

**Freewing** M<sup>o</sup>DEL

[www.freewing-model.com](http://www.freewing-model.com)

# Freewing J-10A 90mm Super Scale

## User Manual

**Wingspan:1530mm**

**Length:940mm**

**Empty Weight:3235G[w/o Battery]**



Thank you for purchasing our Freewing 90mm EDF super scale electric model jet, the J-10A Vigorous Dragon !

The J-10 fighter jet is a high-performance, multi-purpose, all-weather third-generation fighter jet developed and produced under the leadership of China Aviation Industry Chengdu Aircraft Industry Co., Ltd. It was officially launched in 1986 and officially launched in 2003. The J-10 fighter jet, as a new generation of multi-purpose fighter jets, has achieved a historic leap from the second generation to the third generation of China's independent military fighter jets, becoming one of the main fighter jets of the Chinese Air Force. So far, the J-10 fighter jet has developed and derived various different models, and has been exported.

The Freewing J-10A model jet is based on the Chinese Air Force J-10A fighter jet and is produced in a reduced scale.<sup>①</sup> Its wing span is 940mm, length is 1530mm, made of EPO material, with accurate contour. The surface of the aircraft contains a large number of engraved lines and rivet details. It is painted with a unique and famous "red hawk" decal, making it even more imposing. This model also includes simulation details such as miniature antennas, sensors, and airspeed tubes made of a large amount of plastic. At the same time, a total of 11 LED lights and lampshades were installed in the fuselage, main wings, vertical tail, landing gear and other parts to restore the real aircraft's aviation lighting effect. In addition, we will also provide additional 3D printing set with higher simulation capabilities such as ejection seats and instrument panels to meet different needs.<sup>②</sup>

Structurally, the main wing of the Freewing J-10A model uses the QUICK II second-generation quick portable install structure, and uses the "QuickLink in-line circuit design for the first time. Vertical tail and canard are installed by screws fixing structure without any glue. The electric retractable of landing gear adopts a design concept similar to the Freewing F-16 90 model jet, and is further improved to be more sturdy and durable. The landing gear is processed with high-precision CNC, and the shock absorption action is smooth and the damping is soft. By simulating the combination of plastic parts and spraying colors as a whole, the visual effect is lifelike.

The Freewing J-10A electric EDF model jet is available in two versions: 6S standard version, 3668-1960KV in-runner brushless motor, and a 90mm 12 blade all plastic ducted fan (# E72219); 8S upgrade version, 4075-1350KV in-runner brushless motor, aluminum alloy duct outer frame, 12 blade fan (# E72215). Both versions are equipped with a 120A (8S) ESC with reverse thrust function. A larger battery compartment space can accommodate 6S/8S 5000-6000mAh aviation model lipo batteries. The 6S version has a maximum flight speed of approximately 190KPH (119KPH). The Freewing J-10A electric EDF model jet has abundant power and excellent structural strength. A shorter runway distance (20M<) is sufficient for takeoff. During the runway, the aircraft is less prone to yaw and maintains good directional stability. During the flight, the speed response is fast, and the flight actions respond quickly and accurately. At lower airspeed, the aircraft's lateral attitude can continue to maintain stability.

Thank you again! I hope this product can bring you more beautiful flight time!

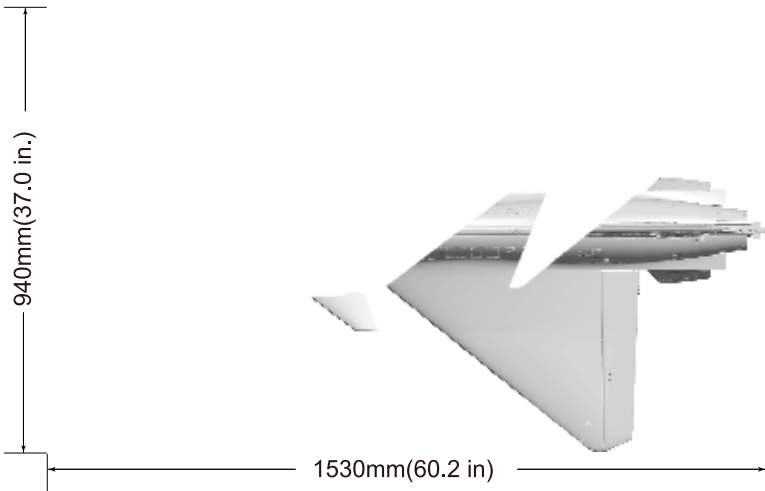
Note:

- ① Not a 100% reduction in scale restoration, some parameters are adjusted to better improve flight performance.
- ② Simulated 3D printed parts, not included in PNP configuration, need to be purchased separately.

## Note:

1. This is not a toy! Operator 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 EPO 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.

**⚠ 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.



**Standard Version**

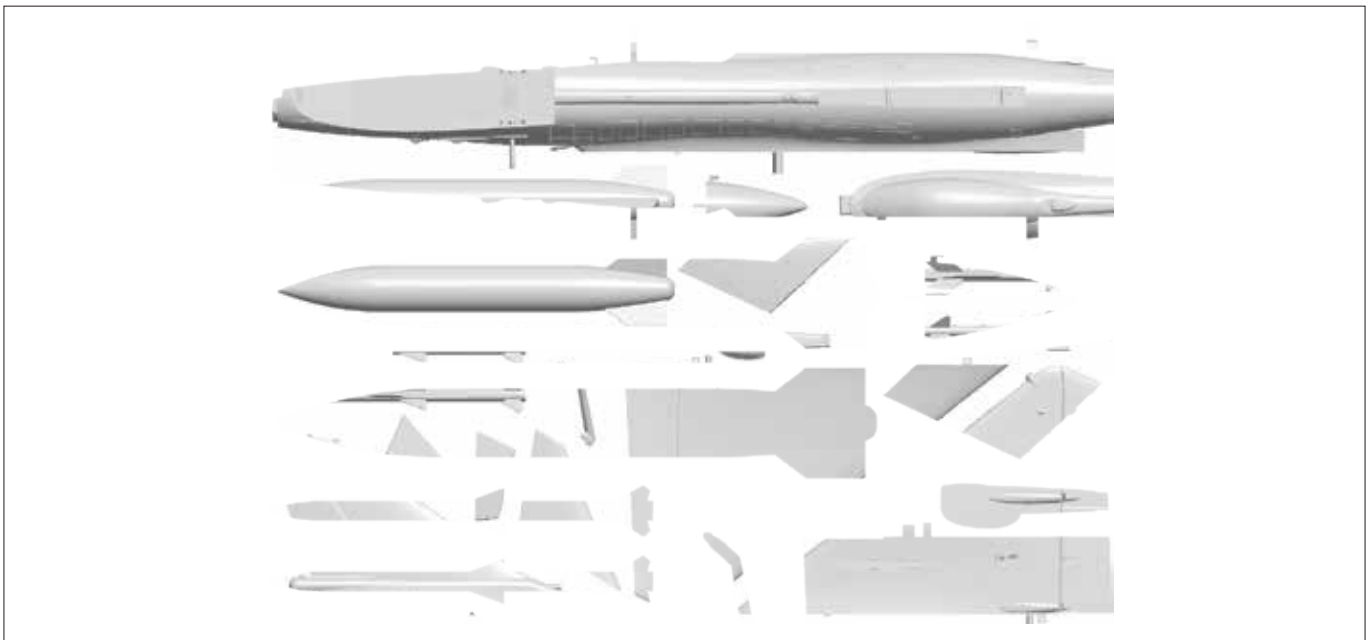
Wingload: 149g/dm<sup>2</sup>  
 Wing Area: 26.7dm<sup>2</sup>  
 Servo: 9g Hybrid digital servo(4pcs)  
 9g MG digital servo(7pcs)  
 Motor: 3668-1960KV I/R Motor  
 Ducted fan: 90mm 12-blade fan  
 ESC: 120A Brushless (Thrust Reverse Function)  
 Weight: 3235g(w/o Battery)  
 Li-Po Battery: 6S 5000-6000mAh  
 Landing gear: electric retracts and aluminum shock absorber struts, scale decorated part, spray painting.

