

Item No.:FJ2061  
Version No.:FJ2061-V01

**M<sup>DEL</sup>**  
**Freewing**  
www.sz-freewing.com

# MIRAGE2000 USER MANUAL



80MM EDF JET

WIDSPAN: 790MM (31.1 IN.)

LENGTH: 1250MM (49.21 IN.)

EN 1 ~ 13

中 14 ~ 26



CE  
MADE IN CHINA

80mm EDF Mirage2000 C! The famous tailless delta wing fighter, has a great "instant circling rate"; Mirage series aircraft, is the pride of the French aerospace industry, this aircraft has created a new era ----- Mirage era ! Mirage fighter, produced a total of more than 600 aircraft, including France, total have 9 countries use them.

Now Freewing produced this classic fighter model ,80mm EDF Mirage2000 C model plane, many details of real plane, it showd perfectly. Excellent painting and decals make it perfection. This product use 12-blade 80mm metal EDF, powerful power output, let it has excellent vertical climb and maneuverability. The delta jet 's high alpha maneuver featured, in here the performance showed thoroughly, we can slow down gently to land the plane.

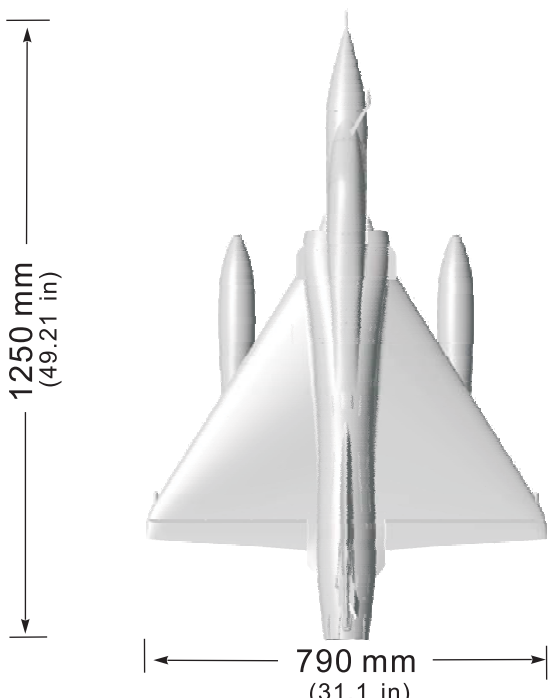
Every part of 80mm EDF Mirage 2000 can assemble/disassemble freely, very convenience to carry. Excellent landing gear design, it make sure that we can take-off/land in grass without damage landing gear

**⚠ 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! 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.

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 <p>1250 mm (49.21 in)</p> <p>790 mm (31.1 in)</p> <p><b>Note:</b> 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.</p>	<p><b>4S Standard Version</b></p> <ul style="list-style-type: none"> <li>● Motor 3525-2870KV</li> <li>● ESC 80A (5A BEC)</li> <li>● Servo 9g (4pcs)</li> <li>● Battery 4S 14.8V 4000mAh 35C</li> <li>● Ducted fans 6-Bladed 80mm EDF</li> <li>● Take-off weight 1900g (67 oz.)</li> <li>● Thrust 1900g (67 oz.)</li> </ul>
	<p><b>6S Upgrade Version</b></p> <ul style="list-style-type: none"> <li>● Motor 3530-1750KV</li> <li>● ESC 80A (5A BEC)</li> <li>● Servo 9g Metal Gear Servo (4pcs)</li> <li>● Battery 6S 22.2V 4000mAh 35C</li> <li>● Ducted fans 12-Bladed 80mm EDF</li> <li>● Take-off weight 2200g (77.6 oz.)</li> <li>● Thrust 2600g (91.8 oz.)</li> </ul>

## Package list



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

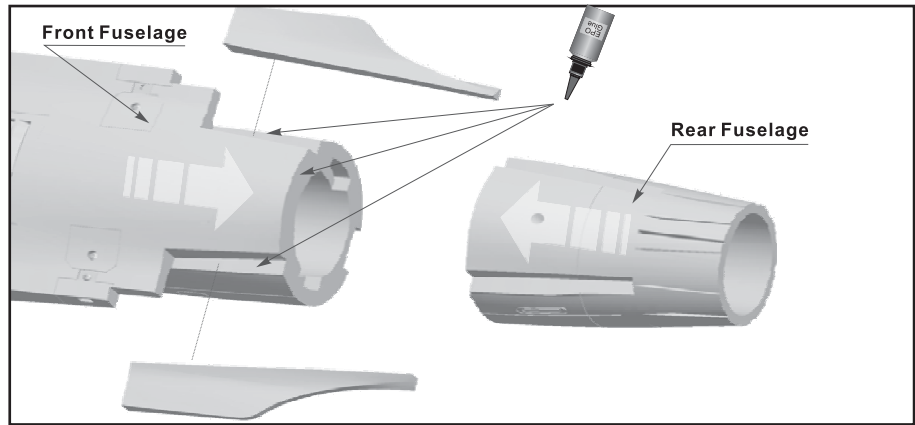
### PNP equipment list

1. Fuselage set (installed, include the electric parts and connection lines)
2. Main wing set (installed, include the electric parts and connection lines)
3. Rudder (installed, include the electric parts and connection lines)
4. Drop tank & pylons, nose cone, tail vector.
5. The tubing, plastic part.
6. Rear landing gear, carbon tube
7. Screw
8. Glue

### KIT equipment list

1. Fuselage set
2. Main wing set
3. Rudder
4. Drop tank & pylons, nose cone, tail vector.
5. The tubing, plastic part.
6. Rear landing gear, carbon tube
7. Screw
8. Glue

1. Use glue to attach front, rear fuselage.
2. Use glue to attach the left, right main wing on the fuselage.

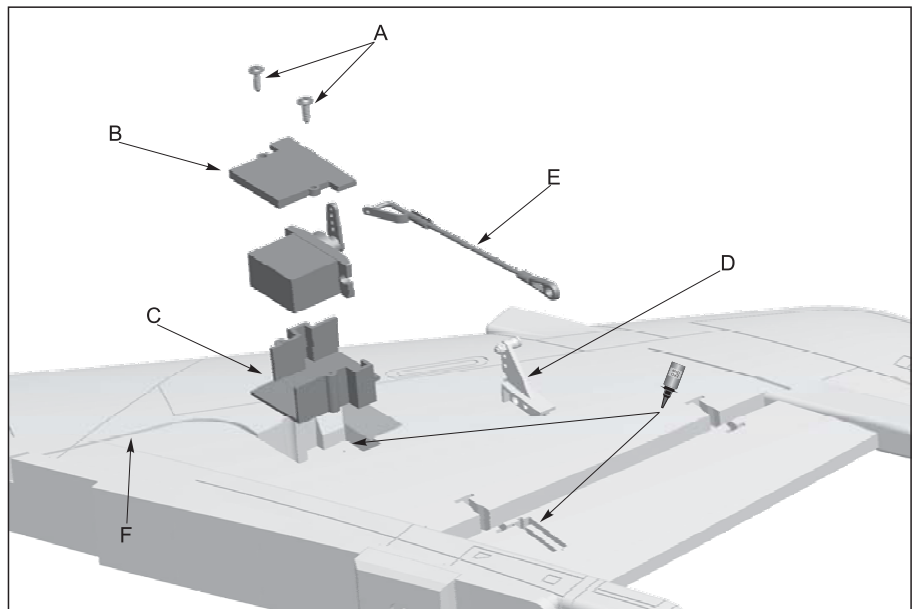


## Installing Rudder

### Installing Rudder Servo

- A - Screw (PWA1.7\*5mm)
- B - 9g servo cover
- C - 9g servo box
- D - Control surface horn
- E - Rudder pushrod
- F - Trough

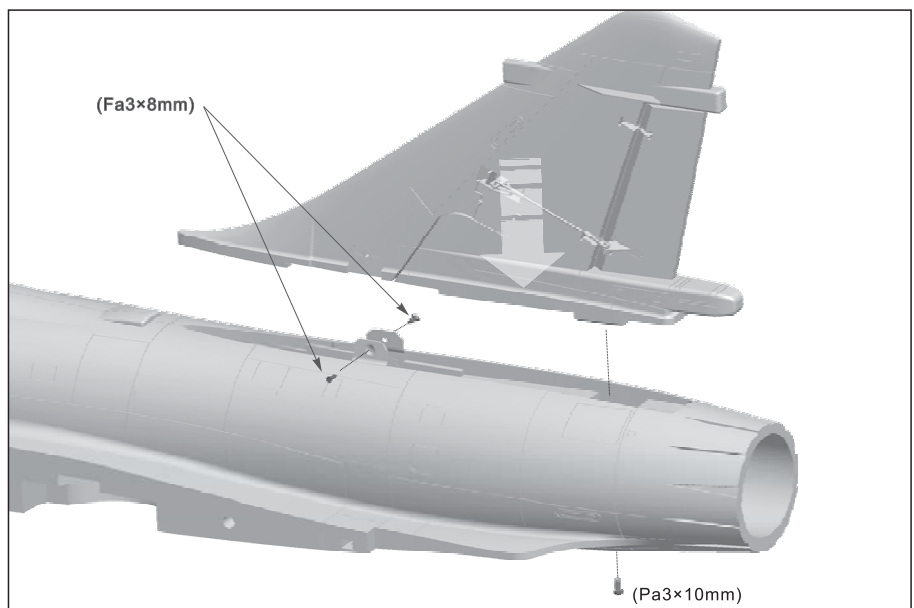
1. Center the servo arm through servo tester or radio.
2. Apply the glue to attach the "9g servo box (C)" and "control surface horn (D)" on the rudder.
3. Install the servo in the "9g servo box (C)", and press the servo cable in the "trough (F)", then cover the "9g servo cover (B)" and fix it by 2 pcs "screws (A)".
4. Use rudder pushrod to connect the servo arm and "control surface horn (D)".



Through adjust the length of pushrod to center the elevator.

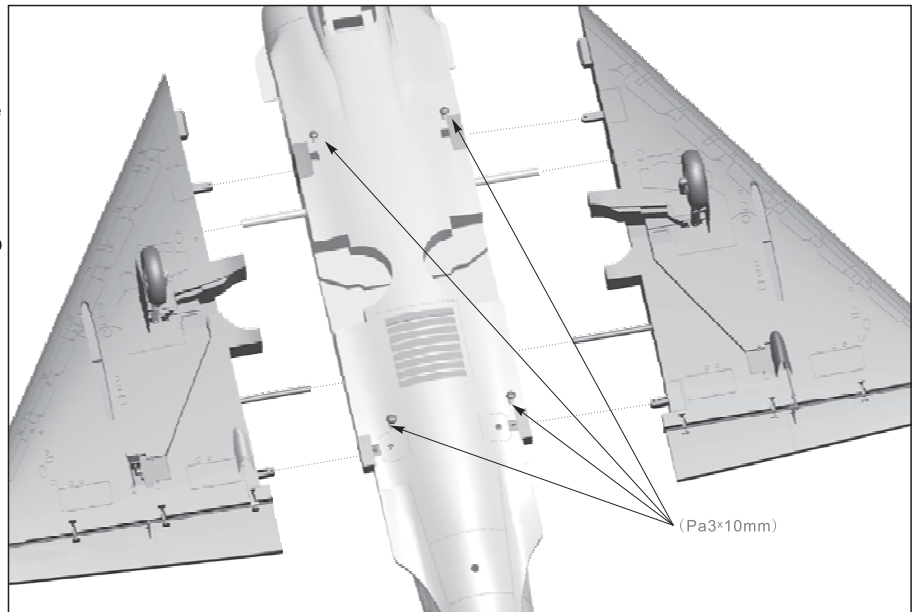
### Installing Rudder

1. Connect the rudder servo cable and extension line in fuselage.
2. Insert the rudder into fuselage and use screw to fix the rudder.



## Installing the main wing

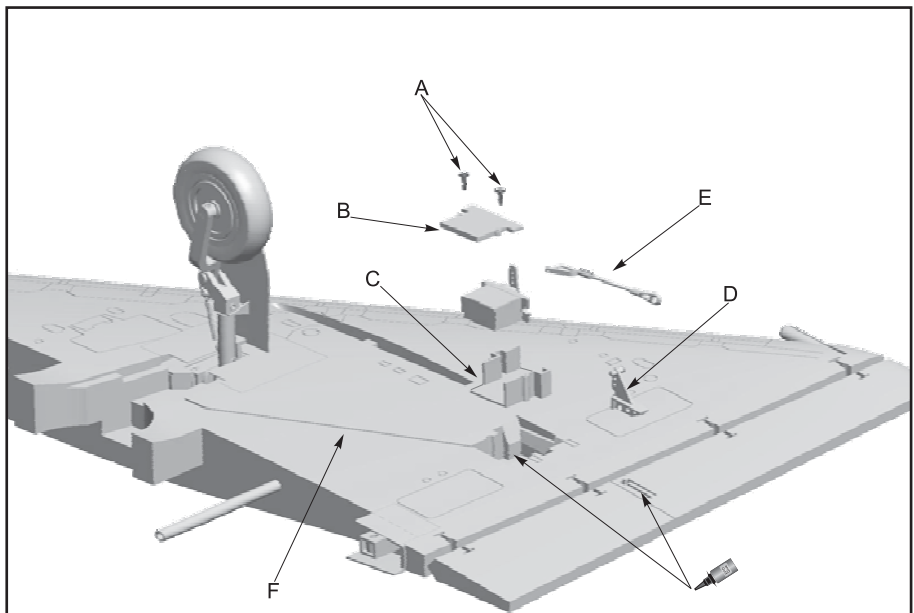
1. Remove the carbon tube from package box, and insert it into the fuselage as the right photo shown.
2. Connect the servo cable of left- right main wing to the extension line in fuselage.
3. Insert the left/right main wing into the fuselage.
4. Use screw to fix the main wing plastic dowel pin to finish its installation.



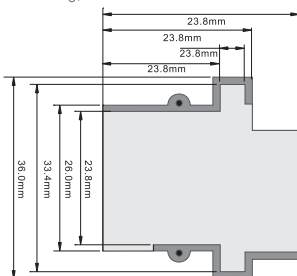
## Installing Main Wing Servo

- A - Screw (PWA1.7x5mm)
- B - 9g servo cover
- C - 9g servo box
- D - Control surface horn
- E - Pushrod
- F - Trough

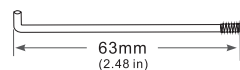
1. As the right photo shown, use glue to attach the "9g servo box (C)" and "control surface horn (D)" on the main wing.
2. Put the 9g servo in the "9g servo box (C)", and press the servo cable into the "main wing trough (F)".
3. Cover the "servo cover (B)" on the "9g servo box (C)", and fix it by 2 pcs "screws (A)".
4. Use "pushrod (E)" to connect the servo arm and control surface horn.
5. Adjust to center the aileron.



