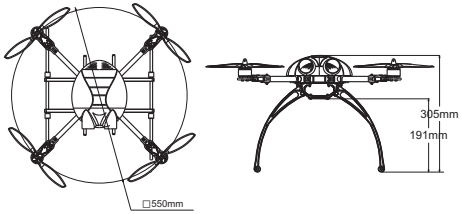


Bumblebee-S Manual

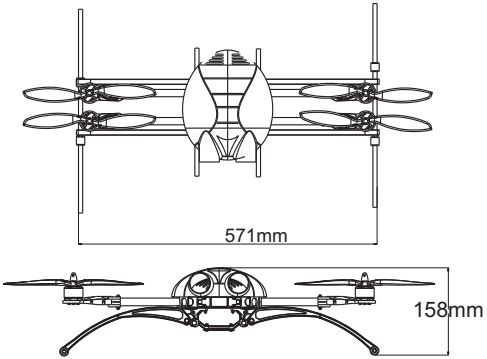
使用前请仔细阅读此说明书。
Read the manual carefully before using it

参数特点 Feathurs：

展开状态：



折叠状态：



空机重量(Empty Frame Weight)：450g
起飞重量(All Weight)：1200g
建议飞行载重量(Payload Capability)：200~500g
最大安全起飞重量(Maximum Gross Take-Off Weight)：1700g
电池要求（Cell Chemistry)：11.1V 3S 2200uma/h~5500uma/h
Li_poly 电池放电能力（Instant Discharge Capacity)>20C
飞行时间(Flight Time)：>10分钟

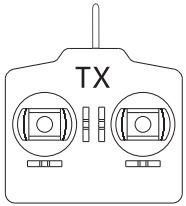
轴距(wheelbase)：550mm
整机高度（height)：306mm
折叠后长度(Length Of After Fold)：784mm
折叠后高度(Height Of After Fold)：100mm
桨Propeller：1038*2pcs，1038P*2pcs

3512无刷电机(Brushless Motor)：
重量(Weight)：75g
KV:930rpm/V
空载电流(No_load Current)：0.7A/11.1V
无刷电子调速器（Brushless ESC)：20A * 4pcs

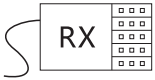
兼容所有模型遥控器和接收机，建议使用6通道以上的遥控器和接收机。
可折叠设计，方便携带和运输。
Compatible with all the RC devices, we recommend you to use RC device with 6 channels or more for expansion.

产品安装须知 Notice For Assembly

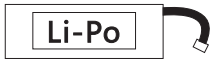
自备遥控及电子设备 Radio transmitter and electronic equipment required for assembly：



遥控器（6通以上）
Transmitter (6-channel or more)

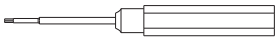


接收机（6通以上）
Receiver (6-channel or more)

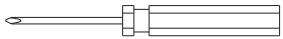


11.1V 3S 2200~5500umA/h 锂电池（瞬时放电能力>20C)
11.1V 3S 2200 ~5500umA/h
Li-Po Battery（Instant discharge capacity>20C）

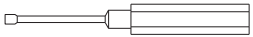
自备工具 Additional tools required for assembly：



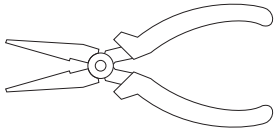
六角螺丝刀
Hexagon ScrewDriver
1.5mm/2mm/2.5mm



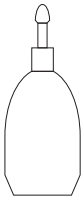
十字螺丝刀
Cross ScrewDriver



十字螺丝刀
Sleeve ScrewDriver



尖嘴钳
Sharp nose pliers



螺丝胶
Screw Glue

飞行须知：

免责声明

1. 请在当地法律允许的范围内使用本产品，本公司将不承担任何非法使用本产品导致的法责任。
2. 本产品属于遥控航模,严格遵守航模产品的操作规范，本公司不承担任何因不当操作引起的安全与法律责任。
3. 航模不是玩具，请在专业人员指导下飞行，并按本说明书安装和使用本产品。本公司不对因用户不当的安装、配置、操作而产生的航模事故负责。

