注意事项
SAFETY PRECAUTIONS

● 这个产品不是玩具，而是一个复杂的具有难度的飞行器。您和您身边人的安全取决于您如何操作它，您需要了解相关知识，并谨慎操作。禁止没有成人陪伴的儿童独自操作该设备。不适合14岁以下人群使用。再次强调，这不是一个玩具。
● This product should not be considered a toy, but rather a complicated and sophisticated flying model. Your safety depends on how you use and fly it, If not correctly operated, could cause injury to you or your family members. Children must be accompanied by an adult at all times if operating this product. Not suitable for children under the age of 14. THIS IS NOT A TOY.

● 不要在机场，军事基地，居民区或其他任何受限制的地方飞行。
● Do not fly around some restricted location like airports, military bases, residential areas, etc.

● 您需要对发射机进行距离检查，以确保没有收到任何干扰。
● You will need to range check the transmitter to be sure you are not experiencing any interference.

● 始终保持先打开发射机后打开接收机，先关闭接收机后关闭发射机的步骤。
● Always turn on the receiver last after turning on the transmitter and shut off the receiver first before turning off the transmitter.

● 如果您是初学者，建议您在有经验玩家的协助下调试和飞行。
● If you are only a beginner to the radio control model flying, do not attempt to fly your model without any assistance or advice from advanced expert fliers.

● 请将相关物品放置在孩子们够不到的地方
● Keep relevant items out of reach of children.

● 这个设备的设计已经超过我们正常使用所需要刚性要求，但若您需要以超出我们推荐的动力飞行时，请合理控制动作幅度并适当增加机体强度。
● This product has been flight tested to meet or exceed our rigid performance and reliability standards in normal use,if you plan to perform any high-stress flying, you are solely responsible for taking any and all necessary steps to control movement range and reinforce the body strength.

● 您的设备中可能包括一些玻纤和碳纤雕刻的部件，这些纤维部件所带的粉尘可能会引起眼睛，皮肤的不适，请您在需要的时候带上护目镜或者防尘服。
● This product may include some fiberglass and carbon-fiber reinforced plastic parts,which may cause eye and skin discomfort,pls wear the goggles or dust-proof clothes when needed.

● 因航空运输安全管制，您收到的产品可能没有清单中出现过的胶水，请您理解无法发送胶水给您的原因。您可以在当地文具店很方便的购买到您所需要的胶水。
● Due to air traffic safety control, the products you receive may not have the glue that appears in the list. Please understand and purchase the glue you need at your local stationery store.

飞行参数
Specification

翼展:2130mm
机长:1500mm
起飞重量≈5.3Kg

Wingspan: 2130mm
Length: 1500mm
Flying Weight≈5.3Kg
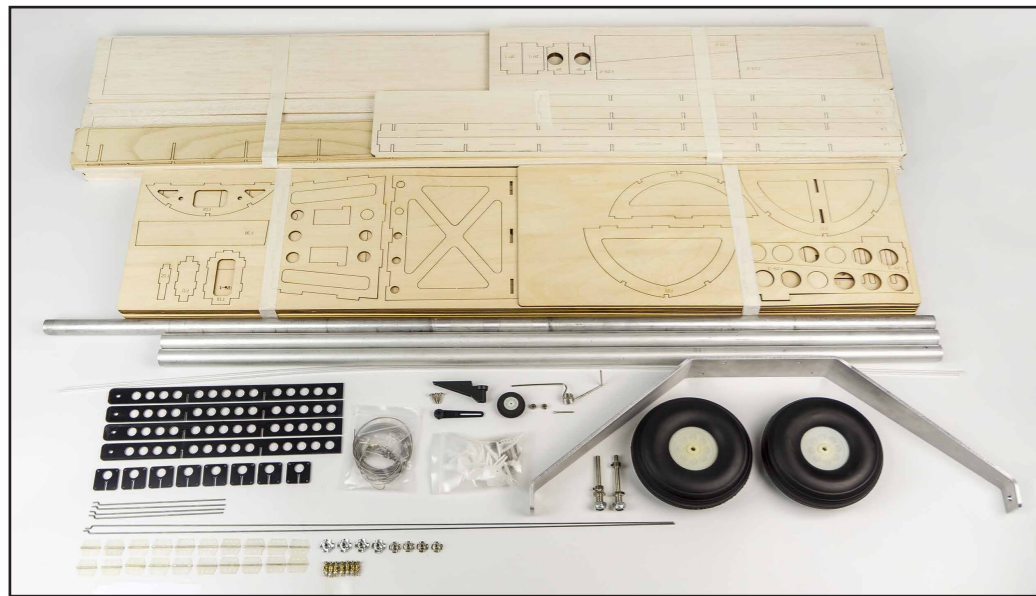
推荐配置
Suggested Equipment

推荐引擎: DLE 20cc/DLE 20ccRA
推荐舵机: 37g*7pcs
推荐桨叶: 16-18寸
推荐8通道以上接收机

Suggested Motor: DLE 20cc/DLE 20ccRA
Suggested Servos: 37g*7pcs
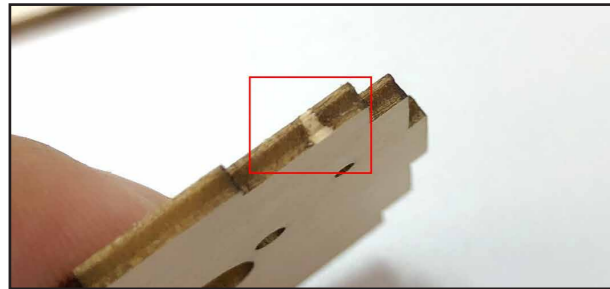Suggested Propeller: 16-18 inch
Radio≥8CH

工具
Tools Needed

配件图仅做参考用，您收到的实物可能因为修改/优化的原因导致与图片有略有不同。
Photos shown here just for reference, the product you received maybe slightly differ from the photos due to continuous improvement on products.

组装说明 How to Assemble

注意：木件用美工刀从板材上取下，各连接点用快干胶定型，用白乳胶固定。
Note:Take down the parts from the board by knife.pls use the fast dry adhesive as stablization to connect all joints and white latex as reinforcement.

拼装之前 请打磨雕刻连接处的地方。
Pls polish the joints before assembly.