**Note:** we have installed all the servo box in aircraft, when players disassemble the servo, it will not damage the foam surface. If need to replace servo, please purchase Freewing servo, or refer to the following drawing, choose the correct size servo.

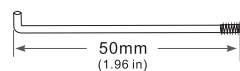


### Rudder pushrod size



Pushrod diameter : Ø 1.5mm

### Aileron pushrod size



Pushrod diameter : Ø 1.5mm

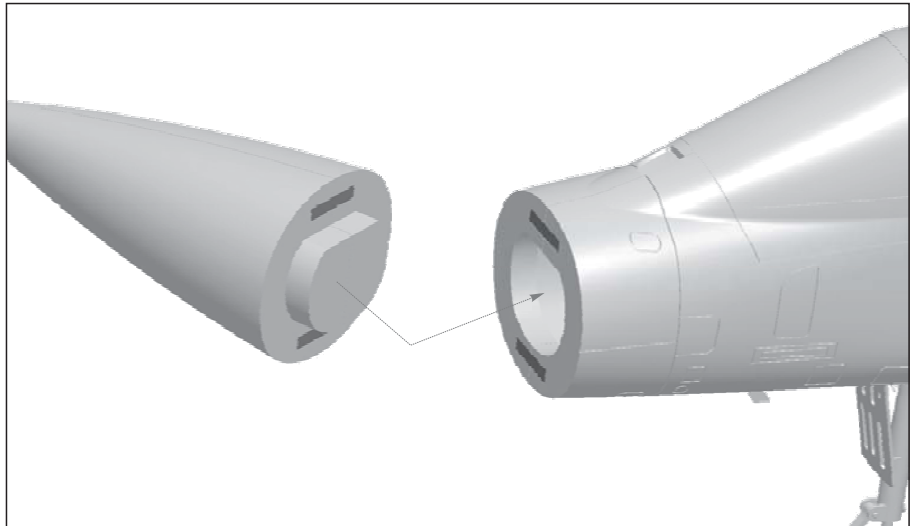
### Rudder pushrod mounting hole



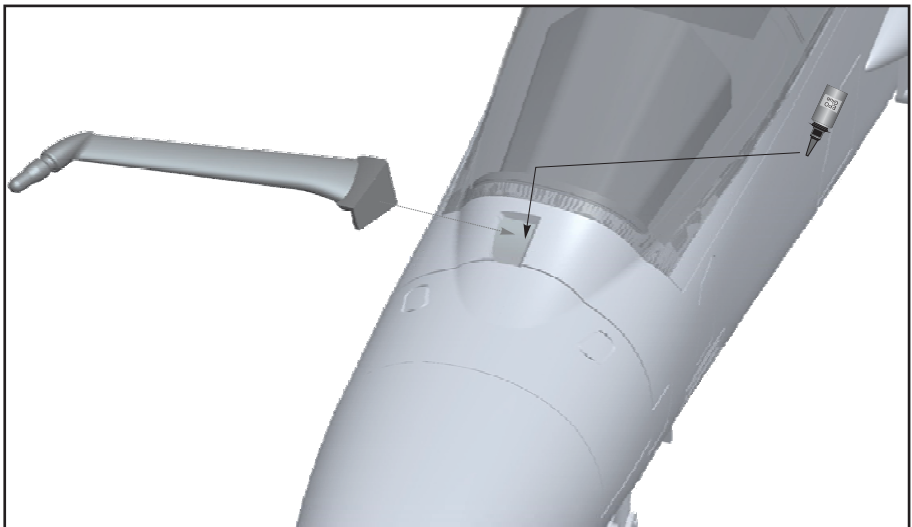
### Aileron pushrod mounting hole



1. Since of magnet absorption, we only need to put the nose cone on the front of fuselage.

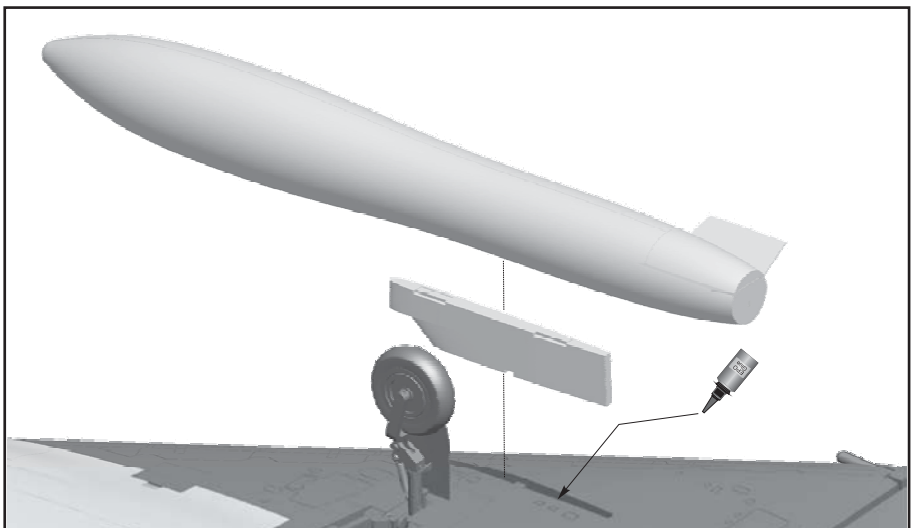


2. As the right photo shown, use glue to attach the tubing on the front of canopy.



### Installing drop tank and pylons

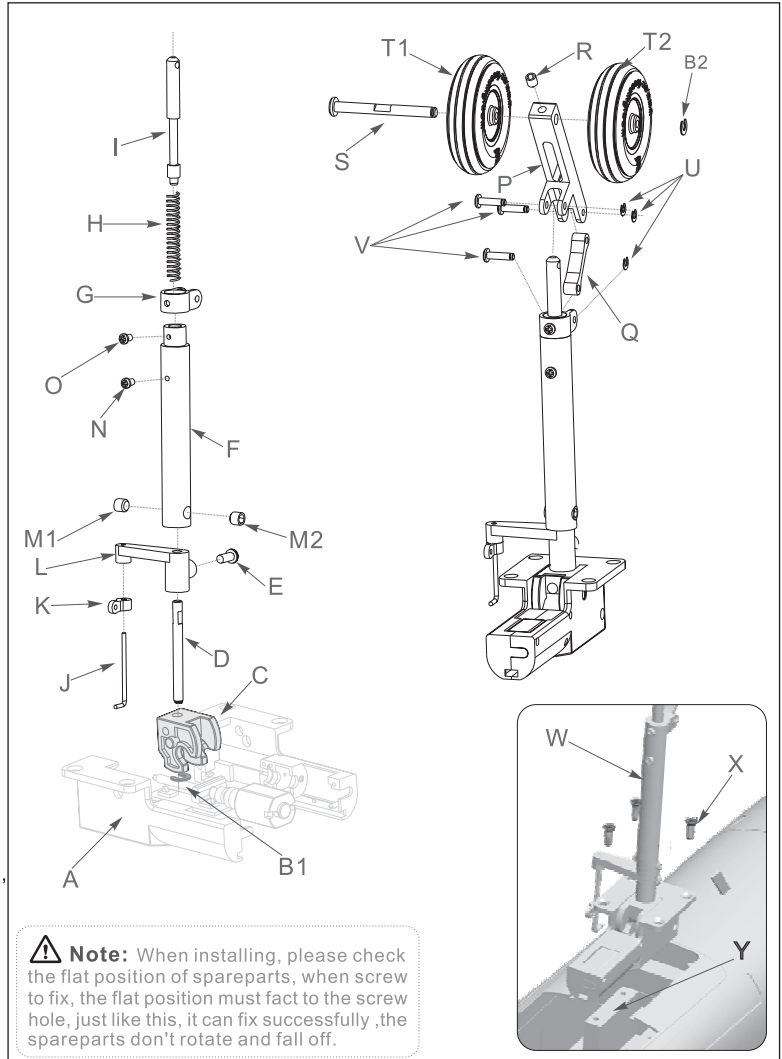
1. Use glue to attach the drop tank and pylons.
2. Pylons attached magnets, absorb it on the below surface of main wing.



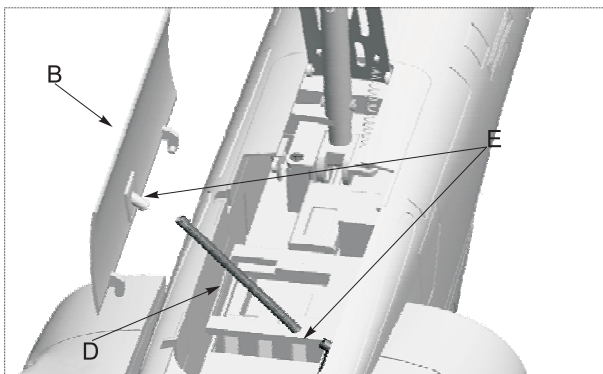
## Nose landing gear list:

- A - Retractable controller
- B - E-buckle (Ø2.0mm)
- C - Rotating arm
- D - Nose landing gear metal wire
- E - Screw (PT2.6\*6mm)
- F - Nose landing gear main strut
- G - U-shape damping arm
- H - Spring
- I - Damping active lever
- J - Nose landing gear steering pushrod
- K - Nose landing gear steering control ring
- L - L-shape arm
- M - Jimi screw (M4\*3mm)
- N - Screw (PM2\*4mm)
- O - Screw (PM2\*3mm)
- P - Damping slant supporting rod
- Q - 8-shape damping shaft
- R - Jimi screw (M3\*3mm)
- S - Nose wheel shaft
- T - Wheel (Ø35\*10mm)
- U - E-buckle (Ø1.5mm)
- V - Pin
- W - Nose landing gear set
- X - Screw (PA2.6\*10mm)
- Y - Nose landing gear mount

1. At first, disassemble the "retractable controller (A)", and remove the "rotating arm (C)".
2. Insert the "nose landing gear metal wire (D)" into the "rotating arm (C)" and use "E-buckle (B)" to fix.
3. Put the "nose landing gear steering control ring (K)" into "nose landing gear steering pushrod (J)" and screw it to the "L-shape arm (L)".
4. Put the "L-shape arm (L)" and "nose landing gear main strut (F)" on the "nose landing gear metal wire (D)", and use 2pcs "Jimi screws (M)" and "screw (E)" to fix.
5. Put the "U-shape damping arm (G)" on the "nose landing gear main strut (F)" and fix it by "screw (O)".
6. Insert the "Spring (H)", damping active lever (I)" into the "nose landing gear main strut (F)", and press the "damping active lever (I)" down, lock the screw to the hole of "nose landing gear main strut", and fix the "damping active lever (I)" to prevent its fall off.
7. Use "pin (V)" and E-buckle (U)" to connect the "damping slant supporting rod (P)", 8-shape damping shaft (Q), U-shape damping arm (G)" and fix them.
8. Put the "wheel (T1)" in the "nose wheel shaft (S)", then insert the "nose wheel shaft (S)" into the "damping slant supporting rod (P)", use "jimi screws (R)" to fix. Then insert the other "nose wheel (T2)" in the "nose wheel shaft (S)", use "E-buckle (B2)" to fix.
9. Assemble the retractable controller again.
10. Install the installed "nose landing gear set (W)" on the "nose landing gear mount (Y)", use 4pcs "screws (X)" to fix.

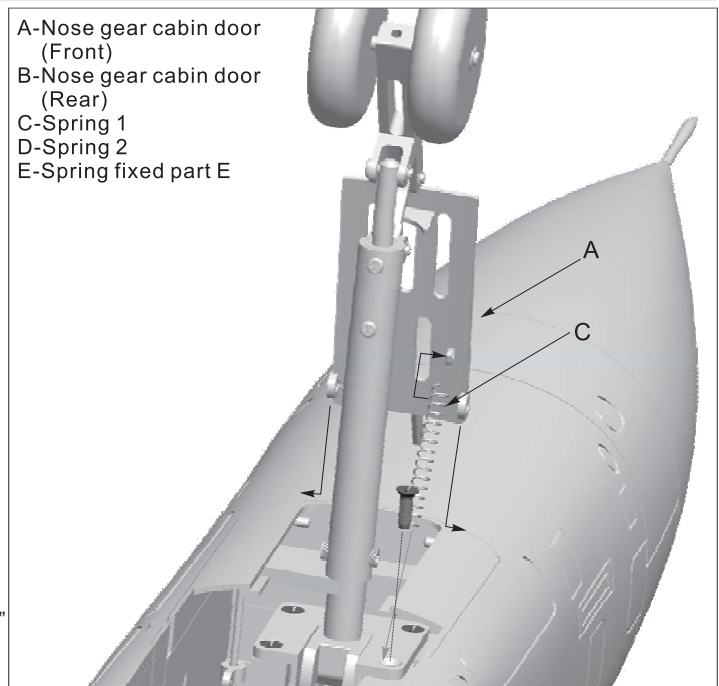


## Installing cabin door of nose landing gear



- A - Nose gear cabin door (Front)
- B - Nose gear cabin door (Rear)
- C - Spring 1
- D - Spring 2
- E - Spring fixed part E

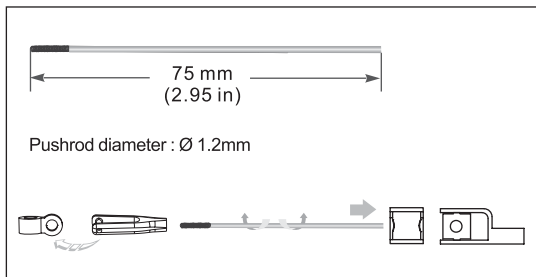
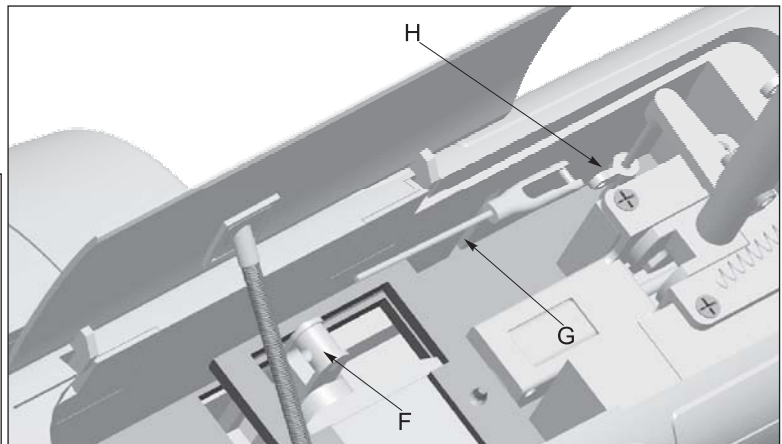
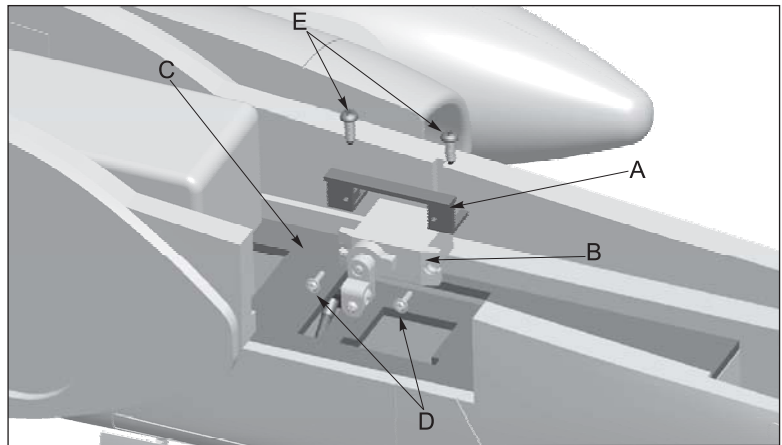
1. Install the rotating buckle of "Nose gear cabin door –front (A)" to the rotating shaft in the front of landing gear fixed mount.
2. Put one side of "Spring 1 (C)" to buckle the "Nose gear cabin door –front (A)", use screw to fix the other side on the nose gear controller.
3. Install the rotating buckle of "Nose gear cabin door –rear (B)" to the rotating shaft in the side of landing gear fixed mount.
4. Put one side of "Spring 2 (D)" to buckle the "Nose gear cabin door –rear (B)", put the other side on the "Spring fixed part (E)".



