

1.4M STICK-14

Balsawood Training Airplane

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.

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维雕刻的部件，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:1400mm
机长:1187mm
起飞重量: 1.5-1.6kg

Wingspan: 1400mm
Fuselage Length: 1187mm
Flying Weight: 1.5-1.6kg

推荐配置 Suggested Equipment

推荐马达: 2815-2820 800-900KV
推荐桨叶: 12*6
推荐电调: 60A
推荐舵机: 17gx6pcs
推荐电池 4S 2200-2800mAh
推荐6通道以上接收机

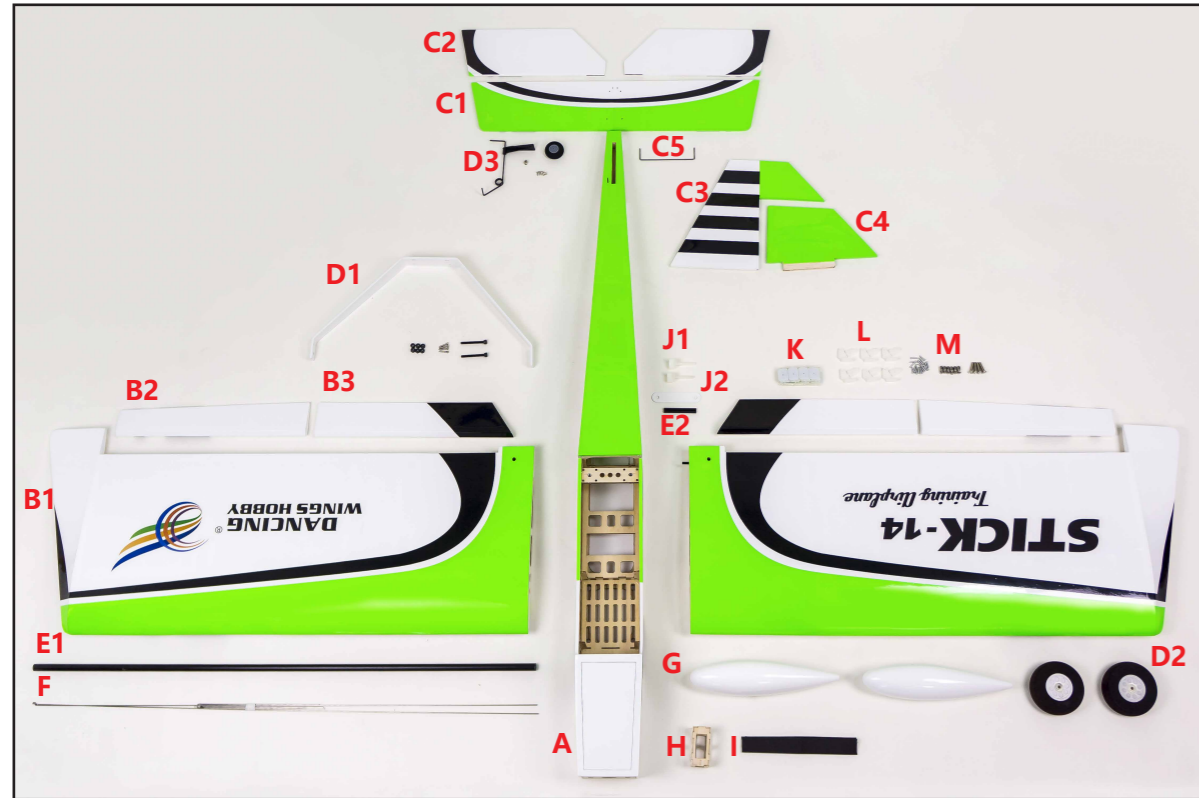
Suggested Motor: 2815-2820 800-900KV
Suggested Propeller: 12*6
Suggested ESC: 60A
Suggested Servo: 17gx6pcs
Suggested Battery: 4S 2200-2800mAh
Radio: more than 6CH

工具 Tools Needed



1.4M STICK-14 Instruction Manual

散件 KIT

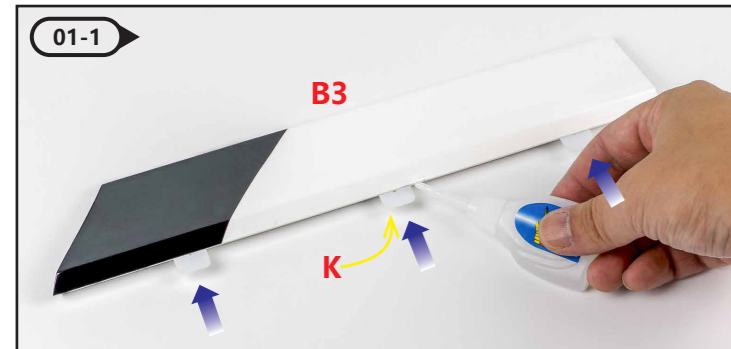


配件图仅做参考用，您收到的实物可能因为修改/优化的原因导致与图片略有不同。Photos shown here just for reference, the product you received maybe slightly differ from the photos due to continuous improvement on products.

