F-8E CRUSADER

NEW PARK-JET SERIES
SCALE 64mm MICRO-EDF JET

User Manual

WINGSPAN:545MM(21.46")
LENGTH:825MM (32.48")
EMPTY WEIGHT:390G (W/O BATTERY)

EN	1~7
中	8~14

www.sz-freewing.com

MADE IN CHINA

www.modellmarkt24.ch; www.modellmarkt24.de

Introduction

The F-8 Crusader is revered as "The Last Gunfighter", as it was the final American fighter designed with its guns as its principal armament. Serving with distinction in Vietnam and playing a pivotal reconnaisance role in the Cuban Missile Crisis, the F-8 Crusader is remembered as a stalwart aircraft that served for almost two decades.

Freewing is proud to present our rendition of the F-8E Crusader, reintroducing our 64mm “Park Jet” series to pilots seeking standoff scale appearance of rarely modeled aircraft in an affordable and easy to own package. Powered by a 64mm 5 Blade EDF fan, 2627-4500kv brushless outrunner motor, and 30A ESC, the Freewing 64mm F-8E Crusader reaches a top speed of 110kph / 68mph on an inexpensive 3s 1000mAh-2200mAh lipo battery. While designed with simplified control surfaces and intended for hand launches and belly landings on grass runways, an optional landing gear set is sold separately for operation on paved runways.

⚠ **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! Operater 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.

Catalog

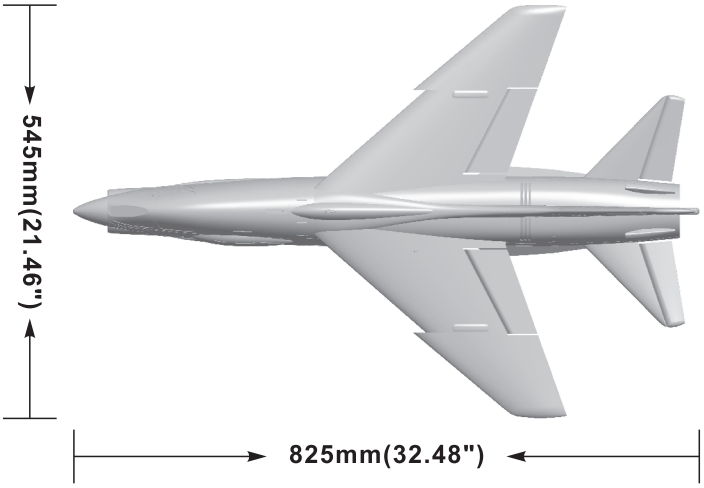
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Product Overview



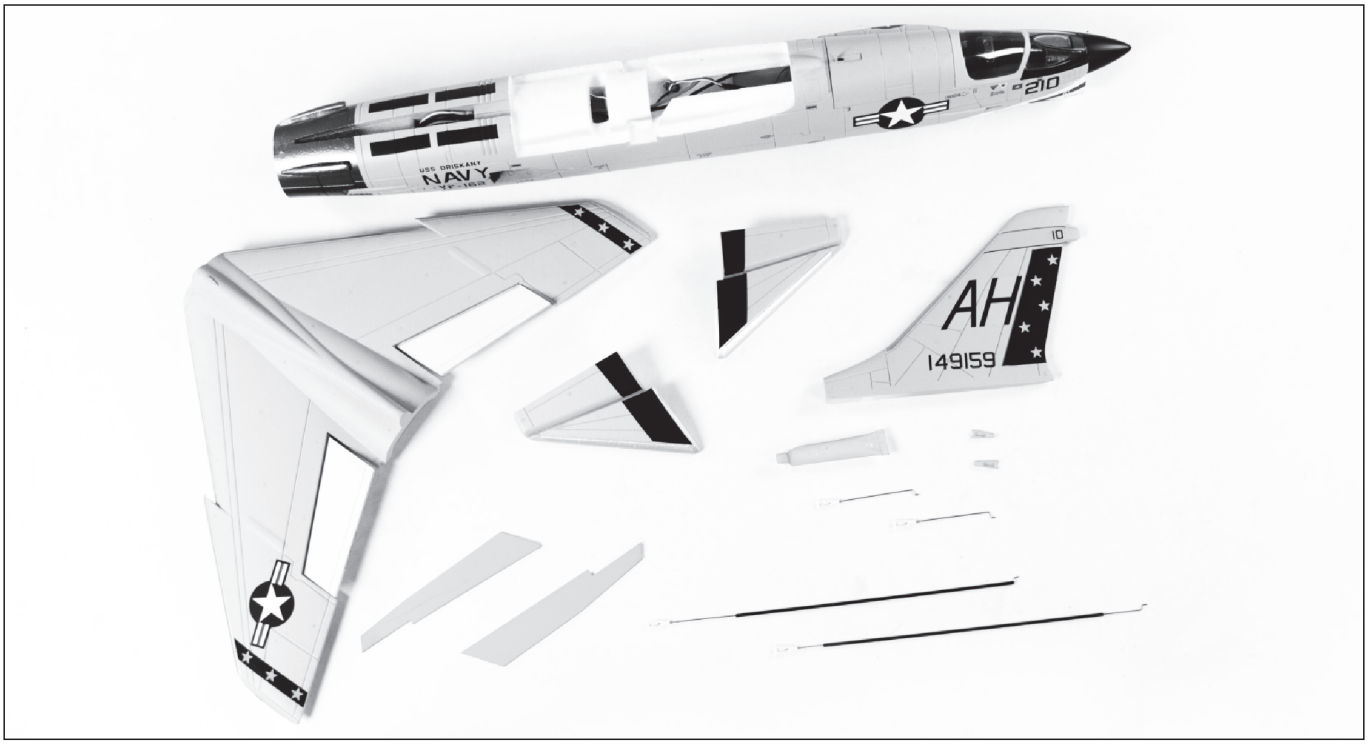
Standard version

Wing Loading: 51.5g/dm^2
Wing Area : 9.3 dm^2
Motor: 2627-4500KV
Brushless Outrunner Motor
Ducted fan: 64mm 5-Blade Fan
ESC: 30A Brushless
Servo: 9g Plastic Servo (2pcs)
Top Speed : 110KPH/68.75MPH
Empty Weight: 390g(without battery)
Bench Tested Thrust: 750g

⚠ 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.

The package don't include the landing gear, if you need,please contact your local dealer.

Contents



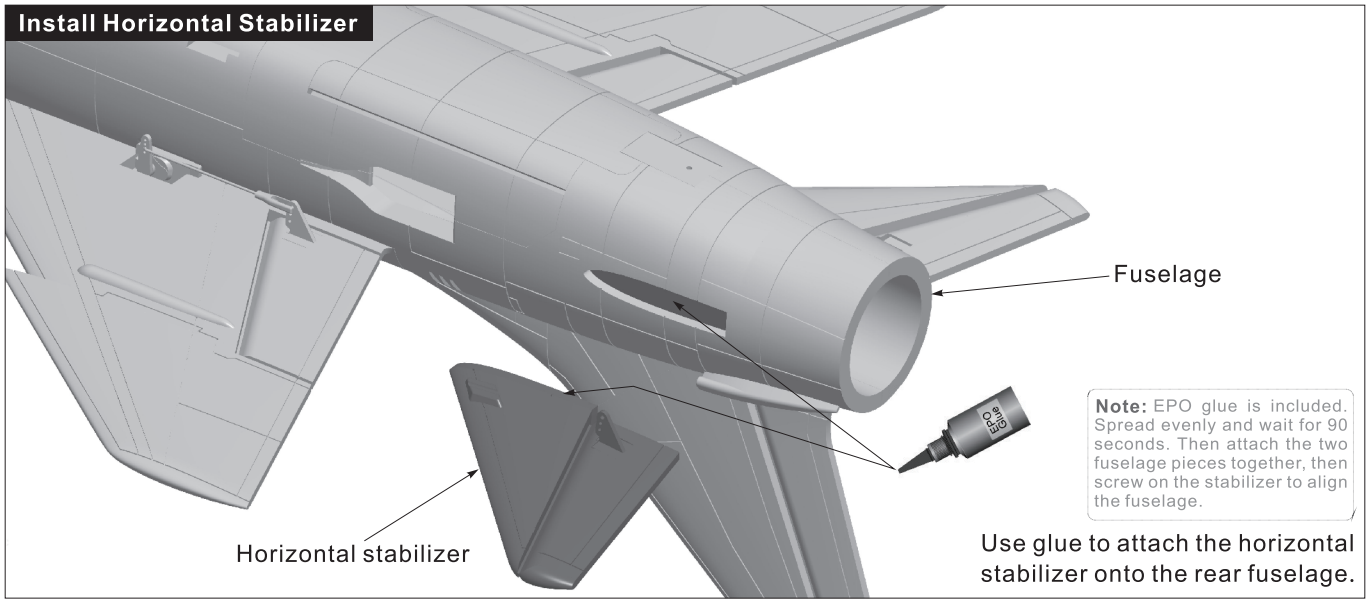
Different equipment include different spareparts. Please refer to the following contents to check your sparepart list.

