Freewing MODEL

F-35 V2

Joint Strike Fighter

Wingspan : 800mm (31.5 in)

www.freewing-model.com

360° vector

MADE IN CHINA

Introduction

Thanks for your purchasing Freewing F35 V2. Compared the old version, V2 replaced the elevator fixing structure, strengthen main wing, and use retracts landing gear to replace old landing gear controlled by servos. F35 V2, will have better quality.

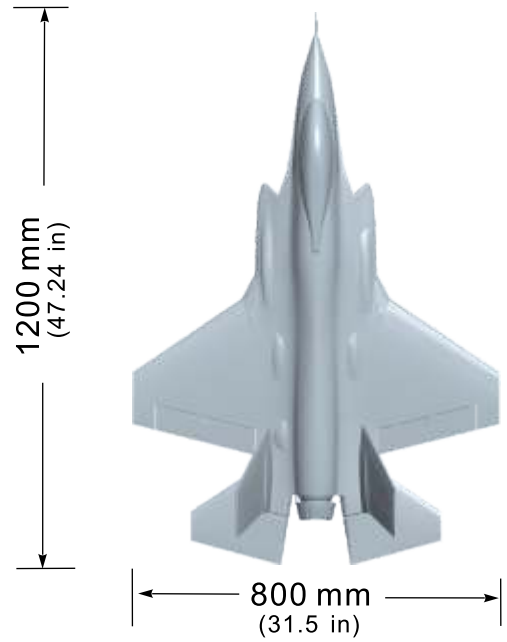
⚠ **NOTE:** This is not a toy. Not for children under 14 years. Young people under the age of 14 should only be permitted to operate this model under the instruction and supervision of an adult. Please keep these instructions for further reference after completing model assembly.

Note:

1. This is not a toy! Operater should have a certain experience, beginners should operate under the guidance of professional players.
2. Before install, please read through the instructions carefully and operate strictly under instructions.
3. Cause of wrong operation,Freewing and its vendors will not be held responsible for any losses.
4. Model planes' players must be on the age of 14 years old.
5. This plane used the EPS material with surface spray paint, don't use chemical to clean, otherwise it will damage.
6. You should be careful to avoid flying in areas such as public places,high-voltage-intensive areas,near the highway, near the airport or any other place where laws and regulation clearly prohibit.
7. You cannot fly in bad weather conditions such as thunderstorms,snows....
8. Model plane's battery, don't allowed to put in everywhere. Storage must ensure that there is no inflammable and explosive materials in the round of 2M range.
9. Damaged or scrap battery should be properly recycled, it can't discard to avoid spontaneous combustion and fire.
10. In flying field, the waste after flying should be properly handled,it can't be abandoned or burned.
11. In any case, you must ensure that the throttle is in the low position and transmitter switch on, then it can connect the lipo-battery in aircraft.
12. Do not try to take planes by hand when flying or slow landing process. You must wait for landing stop, then carry it.

Assembling Data Index

Product basic information



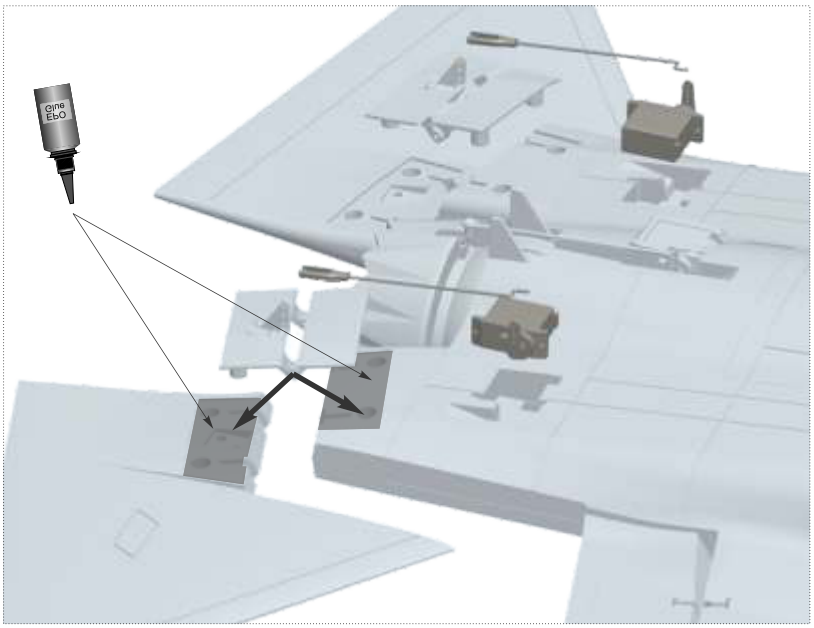
- **Motor**
  2839-3000KV
- **ESC**
  45A
- **Servo**
  9g servos (7pcs)
- **Battery**
  4S 14.8V 2200mAh 35C
- **Fan**
  70mm EDF
- **Take-off Weight**
  1100g (38.8 oz.)
- **Thrust**
  1200g (42.32 oz.)

⚠ Note: The parameters in here are derived from test result using our accessories. If use other accessories, the test result will be different. Any problem since of using other accessories, we are not able to provide technical support.