**Other features**

Cabin doors: front and rear complete cabin doors, servo control  
 Navigation lights: 11 pcs LED navigation lights  
 Other: Simulated cockpit 3D printing set (need to purchase separately)

**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.

**Package List**



Different equipment include different spareparts. Please refer to the following contents to check your sparepart list.

No.	Name	PNP	ARF Plus	No.	Name	PNP	ARF Plus
1	Fuselage	Pre-installed all electronic parts	Pre-installed servo	6	Cockpit	✓	✓
2	Main wing	Pre-installed all electronic parts	Pre-installed servo	7	Missile	✓	✓
3	Canard	✓	✓	8	Annex bag	✓	✓
4	Vertical tail	Pre-installed all electronic parts	Pre-installed servo	9	Fins	✓	✓
5	Nose cone	✓	✓	10	Manual	✓	✓

## Install Main Wing

As the photo show:

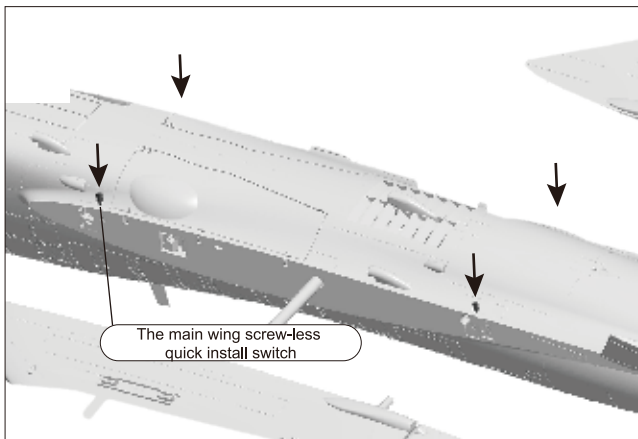
1. Press the main wing screw-less quick install switch to unlock it ①;

① Two different status diagrams of the main wing screw-less quick install switch: (The working mode is to press the button to the bottom and release it. The button pops up to the highest position, which is the unlocked status. Once the button is pressed to the bottom again and released, but the button does not pop up, which is the locked status)

### Unlock status

As shown in the following photo:

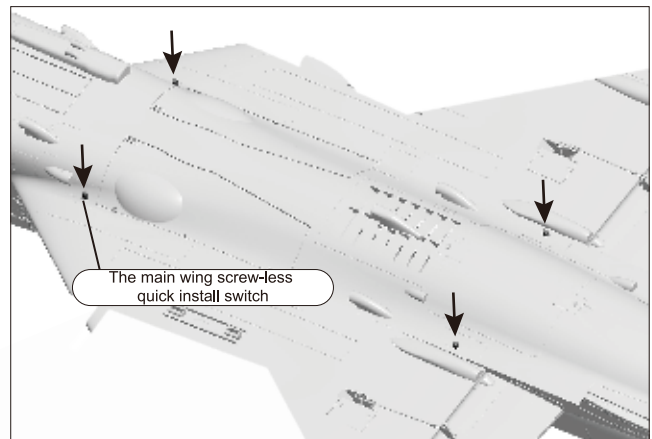
Press the main wing screw-less quick install switch to the bottom and release it. The button pops up to the highest position, indicating that the main wing has been unlocked and can be easily removed and installed.



### Lock status

As shown in the following photo:

After installed the main wing, press again the main wing screw-less quick install switch to the bottom and release it. If the button does not pop up, it is the locked status. At this point, pull the main wing outward and can not remove it.



2. Install the carbon tube on the fuselage.;

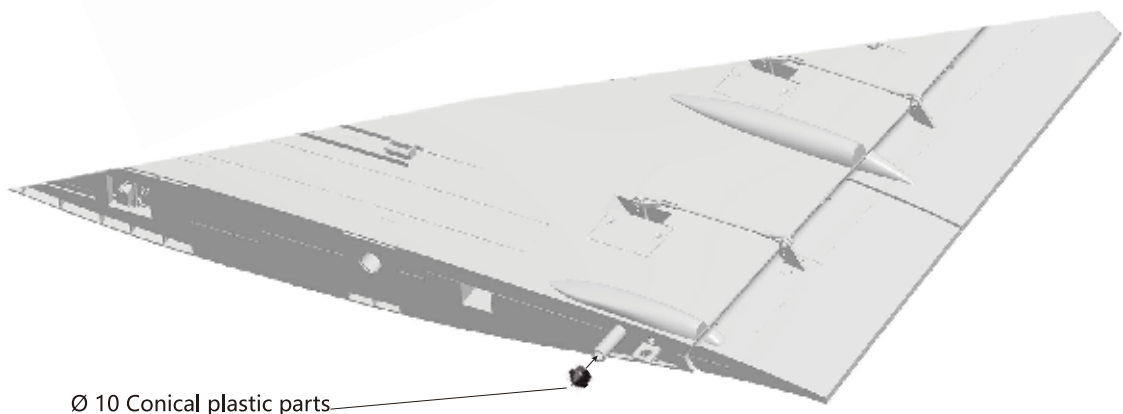
Carbon tube (Ø12x370mm)

Conical plastic parts (Ø12mm)