机身拼装 Assemble the Fuselage

01-1
C1-1
C1

01-2
C4
C2
对齐 Align

细节Detail 1
对齐 Align

在平整工作台上粘合C1，C1-1
Pasting C1 and C1-1 on a flat workbench

01-3
F3
F4
F2
F22

01-4
F26 F26 F26 F26-1 F26

01-5
M4爪牙螺母 M4 claw nut
M3爪牙螺母 M3 claw nut
F26-1
F26
F22-1*2 F22-2*2

01-6
F1*2
01-3
01-4
注意爪牙螺母朝向 F28*2
Pay attention to the claw nut orientation

01-7
注意爪牙螺母朝向
Pay attention to the claw nut orientation

01-8
F21 F5 F6 F7 F12 F11 F10 F9 F8
ERS

拼装此步骤时，用少量快干胶稍加固定，方便后面步骤调整。
When assembling this step, use a small amount of quick-drying glue to fix it slightly, which is convenient for later adjustment.

01-9
在卡口内嵌入轻木条 6*8mm
Insert the balsa strip into the slot
按实际长度截取
Cut according to actual length

在卡口内嵌入轻木条 6*8mm
Insert the balsa strip into the slot
按实际长度截取
Cut according to actual length

01-10
在卡口内嵌入轻木条 6*8mm
Insert the balsa strip into the slot
按实际长度截取
Cut according to actual length

此处需两段轻木条拼接
Here you need to paste together the two pieces of balsa strips

在卡口内嵌入轻木条 6*8mm
Insert the balsa strip into the slot
按实际长度截取
Cut according to actual length

01-11
F23 F23-1 F17
F24

此处需两段轻木条拼接
Here you need to paste together the two pieces of balsa strips

01-12
F29-1 F29

01-13
F29-3
F29-4

注意：拼装完成后检查机身对称性，调整保持机身不要扭曲。然后进行后续步骤。
Note: Check the symmetry of the fuselage after the assembly is completed, and adjust to keep the fuselage body from twisting.Then proceed to the next steps.
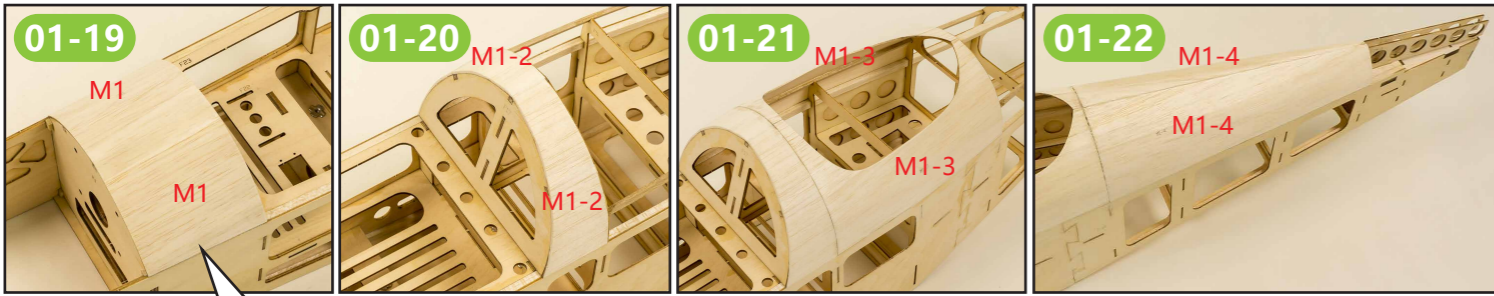
01-14
01-2

按01-1.01-2步骤拼好另一侧板，注意左右方向。然后拼装到机身，并注意安装步骤01-9.01-10的轻木条。
Assemble the other side of the board according to the steps 01-1.01-2, pay attention to the left and right direction. Then assemble to the fuselage, and pay attention to the installation of the balsa strip of step 01-9.01-10

01-17
轻木条 6*8mm
balsa strip 6*8mm
按实际长度截取
Cut according to actual length

01-15
轻木条 4*5mm
balsa strip 4*5mm
按实际长度截取
Cut according to actual length

01-16
轻木条 4*5mm
balsa strip 4*5mm
按实际长度截取
Cut according to actual length

01-18
轻木条 4*5mm
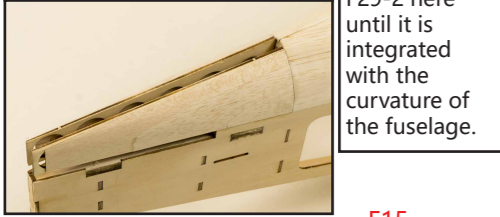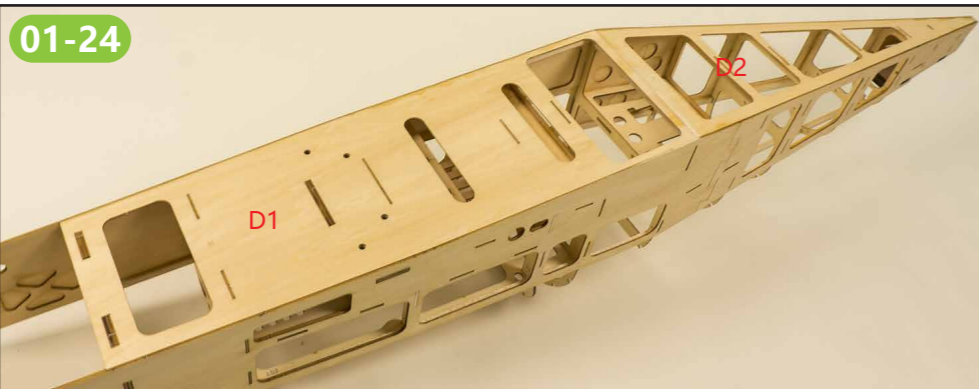balsa strip 4*5mm
按实际长度截取
Cut according to actual length

01-19
M1
M1

01-20
M1-2
M1-2
M1-2

01-21
M1-3
M1-3

01-22
M1-4
M1-4
M1-4

M1蒙板有长短两种，具体见页码4结尾处描述。
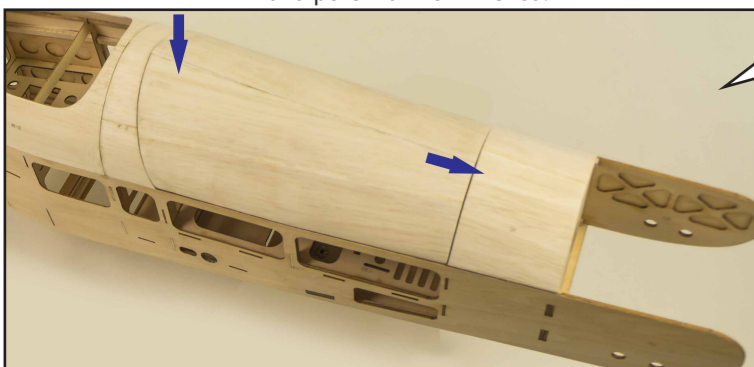M1 masks are available in both long and short versions. See page 4 for details.