Installing control surface

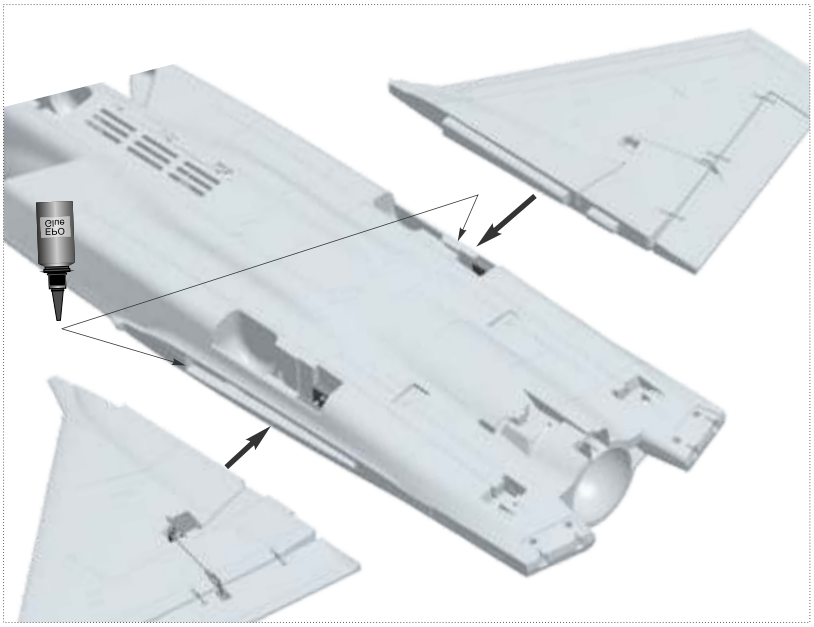
Installing elevator

1.Apply the glue to the indicated place, and adhesive the " elevator connection part" on the indicated place.
2.Center the servo as the right photo shown, and adhesive the elevator servo on the servo mounting trough.
3.Use elevator pushrod to connect the servo arm and elevator horn.
4.Repeat the above steps, and install the other elevator.



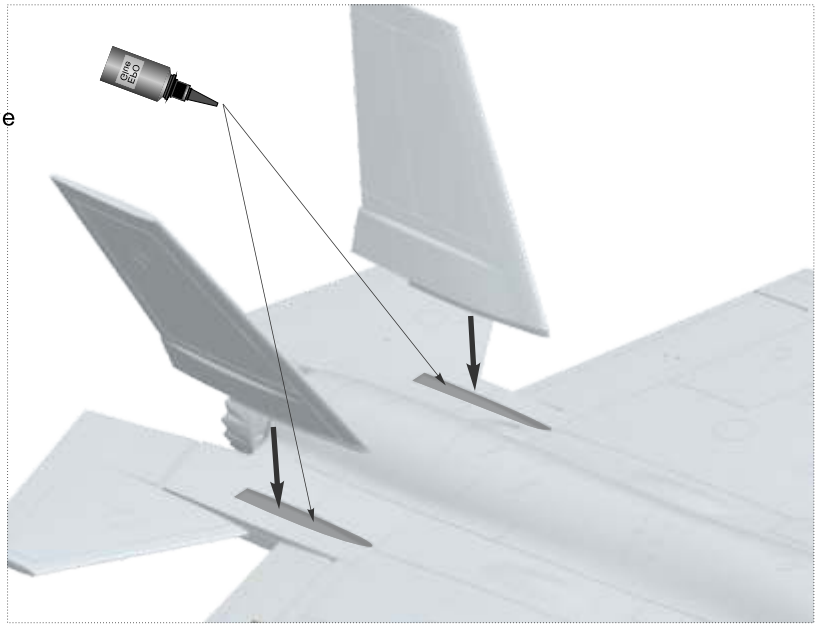
Installing main wing

1.Connect the servo cable of main wing and extention line of fuselage.
2.Apply glue to the indicated place as the right photo shown, then adhesive the main wing on the fuselage.
3.Repeat the above steps, and install the other main wing.



Installing rudder

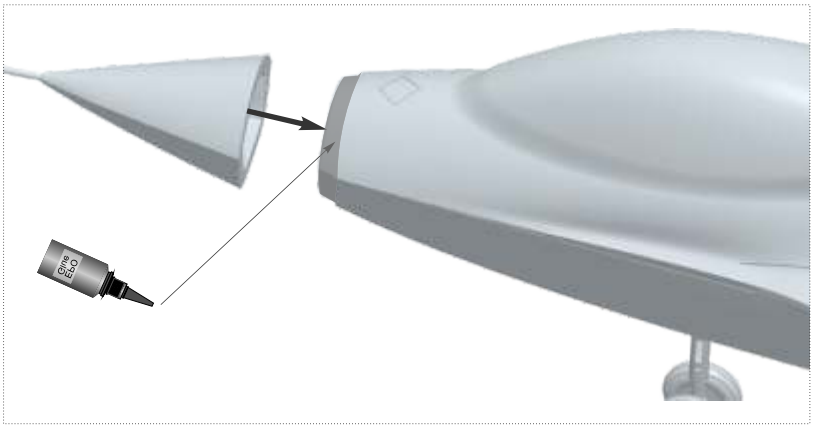
1.As the right photo shown, apply the glue to the indicated place, and attach adhesive the rudder on the fuselage.



⚠ **Note:** In the attach processing,in order to prevent the spareparts move, please hold in position until the epoxy sets. In this way, we can get the best adhesion.

Installing nose cone

1.Apply glue on the indicated place, install the nose cone.