- A:机身
- B1:机翼
- B2:副翼
- B3:襟翼
- C1:水平尾翼
- C2:升降舵
- C3:方向舵
- C4:垂直尾翼
- C5:升降舵连接钢丝
- D1:起落架
- D2:机轮
- D3:尾轮组
- E1/E2:机翼连接碳杆
- F:连杆
- G:机轮罩
- H:油动舵机架
- I:魔术胶带
- J1-J2:机翼固定件
- K:纸合页
- L:舵角
- M:快装接头

A:Fuselage B1:Wing B2:Aileron B3:Flap Wing C1:Horizontal Tail C2:Elevator C3:Rudder C4:Vertical Tail C5:Steel Wire for Connecting Elevator D1:Landing Gear D2:Wheels D3:Tail Wheel Combo E1/E2:Carbon Rod for Connecting Wings F:Linkage Rod G:Wheels Cover H:Servo Frame for Gas Power I:Magic Tape J1-J2:Wing Fixed Parts K:Paper Hinge L:Control Horn M:Quick Joint

01 机翼组装 Assemble the Wing



在副翼，和襟翼的预留槽里插入纸合页，用少量CA胶水粘固。 Plug paper hinge into the pre-cut slot of aileron and flap wing. Stick it with a little CA glue.



把粘好纸合页的副翼襟翼插入机翼的预留槽，调整合适间隙。 Plug the aileron and flap wing into the pre-cut slot of wings, adjust appropriate space.



在连接处点入少量CA胶粘合固定。 Fasten with a little CA glue on the joint.

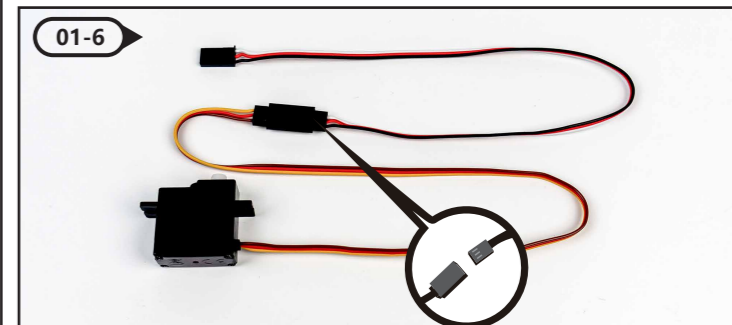
01-4 在机翼的背面用美工刀切开舵机的空位，和舵机线导出孔。 Cut the servo hole and servo wire's guiding hole with knife on the back of wings.



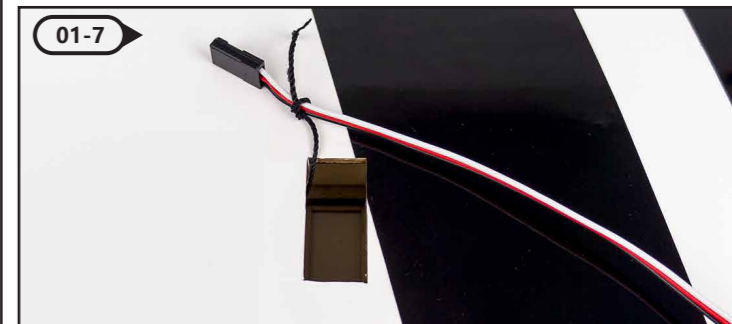
提示：此处需要切开的孔，可以用手摸来确定孔位，也可对着灯光同过光线来确定孔位。 Note: Touch the holes to confirm the correct hole position, or confirm it at the bright light.



用镊子挑出预埋的引导线。 Pick out the pre-embedded guiding wire with tweezers.



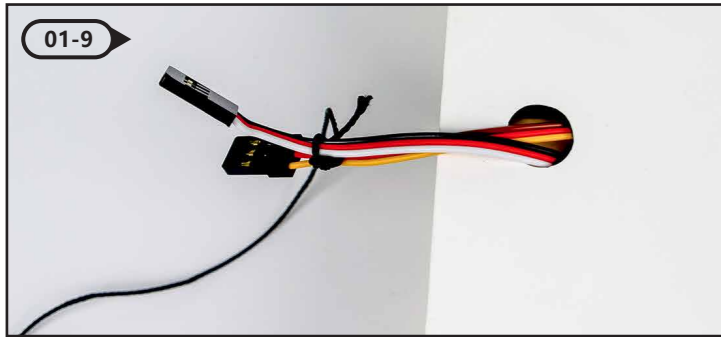
在装机翼上舵机前，您的舵机可能需要接延长线。 Before installing servo of the wings, your servo may need to connect extension line.



