

# Freeman 1600

## INSTRUCTION MANUAL **THIS MODEL IS NOT A TOY**

THESE INSTRUCTIONS SHOULD BE READ BY A SUPERVISING ADULT

Freeman 1600 2.4GHz ARTF GLIDER

Model No:6103

**Fast assembly, No Glue Job!**

### SPECIFICATION:

- Wing span: 1580mm (62<sup>1</sup>/<sub>4</sub>in)
- Wing Loading: 27g/dm<sup>2</sup> (8.8oz/ft<sup>2</sup>)
- Length:960mm (37<sup>3</sup>/<sub>4</sub>in)
- Flying weight: 800g (28.2oz)

IMPORTANT NOTE: J4C03 2.4GHz 4CH transmitter is supplied with MODE 2 as standard set, If needed, you could simply switch to MODE 1 by easy steps, see details in page 7

### WARNINGS

**IMPORTANT:** Before beginning assembly, please read and understand the warnings listed following. Failure to read and understand these warnings could lead to bodily harm and/or injury.

1. This model is not a toy. It is for beginner, intermediate and experienced modeller
2. Assemble the plane according to the instructions. Do not alter or modify the model. If you make any modifications, you will void your warranty.
3. It is highly recommended to fly this model under the guide of experienced modeller
4. Test the operation of the model before each flight to insure that all equipment is operating properly, and that the model remains structurally sound.
5. Fly only on light wind days and in large open areas free of trees, people, buildings or any other obstacles.
6. Always be conscious of the spinning propeller. Be careful not to allow loose clothing to be drawn into the propeller.
7. Always turn on the transmitter before turning on the airplane and always turn off the airplane before turning off the transmitter.
8. Always unplug the flight battery when not flying the airplane.
9. Do not attempt to catch the airplane while flying.
10. It is important to make sure you are always using fresh or fully charged batteries. Never allow the batteries to run low or you could lose control of the airplane.

### FCC REQUIREMENT

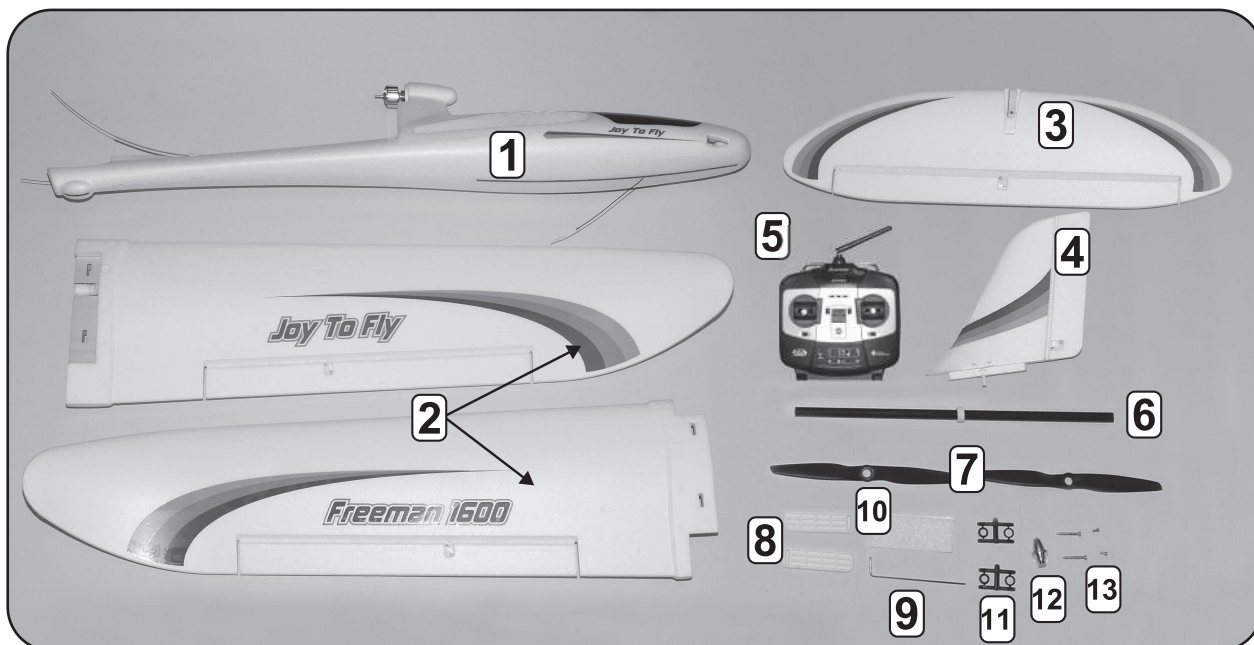


This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

CAUTION: Changes or modifications to this product not expressly approved by the party responsible for compliance may void the user's authority to operate the equipment.