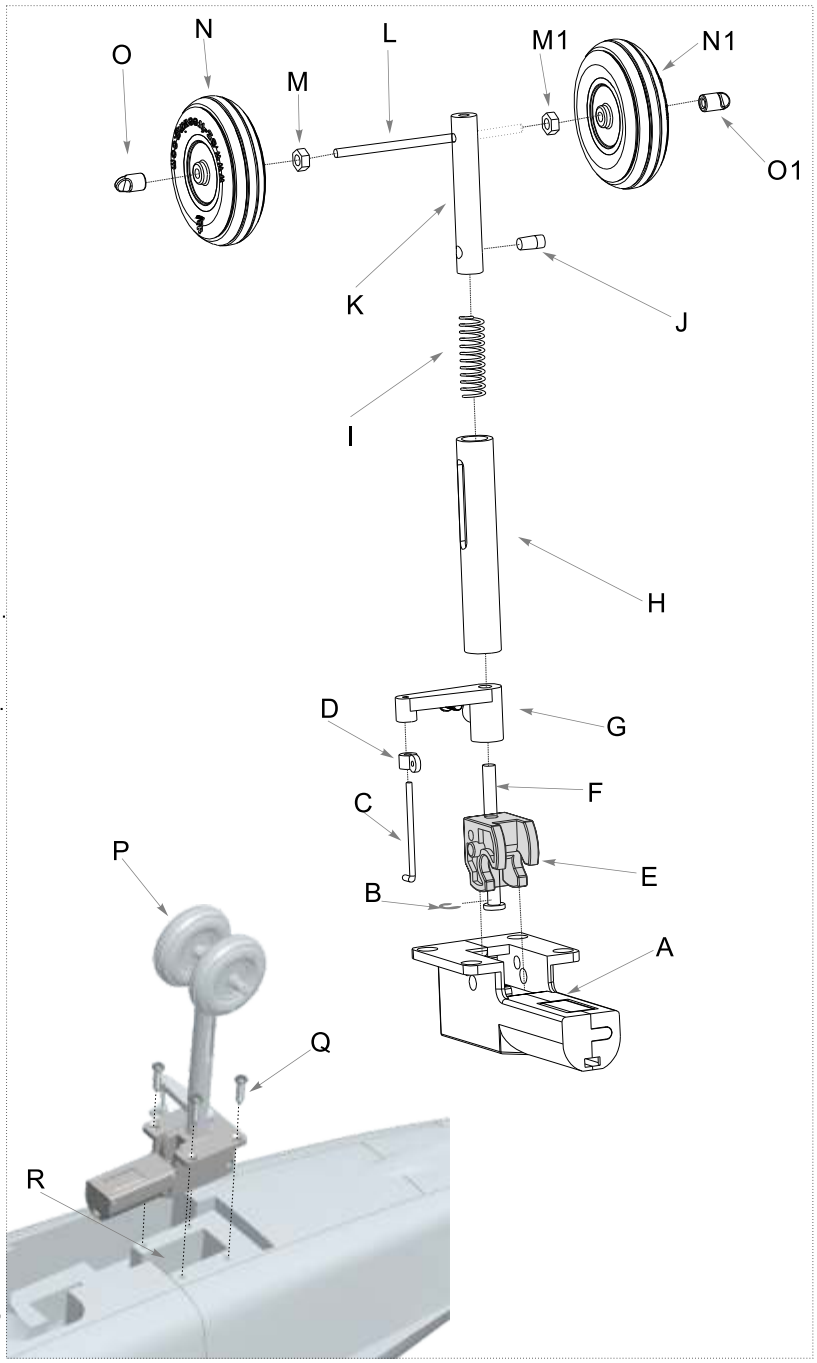
⚠ **Note:** In the attach processing,in order to prevent the spareparts move, please hold in position until the epoxy sets. In this way, we can get the best adhesion.

Installing the landing gear

Nose landing gear accessories list:

A - Landing gear electric base
B - E-buckle
C - Nose landing gear steering pushrod
D - Nose landing gear steering control ring
E - Landing gear rotating arm
F - Nose landing gear metal wire
G - L shape arm
H - Nose landing gear main strut
I - Spring
J - Pin
K - Nose landing gear damping active lever
L - Wheel shaft
M - Nut
N - Wheel
O - Wheel gear
P - Nose landing gear set
Q - Screw
R - Nose gear mount

1.Insert the “Nose landing gear metal wire (F)” into “landing gear rotating arm (E)”, then buckle the ” E-buckle (B)” on the “Nose landing gear metal wire (F)”, to prevent its fall off.
2.Put the “Nose landing gear steering control ring (D)” into “Nose landing gear steering pushrod(C)”. Then screw one screw thread side of “Nose landing gear steering pushrod (C)” into “L-shape arm (G)”.
3.Put the installed “L-shape arm (G)” into “Nose landing gear metal wire (F)”, then use screw to fix.
4.Put the “Nose landing gear main strut (H)” into “Nose landing gear metal wire (F)”, then use jimi screw to fix.
5.Put the “ Spring (I)” in the “Nose landing gear main strut (H)”, next, insert the “Nose landing gear damping active lever (K)” into “Nose landing gear main strut (H)”. The “Pin (J)” should pass through the U-shape trough of “Nose landing gear main strut (H)”, press it into the hole of “Nose landing gear damping active lever (K)”, to prevent its fall off.
6.Insert the “ Wheel shaft (L)” to the “Nose landing gear damping active lever (K)”, use Jimi screw to fix the “ Wheel shaft (L)”. then, two side of wheel shaft L, refer to right photo, put the “nut (M, M1)”, “ Wheel (N,N1)”. At last, screw the “Wheel gear (O,O1)” to prevent its fall off.
7.Install the installed “nose landing gear set (P)” on the “nose gear mount (R)”, and use “screw (Q)” to fix.



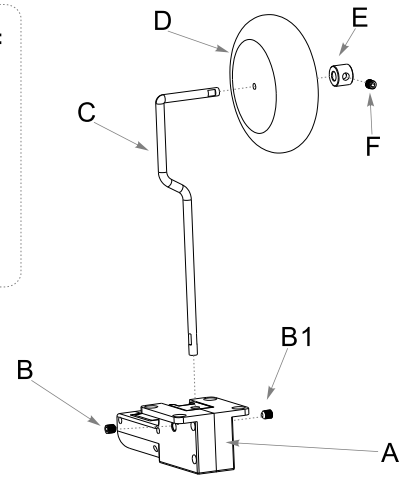
⚠ **Note:** when installing, please check the flat position of spareparts, when screw to fix, the flat position must fact to the screw hole, just like this, it can fix successfully , the spareparts don't rotate and fall off.

