

Item No.:FJ207
Version No.:FJ207-V01

FreeWing MODEL
www.sz-freewing.com

Super Scorpion

80MM SPORT JET

USER MANUAL



Wingspan: 970mm (38.2 in)
Fuselage length: 1150mm (45.27 in)

EN	1 ~ 13
中	14 ~ 26



  
MADE IN CHINA

Thank you for purchasing the Freewing "Super Scorpion" Sport Jet. Originally designed by "Aviation Design", the famous French fiberglass jet design company. In 2014 Freewing teamed up with Aviation Design to produce the first foam version of this excellent design, the Super scorpion 80mm EDF jet. The result is an aircraft that has:

- Very stable flight characteristics. It can achieve slow gentle landings with full flaps.
- An excellent aerodynamic design, ensuring that the stunts can performed perfectly.
- Removable main wings, making it easy to transport.
- A powerful 12-bladed 80mm EDF power system, allowing for great high speed performance.
- A reliable landing gear design, suitable for the grass take-off/landing.
- Ball link clevis', for more precise control

"Super Scorpion" EDF sport jet will give you many hours of great flights!

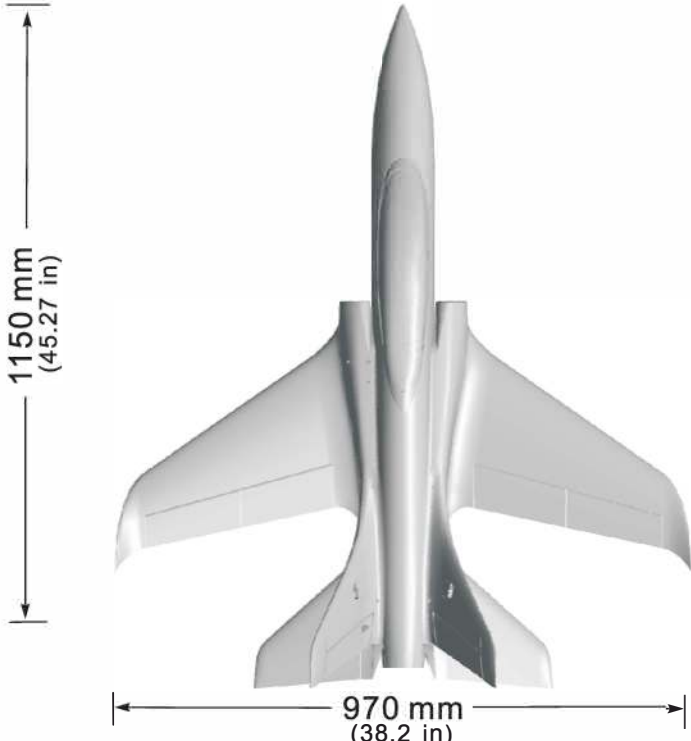
⚠ NOTE: This is not a toy. Not for children under 14 years. Young people under the age of 14 should only be permitted to operate this model under the instruction and supervision of an adult. Please keep these instructions for further reference after completing model assembly.

Note:

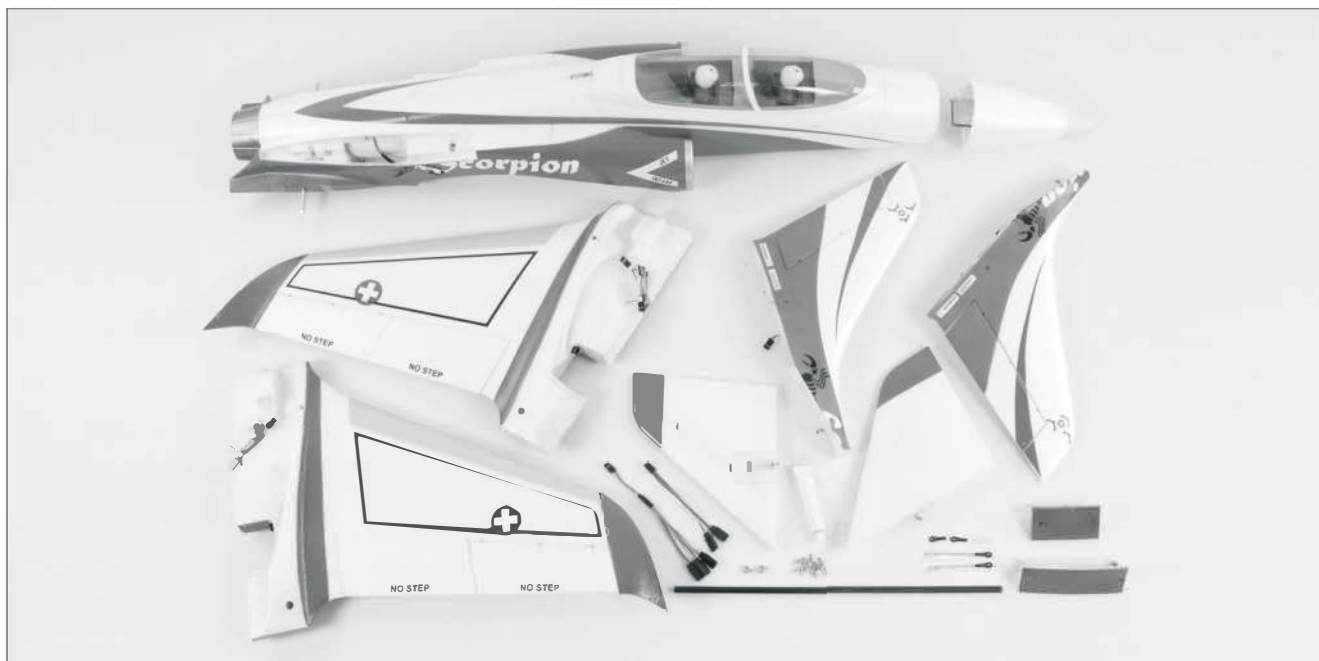
1. This is not a toy! Operators should have some basic experience. Beginners should operate only under the guidance of a professional instructor.
2. Before beginning assembly, please read through the instructions and carefully follow them throughout the build.
3. Freewing and it's vendors will not be held responsible for any losses due to improper assembly and operation.
4. Model airplane operators must be at least 14 years of age.
5. This airplane is made of EPO foam material, covered with surface spray paint. Don't use chemicals to clean as it may cause damage.
6. You should avoid flying in areas such as public places, areas with high voltage power lines, nearby highways, airports or in other areas where laws and regulations clearly prohibit flight.
7. Do not fly in bad weather conditions, including thunderstorms, snow, etc...
8. Lipo batteries should be properly stored in a fire proof container and be kept at a minimum of 2M distance away from flammable or explosive materials.
9. Damaged or scrap batteries must be properly discharged before disposal or recycling to avoid spontaneous combustion and fire.
10. At the Flying Field, properly dispose of any waste you have created, don't leave or burn your waste.. Ensure that your throttle is in the low position and that your radio is turned on before connecting the Lipo battery.
11. Ensure that the throttle is in the lowest position and transmitter is turned on, before connecting a Lipo Battery to the ESC of the aircraft.
12. Do not try to catch the airplane while in flight or during landing. Wait for the airplane to come to a complete stop before handling.

Index

Basic Product Information	2	Nose Gear Door Installation	7
Package List	2	Main Gear Installation	7
Wing Assembly and Installation	3	Servo Introduction	8
Elevator Assembly	3	Battery Installation	8
Elevator Installation	4	Power System Assembly and Installation	9
Rudder Assembly	4	Motor Parameters	9
Vertical Stabilizer Assembly	4	Center of Gravity	10
Nose Cone Installation	5	Surface Control Direction and Setup	11
Pushrod and Servo Information	5	Dual Rates	12
Nose Gear Assembly and Installation	6	Elevator Angle of Attack	12
Steering Servo Installation	6	Trouble Shooting Guide	13

 <p>1150 mm (45.27 in)</p> <p>970 mm (38.2 in)</p> <p>Note: The parameters stated here are derived from test results using our accessories. If you use other accessories, the test results will differ. We cannot provide technical support if you have a problem when using other accessories.</p>	<table border="1"> <tr> <td data-bbox="933 174 1013 593">6S Standard Version</td><td data-bbox="1013 174 1452 593"> <ul style="list-style-type: none"> ● Motor 3530-1750KV ● ESC 80A (5A BEC) ● Servo 9g (7pcs) 17g digital servo (2pcs) ● Battery 6S 22.2V 4000mAh 35C ● Ducted fans 12-Bladed 80mm EDF ● Take-off weight 2300g (81.1 oz.) ● Thrust 2600g (91.71 oz.) </td></tr> <tr> <td data-bbox="933 593 1013 985">6S Upgrade Version</td><td data-bbox="1013 593 1452 985"> <ul style="list-style-type: none"> ● Motor 3665-1750KV ● ESC 100A (5A BEC) ● Servo 9g (7pcs) 17g digital servo (2pcs) ● Battery 6S 22.2V 4000mAh 35C ● Ducted fans 12-Bladed 80mm EDF ● Take-off weight 2365g (83.4 oz.) ● Thrust 3100g (109.4 oz.) </td></tr> </table>	6S Standard Version	<ul style="list-style-type: none"> ● Motor 3530-1750KV ● ESC 80A (5A BEC) ● Servo 9g (7pcs) 17g digital servo (2pcs) ● Battery 6S 22.2V 4000mAh 35C ● Ducted fans 12-Bladed 80mm EDF ● Take-off weight 2300g (81.1 oz.) ● Thrust 2600g (91.71 oz.) 	6S Upgrade Version	<ul style="list-style-type: none"> ● Motor 3665-1750KV ● ESC 100A (5A BEC) ● Servo 9g (7pcs) 17g digital servo (2pcs) ● Battery 6S 22.2V 4000mAh 35C ● Ducted fans 12-Bladed 80mm EDF ● Take-off weight 2365g (83.4 oz.) ● Thrust 3100g (109.4 oz.)
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Package List



Different types of kits will come with certain specific parts. Refer to the list of parts for your type of kit in the chart below.

PNP equipment list

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

KIT equipment list

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

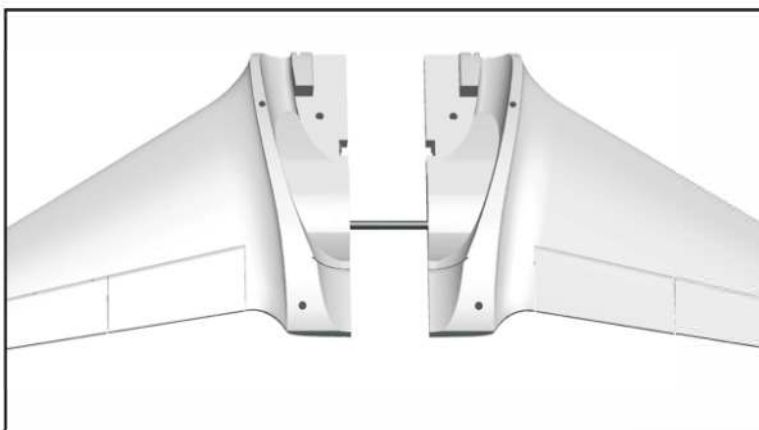
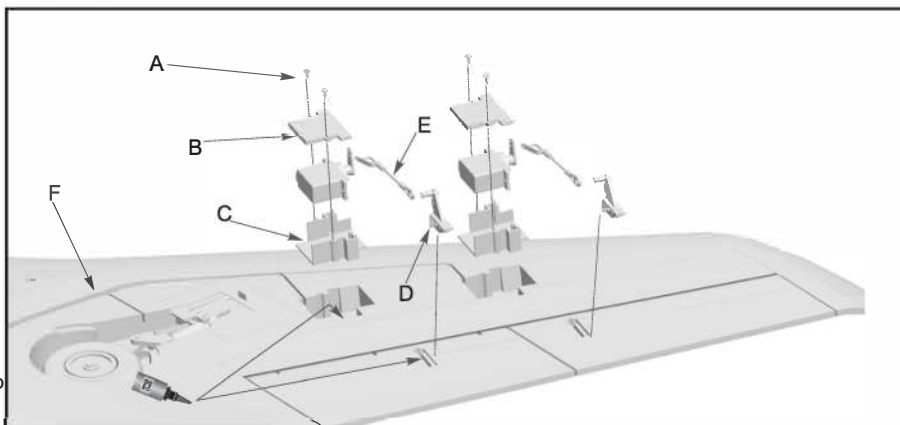
Super Scorpion

Item No.: FJ207
Version No.: FJ207-V01

Wing Servo Installation

- A- Screws (PWA1.7x5mm)
- B- 9g servo cover
- C- 9g servo box
- D- Surface control horns
- E- Pushrod
- F- Trough

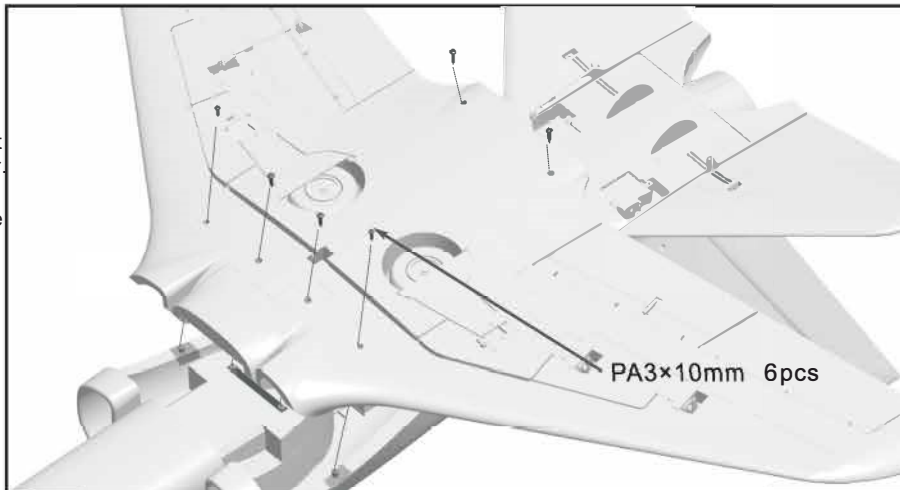
- 1.As shown in the photo, use glue to attach the "9g servo box (C)" and "control surface horns (D)" to the main wing.
- 2.Put the 9g servo in the "9g servo box (C)", and press the servo cable into the "main wing trough (F)".
- 3.Place the "servo cover (B)" over the 9g servo box (C)", and secure it with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



Main Wing Installation

- 1.As shown in the photos above, remove the wooden piece and apply glue to the side of the left wing.
- 2.Insert the carbon fiber tube into the left and right wings, and push them together.
- 3.As shown in the photo to the right, use the 6 screws to secure the main wing to the fuselage.