安全注意事项

1.熟悉飞行环境，远离障碍物和人群，并确认是否存在不安全因素，例如高压线、汽车和人群。
2. 请勿疲劳、酒后或精神状态不佳时飞行，以免发生意外。
3. 远离潮湿环境，请勿在大风或雨天飞行，否则将造成电子设备故障发生危险。
4. 远离热源，以免造成电子设计或其他部件损坏。
5. 初学阶段请不要独自飞行，建议飞行前获取有飞行经验的飞行员的帮助。
6. 请准备救援工具，如手机、对讲机。
7. 请在安全起飞重量下飞行，勿过载以免发生危险。
8. 飞行前必须检查设备是否正常，是否存在同频干扰。
9. 远离运转中的机器，切勿用身体接触旋转中的电机或螺旋桨，更不要用手抓。飞行时切勿穿宽松衣服以免与遥控器或螺旋桨发生牵扯造成意外。
10. 在飞行前始终把遥控器油门杆保持在最低点。
11. 建议在无桨状态下试运行以检查遥控设备和电机的工作是否正常，一切正常之后再安装螺旋桨，以免造成安全事故。
12. 用户改装或使用其它来源的零件,需独立承担相应的飞行责任。

飞行须知 Before Flying:

飞行前检查

在飞行前务必检查各零部件是否完好,如发现部件老化或磨损,请更换配件后再飞行;检查零部件的安装情况,特别是以下部件:

1. 检量螺旋桨是否安装正确和稳固.
2. 检查接收连线是否稳固
3. 检查电池扎带是否扎紧,检查电池电量是否充足
4. 检查无刷电机与无刷电调连接是否稳固
5. 检查遥控器的各个通道的操作和电机是否一致

飞行控制说明

1. 启动:把遥控器油门杆拉到最低后打开遥控器电源开关,然后接通四轴飞行器电源,轻微推杆以启动所有电机,观察电机的旋转方向.如果不对请及时调整.

2. 停止:油门拉到最低点,电机停止工作后,先断开飞行器电源,再关闭遥控器电源.(注意断开电源和关闭遥控器的先后顺序,以免发生失控的危险)

3. 起飞或降落时一旦发生紧急情况，请立即把遥控器油门杆拉到最低，确保安全。

4. 前后左右与旋转等飞行控制与常规直升机等航模控制类似，但这些飞行动作是由各个相应通道独立控制的，请勿将遥控器设置为混控模式。

开始飞行

开关机程序:开机时必须先打开遥控器电源开关并将油门杆拉到最低点,再接通飞行器电源;关机时必须先断开飞行器电源,再关闭遥控器电源.(不正确的开关机顺序可能造成飞行器失控而发生危险。)



1.将油门杆拉到最低，打开遥控器电源开关。

2.接通飞行器电源

3.轻推油门（切忌油门杆瞬间推动很大），当所有电机正常低速运转后，检查遥控器各通道的工作状态，并进行调整。

如果飞行器在飞行过程中发生倾侧无法纠正，请使用附带的软件或编程卡进行校正。

Before Flight:

DISCLAIMER OF LIABILITY

1.Using the company products within the limits permitted by local laws and regulations. the company is not responsible for any illegal activities.

2.The Bumblebee is an aeromodelling product only. Please strictly follow the aeromodelling safe function rules, the company does not hold responsible for any control over its operation or usage.

3.Model aircraft are not toys! Fly under professional guidance and strictly follow instruction rules in this document. the company is not responsible for consequences caused by improper install, wrong setting or operation.

SAFETY CAUTIONS

1. Familiarize yourself with fly environment and any obstacles. Identify any potential hazards such as power lines, cars, people, etc.
2. Do not fly the aircraft when fatigued, drunk or your mental state has been compromised which may cause an accident.
3. Stay away from wet areas. Do not fly in the rain or wet environments which can cause device failure and probably lead to danger. Do not fly at night or in windy conditions.
4. Stay away from any fire resulting in damage of the electronic parts or others such as the flight battery.
5. Do not fly alone during your preliminary flights. If you need help, please enlist the aid of an experienced pilot before flying for the first time.
6. Prepare rescue tools such as cell phones or other communication devices which should you need to call for help.
7. Please fly under safe take-off weight, do not overload the aircraft which can lead to danger.
8. Ensure all the equipment operates correctly before flight and that there is no transmitter interference or conflicts.
9. Do not touch any moving or powered parts. Do not try to catch the quadcopter which has rotating motors or blades for example. Keep loose clothing away from moving parts as they may get caught and could cause physical harm.
10. Always throttle down to minimum before fly.
11. Remove the propellers when testing the remote device or motors operation. Attach the propellers after you have tested that everything is working good to prevent an accident.
12. Assemble the aircraft with accessories the company provides. the company is not responsible for any consequence resulted from assembly with other accessories or modifications.