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

No.	Name	PNP	ARF Plus	Airframe
5	Linkage Set	√	√	√
6	Fin	√	√	√
7	Glue	√	√	√
8	Manual	√	√	√

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Install Horizontal Stabilizer



Note: EPO glue is included. Spread evenly and wait for 90 seconds. Then attach the two fuselage pieces together, then screw on the stabilizer to align the fuselage.

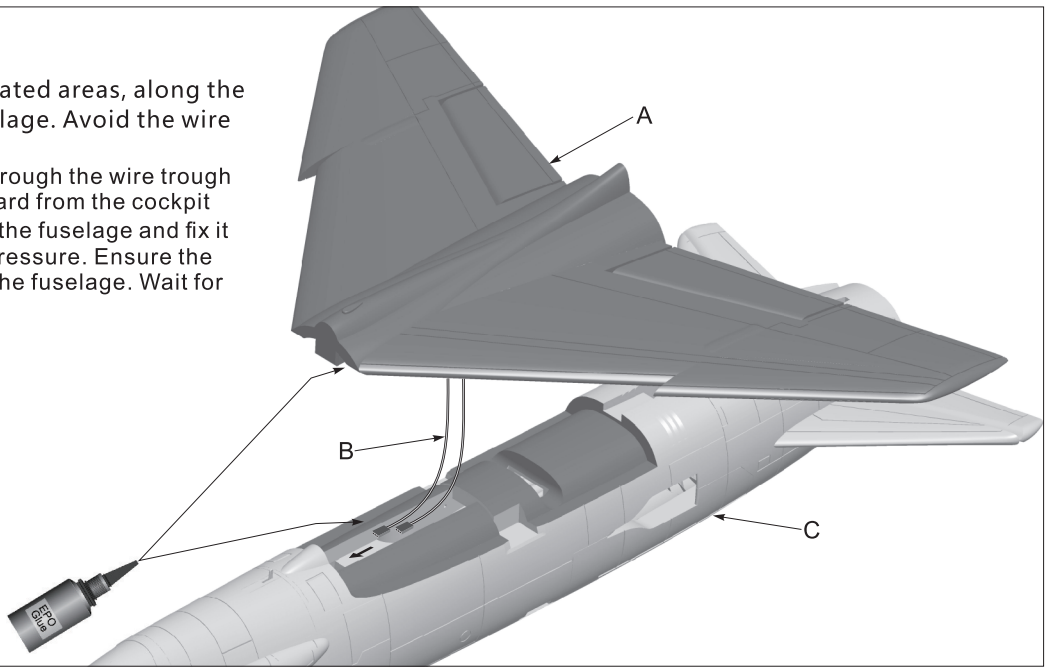
Use glue to attach the horizontal stabilizer onto the rear fuselage.

Install Main Wing

As shown in this photo:

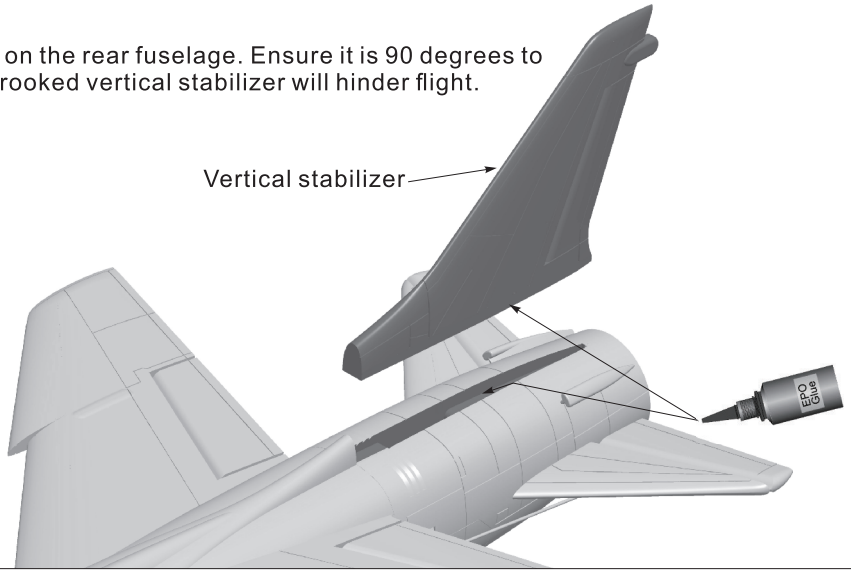
1. Apply glue to the indicated areas, along the entire edge of the fuselage. Avoid the wire trough area.
2. Pass the servo cables through the wire trough area, and pull them forward from the cockpit
3. Attach the main wing on the fuselage and fix it well with firm and even pressure. Ensure the wing is mated evenly to the fuselage. Wait for glue to solidify.

A- Main wing
B- Main wing servo cable
C- Fuselage



Install Vertical Stabilizer

Use glue to install the vertical stabilizer on the rear fuselage. Ensure it is 90 degrees to the horizontal plane of the fuselage. A crooked vertical stabilizer will hinder flight.

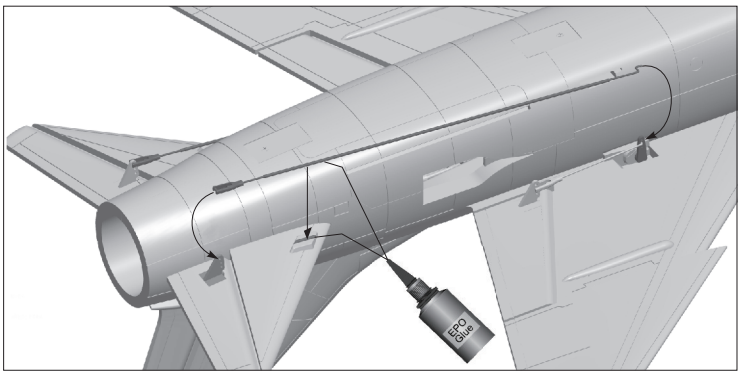


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PNP Installation Instructions

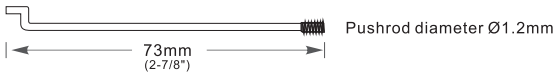
Install Elevator Push Rod

1. Use a servo tester or radio to center each servo.
2. Adjust the clevis' length by rotating it clockwise or counter-clockwise. Insert the clevis to the control horn.
3. Use glue to attach the carbon tube into the groove on the underside of the horizontal stabilizer.
4. Position the end of the carbon tube 35mm back from the leading edge of the stabilizer, measured from where the stabilizer meets the fuselage. Use the molded panel line at this location as reference.
5. Repeat these 4 steps for the other side.



Pushrod Instructions

Aileron pushrod size



Aileron pushrod mounting hole



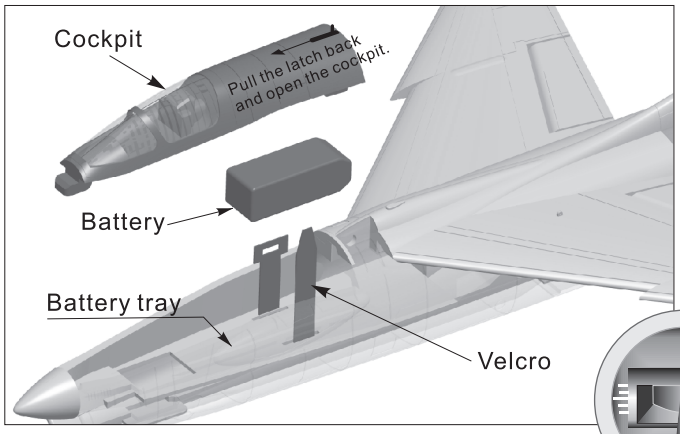
Elevator pushrod size

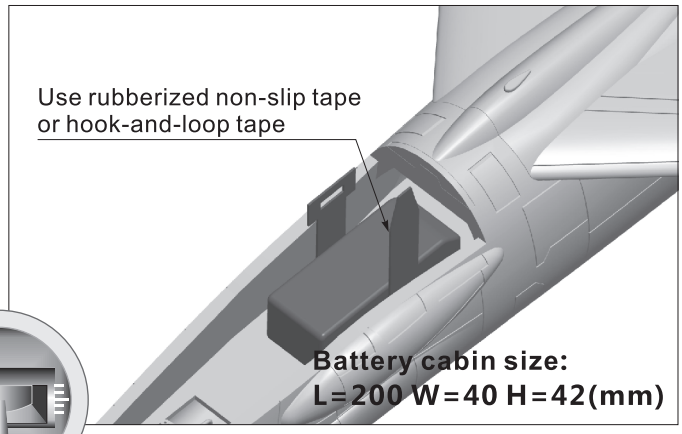


Elevator pushrod mounting hole



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.