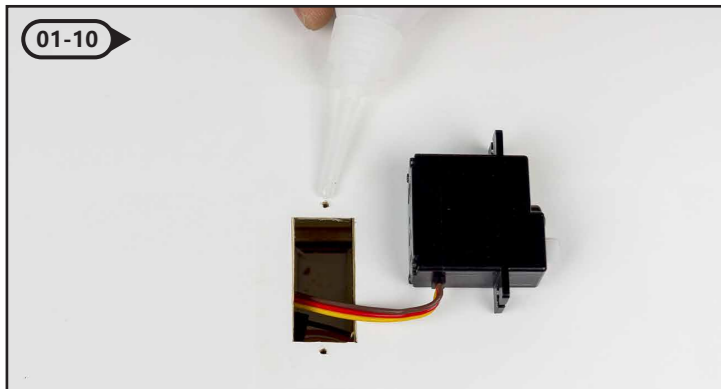
把最远端的引导线绑在舵机线上，然后拉另一端的引导线，让舵机线穿入机翼内。 Bind the farthest guiding line on the servo line, then pull the other end of the guiding line, let the servo line to penetrate into wings.



拉到中段时再绑上另一个舵机的舵机线，继续拉动引导线。 Bind another servo line when you pull it in the middle section, continue to pull the guiding line.



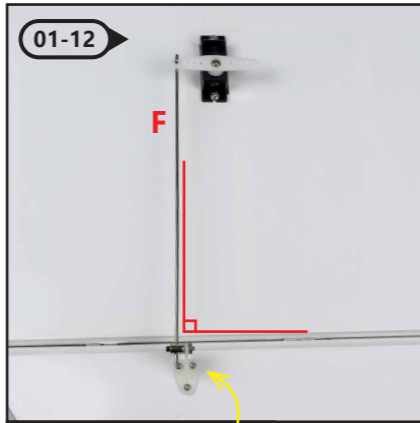
01-9
一直拉引导线，直至两条舵机线从圆孔导出。
Keep pulling the guiding line, until the 2pcs servo lines leading-out from the round hole.



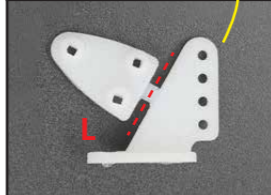
01-10
参考舵机的螺丝位置，在机翼上钻出螺丝孔位，然后在孔里点入少量CA胶。
Refer to the position of servo's screw, drill the hole for the screw on the wing, then put a little CA glue in the hole.



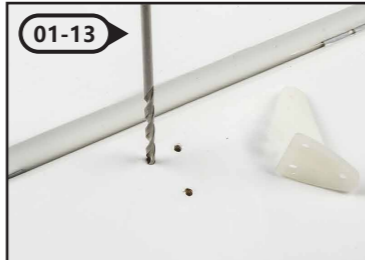
01-11
用螺丝固定住舵机。机翼上两个舵机相同方法安装。
Fasten the servo with screw. The same installation way for 2pcs servos on the wing.



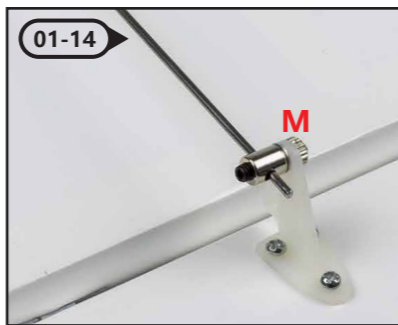
01-12
在舵机上安装舵臂，并安装连杆，连杆Z型一端穿入舵臂。
Install the servo arm on the servo, and mount the linkage rod, plug the linkage rod's Z-shape end into the servo arm.
连杆垂直于机翼摆放，参考连杆末端位置，在副翼上确定舵角的位置。
Put the linkage rod be perpendicular to the wing, refer to the endmost position of linkage rod, confirm the servo horn's position on the aileron.



使用时切开
Cut open when using.
注意：连杆安装在舵机左侧。
Note: Install the linkage rod on the left of the servo.



01-13
在确定的位置上，钻螺丝孔，孔内点少量CA胶水，然后用螺丝固定舵角。
In the definite position, drill screw hole, put a little CA glue, then fasten the servo horn with screw.

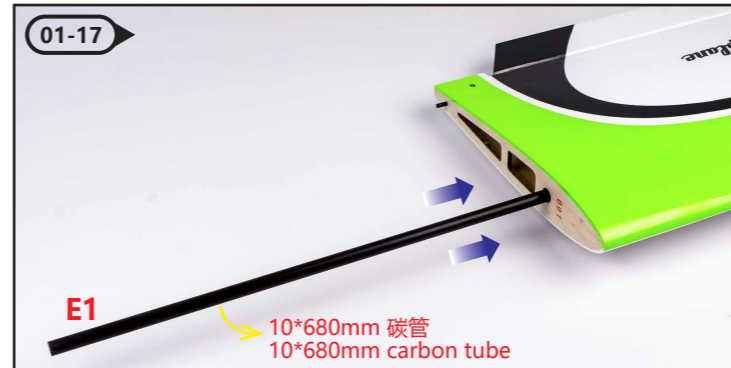


01-14
在舵角上安装快装接头，并锁定连杆。
Install the quick joint on the servo horn, and lock the linkage rod.