Carbon Fiber tube size:
 Ø8×350mm
 Tube thickness=1mm

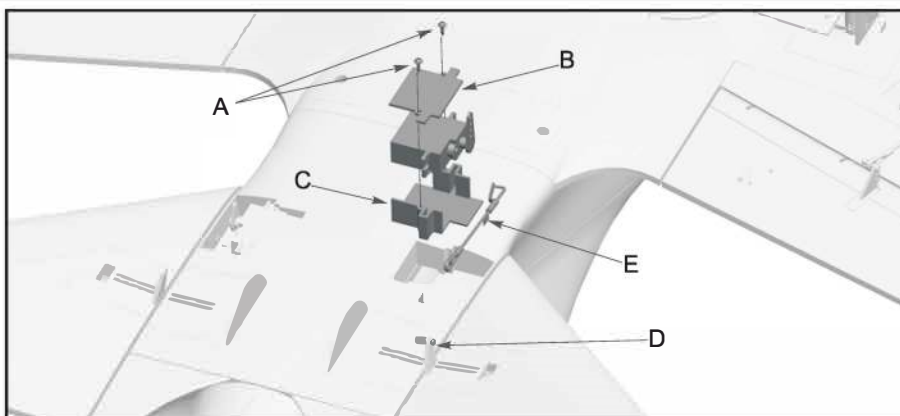


Elevator Assembly

Installing the Elevator Servo

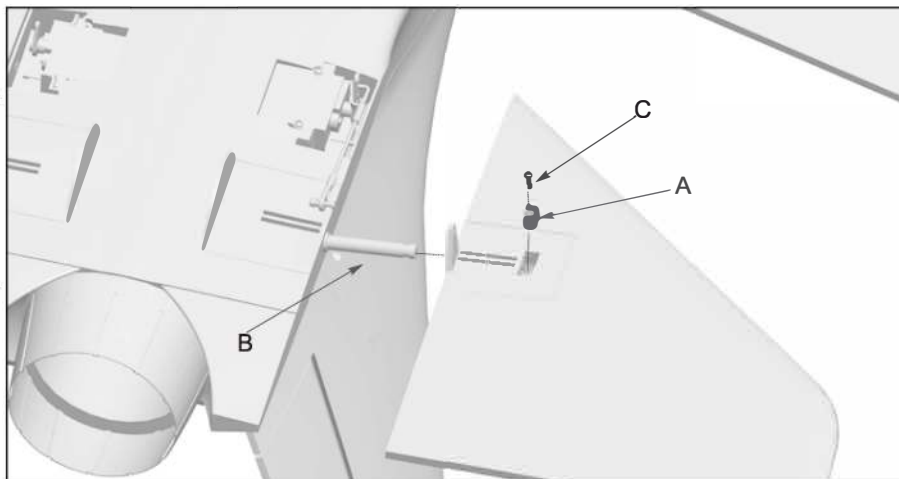
- A-Screws (PWA1.7x5mm)
- B- 9g servo cover
- C- 9g servo box
- D-Surface control horn E - Pushrod

1. As shown in the photo to the right, use glue to attach the "9g servo box (C)" to the fuselage and the "elevator control horn (D)" to the elevator.
2. Place the 9g servo in the "9g servo box (C)". Place the "servo cover (B)" over the "9g servo box (C)", and secure it with 2 "screws (A)".
3. Use "pushrod (E)" to connect the servo arm to the elevator control horn.
4. Adjust the clevis to center the Elevator.



- A- Metal collar**
B- Full elevator rotating shaft
C- Screws (PM2x4mm 2pcs)

1. Put the "Metal collar (A)" into the elevator groove.
2. Slide the elevator onto the "Elevator rotational shaft (B)".
3. Use the "Screw (C)" to secure the "Metal collar(A)" to the "Elevator rotational shaft (B)".

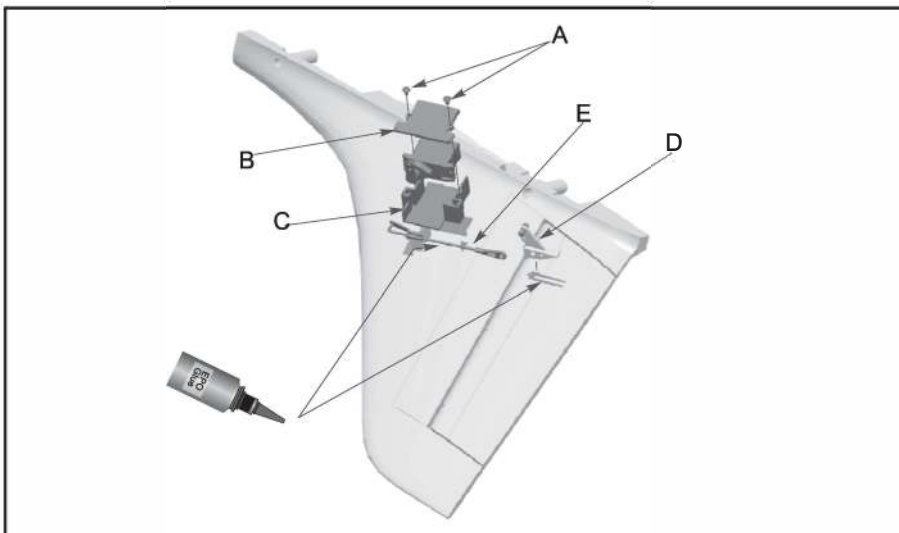


Rudder Assembly

Rudder Servo Installation

- A- Screw (PWA1.7x5mm)**
B - 9g servo cover
C - 9g servo box
D - Surface control horn
E - Rudder pushrod

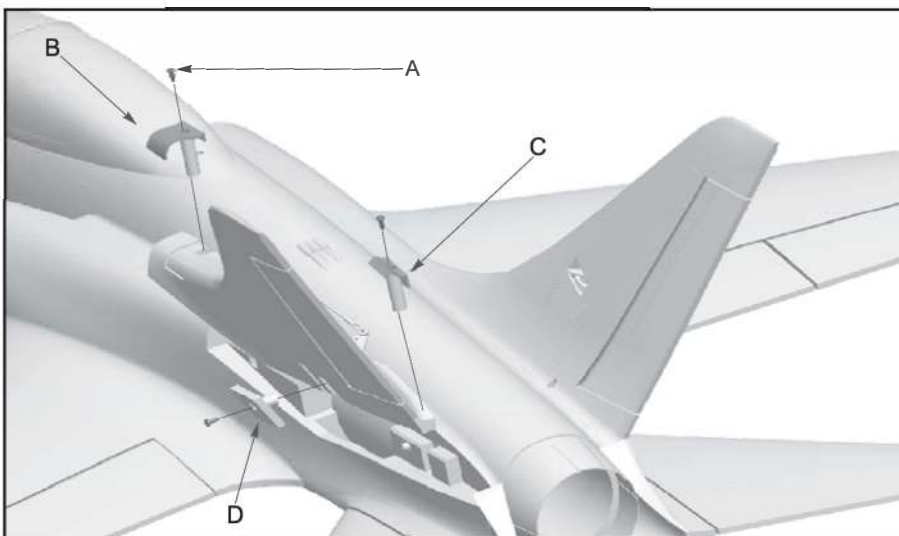
1. Use a radio or a servo tester to center the servo.
2. Use the glue to attach the "9g servo box (C)" and the "Rudder control horn (D)" to the rudder.
3. Place the 9g servo into the "9g servo box (C)".
4. Place the "9g servo cover over the "9g servo box and secure it using 2 "Screws (A)".
5. Use the rudder control rod to connect the "Surface control horn (D)" and the servo control arm.



Vertical Stabilizers Installation

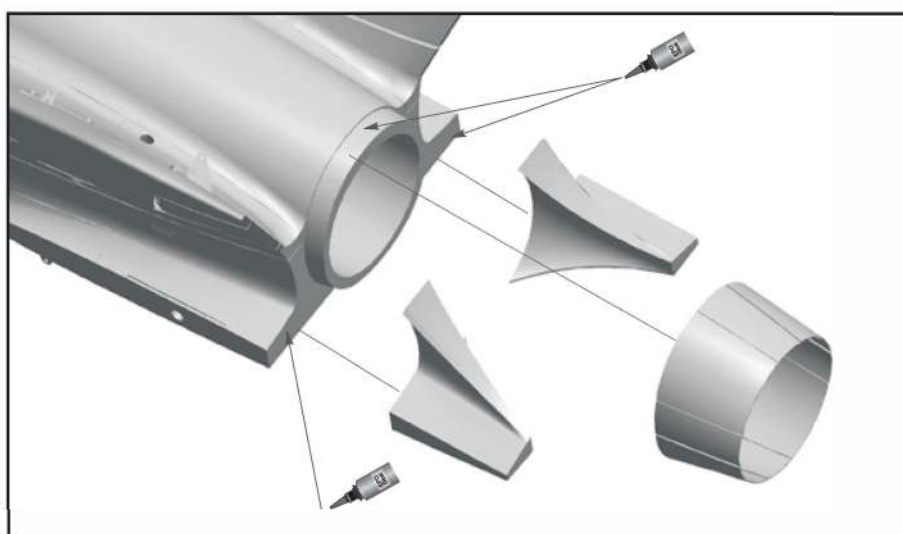
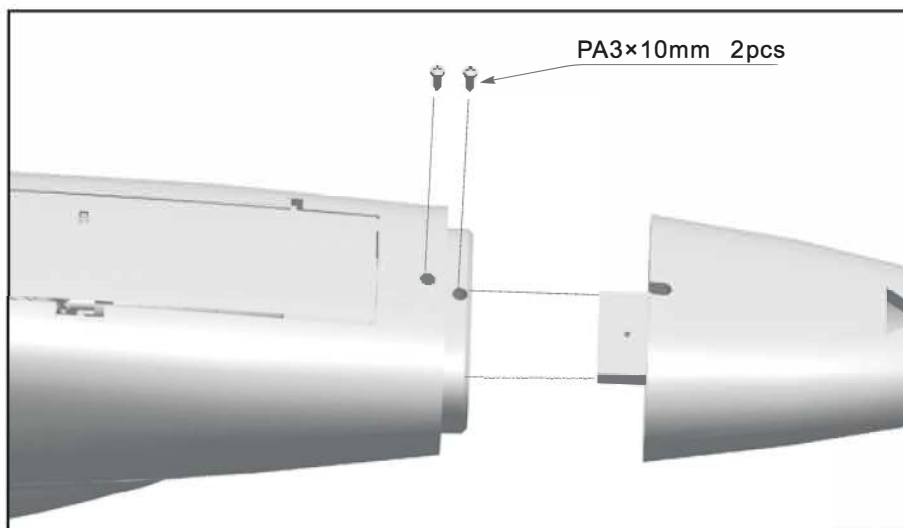
- A-Screws (PA3x1Qmm 6pcs)**
B -Fixed rudder plastic part (LF)
C -Fixed rudder plastic part (LR)
D -Fixed rudder plastic part (LL)

1. As shown in the photo to the right, secure the vertical stabilizers to the fuselage using the plastic reinforcement pieces "B), (C) and (D)", three screws per side.

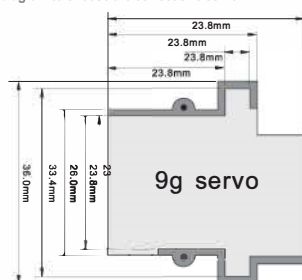


A- Screws (PA3x10mm)

1. As shown in the photo to the right, use the 2 screws to secure the nose cone.
2. Apply a small amount of glue to attach the tail cone pieces.



Note: We have installed all the servo boxes at the factory so that when you remove a servo, it will not damage the foam surface. If you need to replace a servo, please purchase a Freewing servo or refer to the following diagram to choose the correct size servo.