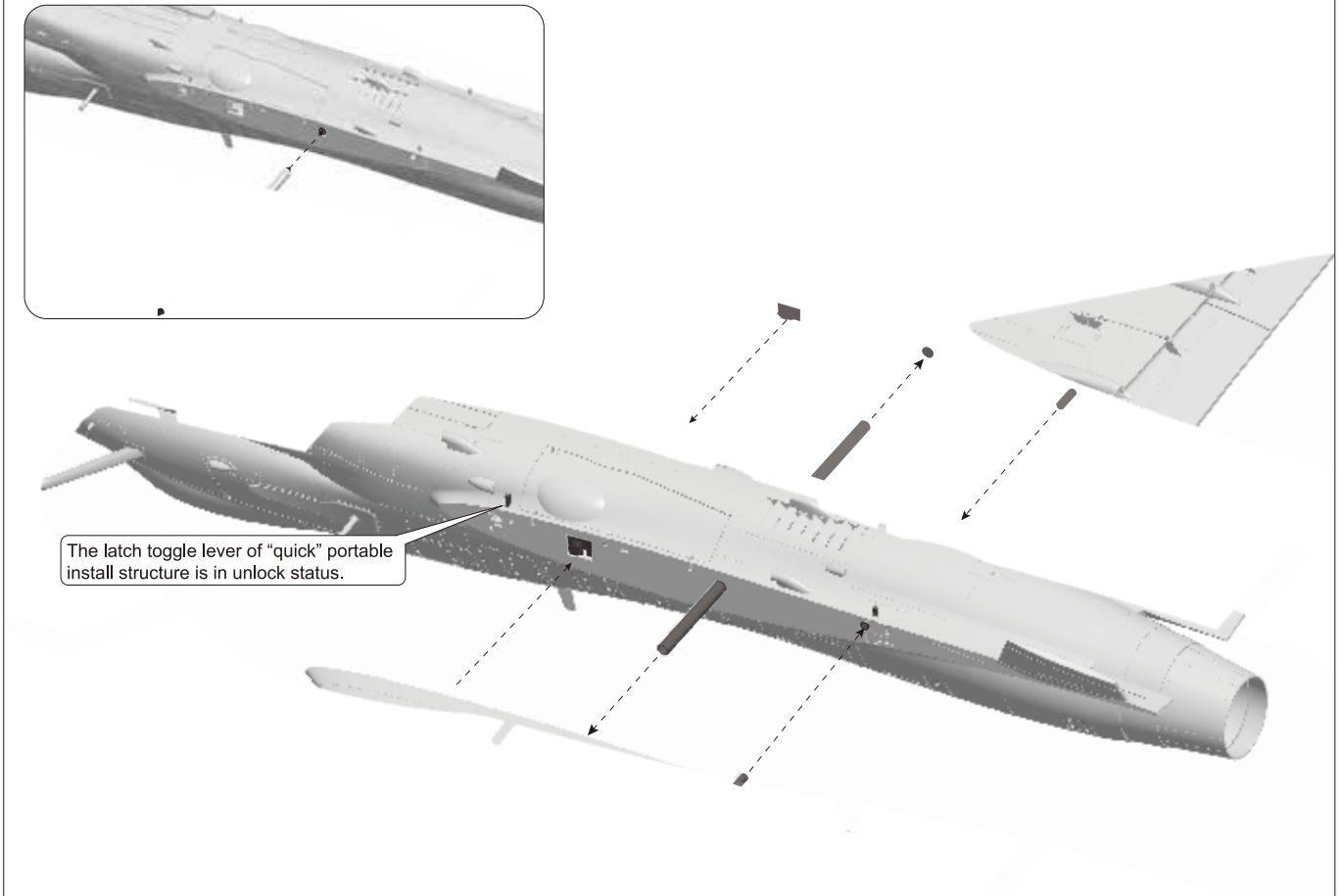
3. Install the conical plastic parts onto the left/right main wing carbon tubes by glue.

Conical plastic parts (Ø10mm)

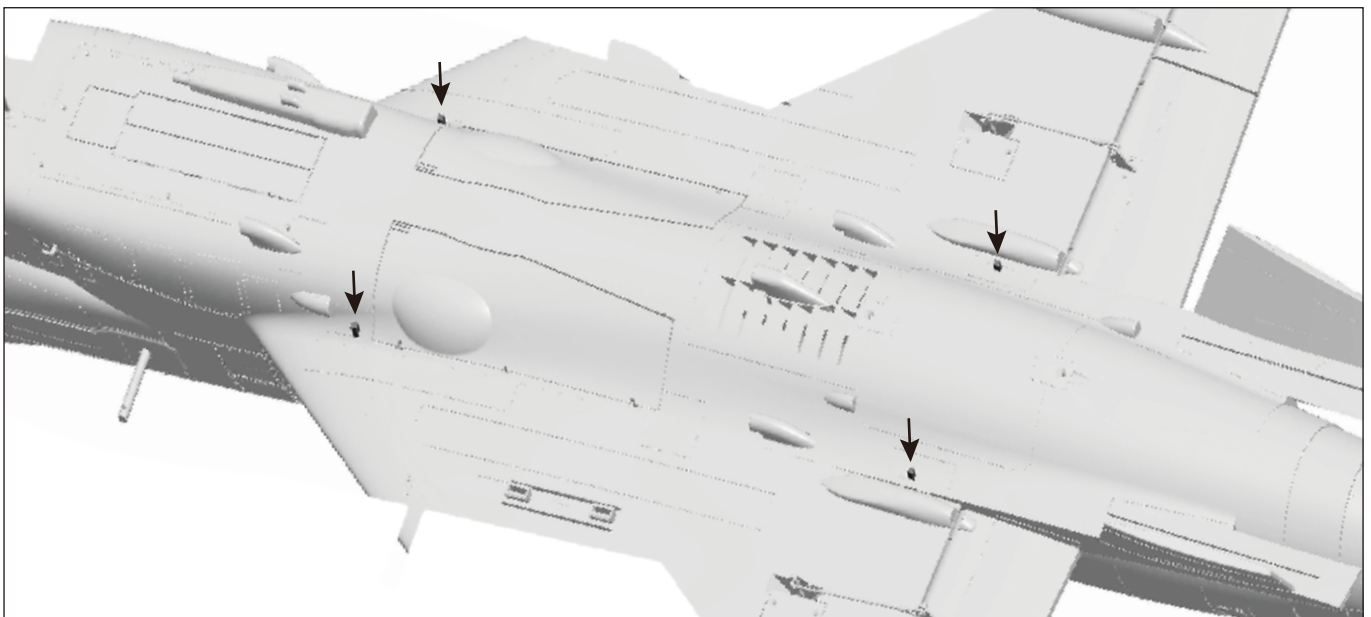


**Install the Main Wing**

4. Install the carbon tube on the fuselage.
5. Align the carbon tubes on both sides with the fuselage and the main wing, and push the main wing into the installation position on top of the fuselage. (Repeat the above steps to install the other main wing.)



6. Press 4pcs main wing screw-less quick install switch, put it in the locked status.

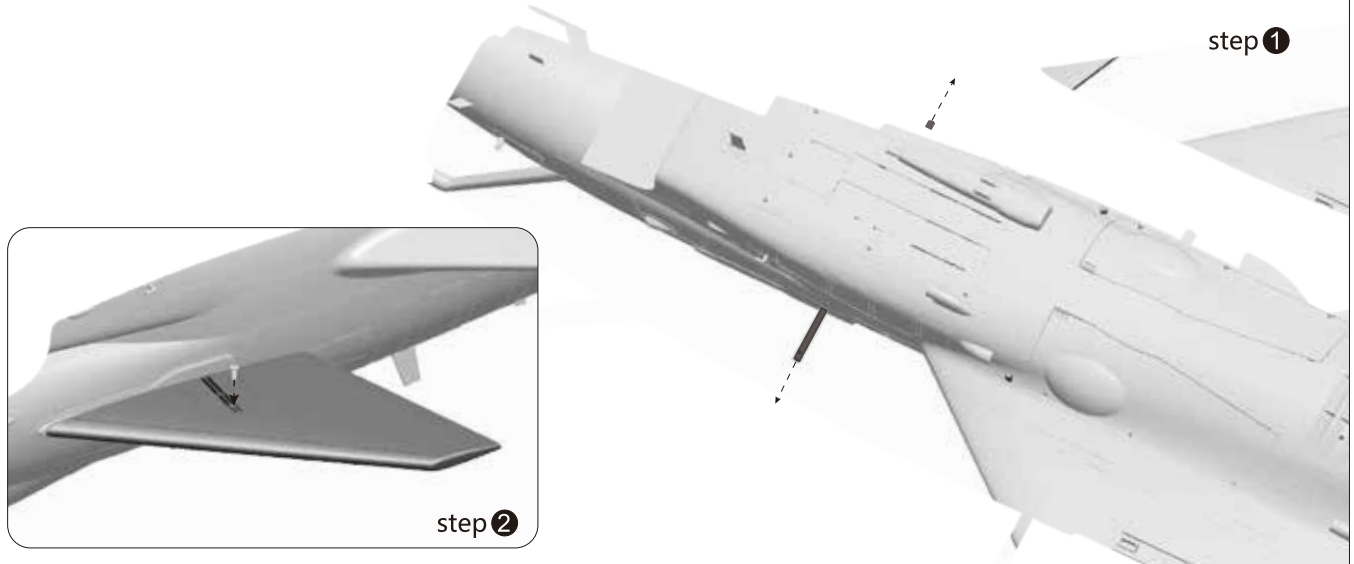


**Install Canard**

As the photo show:

1. Place the canard on the rotating shaft of fuselage, push it all the way along the fuselage direction.  
Then fix with screws to prevent its fall off.