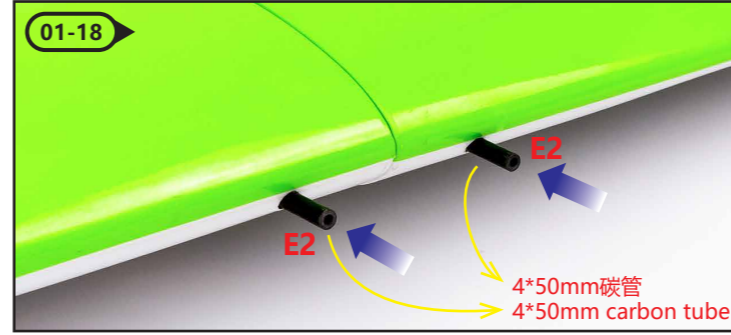


01-15
另一个舵机的连杆参照01-12至01-15步骤相同安装。
Refer to 01-12 to 01-15 steps, install another servo's linkage rod with same way.

01-16
另一边机翼参照01-1至01-15步骤相同安装。
Refer to 01-1 to 01-15 steps, install another wing with same way.

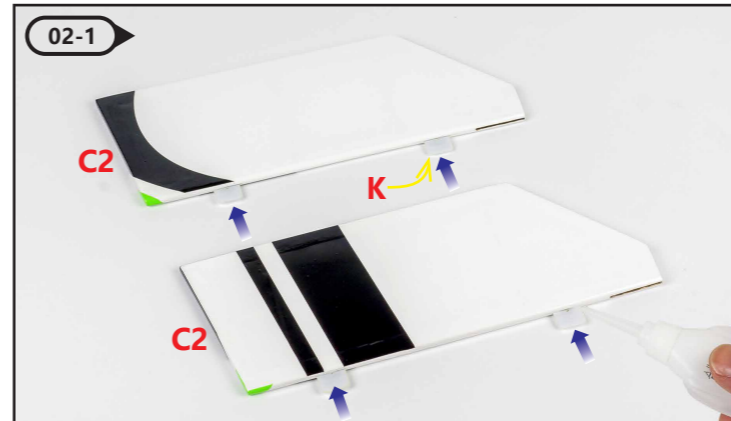


01-17
在机翼的中段插入碳管，并把完成的两部分机翼对插在一起。
Plug carbon tube into the middle of the wing, and insert the finished two wings into each other.

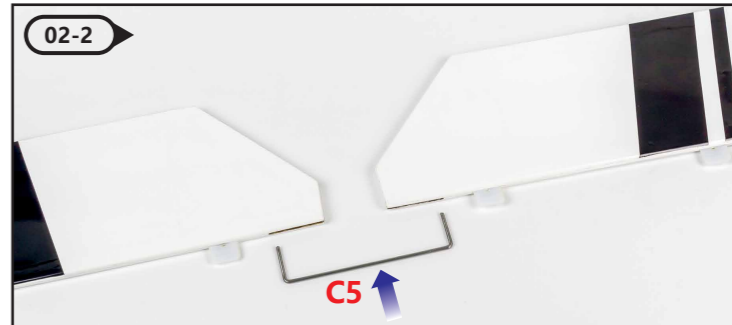


01-18
在机翼的前端预留孔内插入碳管锁定销，用CA胶粘固。
Plug the carbon tube's locking tip into the reserved hole of the wing's front end, fasten with CA glue.

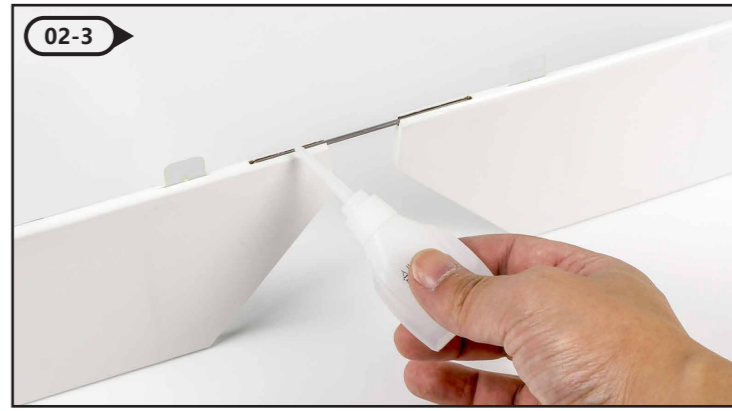
02 垂直尾翼/水平尾翼/后尾轮安装
Vertical Tail/Horizontal Tail/Rear-tail wheel Installation



02-1
在升降舵的预留槽里插入纸合页，用少量CA胶水粘固。
Plug paper hinge into the pre-cutted slot of elevator, fasten with a little CA glue.



02-2
把连接钢丝插入升降舵预留槽，然后查看两片舵面是否平直，如果不平，可抽出钢丝调整，直到调整平直。
Plug the connecting steel wire into the pre-cutted slot of elevator, then check the 2pcs rudder surface are straight and flat or not. If not, you can draw out the steel wire and adjust it until the rudder surface keep flat and straight.



02-3
在调整好的升降舵连接钢丝处，用大量CA胶粘合牢固。
Use a lot of CA glue to fasten the position of elevator's connecting steel wire which well-adjusted before.



02-4
把升降舵插入水平尾翼，在连接合页处点入少量CA胶粘合。
Plug the elevator into the horizontal tail, use a little CA glue on the position of connecting hinge.