**Accessories list:**

- A-Servo fixed frame
- B-Servo (9g)
- C-Wood piece
- D-Screw (PWA2×8mm)
- E-Screw (PWA1.7×5mm)
- F-Pushrod fixed bolt
- G-Steering pushrod
- H-Nose gear steering control ring

- 1.Center the arm of “servo (B)”.
- 2.Use “screw (D)” to fix the 9g “servo (B)” on the “servo fixed frame (A)”.
- 3.Use “screw (E)” to fix the installed “servo fixed frame (A)” on the “wood piece (C)”.
- 4.Use “steering pushrod (G)” to connect the “pushrod fixed bolt (F)” and “nose gear steering control ring (H)”.

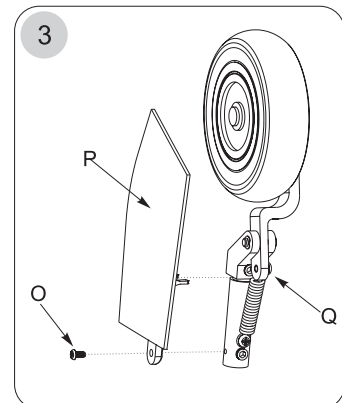
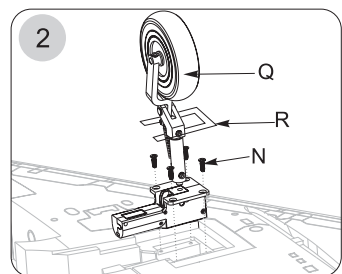
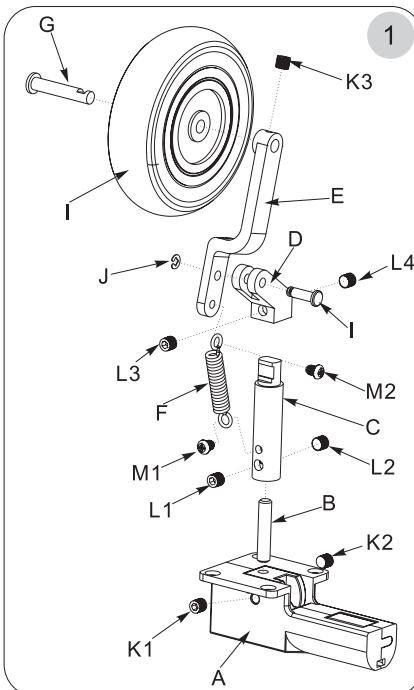


# Installing rear landing gear

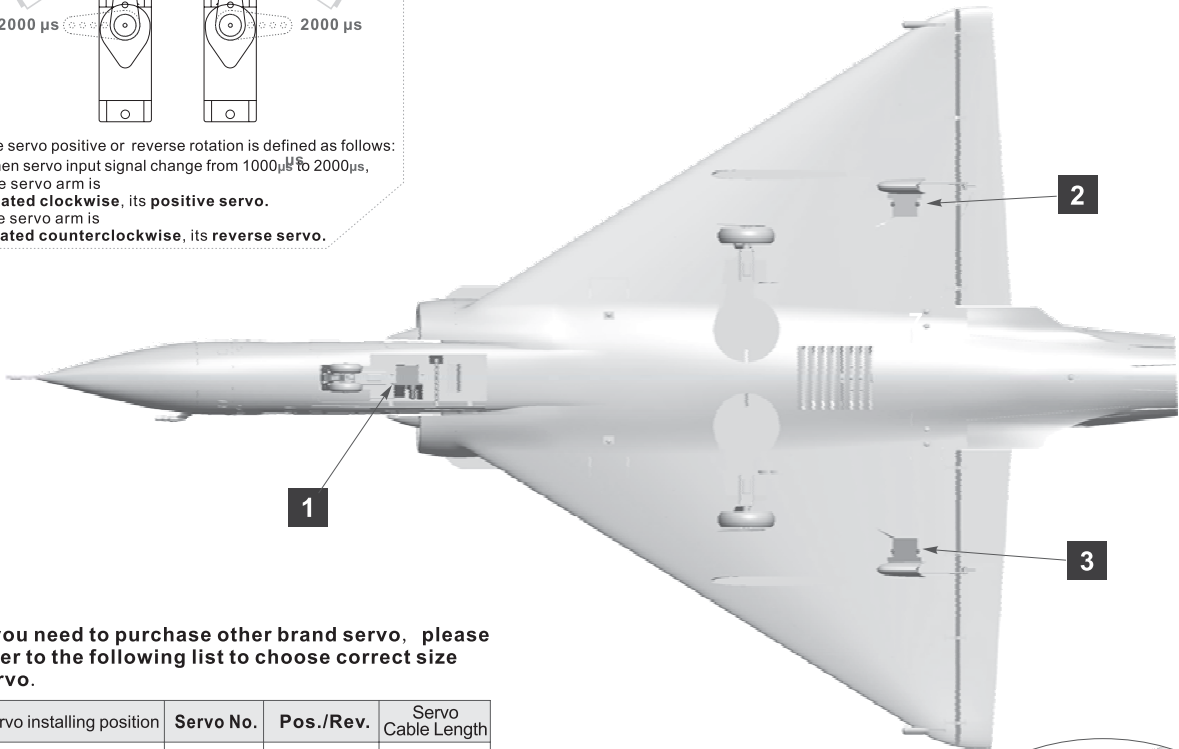
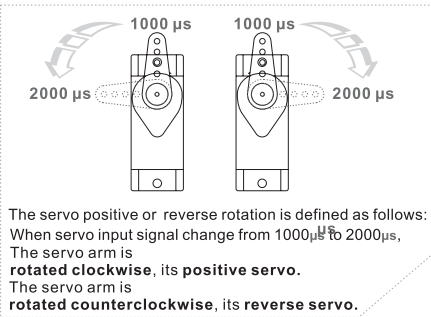
**Accessories list**

- A-Retractable controller
- B-Rear landing gear metal wire
- C-Rear landing gear main supporting rod
- D-Rear landing gear slant supporting rod
- E-Rear landing gear shock absorber arm
- F-Spring
- G-Wheel shaft
- H-Wheel
- I - Pin
- J-E-buckle (Ø1.5mm)
- K-Jimi screw (M3×3mm)
- L-Jimi screw (M4×3mm)
- M-Screw (Pm3×4mm)
- N-Screw (PA2.6×10mm)
- O-Screw (Pm4×3mm)
- P-Rear landing gear cabin door
- Q-Landing gear
- R-Landing gear decorated cover

- 1.Insert the “Rear landing gear metal wire (B)” to the “retractable controller (A)”. and use 2pcs “Jimi screw (K)” to fix.
- 2.Firstly, put the “rear landing gear main supporting rod (C)” to the “Rear landing gear metal wire (B)”, and fix it with 2pcs “Jimi screw (L)”. Next, put the “Rear landing gear slant supporting rod (D)” to the end of “rear landing gear main supporting rod (C)” and use 2pcs “jimi screws (L)” to fix.
- 3.Use “Pin (I)” “E-buckle (J)” to connect the “Rear landing gear slant supporting rod (D)” and “Rear landing gear shock absorber arm (E)”. Then, Use 2pcs “screw (M)” to fix separately the two side of “Spring (F)” on the “Rear landing gear slant supporting rod (D)” and “rear landing gear main supporting rod (C)”.
- 4.The “ wheel shaft (G)” go across the “ Wheel (H)”, insert into the hole in the end of “Rear landing gear shock absorber arm (E)”, and use “Jimi screw (K)” to fix the “ wheel shaft (G)”.
- 5.Use 4pcs “screw (N)” to fix the installed “ landing gear(Q)” on the main wing, and press the wires in the trough.
- 6.After installed the landing gear, use 1pcs “screw (O)” to fix the “Rear landing gear cabin door (P)” on the “Rear landing gear slant supporting rod (D)”.
- 7.Use glue to attach the “landing gear decorated cover (R)” on the main wing as the photo shown.





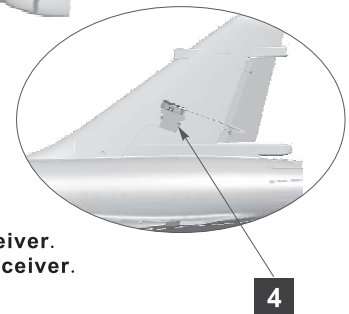


If you need to purchase other brand servo, please refer to the following list to choose correct size servo.

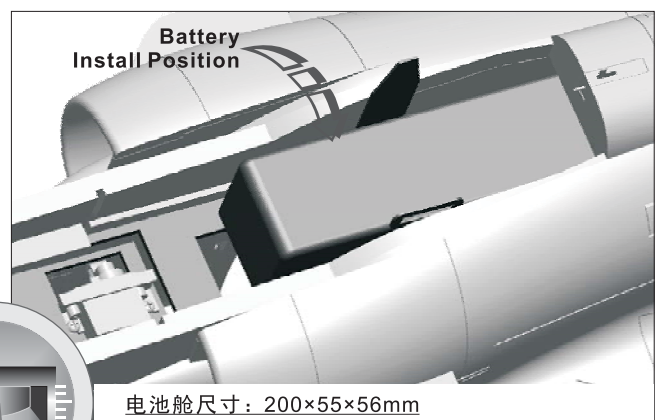
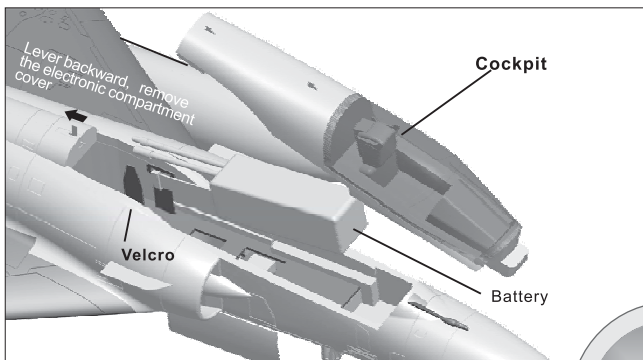
Servo installing position	Servo No.	Pos./Rev.	Servo Cable Length
Nose gear steering servo	1	Reverse	250mm
Aileron servo (Left)	2	Positive	500mm
Aileron servo (Right)	3	Positive	500mm
Rudder servo	4	Positive	250mm

### Servo connection instruction

1. Use Y wire to connect the servos (No. 1, No. 4), then insert to rudder channel in receiver.
2. Insert No. 2 servo and NO. 3 servo into the aileron channel and elevator channel in receiver.
3. Set up a "delta mix" in transmitter, and achieve our movement.

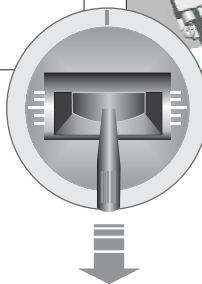


### Install on battery



Lever backward, remove the electronic compartment cover, then bundled battery with Velcro.

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



电池舱尺寸: 200×55×56mm

Our standard battery is:

**4S 14.8V 4000mAh 35C**

**OR 6S 22.2V 4000mAh 35C**

The battery capacity and discharge rate we advise is in the following:

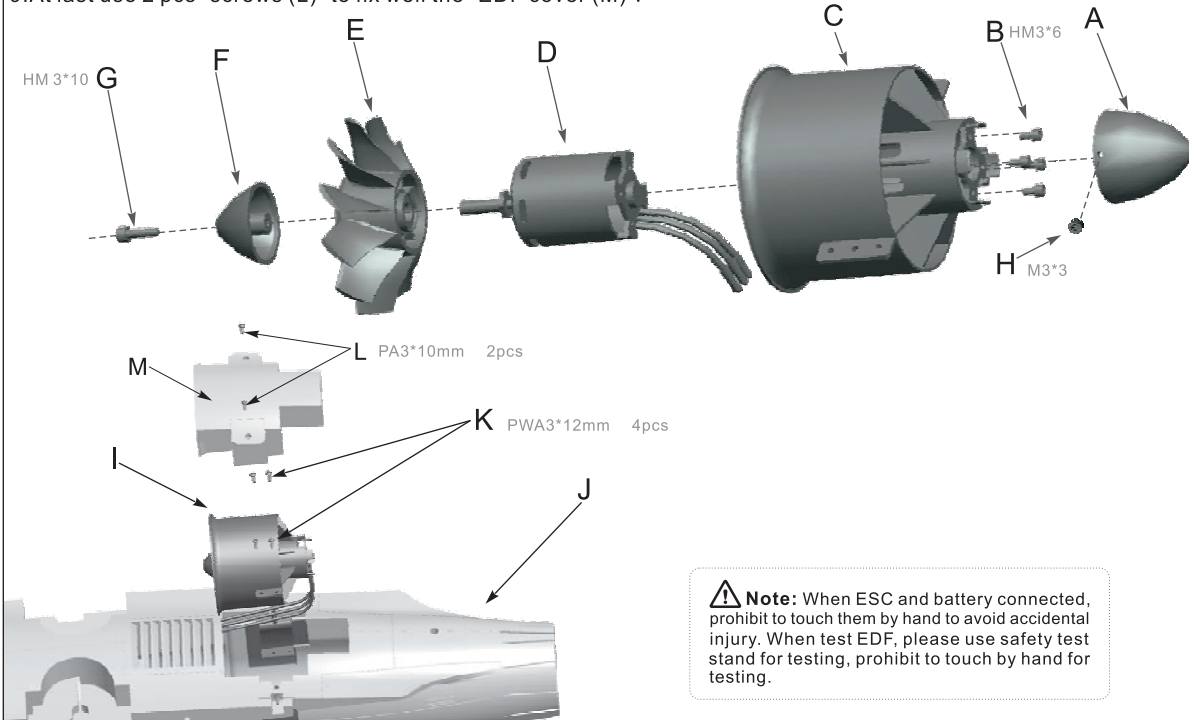
4S 14.8V 3700mAh ~ 4S 14.8V 4500mAh

6S 22.2V 3700mAh ~ 6S 22.2V 4500mAh

**Discharge rate of C ≥ 30C**

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

1. Install the "motor (D)" in the "ducted fan housing (C)".
2. Fix the motor by 4pcs "cup head screws (B)".
3. Put the "rotor (E)" in the motor shaft.  
(During this process, please note the hardware platform of rotor should be alignment with the motor shaft platform)
4. Use "spinner (F)" to cover the rotor, and fix the "spinner (F)" by "cup-head-screw (G)".
5. Install the "tail air-deflector (A)" on the "bottom of ducted fan housing (C)", and use 2pcs "jimi screws (H)" to fix.
6. Connect the motor and ESC.
7. Put the "installed EDF (I)" in the fuselage.
8. Use 4pcs "screws (K)" to fix the "EDF (I)" on the fixing wood piece.
9. At last use 2 pcs "screws (L)" to fix well the "EDF cover (M)".



