

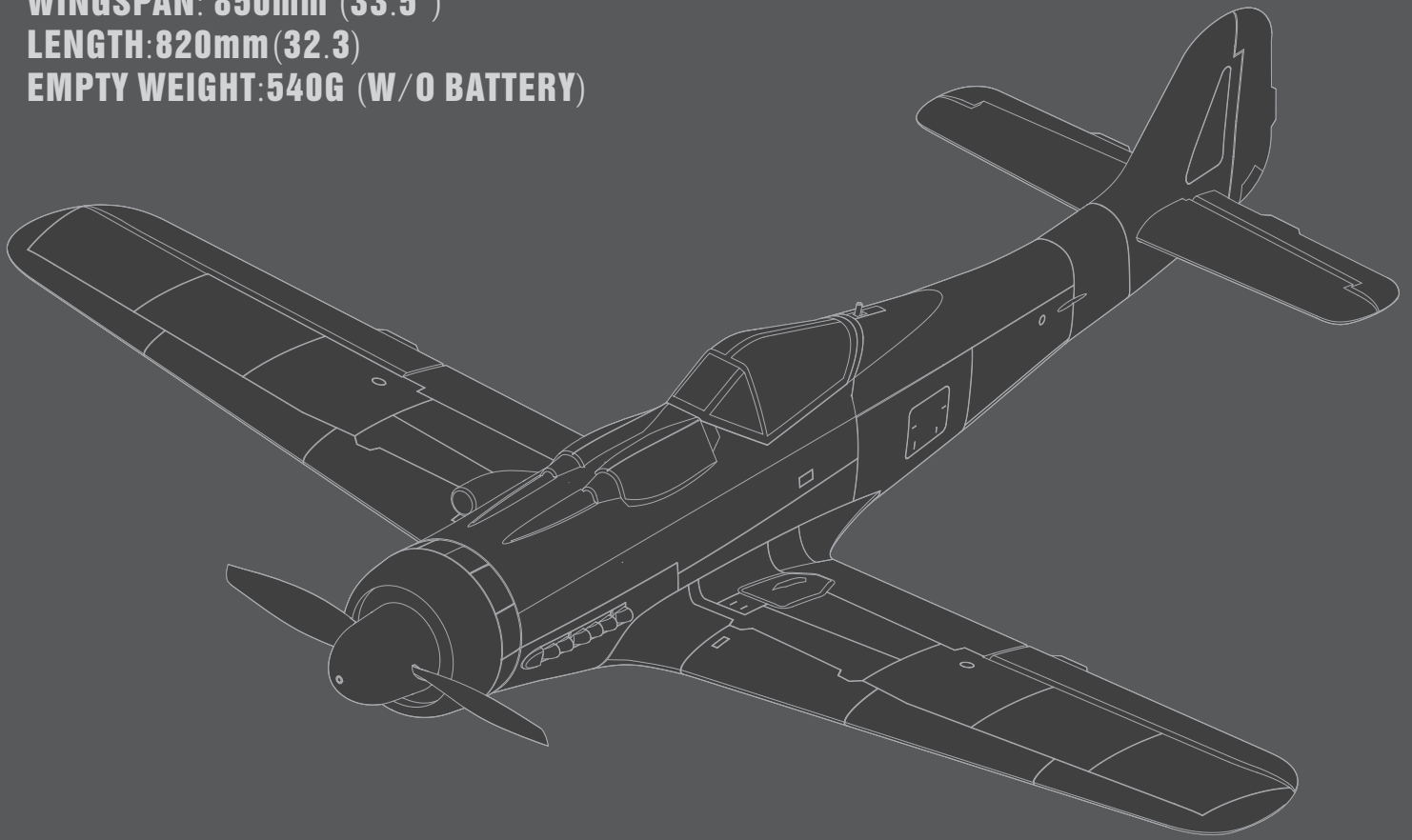


# Fw 190 D-9 Dora User Manual

WINGSPAN: 850mm (33.5")

LENGTH: 820mm (32.3)

EMPTY WEIGHT: 540G (W/O BATTERY)



EN

1~5

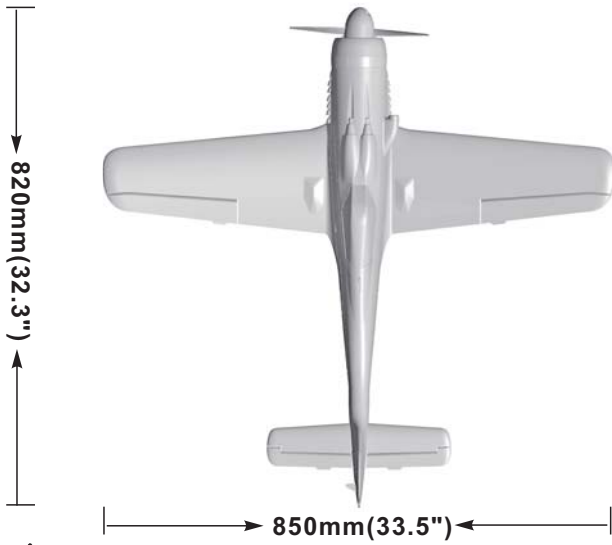
中

6~10



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

MADE IN CHINA



Wing Loading : 61g/dm<sup>2</sup>  
 Wing Area : 10.2dm<sup>2</sup>  
 Motor : 2836-950KV Brushless O/R Motor  
 Propeller : 2-Blade 9×6  
 ESC : 30A  
 Servo : 9g Plastic Servo (3pcs)  
 Top Speed : 130KPH/81.3MPH (4S)  
 100KPH/62.5MPH (3S)  
 Empty Weight : 540g(w/o battery)

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

## Packing List

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

No.	Name	PNP	ARF Plus	Airframe
1	Fuselage	Pre-installed all electronic parts	Pre-installed servo	No electronic equipment
2	Main wing	✓	✓	✓
3	Horizontal tail	✓	✓	✓