02-5

M2*10mm 自攻螺丝+垫片
M2*10mm self-tapping screw+spacer

在机身尾翼安装水平尾翼，用螺丝锁定。
Install horizontal tail on the tail wing of fuselage, lock with screw.

02-7

C4
K

在垂直尾翼的预留槽里插入纸合页，用少量CA胶水粘固。
Plug paper hinge into the pre-cut slot of vertical tail wing, fasten with a little CA glue.

02-8

把垂直尾翼插入机身尾部，调整与机身垂直后用CA胶水粘固。
Plug the vertical tail wing into the tail of fuselage, adjust it to be perpendicular to fuselage and fasten with CA glue.

02-9

C3
D3

把尾轮组件插入转向舵的预留槽内。
Plug the tail wheel parts into the pre-cut slot of steering rudder.

02-10

用大量CA胶水粘固尾轮组件。
Fasten the tail wheel parts with a lot of CA glue.

02-11

把转向舵与垂直尾翼通过纸合页链接，纸合页连接处用少量CA胶粘固。
Connect steering rudder and vertical tail wing with paper hinge, stick with a little CA glue on the joint of paper hinge.

02-12

M2*8mm 自攻螺丝
M2*8mm self-tapping screw

用自攻螺丝把尾轮组件固定到飞机尾部（如上图）
Fasten the tail wheel parts on the tail of airplane with self-tapping screw. (Like the one above)

02-13

把钢丝连杆插入机身导管内，Z型一头在机身内，另一头从机身尾部导出。
Plug the steel wire linkage rod into the duct of fuselage, put Z-shape end inside fuselage, another end leading-out from the tail of fuselage.

02-14

转向舵
Steering Rudder
升降舵
Elevator

在机身内安装舵机，连杆Z型头穿入舵臂，并把舵臂固定到舵机上。
Install servo in the fuselage, plug the z-shape end of linkage rod into servo arm, and fasten the servo arm on the servo.

02-14

M2*10mm 自攻螺丝
M2*10mm self-tapping screw

背面
Back Side

在转向舵上安装舵角，参考尾部连杆位置在舵面上确定位置，用自攻螺丝固定住，连杆用快装接头固定在舵角上。
Install the servo horn on the steering rudder, refer to the position of linkage rod in tail, confirm the position on rudder surface. Fasten with self-tapping screw, fasten the linkage rod on the servo horn with quick joint.

03 起落架安装
Landing Gear Installation

03-1

M2*10mm 自攻螺丝
M2*10mm self-tapping screw

背面
Back Side

在升降舵上安装舵角，参考尾部连杆位置在舵面上确定位置，用自攻螺丝固定住，连杆用快装接头固定在舵角上。
Install the servo horn on the elevator, refer to the position of linkage rod in tail, confirm the position on rudder surface. Fasten with self-tapping screw, fasten the linkage rod on the servo horn with quick joint.

03-1

在起落架上安装螺丝杆，用2个自锁螺母锁定。（如左图所示）
Install screw pole on landing gear, fasten with 2pcs self-locking nuts. (As shown on the left)

M4*45 内六角螺丝+自锁螺母
M4*45 Hexagon screw + Self-locking nut

03-2

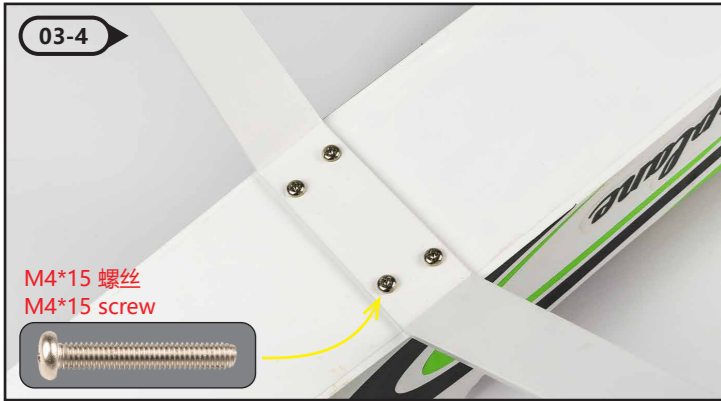
安装机轮，用自锁螺母锁定。
Install wheels, fasten with self-locking nut.

自锁螺母
self-locking nut

03-3

M2.5*8mm 自攻螺丝
M2.5*8mm self-tapping screw

把轮罩卡起落架与机轮之间，用自攻螺丝锁定机轮罩。两边机轮相同安装。
Install the mounted landing gear on the fuselage, fasten with screw. Use same way to install another wheel cover.