Before Flight:

INSPECTIONS BEFORE FLIGHT

PLEASE PAY ATTENTION TO THE AGING AND WORN PARTS, AND FLY WHEN THEY ALL WORK WELL. PLEASE DO CHECK EVERY ASSEMBLY CAREFULLY BEFORE FLIGHT, especially lapses in these parts will easily cause DANGER.

1. Check that the propellers are secured properly.
2. Check that the receiver is receiving a stable signal.
3. Check that the battery is secured tightly and the battery is fully charged.
4. Check that the receiver is attached correctly.
5. Check the antenna is assembled tightly enough.
6. Check that the brushless motor and brushless ESC are secured to the airframe.

Before flight, please assemble receiver or connect ESC to FC as the company factory defaults, if not, please DO CHECK the operations of Remote Control channels and consistence of motor reactions.

FLIGHT CONTROL INSTRUCTION

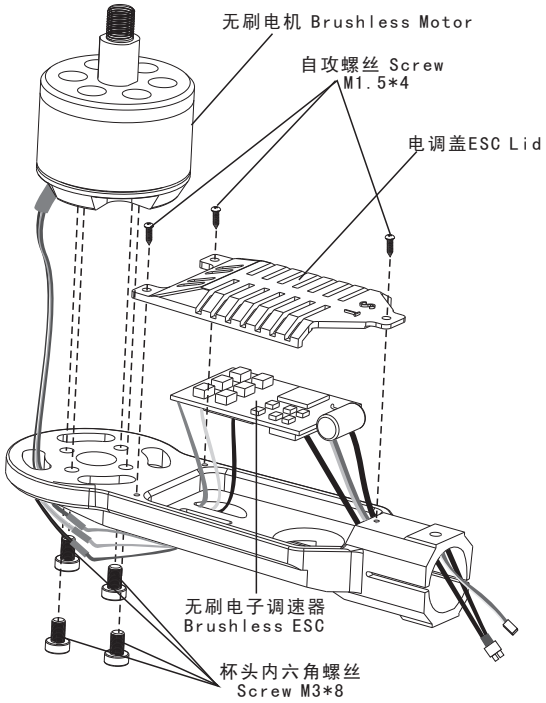
1. Start: Set the throttle stick to the lowest then turn on the transmitter. Connect the flight battery then slowly apply the throttle until all motors begin to run.
2. Stop: Move the throttle stick to the minimum. All motors should stop to work in about one second. First cut off the Bumblebee then the RC powers off.
3. Any emergency occurs when taking off or landing, please move the throttle stick to the lowest position immediately to keep safe.
4. Flight control to the front, back, left and right is similar to the traditional RC helicopters but each motion is controlled by a separate channel. Do not use any channel mixing in your RC transmitter such as v-tail or swashplate mixing etc.

START TO FLY

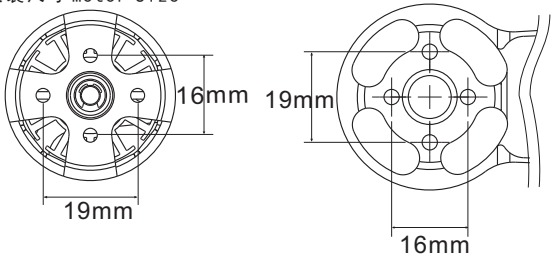
Power ON/OFF Operations: Before plugging in the quad you have to turn on the RC and set the throttle stick to the lowest position. When powering off, you have to cut off the aircraft first then the RC powers off. Disorder in the on and off procedure will cause an accident.

1. Place the aircraft on the ground. Put the throttle stick to the lowest position then turn on the transmitter.
2. Connect the battery to the ESC board.
3. Start the Quad by applying power slowly with the throttle stick. When all the motors rotate at a slow speed you can move the stick to check the X650 Value actions according to your operation.
4. If you can not calibrate the tilt on one side during your flight, please connect Bumblebee to the PC and use the company configuration software to do the calibration.

机身臂安装 Frame Arm assembly:



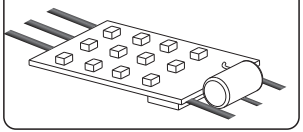
电机安装尺寸 Motor Size



WARNING 警 告 安装时，注意电机固定板与无刷电机的安装孔距，通过调整固定板的安装位置，使安装样式如下图。

Notice the hole distance of motor and motor mounting plate. Assembled style as shown in right figure.