01-23
F29-2*3
F29-2*3

此处轻木F29-2粘固后进行打磨，与机身弧度成为整体。
Paste and polish the balsa wood F29-2 here until it is integrated with the curvature of the fuselage.

01-24
D2
D1

01-25
F15
F14
F13
F19-1
F19

注意：保持平整无变形，完成后需打磨。
Note: Keep it flat and free of deformation, and polish it when finished.

01-26
M1-1
M1-1

01-27

在上图位置安装此贴，并确保仓身盖磁铁与机身上磁铁为相吸状态。
Install the magnet in the position above and make sure that the magnet of the body cover is in the same state as the magnet on the body.

仓身盖为磁吸设计，可开合。
The body cover is designed for magnetic attraction and can be opened and closed.
完成机身拼装后，需整体打磨平滑，待下一步进行蒙皮。
After the fuselage is assembled, it needs to be polished and smoothed, and waiting for covering the film.

蒙皮详细操作可查看以下链接内容，我们提供了蒙皮范本（可直接扫二维码）
For detailed operation of the film, please view the following link.We provide the example (can directly scan the QR code)
http://www.dwhobby.com/art/film

机翼拼装　Assemble the Wing

机翼拼装请参考机翼1：1图纸，拼装时在平整工作台上进行。此处标注了一部分拼装细节，请结合图纸进行拼装。
Pls assemble the wing as per the supplied 1:1 drawing, which is carried out on the flat workbench during assembly. Here we marked out some assembly details,please assemble them in combination with the drawings.
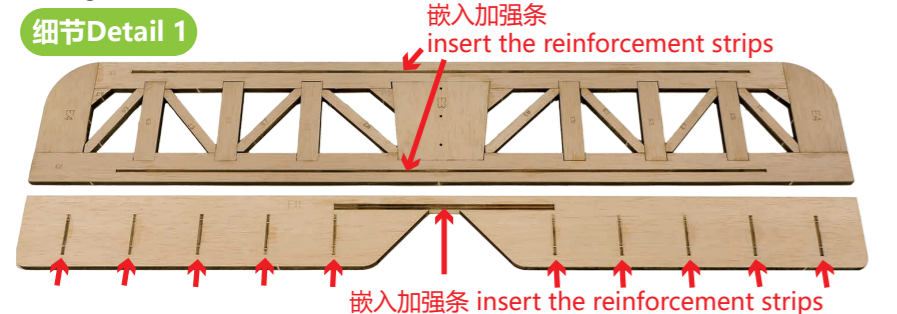
细节Detail 1
嵌入加强条
insert the reinforcement strips
嵌入加强条 insert the reinforcement strips
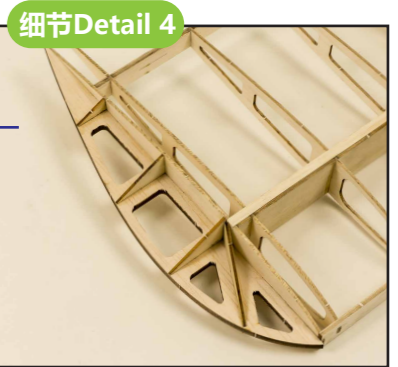
铝管 20*530MM
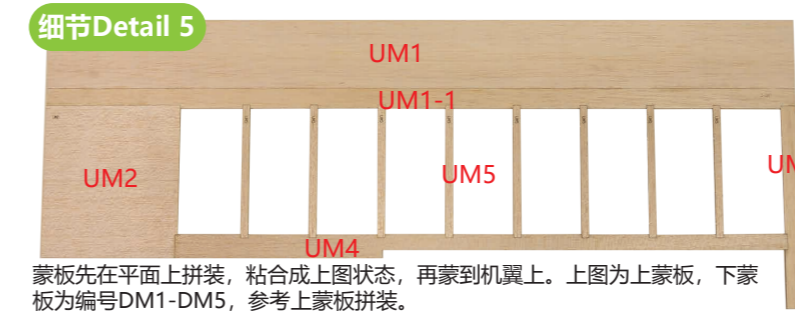Aluminum tube 20*530MM
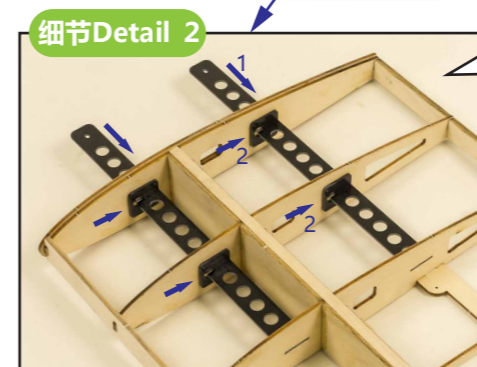
细节Detail 4

细节Detail 2
1
2
2
2
2
1

先插入长玻纤片1，然后再侧边卡入方玻纤片2，卡牢固后用胶水粘合2在机翼上。
Firstly insert the long fiberglass sheet 1, secondly insert the square fiberglass sheet 2 on the side,finally fix them firmly to the wing with glue.

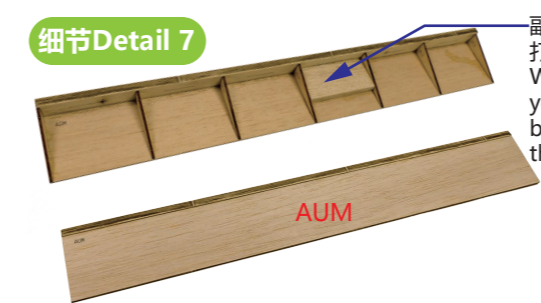**细节Detail 3**
DP　DP-1

细节Detail 5
UM1
UM1-1
UM2
UM5
UM3
UM4

蒙板先在平面上拼装，粘合成上图状态，再蒙到机翼上。上图为上蒙板，下蒙板为编号DM1-DM5，参考上蒙板拼装。
Firstly assemble the cover mask on the flat workbench,bonded to the state of the above picture, and then paste to the wing. The picture above shows the upper mask, the lower mask is numbered DM1-DM5,which need to assemble in same way as upper mask.

细节Detail 6

在机翼前端粘贴L1-1，并打磨成机翼一体弧度。
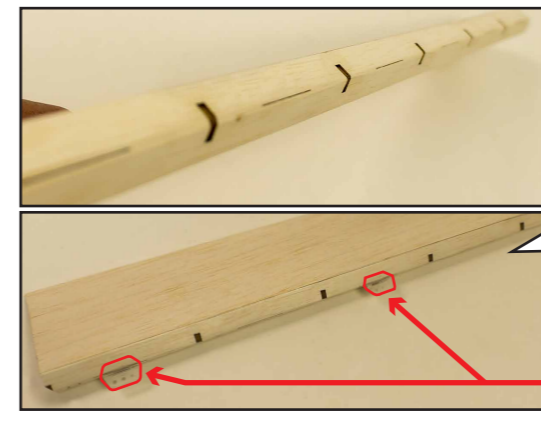Paste L1-1 on the leading edge od the wing and sand it into a full arc of the wing.