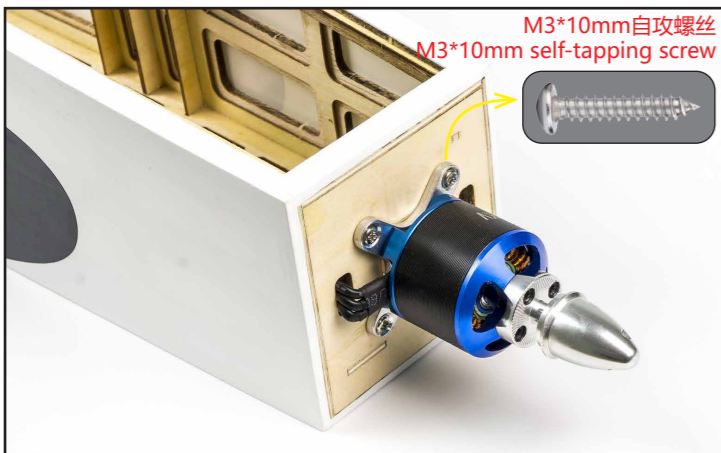


03-4
把安装好机轮的起落架安装到机身上，用螺丝固定。
Install the mounted landing gear on the fuselage, fasten with screw.

04 马达/桨叶/电调安装
Motor/Propeller/ESC Installation



参考马达座的螺丝孔位，在机身头部钻出四个引导孔。
Refer to the screw's hole position of motor mounting board, drill 4pcs holes on the head of fuselage.

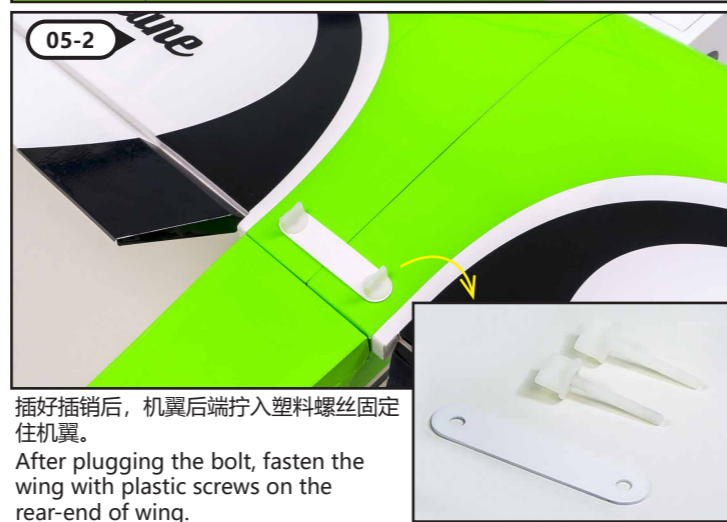
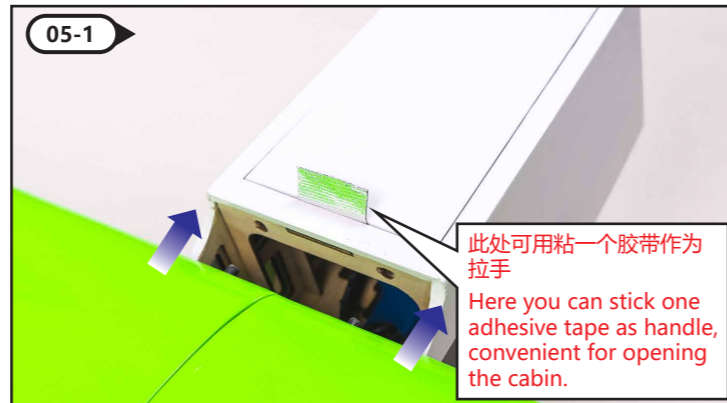


用螺丝固定马达，马达线导入机身内。(可用马达自带螺丝)
Fasten motor with screw, put the motor wire inside the fuselage.(motor's own screw is also available.)

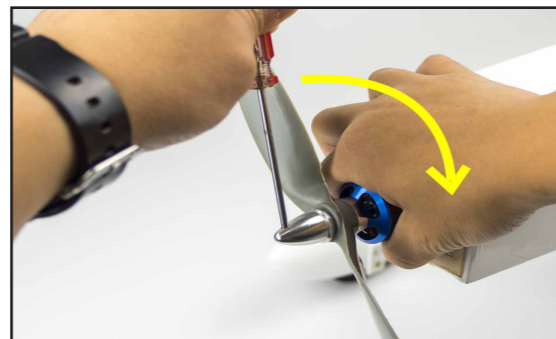


打开仓身盖，安装电调，并连接马达线。
Open the cabin cover, install ESC, and connect motor wire.

05 机翼安装到机身
Assemble the horizontal and vertical tails

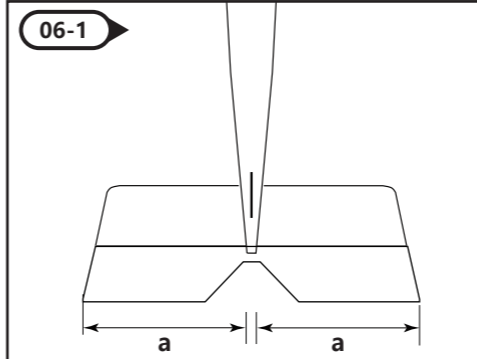


06 安装桨叶
Propeller Installation



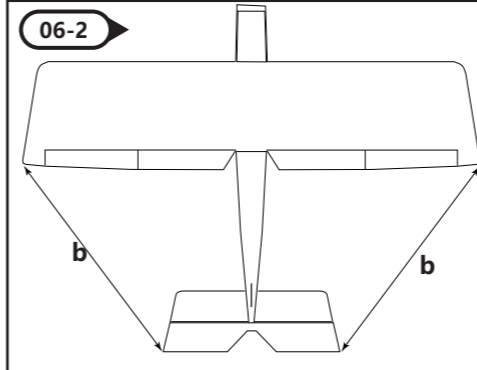
在马达上安装桨叶，用桨夹锁紧。
Install propeller on the motor, and lock it with prop adapter.