Installing rear landing gear

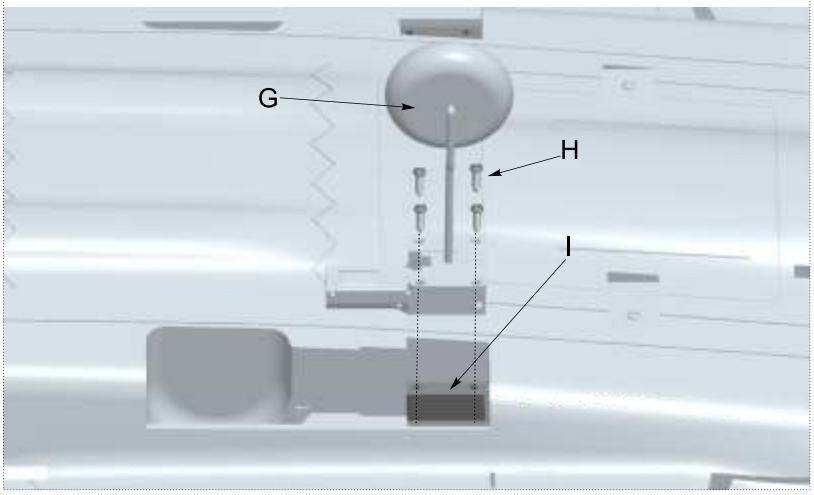
1.Insert the " Rear landing gear metal wire (C)" into "Landing gear electric base (A)", then use "Jimi screw (B,B1)" fix.
2.Put the "wheel (D)" 、"wheel gear (E)" into the "Rear landing gear metal wire (C)", and use "Jimi screw (F)" to screw tightly.
3.Install the installed " rear landing gear set (G)" on the "rear gear mount (I)", and use "screw (H)" to fix.

Rear landing gear accessories list:

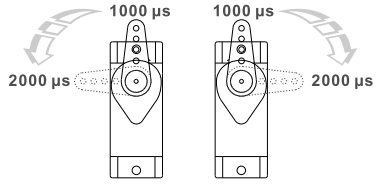
A - Landing gear electric base
B - Jimi screw
C - Rear landing gear metal wire
D - Wheel
E - wheel gear
F - Jimi screw
G - Rear landing gear set
H - Screw
I - Rear gear mount



⚠ **Note:** when installing, please check the flat position of spareparts, when screw to fix, the flat position must fact to the screw hole, just like this, it can fix successfully , the spareparts don't rotate and fall off.



Servo introduction



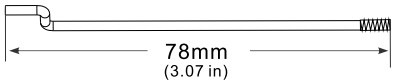
The servo positive or reverse rotation is defined as follows:
When servo input signal change from 1000μs to 2000μs,
The servo arm is
rotated clockwise, its **positive servo.**
The servo arm is
rotated counterclockwise, its **reverse servo.**

No.	Positive / Reverse	Cable length
1	Positive	100 mm
2	Positive	100 mm
3	Positive	100 mm
4	Positive	100 mm
5	Reverse	100 mm
6	Reverse	100 mm
7	Reverse	100 mm

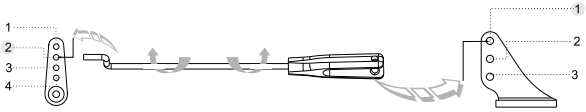
Servo pushrod size

Aileron pushrod size

Pushrod diameter : Ø 1.2mm

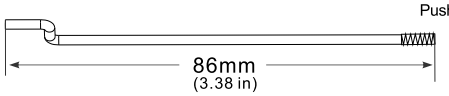


Aileron pushrod mounting hole

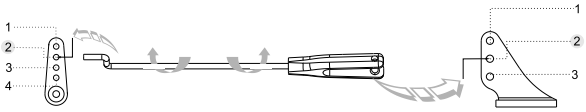


Elevator pushrod size

Pushrod diameter : Ø 1.2mm

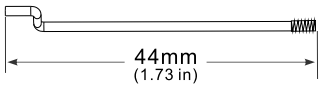


Elevator pushrod mounting hole

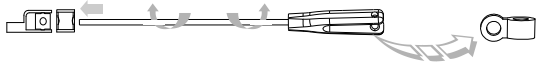


Nose landing gear steering pushrod size

Pushrod diameter : Ø 1.2mm

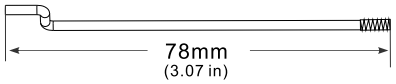


Nose landing gear steering pushrod mounting hole

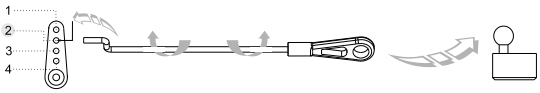


Vector pushrod length (Vertically)

Pushrod diameter : Ø 1.2mm

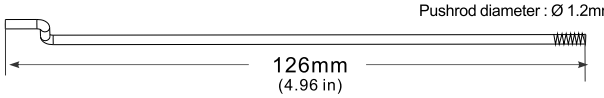


Installing hole of Vector pushrod (Vertically)

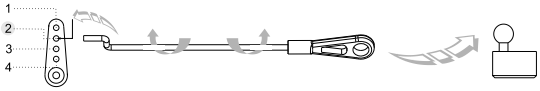


Vector pushrod length (Horizontally)

Pushrod diameter : Ø 1.2mm



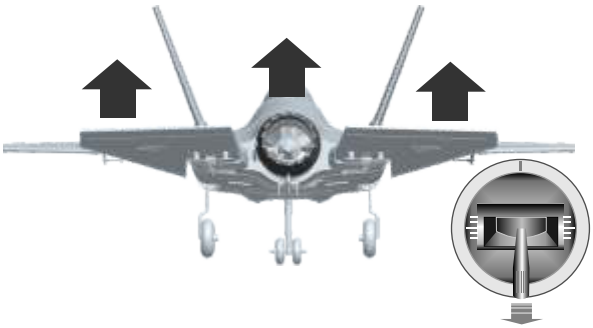
Installing hole of Vector pushrod (Horizontally)

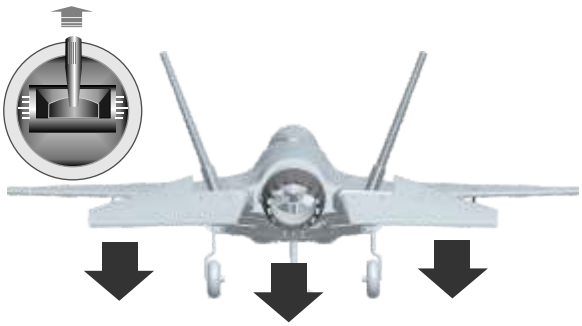


Vector mix set up

Note: This airplane have vector function, it need the 7CH+ radio. At the same time, the radio must have Programming setting function.