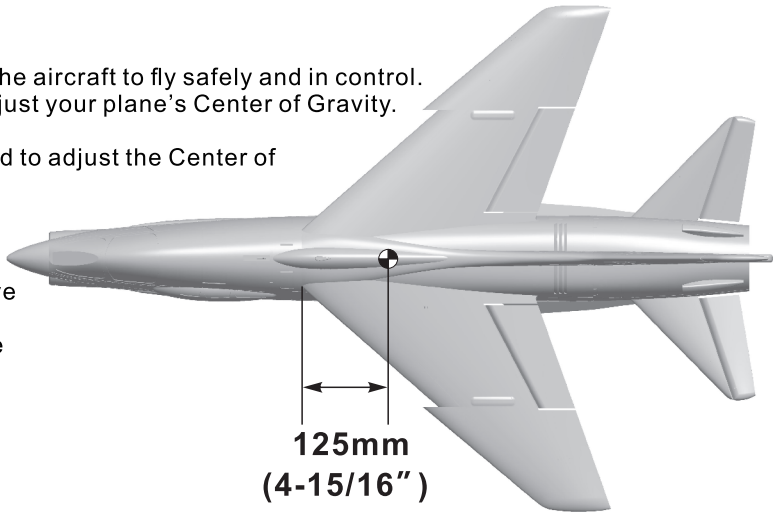
We recommend the following LiPo battery:
3S 11.1V 1000mAh ~ 3S 11.1V 2200mAh
Discharge rate of C ≥ 30C

Center of Gravity

Correct Center of Gravity ("CG") 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.



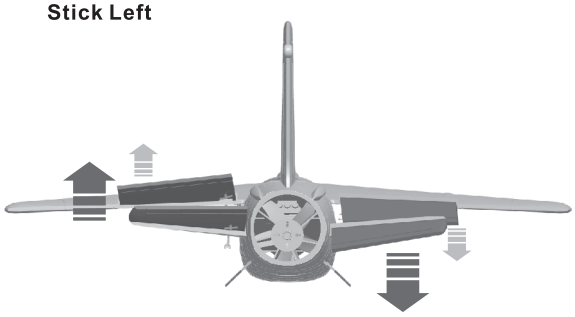
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Control Direction Test

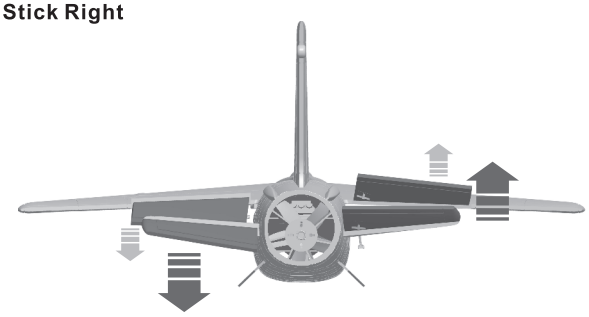
After installed the plane, before flying, we need a fully charged battery and connect to the ESC, then use radio to test and check that every control surface work properly.

Aileron

Stick Left

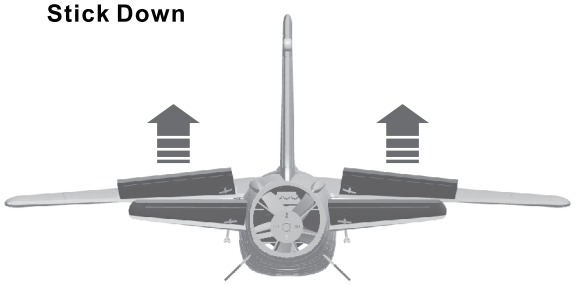


Stick Right

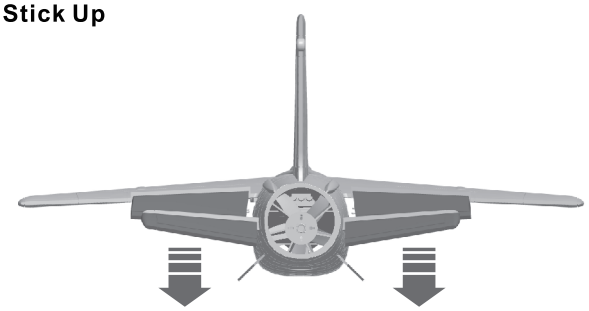


Elevator

Stick Down

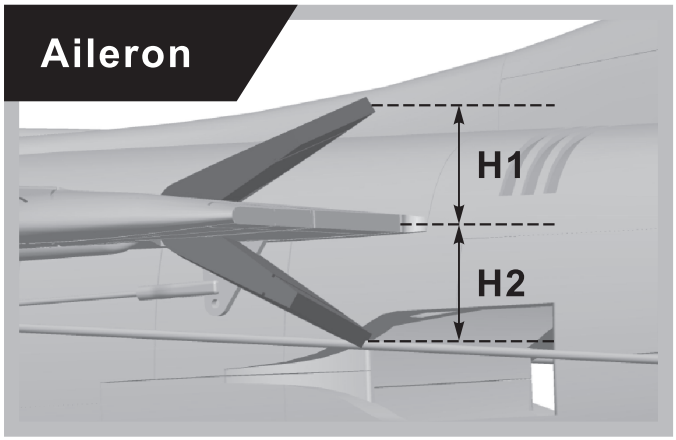


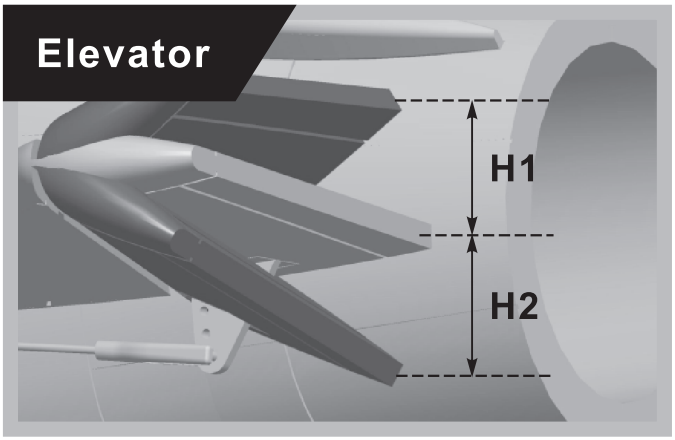
Stick Up



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.





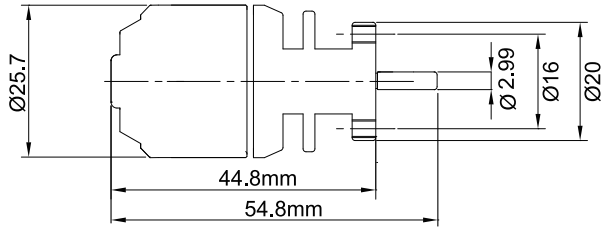
	Aileron(measured closest to the fuselage)	Elevator(measured closest to the fuselage)
Low Rate	H1/H2 11mm/11mm D/R Rate：65%	H1/H2 21mm/21mm D/R Rate：85%
High Rate	H1/H2 15mm/15mm D/R Rate：100%	H1/H2 24mm/24mm D/R Rate：100%

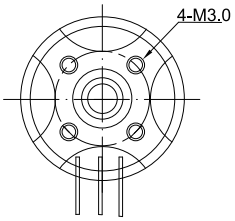
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Accessories Description