细节Detail 7
AUM

副翼拼装时注意垫入轻木块，并打磨斜面，然后再粘贴AUM
When assembling the aileron, you need to put balsawood block and polish the bevel, then paste the AUM.

细节Detail 8

襟翼拼装时注意垫入轻木块，并打磨斜面，然后再粘贴FUM
When assembling the flaps, you need to put the balsawood block, polish the bevel, and then paste the FUM.

在预留槽内装入合页，快干胶粘固。
Insert the hinge in the reserved slot,and fix them with fast-drying adhesive.

背面打磨平滑
The back needs to be polished and smoothed

以下2个步骤建议蒙皮完成后再安装。
The following two steps recommend to install after covering the film.

后续步骤需要蒙皮处均可参考此蒙皮范本。
Follow-up steps that need to cover the film refers to this template.
蒙皮前可在机翼内放置一跟引导线，方便拉出舵机线。
A guide wire can be placed in the wing before covering the film,more convenient to pull out the servo wire.

细节Detail 9

细节Detail 10

机翼背面
Back side of the wing

自攻螺丝
Self-tapping screws

副翼安装到机翼，合页插入机翼预留槽内，用快干胶粘固，并保持副翼可以上下摆动。
The aileron is mounted to the wing, and the hinges are inserted into the reserved slot of the wing,and fasten with quick-drying glue,make sure the aileron can be swung up and down.
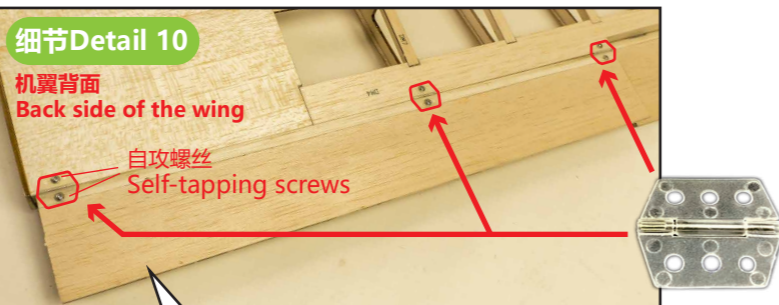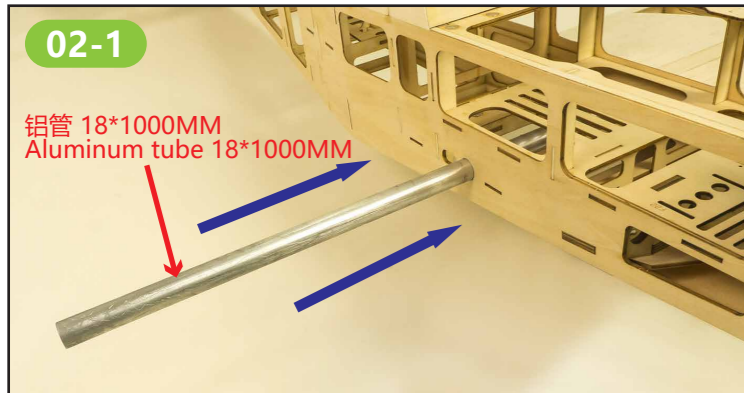
襟翼如上图连接到机翼，用合页加自攻螺丝固定住。
The flap is connected to the wing as shown above,and fasten with hinges and self-tapping screws.

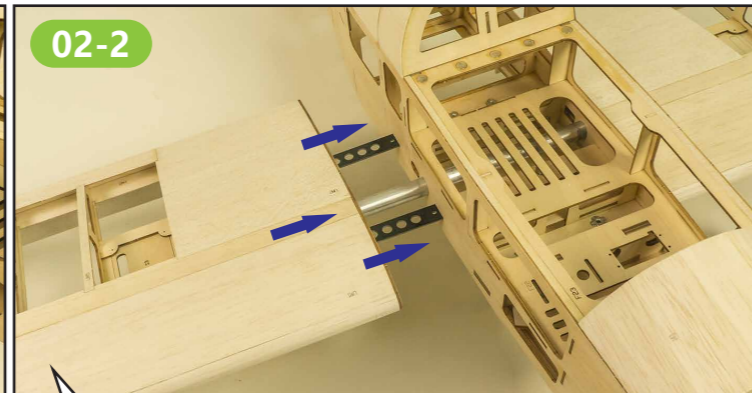## 机翼及起落架安装到机身 Mount the wing and Landing gear to the fuselage

以下步骤需要蒙皮完成后再安装。The following steps need to install after covering the film.
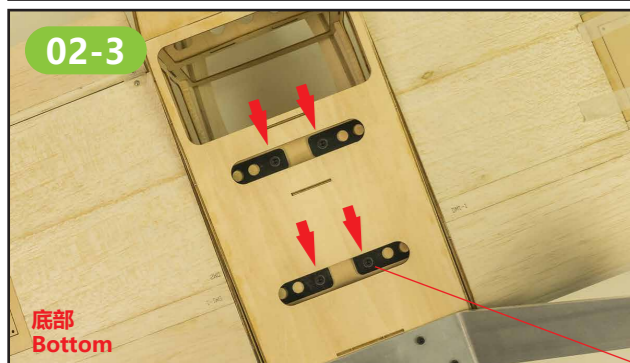
02-1
铝管 18*1000MM
Aluminum tube 18*1000MM

02-2

02-3
底部
Bottom

02-1至02-3展示了机翼安装到机身的步骤。
02-1 to 02-3 show the steps to mount the wing to the fuselage

02-1插入铝管到机身中位置。
02-1 insert the aluminum tube to the center position of the fuselage

02-2把铝管插入机翼预埋铝管内，注意玻纤片嵌入的位置。
02-2 Insert the aluminum tube into the embedded aluminum tube of the wing, pay attention to the position where the fiberglass sheet is embedded.