No.	Name	PNP	ARF Plus	Airframe
4	Pushrod set	✓	✓	✓
5	Glue	✓	✓	✓
6	Manual	✓	✓	✓

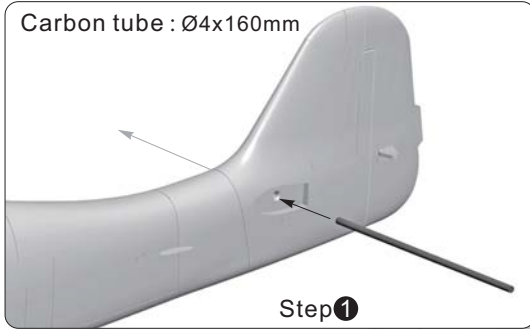
# PNP Installation Instructions

EN

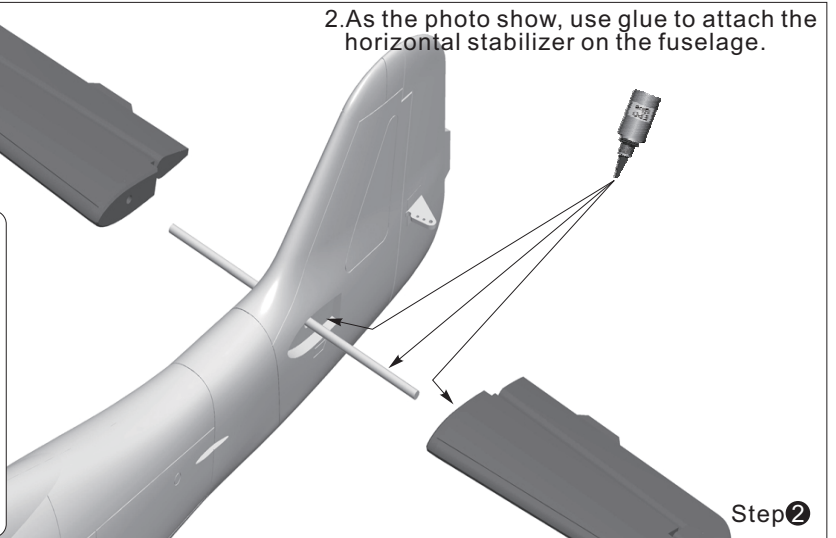
## Install Horizontal Stabilizer

1. Insert the carbon tube to the fuselage.

Carbon tube :  $\varnothing 4 \times 160 \text{mm}$



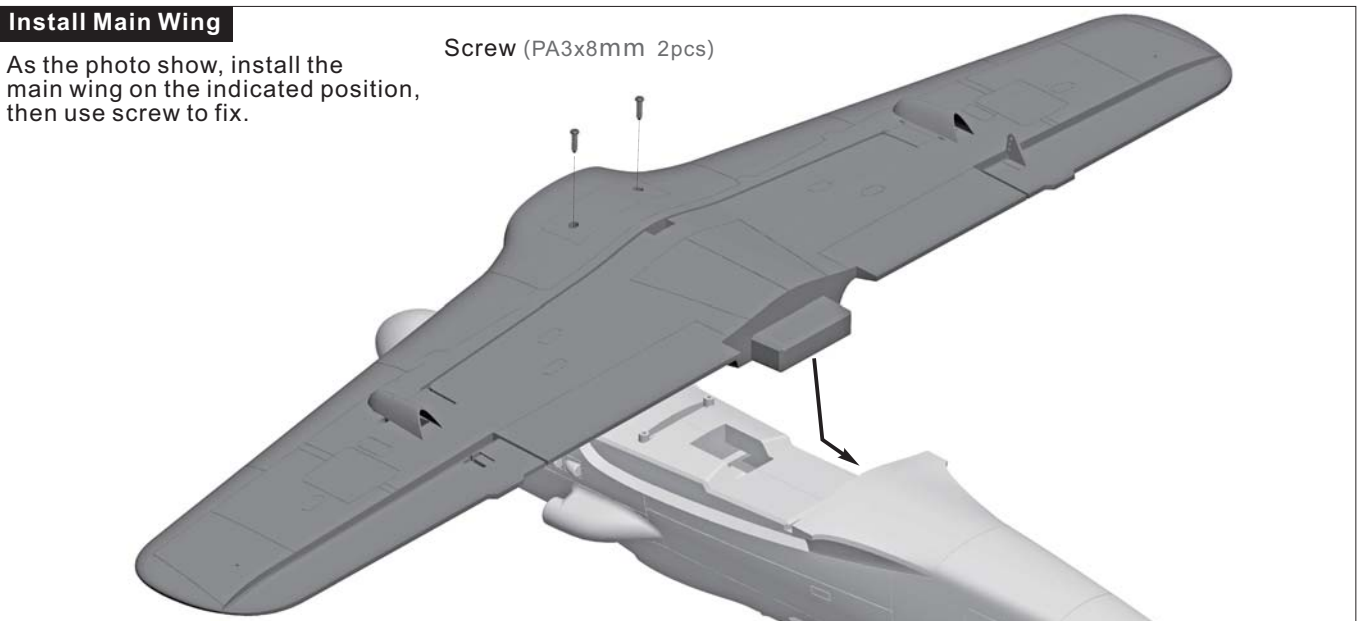
2. As the photo show, use glue to attach the horizontal stabilizer on the fuselage.



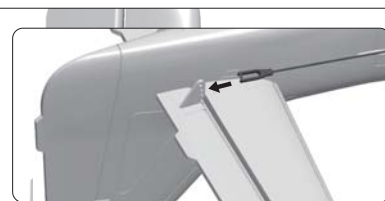
## Install Main Wing

As the photo show, install the main wing on the indicated position, then use screw to fix.