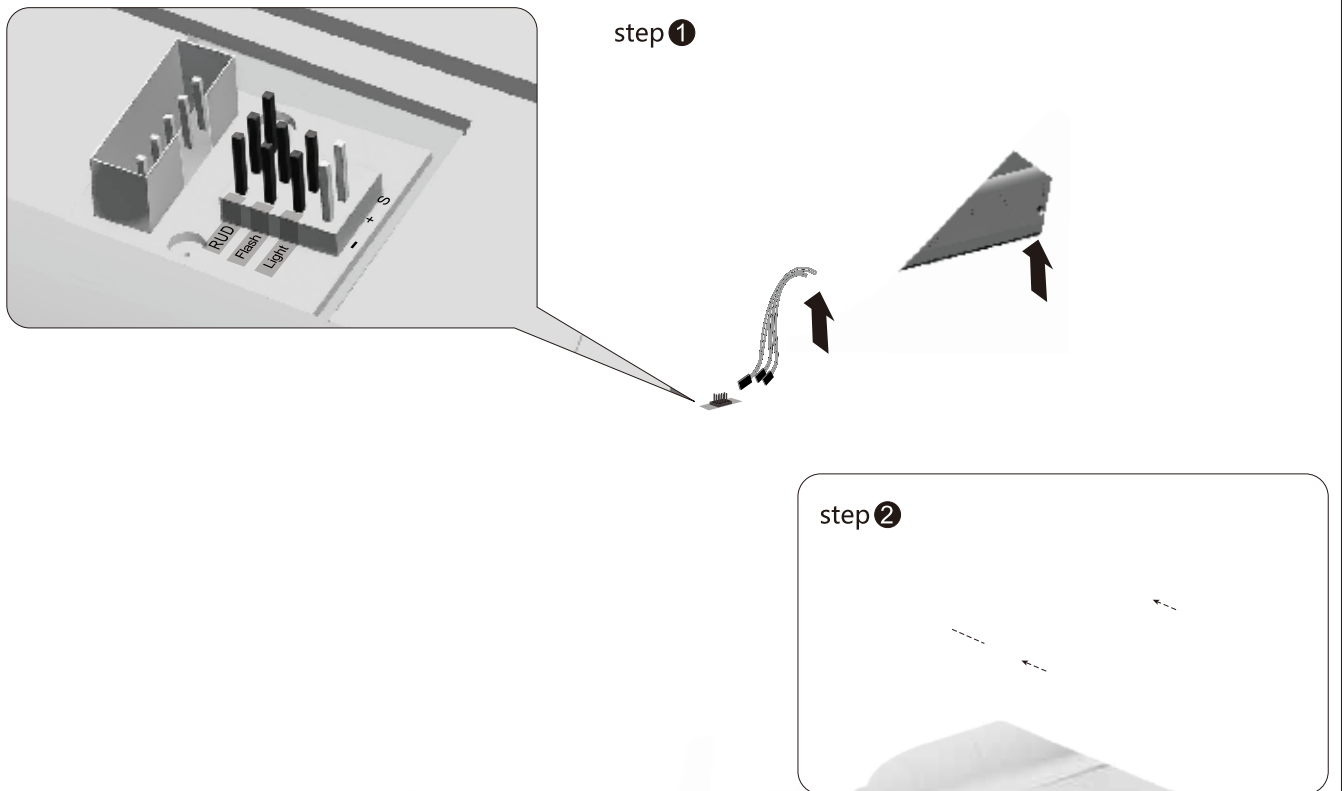
Screw (KM3X10mm 2PCS)

**Install the Vertical tail**

As the photo show:

1. Insert the rudder servo and LED extension wire to the vertical tail PCB control board, insert them to the interface of RUD, Flash, Light.
2. Install the vertical tail on the rear of fuselage and fix it with four pcs screws.

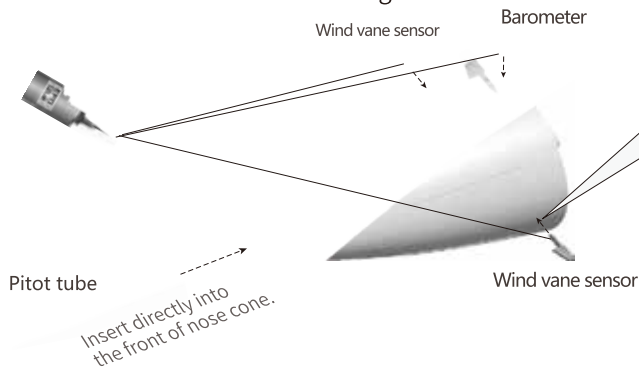
Screw (KA3X10mm 4PCS)



**Install nose cone**

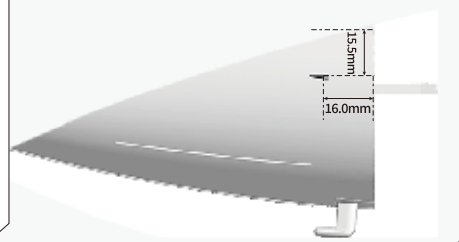
As the photo show:

1. Use glue to attach the decorated part on the nose cone;
2. Refer to the right diagram, and insert the sensor into the front of nose cone;
3. Install the nose cone on the fuselage.



step 1

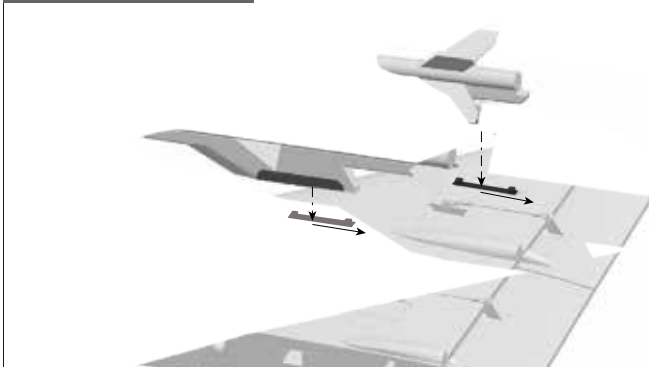
Sensor position diagram



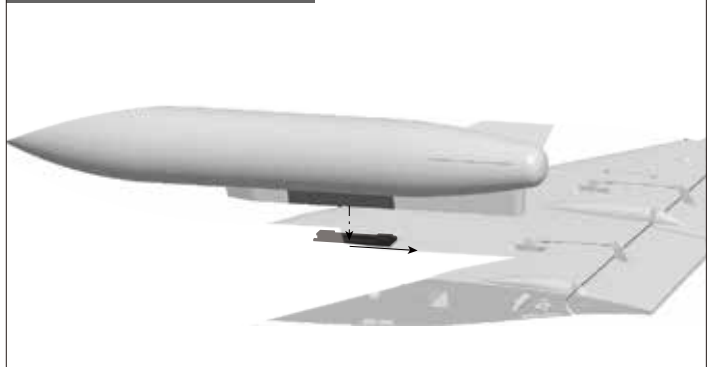
step 2

Drop tanks, missiles and fins are all fixed with plastic slide rail structures; Refer to the following photo and install them in the designated positions.