Aileron pushrod size



Pushrod diameter : Ø 1.5mm

Flap pushrod size



Pushrod diameter : Ø 1.5mm

Elevator pushrod size



Pushrod diameter : Ø 1.5mm

Rudder pushrod size



Pushrod diameter : Ø 1.5mm

Aileron pushrod mounting hole



Flap pushrod mounting hole



Elevator pushrod mounting hole

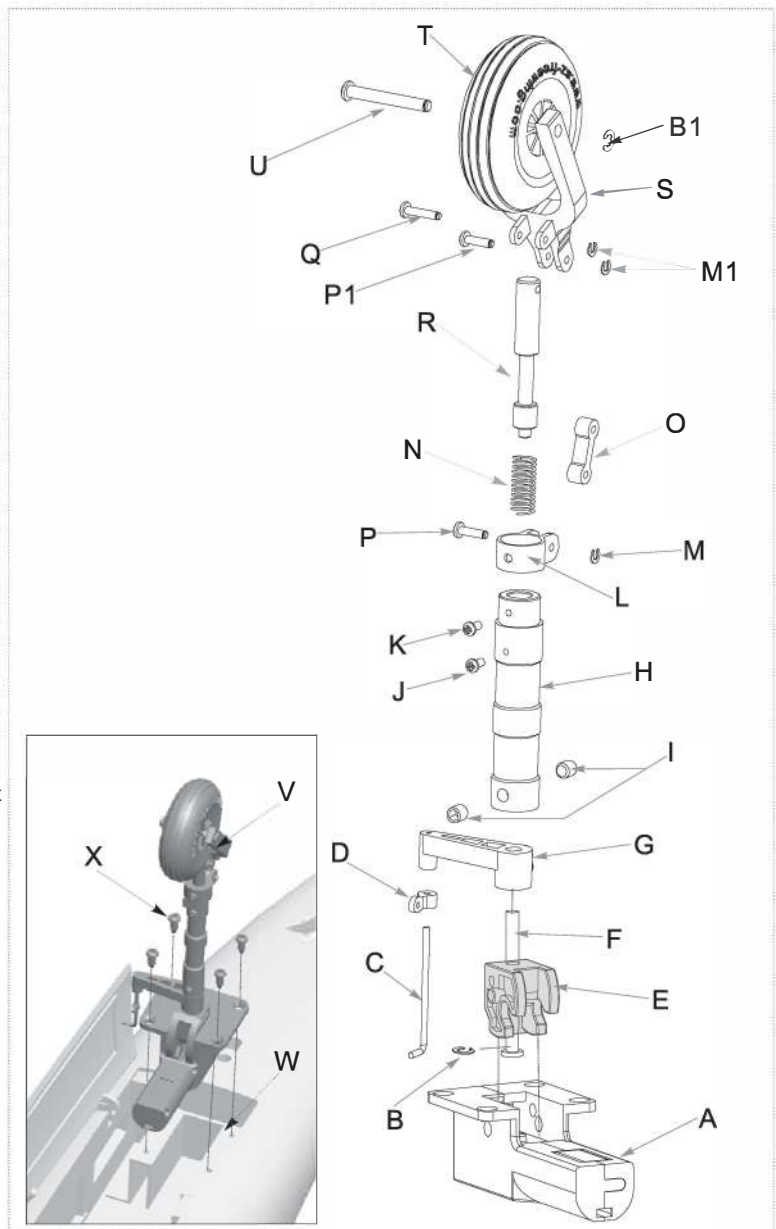


Rudder pushrod mounting hole



- A- Landing gear electric retract
- B- E-clip (02.0mm pcs)
- C- Nose gear steering pushrod
- D- Nose gear steering control ring
- E- Landing gear trunion
- F- Attachment Pin
- G- Steering tiller
- H- Nose gear strut
- I- Grub screw (M4*4mm 2pcs)
- J- Screw (PM2*4mm 1 pc)
- K- Screw (PM2*3mm 1 pc)
- L- Dampening arm collar
- M- E-clip (01.5mm 3pcs)
- N- Spring
- O- "8" shaped dampening arm
- P- Pin (2 pcs)
- Q- Pin
- R- Piston/lower strut
- S- Wheel strut
- T- Wheel
- U- Wheel shaft
- V- Assembled nose gear set
- W- Gear mount hard point
- X- Screws (PWA3*12mm 4 pcs)

1. Start by inserting the "Nose gear attachment pin(F)" into the "Landing gear Trunion (E)", and snap the "E-clip(B)" to the "Nose gear Attachment Pin (F)" to secure it
2. Put the "Nose gear steering control ring (D)" in the "Nose gear steering pushrod (C)", thread a screw to the side of the "Steering tiller (G)" to secure the "Nose gear steering pushrod (C)" in place.
3. Place the assembled "Steering tiller (G)" onto the "Landing gear attachment pin (F)" and secure it with a screw.
4. Next, place the "Nose gear strut (H)" onto the "Nose gear attachment pin (F)" and secure it using 2 "Grub screws (I)".
5. Put the "Spring (N)" in the "Nose gear strut (H)", then insert the "Piston/lower strut (R)" into the "Nose gear strut (H)". Press down on the "Piston/lower strut (R)" and lock it in place using "Screw (J)" through the "Nose gear strut (H)".
6. Place the "Dampening arm collar (L)" on the "Nose gear strut (H)" and secure it with "Screw (K)".
7. Use "Pin (P)" and "E clip (M)" to secure the "Wheel strut (S)" to the "Piston/lower strut (R)", then use the "8 shaped dampening arm (O)", "Pin (P)" and "E-clip (M)" to connect the "Wheel strut (S)" to the "Dampening arm collar (L)".
8. Use "Wheel shaft (U)" and E-clip (B)" to attach the "Wheel (T)" to the "Wheel strut (S)".
9. Place the "Assembled nose gear set (V)" onto the "Gear mount hard point (W)" and secure it with 4 "screws (X)".



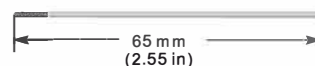
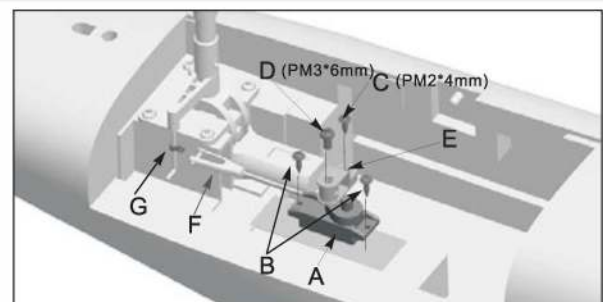
Note: When installing, please check the flat position of the part when locking the grub screw down. The flat position must face the Grub screw in order for it to lock. Ensure this is done properly, the part may come off if it isn't locked

Steering Servo Installation

Accessories List

- A- 9g servo
- B- Screws (PWA2*8mm 2 pcs)
- C- Screw (PM2*4mm)
- D- Screw (PM3*6mm)
- E- Servo arm
- F- Pushrod
- G- Nose gear steering control ring

1. Place the "Servo (A)" onto the wooden deck, use "Screws (B)" to secure it.
2. Install the "Servo arm (E)" on the "Servo (A)" and use "Screw (C)" to secure it.
3. Snap the clevis of the "Pushrod (F)" to the "Nose gear steering control ring (G)" and insert the other end through the eye of the "Servo arm (E)", then center the nose wheel.
4. Use "Screw (D)" to lock the pushrod to the servo control arm.



Pushrod diameter : Ø 1.2mm

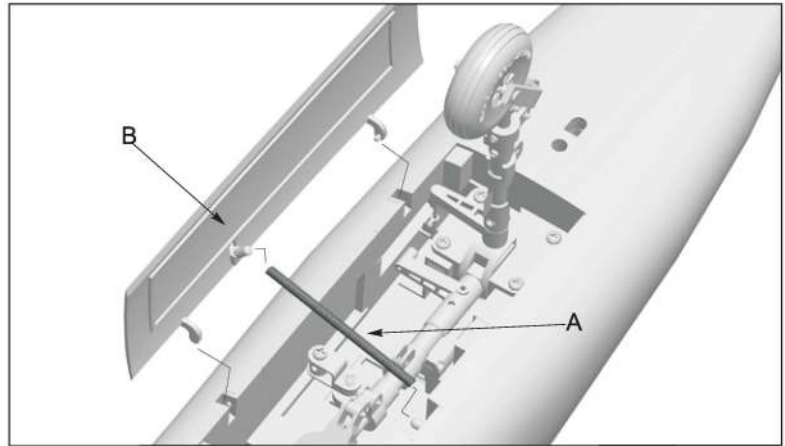


Accessories list

A-Spring

B-Nose cabin door

- 1.As shown in the photo to the right, snap the "Nose gear door (B)" to the fuselage.
- 2.Connect the "Spring (A)".



Main Gear Installation

Accessories list

A-Electric Retract

B-Attachment pin

C-Main gear upper strut

D-Main gear slant supporting rod

E-Main gear lower strut

F-Spring

G-Wheel shaft

H-Wheel

I - Pin

J-E-clip (Ø1.5mm)

K-Grub screw (M3x3mm)

L-Grub screws (M4x3mm 4pcs)

M-Screws (PM3x4mm 2pcs)

N-Screws (KA3x12mm 4 pcs)

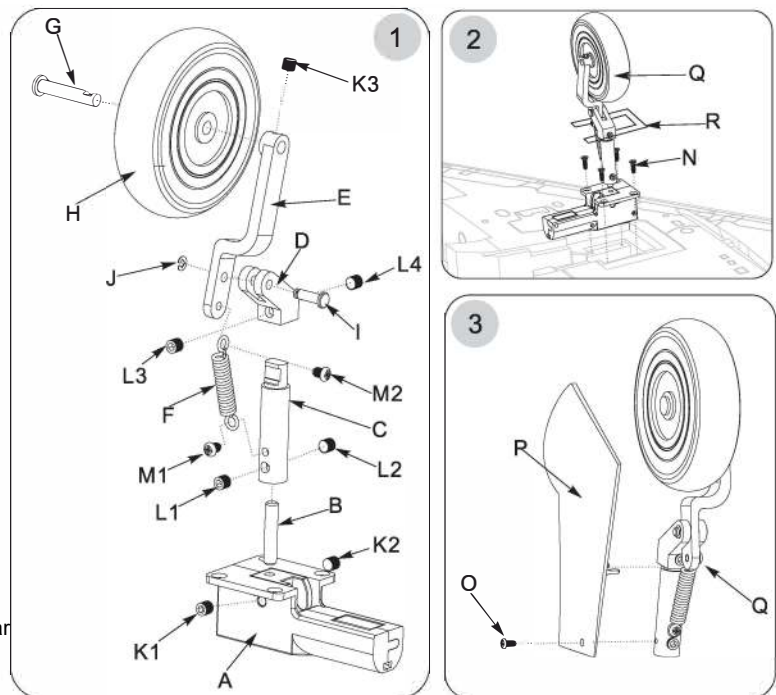
O-Screw (PM2x4mm)

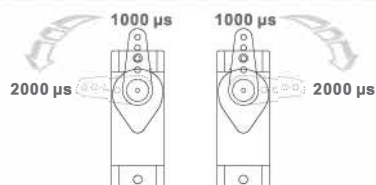
P-Main gear door

R-Landing gear

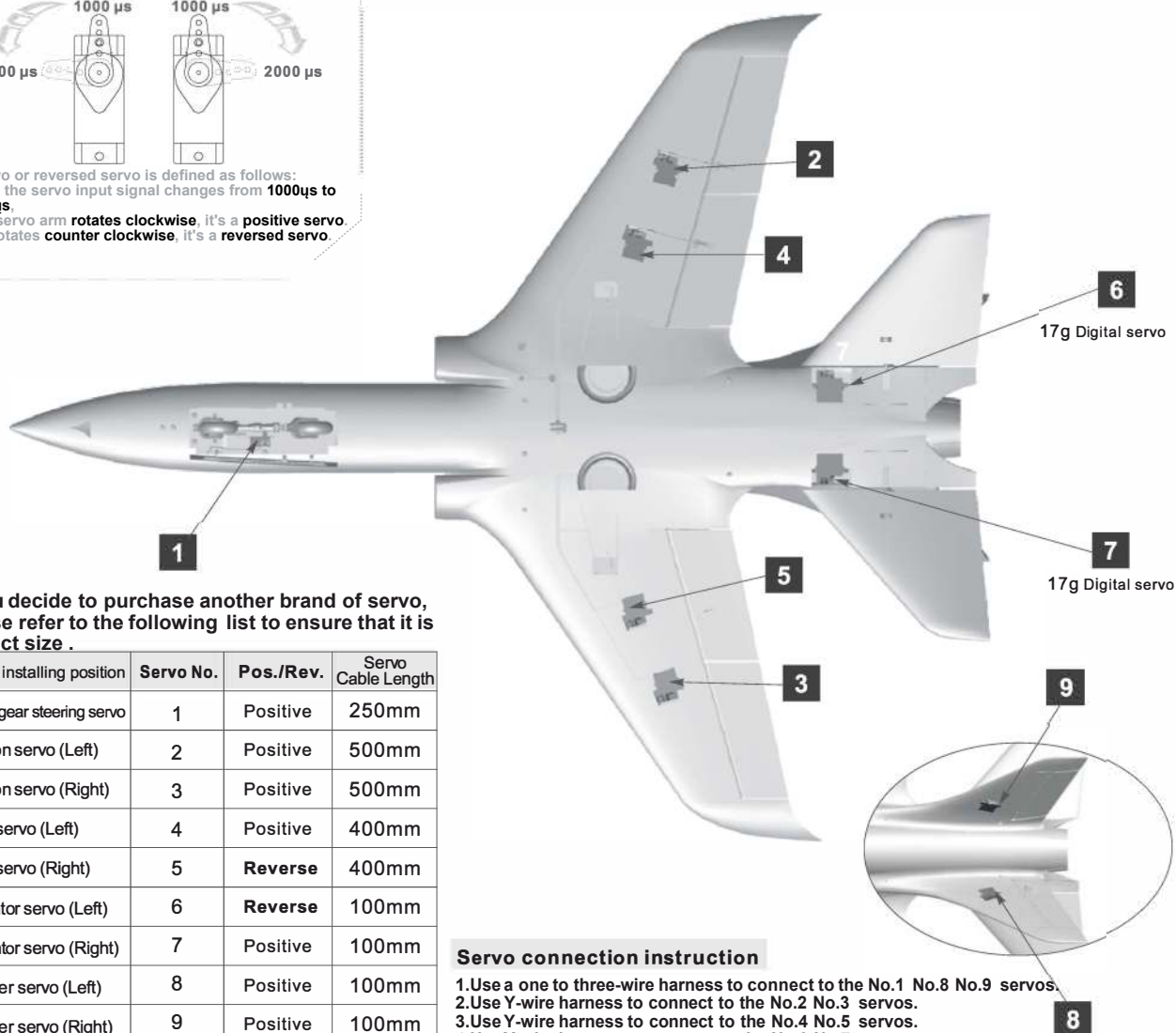
R-Landing gear decal

1. Insert the "Attachment pin(B)"into the Electric retract(A)"and use 2 "Grub screws(K)" to secure it.
2. Put the "Main gear upper strut(C)"on the "Attachment pin(B)"and use 2 "Grub screws (L)" to secure it.
3. Put the "Main gear slant supporting rod(D)"on the end of the "Main gear upper strut(C)"and use 2 "Grub screws (L)" to secure it.
4. Use "Pin(I)" and "E-clip(J)"to connect the "Main gear slant supporting rod(D)"to the "Main gear lower strut(E)".
5. Use 2 "screws(M)"to attach both ends of the "Spring(F)"to the "Main gear slant supporting rod(D)"and the "Main gear upper strut(C)".
6. Insert the "Wheel shaft(G)"into the "Wheel(H)"and then into the hole in the " Main gear lower strut(E)"then use "grub screw(K)" to secure the "Wheel shaft(G)" to the Main gear lower strut(E)".
7. Place the assembled "Main landing gear(Q)"in to the landing gear hard point and use 4 "Screws(N)" to secure it to the main wing.
8. Feed the wires through the wire trough.
9. Use 1 "Screw(O)"to mount the landing gear door to the "Main gear slant supporting rod(D)".
10. Use glue to attach the "Landing gear decal(R)"to the main wing as shown.