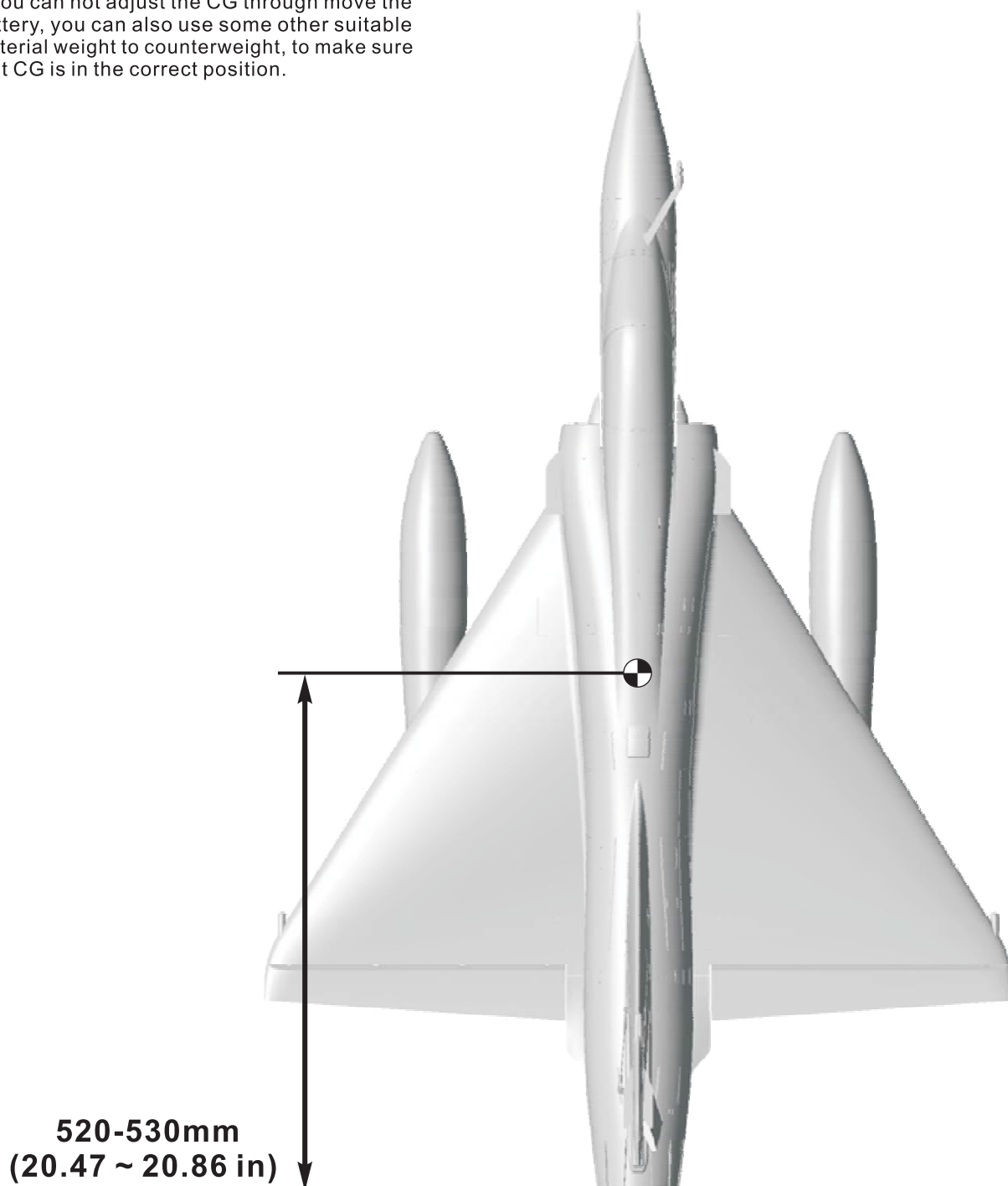
## Motor Parameters

<p><b>MOJ35251</b> 3525-2870KV For 4S Battery Standard Version</p>			
<p><b>MOJ35301</b> 3530-1750KV For 6S Battery Upgrade Version</p>			

Item No.	KV Value	Volute (V)	Current (A)	Thrust (g)	Motor Resistance	Weight (g)	No Load Current	Propeller	ESC
MOJ35251	2870RPM/V	14.8	63	1900	0.0087Ω	125	4.8A/15V	6-Bladed 80mm Ducted Fan	≥ 80A
MOJ35301	1750RPM/V	22.2	72	2600	0.0146Ω	150	4.6A/23V	12-Bladed 80mm Ducted Fan	≥ 80A

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.

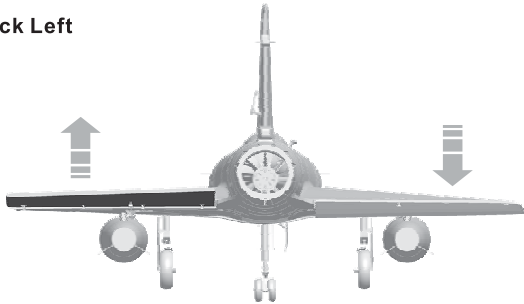
- You can move the battery forward or backward to adjust the center of gravity.
- If you can not adjust the CG through move the battery, you can also use some other suitable material weight to counterweight, to make sure that CG is in the correct position.



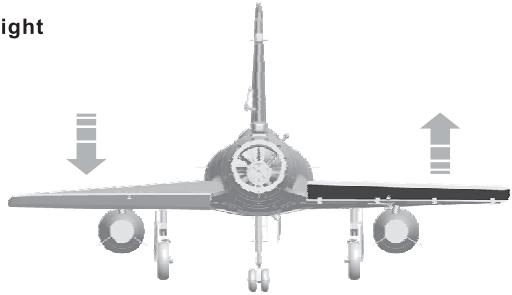
After installed the plane, before flying, we need a fully charged battery and connect to the ESC, then use radio to test and check that every control surface work properly.

## Aileron

Stick Left



Stick Right

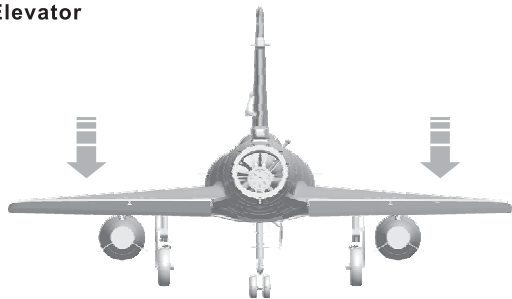


## Elevator

Up Elevator

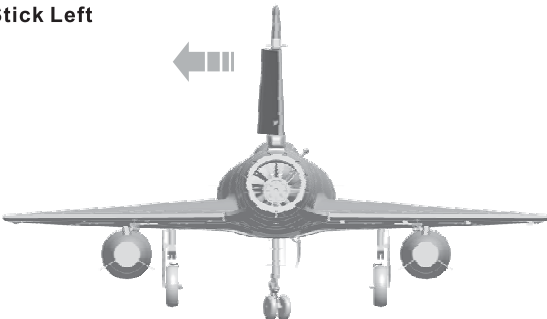


Down Elevator

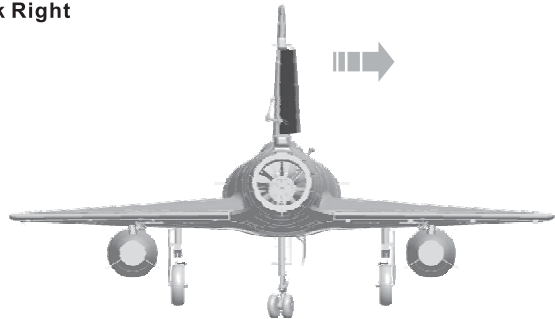


## Rudder

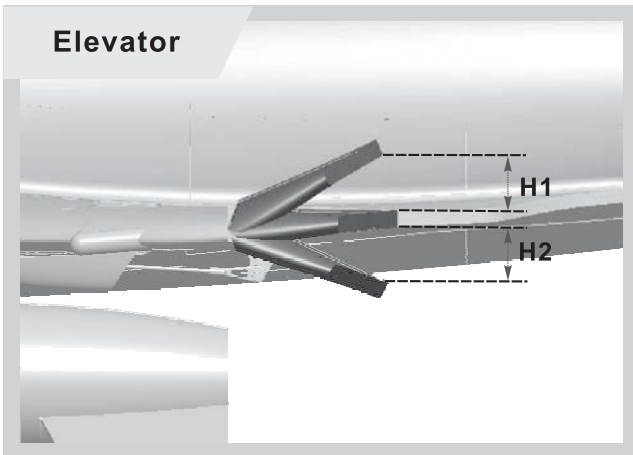
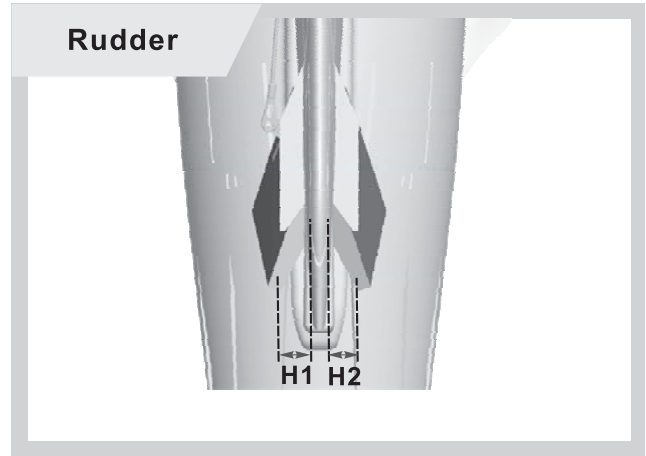
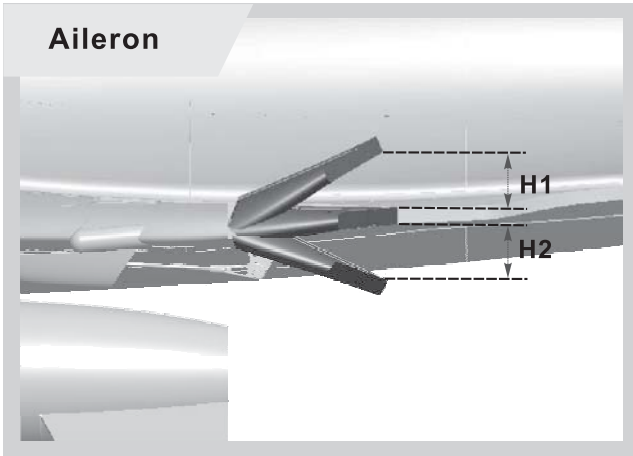
Stick Left



Stick Right



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	Rudder	Elevator
<b>Low Rate</b>	H1/H2 11mm/11mm	H1/H2 18mm/18mm	H1/H2 10mm/10mm
<b>High Rate</b>	H1/H2 16mm/16mm	H1/H2 28mm/28mm	H1/H2 16mm/16mm

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

感谢您购买80mm EDF Mirage2000 C!

这款著名的无尾三角翼战斗机，拥有着绝佳的“瞬时盘旋率”；幻影系列飞机，是法国航空工业的骄傲，这款战斗机开创了一个新的时代-----幻影时代！幻影战斗机，共生产600多架，包括法国，一共有9个国家的空军，在使用它们。

今天，飞翼重新复制这款经典的战斗机，80mm EDF Mirage2000 C模型，能够完美的呈现真实飞机的诸多细节！做工精细的涂装及贴纸，更加让这款产品锦上添花！

这款产品搭配了飞翼模型的12叶80mm涵道风扇，充沛的动力输出，使这款产品拥有绝佳的垂直爬升和机动性能。三角翼飞机的大仰角特性，在这里表现得淋漓尽致，我们可以缓慢、轻柔的让飞机降落下来。

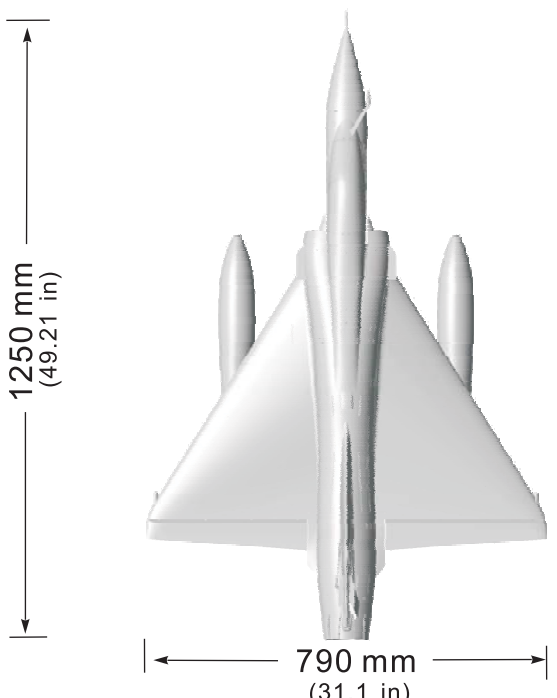
80mm EDF Mirage2000 C模型的每个主要部件都可以自由拆装，非常方便，易于携带。优秀的起落架设计，将可以保证模型在草地上的起降而不易损坏！Mirage2000 C模型，将给飞翼模型80mm EDF产品系列带来一个新的开端！

**⚠ 注意：**模型产品是具有一定危险性的产品，请禁止14岁以下的儿童玩耍，14岁以上的儿童，请在有飞行经验的成人指导下使用，无飞行经验的购买者，应当在具有一定电动涵道飞机飞行经验的成人指导下使用！组装模型前，请仔细阅读说明书，按照说明书的要求进行安装、进行调试和飞行时，请根据说明书指示的参数进行调整。