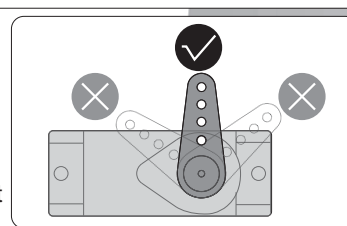
Screw (PA3x8mm 2pcs)



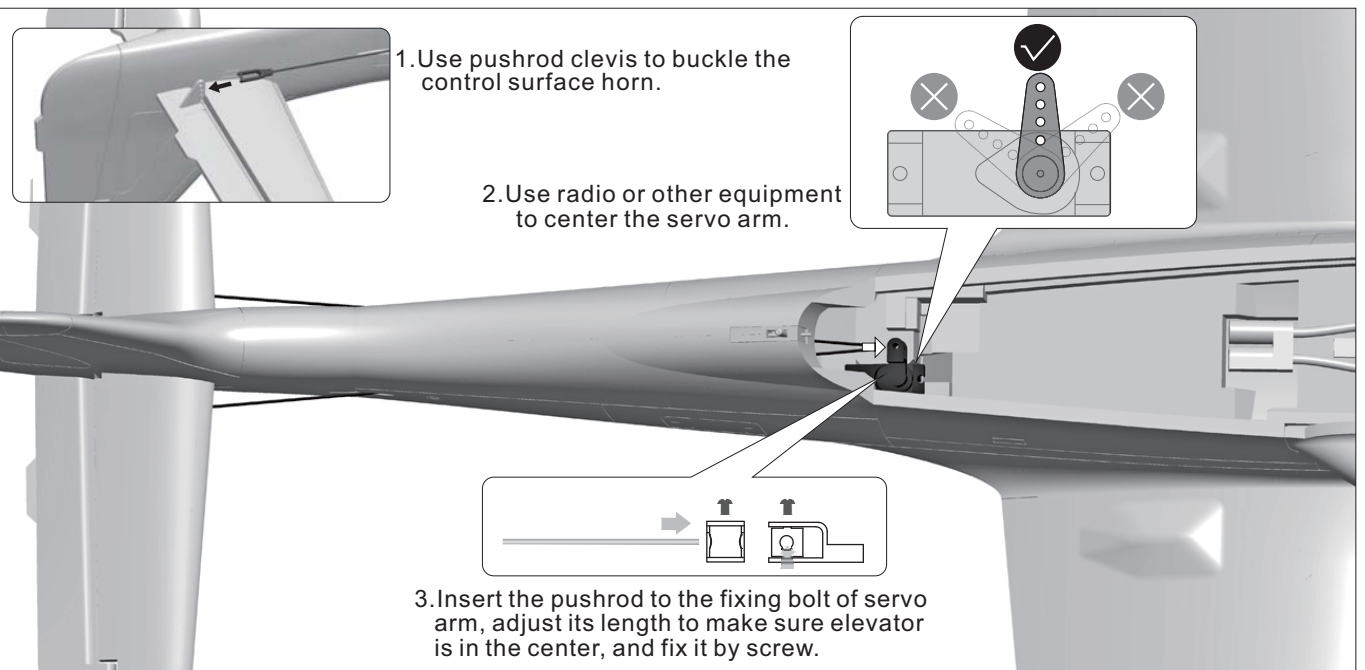
1. Use pushrod clevis to buckle the control surface horn.



2. Use radio or other equipment to center the servo arm.

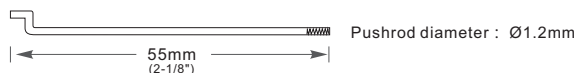


3. Insert the pushrod to the fixing bolt of servo arm, adjust its length to make sure elevator is in the center, and fix it by screw.

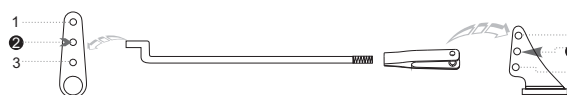


## Pushrod Instructions

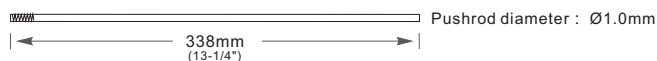
### Aileron pushrod size



### Aileron pushrod mounting hole



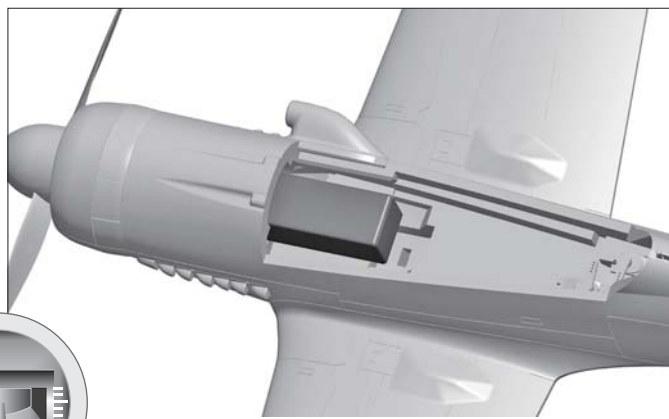
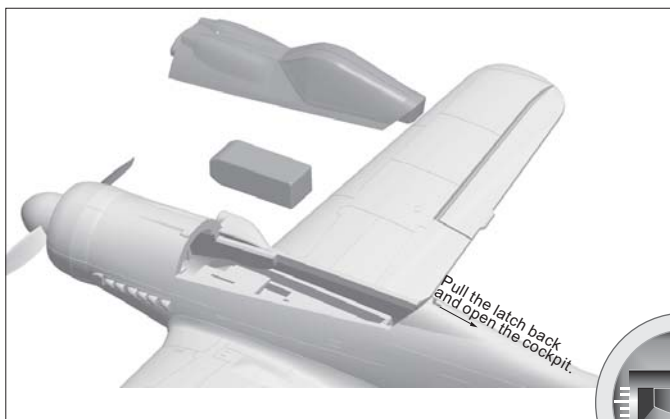
### Elevator pushrod size



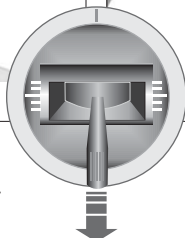
### Elevator pushrod mounting hole



## Battery Size



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



We recommend the following LiPo battery:  
**3S 11.1V 1000mAh ~ 3S 11.1V 1600mAh**  
**4S 14.8V 1000mAh ~ 4S 14.8V 1600mAh**  
**Discharge rate of C ≥ 30C**

## Center of Gravity

Correct Center of Gravity is critical for the aircraft to fly safely and in control. 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 cannot obtain the recommended CG by moving the battery to a suitable location, you can also install a counterweight to achieve correct CG. However, with the recommended battery size, no counterweight is required. We recommend not flying with a battery size that requires a counterweight.