A servo or reversed servo is defined as follows:
When the servo input signal changes from 1000µs to 2000µs,
if the servo arm rotates clockwise, it's a **positive servo**.
If it rotates counter clockwise, it's a **reversed servo**.



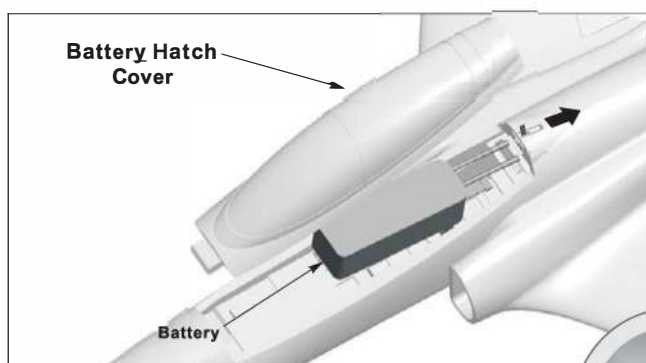
If you decide to purchase another brand of servo, please refer to the following list to ensure that it is correct size .

Servo installing position	Servo No.	Pos./Rev.	Servo Cable Length
Nose gear steering servo	1	Positive	250mm
Aileron servo (Left)	2	Positive	500mm
Aileron servo (Right)	3	Positive	500mm
Flap servo (Left)	4	Positive	400mm
Flap servo (Right)	5	Reverse	400mm
Elevator servo (Left)	6	Reverse	100mm
Elevator servo (Right)	7	Positive	100mm
Rudder servo (Left)	8	Positive	100mm
Rudder servo (Right)	9	Positive	100mm

Servo connection instruction

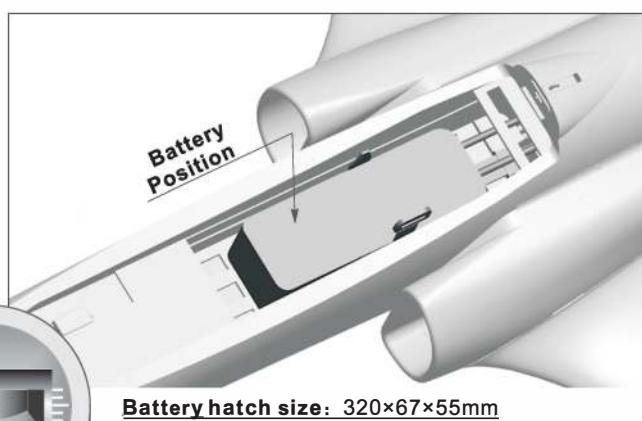
1. Use a one to three-wire harness to connect to the No.1 No.8 No.9 servos.
2. Use Y-wire harness to connect to the No.2 No.3 servos.
3. Use Y-wire harness to connect to the No.4 No.5 servos.
4. Use Y-wire harness to connect to the No.6 No.7 servos.

Battery Installation



Ensure that the receiver is bound to the radio!
Follow the instructions in your radio manual.

Push back the lever to release the Battery Hatch cover. Place the battery on the deck and secure it with the Velcro strap.
Power up the radio, check to ensure that the throttle is in the lowest position.
Engage the kill switch if one is assigned.



Battery hatch size: 320×67×55mm

Our standard battery is:

6S 22.2V 4000mAh 35C

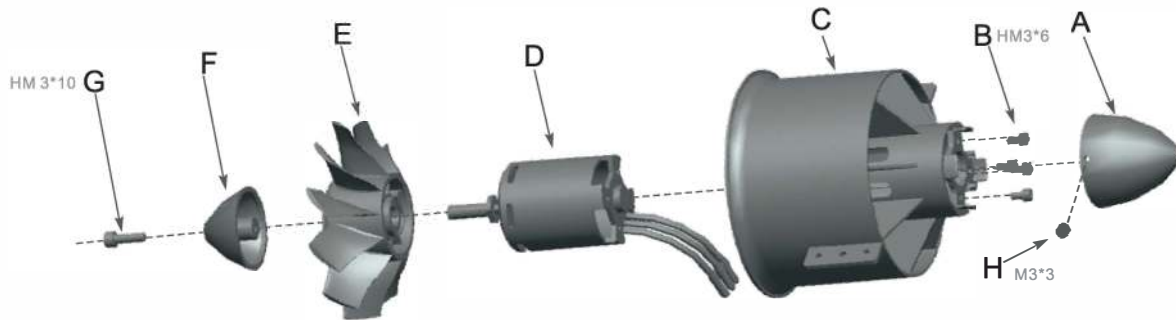
The recommended battery capacity and discharge rate advised is :

6S 22.2V 3700mAh ~ 6S 22.2V 5000mAh

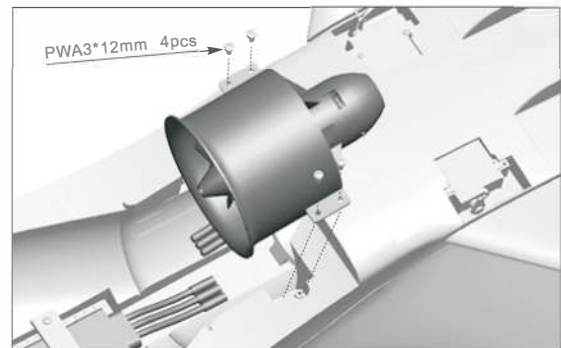
Discharge rate of C ≥ 30C

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

1. Install the "motor (D)" inside the "ducted fan housing (C)".
2. Secure the motor with 4 "cup head screws (B)".
3. Put the "rotor (E)" on 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 secure the "spinner (F)" with a "cup-head-screw (G)".
5. Install the "tail air-deflector (A)" to the "bottom of the ducted fan housing (C)", and use "Grub screws (H)" to secure.



⚠ Note: When the battery and ESC are connected, do not touch them to avoid accidental serious injury. Use a safety test stand while testing. Do not place your hands near the unit!

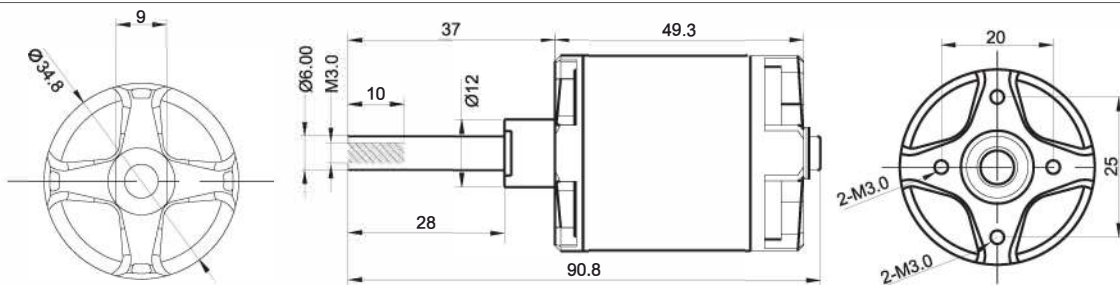


Motor Parameters

MOJ35301

3530-1750KV

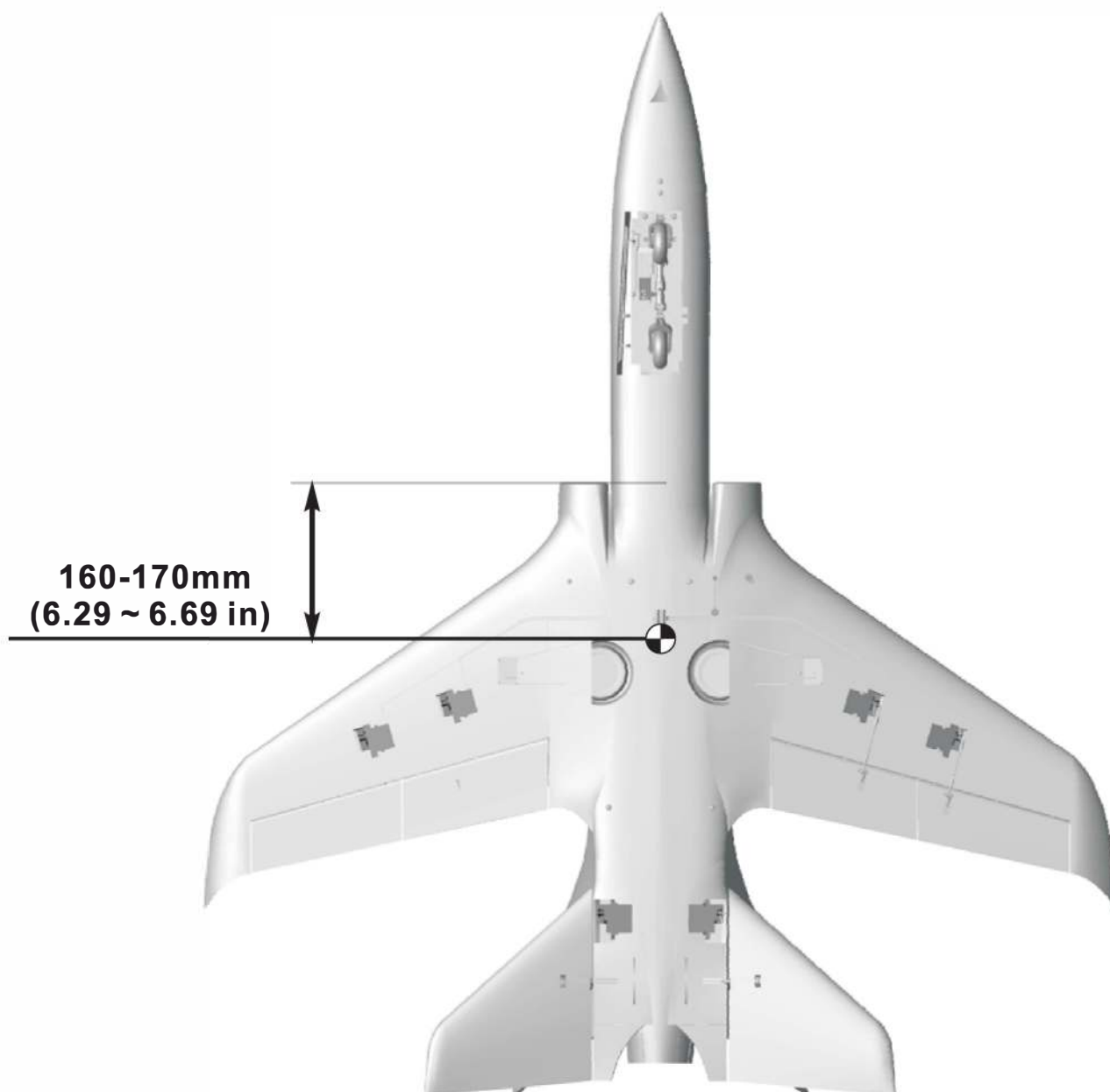
For 6S Battery Upgrade Version



Item No.	KV Value	Voltage (V)	Current (A)	Thrust (g)	Motor Resistance	Weight (g)	No Load Current	Propeller	ESC
MOJ35301	1750RPM/V	22.2	72	2600	0.0146Ω	150	4.6A/23V	12-Bladed 80mm Ducted Fan	≥ 80A

The correct Center of Gravity is directly related to the success of the initial flights. Refer to the following diagram to ensure you have the proper CG. Once comfortable with the airplane, you can adjust the CG to suit your individual taste.

You can adjust the CG by moving the battery either forward or back. If you find that moving the battery is insufficient, you can use some other suitable material such as a sticky back weight strip to counter weight.



After the airplane is assembled, but before flying, power up the radio. ensure that the throttle is in the lowest position and engage the kill switch if one is assigned. Connect a fully charged battery to the ESC, then use radio to test and check that every control surface is moving in the correct direction.

