

# TA-152H1 USER MANUAL

1/11 SCALE WARBIIRD

WINGSPAN:1310mm(51-1/4")

LENGTH:980mm( 38-1/2")

WEIGHT:1200g(42.3 oz.)W/O BATTERY



SUITABLE  
FOR  
**3S**(120KPH/75MPH)  
**4S**(140KPH/88MPH)  
BATTERIES

EN	1~11
中	12~22



**Brief History**

The Ta-152H1 is a high speed piston fighter developed from the Fw-190 near the end of World War II in Nazi Germany. Compared with the Fw-190D which was a "quick fix", the Ta-152 was the ultimate "solution" however, due to the late development period, the production quantity was too small to affect the war's outcome. In spite of this, it's excellent performance, still won the praise of both sides of the war. The Ta-152H1, along with the P-51D and the Spitfire XIV, were known as the ultimate piston fighters, their flight performances being close to the limit of a piston engine fighter.

**Overview**

An 1/11 scale gives the Ta-152H1 a 980mm length and a wingspan of 1310mm. Its shape and contour lines are scaled down from the actual aircraft and scale details and exquisite paint made it extremely realistic in appearance. Extensive use of plastic parts, allow for quick and easy installation of the main wing, horizontal and vertical tail surfaces and we have utilized carbon fiber rods in the main wing, horizontal tail and every control surface, to avoid distortions during high speed flight, making the airplane extremely stable. Plastic hinges included with the kit allow you to further increase the reliability of the control surfaces. Inside the fuselage, we have designed a ventilation system, allowing the ESC to be effectively cooled thereby prolonging its life. The battery tray is mounted with screws, and divided into two levels, making it easy to install the ESC and a non-slip mat effectively prevents the battery from moving.

The Ta-152H1 uses a high power 3648-830KV brushless motor with a 10x6 3-blade scale propeller, a light fuselage (1200 gm without the motor) with a large battery compartment which can accommodate 3S/4S batteries for flight. When using a 3S battery, it can reach speeds up to 120kph/75mph. when using 4S battery, it can reach speeds up to 140kph/88mph. Also available is a special 2-blade high speed power system set( which includes a 2-blade 12x8 propeller, spinner and back plate along with a 3648 880 kv motor). Using this modification, the Ta-152H1 can reach top speeds of up to 160kph/100mph!

**Flight features**

The FlightLineRC Ta-152H1, with its long wingspan, has excellent flight stability and a small turning radius. The smaller body combined with it's high power give it excellent speed and climb performance. The wide main landing gear (350 mm), helps offset the propeller torque at take off, making it easier to maintain directional control during take off. With the stock power setup utilizing 3S/4S batteries, it has a 18M/15M take-off run. When landing with flaps, there will be a slight nose down tendency, a slight flap/up elevator mix, will correct this and help make for a slow and gentle landing.

**Color scheme introduction**

This airplane has a factory applied paint scheme as well as a variety of decals to choose from as well as placement instructions, so you can customize your airplane to suit your taste.

**⚠ 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:**

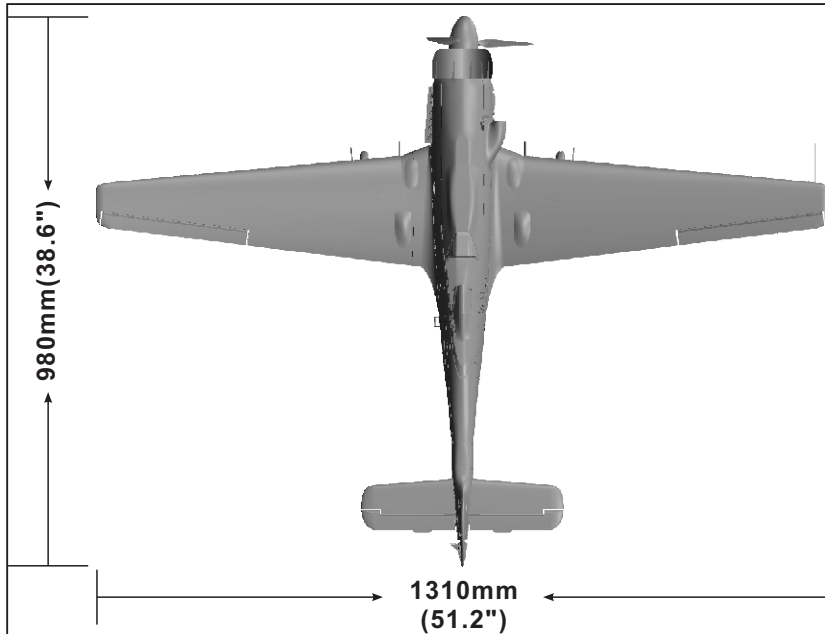
1. This is not a toy! Operators should have some basic experience. Beginners should operate only under the guidance of a professional instructor.
2. Before beginning assembly, please read through the instructions and carefully follow them through the build.
3. Freewing and it's vendors will not be held 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 or airports or an 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 safe 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 or fire.
10. At the Flying Field, properly dispose of any waste you have created. Don't leave or burn your waste.
11. Make sure your radio is powered up and the throttle is in low position before connecting the Lipo Battery.

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## Product basic information

EN



Wing loading: 88g/dm<sup>2</sup>  
 Motor: 3648-830KV brushless motor  
 Propeller: 3-blade 10×6  
 ESC: 60A brushless ESC  
 Servo: 9g MG×2, 9g plastic×4  
 Weight: 1200g (w/o battery)

Aileron: Yes  
 Elevator: Yes  
 Rudder: Yes  
 Flap: Yes  
 Landing gear: Retract landing gear  
 Main landing gear cabin door  
 Material: EPO

### High speed DIY spare-part

(The following is DIY spare-part list, please contact your distributor to purchase separately.)

2-blade propeller spinner  
 2-blade propeller backing plate  
 3648-880KV brushless motor  
 2-blade 12×8 propeller

**⚠ Note:** The parameters stated here are derived from test results using our accessories. If you use other accessories, the results will differ. We cannot provide technical support if you have a problem.

## Package list



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

No.	Spareparts name	PNP	ARF Plus	ARF
1	Fuselage	Pre-installed all electronic parts	Pre-installed servo	No electronic equipment
2	Main wing	Pre-installed all electronic parts	Pre-installed servo	No electronic equipment
3	Horizontal tail	Pre-installed all electronic parts	Pre-installed servo	No electronic equipment
4	Decals / Manual	✓	✓	✓
5	Control board	✓	✓	✓

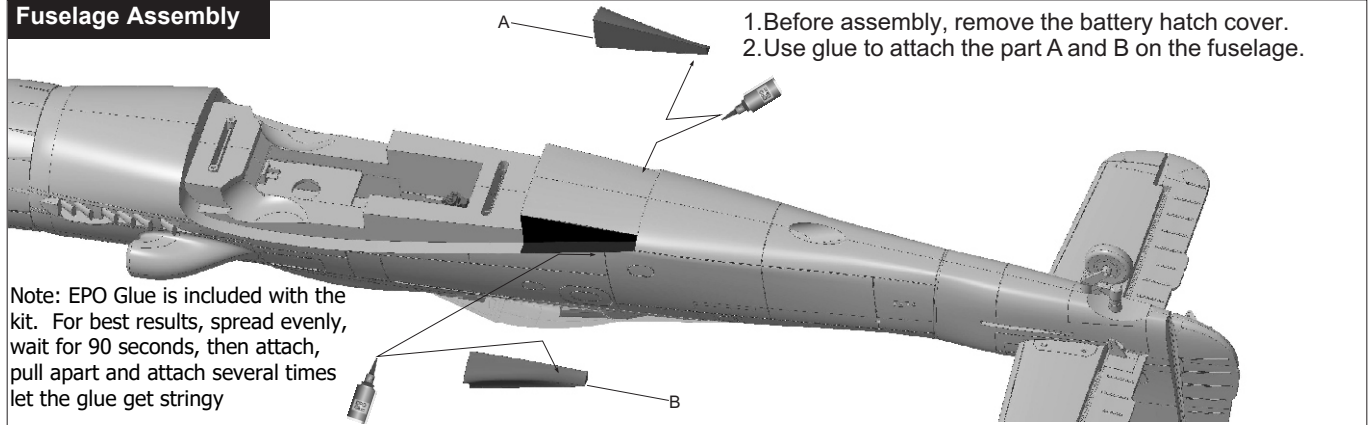
No.	Spareparts name	PNP	ARF Plus	ARF
6	Propeller and parts	✓	✓	✓
7	Spinner and parts	✓	✓	✓
8	Carbon tube	✓	✓	✓
9	Glue and Screws	✓	✓	✓
10	Pushrod/Plastic parts	✓	✓	✓

**TA-152H1**  
 Item No.: FLW05

**Flightline**  
 RC.com

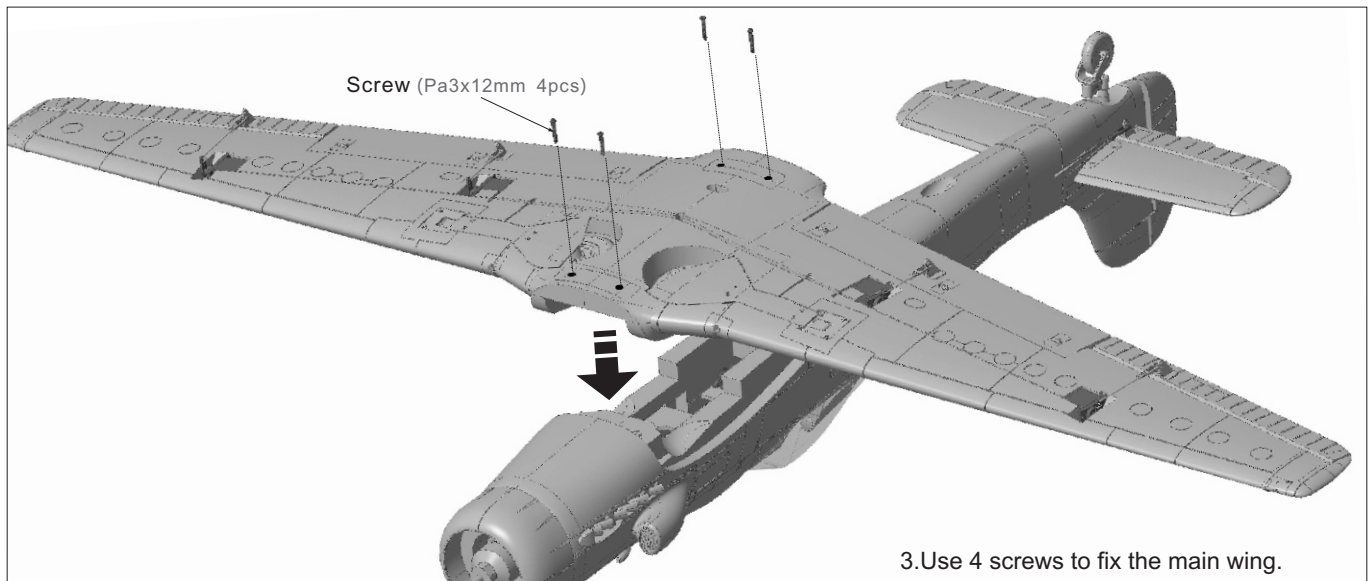
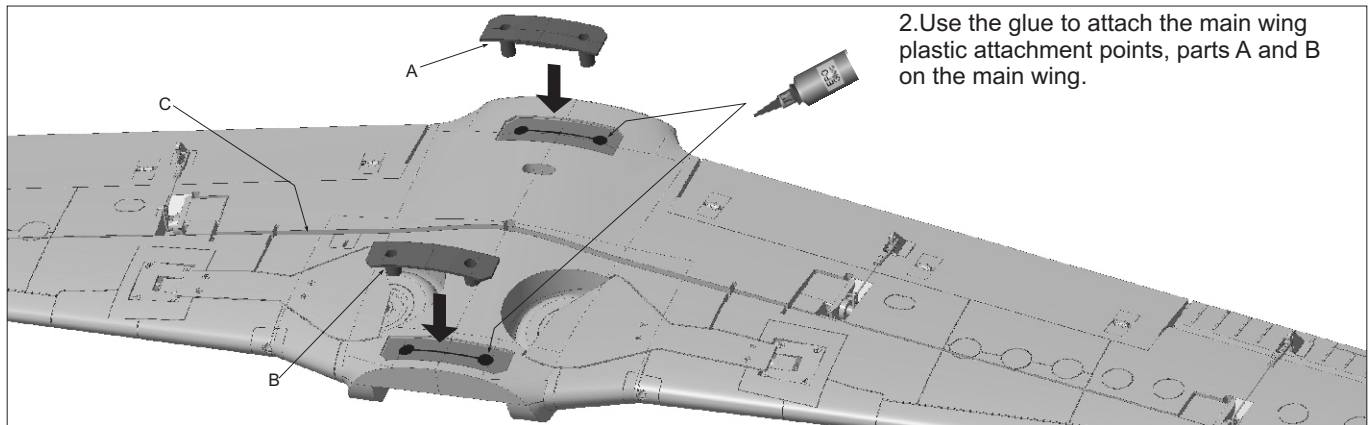
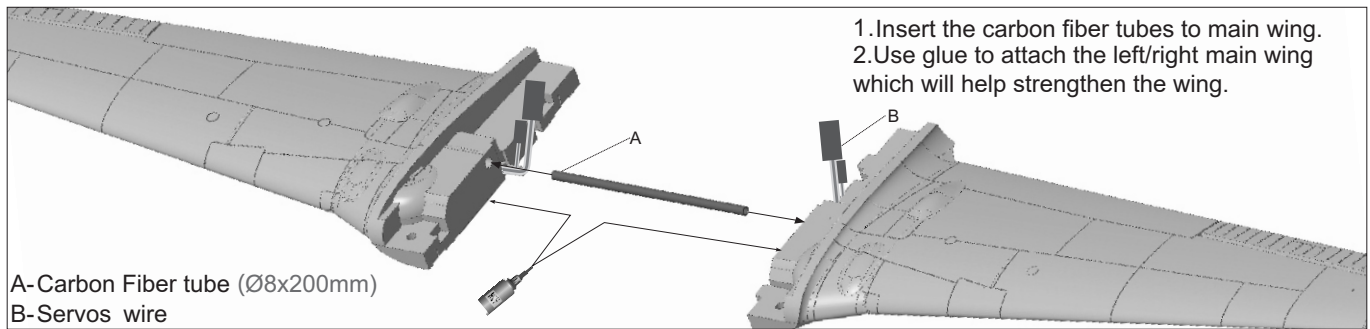
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## Fuselage Assembly

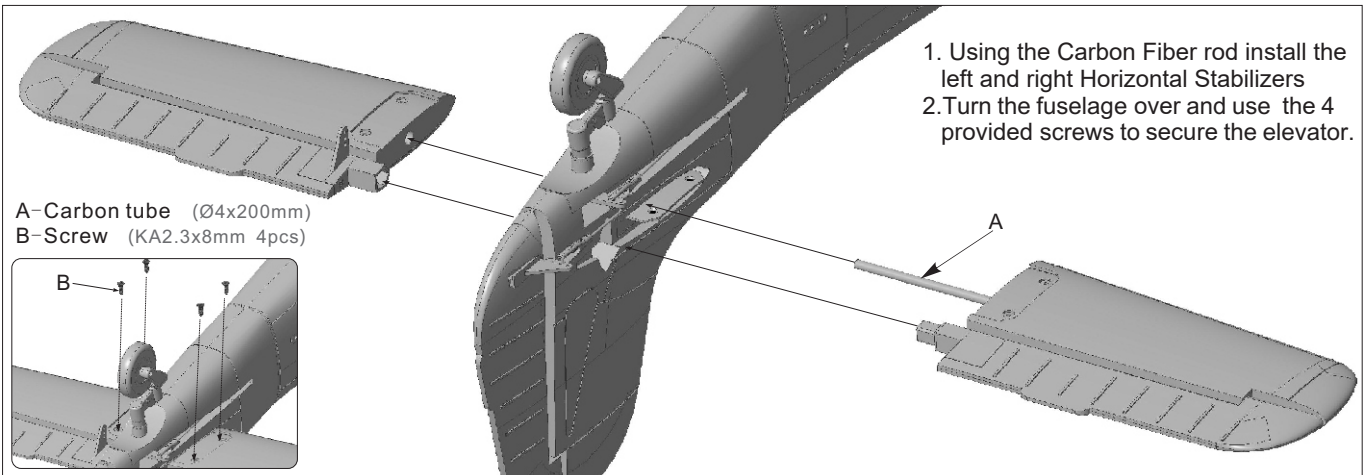


Note: EPO Glue is included with the kit. For best results, spread evenly, wait for 90 seconds, then attach, pull apart and attach several times let the glue get stringy