## Control Direction Test

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

### Aileron

Stick Left

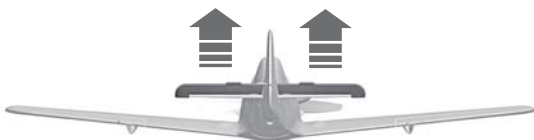


Stick Right

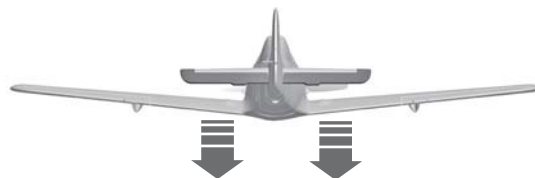


### Elevator

Stick Down

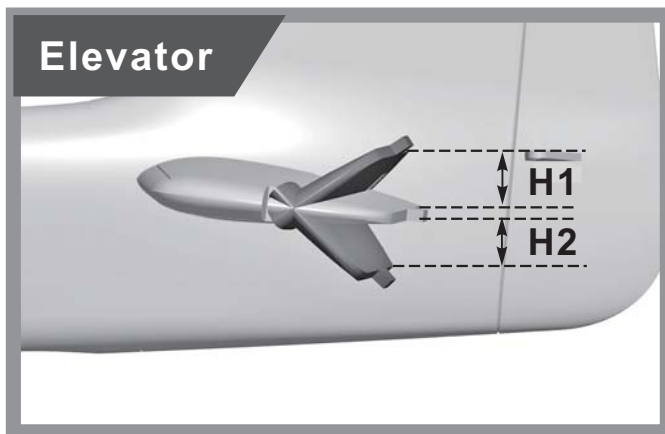
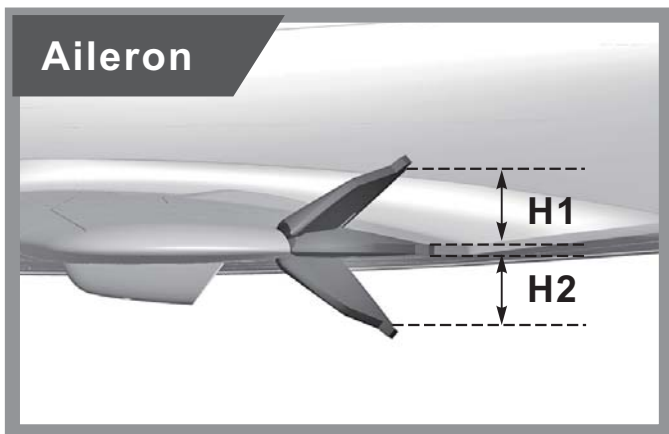


Stick Up



## Dual Rates

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

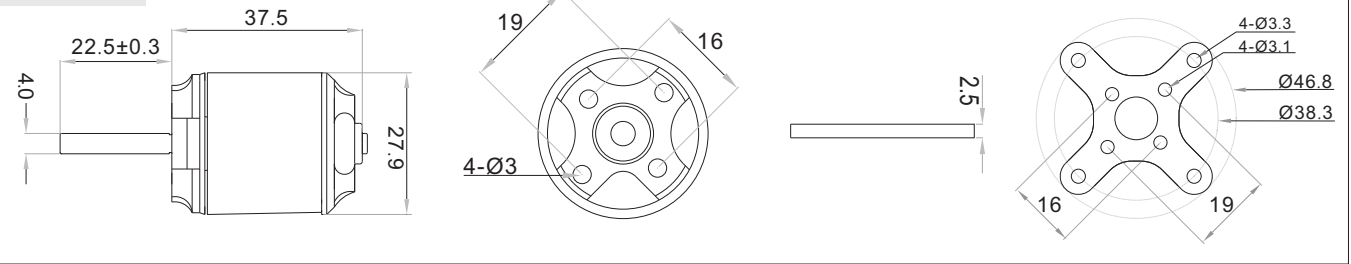


	Aileron(measured closest to the fuselage)	Elevator(measured closest to the fuselage)
<b>Low Rate</b>	H1/H2 11mm/11mm D/R Rate:80%	H1/H2 6mm/6mm D/R Rate:60%
<b>High Rate</b>	H1/H2 13mm/13mm D/R Rate:100%	H1/H2 8mm/8mm D/R Rate:80%