Motor Specifications

2627-4500



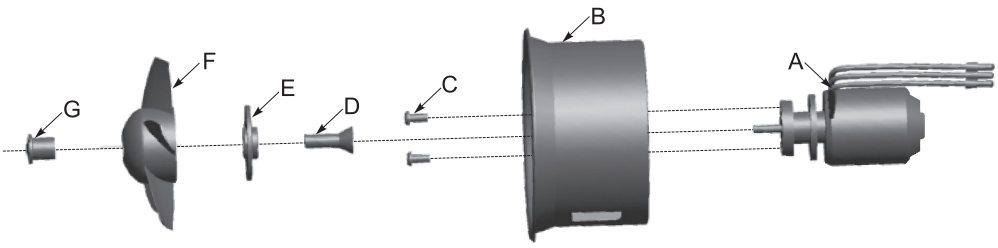


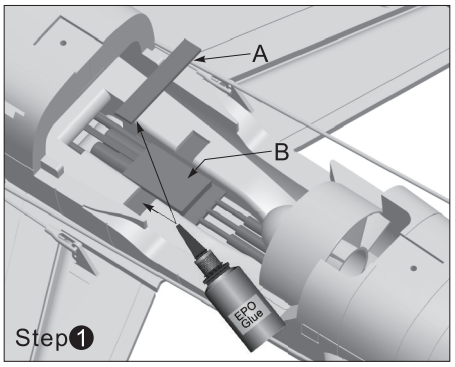
Item No.	EDF Fans	Use voltage (V)	Current(A)	Max power (W)	Thrust(g)	Efficiency (g/w)	Motor Specifications (KV)	Rotating speed (rpm)	Weight (g)
E7201	64mm 5-blade EDF	11.1(3S)	28	310	750	2.4	2627-4500	49000	50

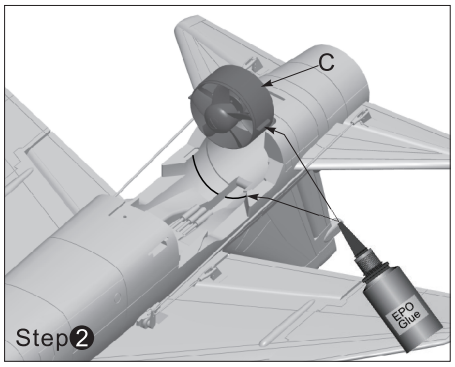
Motor Overview

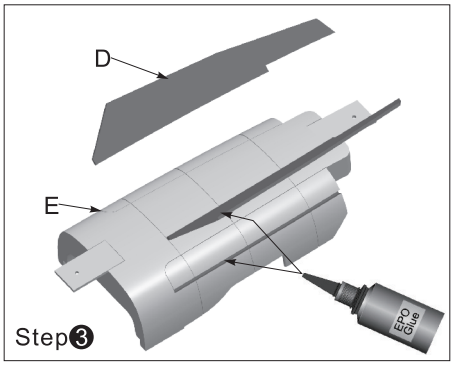
Standard version

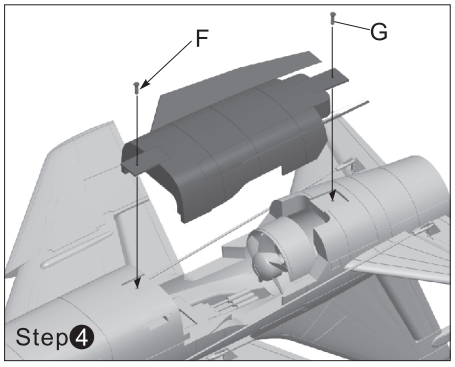
A- Motor 2627-4500KV
B- 64mm Outrunner ducted frame
C- Screw (PM2.5x6 2pcs)
D- Motor collet
E- Motor collet backplate
F- 64mm 5-blade ducted fan
G- Nut











As the left diagram, install ESC and power system

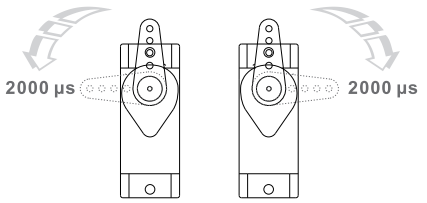
A- ESC fixed wood piece
B- ESC
C- 64mm EDF power system
D- Fin
E- EDF cover
F- Screw (FA2.2x24 1pcs)
G- Screw (FA2.2x14 1pcs)

⚠ **Note:** When the ESC and battery are connected, avoid touching the ESC by hand to avoid accidental injury due to heat When testing the EDF, please use safety test stand for testing.Never hold an EDF unit in your hand while it is powered on.

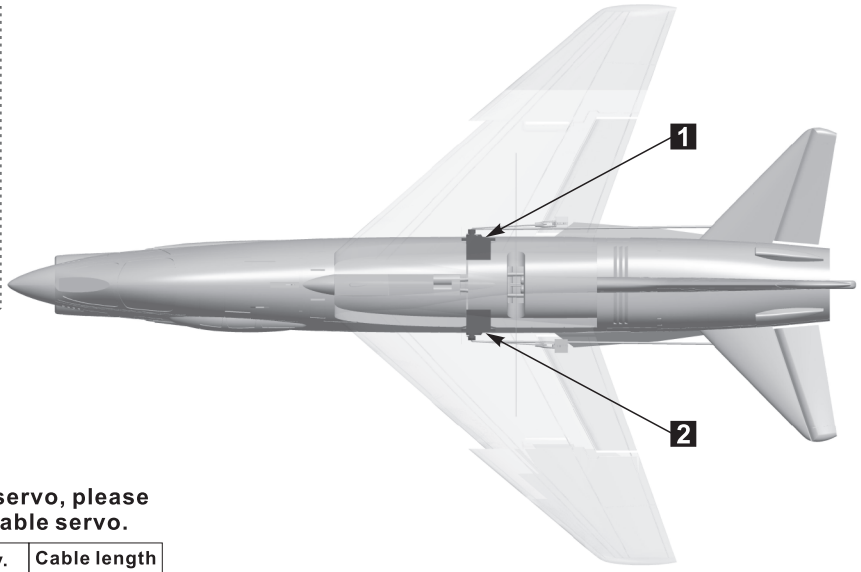
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Accessories Introduction

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
Main wing(L)	9g plastic servo	1	Positive	300mm
Main wing(R)	9g plastic servo	2	Positive	300mm

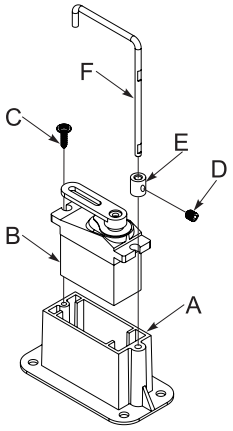
Install nose landing gear

(**Note:**The PNP does not include the landing gear. Contact your local dealer to purchase this Option.)

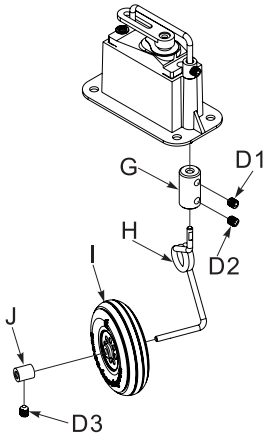
Please refer to the following photo for assembly and installation of the landing gear.

Spare part name and parameters

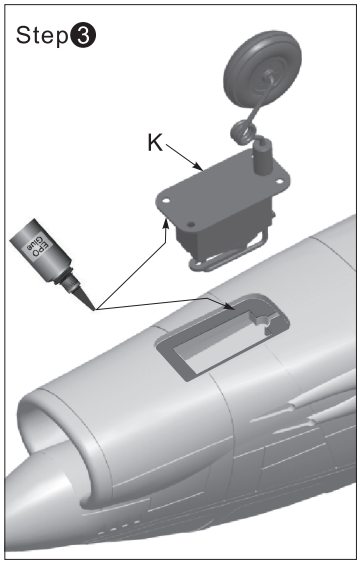
A - Servo fixed mount
B - 9g Servo
C - Screw (PWA2.3x8 1pcs)
D - Set screw (M3x3 4pcs)
E - Nose wheel strut fixed piece
F - Nose wheel strut (top)
G - Wheel connecting part
H - Nose wheel strut (bottom)
I - Nose wheel (Ø35x10mm)
J - Wheel chock
K - Nose landing gear



Step❶



Step❷



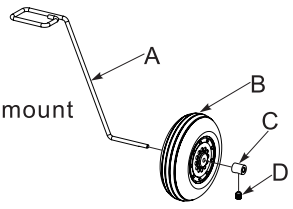
Install rear landing gear

(**Note:** The PNP does not include the landing gear. Contact your local dealer to purchase this Option.)

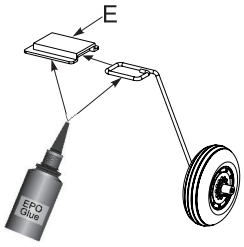
Please refer to the following photo for assembly and installation of the landing gear.