## Installing the main wing



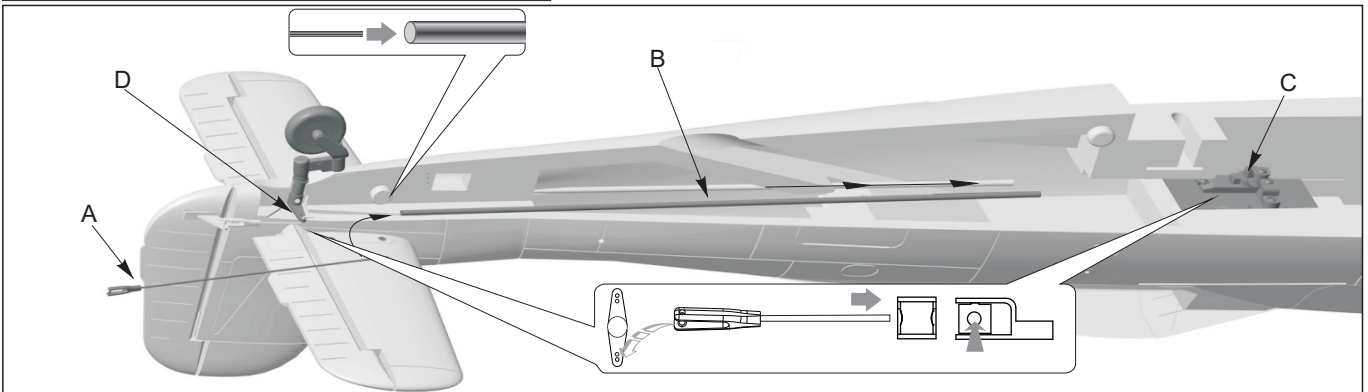
**Elevator Assembly**



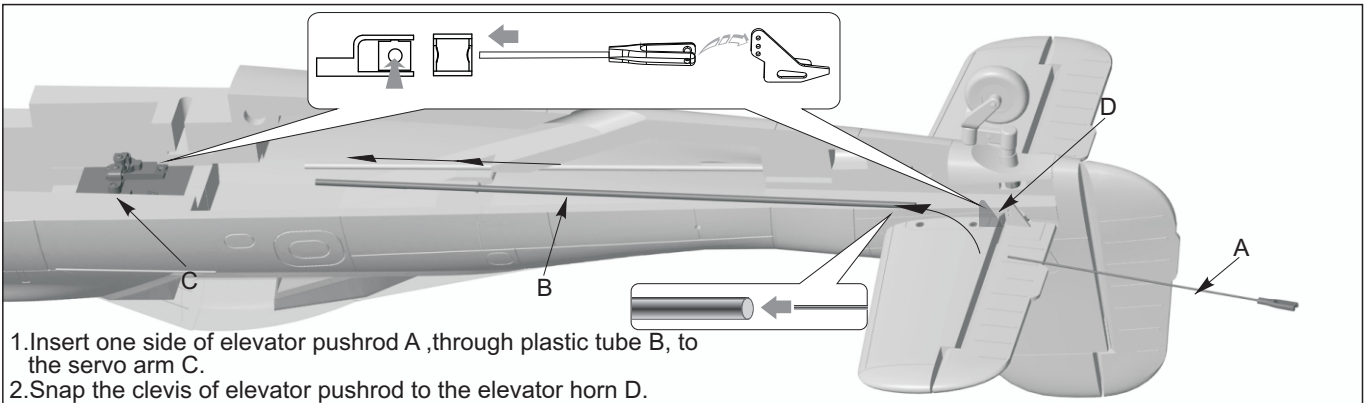
1. Using the Carbon Fiber rod install the left and right Horizontal Stabilizers
2. Turn the fuselage over and use the 4 provided screws to secure the elevator.

A-Carbon tube (Ø4x200mm)  
 B-Screw (KA2.3x8mm 4pcs)

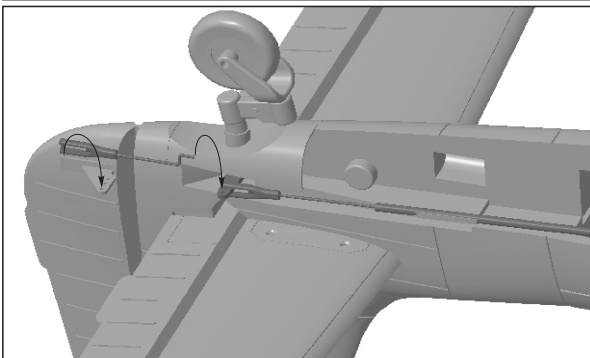
**Installing the elevator/rudder pushrods**



1. Insert one side of rudder pushrod A ,through plastic tube B, to the servo arm C.
2. Snap the clevis of rudder pushrod to the tail gear steering arm D.



1. Insert one side of elevator pushrod A ,through plastic tube B, to the servo arm C.
2. Snap the clevis of elevator pushrod to the elevator horn D.

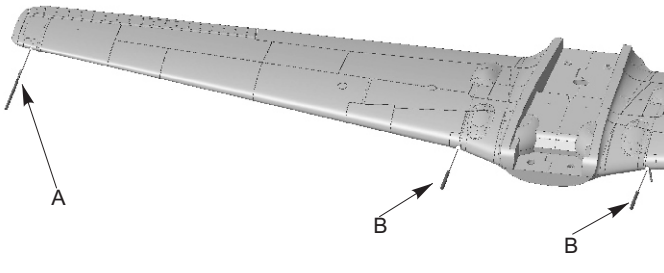


**⚠ Note:** when installing the rudder pushrod, make sure the tail gear is centered. Then attach the rudder pushrod, and adjust the plastic clevis to center the rudder.

1. Use glue to attach the rudder horn to the rudder.(as the left photo shown).
2. Use rudder pushrod to connect the tail gear steering arm and rudder horn.

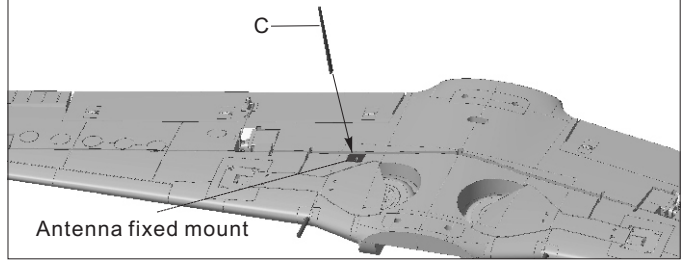
**Guns/pitot tube Assembly**

1. Insert the pitot tube A and gun B into the front of main wing.



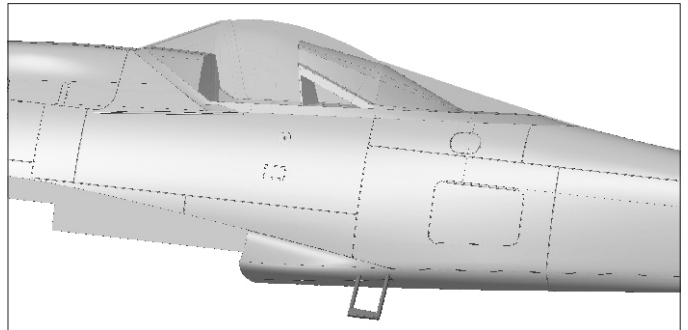
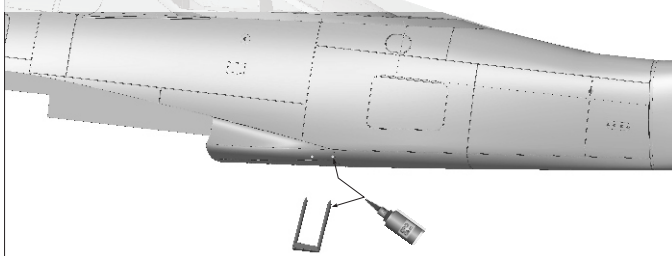
**Antenna Installation**

2. Insert the antenna C to the antenna fixed mount in the under surface of the main wing.



**Boarding Step installation**

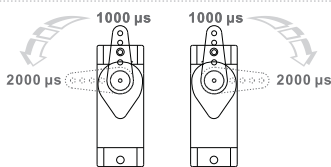
3. Drill two small holes and use the glue to attach the Boarding Step.



**Note:**

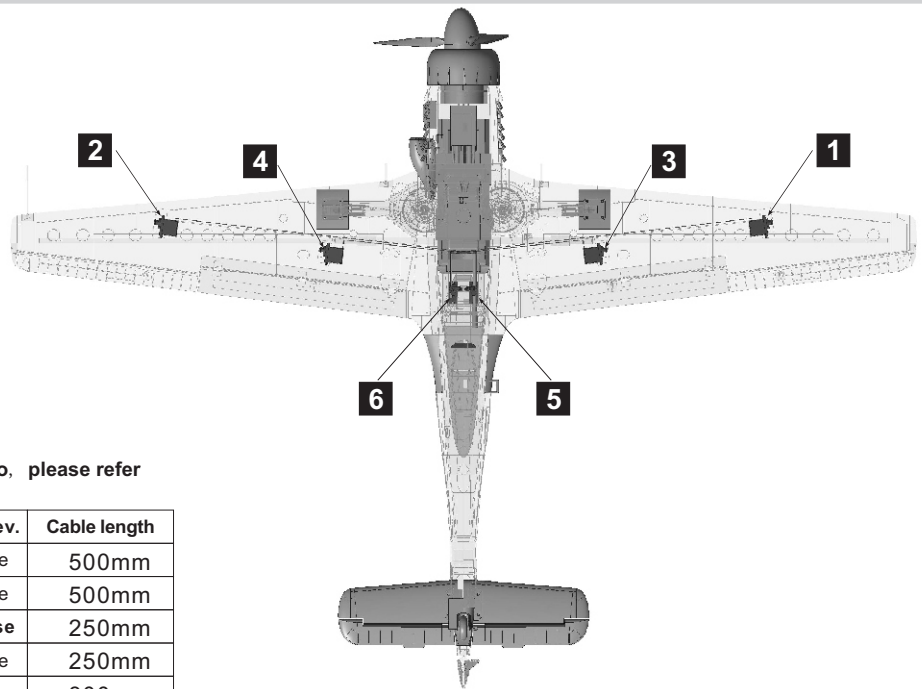
After finishing the above steps, depending on the type of control board, insert aileron, flap servo cable and landing gear cable to the control board.

**Servo introduction**



A servo or reversed servo is defined as follows:

When the servo input signal changes from 1000µs to 2000µs, The servo arm rotates clockwise, its a positive servo. If it rotates counter clockwise, its a reversed servo.

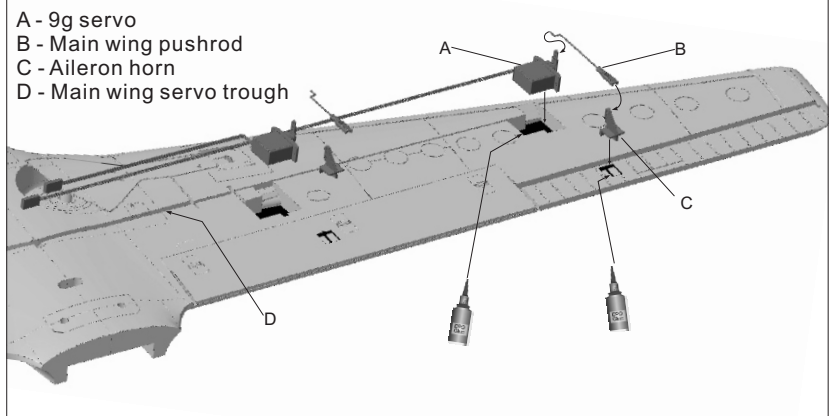


If you need to purchase another brand servo, please refer to the following list to choose correct size.

Position	Model	No.	Pos./Rev.	Cable length
Aileron(Left)	9g plastic	1	Positive	500mm
Aileron(Right)	9g plastic	2	Positive	500mm
Flap(Left )	9g plastic	3	<b>Reverse</b>	250mm
Flap(Right)	9g plastic	4	Positive	250mm
Rudder	9g Digital MG	5	Positive	300mm
Elevator	9g Digital MG	6	Positive	300mm

## Main wing servo Installation

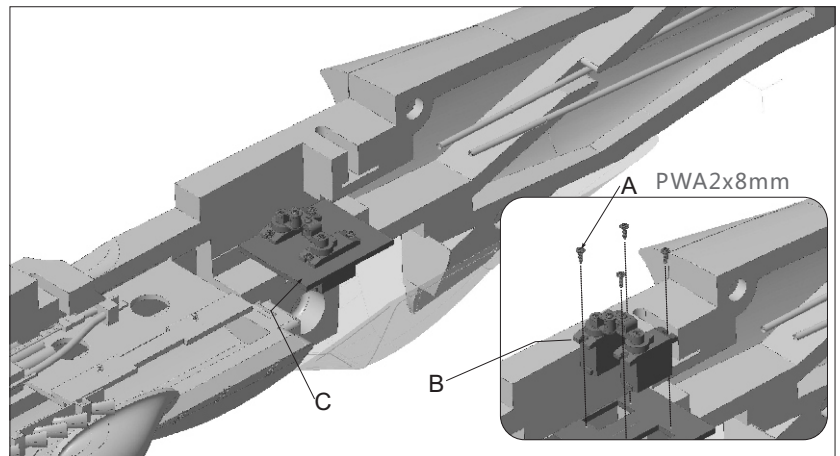
1. Use servo tester or radio to center the servo.
2. Use glue to install the servo and aileron horn on the main wing.
3. Feed the servo cable through the slot, after installing all the servos, apply the decal over the slot.
4. Insert the end of the control rod into the servo arm, adjust its length. And snap the clevis to the aileron horn.
5. Repeat the above four steps for other main wing and flap servo.



## Elevator/rudder Servo Installation

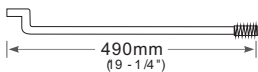
1. Use servo tester or radio to center the servo.
2. Use screw A to secure the 9g servo onto the wooden piece.
3. Slide the servo cable under the wooden piece, and feed it through to the battery compartment.