## KIT CONTENTS



- |                              |                           |                        |
|------------------------------|---------------------------|------------------------|
| 1> Fuselage                  | 2> Main Wing              | 3> Horizontal tail     |
| 4> Vertical tail             | 5> 2.4GHz 4CH Transmitter | 6> Fiber bar for wings |
| 7> Propeller x 2             | 8> Wing bolt x 2          | 9> Hex wrench          |
| 10> Velcro strap for battery | 11> Plastic ring x 4      | 12> Spinner            |
|                              |                           | 13> screws x 4         |

## ITEMS REQUIRED FOR COMPLETION

Four "AA" Size Alkaline batteries. (For transmitter)

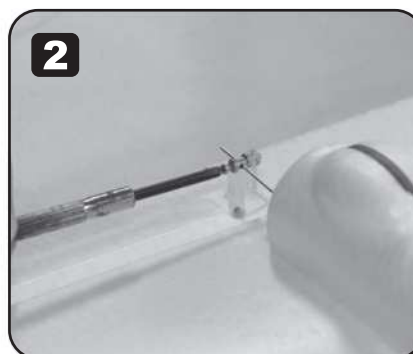
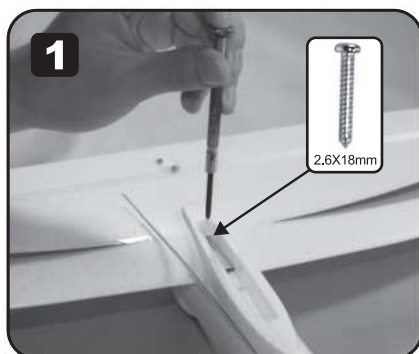
11.1V 1500mAh Li-Ion pack.

2S/3S Balance charger with DC adapter.

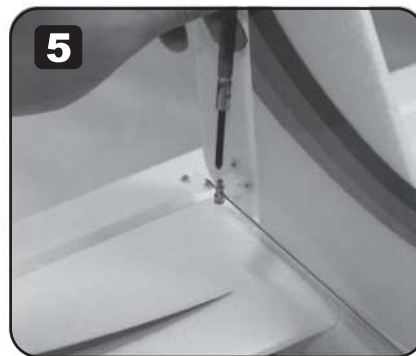
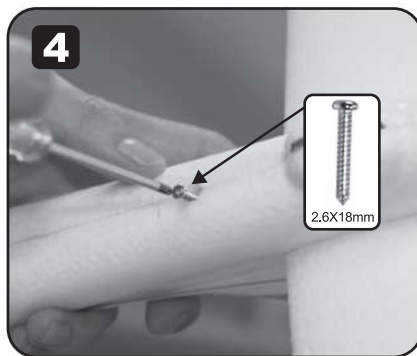
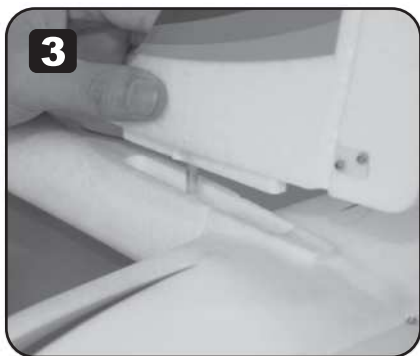
## ASSEMBLING YOUR FREEMAN 1600

### STEP 1: INSTALLING THE TAILS SET

- 1. Place the horizontal tail on fuselage and aligned, secure the tail set by threading 2.6 x 18mm screw through the hole as shown.
- 2. Thread the elevator pushrod through the pushrod adjuster on control horn of horizontal tail, secure the elevator pushrod adjuster tightly.

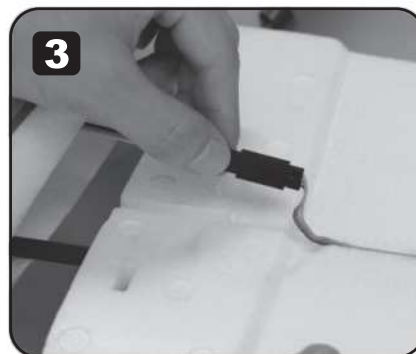
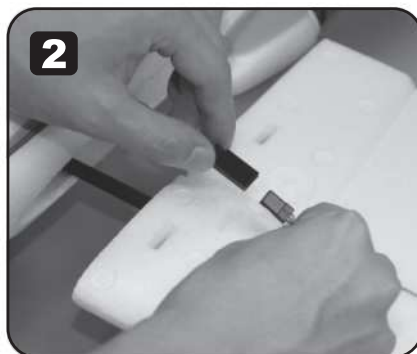
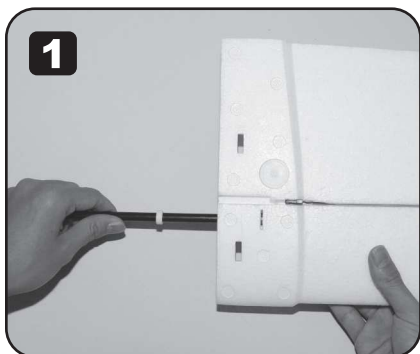


- 3. Place the vertical tail on fuselage and aligned.
- 4. Secure the vertical tail set by threading 2.6 x 18mm screw through the hole as shown..
- 5. Thread the rudder pushrod through the pushrod adjuster on control horn of vertical tail, secure the rudder pushrod adjuster tightly.

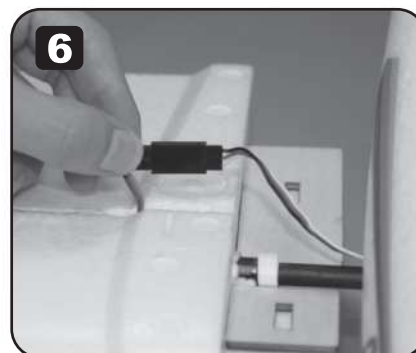
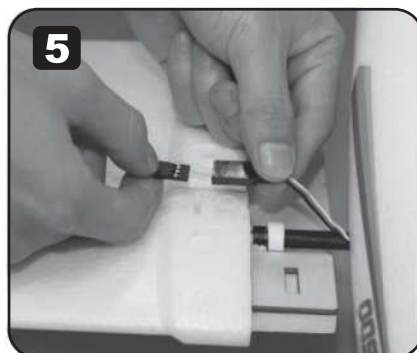


## STEP 2: INSTALLING THE MAIN WING

- 1. Insert the fiber bar into the fiber tube of right wing.
- 2. Connect the right aileron servo wire with wire plug inside fuselage. Notice the direction, they can be attached only one way.
- 3. Place the right aileron wire plug inside the slot of wing.