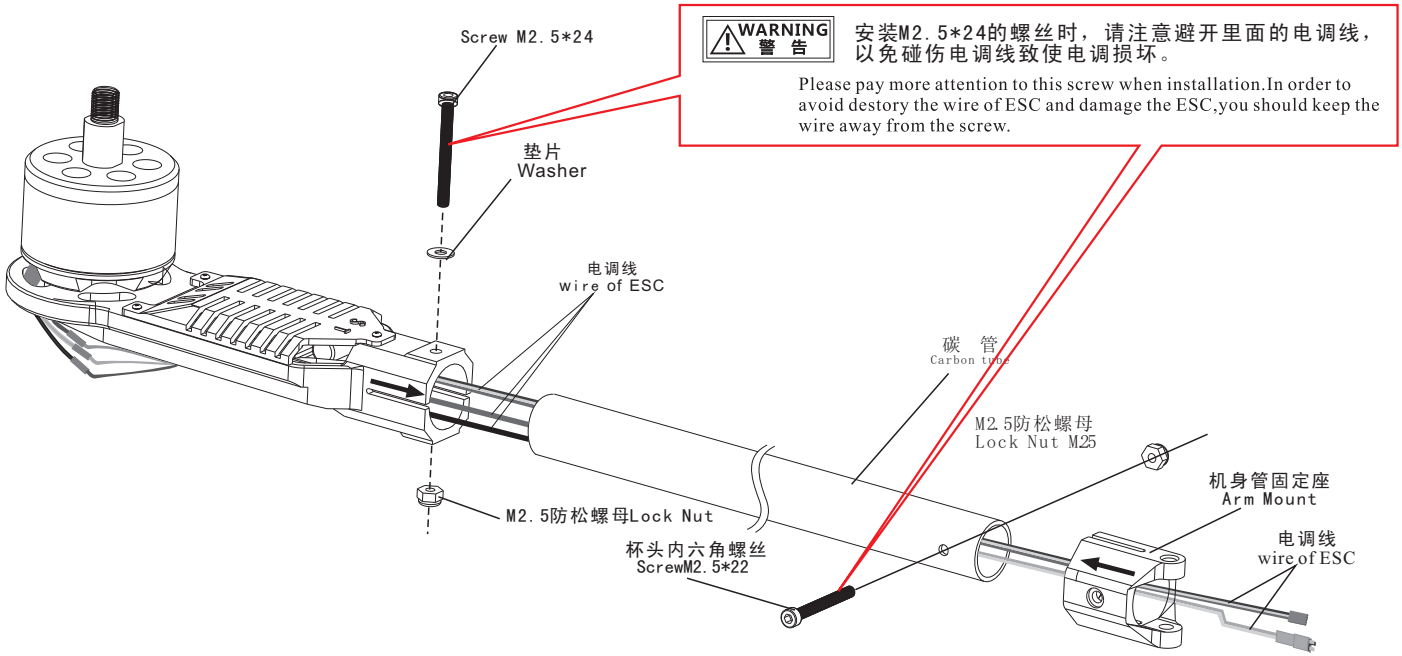
MOS管朝上 MOSFET Side Up



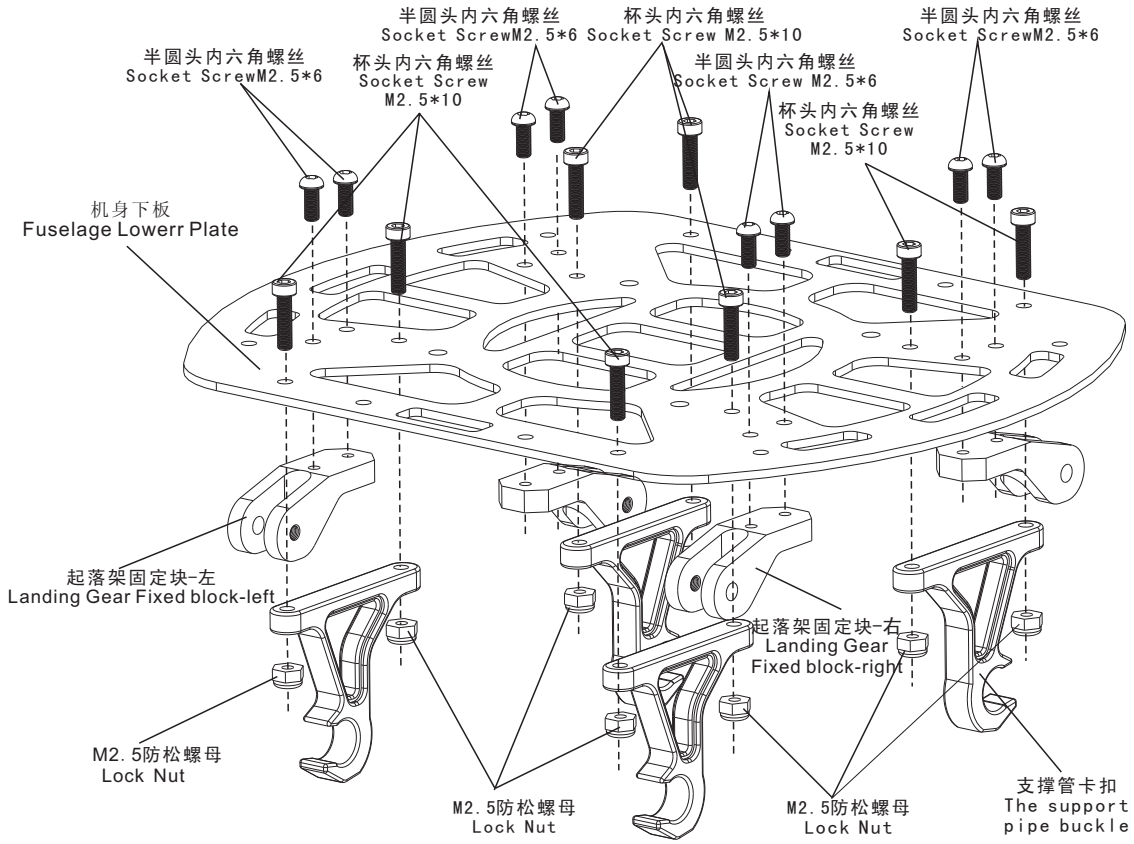
电机与电调的连接：
由于本机所用电调无自检声，请仔细检查按照颜色接线 以免接错，危险。（接线时请勿必将遥控器的油门摇杆拉到最低点。）

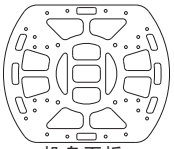
Motor and ESC connections:
As for all the ESC of the machine without self-sound testing, in order to avoid dangers happening please kindly check wiring in accordance with the color without wrong picking. (Please be sure to pull the most low level on throttle lever of remote control when you are wiring)

机身臂安装 Frame Arm assembly:

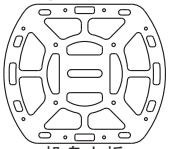


机身装配 Main Frame Assesbly(1):