**⚠ Note:** If you choose not to use the factory servo, the chosen servo may be larger. If that is the case, you need to remove the fixed wooden piece and glue the servo in the servo position in the fuselage



## Pushrod instructions

### Steering pushrod size

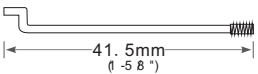


Pushrod diameter Ø1.2mm

### Steering pushrod mounting hole



### Rudder pushrod size

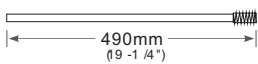


Pushrod diameter Ø1.2mm

### Rudder pushrod mounting hole



### Elevator pushrod size

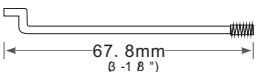


Pushrod diameter Ø1.2mm

### Elevator pushrod mounting hole



### Aileron pushrod size

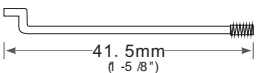


Pushrod diameter Ø1.2mm

### Aileron pushrod mounting hole



### Flap pushrod size



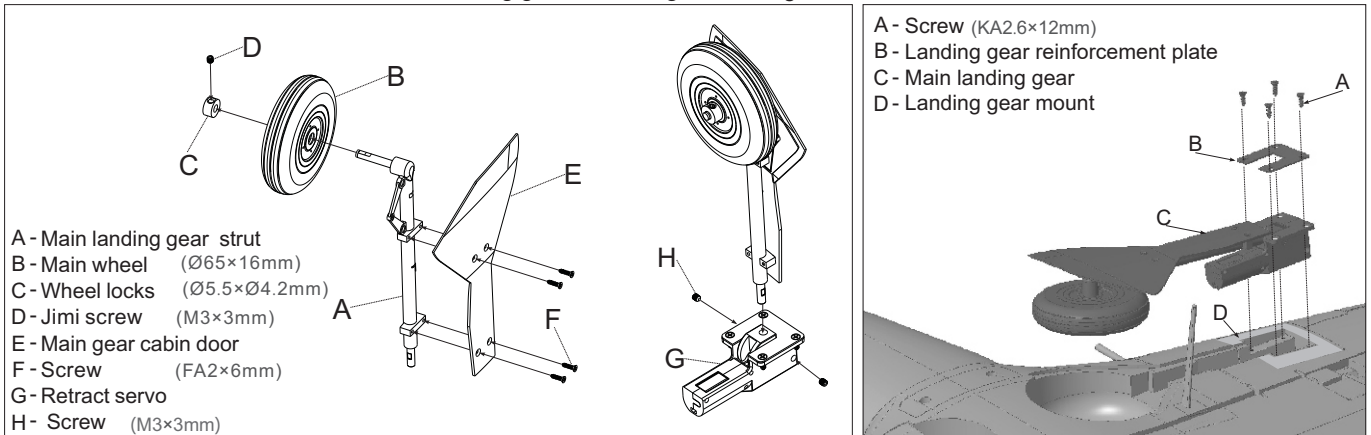
Pushrod diameter Ø1.2mm

### Flap pushrod mounting hole



## Main Landing Gear Assembly

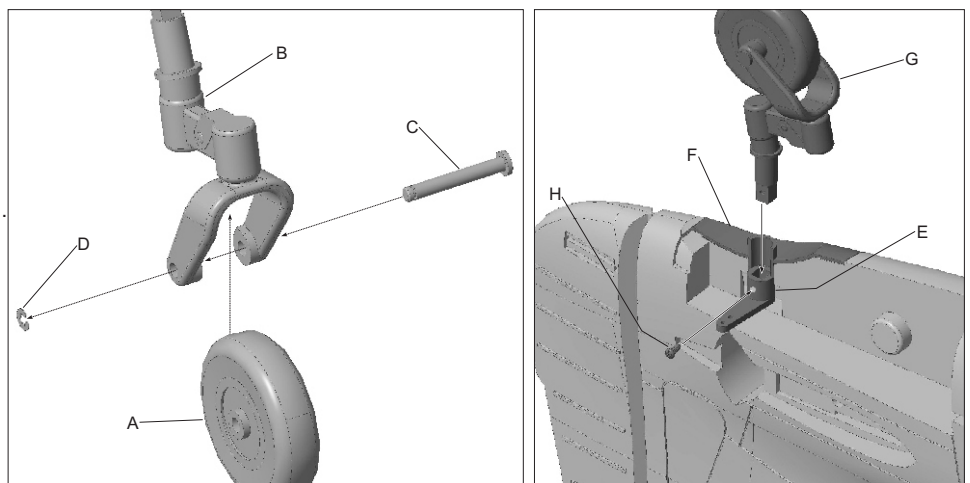
Please assemble/ disassemble the main landing gear according to the diagram below



## Install the tail gear set

1. Refer to the right photo, install the tail landing gear set.
2. Insert the tail gear set C to the fixed plastic part B, and continue to insert to the tail steering arm A.
3. Use screw D to fix the tail steering arm.

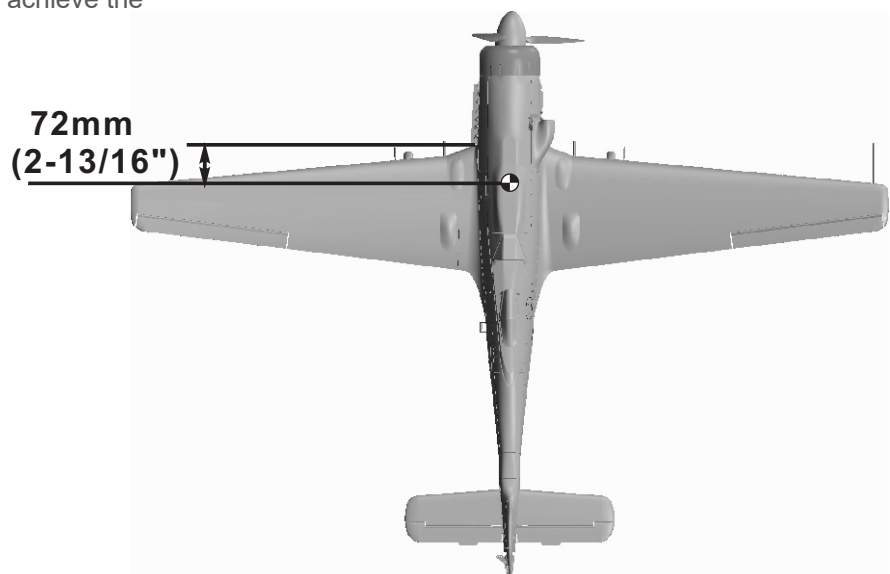
- A - Rear wheel (Ø35×10mm)  
 B - Rear gear supporting rod  
 C - Rear wheel shaft  
 D - E-buckle (Ø5×Ø2mm)  
 E - Tail steering arm  
 F - Rear gear fixed plastic part  
 G - Tail gear set  
 H - Screw (PA1.6×6mm)



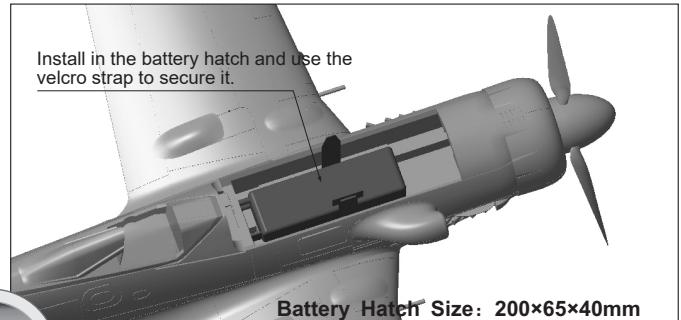
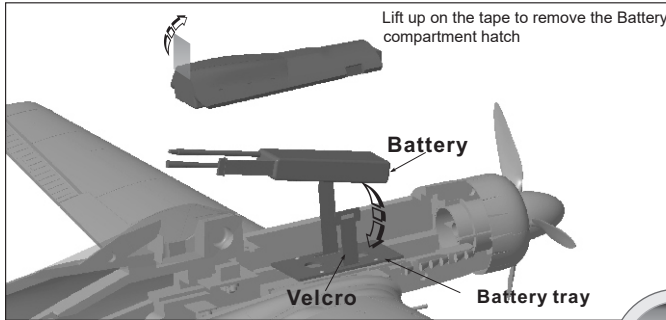
## Center of Gravity

A successful flight is directly related to a proper Center of Gravity.

If you cannot achieve a proper CG by adjusting the battery position, you can use an alternate material such as a sticky backed weight to achieve the optimum CG

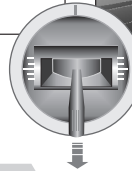






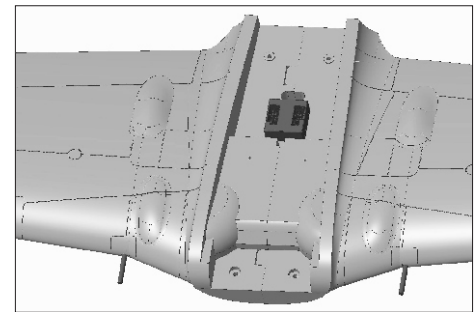
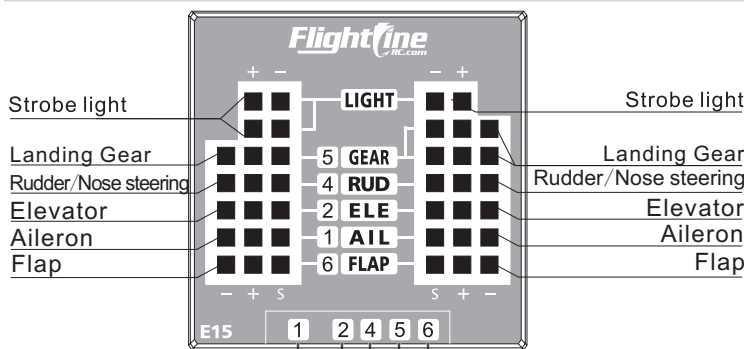
Battery Hatch Size: 200×65×40mm

Before connecting the battery to the ESC, please power up the transmitter and make sure the throttle stick is in the lowest position.

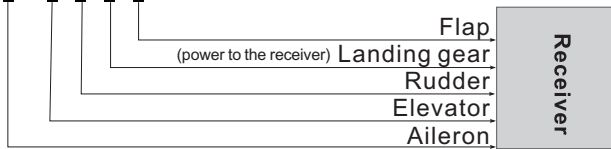


The battery size range we recommend for this airplane:  
 3S 11.1V 2600mAh ~ 3S 11.1V 4000mAh 4S  
 14.8V 2600mAh ~ 4S 14.8V 4000mAh  
 Discharge rate of C > 30C

### Control board use introduction



Dan's Note: The control board may not have all the outputs as shown in the diagram. If not, plug the existing outputs into the receiver and route the other servos directly to the receiver.



Use the markings on the control board to correctly insert all the servo cables. Then determine an optimum place at which to secure the control board down using either glue or double sided sticky tape.

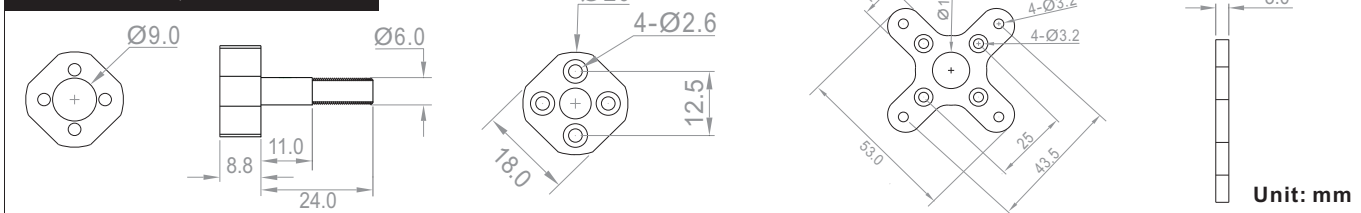
### Motor Parameters

**Motor size**

**3648-830KV / 3648-880KV** Unit: mm

Item No.	KV Value	Volute (V)	Current (A)	Pull (g)	Motor Resistance	Weight (g)	No Load Current	Propeller	ESC
MO136483	830RPM/V	14.8	41	2500	0.02 Ω	170	2.3A/10V	3-Blade10×6	≥60A
MO136484	880RPM/V	14.8	53	2600	0.02 Ω	165	2.3A/10V	2-Blade12×8	≥60A

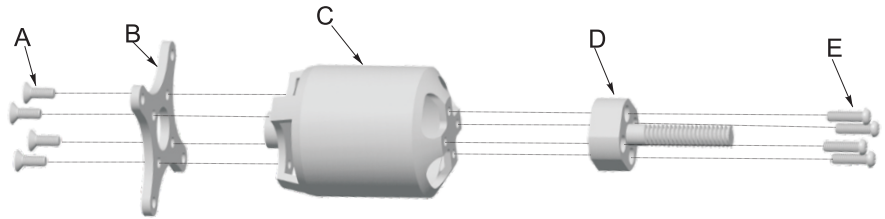
### Motor shaft, X-fixed base



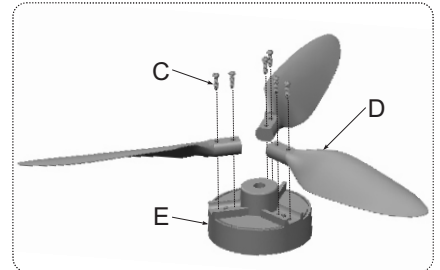
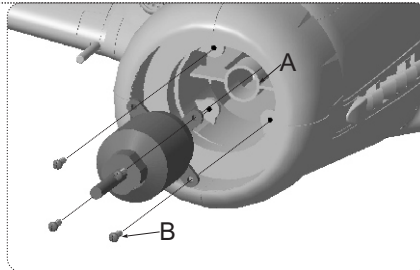
## Power System Installation

EN

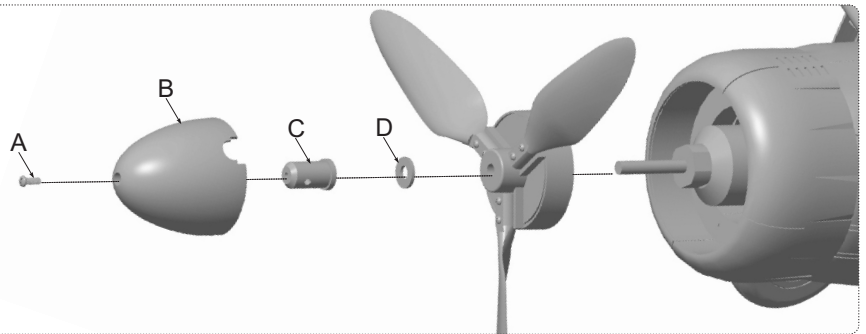
- A-Screw (KM3×5mm 4pcs)
- B-Motor Mount
- C-3648-830KV out-runner motor
- D-Propeller folder
- E-Screw (HM2.5×10mm 4pcs)



- A-Motor Mount
- B-Screw (PA3×12mm 4pcs)
- C-Screw (PA2.3×16mm 8pcs)
- D-Scale propeller (10x6, 3-blade)
- E-Scale propeller back plate

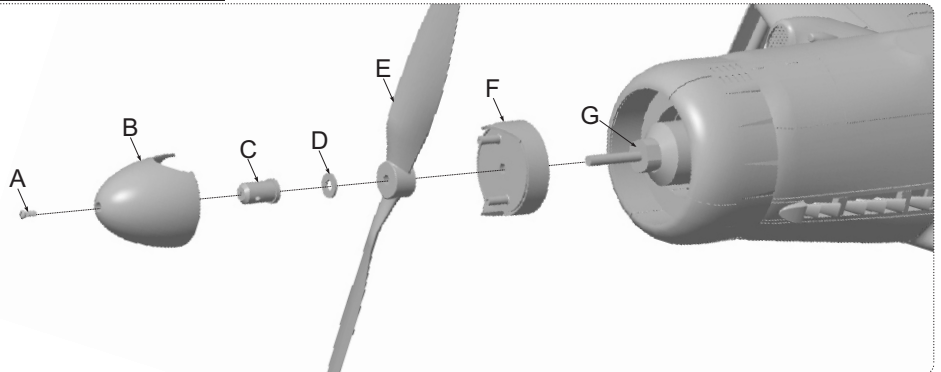


- A-Screw (PM3×10mm 1pcs)
- B-Spinner (scale 3-blade spinner)
- C-Propeller securing bolt
- D-Washer (Φ14×1.5×Φ6.2mm)



### Install 2-blade propeller high power system

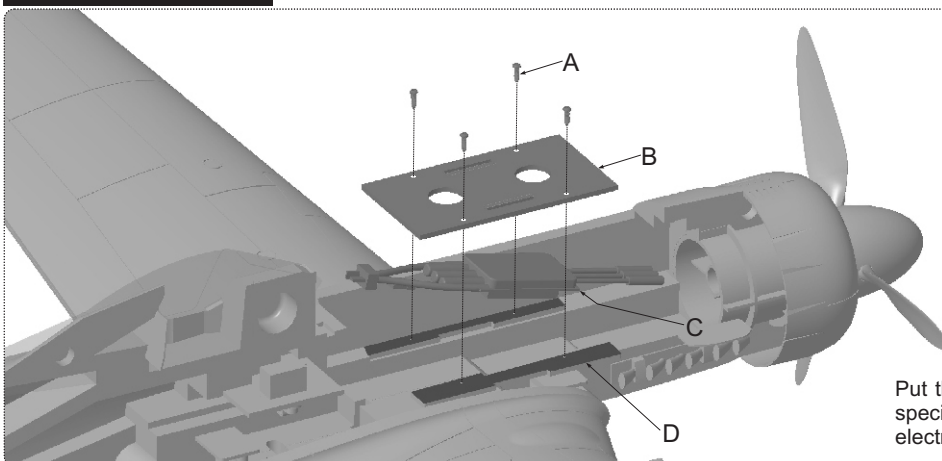
- A-Screw
- B-2-blade spinner
- C-Propeller securing bolt
- D-Washer (Φ14×1.5×Φ6.2mm)
- E-2-blade propeller (12×8)
- F-2-blade propeller back plate
- G-3648-880KV brushless motor



An optional 2 blade high speed system is available for this airplane. Contact your local distributor for more information or to purchase this option.