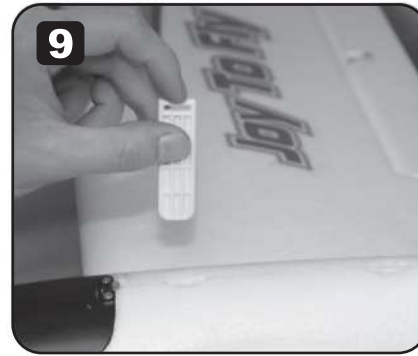
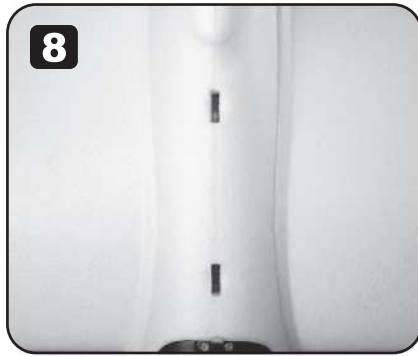
- 4. Thread the right wing set through the slot of fuselage.
- 5. Insert the fiber bar of right wing into the fiber tube of left wing, connect the left aileron servo wire with wire plug inside fuselage. Notice the direction, they can be attached only one way.
- 6. Place the left aileron wire plug inside the slot of wing.



- 7. Thread the left wing set through the slot of fuselage.

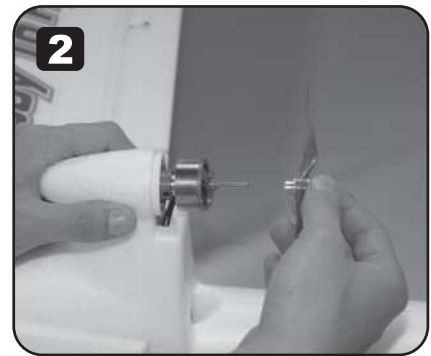
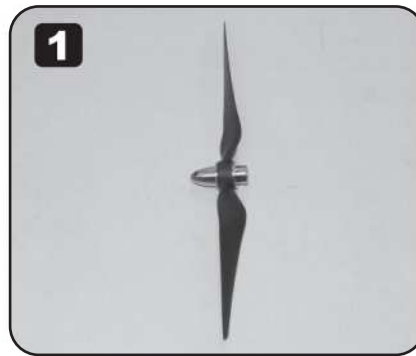
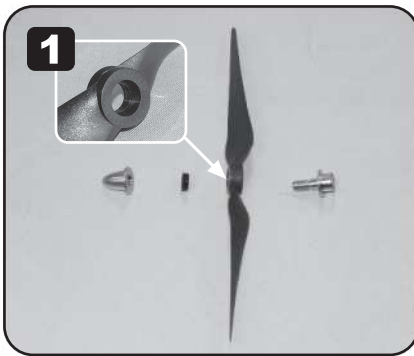


- 8. Assemble the right wing and left wing as photo show.
- 9. Insert the two wing bolts (round end facing down) inside the two slot of fuselage to secure the wings set tightly.



**STEP3:INSTALLING THE PROPELLER**

- 1. Assembling the propeller with the plastic ring(smaller inside diameter) and spinner in order as photos shown. Notice the propeller's orientation.
- 2. Slide the propeller onto the motor shaft.



- 3. Secure the propeller tightly on the motor shaft by using supplied hex wrench.



**PREPARATION BEFORE FLIGHT**

**STEP 1: INSTALLING THE TRANSMITTER BATTERIES**

- 1. Carefully remove the battery cover from the back of the transmitter by pulling down on it with one hand while holding the transmitter with your other hand.
- 2. Install 4 fresh AA Alkaline batteries, being careful to make sure that the polarity is correct for each battery.
- 3. After double-checking that the batteries are installed correctly, reinstall the battery cover, making sure it's firmly seated into place.



## STEP 2: CHARGING THE LI-ION PACK (NOT INCLUDED)

The following parts are optional purchasing parts.

11.1V 1500mAh Li-Ion pack

2S/3S Balance charger with DC adapter

NOTE: Familiarize yourself with the charging procedure of the Li-Ion battery. Read the charger Manual completely and fully charge the Li-Ion battery.

### CAUTION:

1. Only use a Li-Ion approved charger. Never use a NiCd/NiMH peak charger!
2. Never leave the battery unattended during the charging process. Always keep this charger out of reach of children.
3. Stop charging immediately if any abnormality occurs, such as power indicator is off, the temperature of the battery raise rapidly.
4. Do not attempt to disassemble the charger
5. Do not set the charger on carpet during the charging process.
6. Un-plug the charger DC Adapter from the vehicles's cigarette lighter if you do not intend to use it for a period of time.