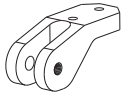


机身下板
Fuselage Lower Plate

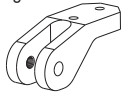


机身上板
Fuselage upper Plate

安装前请仔细辨认
Identify the parts carefully
before installing



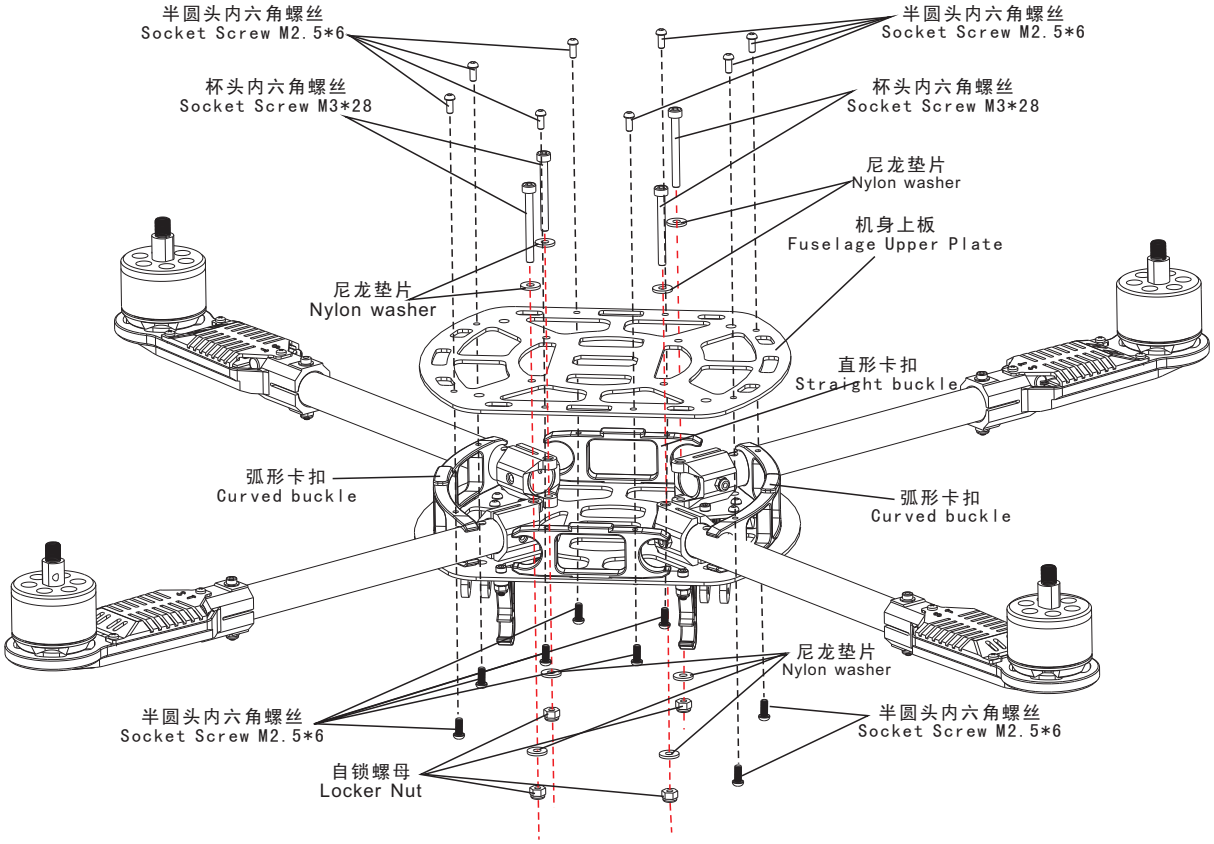
起落架固定块-左
Landing Gear Fixed block-left



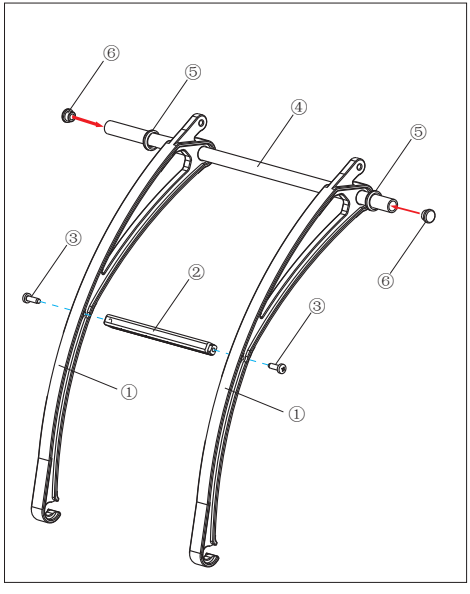
起落架固定块-右
Landing Gear Fixed block-right

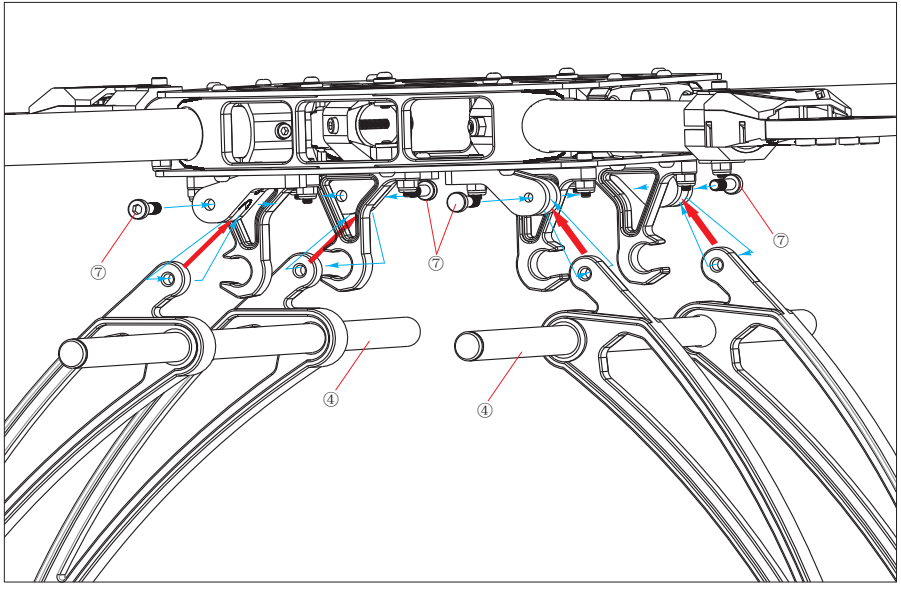
注意安装方向
Notice face.