07 检查与调试
Check and Adjustment

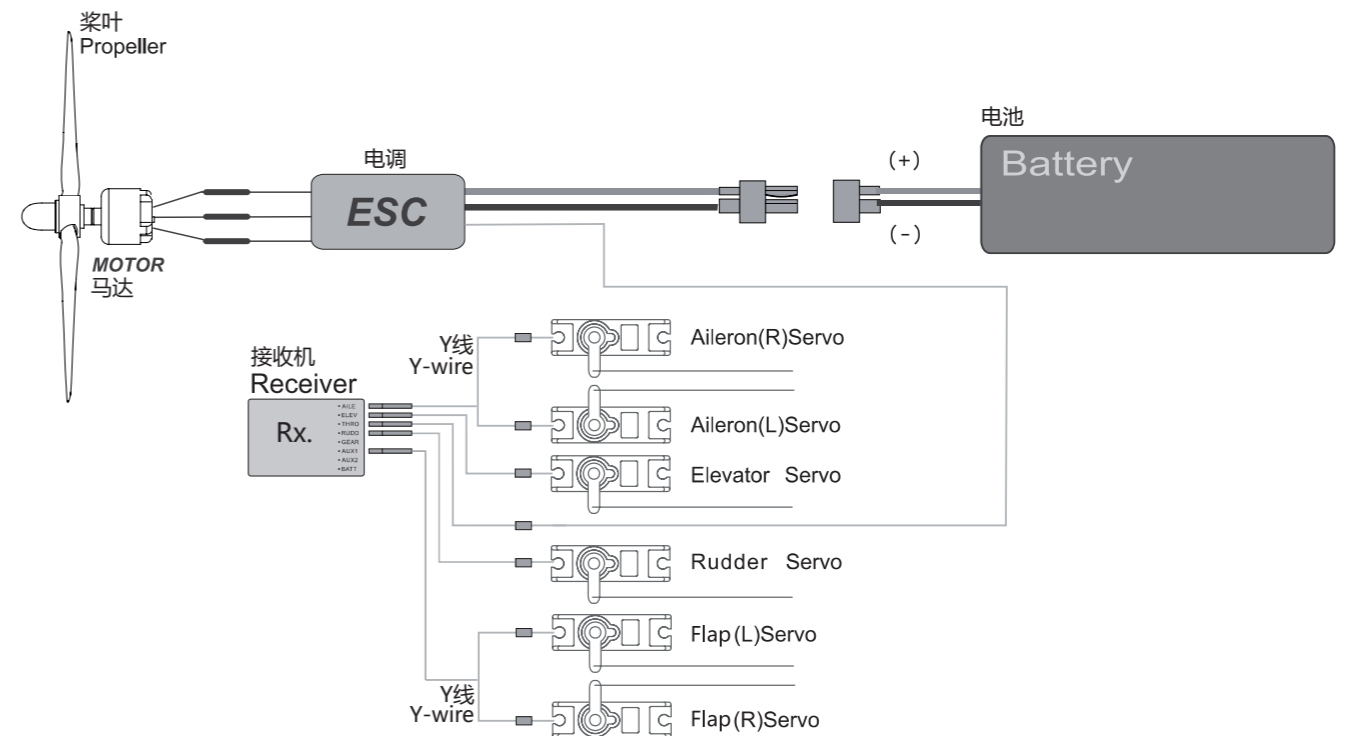


06-1
用尺检查图中机翼，尾翼的尺寸，确保测量的 $a=a$, $b=b$
Check the size of middle wing and tail wing with ruler, ensure $a=a$, $b=b$

如发现小量误差，可松开固定机翼和尾翼的螺丝做小量的调整，然后锁紧。
If you find small error, you can loosen the screw which fasten wing and tail wing to make a little adjustment, then lock it.

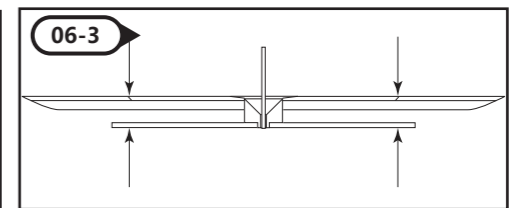


08 电子设备安装调试
Power System Installation and Adjustment



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>



06-3
检查尾翼与机翼的平行情况，它机身两侧应相等。
Check the parallelism condition of tail wing and wing, two sides of fuselage must be equal.