02-3翻转到机身底部，用螺丝锁定机翼玻纤片。
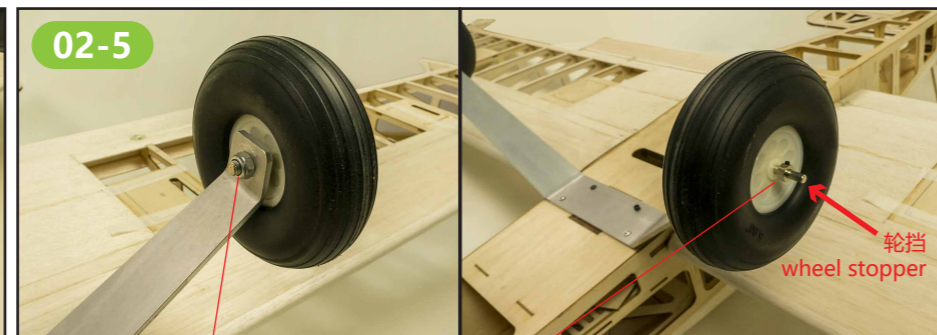02-3 flip to the bottom of the fuselage, lock the wing fiberglass with screws

M3*10mm内六角螺丝
M3*10mm inner hexagon screws
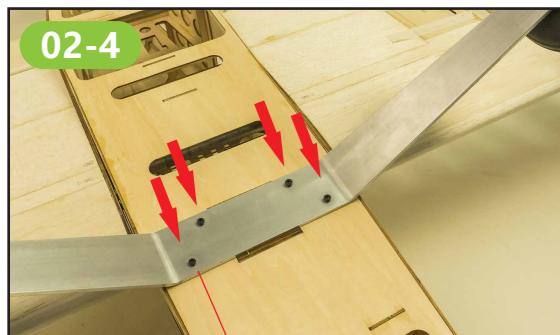
02-4
M4*20mm内六角螺丝
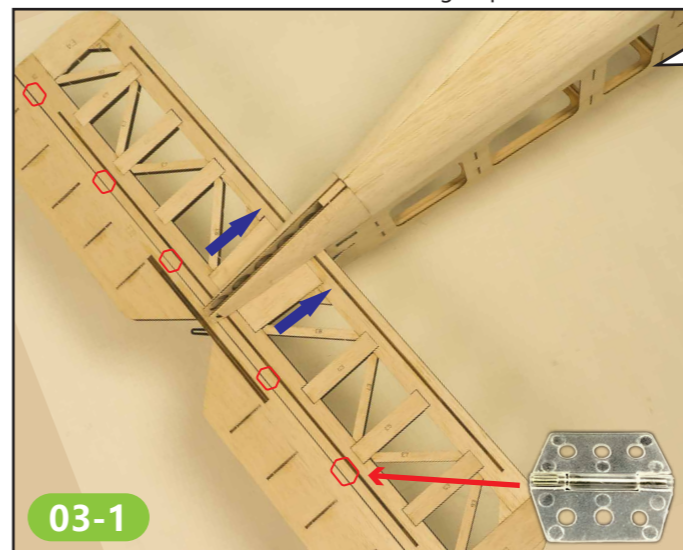M4*20mm inner hexagon screws

02-5
轮轴
wheel axle

轮挡
wheel stopper

轮挡
wheel stopper

尾翼及后尾轮安装到机身 Mount the tail and rear tail wheel to the fuselage

以下步骤需要蒙皮完成后再安装。The following steps need to install after covering the film.

03-1
水平尾翼插入机身尾部卡口，用胶水粘合连接处。安装升降舵用铰链连接。可参考机翼拼装的细节7，9。
The horizontal tail is inserted into the slot at the rear end of the fuselage, and fix with glue at the joints.Install the elevator with hinges. See the details of the wing assembly 7,9.
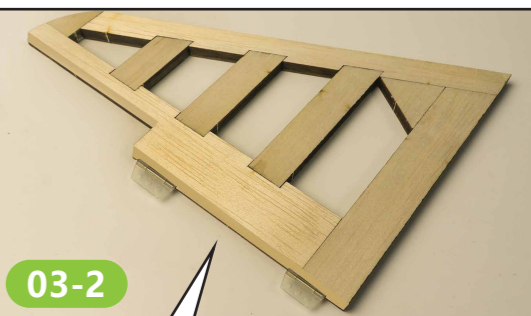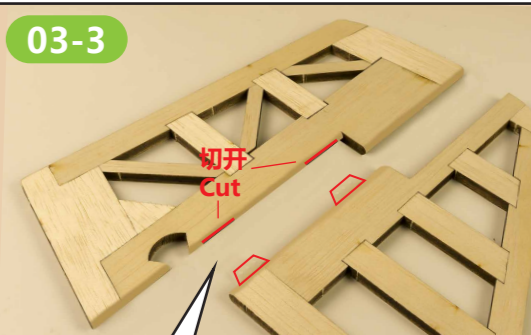
03-2
打磨垂直尾翼末端，用刀切出槽，并装入铰链，用胶水粘固。
Grind the end of the vertical tail,and cut the groove with a knife,finally insert the hinge and fasten with glue.
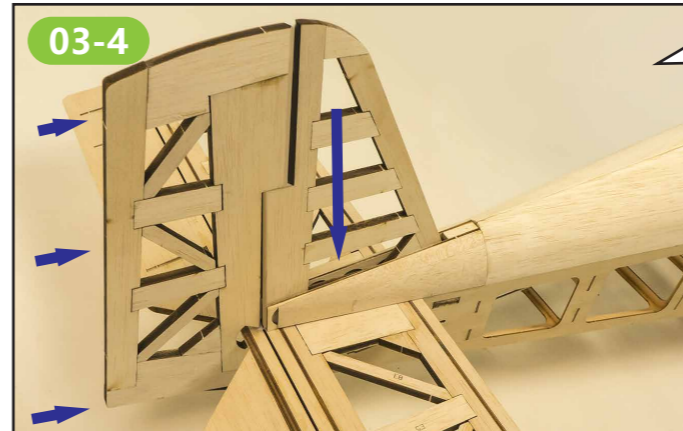
03-4
把垂直尾翼插入机身，胶水粘固，把方向舵对接垂直尾翼，铰链插入开的槽内，胶水粘固。
Insert the vertical tail into the fuselage,and fix with glue.Dock the rudder to the vertical tail,insert the hinge into the slot and fasten with glue.

03-3
切开
Cut

打磨方向舵，参考垂直尾翼装好的铰链位置用刀在方向舵上切出槽。
Grind the rudder, refer to the hinge position of the vertical tail and cut the groove on the rudder with a knife.