Spare part name and parameters

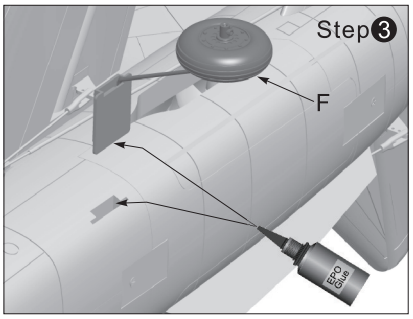
A - Rear gear main strut
B - Nose wheel (Ø50x5mm)
C - Wheel chock
D - Set screw (M3x3)
E - Main landing gear fixed mount
F - Main landing gear door



Step❶



Step❷



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前　言

沃特F-8“十字军战士”是为了满足美国海军的要求而开发的第一代超音速舰载战斗机。该机以其优异性能很快就在美国海军舰载航空兵中站稳了脚跟，并在随后的越南战争中取得了不俗的战绩，并因此而得到了“米格杀手”、“航炮终结者”的绰号。

全新的迷你系列仿真电动涵道------F-8E“十字军战士”模型飞机，采用EPO材料制作，翼展545mm，机长825mm，全机采用胶水粘合的组装方式。PNP版本，使用了64mm 5叶风扇，搭配3S 2627-4500KV无刷马达，30A电调。使用3S 1600mAh电池时，半/全油门综合飞行时长约4分钟，最高飞行时速达到110KM/H。

F-8E“十字军战士”模型飞机，常规上单翼布局，低速稳定性能佳，易于驾驭。由于上单翼的原因，机腹拥有丰富的可抓取位置，有助于手抛。与此同时，我们提供了起落架组的选购件，以适应跑道起降。

⚠ **注意：**模型产品是具一定危险性的产品，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

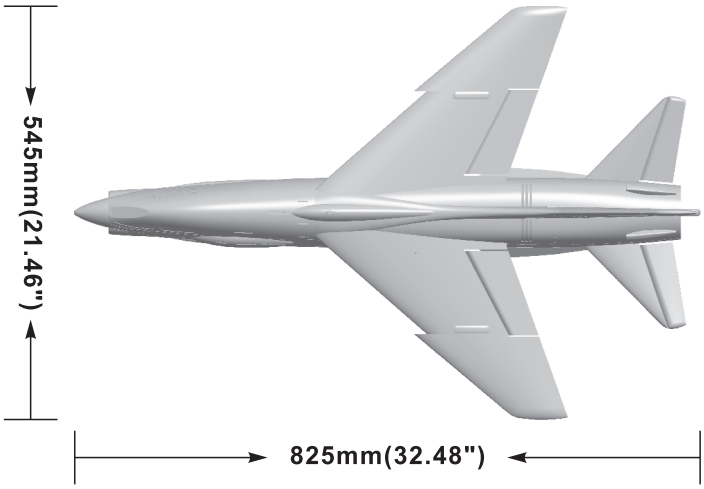
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产品基本参数

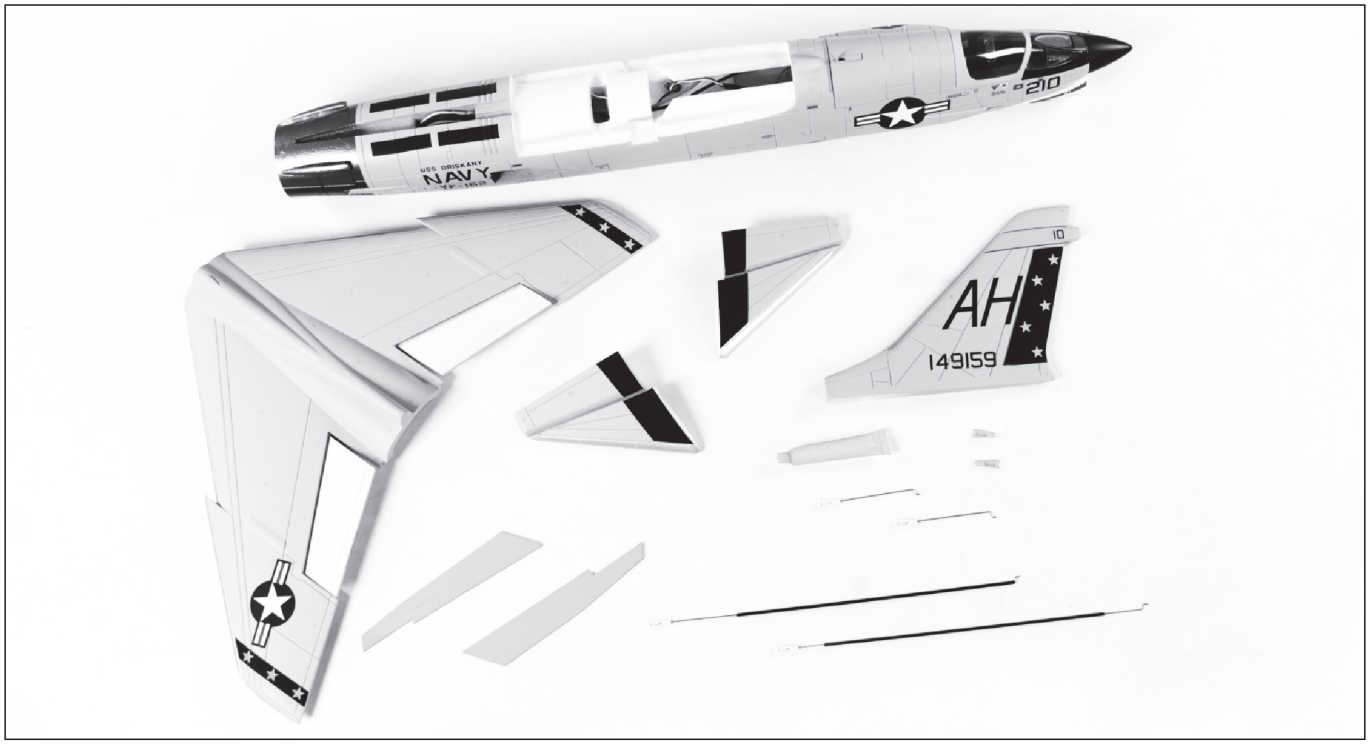


标准版

翼载荷：51.5g/dm^2
翼面积：9.3 dm^2
电机：2627-4500KV外转无刷电机
涵道风扇：64mm 5叶涵道
电调：30A无刷电调
舵机：9g塑料舵机（2pcs）
飞行速度：110公里/小时
起飞重量：390g(不含电池)
推力：750g

⚠**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



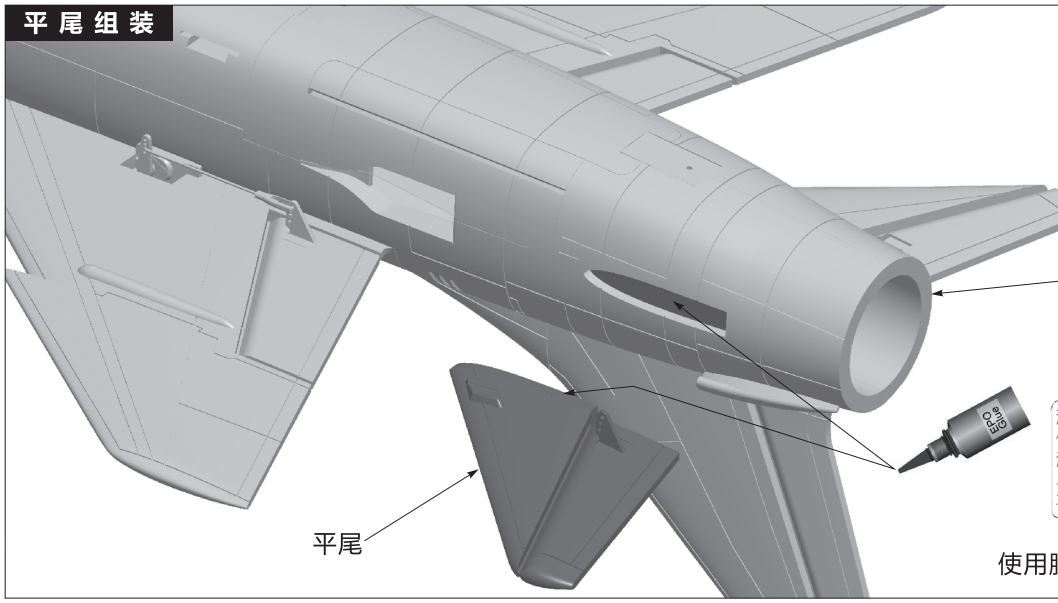
打开产品包装，核对包装清单。（不同配置的版本，包含内容不同！）

序号	配件名称	PNP	ARF Plus	Airframe
1	机身	预装所有电子设备	√	不含电子设备
2	主翼	预装所有电子设备	预装舵机	不含电子设备
3	平尾	√	√	√
4	垂尾	√	√	√