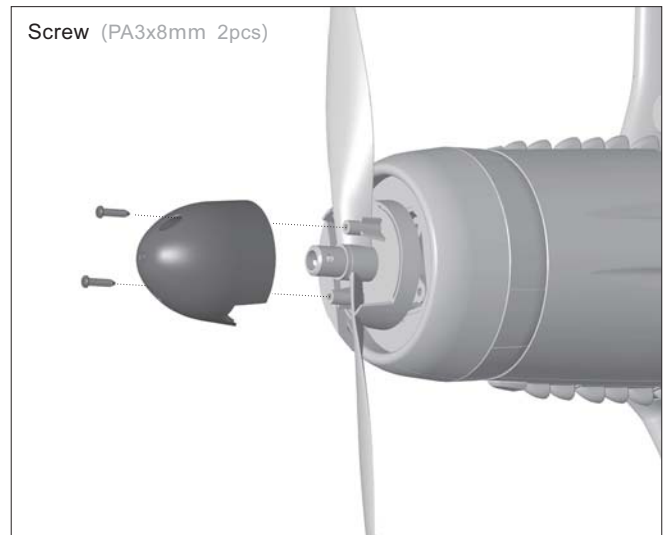
## Motor Specifications

**2836-950**  
Item No.: MO128361

Unit : mm

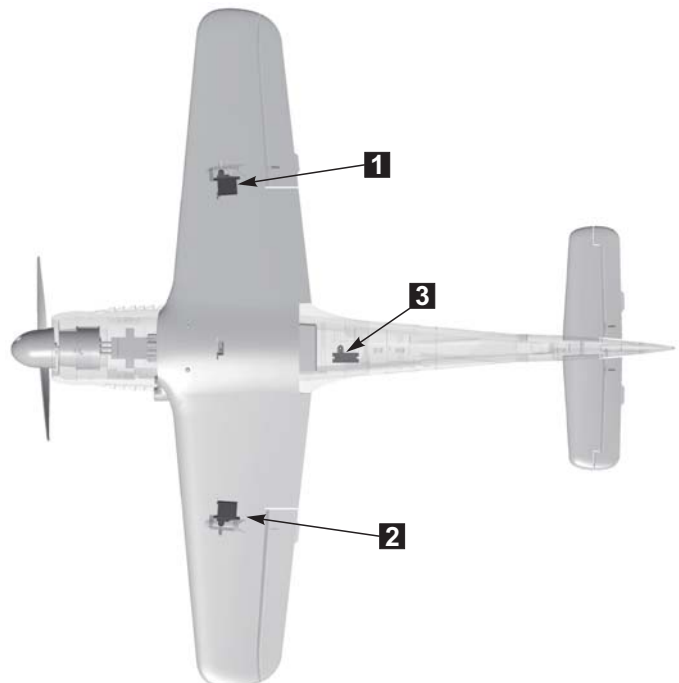


Item No.	Propeller	Motor Specifications (KV)	Use voltage (V)	Current(A)	Max power (W)	Thrust(g)	Efficiency (g/w)	Rotating speed (rpm)	Weight (g)
MO128361	2-Blade 9x6	2836-950	11.1	14	950	760	4.9	10500	90
			14.8	20		1100	3.7	14000	90



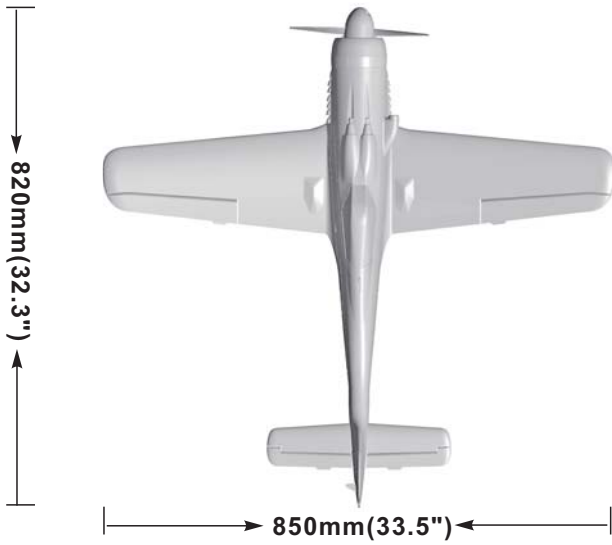
## Servos Introductions

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



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

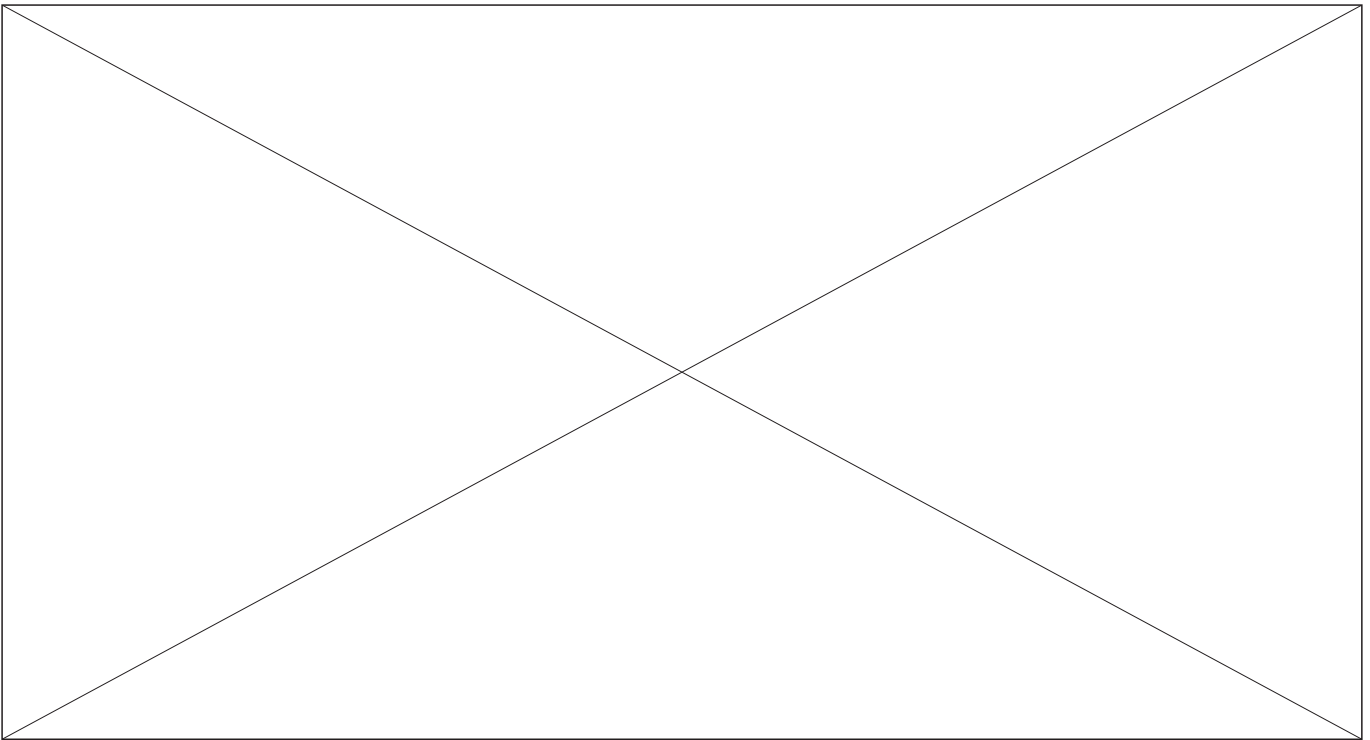
Position	Servo regulation	No.	Pos./Rev.	Cable length
Aileron(L)	9g plastic servo	1	Positive	300mm
Aileron(R)	9g plastic servo	2	Positive	300mm
Elevator	9g plastic servo	3	Positive	200mm