## 重要提示

1. 模型飞机不是玩具，操作者需要具备一定的经验；没有经验的初学者，必须在有丰富经验的专业人士指引下，逐步学习！
2. 在组装之前，必须认真阅读产品说明书，严格按照说明书指示操作。
3. 飞翼模型及其销售商，对于违反说明书的要求操作而造成的损失、将不承担任何法律责任！
4. 模型飞机的使用年龄必须是14岁以上的儿童或者成人。
5. 此模型产品使用EPO材料制成，表面喷涂油漆，不可随意使用化学制剂擦拭，否则会损坏模型产品。
6. 不可以公共场合、高压线密集区、高速公路附近、机场附近或者其它法律法规明确禁止飞行的场合飞行。
7. 不可以雷雨、大风、大雪或者其它恶劣气象环境下飞行。
8. 模型飞机的电池产品，不可以随意乱扔，乱放。存放时，必须保证周边2M范围内，无易燃、易爆物体。
9. 损坏或者报废处理的模型飞机电池，应妥善回收处理，不准随意抛弃，避免自燃而引发火灾。
10. 在飞场飞行时，应做到妥善处理飞行后所产生的垃圾，不可随意抛弃、焚毁模型及其配件。
11. 在任何情况下，都必须保证油门杆处于起始位、发射机处于打开状态时，才能连接模型飞机内部的动力电池。
12. 无论是模型飞机是在正常飞行过程中，或者是在缓慢降落过程中，都不要尝试用手去回收模型。必须等模型降落停稳以后，再进行回收！

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 <p>1250 mm (49.21 in)</p> <p>790 mm (31.1 in)</p> <p>⚠ 注意：此处各项参数，均使用本公司配件测试得出，如果使用副厂配件，会有所差异。使用副厂配件时所产生的问题，我们将无法给予技术支持！</p>	<p>标准版</p>	<ul style="list-style-type: none"> <li>● 电机 3525- 2870KV</li> <li>● 电调 80A 无刷电调 (5A BEC)</li> <li>● 舵机 9g 模拟舵机 (4pcs)</li> <li>● 电池 4S 14.8V 4000mAh 35C</li> <li>● 涵道风扇 6叶 80mm涵道</li> <li>● 起飞重量 1900 g (67oz.)</li> <li>● 推力 1900g (67 oz.)</li> </ul>
	<p>升级版</p>	<ul style="list-style-type: none"> <li>● 电机 3530- 1750KV</li> <li>● 电调 80A 无刷电调 (5A BEC)</li> <li>● 舵机 9g 金属模拟舵机 (4pcs)</li> <li>● 电池 6S 22.2V 4000mAh 35C</li> <li>● 涵道风扇 12叶 80mm涵道</li> <li>● 起飞重量 2200 g (77.6 oz.)</li> <li>● 推力 2600g (91.8 oz.)</li> </ul>

配件清单



不同配置，包装盒内部物品不同，请参考以下内容，核对您的配件：

PNP配置物品清单

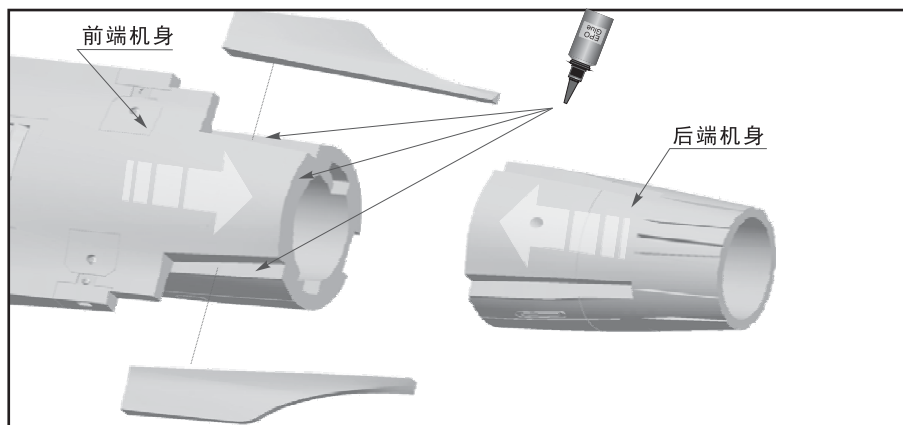
1. 机身套件(已组装完成, 含电子设备及连接线)
2. 主翼套件(已组装完成, 含电子设备及连接线)
3. 垂尾套件(已组装完成, 含电子设备及连接线)
4. 副油箱及挂架, 机头罩, 尾喷口
5. 受油管, 塑料配件
6. 后起落架套件, 碳纤维管
7. 螺丝
8. 胶水

KIT(空机)配置物品清单

1. 机身套件(已组装完成)
2. 主翼套件(已组装完成)
3. 垂尾套件(已组装完成)
4. 副油箱及挂架, 机头罩, 尾喷口
5. 受油管, 塑料配件
6. 后起落架套件, 碳纤维管
7. 螺丝
8. 胶水



1. 使用胶水，粘合前、后二段机身；
2. 使用胶水，将左、右主翼部份泡沫件粘合在机身上；



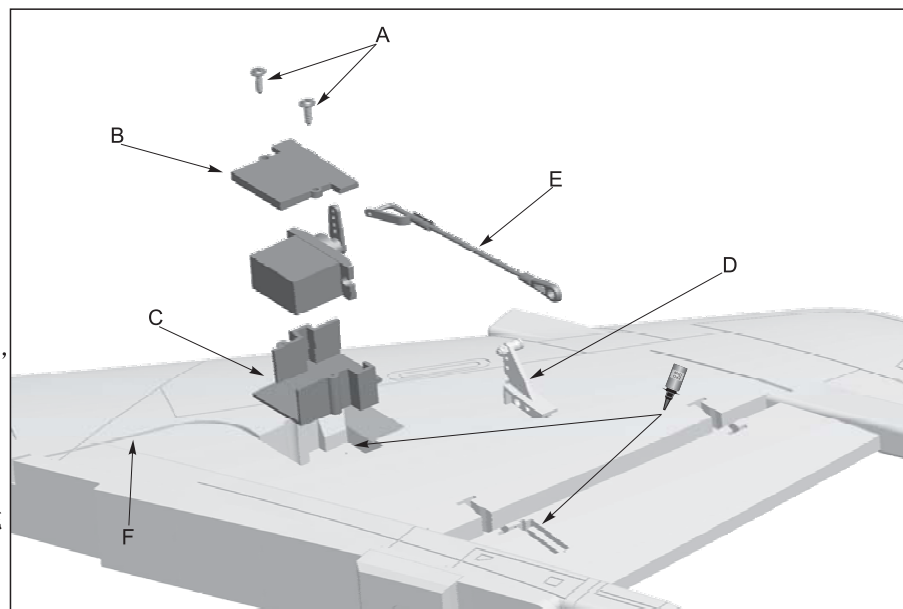
## 垂尾安装

### 垂尾舵机安装

- A - 螺丝 (PWA1.7×5mm)
- B - 9g舵机盖
- C - 9g舵机盒
- D - 舵面摇臂
- E - 垂尾舵机控制钢丝
- F - 舵机线槽

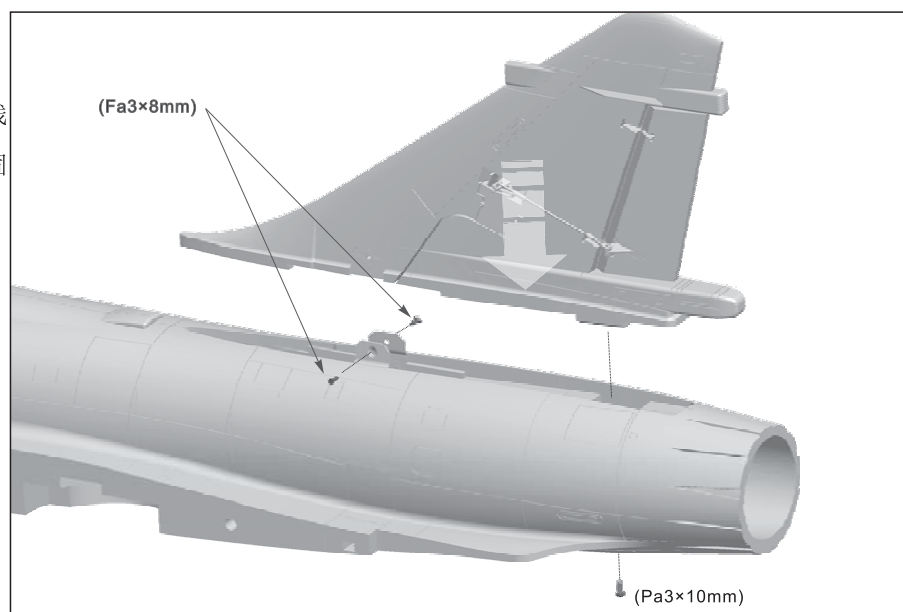
1. 通过舵机测试仪或者遥控器，把舵机摇臂校正到居中位置；
2. 用胶水把“9g舵机盒(C)”和“舵面摇臂(D)”粘在垂尾上；
3. 把舵机安装到“9g舵机盒(C)”内，同时把舵机线压入“舵机线槽(F)”，然后盖上“9g舵机盖”，最后用2颗“螺丝(A)”锁紧固定；
4. 用“垂尾舵机控制钢丝(E)”连接舵机摇臂与“舵面摇臂(D)”。

通过调整钢丝长短距离，使垂尾舵面处于居中位置！



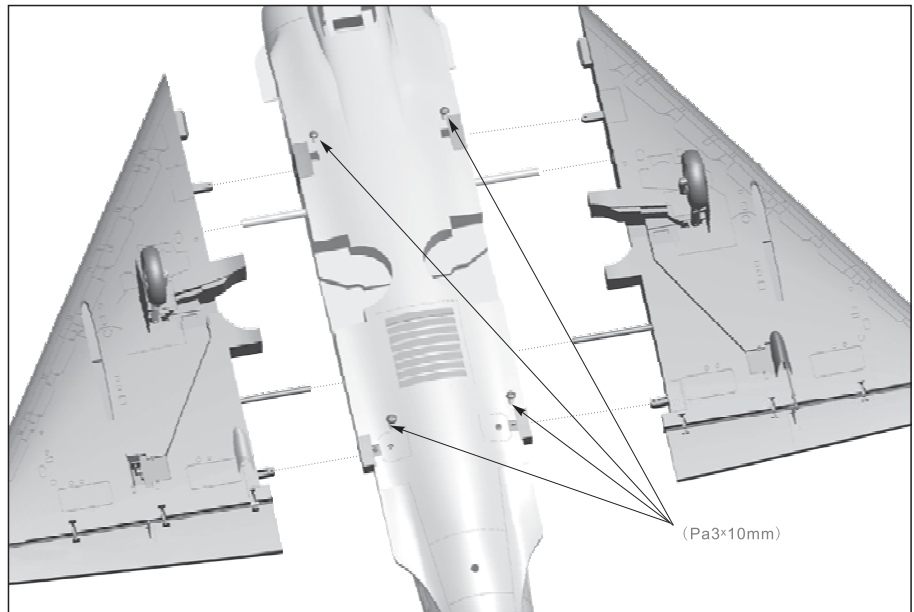
### 垂尾安装

1. 把垂尾舵机线与机身内置的延长线连接起来；
2. 将垂尾插入机身，然后使用螺丝固定垂尾；



## 主翼安装

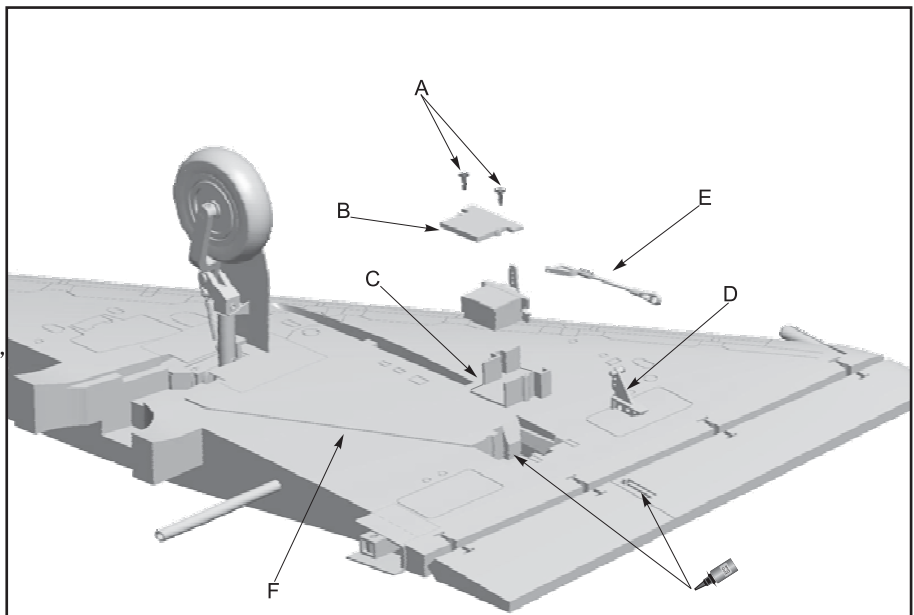
1. 从包装盒内取出主翼碳纤维管，如右图所示，插入到机身；
2. 把左、右主翼上的舵机线等与机身内置的延长线连接起来；
3. 将左、右主翼插入机身；
4. 使用螺丝固定主翼塑料插梢，完成组装；



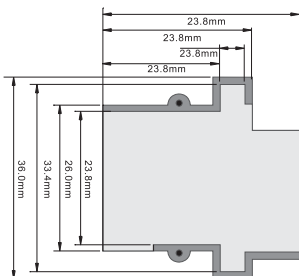
## 主翼舵机安装

- A- 螺丝 (PWA1.7x5mm)
- B- 9g舵机盖
- C- 9g舵机盒
- D- 舵面摇臂
- E- 主翼舵机控制钢丝
- F- 舵机线槽

1. 通过舵机测试仪或者遥控器，把舵机摇臂校正到居中位置；
2. 用胶水把“9g舵机盒(C)”和“舵面摇臂(D)”粘在主翼上；
3. 把舵机安装到“9g舵机盒(C)”内，同时把舵机线压入“舵机线槽(F)”，然后盖上“9g舵机盖”，最后用2颗“螺丝(A)”锁紧固定；
4. 用“主翼舵机控制钢丝(E)”连接舵机摇臂与“舵面摇臂(D)”；