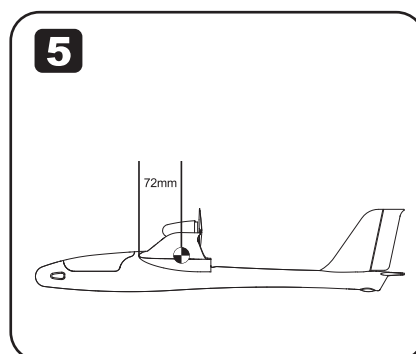
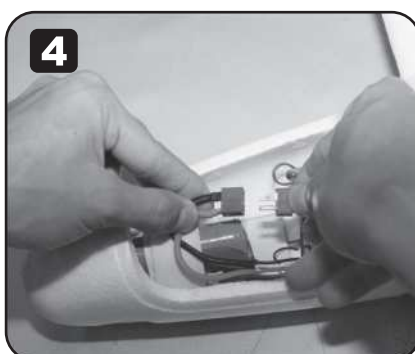
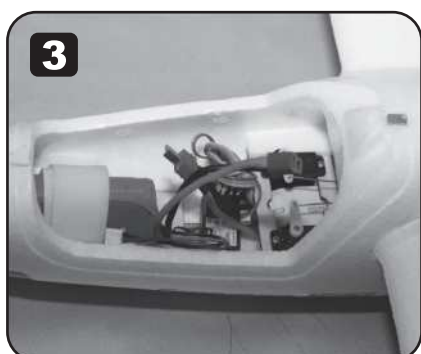
## STEP 3: INSTALLING THE LI-ION PACK

**IMPORTANT** Always turn on the transmitter before turning on the airplane and always turn off the airplane before turning off the transmitter.

- 1. Push down the throttle stick (Left Stick, MODE 2) till the end as shown. Switch off "MXMD" button on top position, because Freeman don't need mix control function on wing or tail. Then turn on the transmitter by pressing on the power switch.
- 2. Remove the hatch of fuselage.

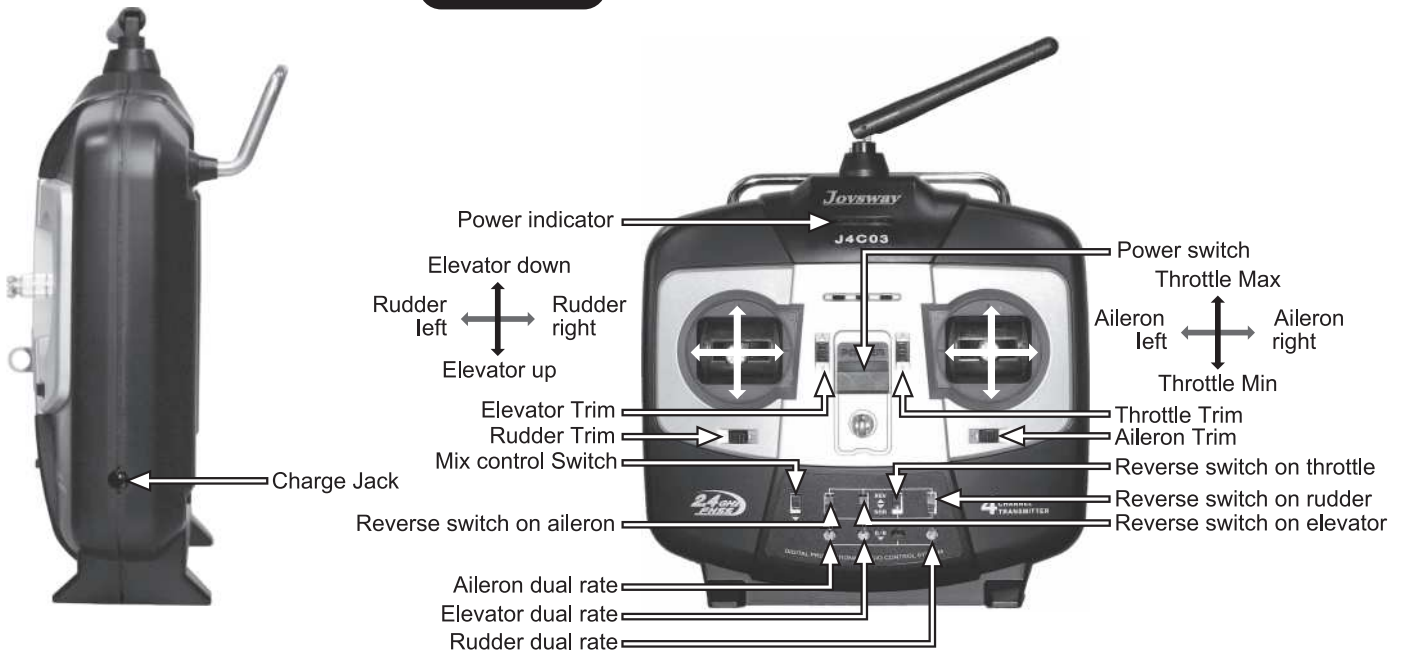


- 3. Put Li-Ion pack inside the fuselage, using hook and loop strap to secure them tightly on position.
- 4. Attach the battery connector to the matching connector of ESC. And reinstall the hatch of fuselage, making sure it is secured tightly.
- 5. The proper CG position should be 72mm away from the leading edge, please refer to the picture. If not, please adjust the position of battery.