翼载荷：61g/dm<sup>2</sup>  
 翼面积：10.2dm<sup>2</sup>  
 电机：2836-950KV外转无刷电机  
 螺旋桨型号：2叶 9×6  
 电调：30A无刷电调  
 舵机：9g塑料舵机(3pcs)  
 飞行速度：130公里/小时(4S)  
 100公里/小时(3S)  
 起飞重量：540g(不含电池)

**⚠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！出厂产品不含起落架，需另行购买请联系当地经销商咨询。

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	ARF Plus	Airframe	序号	配件名称	PNP	ARF Plus	Airframe
1	机身	预装所有电子设备	预装舵机	不含电子设备	4	舵面控制钢丝	✓	✓	✓
2	主翼	✓	✓	✓	5	胶水	✓	✓	✓
3	平尾	✓	✓	✓	6	说明书	✓	✓	✓



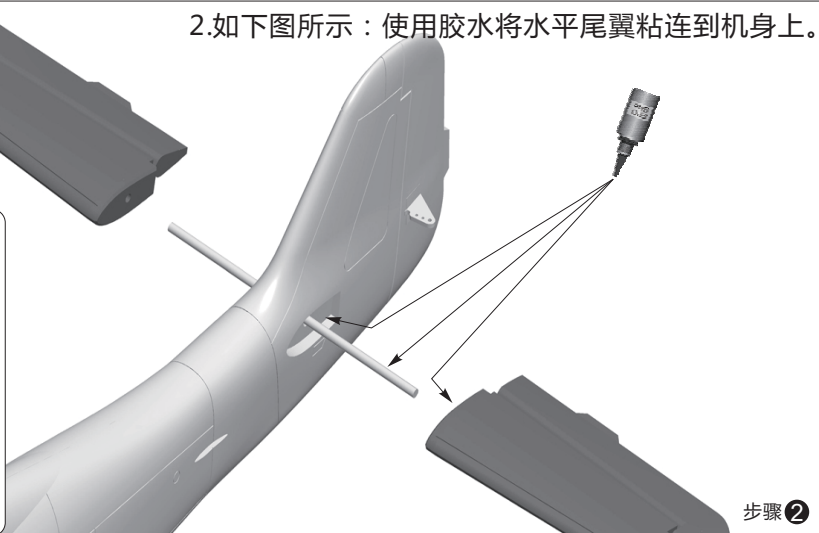
## 平尾组装

1. 将碳纤维管插入机体。

碳纤维管规格：(Ø4x160mm)



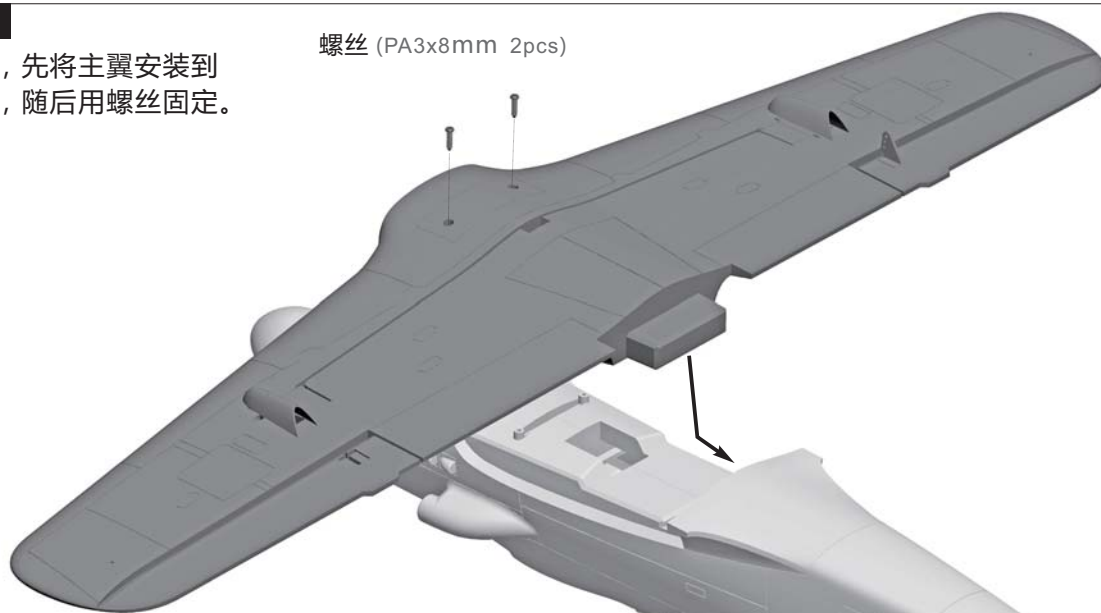
2. 如下图所示：使用胶水将水平尾翼粘连到机身上。



## 主翼安装

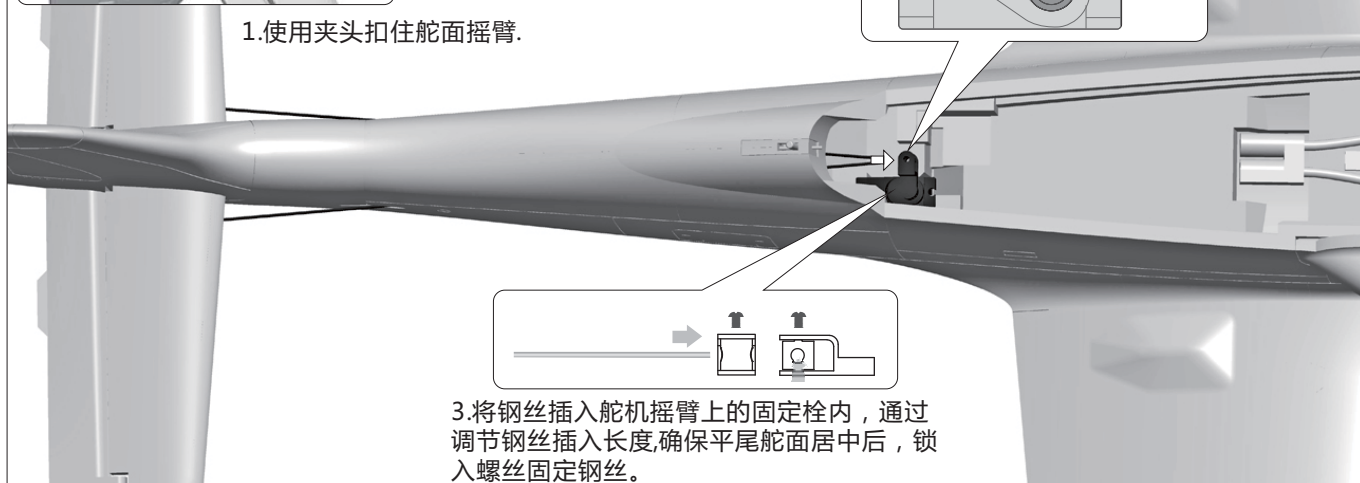
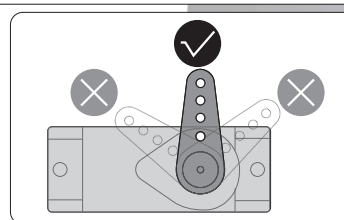
如图所示，先将主翼安装到指定位置，随后用螺丝固定。