尾轮组合状态
Tail wheel status

长度可能需要裁剪
Length may need to be cut
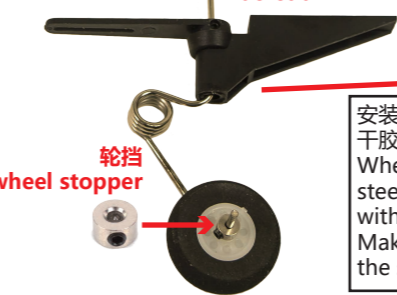
把尾轮组固定到机身尾部，用自攻螺丝固定。
Fix the tail wheel to the rear of the fuselage and fix it with self-tapping screws
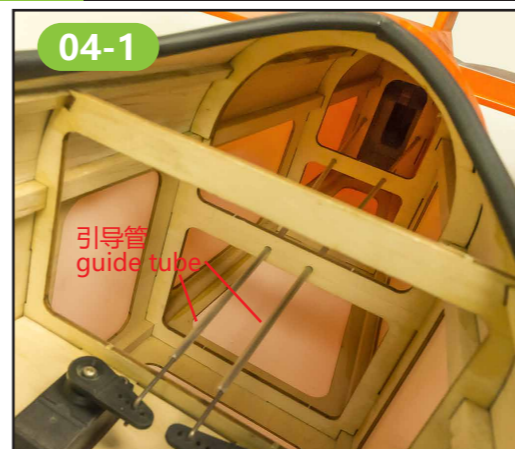
轮挡
wheel stopper

03-5

安装尾轮组时，钢丝插入转向舵内，用大量快干胶水粘固。使尾轮可以随转向舵转动。
When the tail wheel is installed, insert the steel wire into the steering rudder and fix with a large amount of quick-drying glue. Make sure the tail wheel could turn with the steering rudder
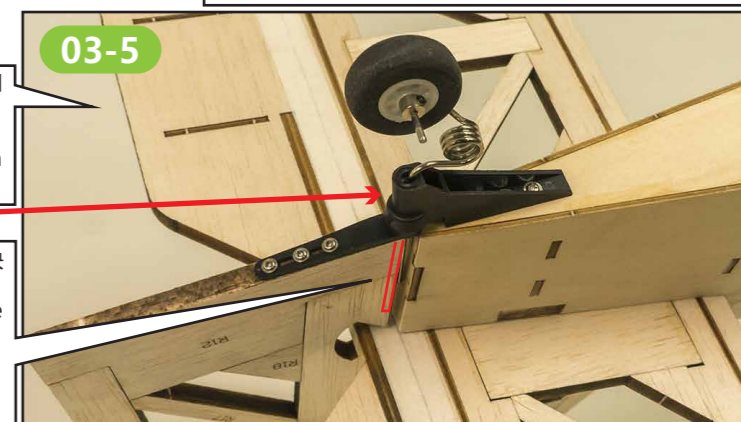
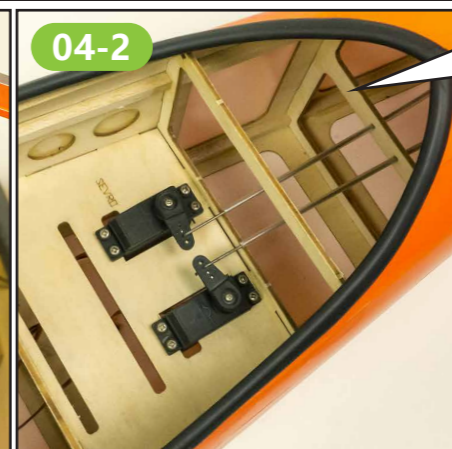## 电子设备及引擎安装示范 Installation for Power system and Engine
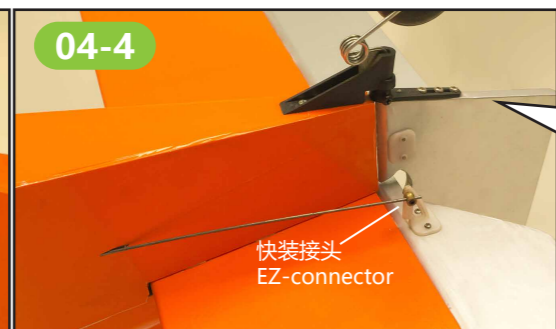
04-1
引导管
guide tube

04-2

在机身内安装舵机，并把钢丝连杆插入机身内，钢丝套引导管，引导管用胶水固定在机身内。
Install the servos inside the fuselage, insert the steel wire linkage rod into the fuselage, insert the steel wire into the guide tube, and fix the guide tube inside the fuselage with glue.

连杆钢丝Z型一头穿入舵臂固定住。
The Z-shaped end of the linkage rod is inserted into the servo arm.

04-3

快装接头
EZ-connector

04-4

快装接头
EZ-connector

连杆从机身尾部预留槽导出，根据连杆位置确定出舵角位置，然后安装舵角。在舵角上安装快装接头，快装接头锁定连杆。
The linkage rod is led out from the reserved slot at the rear of the fuselage,servo horn position is determined according to the position of the linkage rod, and then install the servo horn.Install the EZ-connector on the servo horn,then lock the linkage rod.