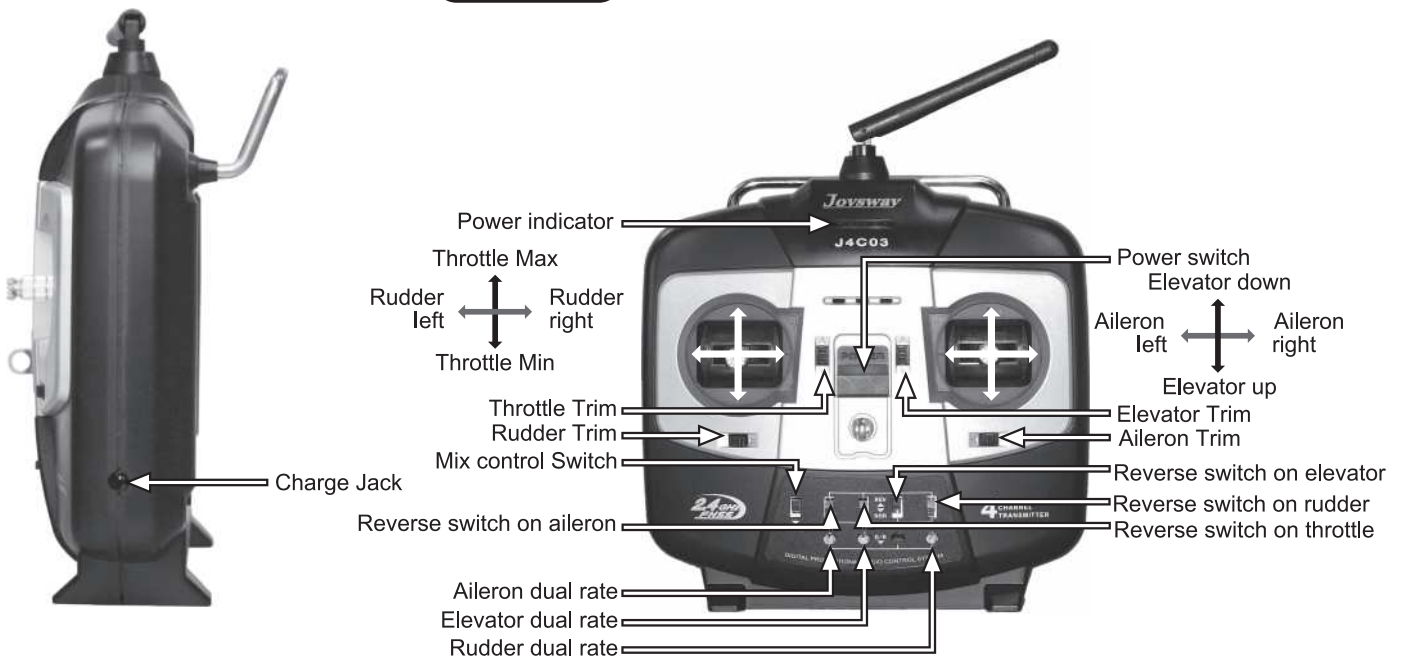


**STEP 4: FAMILIAR WITH RADIO CONTROL SYSTEM**

**Mode 1**



**Mode 2**



**NOTE:**

1. MXMD button is mix control ON/OFF button, switch down as "ON" if model is with mix control function. Otherwise switch up as "OFF".
2. Supplied plastic screwdriver on transmitter handle, use this part to adjust Aileron, Elevator, Rudder dual rate.

## TRANSMITTER MODE SWITCHING

J4C03 2.4GHz 4CH transmitter is supplied with MODE 2 as standard set, If needed, you could simply switch to MODE 1 by easy steps as following:

Step 1: Open battery cover, switch MODE button to MODE 1.

Step 2: Use screwdriver to screw down the up-left screw tightly as photo shown.

Step 3: Screw down the down-left screw as photo shown, but not fully tighten, adjust this screw tightness so as to adjust the throttle stick (right stick) spring tightness as you wanted.



Step 4: Screw off down-right screw completely until the screw head is almost even with back panel.

Step 5: Screw off up-right screw, but not completely. adjust this screw tightness so as to adjust the Elevator stick(left stick) spring tightness as you wanted.



**NOTE:** If switch back form MODE 1 to MODE 2, firstly switch MODE button to MODE 2 under battery cover, screw off the left two screws, Screw down the right two screws, adjust down-left and up-right screws tightness so as to adjust the Throttle stick and Elevator stick spring tightness as you wanted.

## CHARGING(FOR RECHARGEABLE BATTERIES)

The J4C03 transmitter has a charge jack that allows rechargeable AA cells (not included) to be charged in it, using a suitable battery charger.(Output: 6V, Max500mA)

**Caution:** Never try to charge dry cell batteries in the transmitter. They will leak and could explode!

**Caution:** Never leave the radio/charger unattended when charging.

**Caution:** To prevent the possibility of accident, overheating and/or short circuit, always disconnect your battery charger from its power supply when not in use.

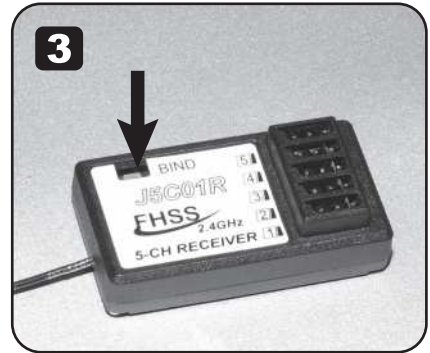
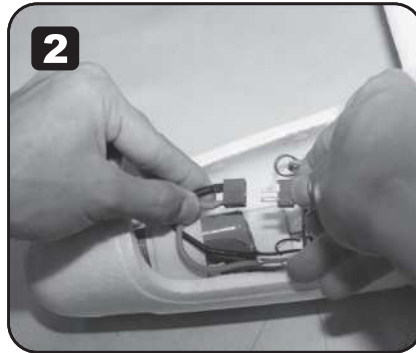
**Note:** When rechargeable batteries are finally depleted (dead) they should be taken to a designated recycling centre for disposal. DO NOT dispose of them in household waste.