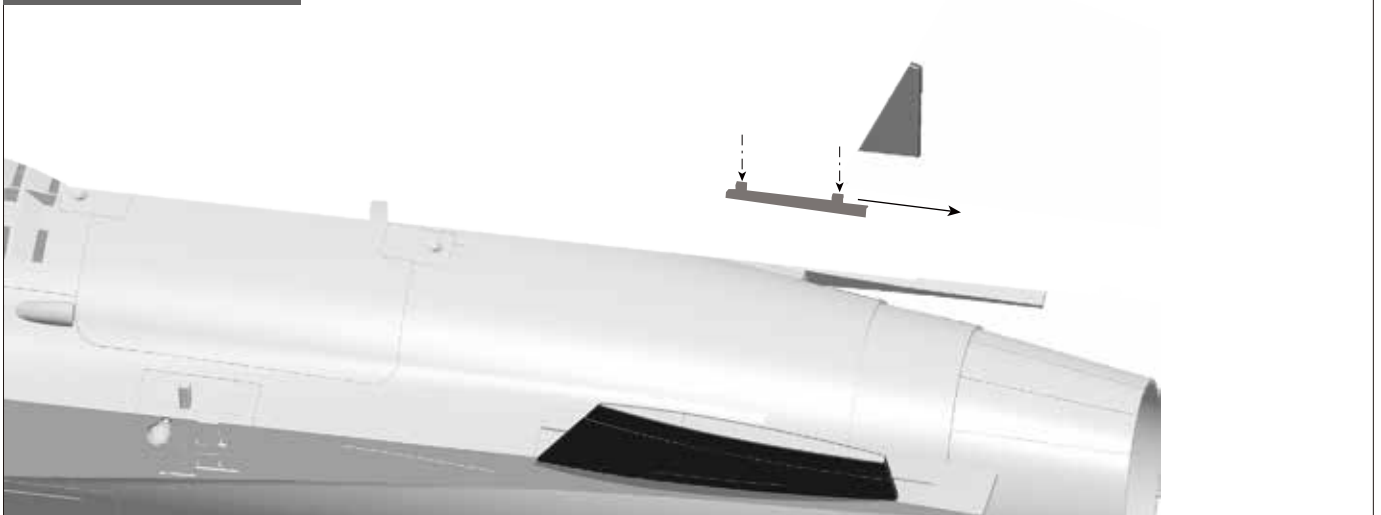
**Install missiles**



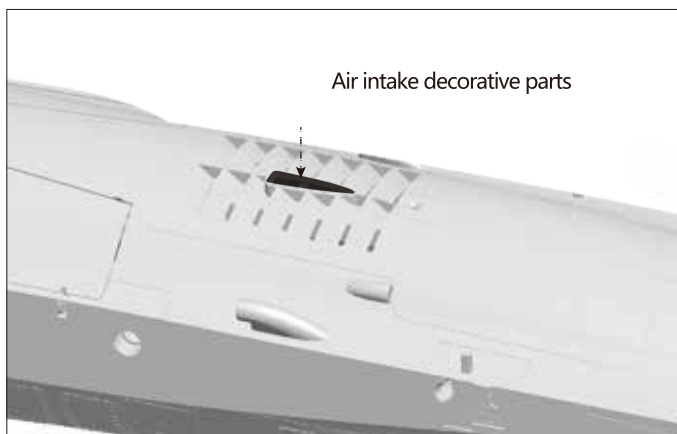
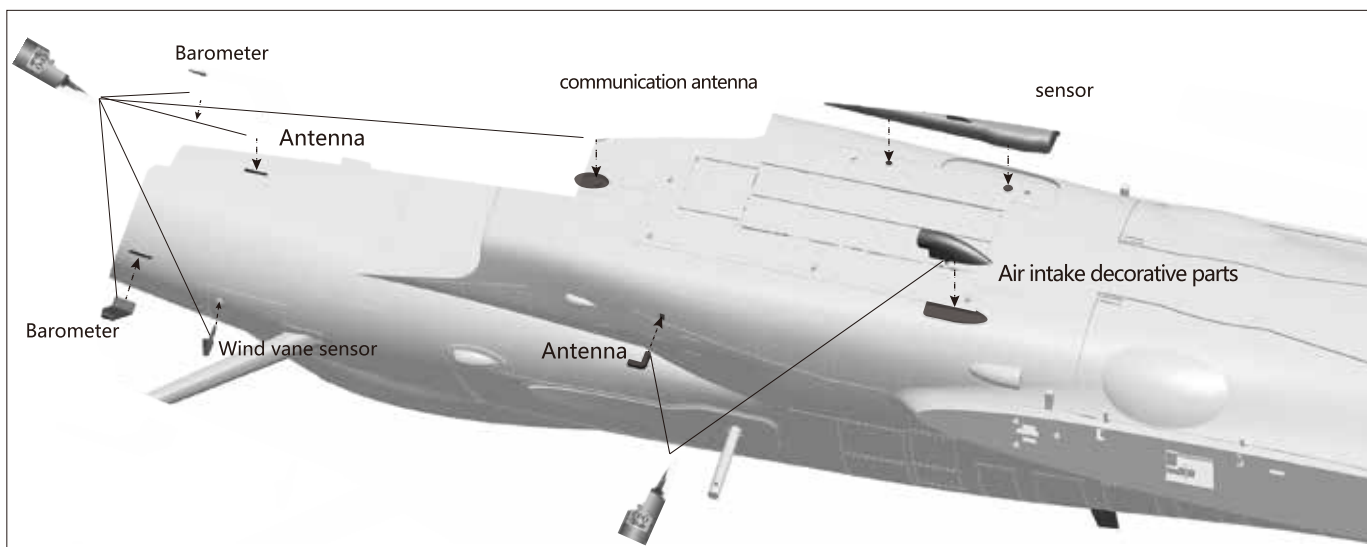
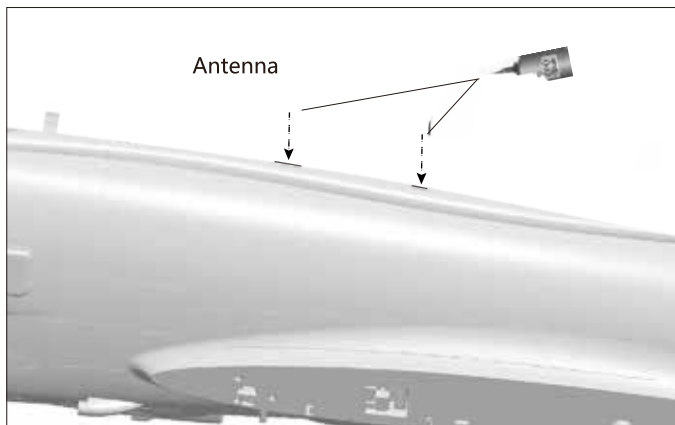
**Install drop tanks**