### ESC Installation

- A-Screw (PWA3×8mm 4pcs)
- B-Battery tray
- C-ESC
- D-Tray holder



Put the ESC under the battery tray, there are specially designed ventilation ducts to cool the electrical equipment effectively.

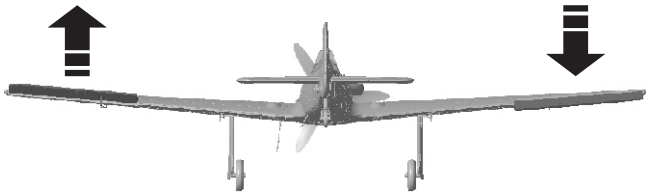
## Control direction test

EN  
EN

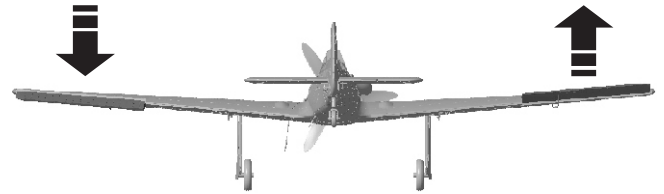
After the build is complete but with the propeller removed, power up the radio and connect a fully charged battery to the ESC. Use the radio to ensure control direction.

### Aileron

Stick Left

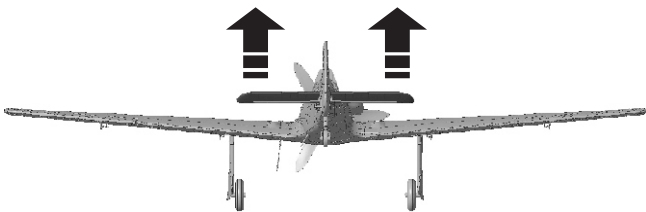


Stick Right

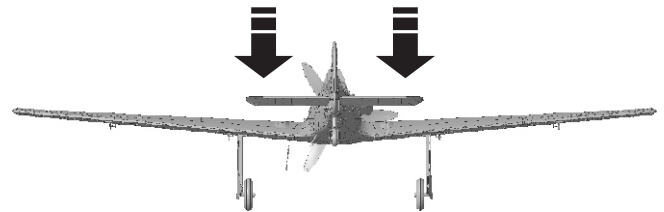


### Elevator

Up Elevator

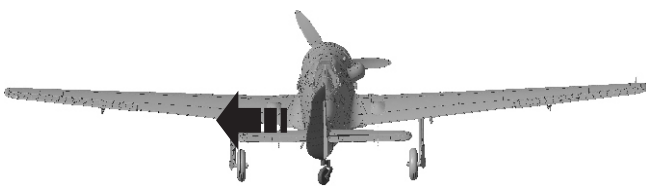


Down Elevator

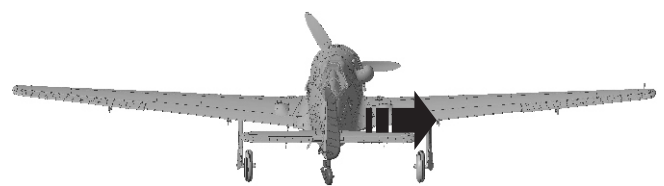


### Rudder

Stick Left

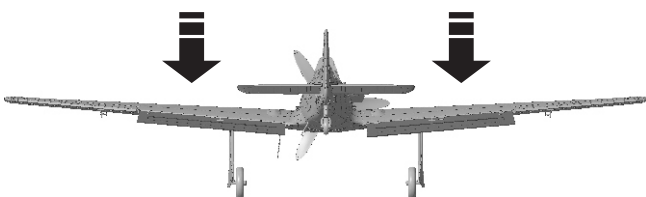


Stick Right



### Optional Flaps

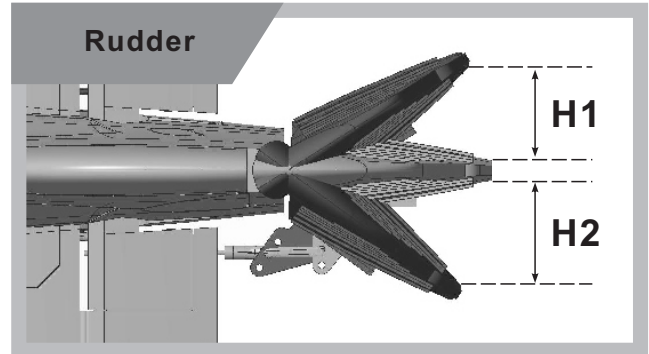
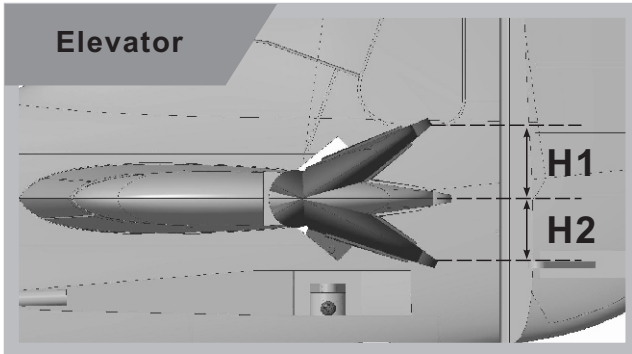
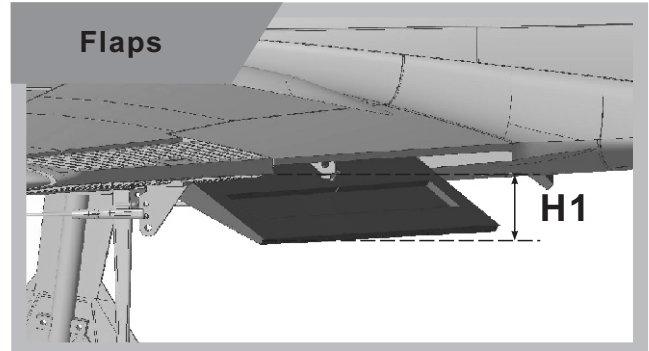
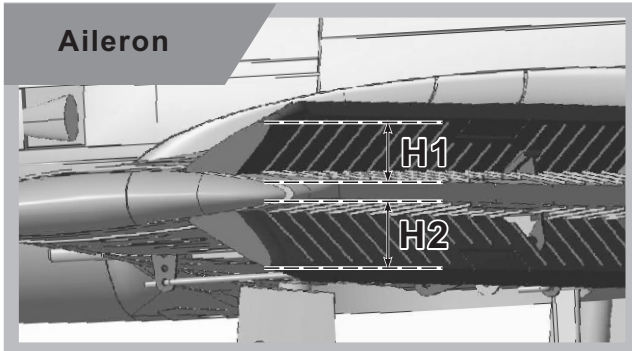
Flaps down



## Dual Rates

EN

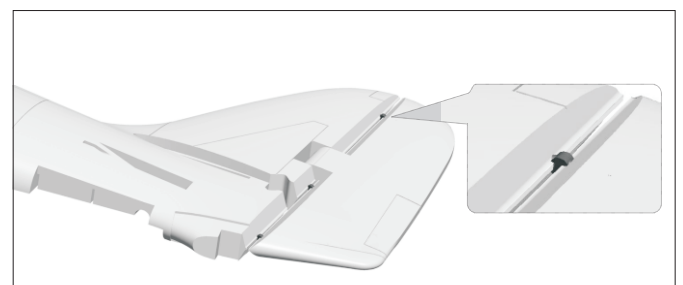
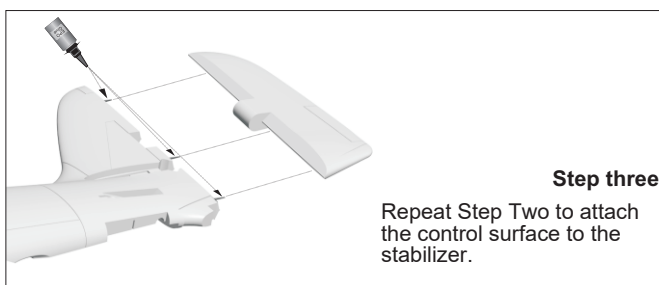
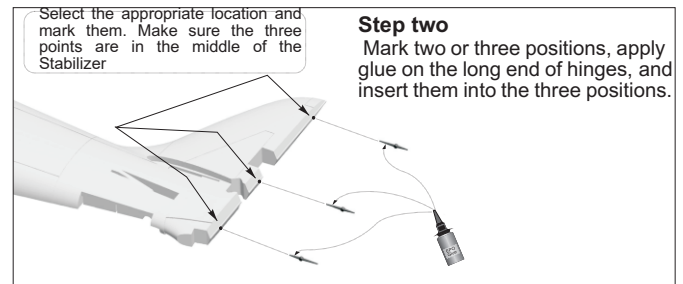
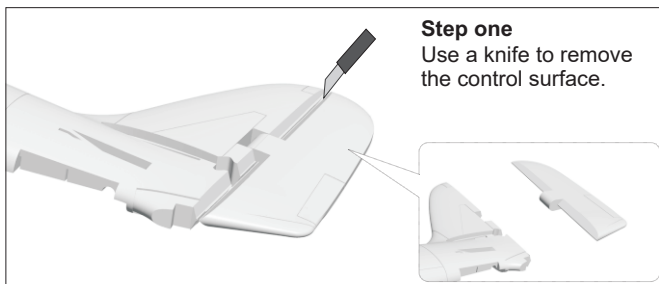
According to our test results, the following rates proved to be a good starting point. Low rates are good for initial flights or less experienced pilots. Adjust rates to suit you own style.



	Aileron	Elevator	Rudder	Flaps
<b>Low Rate</b>	H1/H2 10mm/10mm D/R Rate : 90%	H1/H2 11mm/11mm D/R Rate : 85%	H1/H2 18mm/18mm D/R Rate : 85%	H1 15mm
<b>High Rate</b>	H1/H2 12mm/12mm D/R Rate : 100%	H1/H2 13mm/13mm D/R Rate : 100%	H1/H2 21mm/21mm D/R Rate : 100%	H1 28mm

## Installing Optional Plastic Hinges

The control surfaces of this airplane use a no-hinge connection design. Although proven reliable, these type of hinges can be damaged due to errors, causing the control surface to become loose or separate. Included with this kit is a set of plastic hinges if you wish to use them as an alternate or for repair.



## 历史简介

Ta-152是纳粹德国在二战末期由Fw-190发展的一种高空高速活塞战斗机。与作为“快速解决方案”的Fw-190D相比，Ta-152是作为“最终解决方案”的极致之作。由于诞生时期偏晚，生产数量太少，并未在战争中发挥太大作用；但其优秀的性能仍获得了交战双方的一致赞赏，与P-51H、喷火XIV一起被誉为终极活塞式战斗机，其各项飞行性能已经接近活塞式战斗机的极限。

## 模型介绍

飞行线1/11比例Ta-152H1模型，采用EPO材料制作，机长980mm，翼展1310mm，这款模型的外形线条及轮廓，完全依据真实飞机制作，丰富的细节设计和细腻的迷彩喷涂，使外形更加逼真。大量的塑料零件运用，使我们可以快速、便捷安装主翼、平尾及垂尾。模型的主翼、平尾及每个活动舵面，嵌入了玻纤管，避免高速飞行过程中出现的扭曲、变形现象，让飞行变得更加稳定。包装盒内配送的针式活页，可以让您进一步增加舵面的可靠性。在机身内部，设计了一条通风管道，使电子设备能够有效散热，延长寿命。用螺丝固定的电池托盘，将电池舱分为上、下二层，可以非常方便的安装电调！随机配送的防滑垫，能够有效阻止电池的移动。这款Ta-152H1模型，采用了高功率的3648-830KV无刷马达，配合10X6三叶仿真桨，1200g(不含电机)的轻量化机体和硕大的电池舱空间，可以同时使用3S和4S电池来飞行。使用3S电池时，速度达到120kph/75mph，4S电池下，速度达到140kph/88mph，同时，我们为这款模型产品，特别提供了另外的2叶桨动力改装套件（包含：二叶桨桨罩和螺旋桨固定盘，12\*8二叶桨，3648马达），通过改装，您可以让这款模型飞机达到高达160kph/100mph的时速，带来全新极速体验！

## 飞行特性

飞行线Ta-152H1模型，长翼展设计，拥有极佳的飞行稳定性和较小的转弯半径。较细的机体和强劲的动力，同时带来优秀的速度和爬升性能。350mm宽的前轮距，能够有效抵抗起飞时的反扭力，滑跑方向容易保持。正常情况下，3S/4S动力，分别需要18M/15M的滑跑距离。降落时，襟翼开启后，机头会轻微向下，我们需要略微带住少许升舵，即可慢速、轻柔接地！

## 涂装介绍

模型在出厂时，已经喷涂完成。包装盒内，配送了多种机身编号的感压贴纸和贴纸说明书，您可以选择最喜欢的编号，粘贴到机体上。

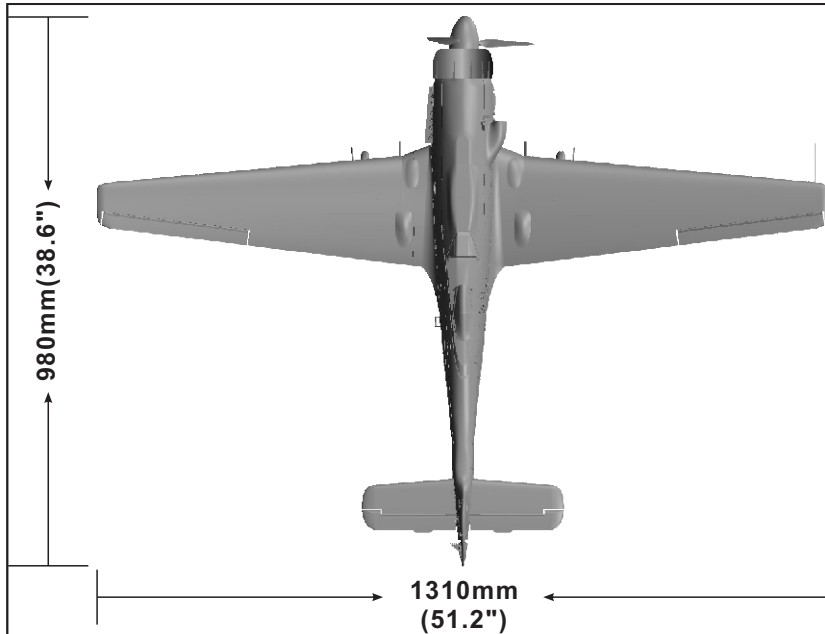
**注意：**模型产品是具有一定危险性的产品，请禁止14岁以下的儿童玩耍，14岁以上的儿童，请在有飞行经验的成人指导下使用，无飞行经验的购买者，应当在具有一定电动涵道飞机飞行经验的成人指导下使用！组装模型前，请仔细阅读说明书，按照说明书的要求进行安装。进行调试和飞行时，请根据说明书指示的参数进行调整。

## 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.不可以在公共场合、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.不可以在雷雨、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!