螺丝 (PA3x8mm 2pcs)



1. 使用夹头扣住舵面摇臂。

2. 使用遥控器或其它设备，将平尾舵机摇臂居中。

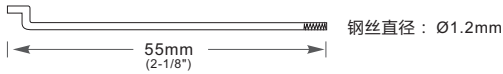


3. 将钢丝插入舵机摇臂上的固定栓内，通过调节钢丝插入长度，确保平尾舵面居中后，锁入螺丝固定钢丝。



## 舵机控制钢丝规格

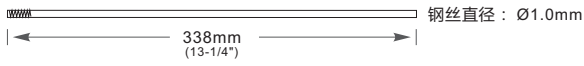
### 副翼舵机控制钢丝尺寸



### 摇臂连接孔位



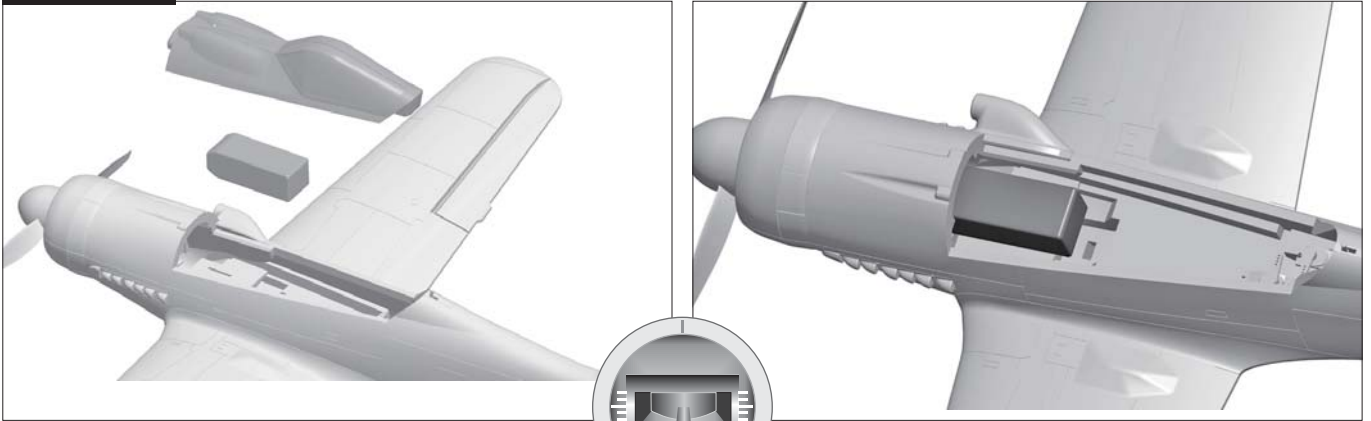
### 平尾舵机控制钢丝尺寸



### 摇臂连接孔位



## 电池安装



将电池与接收机连接前，首先请打开发射机电源，确认油门杆处于最小位置或者已经打关油门保护开关。

我们建议使用的电池容量和放电倍率如下：  
 3S 11.1V 1000mAh ~ 3S 11.1V 1600mAh  
 4S 14.8V 1000mAh ~ 4S 14.8V 1600mAh  
 放电倍率 ≥ 30C

## 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！



**舵面测试**

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

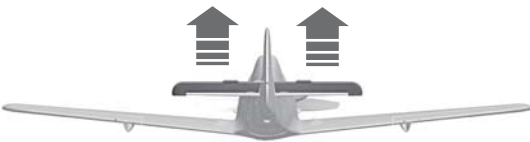


副翼摇杆  
向右运动

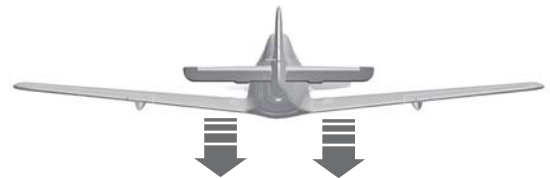


**升降舵**

升降摇杆  
向下运动



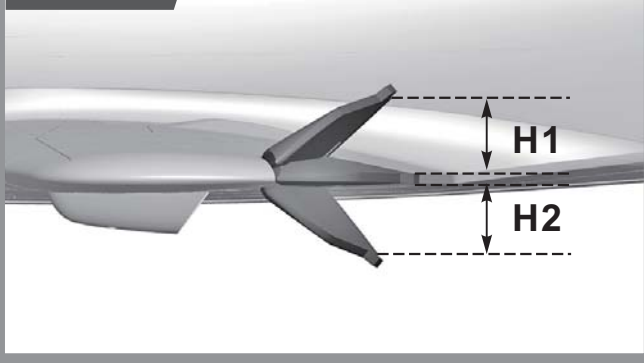
升降摇杆  
向上运动



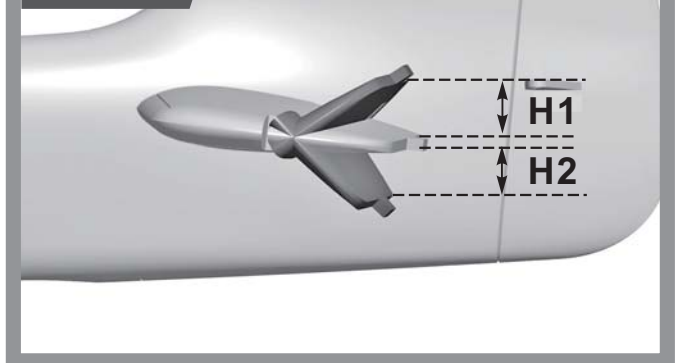
**大、小舵参数**

根据我们的测试经验，我们认为，按以下参数来设置大小舵量，将有助于飞行。小舵量飞机的操纵会笨拙些，大舵量飞机的操纵会灵敏些，我们建议初次飞行使用大舵量起飞，然后视操纵习惯选用小舵量或者大舵量飞行。