**注意：**模型所有舵机安装位置已经安装好舵机盒，使玩家在拆卸舵机时，不会损伤机身表面。如果需要更换舵机，请购买原厂舵机或者参考下列图纸，选择尺寸相符的舵机！



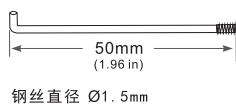
垂尾舵面控制钢丝尺寸



垂尾舵机钢丝安装孔位



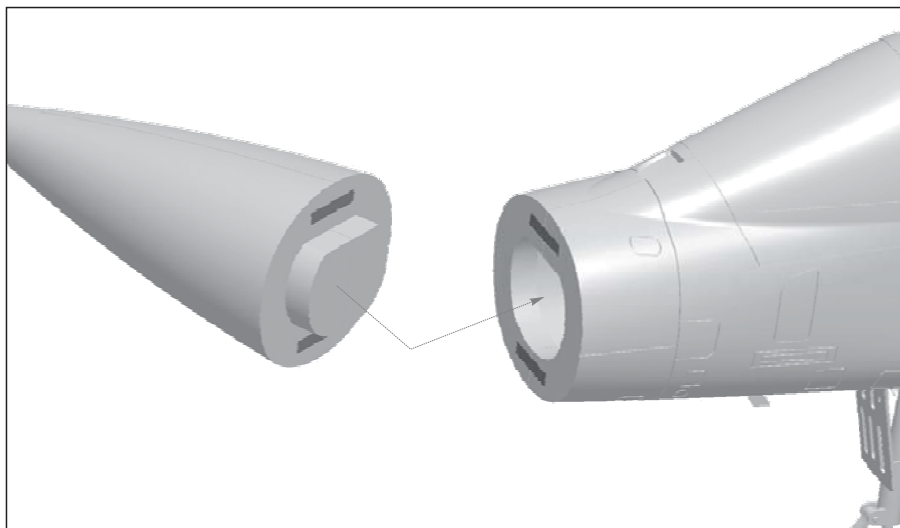
主翼舵面控制钢丝尺寸



主翼舵机钢丝安装孔位

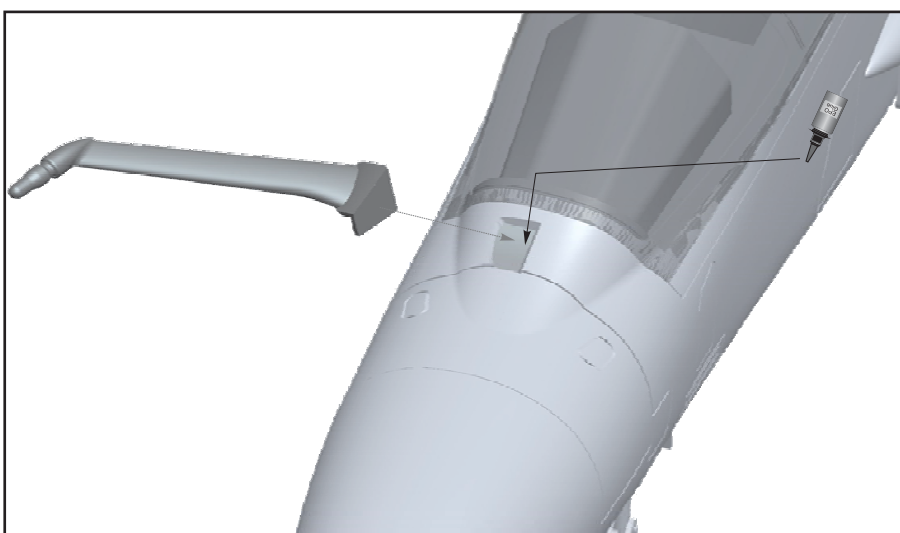


1. 由于采用磁力吸附结构，我们只需要将机头罩吸在机头前端即可。



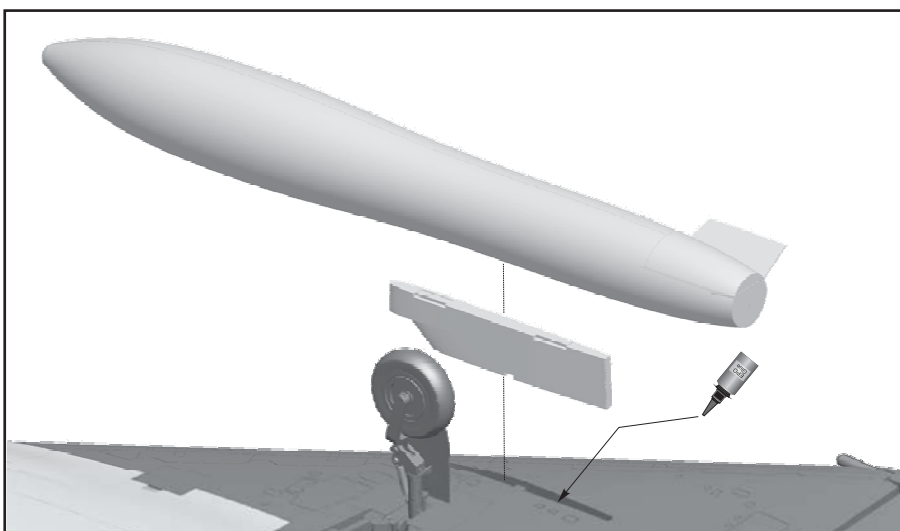
### 授油管安装

1. 如右图所示，用胶水将受油管粘贴在座舱前端；



### 副油箱及挂架组装

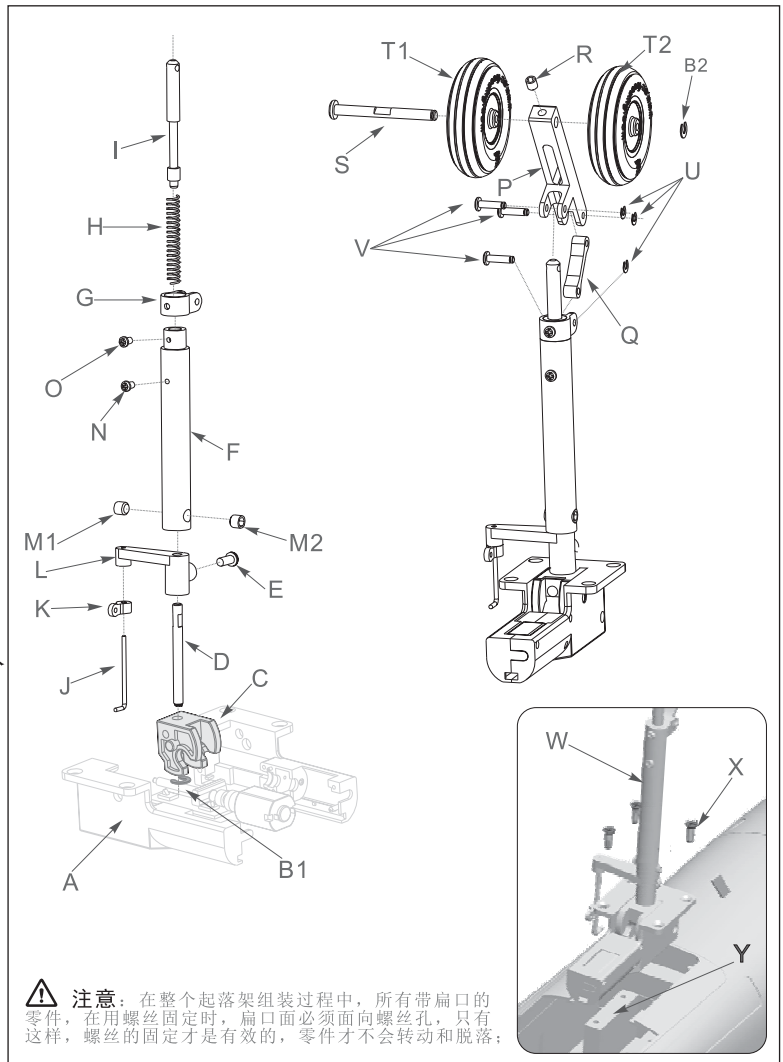
1. 使用胶水把副油箱与挂架粘合起来；
2. 通过挂架预先安装好的磁铁，直接吸附在主翼下表面；



## 前起落架零件列表：

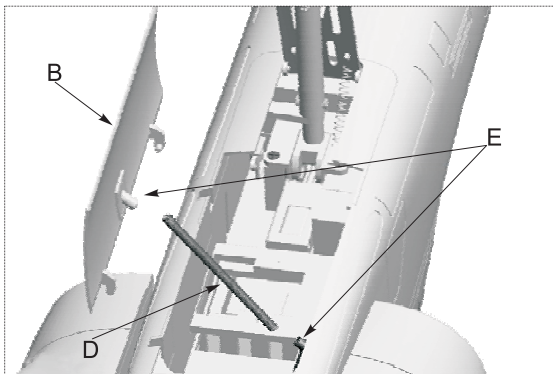
- |                   |                    |
|-------------------|--------------------|
| A- 起落架电动控制器       | M- 机米螺丝 (M4×3mm)   |
| B- E型扣 (∅2.0mm)   | N- 螺丝 (PM2×4mm)    |
| C- 收放旋转臂          | O- 螺丝 (PM2×3mm)    |
| D- 前起落架主钢丝        | P- 减震斜撑杆           |
| E- 螺丝 (PT2.6×6mm) | Q- 8字型减震转轴         |
| F- 前起落架主撑杆        | R- 机米螺丝 (M3×3mm)   |
| G- U型减震臂          | S- 前轮轮轴            |
| H- 弹簧             | T- 机轮 (∅35×10mm)   |
| I- 减震活动杆          | U- E型扣 (∅1.5mm)    |
| J- 前起落架转向钢丝       | V- 梢钉              |
| K- 前起落架转向控制环      | W- 前起落架套件          |
| L- L型摇臂           | X- 螺丝 (PA2.6×10mm) |
|                   | Y- 前起落架固定座         |

1. 首先拆开“起落架电动控制器 (A)”，取出“收放旋转臂 (C)”；
2. 将“前起落架主钢丝(D)”插入到“收放旋转臂(C)”中，然后用“E型扣 (B)”固定；
3. 把“前起落架转向控制环 (K)”套入到“前起落架转向钢丝 (J)”，一起拧入“L型摇臂 (L)”上；
4. 把“L型摇臂 (L)”及“前起落架主撑杆 (F)”分别套入到“前起落架主钢丝 (D)”上，分别用2颗“机米螺丝 (M)”和“螺丝 (E)”固定；
5. 把“U型减震臂 (G)”套入到“前落架主撑杆 (F)”上，然后用“螺丝 (O)”固定；
6. 将“弹簧 (H)、减震活动杆 (I)”分别插入到“前起落架主撑杆 (F)”内，用力向下压住“减震活动杆 (I)”的同时，从“前起落架主撑杆 (F)”侧面的螺丝孔处拧入“螺丝 (N)”，“固定减震活动杆 (I)”，防止其脱落；
7. 使用“梢钉 (V)”和“E型扣 (U)”将“减震斜撑杆 (P)、8字型减震转轴 (Q)、U型减震臂 (G)”连接固定；
8. 将“机轮 (T1)”套入到“前轮轮轴 (S)”上，然后把“前轮轮轴 (S)”插入到“减震斜撑杆 (P)”内，同时用“机米螺丝 (R)”固定，再将另外一个“前轮 (T2)”套入到“前轮轮轴 (S)”上，用“E型扣 (B2)”固定；
9. 最后将拆开的起落架电动控制器拼装起来；
10. 把组装好的“前起落架套件 (W)”安装到“前起落架固定座 (Y)”上，用3颗“螺丝 (X)”固定；

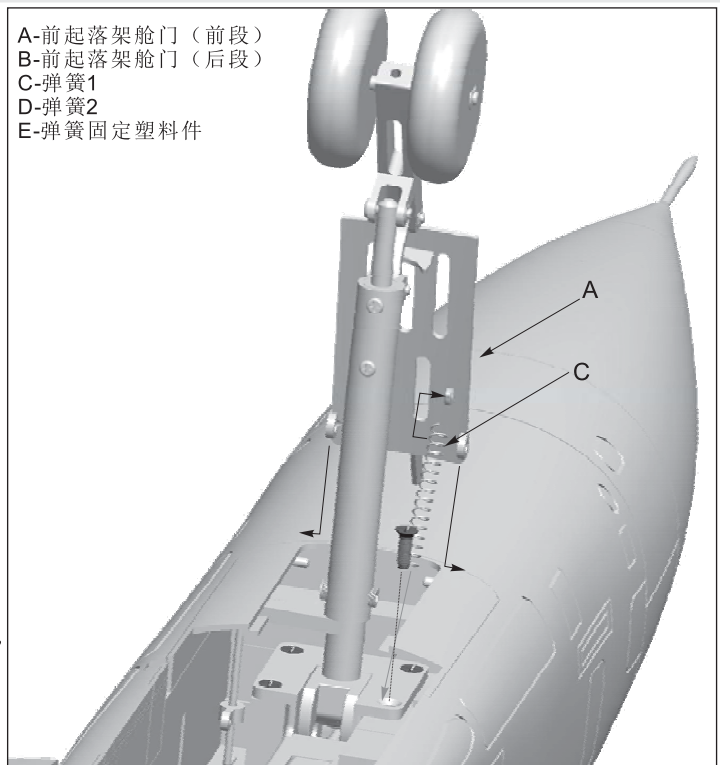


**注意：**在整个起落架组装过程中，所有带扁口的零件，在用螺丝固定时，扁口面必须面向螺丝孔，只有这样，螺丝的固定才是有效的，零件才不会转动和脱落；

## 前起落架舱门组装



1. 将“前起落架舱门 (前段) (A)”上的旋转卡扣套在起落架固定座前端旋转轴上；
2. “弹簧1 (C)”一端扣住“前起落架舱门 (前段) (A)”，另外一端使用螺丝固定在前起落架电动收放控制器上；
3. 将“前起落架舱门 (后段) (B)”上的旋转卡扣套在起落架固定座侧面的旋转轴上；
4. “弹簧2 (D)”一端套入“前起落架舱门 (后段) (B)”，另外一端套入到“弹簧固定塑料件 (E)”上，完成安装！