Ailerons

Stick Left



Stick Right



Elevator

Stick Back



Stick Forward



Rudders

Stick Left



Stick Right



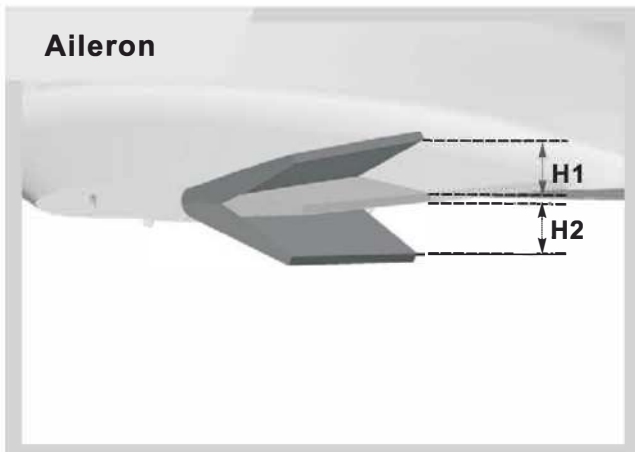
Optional Flaps

Flaps Down

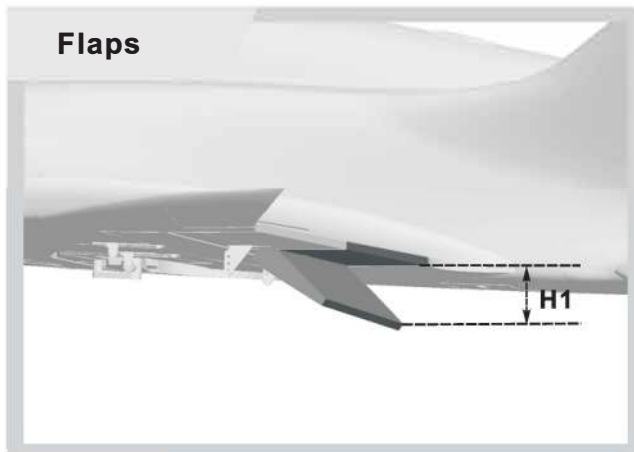


According to our test results, the following rates proved to be a good starting point. Low rates are good for initial flights or less experienced pilots. High Rates will be more sensitive to control inputs. After initial flights, adjust the rates to suit your own style.

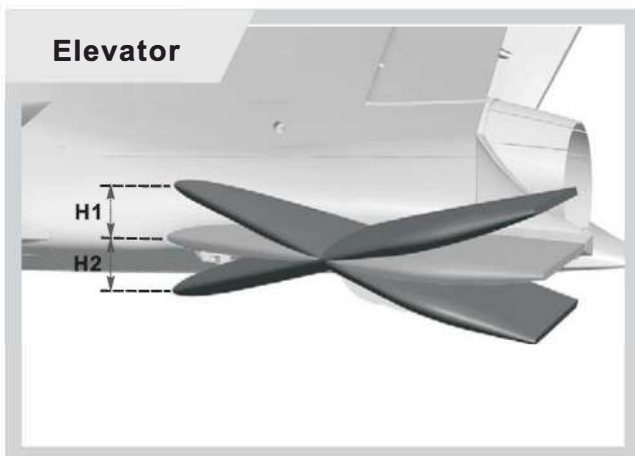
Aileron



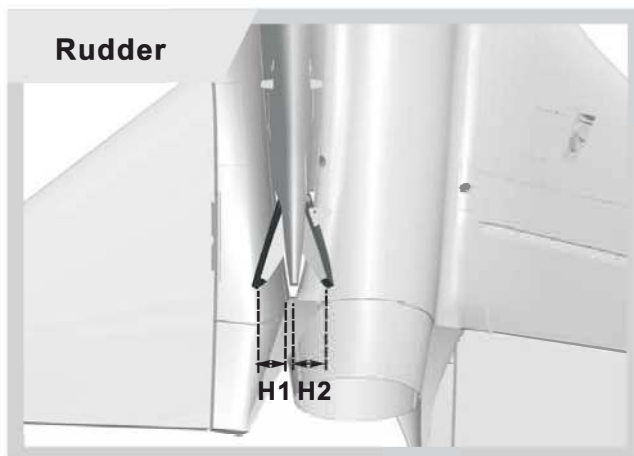
Flaps



Elevator



Rudder



	Aileron	Flaps	Elevator	Rudder
Low Rate	H1/H2 14mm/14mm	H1 25mm	H1/H2 19mm/19mm	H1/H2 12mm/12mm
High Rate	H1/H2 20mm/20mm	H1 40mm	H1/H2 28mm/28mm	H1/H2 19mm/19mm

Elevator angle of Attack



Note:


Correct elevator angle of attack is very important for successful flights. Refer to the photo at the left to ensure the correct elevator angle of attack.

Motor does not start	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
Aircraft 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
Airplane flies nose heavy needing back elevator	A) CG is forward	A) Adjust CG backward refer to instruction
Airplane 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 sensitive, unstable vertically	A) CG is backward	A) Adjust CG forward refer to instruction
Airplane does not taxi straight	A) Nose gear is not center.	A) Center nose gear
	B) Rudder is not center.	B) Center rudder
Airplane will not climb	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
Airplane has weak thrust, no power	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 then, check and select a more powerful ESC
Li-po battery is slightly warm after flight	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 balanced	C) Adjust the ducted fan balance
	D) At high speed the motor will vibrate slightly	D) Its normal to use
Control surface moves in the wrong direction	A) Servo direction is reversed	A) Adjust the servo reversing function in the radio

感谢您购买和使用“超级天蝎”运动模型飞机。“超级天蝎”运动模型飞机，是由法国著名的玻璃钢涡喷模型飞机设计公司“Aviation Design”，设计出来的一款优秀的运动飞机。在2014年，我们同“Aviation Design”一起，推出这一款模型的泡沫版本---80mm“超级天蝎”电动涵道飞机：

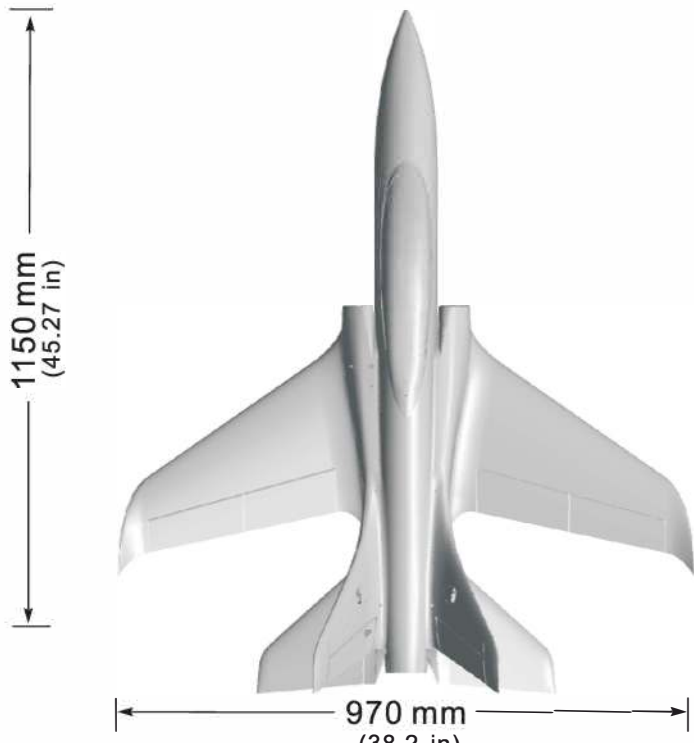
- 飞行过程中，飞机的姿态稳定性非常好，打开襟翼后，可以实现慢速、轻柔的降落；
- 优秀的气动性设计，保障特技动作能够完美的完成；
- 可拆机翼设计，方便携带；
- 动力充沛的12叶80mm动力系统，带来极速体验；
- 可靠的起落架设计，将更加适合草地起、降；
- 采用更可靠，更加精密的舵面球头连接机构；

“超级天蝎”运动模型飞机,将带给您非常满意的飞行体验！

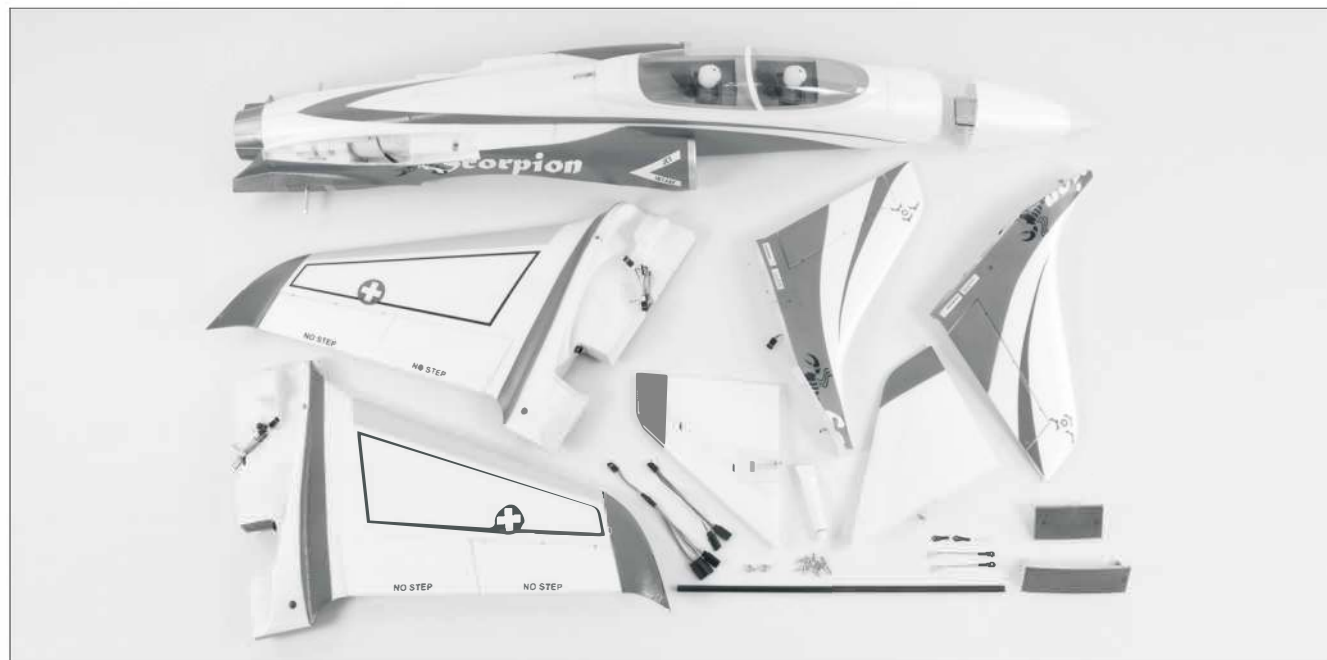
 注意：模型产品是具有一定危险性的产品，请禁止14岁以下的儿童玩耍，14岁以上的儿童，请在有飞行经验的成人指导下使用，无飞行经验的购买者，应当在具有一定电动涵道飞机飞行经验的成人指导下使用！组装模型前，请仔细阅读说明书，按照说明书的要求进行安装。进行调试和飞行时，请根据说明书指示的参数进行调整。

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、将不负任何法律责任！
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！

 <p>1150 mm (45.27 in)</p> <p>970 mm (38.2 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"> 电机 3530- 1750KV 电调 80A 无刷电调 (5A BEC) 舵机 9g 模拟舵机 (7pcs) 17g 数字舵机 (2pcs) 电池 6S 22.2V 4000mAh 35C 涵道风扇 12叶 80mm涵道 起飞重量 2300 g (81.1oz.) 推力 2600g (91.71 oz.)
	<p>升级版</p> <ul style="list-style-type: none"> 电机 3665- 1750KV 电调 100A 无刷电调 (5A BEC) 舵机 9g 模拟舵机 (7pcs) 17g 模拟舵机 (2pcs) 电池 6S 22.2V 4000mAh 35C 涵道风扇 12叶 80mm涵道 起飞重量 2365 g (83.4oz.) 推力 3100g (109.4 oz.)

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

Super Scorpion

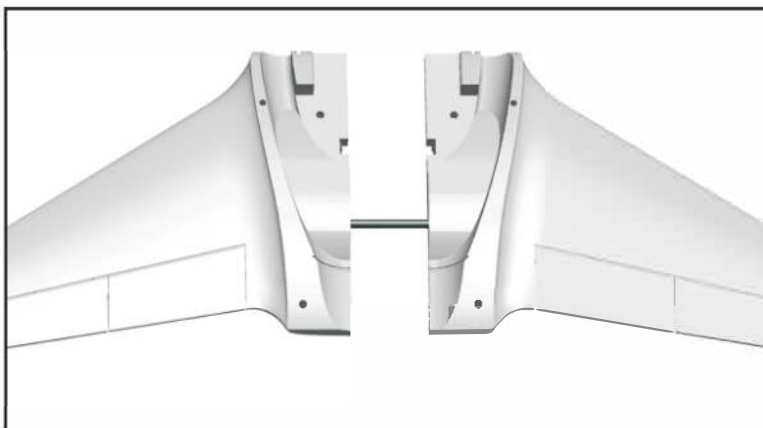
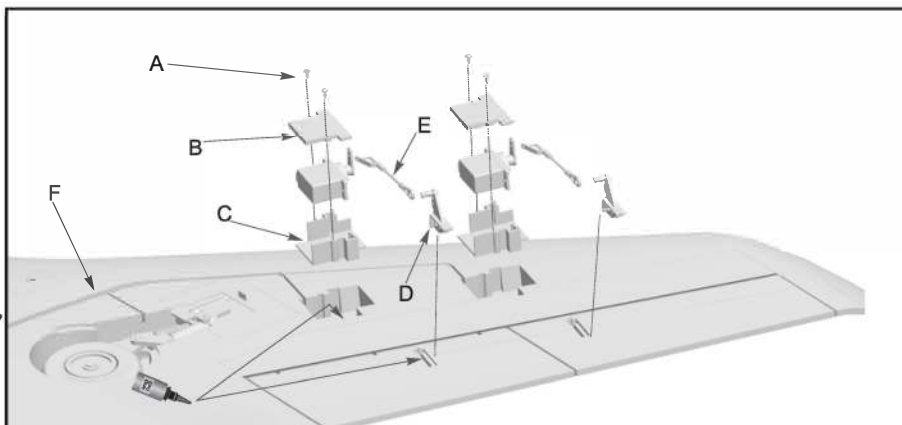
Item No.: FJ207
Version No.: FJ207-V01

主翼舵机安装

- A- 螺丝 (PWA1.7*5mm)
 B- 9g舵机盖
 C- 9g舵机盒
 D- 舵面摇臂
 E- 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“主翼舵机控制钢丝(E)”连接舵机摇臂与“舵面摇臂(D)”。

通过调整钢丝长短距离, 使主翼舵面处于居中位置!