序号	配件名称	PNP	ARF Plus	Airframe
5	舵面控制钢丝	√	√	√
6	腹鳍	√	√	√
7	胶水	√	√	√
8	说明书	√	√	√

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平尾组装



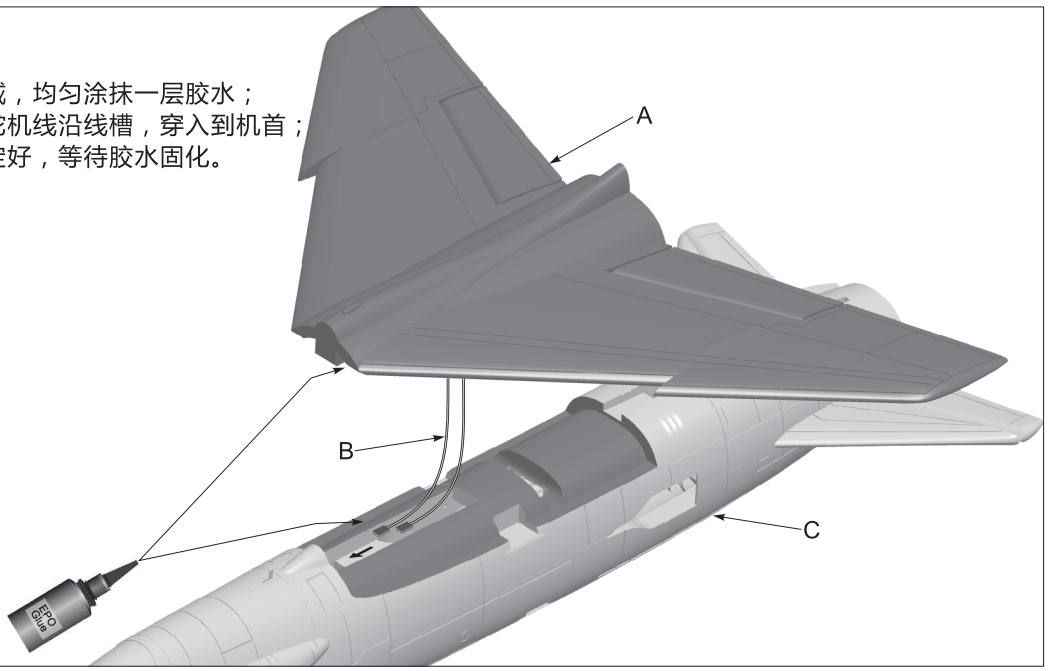
注：包装盒内有赠送的EPO胶水，请使用这支赠送的胶水进行粘合作业。涂摸胶水应该均匀。胶水均匀涂摸完毕，不要立即粘合，请等待90秒时间，再进行粘合，效果最佳!

使用胶水把平尾粘到机身尾部；

主翼组装

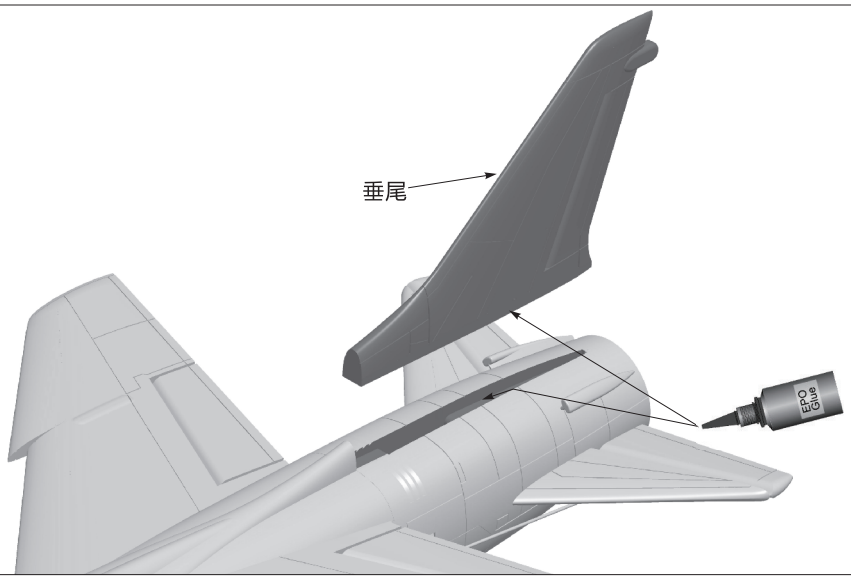
如图所示：
1.在右图所示机身阴影区域，均匀涂抹一层胶水；
2.在主翼粘于机身前，将舵机线沿线槽，穿入到机首；
3.把主翼粘于机身，将固定好，等待胶水固化。

A- 主翼
B- 主翼舵机线
C- 机身



垂尾组装

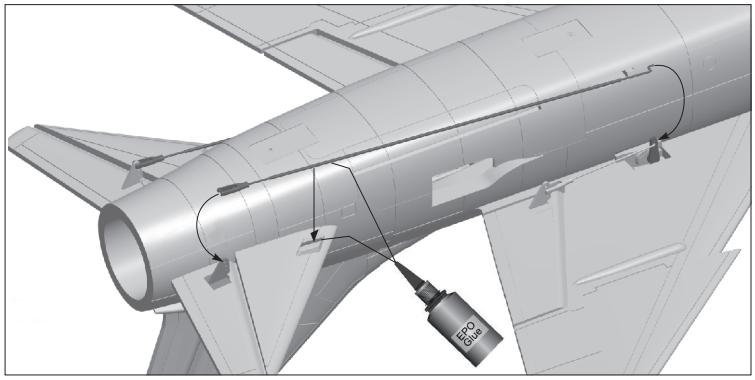
使用胶水把垂尾安装在机身尾部上.



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钢丝安装

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.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;
3.用胶水把碳纤管粘贴平尾上；
4.重复以上 3 个步骤，安装另外一侧平尾钢丝。