## TRANSMITTER/RECEIVER BINDING

The binding process effectively ties the J4C03 transmitter and J5C01R receiver together. Under normal circumstances, both items are supplied like this from the factory. If, however, you find that your transmitter and receiver are not bound (receiver's red LED will be lighting), you should do the following:

- 1. Push down the throttle stick (Left Stick, MODE 2) till the end as shown. Switch "ON" the transmitter.
- 2. Connect Li-Ion pack to ESC's matching connector
- 3. Press down the "BIND" button on the receiver as shown, until the receiver's red LED flash then let go, the receiver's green LED will be lighting to indicate that binding has been successful and the receiver will now accept commands from the transmitter.



Note 1: You would also need to carry out the binding process if you were to replace the included receiver with another one.

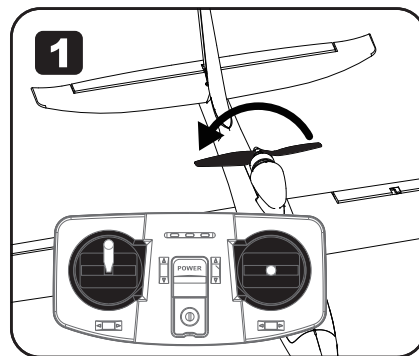
Note 2: Typically, for the binding process to be effective, transmitter and receiver should be no more than one meter apart and no other similar devices should be within 10 meters of both during setup.

### STEP 5: TEST THE THROTTLE (Mode 2)

- 1. Move the throttle control stick forward slowly, the motor rotates faster gradually.

**NOTE:** If the motor doesn't react with the throttle increasing, please check the power supply or the battery capacity and the throttle reverse switch and make necessary adjustment.

**WARNING:** Keep everything clear of the propeller once the battery is plugged in. Do not try to stop the propeller by hand or anything else.



### STEP 6: TEST THE AILERON (Mode 2)

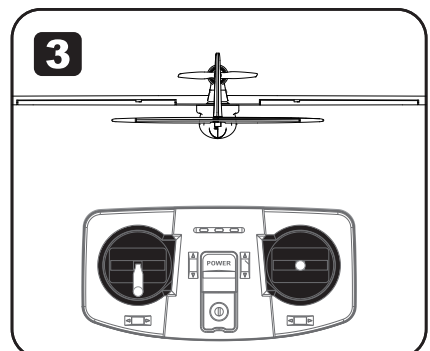
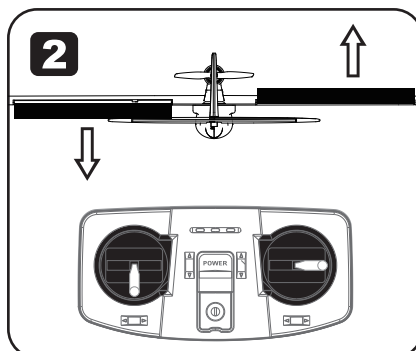
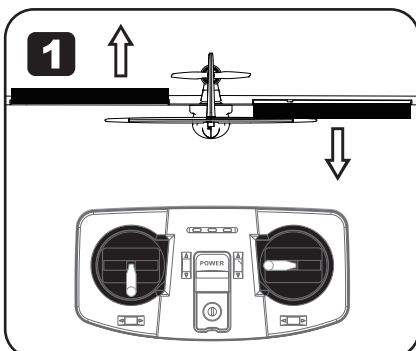
- 1. Move the aileron control stick to the left, the left aileron moves up and the right aileron moves down.
- 2. Move the aileron control stick to the right, the left aileron moves down and the right aileron moves up.

**NOTE:** If the movement of aileron works in opposite position, please check the aileron reverse switch and make necessary adjustment.

- 3. Let Aileron control stick returns to its neutral position, the aileron returns to its neutral position.

**NOTE:** If aileron doesn't return to neutral position, then adjust the aileron trim button to make it in neutral position

**REMARK:** You could adjust the aileron servo traveling value by using the plastic screwdriver to adjust the aileron dual rate on transmitter.





### STEP 7: TEST THE RUDDER (Mode 2)

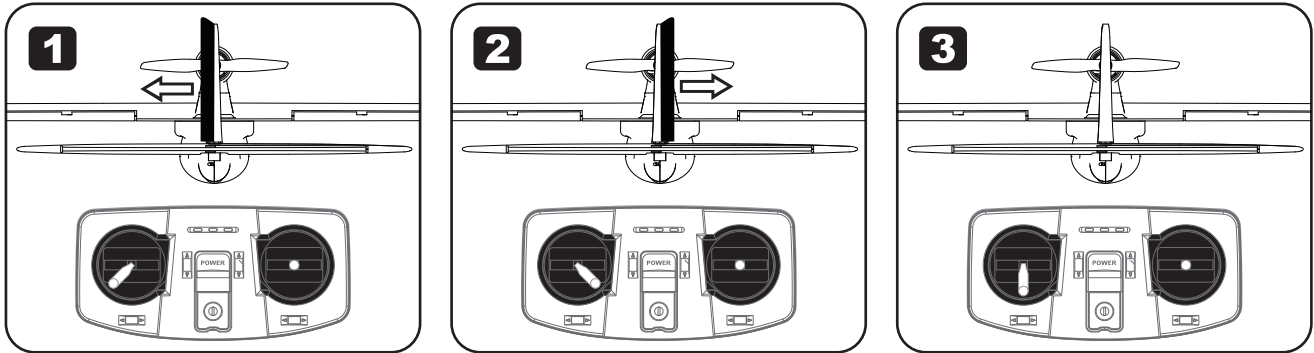
- 1. Move the rudder control stick to the left, the rudder turns to the left.
- 2. Move the rudder control stick to the right, the rudder turns to the right.