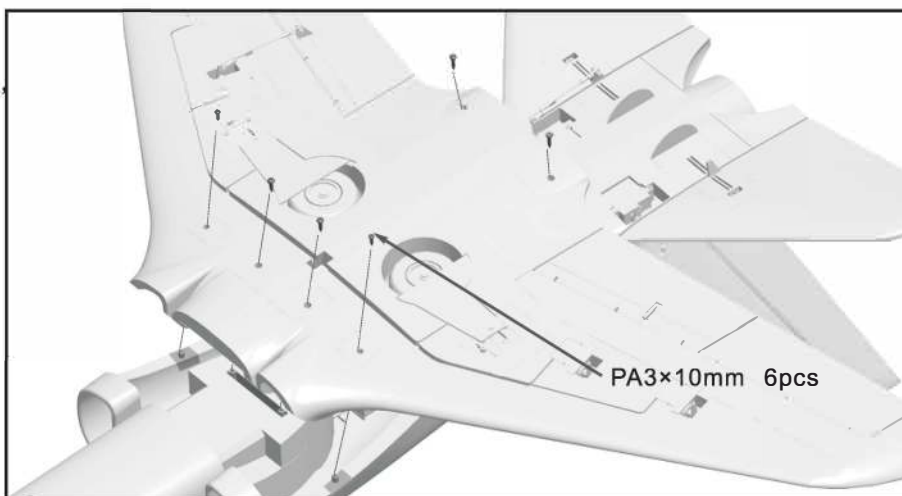


主翼安装

1. 如上图所示, 取出附件包中的木片, 用胶水粘在左主翼的侧面;
2. 将碳纤管插入, 左、右主翼, 合拢左、右主翼;
3. 如右图所示, 用螺丝将主翼固定在机身上;

碳纤管尺寸:

Ø8×350mm 壁厚=1mm

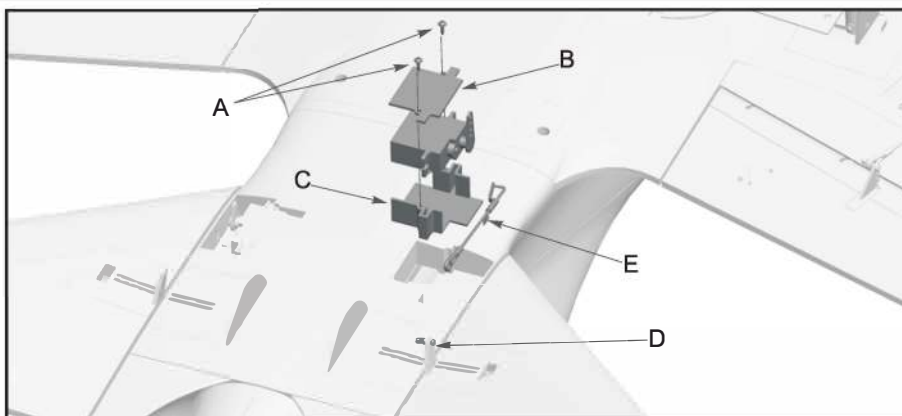


平尾安装

平尾舵机安装

- A- 螺丝 (PWA1.7*5mm)
 B- 17g舵机盖
 C- 17g舵机盒
 D- 舵面摇臂
 E- 平尾舵机控制钢丝

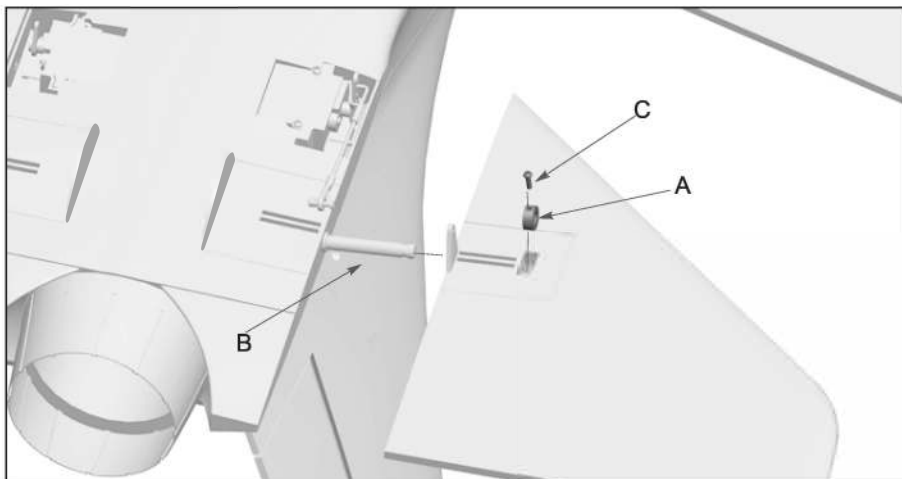
1. 通过舵机测试仪或者遥控器, 把舵机摇臂校正到居中位置;
2. 用胶水把“17g舵机盒(C)”和“舵面摇臂(D)”粘在主翼上;
3. 把舵机安装到“17g舵机盒(C)”内, 然后盖上“17g舵机盖”, 最后用2颗“螺丝(A)”锁紧固定;
4. 用“平尾舵机控制钢丝(E)”连接舵机摇臂与“舵面摇臂(D)”;



平尾安装

- A- 金属固定圈
B- 全动平尾旋转轴
C- 螺丝 (PM2×4mm 2pcs)

1. 首先将“金属固定圈 (A)”放置到平尾上的凹槽内，接下来，平尾直接套入“全动平尾旋转轴 (B)”上，最后用“螺丝 (C)”从“金属固定圈 (A)”上拧入固定平尾；

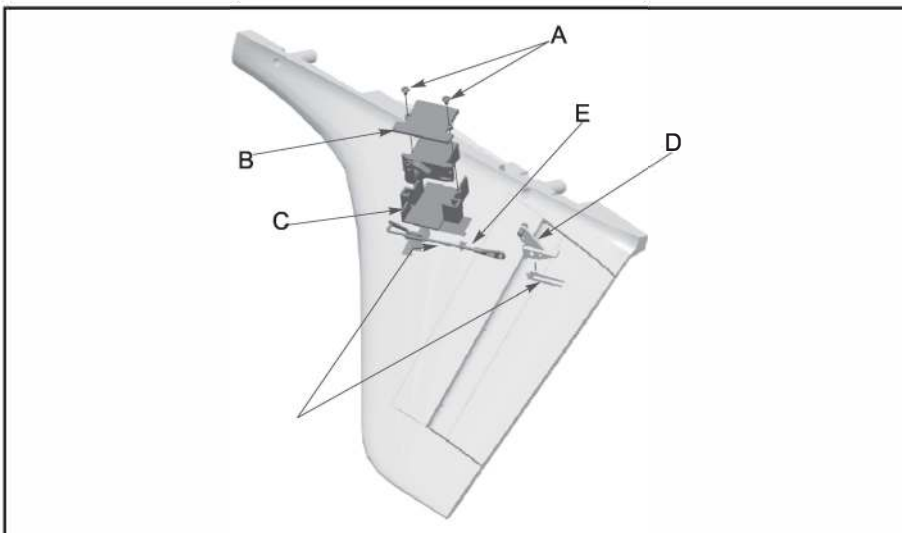


垂尾组装

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

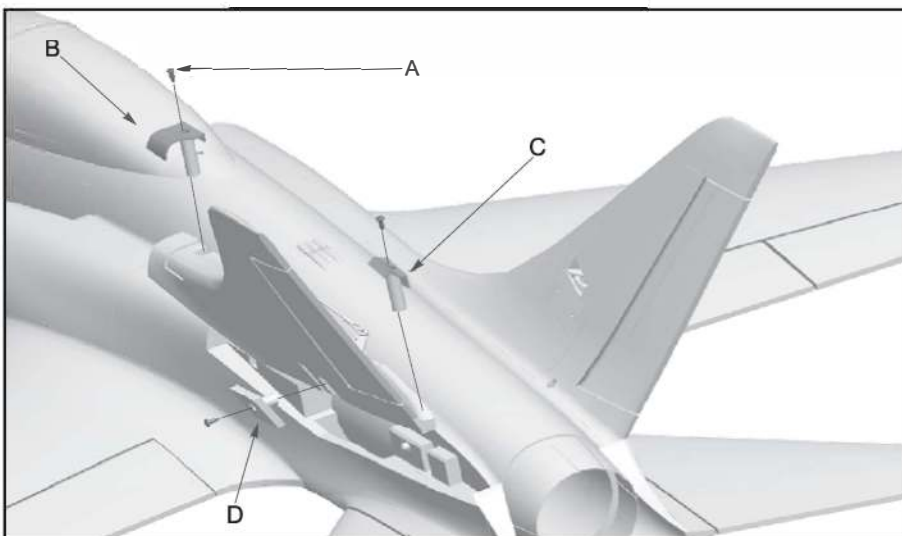
1. 通过舵机测试仪或者遥控器，把舵机摇臂校正到居中位置；
2. 用胶水把“9g舵机盒 (C)”和“舵面摇臂 (D)”粘在主翼上；
3. 把舵机安装到“9g舵机盒 (C)”内，然后盖上“9g舵机盖”，最后用2颗“螺丝 (A)”锁紧固定；
4. 用“垂尾舵机控制钢丝 (E)”连接舵机摇臂与“舵面摇臂 (D)”；



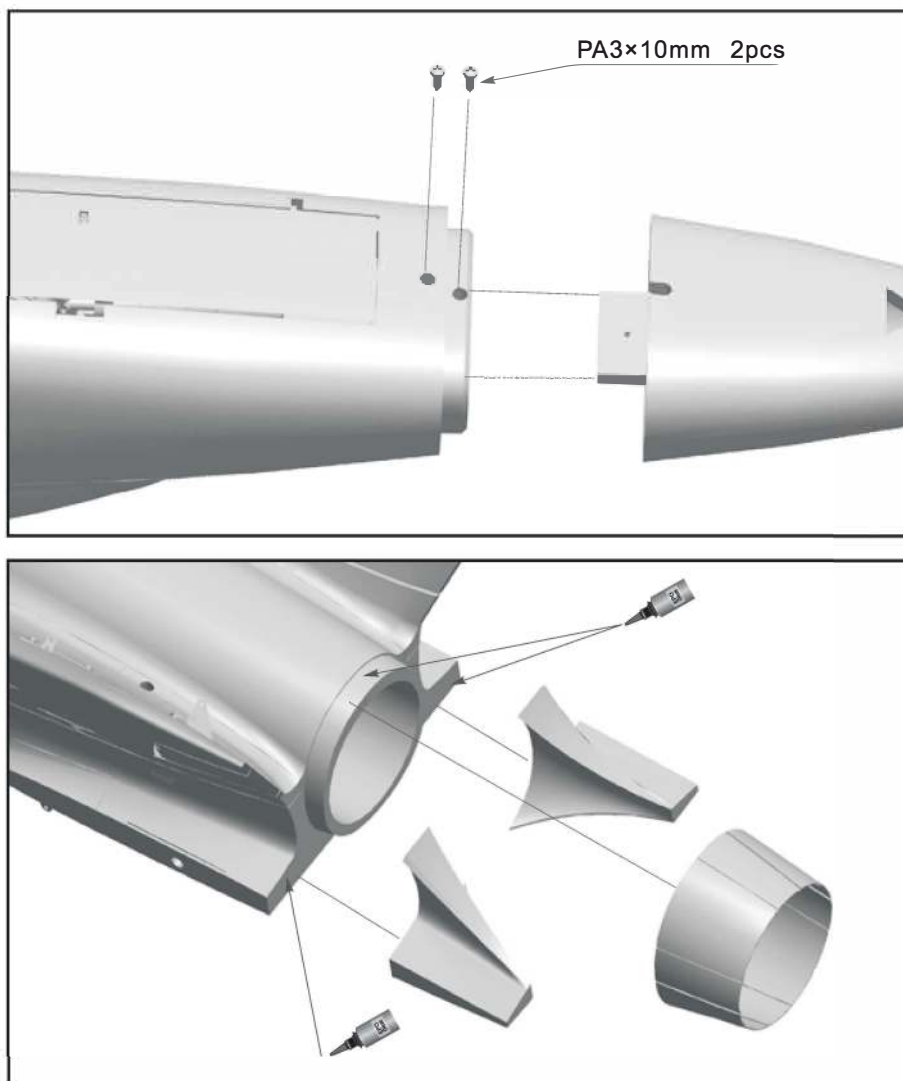
垂尾安装

- A- 螺丝 (PA3×10mm 6pcs)
B- 垂尾固定塑料件 (LF)
C- 垂尾固定塑料件 (LR)
D- 垂尾固定塑料件 (LL)

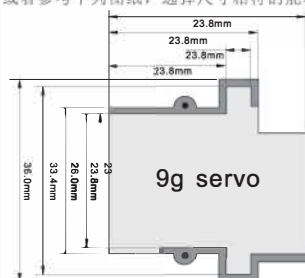
1. 如右图所示，用螺丝将左、右垂尾分别固定在机身上。



- 1.如右图所示,用螺丝固定机头罩;
- 2.如右图所示,用胶水尾喷口;