舵面控制钢丝尺寸

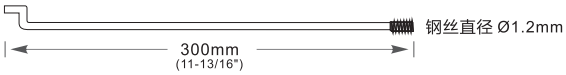
副翼控制钢丝尺寸



副翼舵机钢丝安装孔位



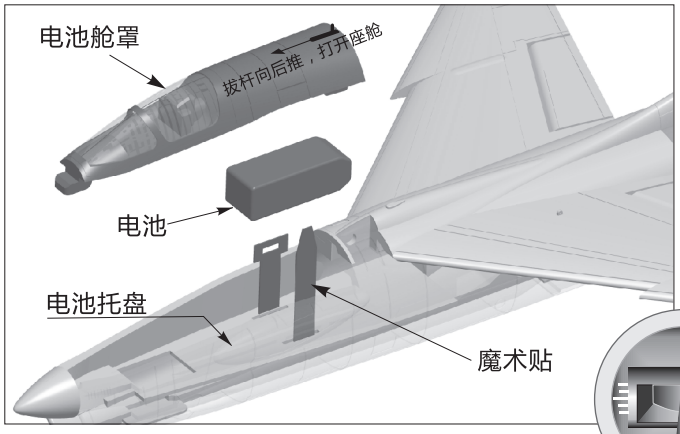
平尾控制钢丝尺寸

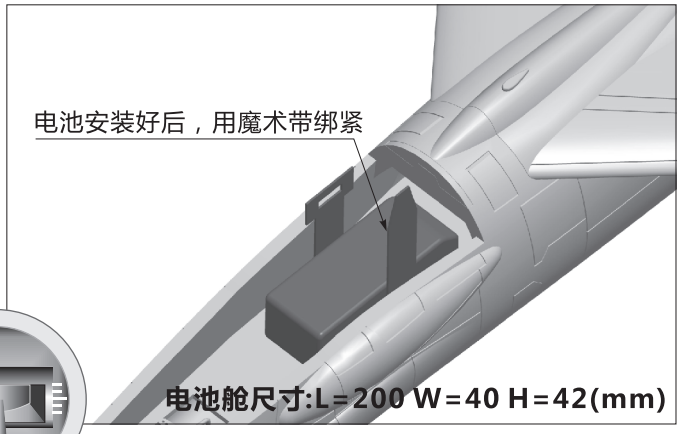


平尾舵机钢丝安装孔位



电池安装说明





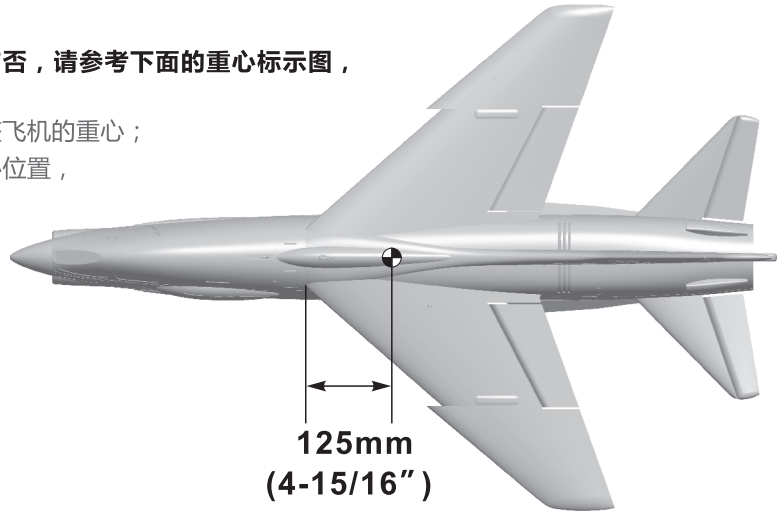
将电池与接收机连接前，首先请打开发射机电源，确认油门杆处于低位。

我们建议使用的电池容量和放电倍率如下：
3S 11.1V 1000mAh ~ 3S 11.1V 2200mAh
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！



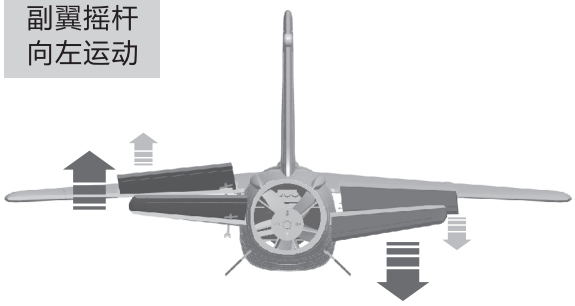
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舵 面 测 试

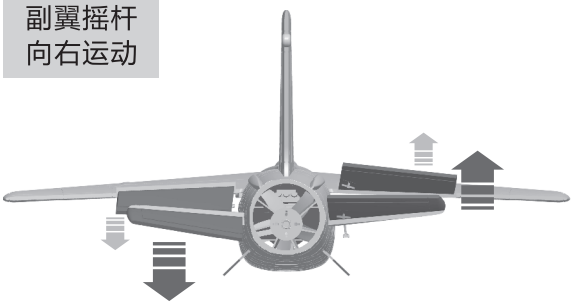
当您按前面的步骤组装好飞机后，在飞行前，我们需要用一块充饱电的电池，连接到电调。用遥控器测试每个舵面的工作情况，检查是否正常！

副 翼

副翼摇杆
向左运动

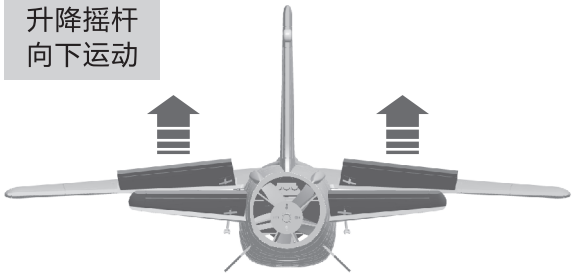


副翼摇杆
向右运动

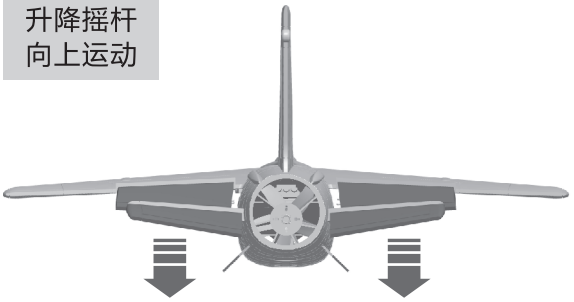


升降舵

升降摇杆
向下运动



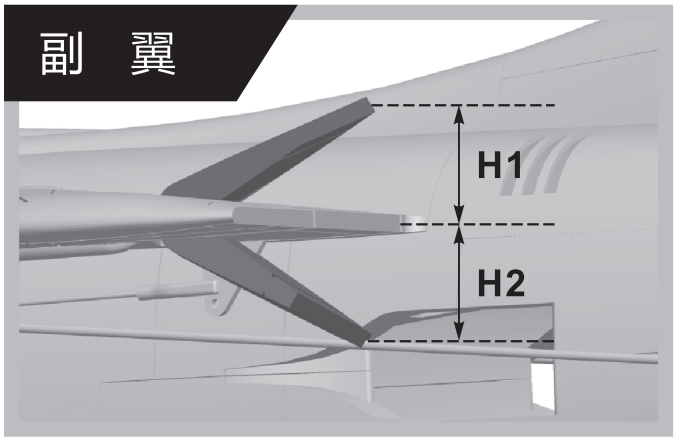
升降摇杆
向上运动



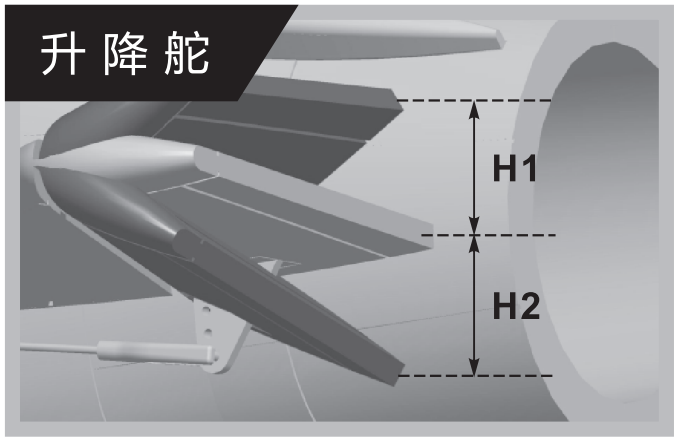
大 、 小 舵 参 数

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



升 降 舵

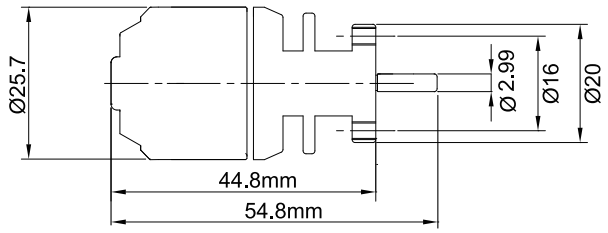


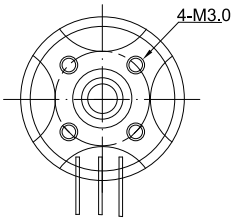
	副翼(内侧)	升降舵(内侧)
小舵量	H1/H2 11mm/11mm 舵量比率：65%	H1/H2 21mm/21mm 舵量比率：85%
大舵量	H1/H2 15mm/15mm 舵量比率：100%	H1/H2 24mm/24mm 舵量比率：100%

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电机参数

2627-4500



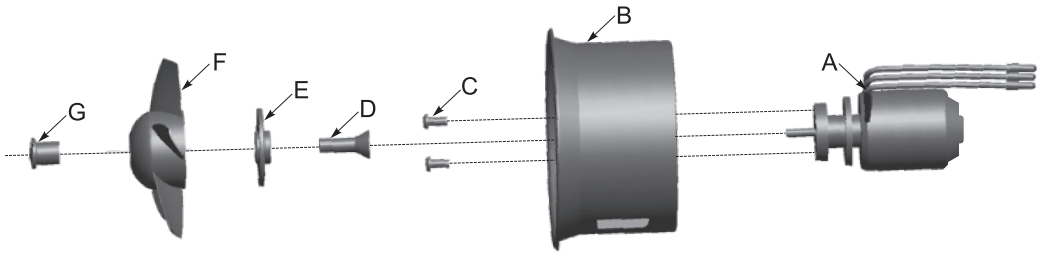


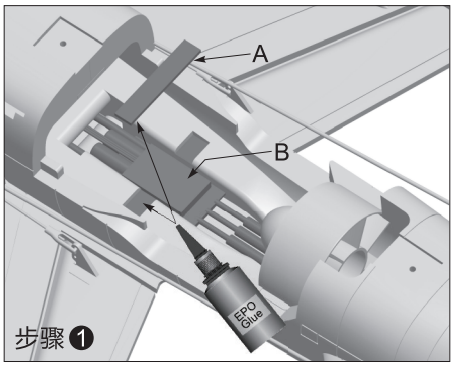
电机编号	涵道类型	电压(V)	电流(A)	最大功率(W)	推力(g)	效率比(g/w)	电机规格(KV)	最大转速(W)	重量(g)
E7201	64塑料涵道(5叶)	11.1	28	310	750	2.4	2627-4500	49000	50