## 目录

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| 18 重心       | 22 舵面活页改装     |



翼载荷：88g/dm<sup>2</sup>  
 电机：3648-830KV外转无刷电机  
 螺旋桨：3叶 10×6  
 电调：60A 无刷电调  
 舵机：9g数码金属×2，9g数码塑料×4  
 重量：1200g (不含电池)

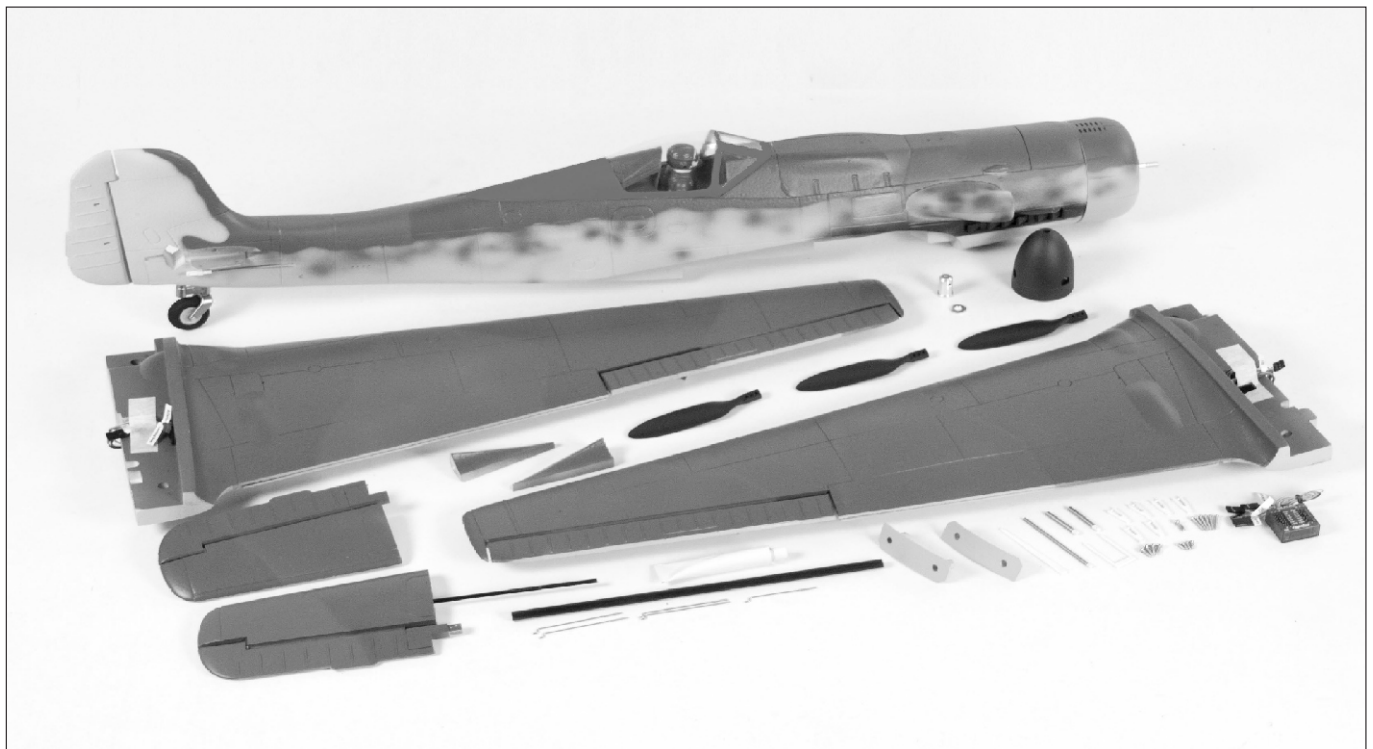
副翼功能：有  
 平尾功能：有  
 方向舵：有  
 襟翼功能：有  
 起落架：电动可收放起落架  
 舱门：主起落架舱门  
 机体材料：EPO

**高速版本改装配件**  
 (以下改装配件，请联系经销商单独购买！)

专用二叶螺旋桨罩  
 专用二叶螺旋桨固定盘  
 3648-880KV 外转无刷马达  
 12×8 二叶桨

**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！

产品包装清单



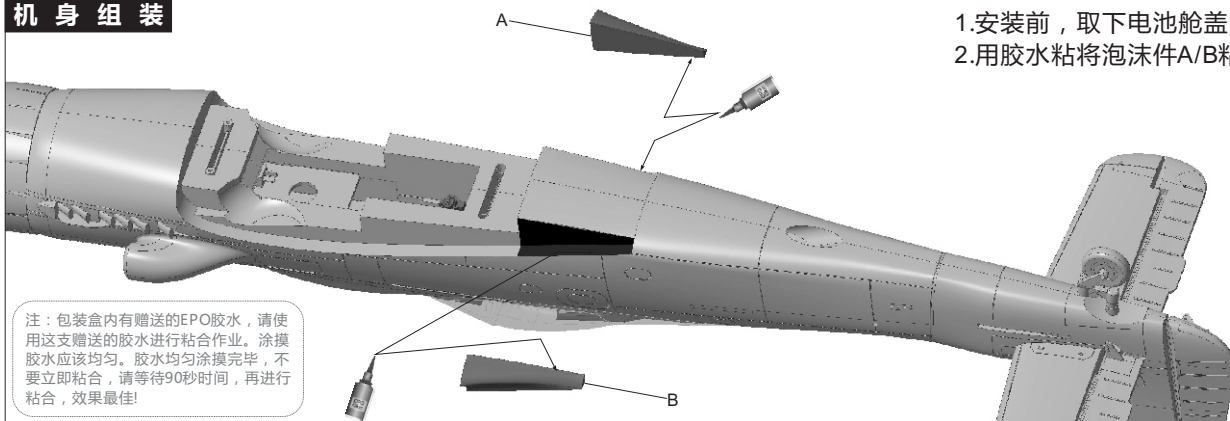
打开产品包装，核对包装清单。(不同配置的版本，包含内容不同！)

序号	配件名称	PNP	KIT Plus	Airframe	序号	配件名称	PNP	KIT Plus	Airframe
1	机身套件	预装所有电子设备	预装舵机	无电子设备	6	螺旋桨	✓	✓	✓
2	主翼套件	预装所有电子设备	预装舵机	无电子设备	7	桨罩及固定件	✓	✓	✓
3	平尾套件	预装所有电子设备	预装舵机	无电子设备	8	组装塑料件及螺丝	✓	✓	✓
4	贴纸	✓	✓	✓	9	玻纤管、胶水	✓	✓	✓
5	说明书	✓	✓	✓	10	集线控制盒	✓	✓	✓

## 机身组装

1. 安装前，取下电池舱盖。
2. 用胶水粘将泡沫件A/B粘到机身上。

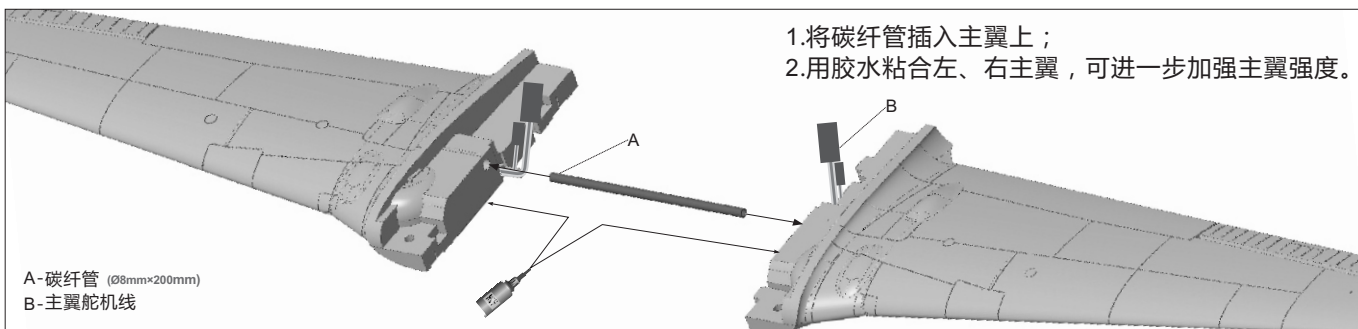
注：包装盒内有赠送的EPO胶水，请使用这支赠送的胶水进行粘合作业。涂摸胶水应该均匀。胶水均匀涂摸完毕，不要立即粘合，请等待90秒时间，再进行粘合，效果最佳！



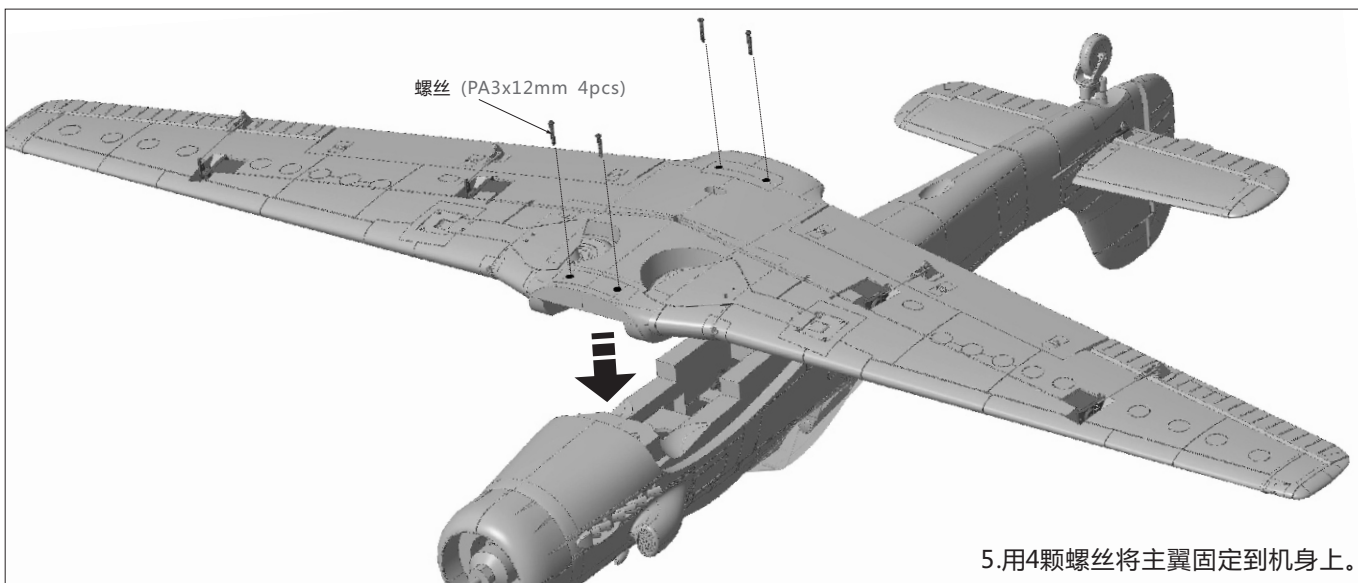
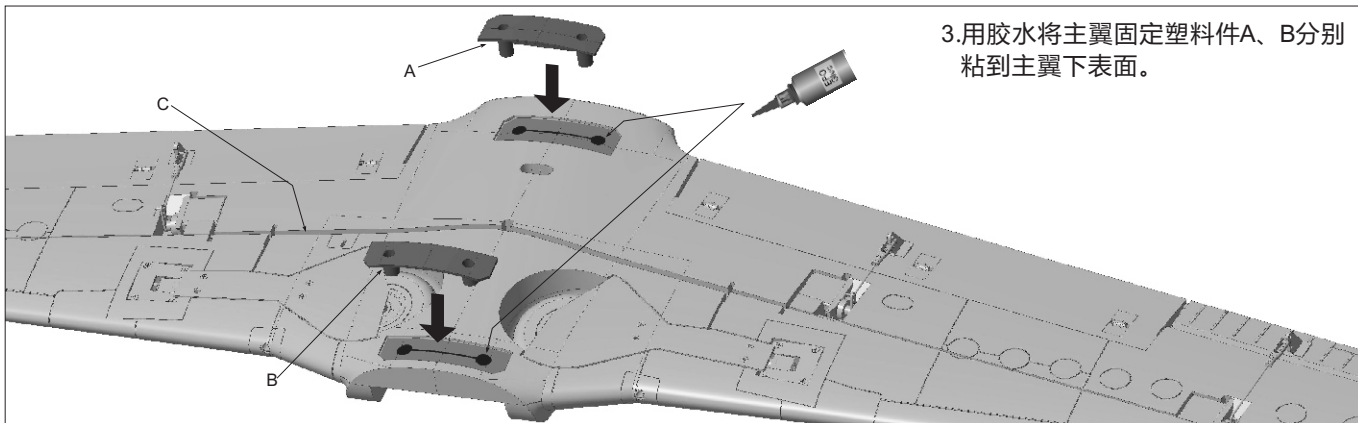
## 主翼组装