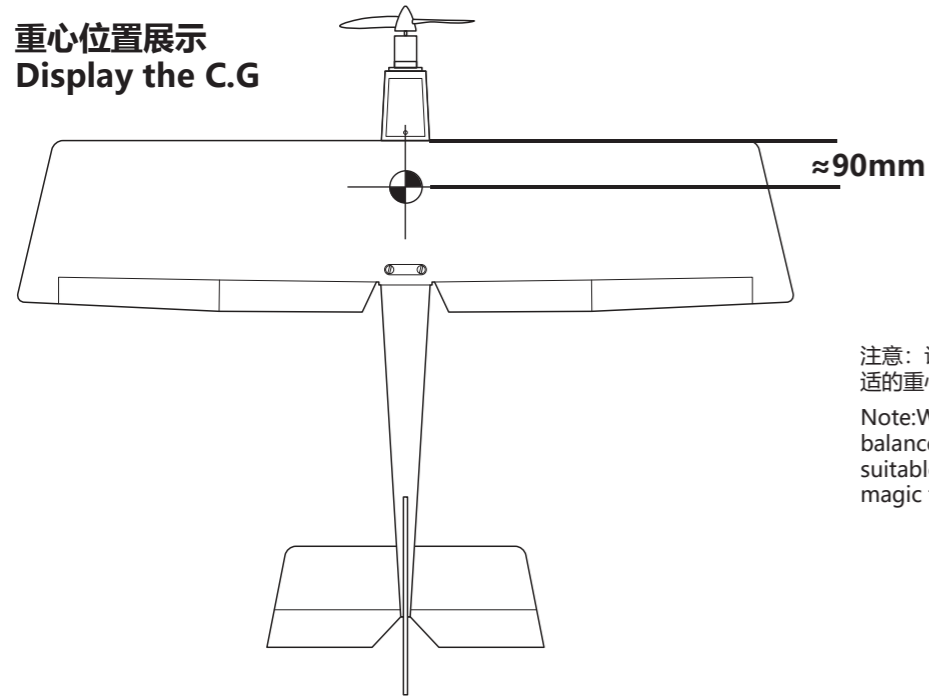
06-4

	舵角 Horns	舵臂 Arms	更多控制量 More control throw
升降舵 Elevator			
方向舵 Rudder			
副翼 Ailerons			

这个表格展示了出厂默认设置舵角和舵臂，请用默认设置试飞飞机。飞行之后，你可以选择调整连杆的位置，以达到期望的控制效果。
The table shows the factory settings for the control horns and servo arms. Fly the aircraft at the factory settings before making changes.
After flying, you may choose to adjust the linkage positions for the desired control response.

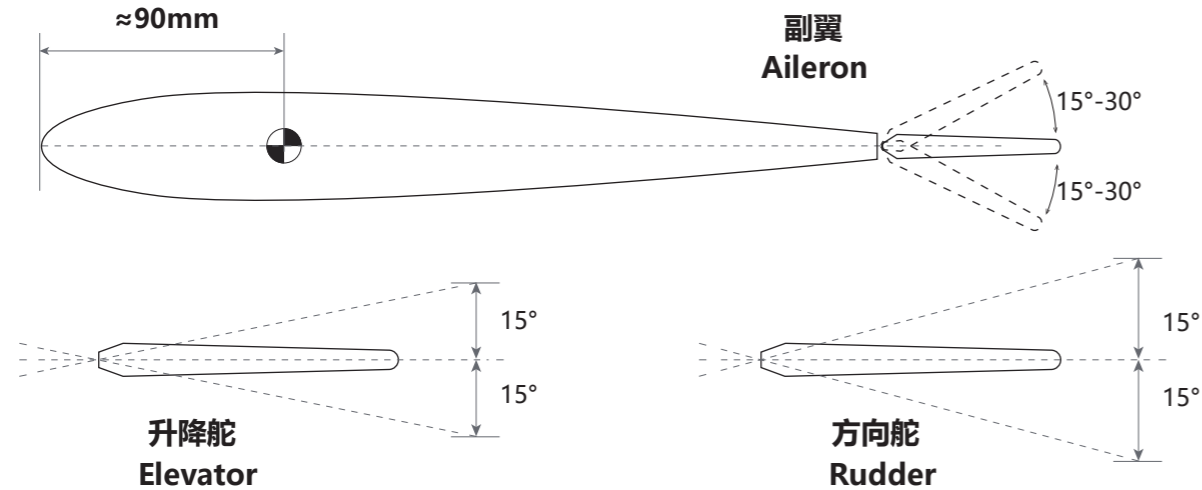
09 设置和调试
Set and Adjust

重心位置展示
Display the C.G



注意：设置重心时，可用电池配重，调整电池位置以达到合适的重心。然后用魔术胶带把电池固定在机身内。
Note: When you adjust CG, you can use battery as balance weight, adjust battery position to find the suitable CG, then fasten the battery on the cabin with magic tape.

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



训练飞行模式参考上图设置，运动3D飞行模式请参考3D飞行。在3D飞行时可使用混控把副翼和襟翼联合起来。
About the training flying mode, please refer to above picture's setting;
For sport 3D flying mode, please refer to 3D flying. Use mixed control to connect aileron and flap in 3D flying.

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.

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	