**NOTE:** If the movement of rudder works in opposite position, please check the rudder reverse switch and make necessary adjustment.

- 3. Let rudder control stick returns to its neutral position, the rudder returns to its neutral position.

**NOTE:** If rudder doesn't return to neutral position, then adjust the rudder trim button to make it in neutral position

**REMARK:** You could adjust the rudder servo traveling value by using the plastic screwdriver to adjust the rudder dual rate on transmitter.



### STEP 8: TEST THE ELEVATOR (Mode 2)

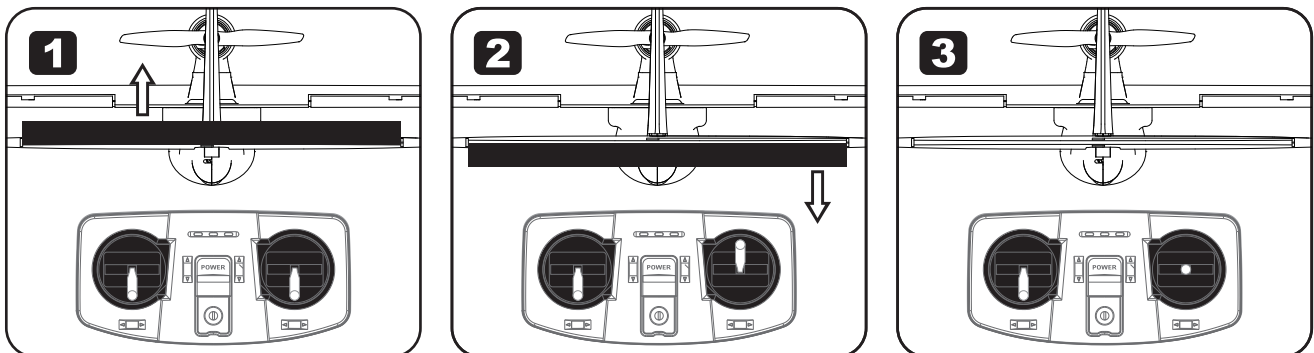
- 1. Move the elevator control stick backward, the elevator will be up
- 2. Move the elevator control stick forward, the elevator will be down.

**NOTE:** If the movement of elevator works in opposite position, please check the elevator reverse switch and make necessary adjustment.

- 3. Let elevator control stick returns to its neutral position, the elevator returns to its neutral position.

**NOTE:** If elevator doesn't return to neutral position, then adjust the elevator trim button to make it in neutral position.

**REMARK:** You could adjust the elevator servo traveling value by using the plastic screwdriver to adjust the elevator dual rate on transmitter.



# FLIGHT MANUAL

## Choose a good flying site and day

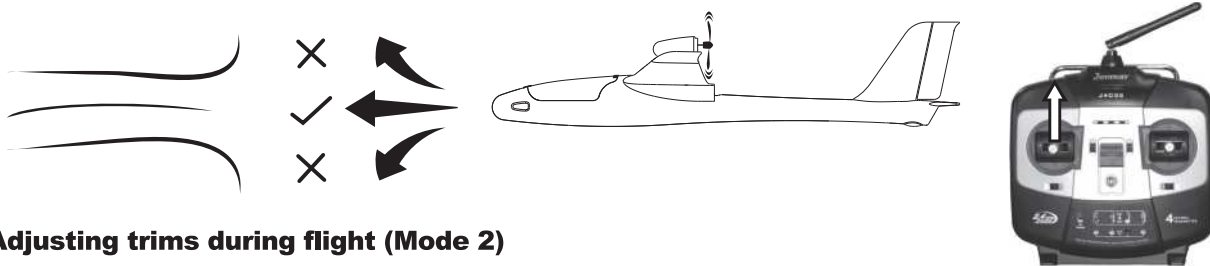
1. The ideal location for flying has wide-open space in four directions with no people
2. Choose location carefully! Do not operate model near these areas: Houses or buildings, children's play areas, road traffic, railways, airports, overhead powerlines.
3. Fly in calm weather conditions with no winds or gentle winds.

## Pre-flight check

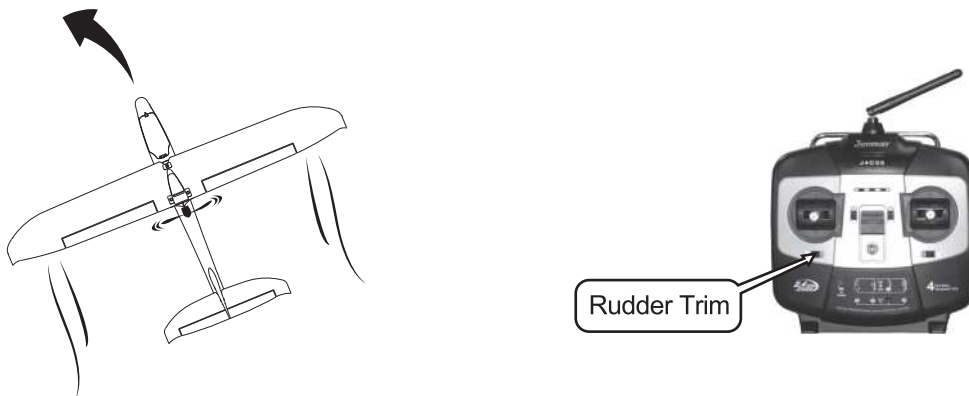
1. Check the propeller and all screws are secured fastened.
2. Check airplane responds properly to control signals.
3. Test the range of the radio signal. It is recommended that have around 100 M range check.