**Install the fins**

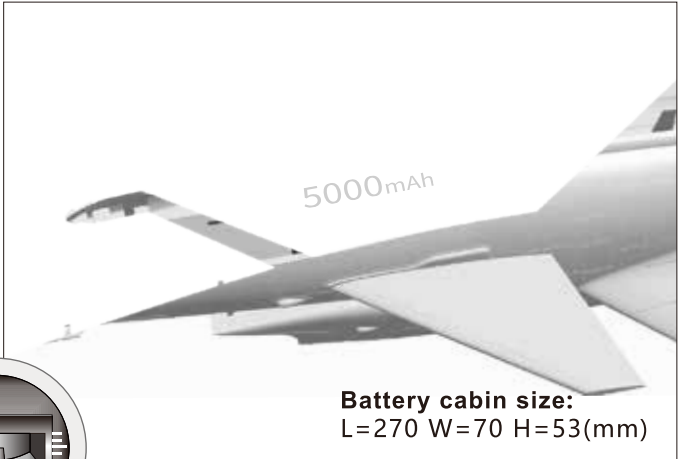
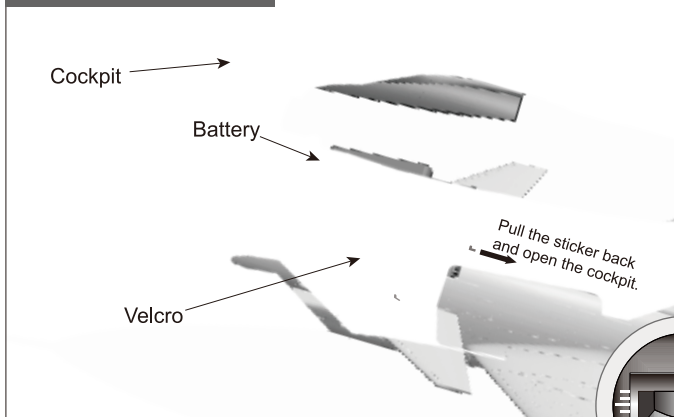


Install other accessories





**Install Battery**

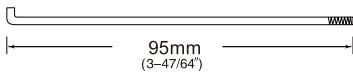


Before connecting the battery and receiver, please switch on the transmitter power and make sure the throttle stick is in the lowest position. Bind your receiver to your transmitter according to your transmitter's instruction manual.

We recommend the following LiPo battery:  
**6S 22.2V 5000mAh~6S 22.2V 6000mAh (1pcs)**  
 Discharge rate of C ≥ 35C

**Pushrod instructions**

**Rudder pushrod length**

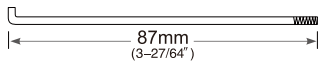


Pushrod diameter Ø1.5mm

**Rudder pushrod mounting hole**



**Aileron pushrod length**

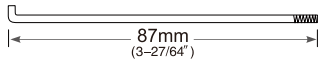


Pushrod diameter Ø1.5mm

**Aileron pushrod mounting hole**

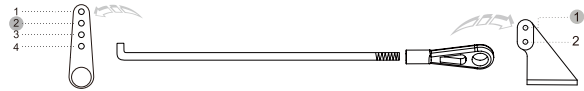


**Elevator pushrod length**

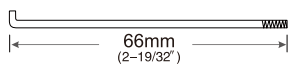


Pushrod diameter Ø1.5mm

**Elevator pushrod mounting hole**

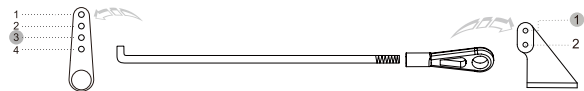


**Canard pushrod length**

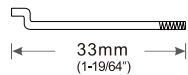


Pushrod diameter Ø1.5mm

**Canard pushrod mounting hole**



**Nose Cabin door pushrod length**

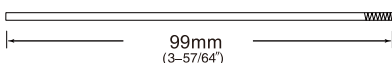


Pushrod diameter Ø1.2mm

**Nose cabin door pushrod mounting hole**

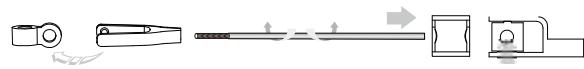


**Nose gear steering pushrod length**



Pushrod diameter Ø1.2mm

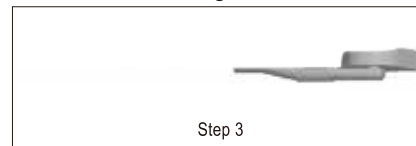
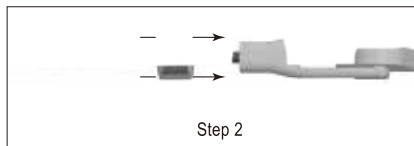
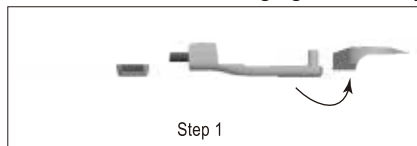
**Nose gear steering pushrod mounting hole**



### Important additional notes

The Y-type clevis used in this product is equipped with a transparent silicone ring for secondary reinforcement, which can effectively prevent the clevis from accidentally loosening.

As shown in the following figure, when you buckle the clevis into the control surface horn, use the silicone ring to cover the clevis.

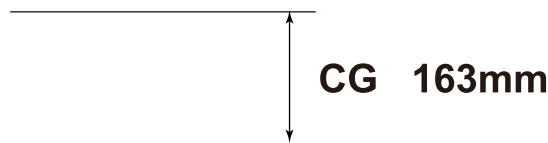
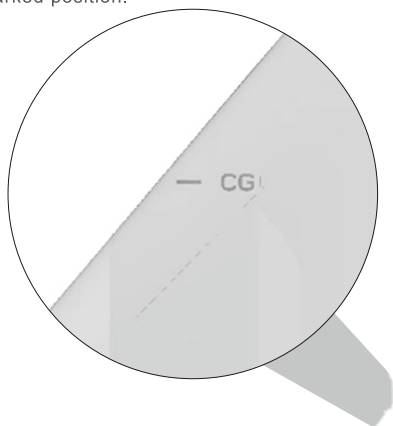


### Center of Gravity

Correct Center of Gravity ("CG") is critical for enabling safe aircraft stability and responsive control. Please refer to the following CG diagram to adjust your aircraft's Center of Gravity.

- Depending on the capacity and weight of your chosen flight batteries, move the battery forward or backward to adjust the Center of Gravity.
- If you cannot obtain the recommended CG by moving the battery to a suitable location, you can also install a counterweight to achieve correct CG. However, with the recommended battery size, a counterweight is not required. We recommend flying without unnecessary counterweight.

As the photo show, We marked the center of gravity on the bottom of the Main wing. Please confirm the CG based on this marked position.