1. 将碳纤维管插入主翼上；
2. 用胶水粘合左、右主翼，可进一步加强主翼强度。

A-碳纤维管 (Ø8mm×200mm)  
B-主翼舵机线

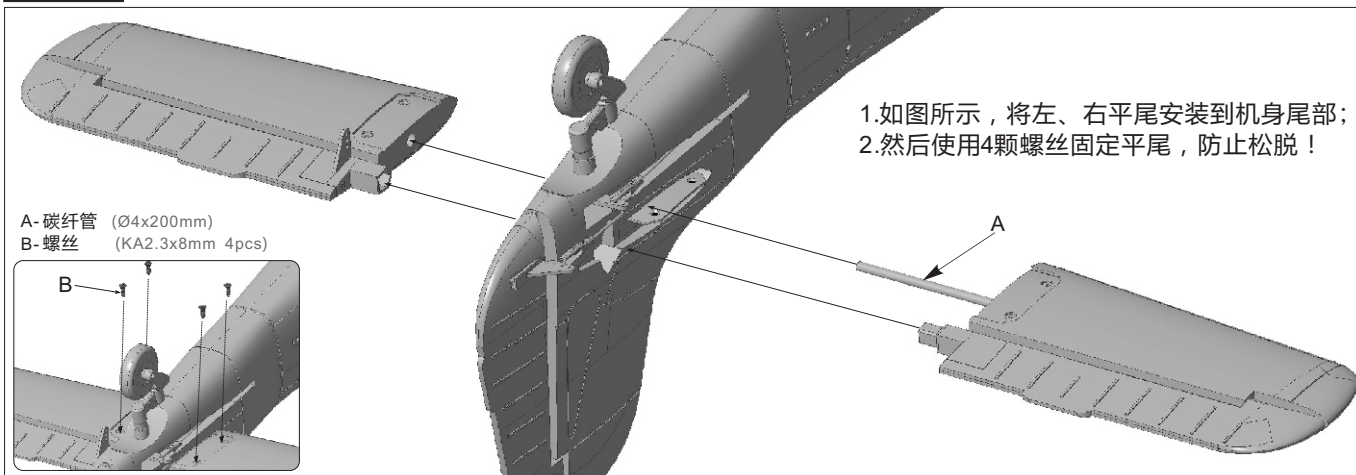


3. 用胶水将主翼固定塑料件A、B分别粘到主翼下表面。



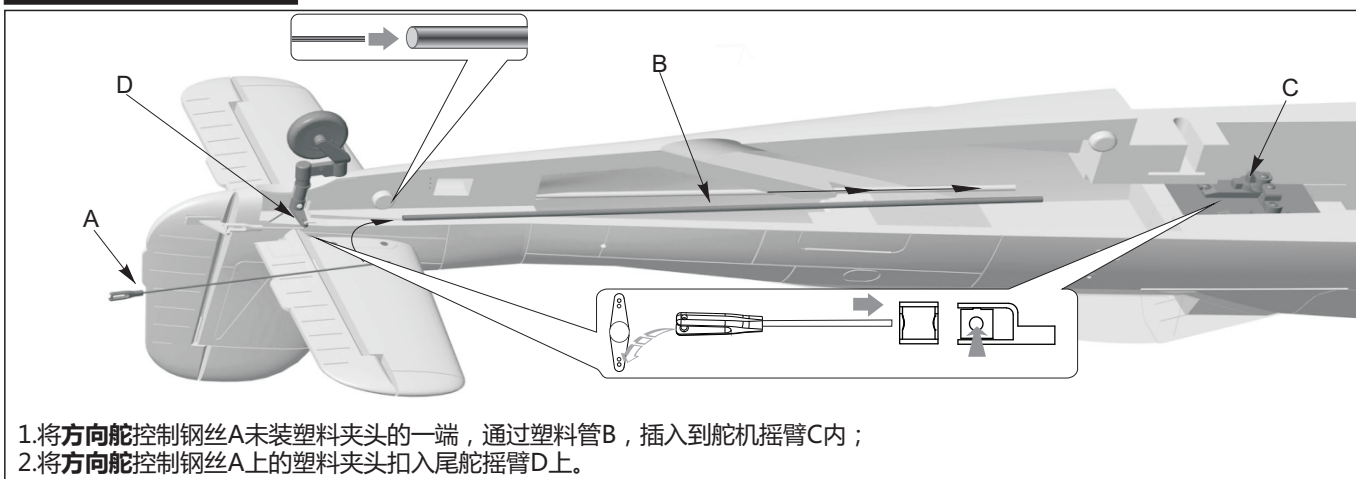
5. 用4颗螺丝将主翼固定到机身上。

## 平尾安装

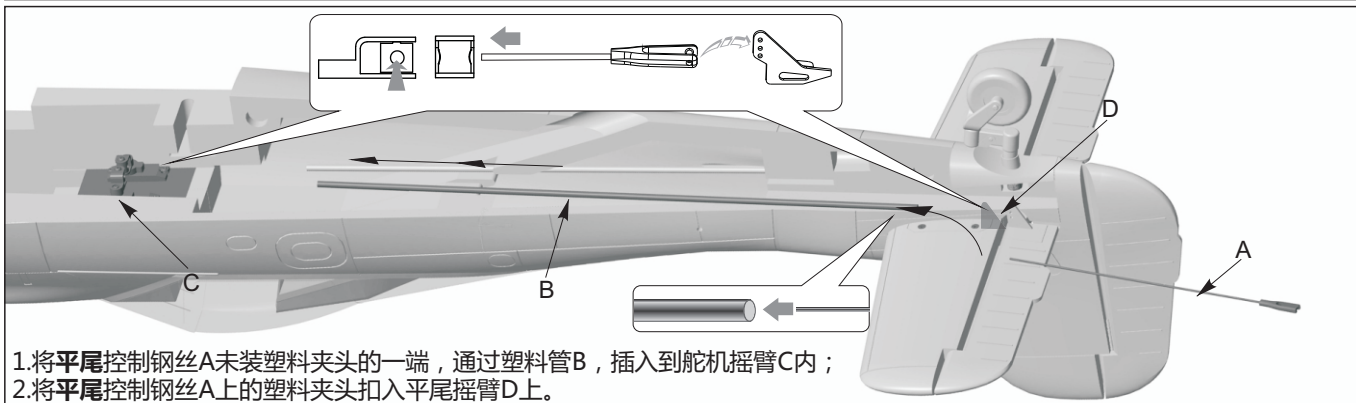


1. 如图所示，将左、右平尾安装到机身尾部；
2. 然后使用4颗螺丝固定平尾，防止松脱！

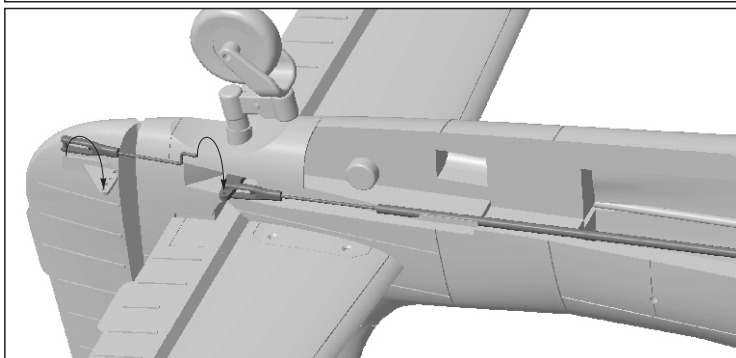
## 安装尾翼舵面控制钢丝



1. 将方向舵控制钢丝A未装塑料夹头的一端，通过塑料管B，插入到舵机摇臂C内；
2. 将方向舵控制钢丝A上的塑料夹头扣入尾舵摇臂D上。



1. 将平尾控制钢丝A未装塑料夹头的一端，通过塑料管B，插入到舵机摇臂C内；
2. 将平尾控制钢丝A上的塑料夹头扣入平尾摇臂D上。



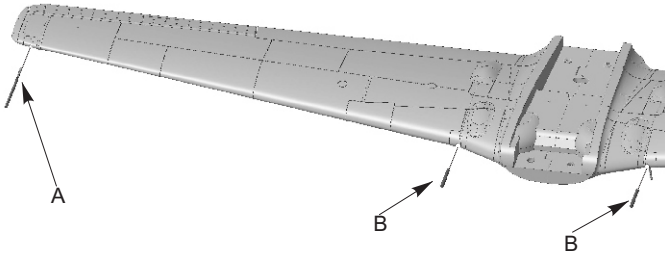
**⚠ 注意：**安装垂尾舵面控制钢丝时，首先需要确保我们已经将后轮调试到居中位置；然后再安装垂尾舵面控制钢丝，并通过调节塑料夹头，使垂直尾翼保持居中位置；

1. 使用胶水把舵面摇臂粘到垂直尾翼上。
2. 用垂尾控制钢丝将转向舵摇臂与垂直尾翼上的舵面摇臂连接起来！



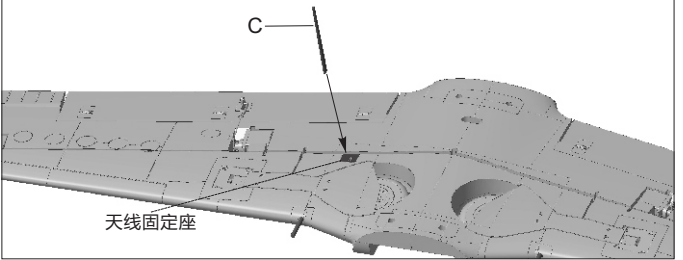
## 机枪安装

1.将机炮A/B分别插入主翼前端。



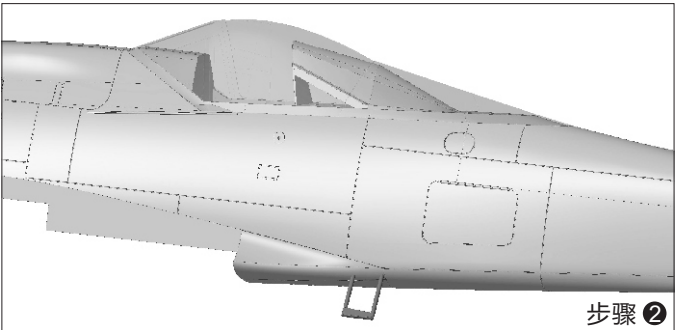
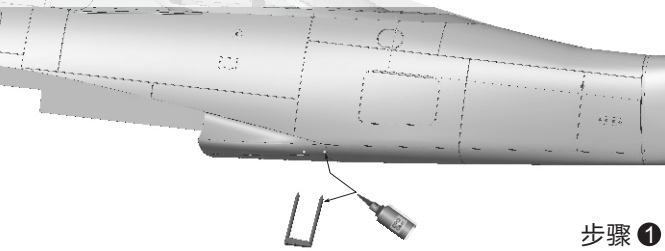
## 天线安装

2.将天线C插入主翼下表面天线固定座内。



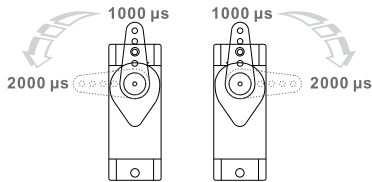
## 登机踏板安装

2.在下图位置，钻二个孔，使用胶水将登机踏板粘贴到小孔中。

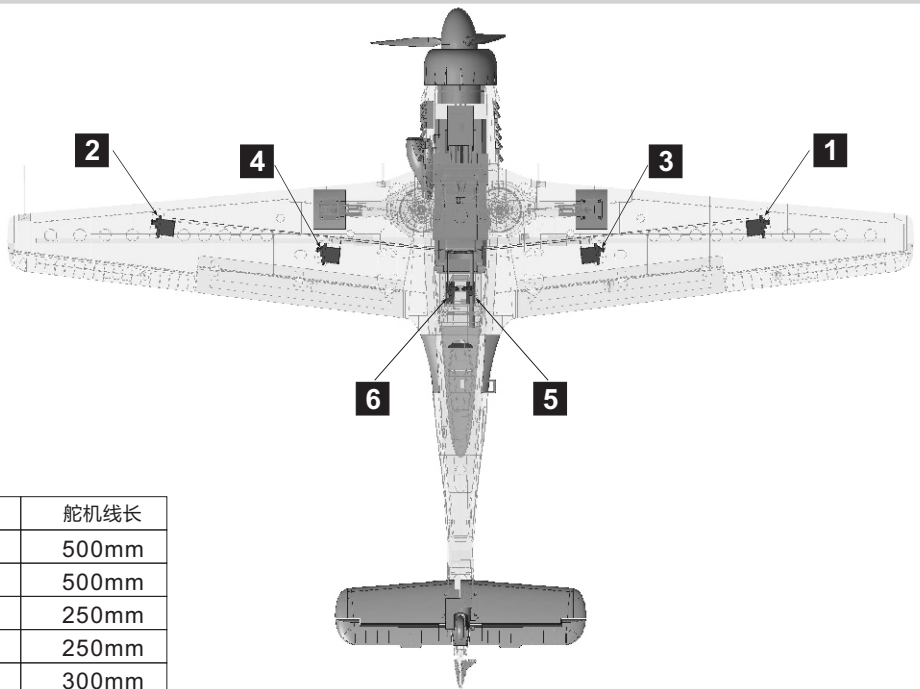


注意：1.完成以上步骤后，根据集线盒上的内容通道标识，将所有舵机线插入到集线盒内。  
2.最后使用胶水固定集线盒。

## 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1000μs到2000μs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



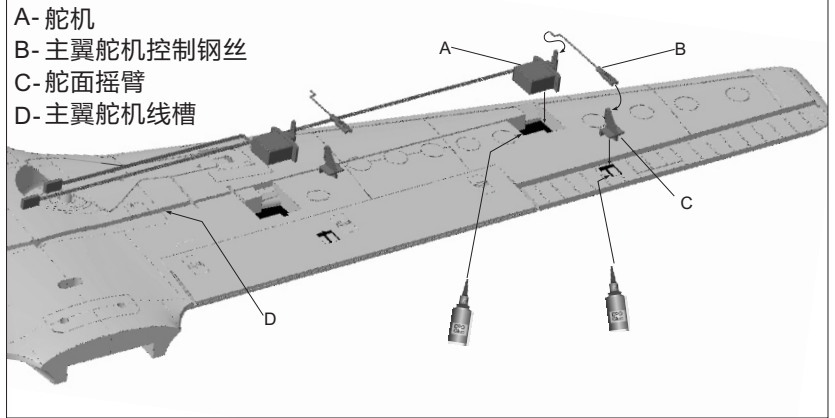
如果您需要选购其它品牌的舵机进行安装，  
请参考下面的表格选择正确的舵机

舵机位置	舵机规格	序号	正、反向	舵机线长
左副翼	9g 模拟-塑料	1	正向	500mm
右副翼	9g 模拟-塑料	2	正向	500mm
左襟翼	9g 模拟-塑料	3	反向	250mm
右襟翼	9g 模拟-塑料	4	正向	250mm
垂尾	9g 数码-金属	5	正向	300mm
平尾	9g 数码-金属	6	正向	300mm

# 舵机组装介绍

## 主翼舵机安装

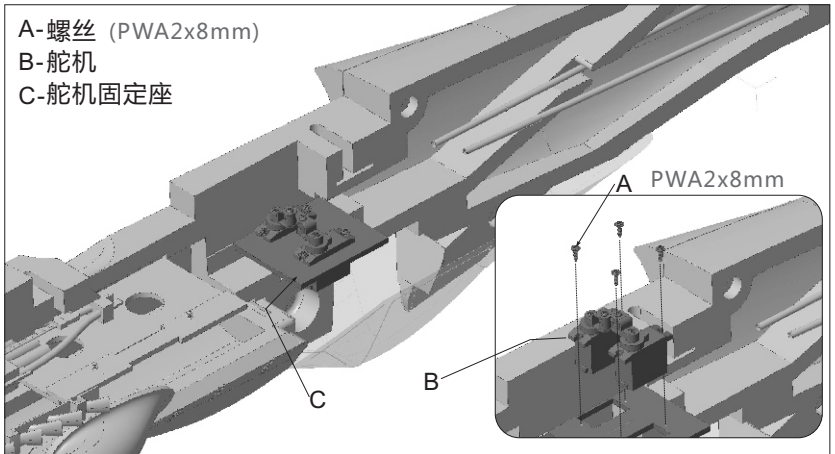
- 1.通过舵机测试仪或者遥控器，把舵机摇臂校正到居中位置；
- 2.用胶水分别把舵机和舵面摇臂粘到主翼；
- 3.将舵机线卡到舵机线槽内，待所有主翼舵机安装完成，贴上贴纸；
- 4.钢丝一端穿入到舵机摇臂后，调节钢丝长度，在保持舵面居中的情况下，将夹头扣入舵面摇臂内；
- 5.重复以上4个步骤，安装襟翼舵机和另外一侧主翼舵机。



## 平尾、垂尾舵机安装

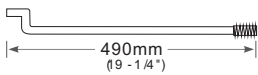
- 1.通过舵机测试仪或者遥控器，把舵机摇臂校正到居中位置；
- 2.使用螺丝A把舵机固定到木板上；
- 3.将舵机线从木板下方，放置到电池航舱内。