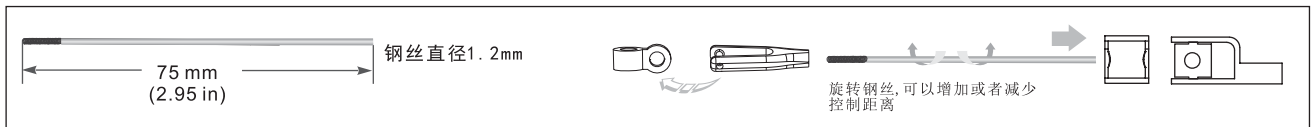
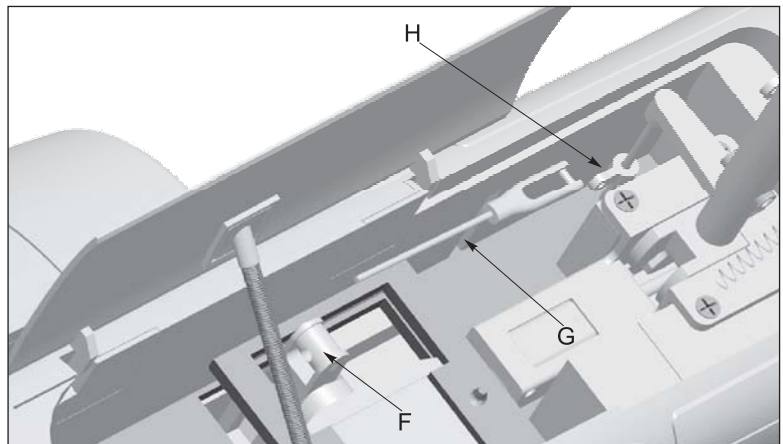
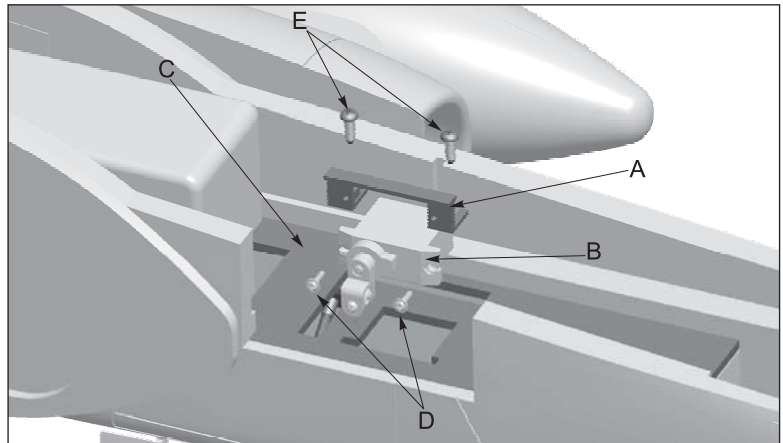


- A-前起落架舱门 (前段)
- B-前起落架舱门 (后段)
- C-弹簧1
- D-弹簧2
- E-弹簧固定塑料件

## 配件清单

- A-舵机固定框
- B-舵机 (9g)
- C-木板
- D-螺丝 (PWA2×8mm)
- E-螺丝 (PWA1.7×5mm)
- F-钢丝固定栓
- G-转向控制钢丝
- H-前起落架转向控制环

1. 将“舵机 (B)” 摇臂居中；
2. 使用“螺丝 (D)” 将“9g舵机 (B)” 固定在“舵机固定框 (A)” 上；
3. 用“螺丝 (E)” 将组装好舵机的“舵机固定框 (A)” 固定在“木板 (C)” 上；
4. 使用“转向控制钢丝 (G)” 将“钢丝固定栓 (F)” 与“前起落架转向控制环 (H)” 连接起来，形成一个控制机构；

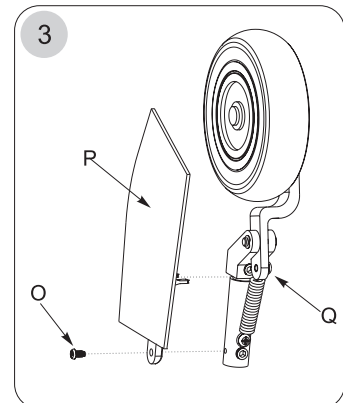
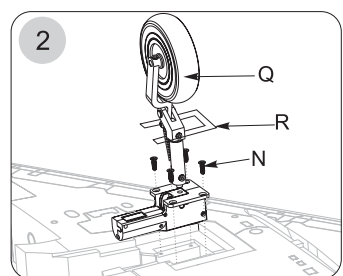
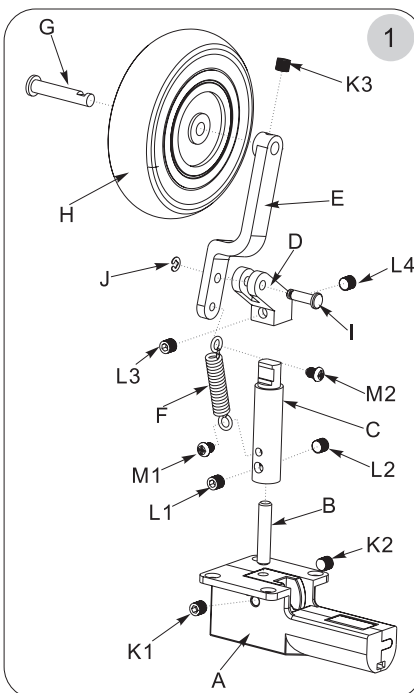


## 后起落架组装

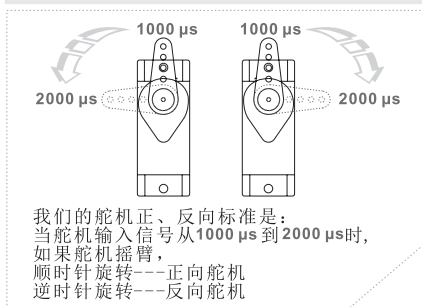
### 后起落架零件列表:

- |              |                   |
|--------------|-------------------|
| A-起落架电动收放控制器 | J-E型扣 (Ø1.5mm)    |
| B-后起落架主钢丝    | K-机米螺丝 (M3×3mm)   |
| C-后起落架主撑杆    | L-机米螺丝 (M4×3mm)   |
| D-后起落架斜撑杆    | M-螺丝 (Pm3×4mm)    |
| E-后起落架减震臂    | N-螺丝 (PA2.6×10mm) |
| F-弹簧         | O-螺丝 (Pm4×3mm)    |
| G-轮轴         | P-后起落架舱门          |
| H-机轮         | Q-起落架套件           |
| I-梢钉         | R-起落架吸塑装饰盖        |

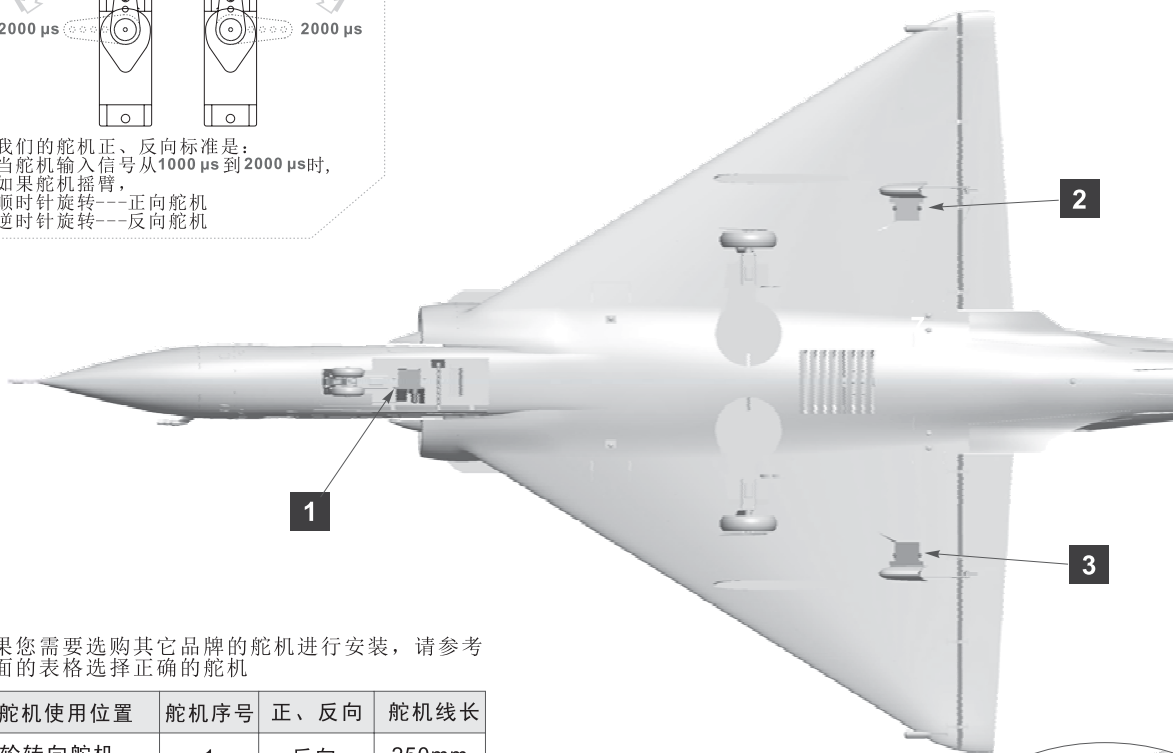
1. 将“后起落架主钢丝 (B)” 插入到“起落架电动收放控制器 (A)” 中，然后用2颗“机米螺丝 (K)” 固定；
2. 首先把“后起落架主撑杆 (C)” 套入“后起落架主钢丝 (B)”，并用2颗“机米螺丝 (L)” 固定，接下来，再次将“后起落架斜撑杆 (D)” 套入到“后起落架主撑杆 (C)” 末端，同时用2颗“机米螺丝 (L)” 固定；
3. 使用“梢钉 (I)” 和“E型扣 (J)” 将“后起落架斜撑杆 (D)” 和“后起落架减震臂 (E)” 连接起来。接下来，分别用2颗“螺丝 (M)” 将“弹簧 (F)” 二端分别固定在“后起落架斜撑杆 (D)” 和“后起落架主撑杆 (C)” 上；
4. 将“轮轴 (G)” 穿过“机轮 (H)” 插入到“后起落架减震臂 (E)” 末端圆孔内，然后使用“机米螺丝 (K)” 固定好“轮轴 (G)”；
5. 使用4颗“螺丝 (N)” 把组装好的“起落架套件 (Q)” 固定在主翼上，同时把控制线压入主翼下表面的线槽内；
6. 安装好起落架后，再用1颗“螺丝 (O)” 把“后起落架舱门 (P)” 固定在“后起落架斜撑杆 (D)” 上；
7. 用胶水将“起落架吸塑装饰盖 (R)” 粘贴在主翼下表面图示位置，完成安装！



## 舵机使用介绍



我们的舵机正、反向标准是：  
当舵机输入信号从1000 μs到2000 μs时，  
如果舵机摇臂，  
顺时针旋转---正向舵机  
逆时针旋转---反向舵机

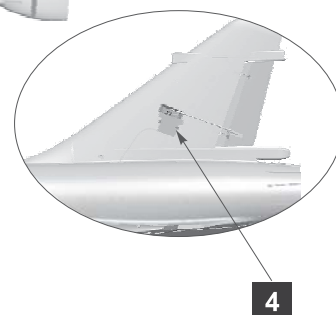


如果您需要选购其它品牌的舵机进行安装，请参考下面的表格选择正确的舵机

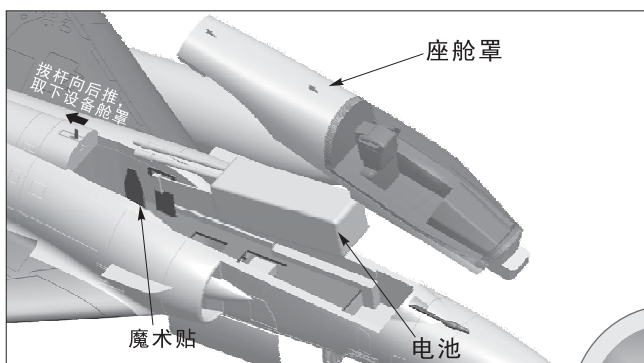
舵机使用位置	舵机序号	正、反向	舵机线长
前轮转向舵机	1	反向	250mm
左副翼舵机	2	正向	500mm
右副翼舵机	3	正向	500mm
垂尾舵机	4	正向	250mm

### 舵机连接说明

1. 用一条Y线连接编号为1、4的这二个舵机，然后接入接收机方向通道；
2. 编号为2、3的这二个舵机，分别接入接收机副翼、升降二个通道；
3. 最后在遥控器上设置一个“三角翼”混控，实现我们的飞行动作；

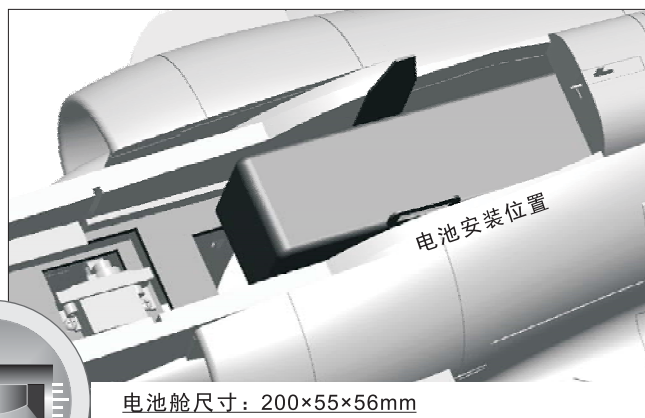


## 电池安装说明



拨杆向后推，取下座舱盖，然后用魔术贴捆绑电池。

将电池与接收机连接前，首先请打开发射机电源，确认油门杆处于低位。



电池舱尺寸：200×55×56mm

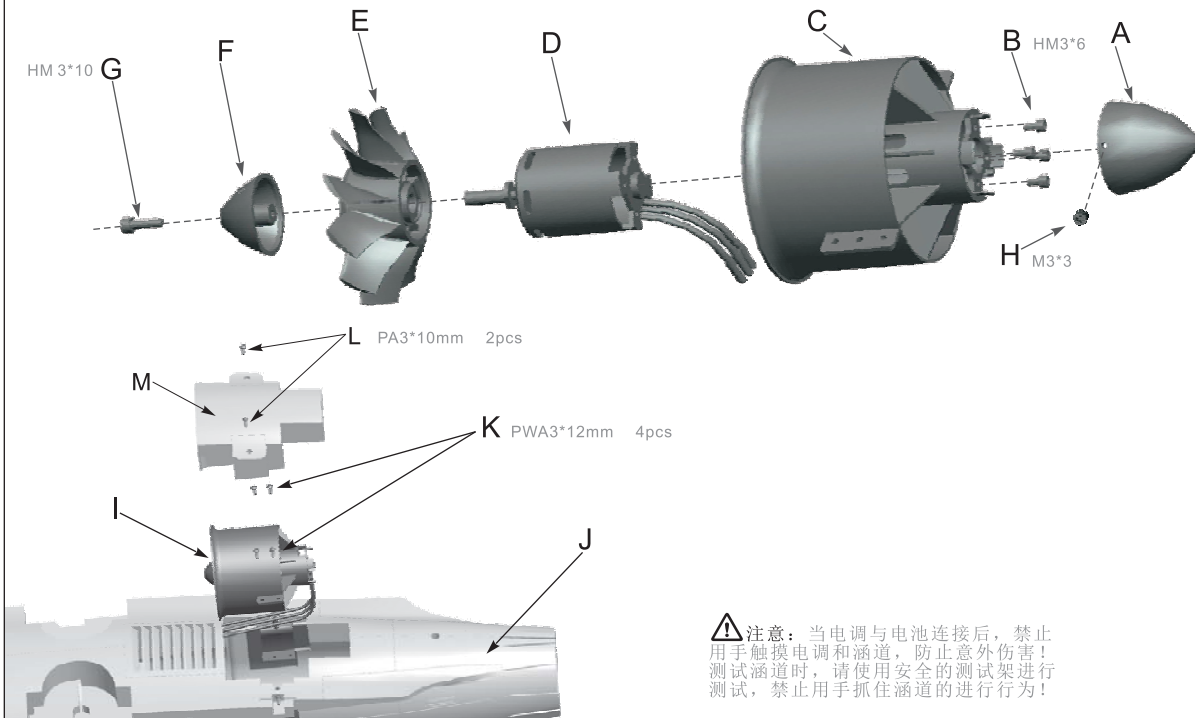
我们出厂时配备的电池为：  
**6S 22.2V 4000mAh 35C**

我们建议使用的电池容量和放电倍率如下：  
**6S 22.2V 3700mAh ~ 6S 22.2V 4500mAh**  
放电倍率  $\geq 30C$

不同重量的电池，会影响重心！请注意飞机的重心在说明书指示的正确范围内！

1. 将电机“D”装入涵道框“C”内；
2. 用4颗杯头螺丝“B”固定马达；
3. 把涵道风扇“E”套入到电机轴上；  
(在此过程中，请注意风扇叶内嵌五金件的扁口与马达轴的扁口部位对齐装入)
4. 用整流罩“F”盖住风扇叶，最后用杯头螺丝“G”固定整流罩“F”。