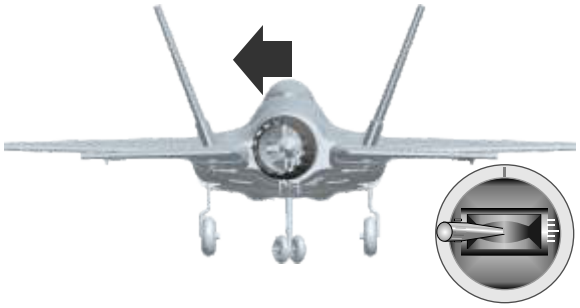
Vector – Elevator mix

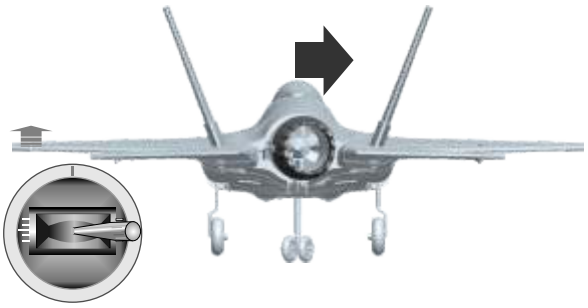




1.Insert the vector servo cable (Horizontally) into the free channal of receiver.
2.Enter into this channel to set interface.
3.Set this channel and Elevator channel (CH2) to synchronous action.
4.As the above photo shown, use radio to test the elevator channel (CH2), and check it set successful.

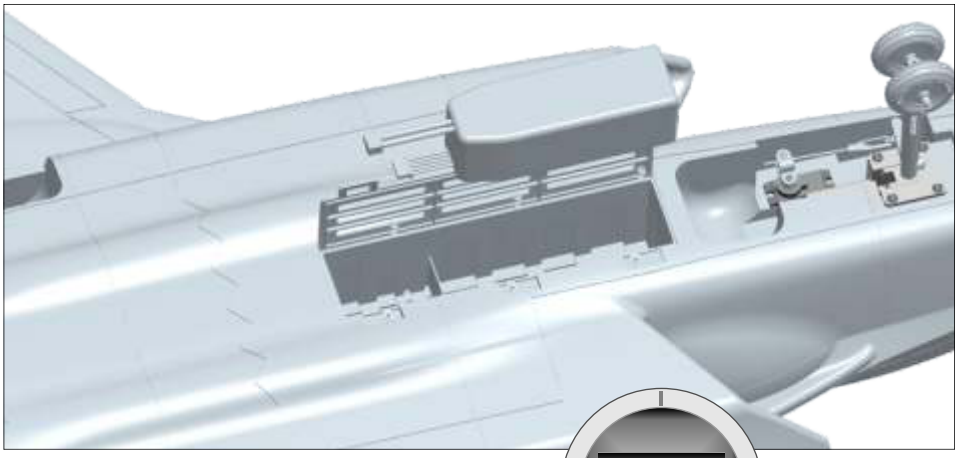
Vector-Rudder mix





1.Insert the vector servo cable (Vertically) into the free channal of receiver.
2.Enter into this channel to set interface.
3.Set this channel and Rudder channel (CH4) to synchronous action.
4.As the above photo shown, use radio to test the rudder channel (CH4), and check it set successful.

Install on battery



In the bottom of fuselage, there is a plastic battery compartment. We can put the battery in it.

Before connect battery and receiver, please switch on the transmitter and check that the throttle is in the low position.

Our standard battery is: **4S 14.8V 2200mAh 35C**
You can choose the battery refer to the battery cabin size:

L=190mm; W=53mm; H=40mm

4S 14.8V 2200mAh 35C ~ 4S 14.8V 3200mAh 35C
Discharge rate of C > 35C

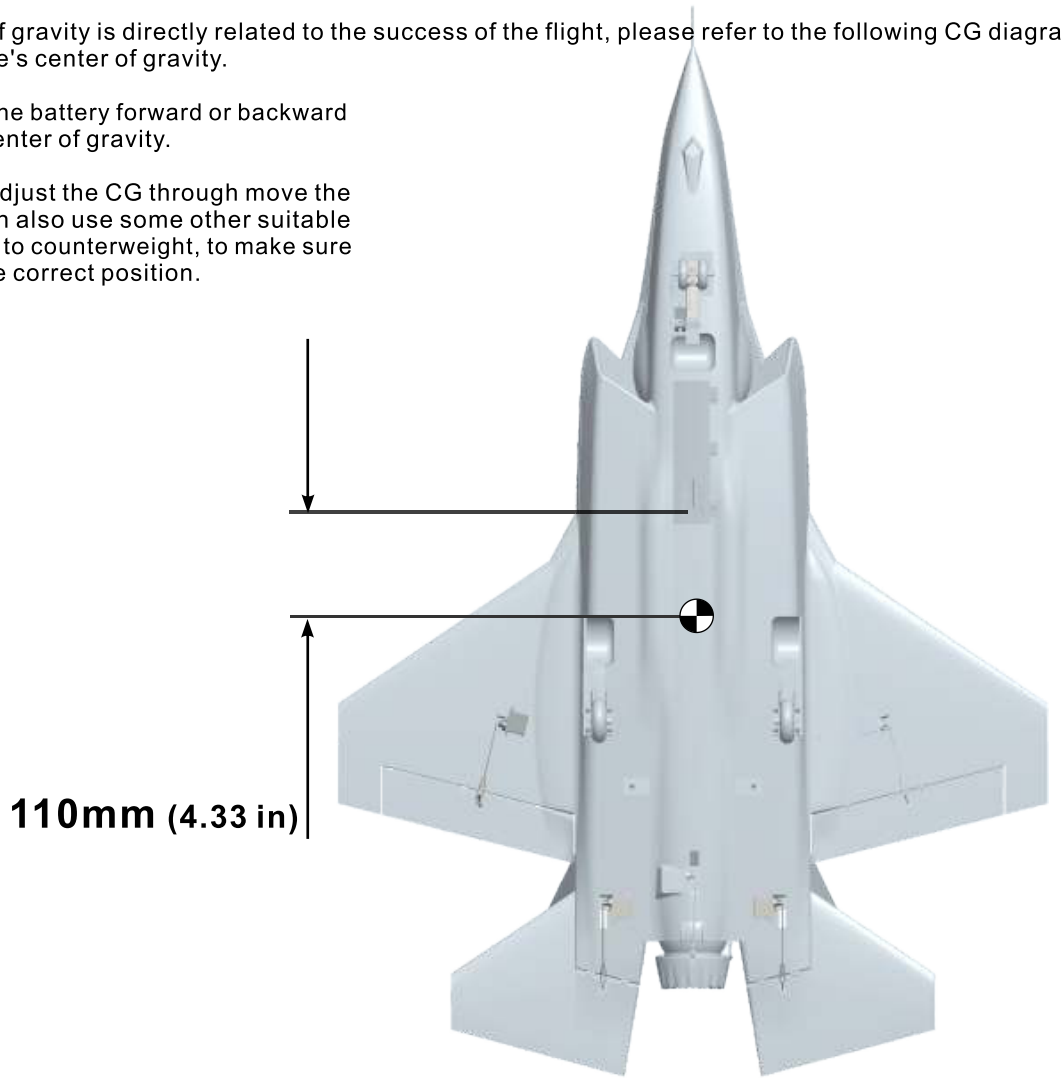
Different weight battery may affect its CG, please the correct range of CG indication.

Center of Gravity

Correct center of gravity is directly related to the success of the flight, please refer to the following CG diagram to adjust your plane's center of gravity.

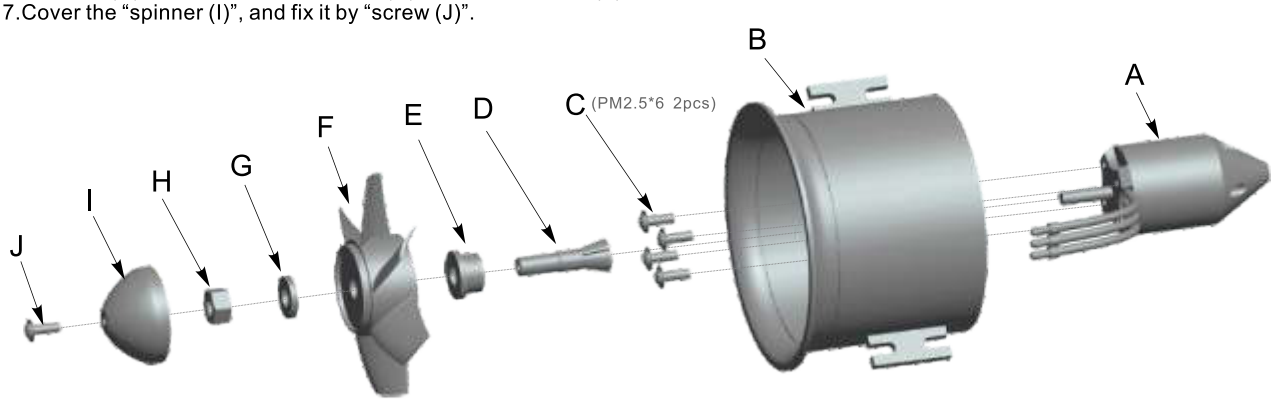
- You can move the battery forward or backward to adjust the center of gravity.

- If you can not adjust the CG through move the battery, you can also use some other suitable material weight to counterweight, to make sure that CG is in the correct position.