**副翼**



**平尾**

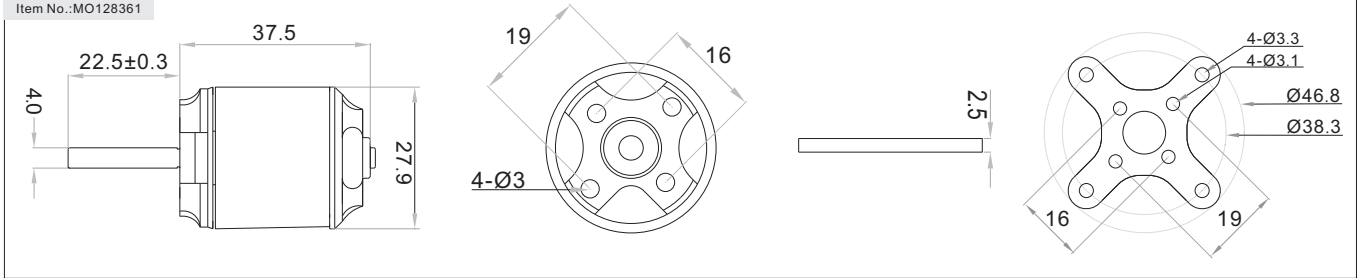


	副翼(内侧)	升降舵(内侧)
小舵量	H1/H2 11mm/11mm D/R Rate:80%	H1/H2 6mm/6mm D/R Rate:60%
大舵量	H1/H2 13mm/13mm D/R Rate:100%	H1/H2 8mm/8mm D/R Rate:80%

电机参数

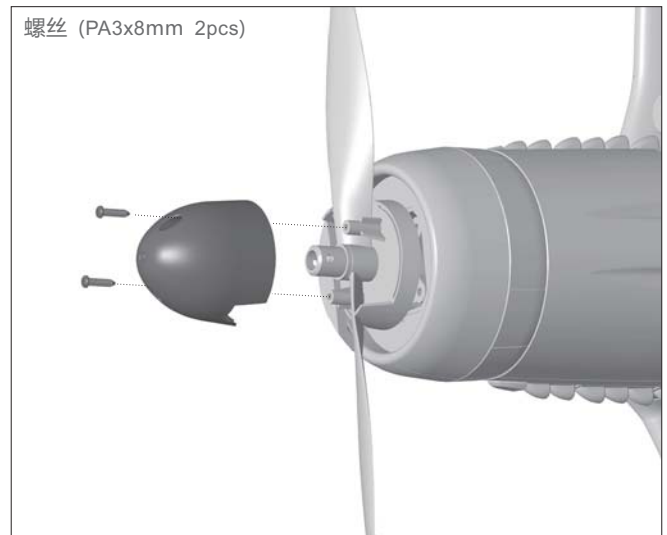
2836-950  
Item No.: MO128361

单位: mm

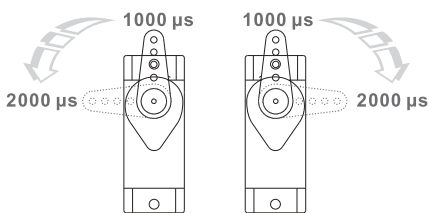


电机编号	螺旋桨规格	电机规格 (KV)	电压(V)	电流(A)	最大功率 (W)	拉力 (g)	效率比 (g/w)	最大转速 (W)	重量(g)
MO128361	2-Blade 9×6	2836-950	11.1	14	950	760	4.9	10500	90
			14.8	20		1100	3.7	14000	90

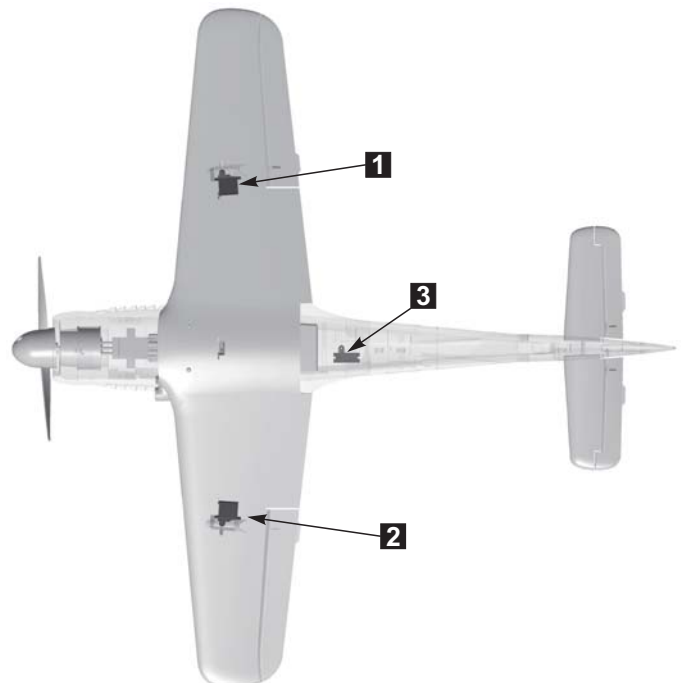
电机安装



舵机使用说明



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



舵机位置	舵机规格	序号	正、反向	舵机线长
主翼(左)	9g 塑料	1	正向	300mm
主翼(右)	9g 塑料	2	正向	300mm
升降舵-机身内部	9g 塑料	3	正向	200mm

## 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.

## 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、大雪或者其他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。必须等模型降落平稳以后,再进行回收!



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

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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

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