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！



主翼舵面控制钢丝尺寸



钢丝直径 $\varnothing 1.5\text{mm}$

襟翼舵面控制钢丝尺寸



钢丝直径 $\varnothing 1.5\text{mm}$

平尾舵面控制钢丝尺寸



钢丝直径 $\varnothing 1.5\text{mm}$

垂尾舵面控制钢丝尺寸



钢丝直径 $\varnothing 1.5\text{mm}$

主翼舵机钢丝安装孔位



襟翼舵机钢丝安装孔位



平尾舵机钢丝安装孔位



垂尾舵机钢丝安装孔位

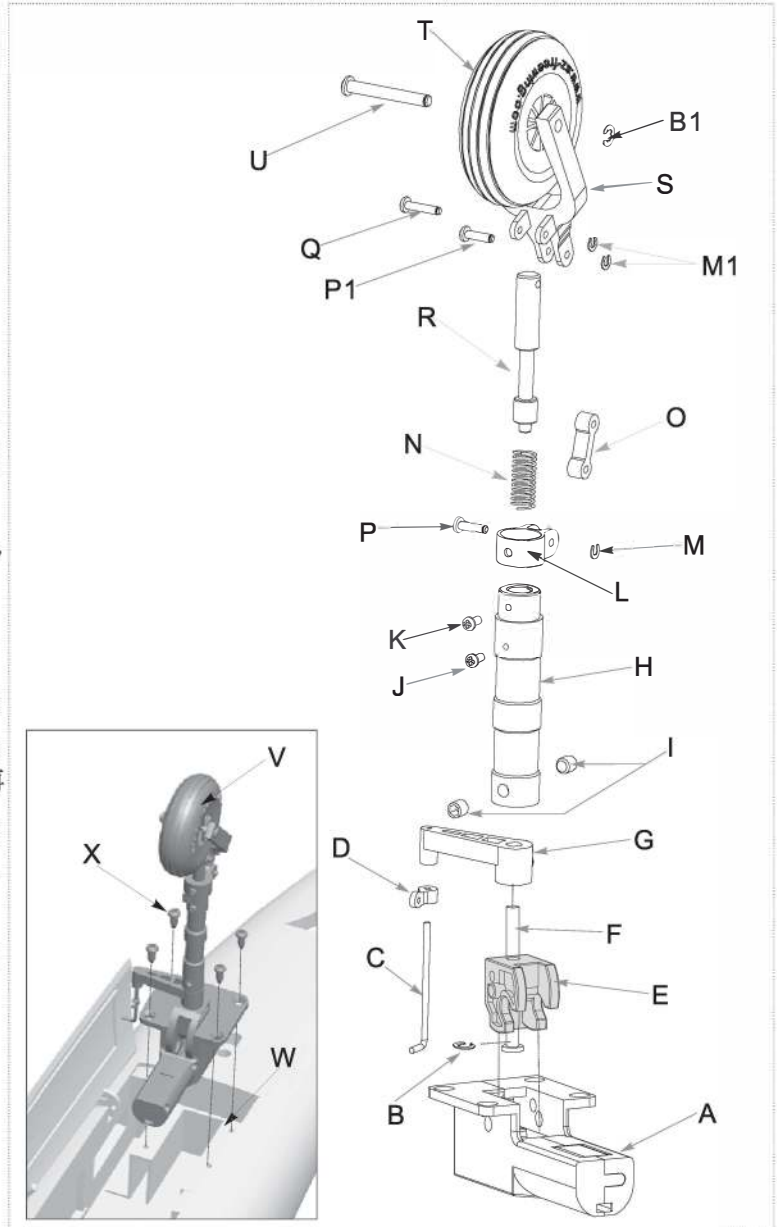


前起落架零件列表:

A - 起落架收放控制器	N - 弹簧
B - E型扣 (Ø2.0mm pcs)	O - 8字型减震转轴
C - 前起落架转向钢丝	P - 梢钉
D - 前起落架转向控制环	Q - 梢钉
E - 起落架收放旋转臂	R - 减震活动杆
F - 前起落架主钢丝	S - U型斜撑杆
G - L型摇臂	T - 机轮
H - 前起落架主撑杆	U - 轮轴
I - 机米螺丝 (M4*4mm 2pcs)	V - 前起落架组件
J - 螺丝 (PM2*4mm 1pcs)	W - 前起落架安装座
K - 螺丝 (PM2*3mm 1pcs)	X - 螺丝 (PWA3*12mm 4pcs)
L - U型减震臂	
M - E型扣 (Ø1.5mm pcs)	

1. 首先把“前起落架主钢丝(F)”插入“起落架收放旋转臂(E)”内, 再用“E型扣(B)”卡在“前起落架主钢丝(F)”上, 防止脱落;
2. 把“前起落架转向控制环(D)”套入“前起落架转向钢丝(C)”, 然后将“前起落架转向钢丝(C)”有螺纹的一端拧入到“L型摇臂(G)”上;
3. 把组装好的“L型摇臂(G)”套入“前起落架主钢丝(F)”, 然后用螺丝固定;
4. 接下来将“前起落架主撑杆(H)”套入“前起落架主钢丝(F)”, 然后用机米螺丝固定;
5. 把“弹簧(N)”放置到“前起落架主撑杆(H)”内, 然后将“前起落架减震活动杆(R)”插入到“前起落架主撑杆(H)”内, 向下挤压“减震活动杆(R)”的同时, 把“螺丝(J)”锁入到“前起落架主撑杆(H)”内, 防止“减震活动杆(R)”脱离;
6. 然后把“U型减震臂(L)”套在“前起落架主撑杆(H)”上, 用“螺丝(K)”固定;
7. 利用“梢钉(Q)”、“E型扣(M)”将“U型斜撑杆(S)”固定在“减震活动杆(R)”上; 最后再利用“8字型减震转轴(O)”、“梢钉(P)”、“E型扣(M)”将“U型斜撑杆(S)”与“U型减震臂(L)”连接起来;
8. 用“轮轴(U)”与“E型扣(B1)”将“机轮(T)”固定在“U型斜撑杆(S)”中;
9. 把组装好的“前起落架组件(V)”安放在“前起落架固定座(W)”上, 最后用“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;

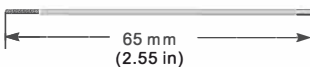


前轮转向舵机安装

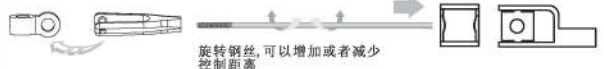
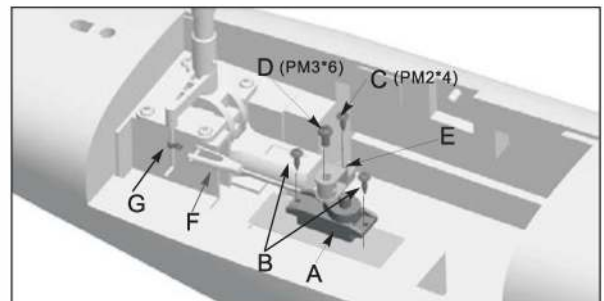
配件名称

A - 9g舵机	E - U型舵机摇臂
B - 螺丝 PWA2*8mm	F - 舵机控制钢丝
C - 螺丝 PM2*4mm	G - 起落架转向控制环
D - 螺丝 PM3*6mm	

1. 将“舵机(A)”安装到木片上, 用“螺丝(B)”固定舵机, 然后将“U型舵机摇臂(E)”安装到舵机上, 同时用“螺丝(C)”固定摇臂;
2. 将起落架“舵机控制钢丝(F)”一端夹头扣入“起落架转向控制环(G)”内, 另外一端穿入“U型舵机摇臂(E)”中, 调整插入去深度直至前轮居中;
3. 用“螺丝(D)”固定“舵机控制钢丝(F)”;



钢丝直径1.2mm

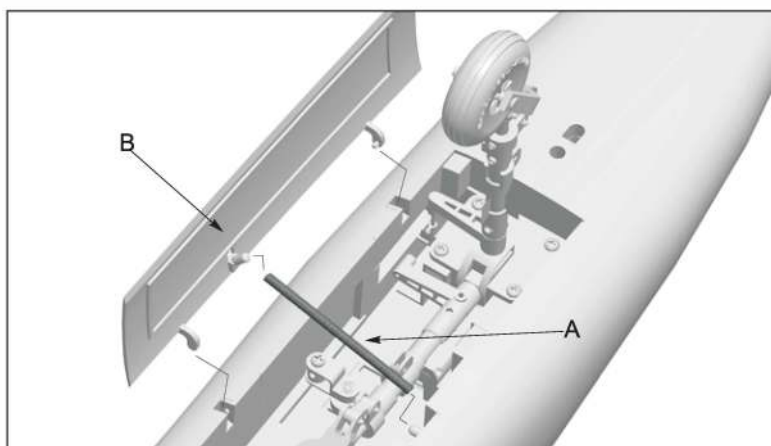


旋转钢丝, 可以增加或者减少控制距离

配件清单

A-弹簧
B-前起落架舱门

- 1.按右图所示：将“前起落架舱门（B）”和卡入到机身上；
- 2.连接好“弹簧（A）”；



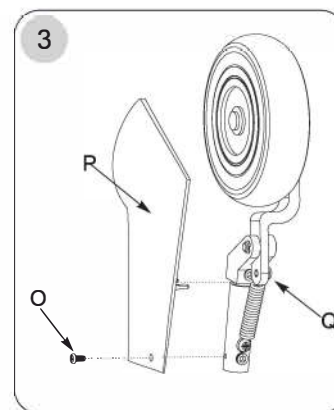
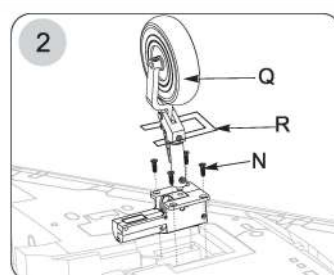
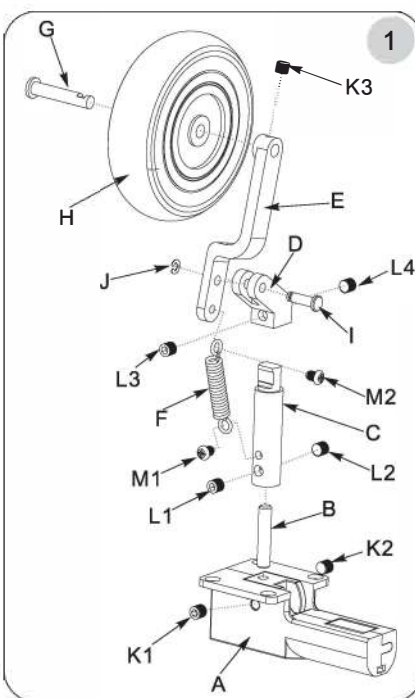
后起落架组装

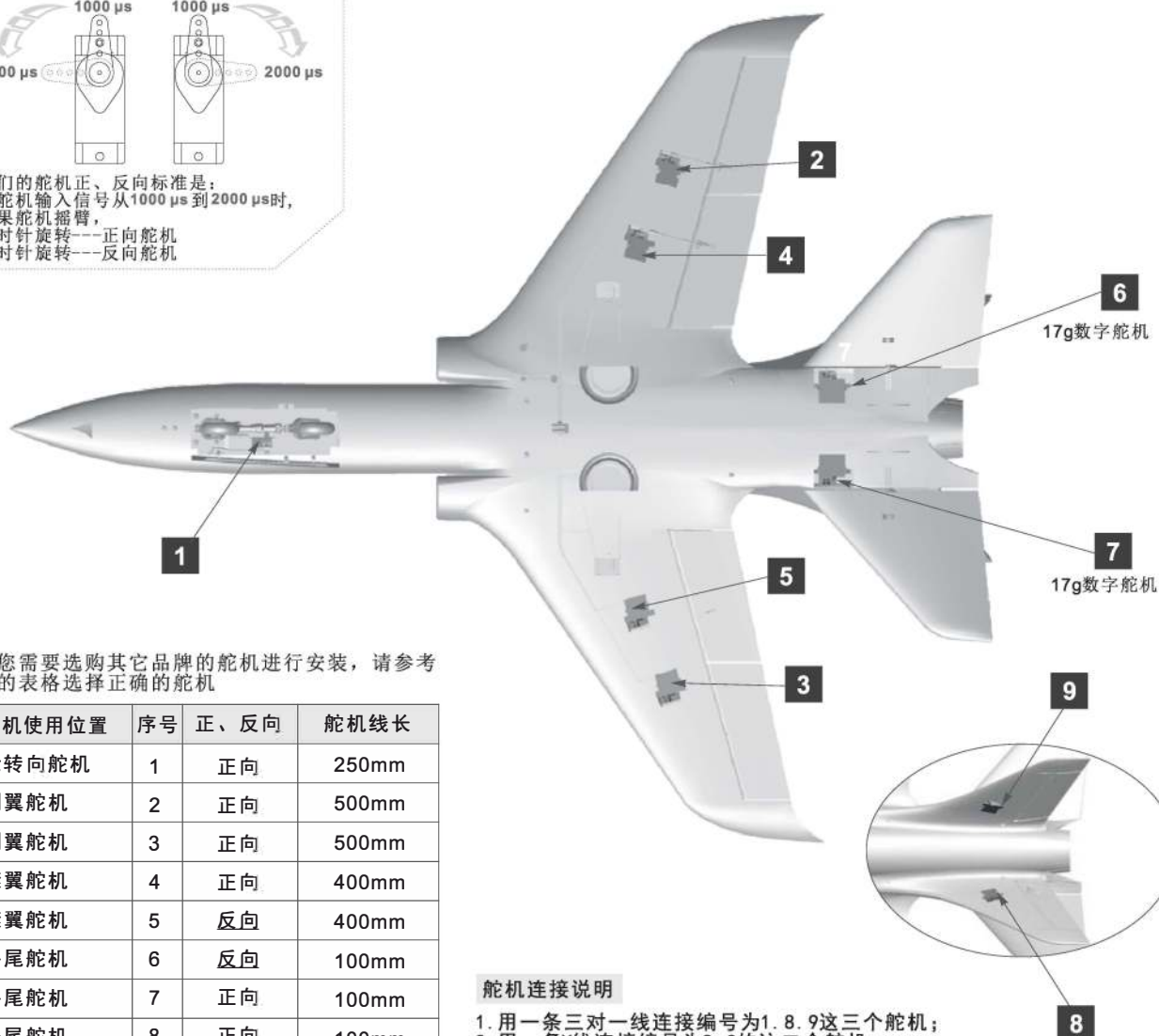
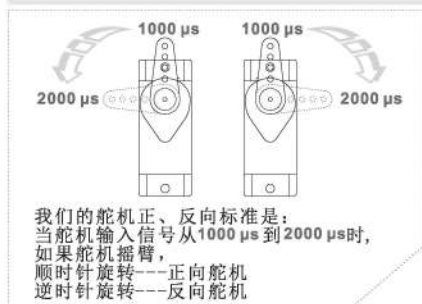
后起落架零件列表：