**注意：**自选舵机时，可能因为舵机尺寸的关系，无法固定。此时，我们可以取下舵机固定木片，直接将舵机粘在木片下方的泡沫舵机孔内，不会影响使用；



# 控制钢丝尺寸

### 方向舵控制钢丝尺寸

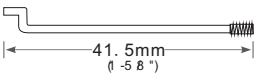


钢丝直径  $\varnothing 1.2\text{mm}$

### 方向舵控制钢丝安装孔位



### 垂尾控制钢丝尺寸

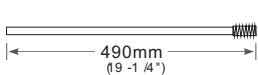


钢丝直径  $\varnothing 1.2\text{mm}$

### 垂尾钢丝安装孔位



### 平尾控制钢丝尺寸

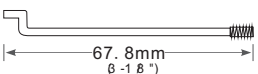


钢丝直径  $\varnothing 1.2\text{mm}$

### 平尾钢丝安装孔位



### 副翼控制钢丝尺寸

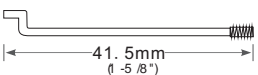


钢丝直径  $\varnothing 1.2\text{mm}$

### 副翼舵机钢丝安装孔位



### 襟翼控制钢丝尺寸



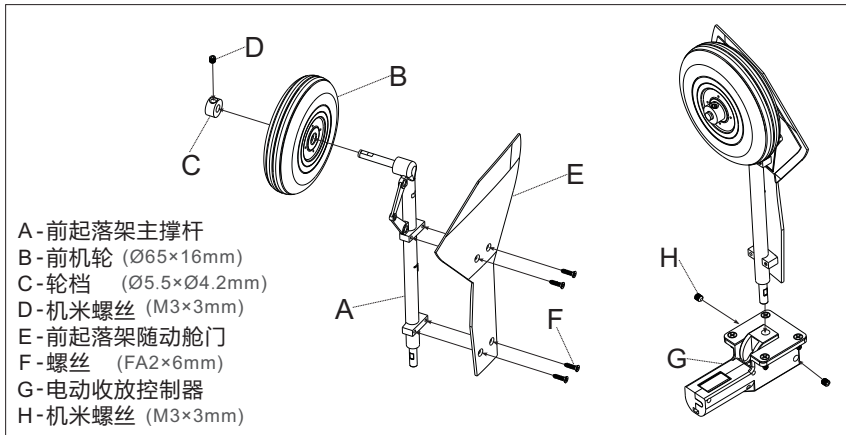
钢丝直径  $\varnothing 1.2\text{mm}$

### 襟翼舵机钢丝安装孔位

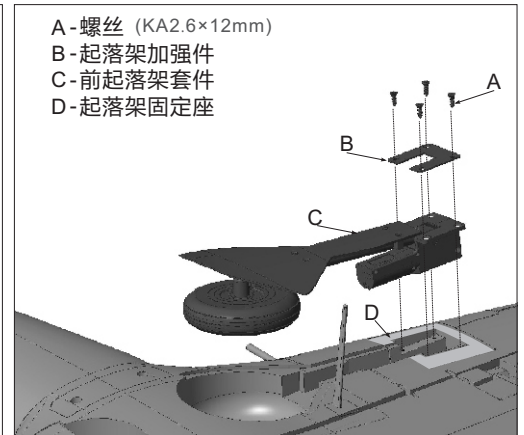


## 主起落架组装

请参才以下图示，组装、更换、维修起落架；



- A - 前起落架主撑杆
- B - 前机轮 (Ø65×16mm)
- C - 轮档 (Ø5.5×Ø4.2mm)
- D - 机米螺丝 (M3×3mm)
- E - 前起落架随动舱门
- F - 螺丝 (FA2×6mm)
- G - 电动收放控制器
- H - 机米螺丝 (M3×3mm)

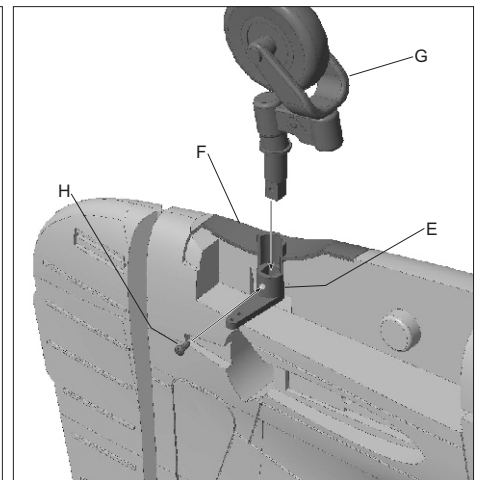
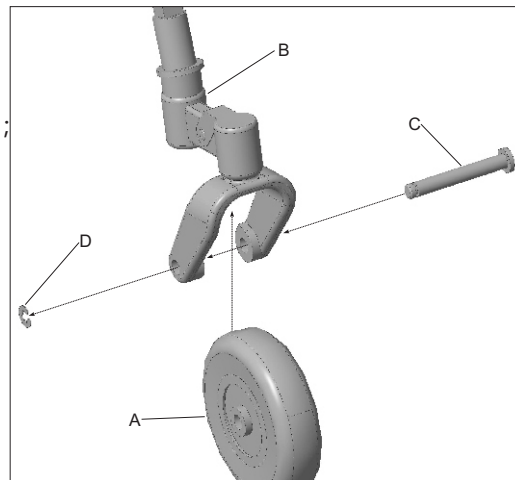


- A - 螺丝 (KA2.6×12mm)
- B - 起落架加强件
- C - 前起落架套件
- D - 起落架固定座

## 后起落架组装

1. 参考右图，组装好尾轮组。
2. 将尾轮组穿入后轮固定塑料件后，继续插入到尾舵转向摇臂中；
3. 将螺丝锁入尾舵转向摇臂进行固定！

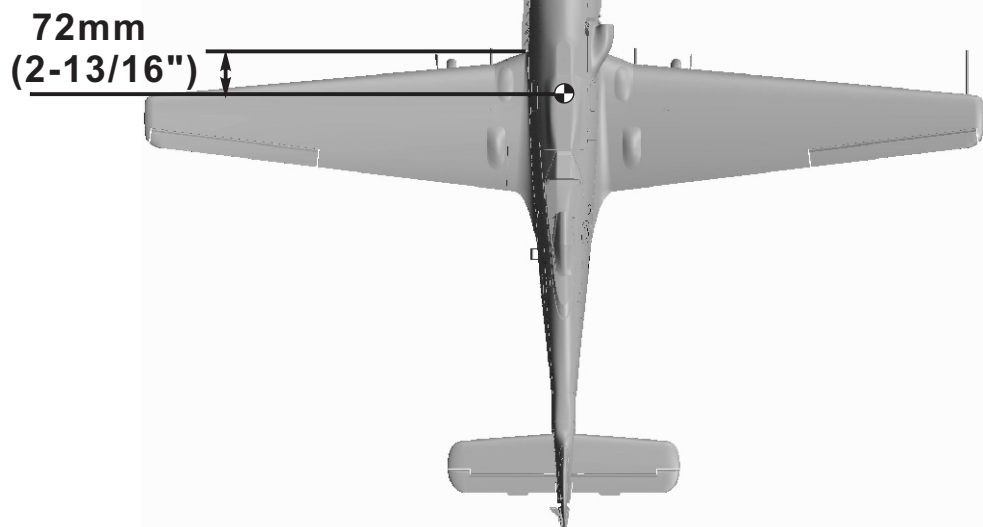
- A - 后机轮 (Ø35×10mm)
- B - 后轮主撑杆
- C - 后轮轮轴
- D - E型扣 (Ø5×Ø2mm)
- E - 尾舵转向摇臂
- F - 后轮固定塑料件
- G - 尾轮组
- H - 螺丝 (PA1.6×6mm)

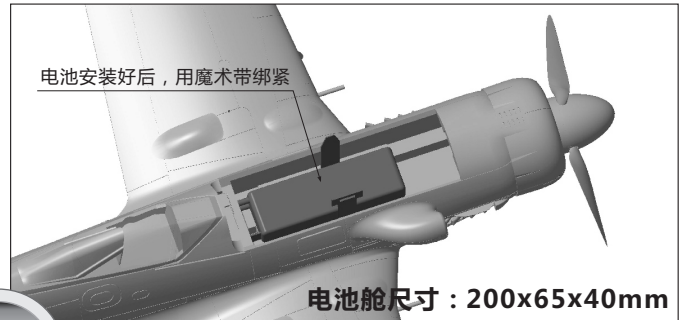
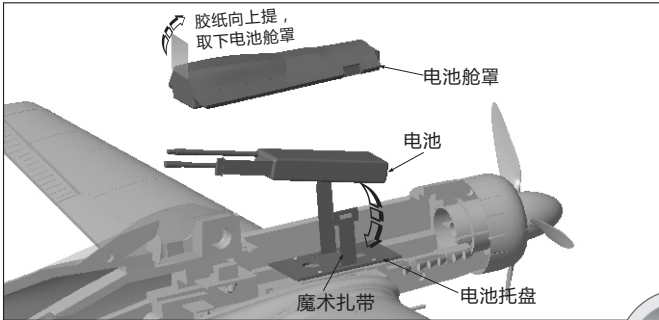


## 重心示意图

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。

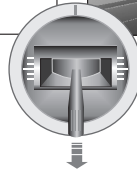
- 您可以将电池向前，或者向后移动，来调整飞机的重心；
- 如果通过电池的移动无法调整到正确的重心位置，您还可以适当的使用一些其它材料来配重，使飞机的重心处于正确的位置！





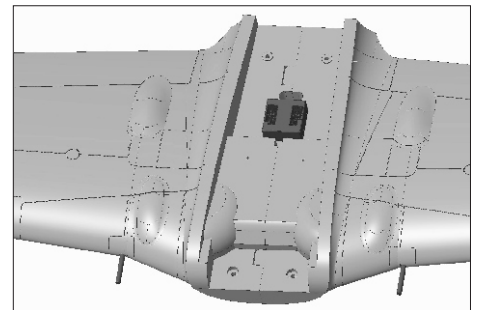
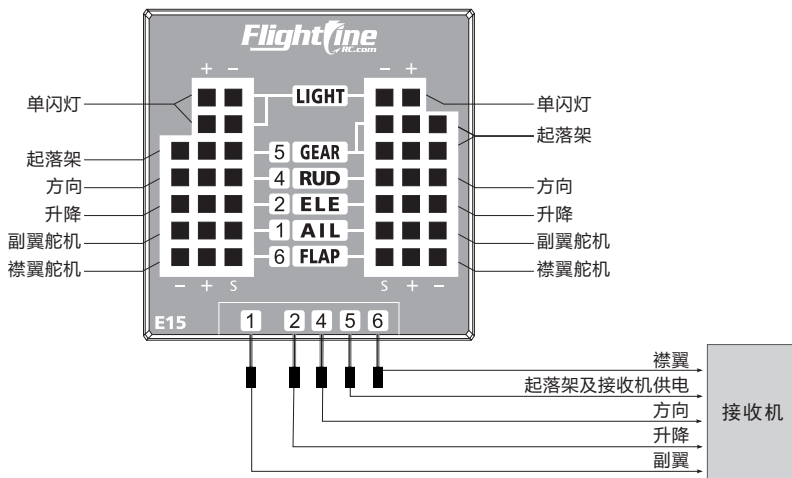
**电池舱尺寸：200x65x40mm**

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。  
安装电池后，启动油门前，请保证没有任何物体在螺旋桨转动直径以内，避免造成事故和人身伤害！



我们建议使用的电池容量和放电倍率如下：  
3S 11.1V 2600mAh ~ 3S 11.1V 4000mAh  
4S 14.8V 2600mAh ~ 4S 14.8V 4000mAh  
放电倍率 ≥ 30C

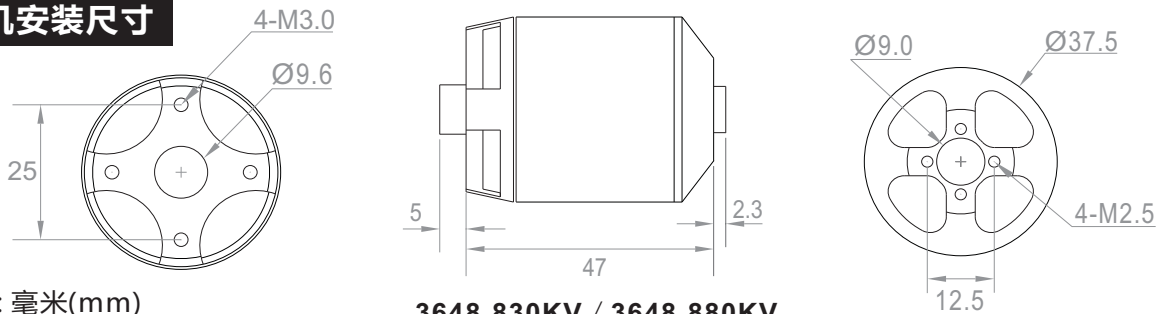
## 集线盒使用说明



参考集线盒上的通道标识，将所有电池舱内的连接线插入集线盒。接线工作完成后，使用胶水固定集线盒，防止松动。

## 电机参数

### 电机安装尺寸

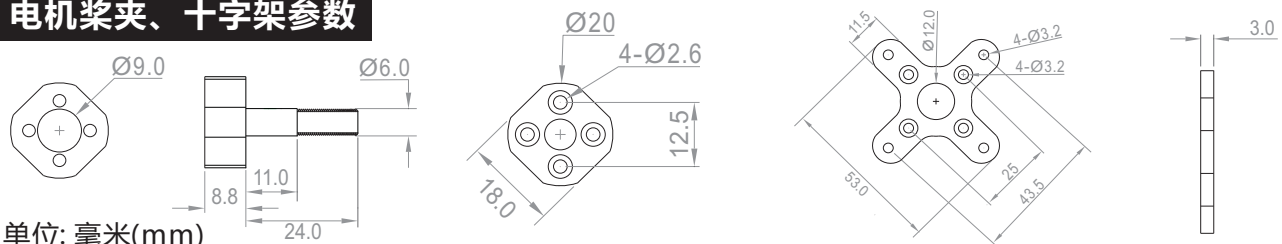


单位: 毫米(mm)

**3648-830KV / 3648-880KV**

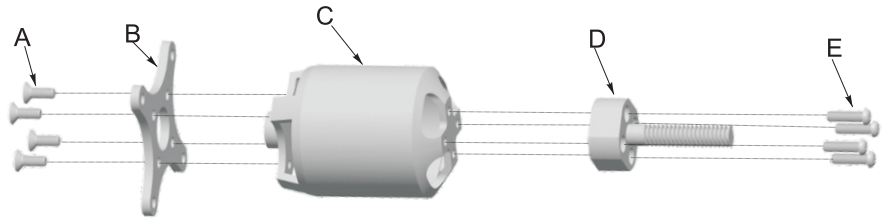
Item No.	KV Value	Volute (V)	Current (A)	Pull (g)	Motor Resistance	Weight (g)	No Load Current	Propeller	ESC
MO136483	830RPM/V	14.8	41	2500	0.02 Ω	170	2.3A/10V	3-Blade10×6	≥60A
MO136484	880RPM/V	14.8	53	2600	0.02 Ω	165	2.3A/10V	2-Blade12×8	≥60A

### 电机桨夹、十字架参数

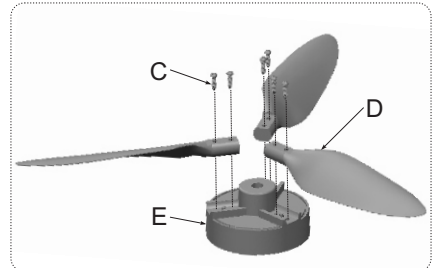
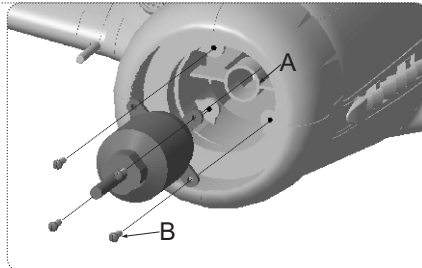