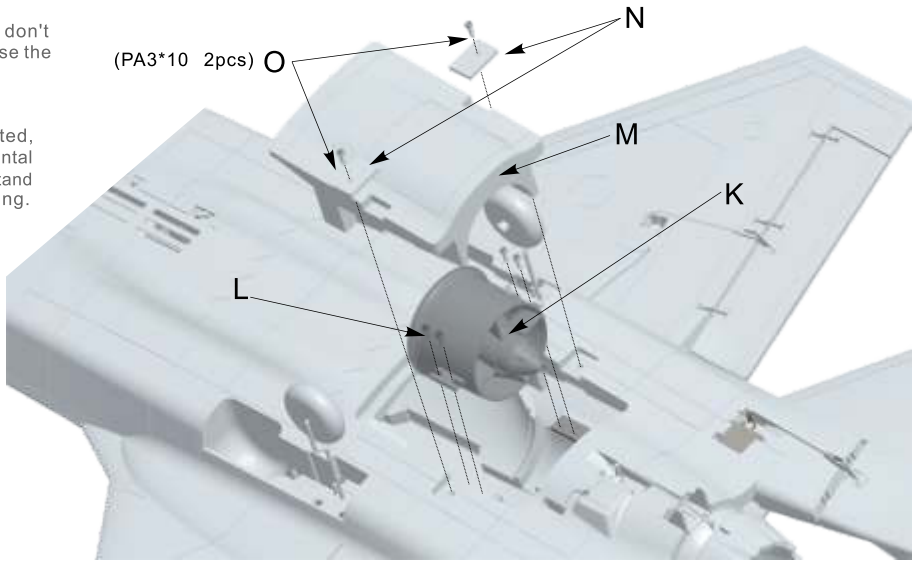
Install power system

1.Install “motor (A)” in “ducted fan housing (B)”.
2.Fix motor by 4pcs “screws (C)”.
3.Insert te “motor clip (D)” in the motor shaft.
4.Put the “fixed disk (E)” to the “motor clip (D)”.
5.then put the “rotor (F)”, “spacer (G)” to the “motor clip (D)”.
6.Use “nut (H)” to screw the “motor clip (D)” and fix the “rotor (F)”.
7.Cover the “spinner (I)”, and fix it by “screw (J)”.
8.Put the installed “EDF (K)” in the fuselage and fix it by “screws (L)”.
9.Connect the ESC and motor, and put the lines in order.
10.Cover the “EDF cover (M)” and “motor cabin fixed part (N)”.
11.Fix it by 2pcs “screws (O)”.

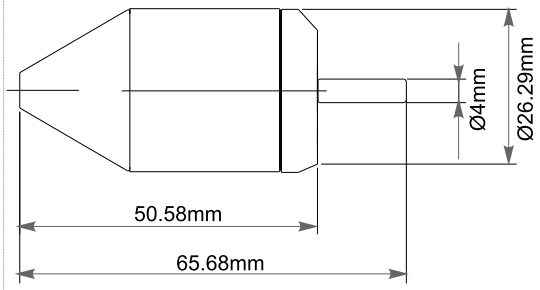


⚠ Note: When screw the nut(G), please don't screw too tight, if screw too tight, it may cause the damage of rotor (F).

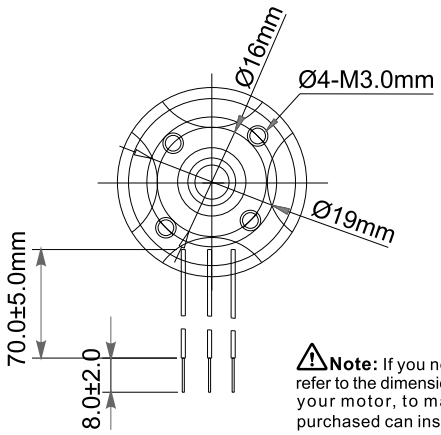
⚠ Note: When ESC and battery connected, prohibit to touch them by hand to avoid accidental injury. When test EDF, please use safety test stand for testing, prohibit to touch by hand for testing.



Motor parameters



2839-3000



⚠**Note:** If you need other motor to use, please refer to the dimension shown on the above to select your motor, to make sure that the motor you purchased can install successfully.

Model	KV (RPM/V)	Volate (V)	Load Current (A)	Pull (g)	Rotate Speed (rpm)	Weight (g)	No Load Current	Propeller	ESC
MO02822	3000RPM/V	14.8	42	1250	33000	86	4.5A	70mm Ducted Fan	>45A

Control direction test

After installed the plane, before flying, we need a fully charged battery and connect to the ESC, then use radio to test and check that every control surface work properly.

Aileron

Stick Left

Stick Right

Elevator

Up Elevator

Down Elevator

Rudder

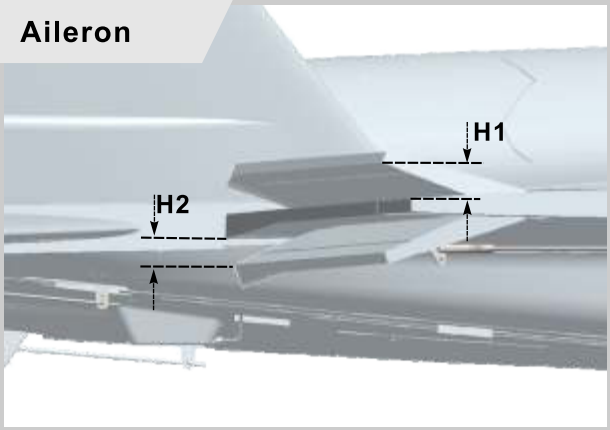
Stick Left

Stick Right

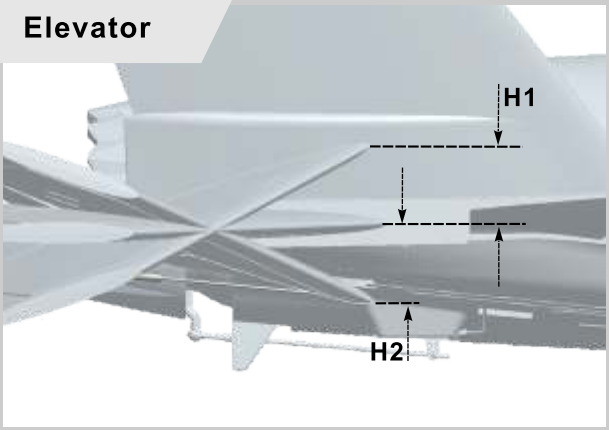
Dual Rates

According to our testing experience, according to the following parameters to set the aileron/elevator rate, it will be useful for flight. In low rate, its good for flight control and its suitable for the initial flight or less skilled players. According to your own circumstance, choose one rate in flight.