A-起落架电动收放控制器
B-后起落架主钢丝
C-后起落架主撑杆
D-后起落架斜撑杆
E-后起落架减震臂
F-弹簧
G-轮轴
H-机轮
I-梢钉
J-E型扣 (Ø1.5mm)
K-机米螺丝 (M3×3mm)
L-机米螺丝 (M4×3mm)
M-螺丝 (PM3×4mm)
N-螺丝 (KA3×12mm)
O-螺丝 (PM2×4mm)
P-后起落架舱门
Q-起落架套件
R-起落架吸塑装饰盖

J-E型扣 (Ø1.5mm)
K-机米螺丝 (M3×3mm)
L-机米螺丝 (M4×3mm)
M-螺丝 (PM3×4mm)
N-螺丝 (KA3×12mm)
O-螺丝 (PM2×4mm)
P-后起落架舱门
Q-起落架套件
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！





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	序号	正、反向	舵机线长
前轮转向舵机	1	正向	250mm
左副翼舵机	2	正向	500mm
右副翼舵机	3	正向	500mm
左襟翼舵机	4	正向	400mm
右襟翼舵机	5	反向	400mm
左平尾舵机	6	反向	100mm
右平尾舵机	7	正向	100mm
左垂尾舵机	8	正向	100mm
右垂尾舵机	9	正向	100mm

舵机连接说明

1. 用一条三对一线连接编号为1. 8. 9这三个舵机；
2. 用一条Y线连接编号为2. 3的这两个舵机；
3. 用一条Y线连接编号为4. 5的这两个舵机；
4. 用一条Y线连接编号为6. 7的这两个舵机；

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。

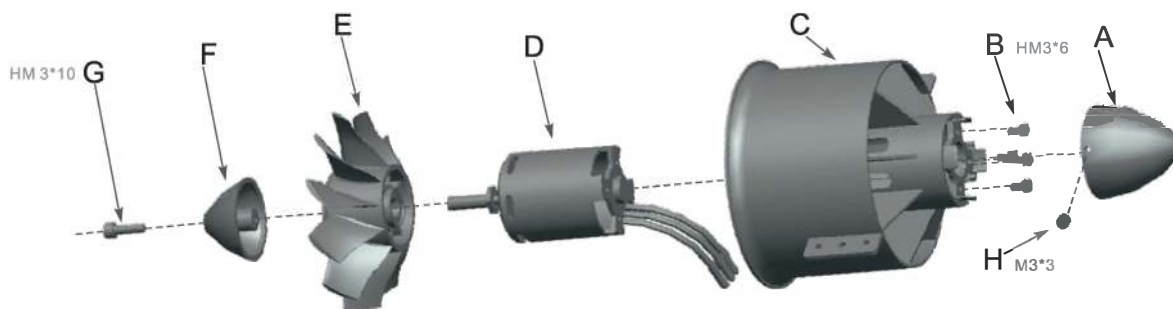
我们出厂时配备的电池为：
6S 22.2V 4000mAh 35C

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 **> 30C**

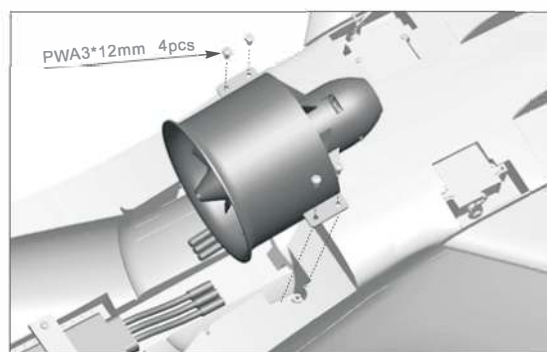
不同重量的电池，会影响重心！请注意飞机的重心在说明书指示的正确范围内！

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。



⚠注意：当电调与电池连接后，禁止用手触摸电调和涵道，防止意外伤害！
测试涵道时，请使用安全的测试架进行测试，禁止用手抓住涵道的进行行为！

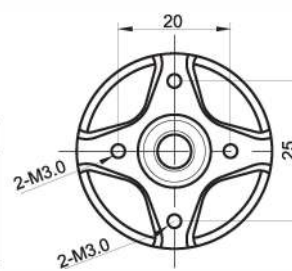
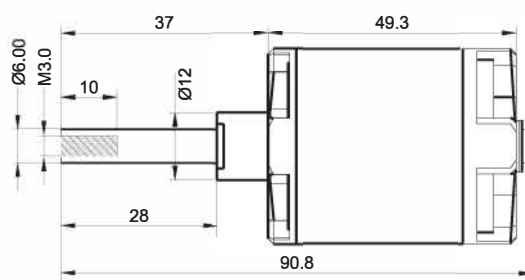
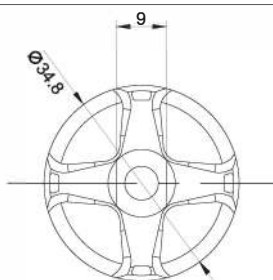


电机参数

MOJ35301

3530-1750KV

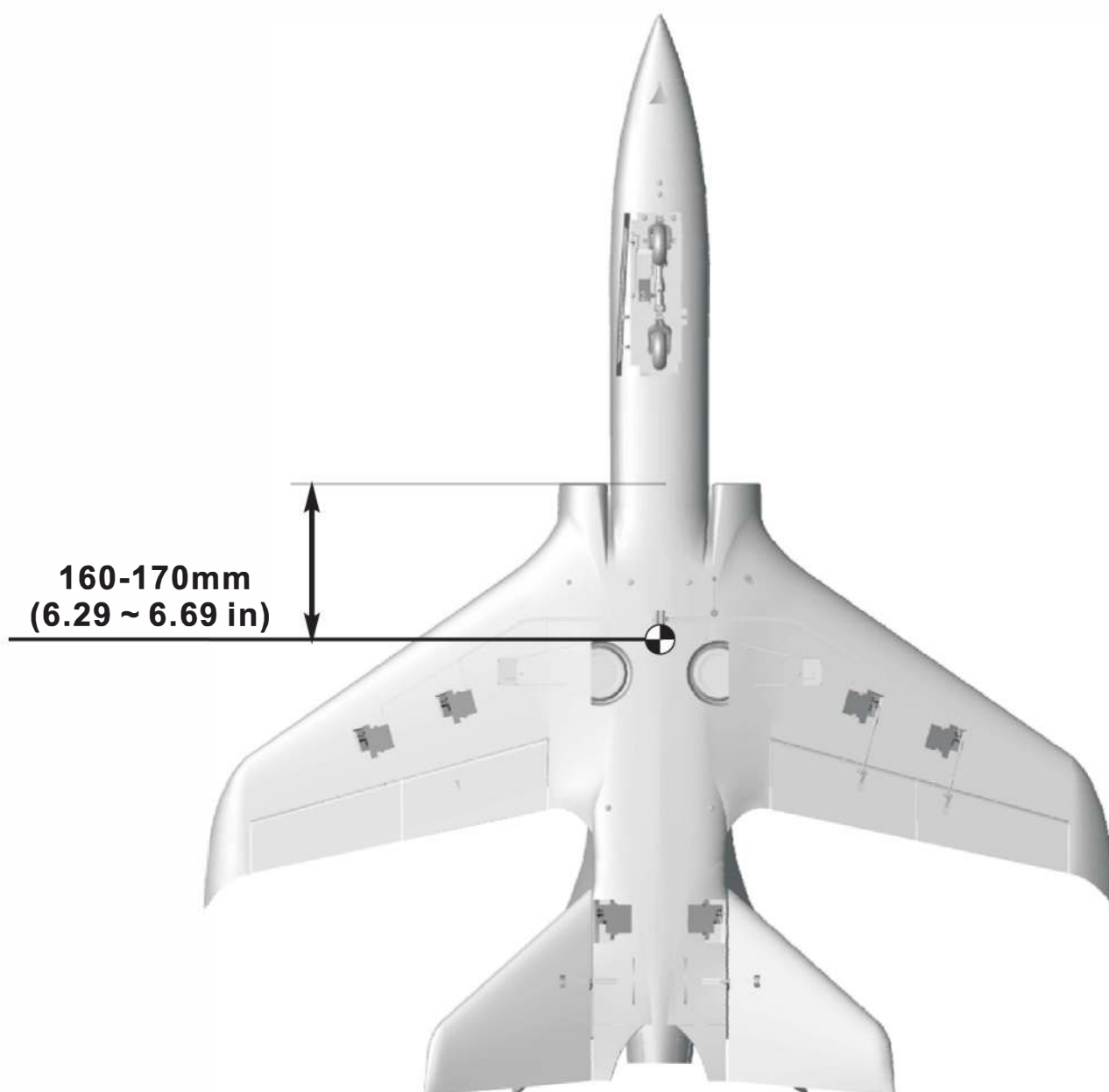
For 6S Battery
Upgrade
Version



Item No.	KV Value	Volate (V)	Current (A)	Thrust (g)	Motor Resistance	Weight (g)	No Load Current	Propeller	ESC
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，我们需要用一块充满电的电池，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

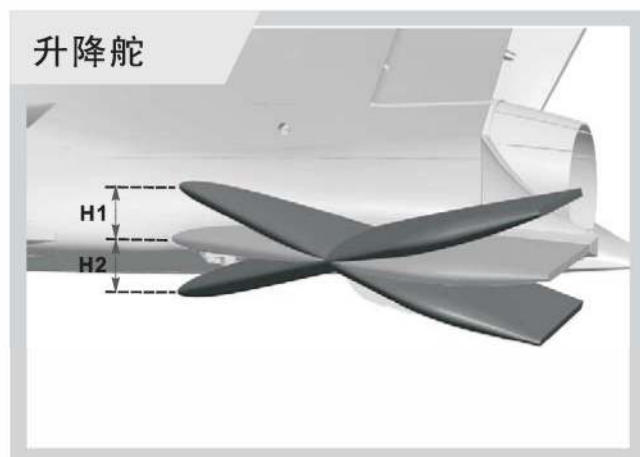
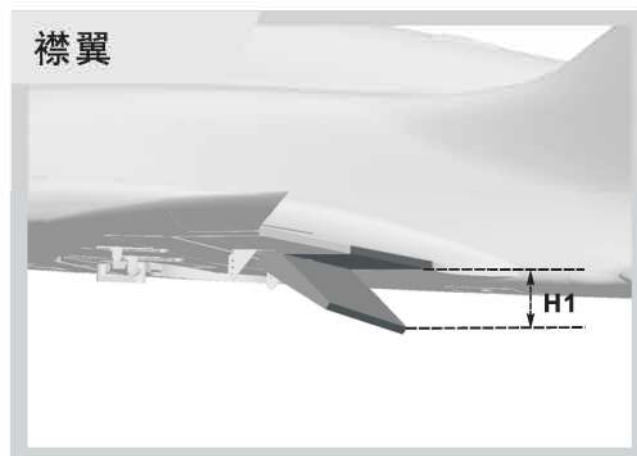
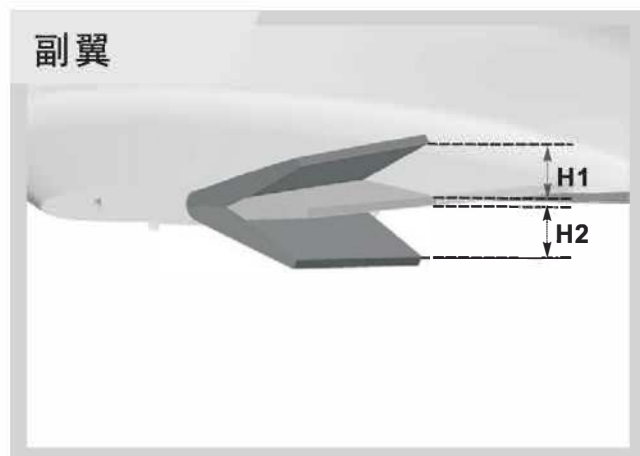


襟翼

襟翼放下



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	襟 翼	升降舵	方向舵
小舵角	H1/H2 14mm/14mm	H1 25mm	H1/H2 19mm/19mm	H1/H2 12mm/12mm
大舵角	H1/H2 20mm/20mm	H1 40mm	H1/H2 28mm/28mm	H1/H2 19mm/19mm

平尾舵面居中设定



注意:

正确的平尾舵面角度对成功的飞行非常重要,超级天蝎的平尾舵面角度,请参考左图所示!

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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