安装机翼上的副翼，襟翼舵机
Install the servos on the aileron and flap of the wing

04-5

S3

04-6
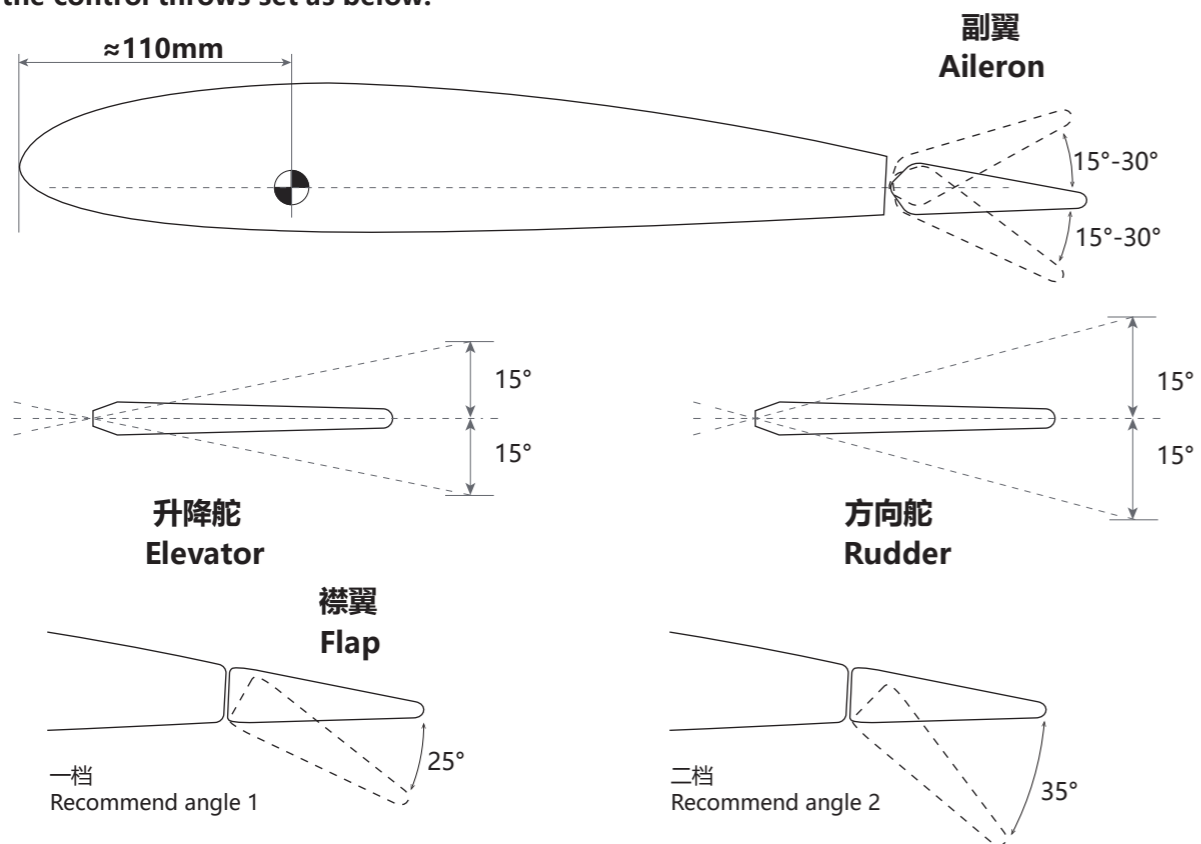
自攻螺丝
Self-tapping screws

04-7

襟翼舵机为内装设计，用轻木块固定在S3上，舵机线穿入机翼内。
The flap servo should be installed inside the wing,fix the servo on the S3 with balsawood block,and the servo wire penetrate into the wing.
舵机固定好后，用自攻螺丝把S3固定在机翼上。
After the servo is fixed, fasten the S3 to the wing with a self-tapping screw.

钢丝连杆Z型一头连接舵臂，然后连杆垂直机翼确定出舵角位置，然后安装舵角。在舵角上安装快装接头，快装接头锁定连杆。
The Z-shaped end of the linkage rod is connected to the servo arm. Pulling the linkage rod to the appropriate position on the aileron determines the position of the servo horn.Here pls note the linkage rod needs to be perpendicular to the wing. Then install the servo horn.Install the EZ-connector on the servo horn,then lock the linkage rod.

副翼上舵机安装方法和襟翼上相同。安装完成后，舵机线从上图预留孔导出。
Install the aileron servo in the same way as flap servo.After the installation is completed, the servo wire is exported from the reserved hole in the above figure.

通常情况下，舵面角度的设置如下：
Usually, the control throws set as below:

≈110mm

副翼
Aileron

15°-30°
15°-30°

15°
15°

升降舵
Elevator

15°
15°

方向舵
Rudder

襟翼
Flap

一档
Recommend angle 1

25°

二档
Recommend angle 2

35°

襟翼设置成两个档位，起飞开启一档，升空后关闭襟翼。降落时开启二档。
The flaps are set to two gears with different angles, open the first gear (recommend angle 1) for take-off,and close the flaps after lifting. Open the second gear (recommend angle 2) when landing.

	常规飞行(Normal Flying)	3D飞行 部分飞机支持(3D Flying only support some models)
副翼 Aileron	±（15°-30°）	±40° 或者更大(or larger)
平尾 Elevator	±15°	±40° 或者更大(or larger)
垂尾 Rudder	±15°	±40° 或者更大(or larger)
常用襟翼 Flap	（起飞 take-off）15°-20° （降落 Landing）20°-40°	

部分特殊机型会有V型尾翼，襟翼，前缘机翼或舵面很小等，可以以常规飞行的角度作为参考，在您不确认且没有有经验人员指导的情况下，我们建议您先以小角度试飞以确认您的设置是否正确。
Some special models will have V-tails, flaps, leading edge wings, etc., which can be used as a reference for conventional flight angles. If you do not confirm and there is no experienced person to guide you, we recommend that you first test at a small angle to confirm that your settings are correct.

安装引擎
Install the engine

引擎及所需相关设备此处仅做示范，实际安装请跟据您所选设备的说明进行调整及安装。
The engine and related equipment are only shown here for reference. The actual installation should be adjusted and installed according to the instructions of the equipment you selected.


点火器 Igniter
油箱 Oil tank
油门舵机 Throttle servo
UBEC
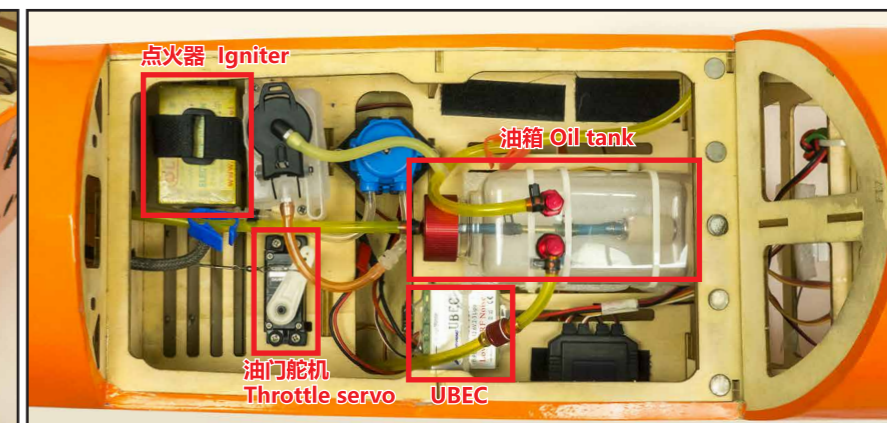
更多电子设备调试细节可参考以下链接查看（可直接扫二维码）
More details about power system adjustment, please refer to below link: (You can scan QR Code directly.)

http://www.dwhobby.com/art/connection

引擎头部蒙版分为长短两套，跟据您所选用的引擎选择安装。（油动引擎建议用短蒙板，电动马达建议用长蒙板）
The engine mask is available in two sets, which are selected according to the engine you choose. (The oil engine recommends short masks and the electric motor recommends long masks)