单位: 毫米(mm)

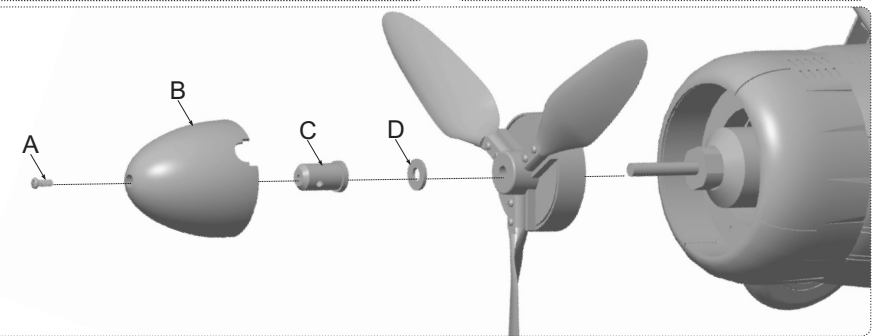
- A- 螺丝 (KM3x5mm 4pcs)
- B- 电机固定十字架
- C- 3648-830KV无刷外转马达
- D- 螺旋桨桨夹
- E- 螺丝 (HM2.5x10mm 4pcs)



- A- 电机固定座
- B- 螺丝 (PA3x12mm 4pcs)
- C- 螺丝 (PA2.3x16mm 8pcs)
- D- 仿真螺旋桨 (10x6, 三片组合)
- E- 仿真螺旋桨固定盘

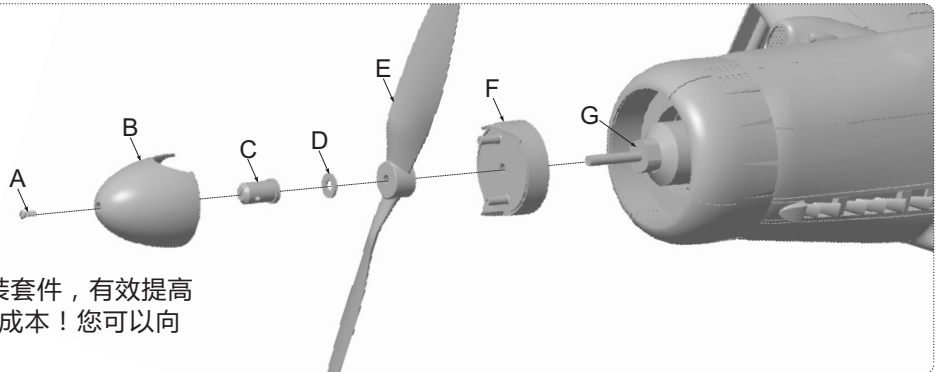


- A- 螺丝 (PM3x10mm 1pcs)
- B- 螺旋桨桨罩 (仿真三叶桨罩)
- C- 螺旋桨固定栓
- D- 垫片 (Φ14x1.5xΦ6.2mm)



## 2叶高速版改装套件的安装

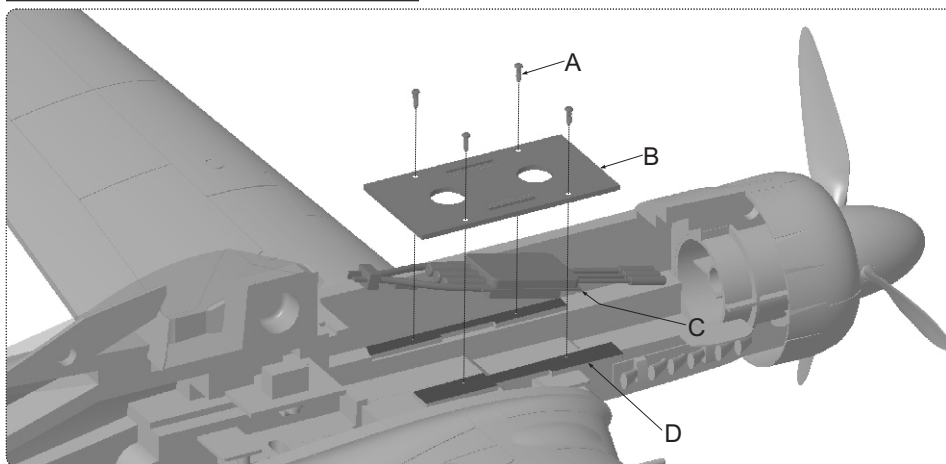
- A- 螺丝 (PM3x10mm 1pcs)
- B- 二叶螺旋桨桨罩
- C- 螺旋桨固定栓
- D- 垫片 (Φ14x1.5xΦ6.2mm)
- E- 二叶桨 (12x8)
- F- 二叶螺旋桨固定盘
- G- 3648-880KV无刷马达



我们为这款模型准备一个2叶高速改装套件，有效提高功率和飞行速度，降低螺旋桨的使用成本！您可以向我们的经销商联系购买专和改装套件

## 无刷电子调速器安装

- A- 螺丝 (PWA3x8mm 4pcs)
- B- 电池托盘
- C- 电调
- D- 托盘固定架



电调放置在电池托盘B下方，这里是一个特别设计的通风管道，可以有效对电子设备降温。如左侧图示，当我们取下电池托盘B时，您可以方便地更换电调！

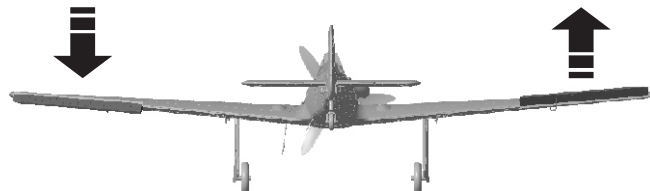
当您按前面的步骤组装好飞机后，在飞行前，我们需要用一块充满电的电池，连接到电调。用遥控器测试每个舵面的工作情况，检查是否正常！

## 副翼

副翼摇杆  
向左运动

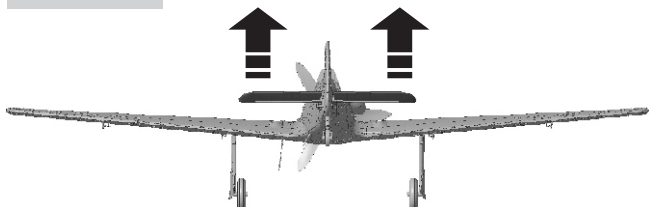


副翼摇杆  
向右运动

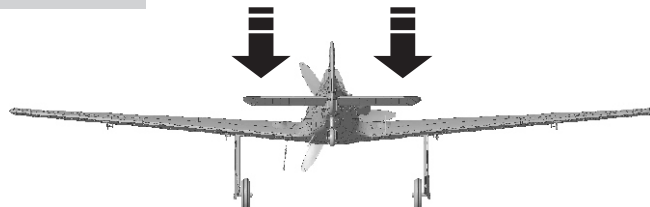


## 升降舵

升降摇杆  
向下运动

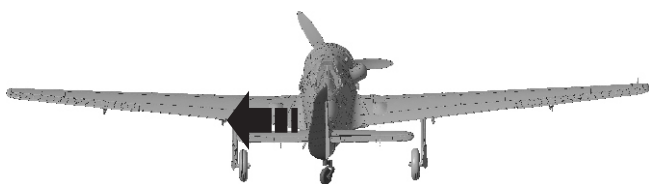


升降摇杆  
向上运动

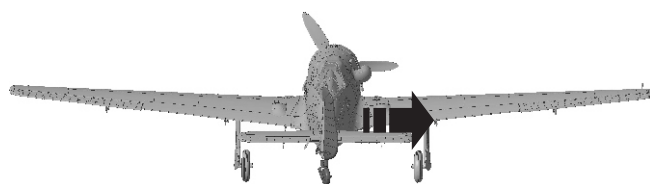


## 方向舵

方向摇杆  
向左运动

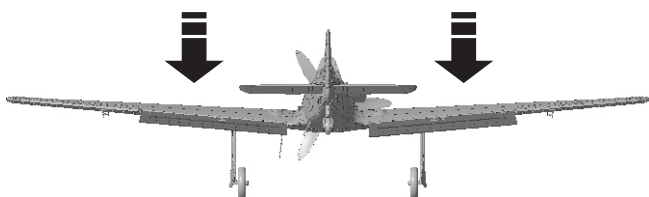


方向摇杆  
向右运动

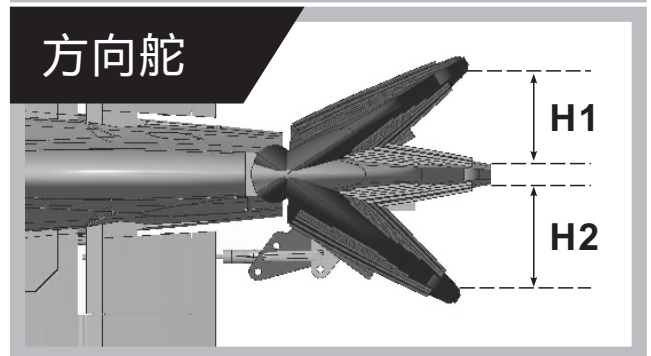
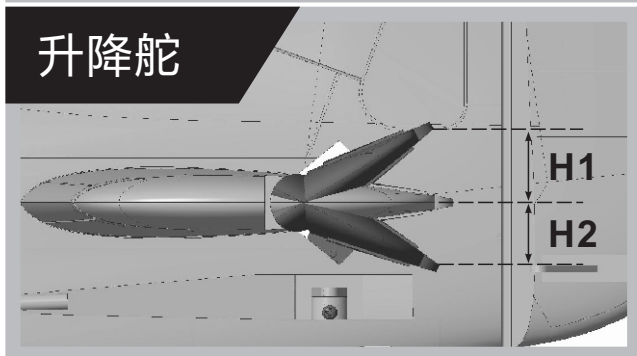
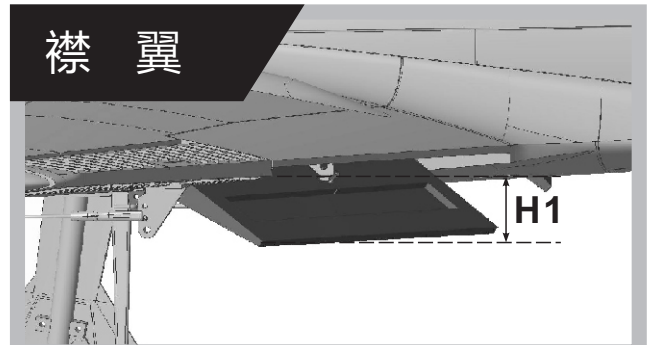
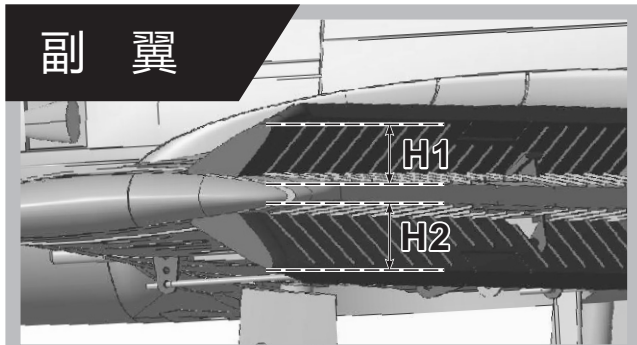


## 襟翼

襟翼放下



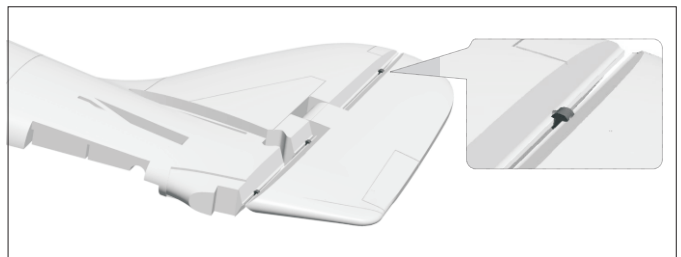
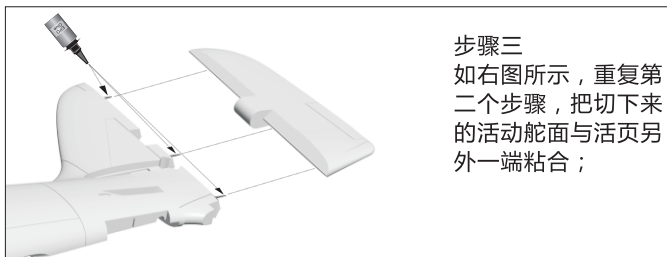
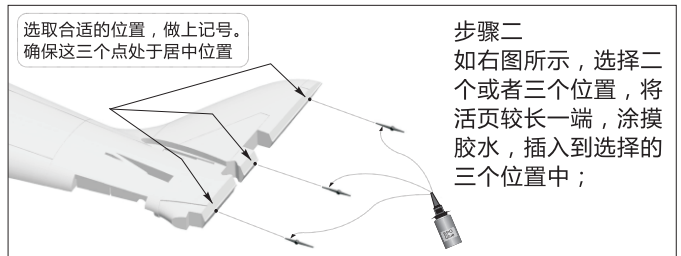
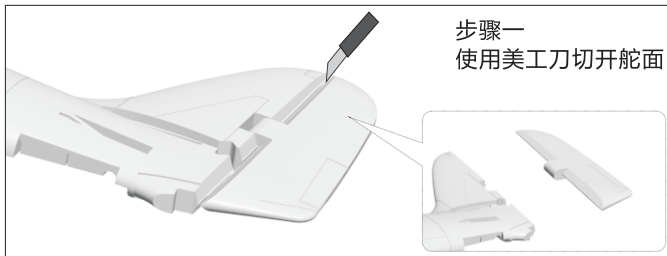
根据我们的测试经验，我们认为，按以下参数来设置副翼和升降舵的大、小舵，将有助于飞行。在小舵角的情况下，飞机的可控性能会好一些，适合初次飞行或者不太熟练的玩家飞行。而大舵角的设置，可以提高动作灵敏度，使用经验丰富的玩家。您可以根据自身的情况，来选择其中一种舵量进行飞行！



	副翼	升降舵	方向舵	襟翼
<b>小舵角</b>	H1/H2 10mm/10mm 舵量比率：90%	H1/H2 11mm/11mm 舵量比率：85%	H1/H2 18mm/18mm 舵量比率：85%	H1 15mm
<b>大舵角</b>	H1/H2 12mm/12mm 舵量比率：100%	H1/H2 13mm/13mm 舵量比率：100%	H1/H2 21mm/21mm 舵量比率：100%	H1 28mm

## 舵面活页改装

本产品舵面，采取无铰链方案设计，虽然经过大量的运用，已经证明这是一种可靠的设计，但是，我们不排除，在使用的过程中，由于失误而造成舵面脱落现象。所以，我们随机配送了一套塑料针式铰链，方便您的维修和舵面加强，请参考以下示意图，进行改装：





**Dongguan Freewing Electronic Technology Ltd**  
**HK Freewing Model International Limited**

Add.: Fei Yi Building, face to Labor Bureau, Fumin Middle Road, Dalang Town,  
Dongguan City, Guangdong Province, China

Web: <http://www.sz-freewing.com>

Email: [freewing@sz-freewing.com](mailto:freewing@sz-freewing.com)

Tel: 86-769-82669669 Fax: 86-769-82033233

**东莞市飞翼电子科技有限公司**  
**香港飞翼模型国际有限公司**

地址: 广东省东莞市大朗镇富民中路402-408号飞翼楼四楼

Web: <http://www.sz-freewing.com>

Email: [freewing@sz-freewing.com](mailto:freewing@sz-freewing.com)

Tel: 86-769-82669669 Fax: 86-769-82033233