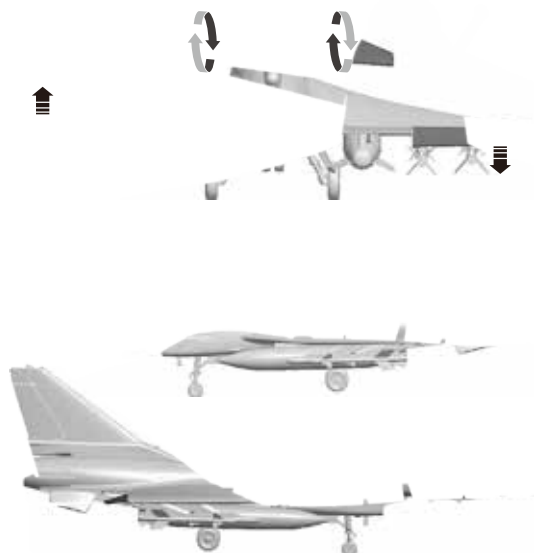


After installed this J-10 model plane, please connect to the receiver and power on, then adjust it.

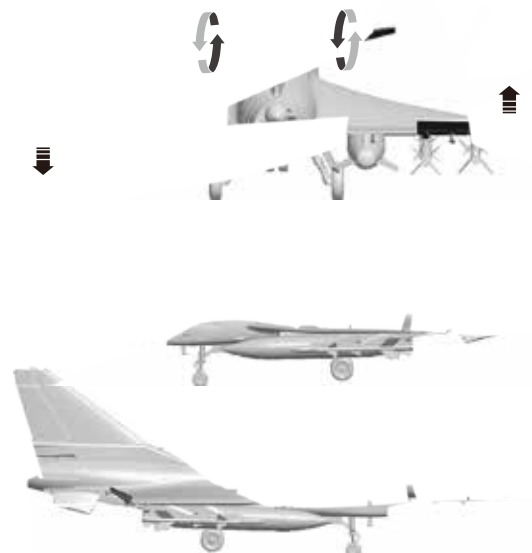
1. When all channels of radio are fine tuned to zero and the control stick is centered: check whether each control surface on the aircraft is in the center position. If it is found that the control surface is not in the center position, please adjust the control rod to center it;
2. Please refer to the diagram below and use the radio to test each control surface to ensure that its movement direction matches the diagram. If the opposite movement occurs, first check whether the relevant channel in the radio has enabled the reverse function; If the problem persists, please contact us for assistance in resolving it.

## Aileron

Stick Left



Stick Right

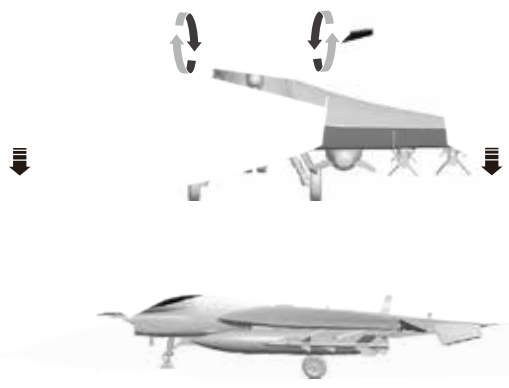


## Elevator

Stick down

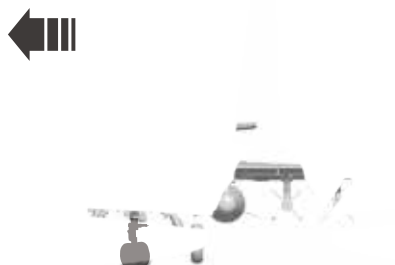


Stick up

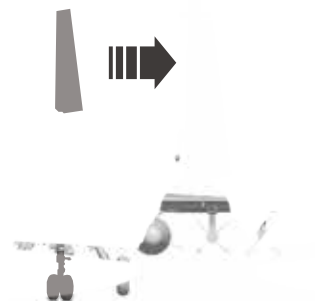


## Rudder

Stick Left

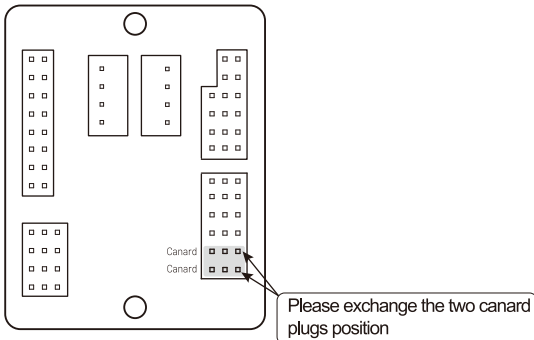


Stick Right

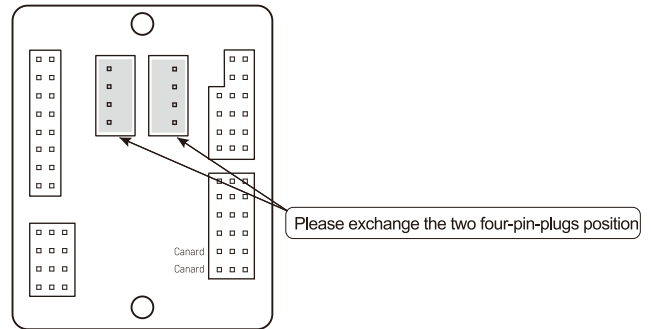


Setting and Adjustment Instructions

1. If you found the elevator control direction of Canard is not correct when you found in adjusting, please try to adjust and exchange the two canard plugs position on the control board, as the following photo show:



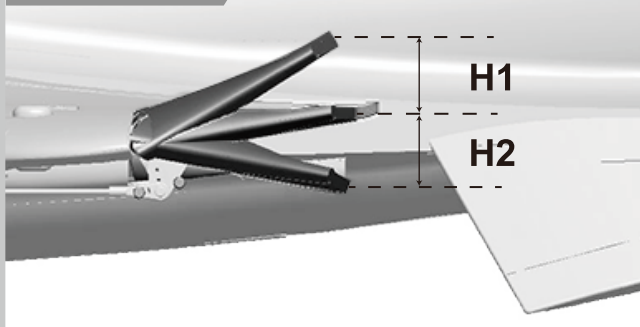
2. If you found the elevator control direction of elevator is not correct when you found in adjusting, please try to adjust and exchange the two four-pin-plugs position on the control board, as the following photo show:



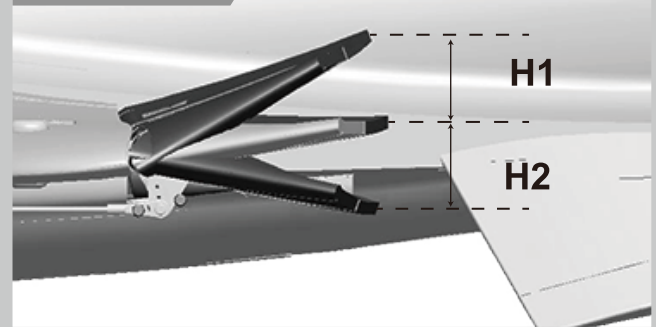
Dual Rates

According to our testing experience, use the following parameters to set Aileron/Elevator Rate. Program your preferred Exponential % in your radio transmitter. We recommend using High Rate for the first flight, and switching to Low Rate if you desire a lower sensitivity. On successive flights, adjust the Rates and Expo to suit your preference.