5. 最后把尾部导流罩“A”安装到涵道框“C”底部，并用2颗机米螺丝“H”固定。
6. 将马达与机身内电调连接起来；
7. 把组装好的涵道“I”放置到机身“J”内；
8. 使用4颗螺丝“K”将涵道“I”锁到固定木片上；
9. 最后使用2颗螺丝“L”固定好涵道盖“M”。



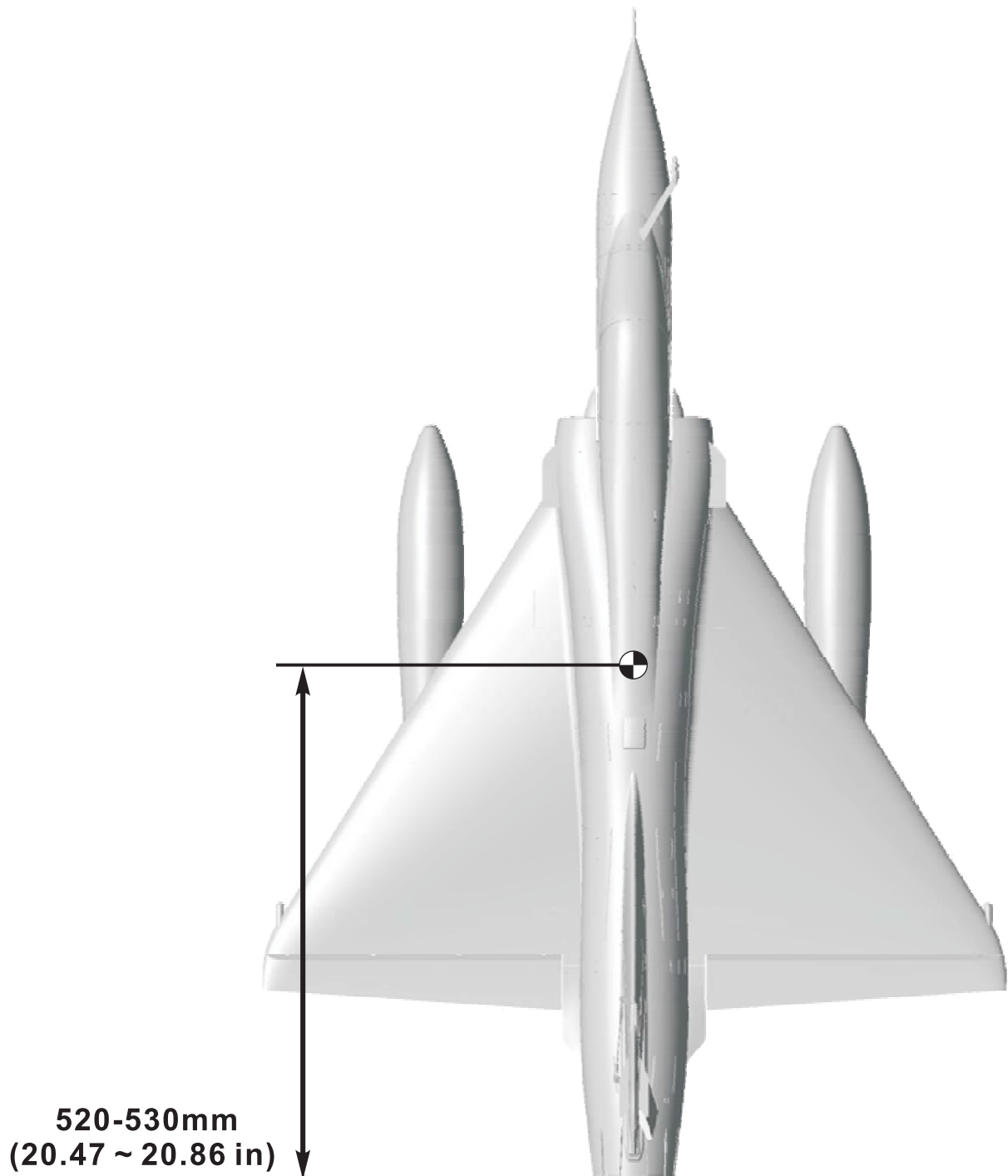
## 电机参数

<p><b>MOJ35251</b> 3525-2870KV For 4S Battery Standard Version</p>	<p><b>MOJ35301</b> 3530-1750KV For 6S Battery Upgrade Version</p>
--	---

Item No.	KV Value	Volute (V)	Current (A)	Thrust (g)	Motor Resistance	Weight (g)	No Load Current	Propeller	ESC
MOJ35251	2870RPM/V	14.8	63	1900	0.0087Ω	125	4.8A/15V	6-Bladed 80mm Ducted Fan	≥ 80A
MOJ35301	1750RPM/V	22.2	72	2600	0.0146Ω	150	4.6A/23V	12-Bladed 80mm Ducted Fan	≥ 80A

正确的重心，直接关系到飞行的成功与否，请参考下面的重心标示图，来调整飞机的重心。

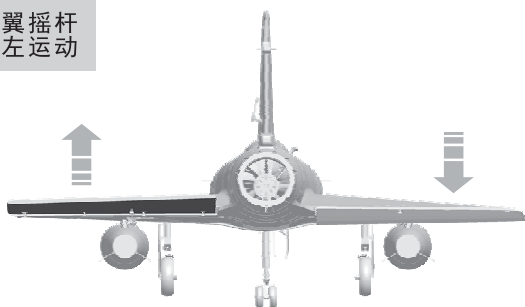
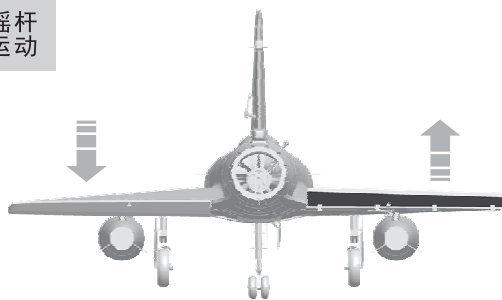
- 您可以将电池向前，或者向后移动，来调整飞机的重心；
- 如果通过电调的移动无法调整到正确的重心位置，您还可以适当的使用一些其它材料来配重，使飞机的重心处于正确的位置！





当您按前面的步骤组装好飞机后，在飞行前，我们需要用一块充电的电池，连接到电调。用遥控器测试每个舵面的工作情况，检查是否正常！

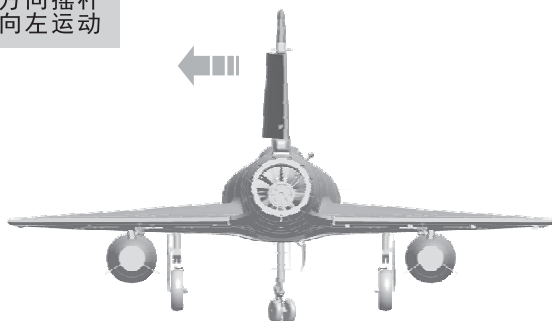
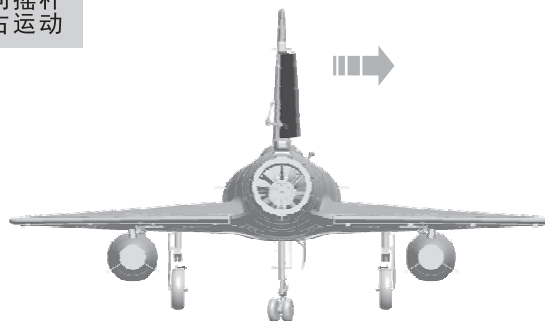
## 副翼

副翼摇杆  
向左运动副翼摇杆  
向右运动

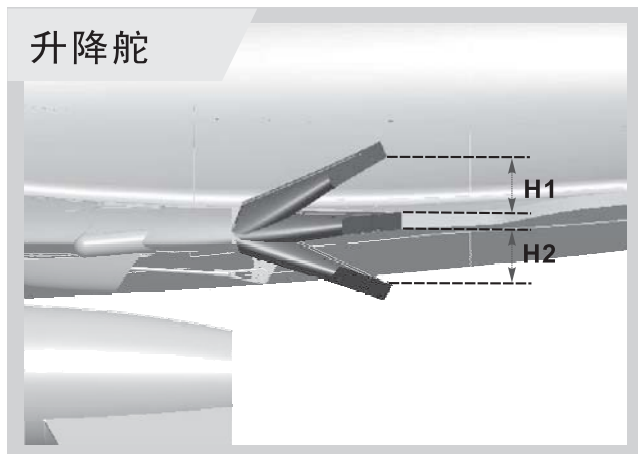
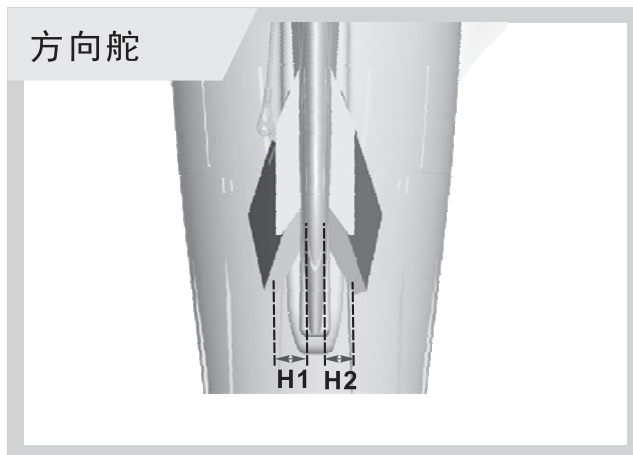
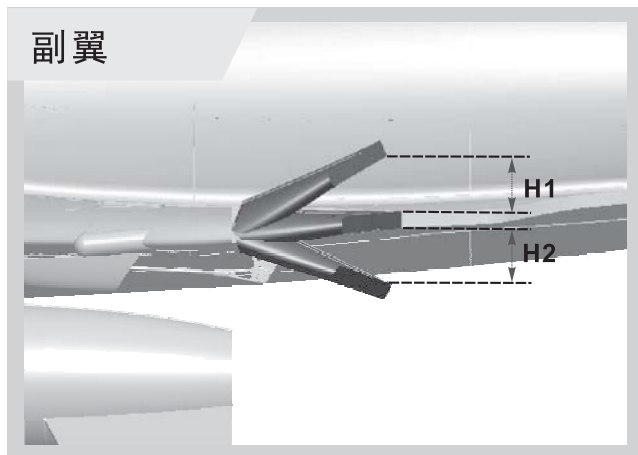
## 升降舵

升降摇杆  
向下运动副翼摇杆  
向上运动

## 方向舵

方向摇杆  
向左运动方向摇杆  
向右运动

根据我们的测试经验，我们认为，按以下参数来设置副翼和升降舵的大、小舵，将有助于飞行。在小舵角的情况下，飞机的可控性能会好一些，适合初次飞行或者不太熟练的玩家飞行。而大舵角的设置，可以提高动作灵敏度，使用经验丰富的玩家。您可以根据自身的情况，来选择其中一种舵量进行飞行！



	副翼	方向舵	升降舵
小舵角	H1/H2 11mm/11mm	H1/H2 18mm/18mm	H1/H2 10mm/10mm
大舵角	H1/H2 16mm/16mm	H1/H2 28mm/28mm	H1/H2 16mm/16mm

电机不工作	A) 电池电量耗尽	A) 充电
	B) 发射机电量耗尽	B) 更换或者充电
	C) 发射机开关没开	C) 打开发射机开关
	D) 电池没有连接好	D) 检查并连接好电池
	E) 电机连接错误	E) 检查并正确连接电机
	F) 因为摔机等原因损坏	F) 更换
	G) 其它或者ESC故障	G) 检查ESC或者经销商
飞机难以控制	A) 飞行中遇到强风或者乱流	A) 无风的时候起飞
	B) 电池电量耗尽	B) 需要充电
	C) 发射机电量耗尽	C) 更换电池或者给电池充电
	D) 发射机天线没有完全展开	D) 展开发射机天线
	E) 舵面的控制过量	E) 使用小舵量进行飞行
飞行时机头一直向下，需要补偿升舵	A) 重心靠前	A) 参考说明书，向后调整重心
在没有控制发射机时，飞机总是向上、向下；或者飞机总是向左、向右倾斜	A) 没有对升降舵、副翼进行微调	A) 适当调节一些微调
	B) 飞行时遇到太大的自然风力	B) 先降落，选择无风天气飞行
飞行时升降舵异常灵敏，俯、仰不安定	A) 重心靠后	A) 参考说明书，向前调整重心
地面滑跑时方向会偏	A) 前轮没有居中	A) 居中前轮
	B) 方向舵没有居中	B) 居中方向舵
起飞困难	A) 油门没有推到最大	A) 油门推到最大
	B) 滑跑助飞距离不够	B) 尽可能滑跑得更远些
	C) 升舵舵量不够	C) 使用更大的舵量
飞机爬升困难	A) 电池电量不足	A) 需要重新充电
	B) 涵道风扇损坏	B) 确认并重新更换
	C) 电机损坏	C) 确认并重新更换
	D) 电调过热保护，功率降低	D) 先降落，确认并选择更大功率的电调
电流充电后发热	A) 电池充电时，会产生热量，这是正常的	A) 电流充电后，会发热，但用手触摸不烫
电机震动	A) 涵道风扇损坏	A) 确认并更换
	B) 马达损坏	B) 确认并更换
	C) 涵道需要调节动平衡	C) 调节动平衡
	D) 高速运转时，可能产生轻微震动	D) 轻微震动是正常的，可以使用
控制面向错误的方向运动	A) 舵机方向装反	A) 重新安装舵机



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