## Take off (Mode 2)

1. Apply full throttle while facing into the wind, hold the airplane horizontally and launch with a pushing motion.



## Adjusting trims during flight (Mode 2)



1. Let go of control sticks. If airplane moves left, adjust rudder trim to the right.


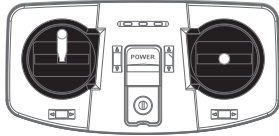

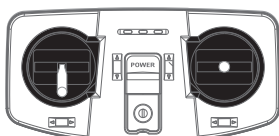
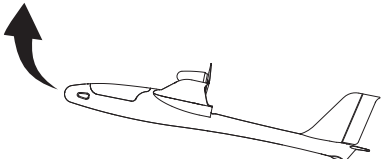
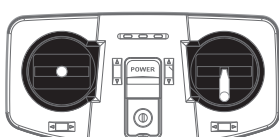
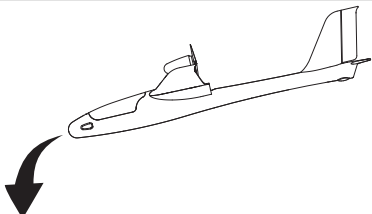
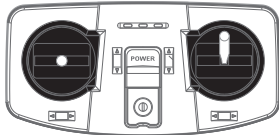
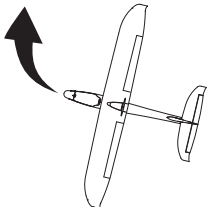
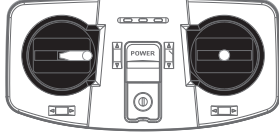
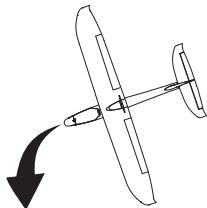
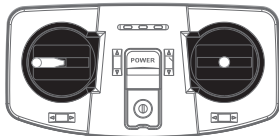
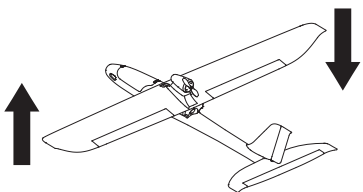
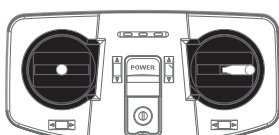
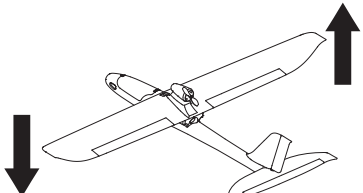
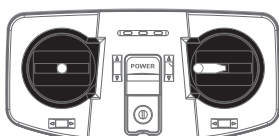


2. Let go of control sticks. If airplane moves upward, adjust elevator trim to downward.



3. Let go of control sticks. If airplane inclines to the left, adjust aileron trim to the right.
4. Adjust rudder, elevator and aileron trims so airplane flies straight and horizontal when sticks are free.

## Command And Fly (Mode 2)

Speed up			Left stick up
Speed down			Left stick down
Ascending			Right stick down
Descending			Right stick up
Nose turn right			Left stick right
Nose turn left			Left stick left
The Body incline to Right			Right Stick Right
The Body incline to Left			Right Stick Left

**Valuable experience:** When your airplane is moving away from you, moving the aileron stick (right stick) to the left, combined with a small amount of up elevator (moving the right stick down), will make your plane turn to the left. Moving the aileron stick to the right with a small amount of up elevator will make the airplane turn to the right. To stop the turn, move the stick the opposite direction until the airplane is flying level and return the elevator stick to center.

CAUTION: Only a small amount of up elevator is needed here.

### **Landing**

1. For your first couple of flights we recommend that you attempt to land with reserve battery power.
2. During your first flight, while at a high altitude, turn the motor off and notice how the Freeman 1600 reacts. This will give you an idea of how the airplane will react during a landing. At this higher altitude, familiarize yourself with how the model responds at low power and slower speeds as this is how the model will fly when landing.
3. To land the Freeman 1600, fly down wind, past the landing area. Gently turn into the wind and reduce the throttle so that the airplane starts to come down. Adjust the throttle as needed to reach the landing area, but not fly past it. Always land into the wind.
4. Just before landing, at about 0.5 meter above the ground, apply a little up elevator, This will cause the airplane to slow and settle to the ground.

### **After Landing**

Disconnect the battery, then, switch the transmitter off. Remove the battery from the fuselage, Check the airplane over to make sure nothing has come loose or may be damaged.

## **SPARE PART LIST**

To order Freeman 1600 spare parts, use the part numbers in the spare parts list that follows.

<b>PART NO.</b>	<b>DESCRIPTION</b>
610301	Fuselage set without decal sticker
610302	Main wings set without decal sticker
610303	Vertical tail and Horizontal tail
610304	Wings Plastic bolt
610305	Pushrod set(PK2)
610307	2S/3S Balance Charger with DC Adapter
610309	11.1V 1500mAh Li-Ion
610310	30A Brushless ESC set
610311	Freeman decal stickers set
610312	Hatch
610313	2.4GHz Receiver set for J4C03
610314	2.4GHz 4CH Transmitter set-J4C03
610105	Pushrod adjuster set(PK2)
610106	Elevator/Rudder Servo set
610206	Control Horn set(PK6)
610207	Aileron servo set
610208	CF2812 Brushless motor 1950KV set
610210	Propeller & Spinner set (PK2)