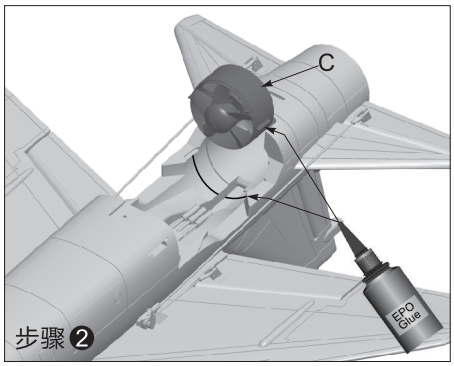
电机安装

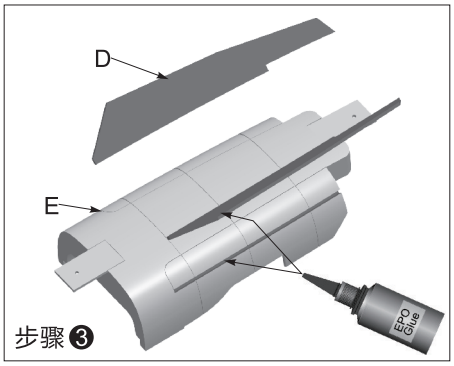
标准版

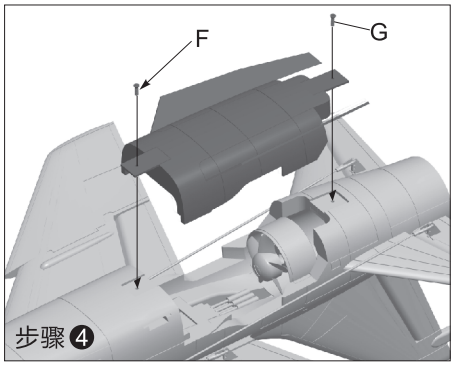
A- 电机2627-4500KV
B- 64mm涵道框
C- 螺丝 (PM2.5x6 2pcs)
D- 夹头
E- 夹头固定盘
F- 64mm 5叶风扇叶
G- 螺帽











按左边图示安装电调及动力组

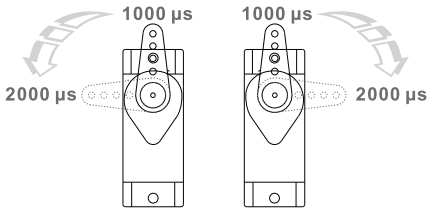
A- 电调固定木片
B- 电调
C- 64mm涵道动力组
D- 腹鳍
E- 涵道底盖
F- 螺丝 (FA2.2x24 1pcs)
G- 螺丝 (FA2.2x14 1pcs)

⚠ **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行为。

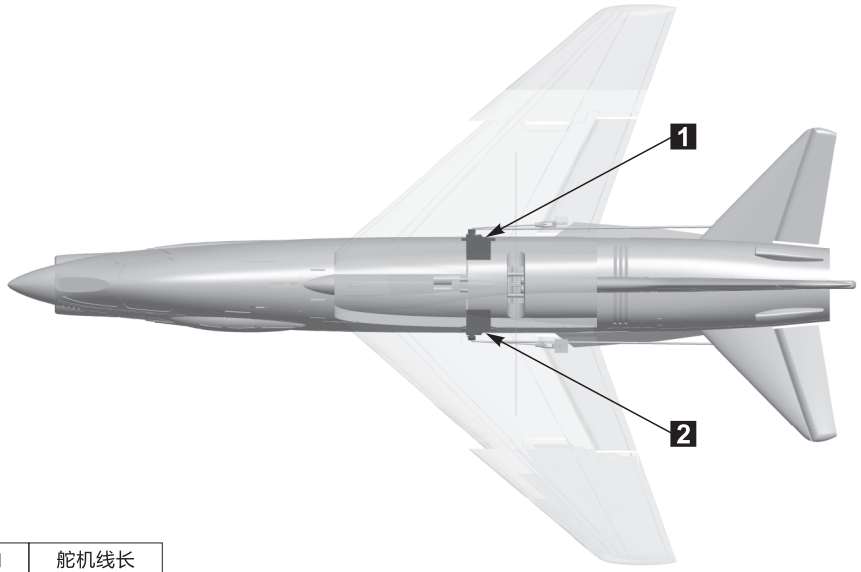
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重要配件介绍

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



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

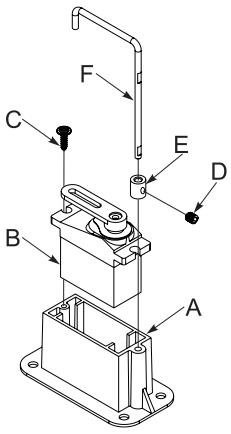
舵机位置	舵机规格	序号	正、反向	舵机线长
主翼(左)	9g 塑料	1	正向	300mm
主翼(右)	9g 塑料	2	正向	300mm

前起落架组装 (注意: 出厂产品不含前起落架，需另行购买请联系当地经销商咨询.)

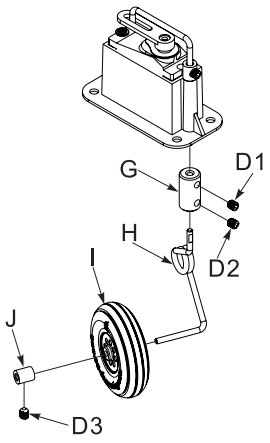
请参考以下图示、组装、更换、维修前起落架

配件名称及规格参数

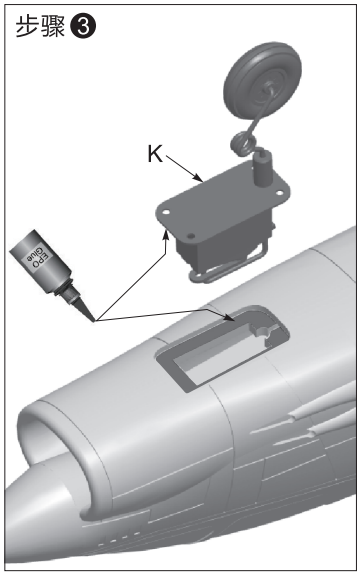
A - 舵机固定座
B - 舵机
C - 螺丝 (PWA2.3x8 1pcs)
D - 机米螺丝 (M3x3 4pcs)
E - 前轮上钢丝固定块
F - 前轮上钢丝
G - 机轮连接块
H - 前轮下钢丝
I - 机轮
J - 轮档
K - 前起落架组件



步骤❶



步骤❷

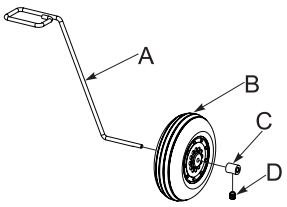


后起落架组装 (注意: 出厂产品不含后起落架，需另行购买请联系当地经销商咨询.)

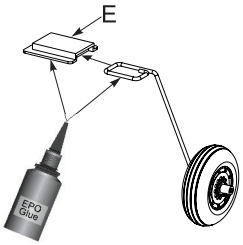
请参考以下图示、组装、更换、维修后起落架

配件名称及规格参数

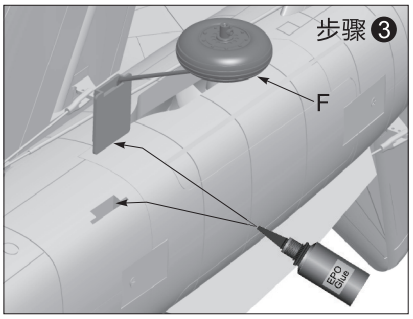
A - 后起落架主钢丝
B - 机轮
C - 轮档
D - 机米螺丝 (M3x3)
E - 后起落架固定座
F - 后起落架组件



步骤❶



步骤❷



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Dongguan Freewing Electronic Technology Ltd
HK Freewing Model International Limited

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