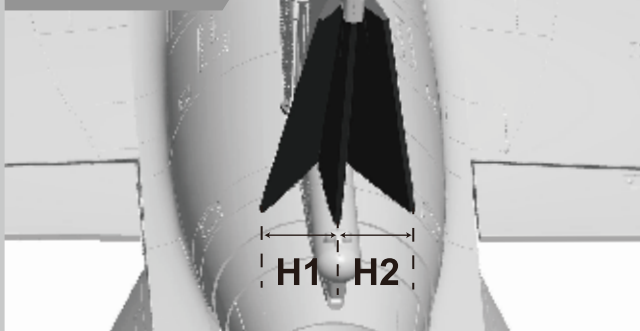
Aileron



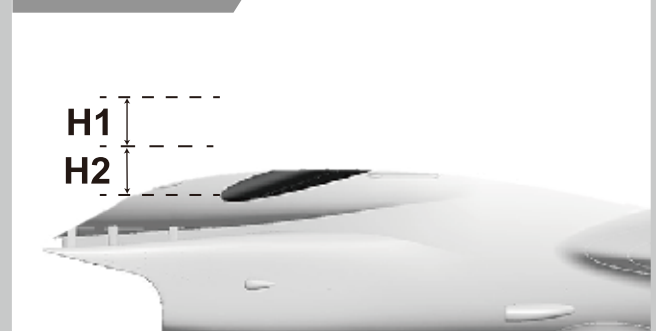
Elevator



Rudder



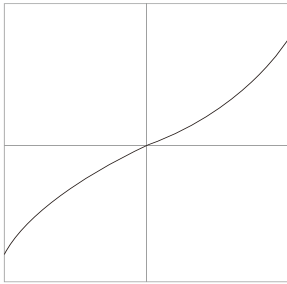
Canard



	<b>Aileron</b> (Measured closest to the fuselage)	<b>Elevator</b> (Measured closest to the fuselage)	<b>Rudder</b> (Measured from the bottom)	<b>Canard</b> (Canard wing tip)
<b>Low Rate</b>	H1/H2 11mm/11mm D/R Rate: 50%	H1/H2 16mm/16mm D/R Rate: 60%	H1/H2 29mm/36mm D/R Rate: 80%	H1/H2 24mm/24mm D/R Rate: 80%
<b>High Rate</b>	H1/H2 16mm/16mm D/R Rate: 70%	H1/H2 22mm/22mm D/R Rate: 80%	H1/H2 36mm/46mm D/R Rate: 100%	H1/H2 31mm/31mm D/R Rate: 100%

Remote Control EXP Setting Suggestion

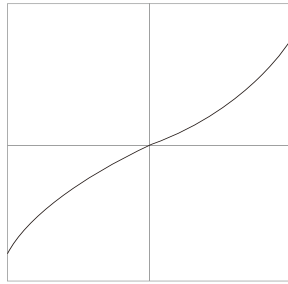
1. Aileron EXP curve is shown as below :



Futaba brand Remote Control : EXP A -30  
EXP B -30

Spektrum brand Remote Control : EXPO 30% 30%

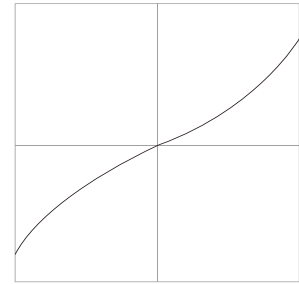
2. Elevator EXP curve is shown as below :



Futaba brand Remote Control : EXP A -30  
EXP B -30

Spektrum brand Remote Control : EXPO 30% 30%

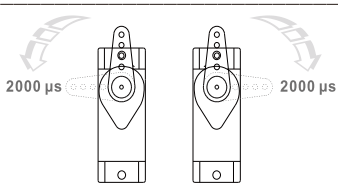
3. Rudder EXP curve is shown as below :



Futaba brand Remote Control : EXP A -30  
EXP B -30

Spektrum brand Remote Control : EXPO 30% 30%

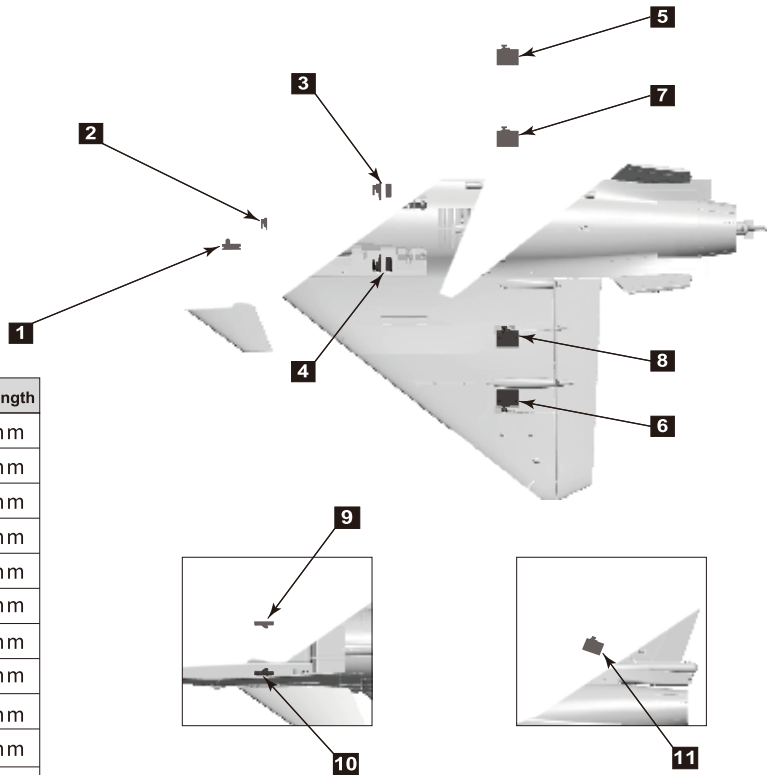
Servo Direction



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.

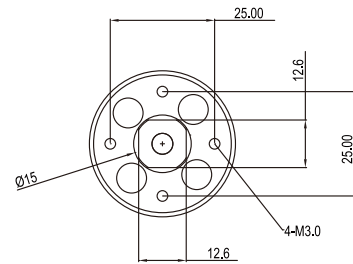
If you need to purchase another brand's servo, please refer to the following list to choose a suitable servo.

Position	Servo regulation	No.	Pos. / Rev.	Cable length
Nose gear steering servo	9g Digital-Hybrid	1	Reverse	500mm
Nose cabin door	9g Digital-Hybrid	2	Reverse	400mm
rear cabin door (L)	9g Digital-Hybrid	3	Reverse	400mm
rear cabin door (R)	9g Digital-Hybrid	4	Positive	400mm
Aileron(L)	9g Digital-MG	5	Positive	500mm
Aileron(R)	9g Digital-MG	6	Positive	500mm
Elevator(L)	9g Digital-MG	7	Positive	400mm
Elevator(R)	9g Digital-MG	8	Positive	400mm
Canard(L)	9g Digital-MG	9	Positive	300mm
Canard(R)	9g Digital-MG	10	Positive	300mm
Rudder	9g Digital-MG	11	Positive	300mm



Motor Specification

3668-1960  
Item No.:MI036681



Unit :mm

3668-1960KV

Item No.	EDF Fans	Use voltage (V)	Current(A)	Max power (W)	Thrust(g)	Efficiency (g/w)	Motor(KV)	Use ESC (A)	Weight (g)
E72216	90mm 12-Blade	22.2	120	2660	3700	1.4	3668-1960	120	454