Aileron



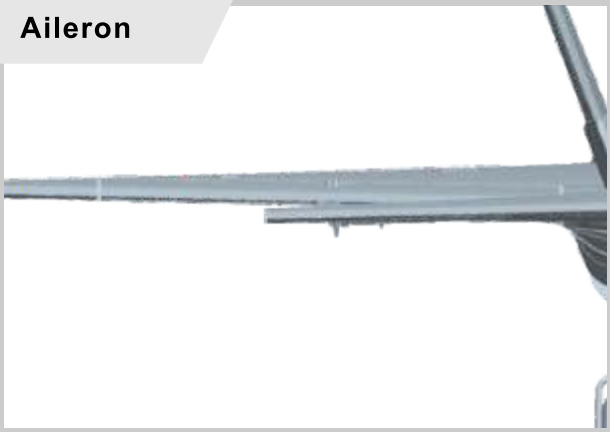
Elevator



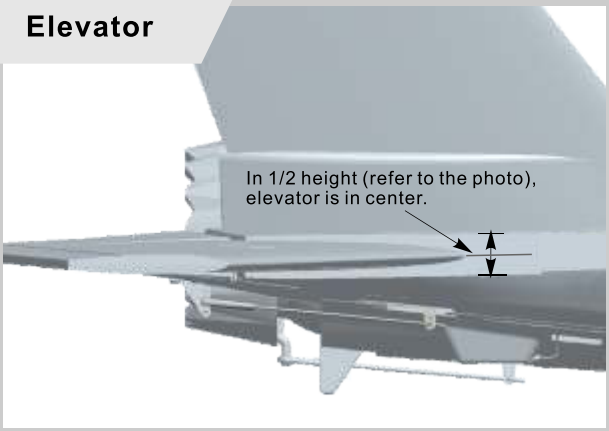
	Aileron	Elevator
Low Rate	H1/H2 6mm/6mm	H1/H2 6mm/6mm
High Rate	H1/H2 10mm/10mm	H1/H2 9mm/9mm

Control surface centered diagram

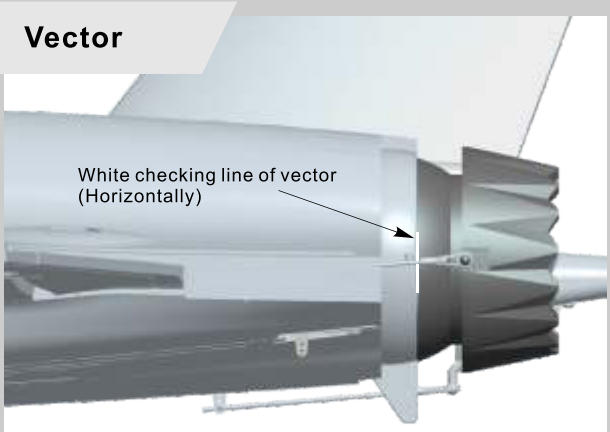
Aileron



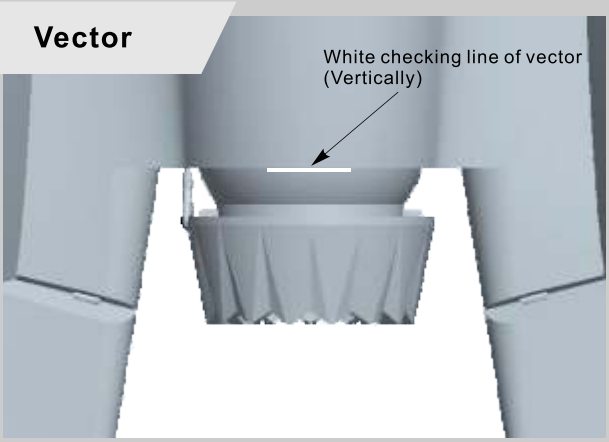
Elevator



Vector



Vector



Troubleshooting Guide

Motor does not turn on	A) Li-Po battery depleted	A) Recharge Li-Po battery
	B) Transmitter batteries depleted	B) Replace or recharge batteries
	C) Transmitter not turned on	C) Turn on transmitter
	D) Li-Po battery not plugged in	D) Plug in Li-Po battery
	E) Motor not armed	E) Arm motor
	F) A crash has damaged an internal component	F) Replace
	G) ESC or other damaged	G) Check ESC or contact local distributor
Cub is difficult to control	A) You are flying in too much wind	A) Fly when there is no wind
	B) Li-Po battery depleted	B) Recharge Li-Po battery
	C) Transmitter batteries depleted	C) Replace or recharge batteries
	D) Transmitter antenna not extended completely	D) Extend transmitter antenna completely
	E) Surface control rate is too high	E) Use low rate to fly
The nose always move down when fly, always need to up elevator	A) CG is forward	A) Adjust CG backward refer to instruction
Cub constantly climbs or descends, or turns right or left without control input	A) The aircraft is out of trim adjustment	A) Adjust the transmitter trim tabs
	B) You are flying in too much wind	B) Fly when there is no wind
Elevator is too flexible, up and down is not stable	A) CG is backward	A) Adjust CG forward refer to instruction
Plane will be slant when taxi on the runway	A) Nose gear is not center.	A) Center nose gear
	B) Rudder is not center.	B) Center rudder
Take off is difficult	A) Thrust is not on the high position	A) Thrust is on the high position
	B) Taxi distance is not enough	B) Long taxi distance
	C) Elevator rate is not enough high	C) Use high rate of elevator
Cub will not climb	A) Li-Po battery is depleted	A) Recharge Li-Po battery
	B) Ducted fan is damaged	B) Check and replace ducted fan
	C) Motor is damaged	C) Check and replace motor
	D) ESC overheat protection,power reduction.	D) Landing firstly, check and select a more powerful ESC
Li-Po battery is slightly warm after charging	A) This is normal	A) The Li-Po battery may be slightly warm when fully charged. It should not be hot to the touch.
Motor vibrates excessively	A) Ducted fan is damaged	A) Check and replace ducted fan
	B) Motor is damaged	B) Check and replace motor
	C) Ducted fan is not balance	C) Adjust the ducted fan balance
	D) High speed will happen slightly vibrate	D) Its normal to use
Control surface move the wrong direction	A) Servo direction is reversed	A) Adjust servo reversing function

http://www.freewing-model.com

sales@freewing-model.com