M1
M1

M1
M1
L1-1

≈110mm
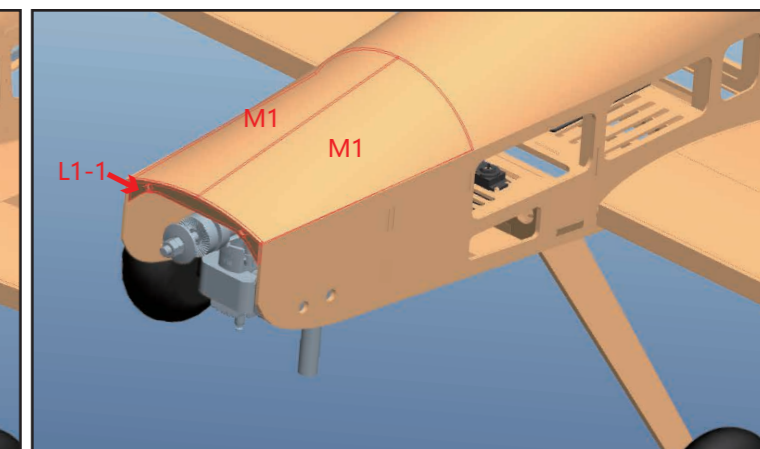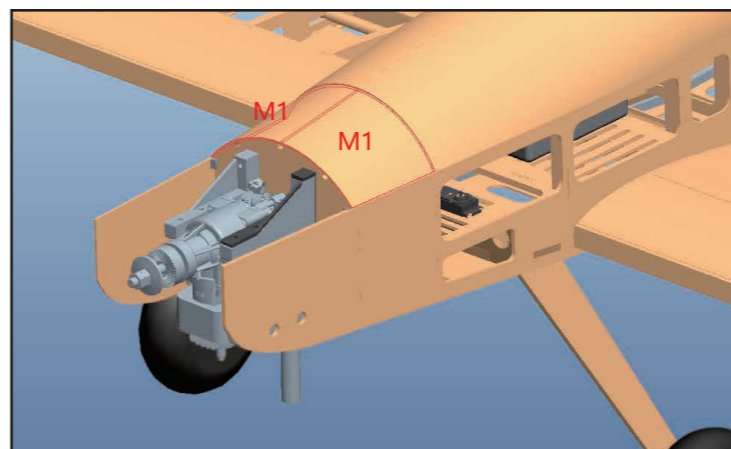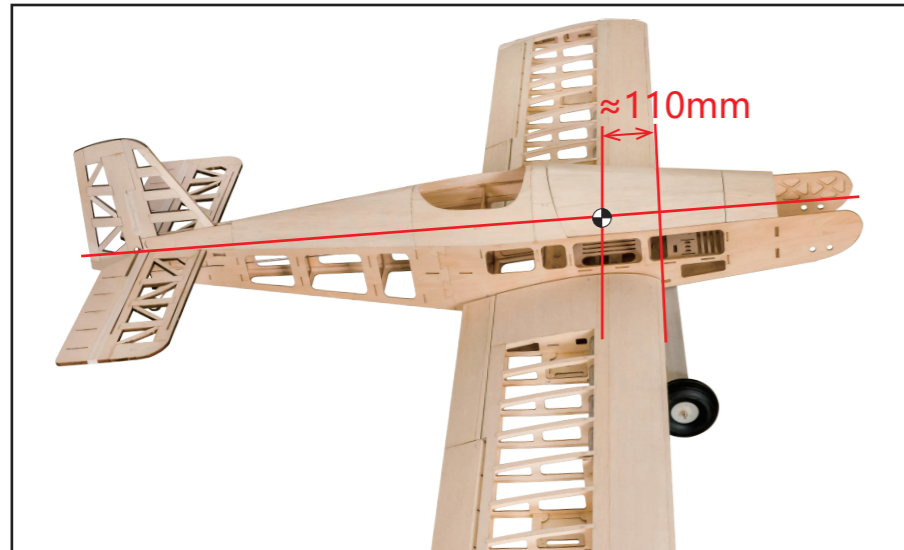
注意：设置重心时，油箱放置在重心点位置。
Note: When setting the center of gravity, the oil tank is placed at the center of gravity.
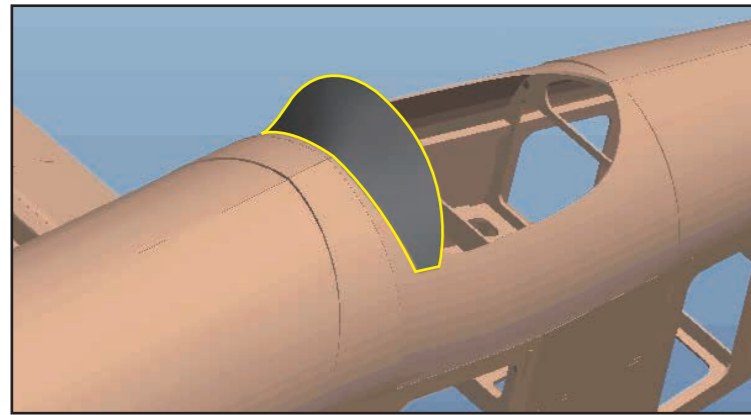
折叠PVC风挡到合适形状，然后粘到驾驶室前部。
Fold the PVC windshield to the suitable shape and stick it to the cab.

飞行前的建议
PRE-FLIGHT CHECKS

● 安装舵机前，请先将舵机通电让舵机中心点回中，以便能更好的调试舵面。
● Check/adjust servo centering, in order to adjust the control surface better.

● 初次启动电机，您需要确认电机旋转的方向以适配您的机型。
● Double-check the spinning direction of motor at first usage, and sure it's suitable for your model.

● 请将重心（CG）调整至说明书所述位置并尽量靠近。如果有需要，您可以增加机头或者机尾的重量，以确保机体有更好的飞行姿态。
● Set the center of gravity (CG) at the position that manual already marked out. If necessary, add weight to the nose or tail to ensure the best flight performance.

● 检查机身内部，确保所有设备正常连接；检查机身表面，包括但是不限于蒙皮，固定螺丝，舱盖，座舱罩等位置。
● Double-check the inside of the fuselage, make sure all the equipments are correctly connected; Check the heat-shrink covering material's surface, Make certain all screws, bolts, cabin and canopy remain secure.

● 在飞行前，请检查您电池情况，若有低电压，电池损坏等情况，请您停止操作并马上更换电池。
● Take great care when connecting/disconnecting the battery, pls replace the battery immediately once found low voltage or damage to battery.

● 机身内部设备连接的方式，会和您的收发设备有关，在一些功能更多的收发设备上，您可以通过设置简化机身内部设备的连接。详细请查看您的收发设备以确认是否满足您需要的功能。
● The way the internal devices of the fuselage are connected will be related to your transmitter-receiver device. For those transmitter-receiver devices with more functions, you can simplify the connection of the internal devices of the fuselage. Check your device for details to see if it meets the features you need.

● 动力设备和收发设备第一次配对时，可能需要设置油门最大行程，请您自行设置。
● When the power system and transmitter-receiver device are paired for the first time, you may need to set the maximum stroke of the throttle. Please set it yourself.

地面控制方向测试
Control Directions Tests

遥控器动作 Transmitter Command		飞机反应 Aircraft Reaction
升降舵 Elevator	升降杆下拉 Lifting rod down	
	升降杆上推 Lifting rod up	
副翼 Aileron	转向杆向右 Steering rod to the right	
	转向杆向左 Steering rod to the left	
方向舵 Rudder	方向杆向右 Direction rod to the right	
	方向杆向左 Direction rod to the left	