机身装配 Main Frame Assesbly(2):



起落架安装 Landing Gear Assembly



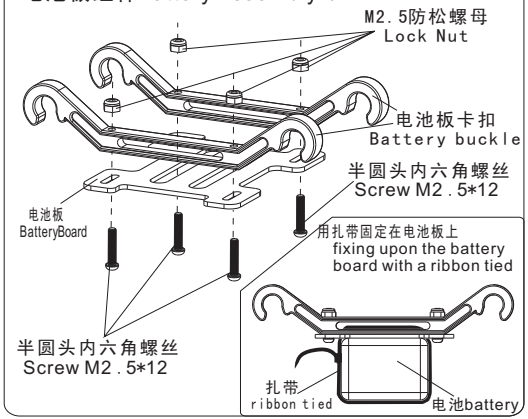


①	起落架	Landing Gear
②	起落架连接柱	Landing Gear Connector
③	圆头十字自攻螺丝	Screw PA 2.5×10
④	支撑管	Supporting Tube

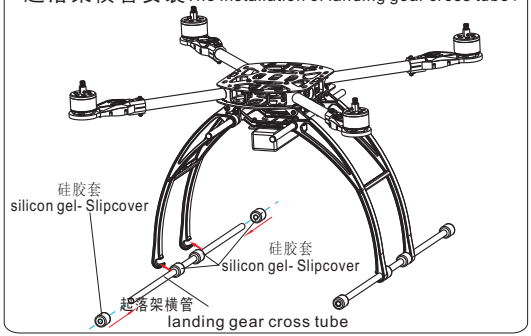
⑤	硅胶套	Silicon gel- Slipcover
⑥	碳管胶塞	Plugs
⑦	杯头内六角轴套螺丝	Screw M3×12

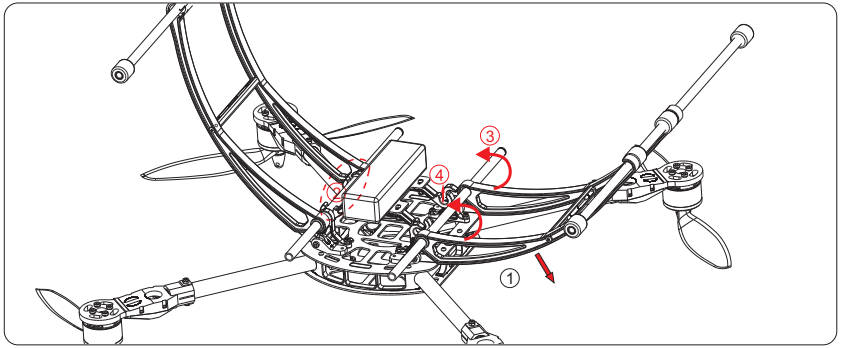
电池板组件安装 Battery Mounting Assembly:

电池板组件Battery Assembly ：

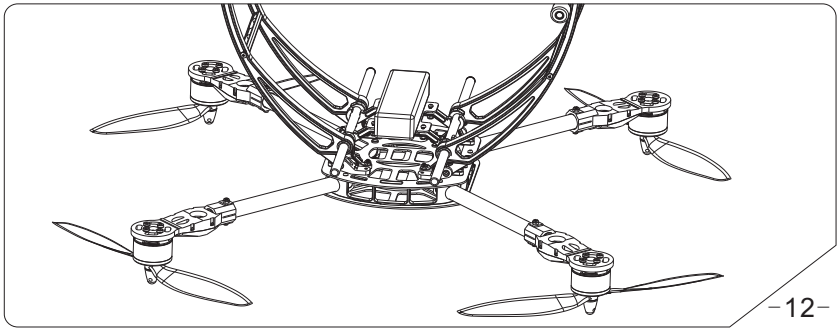


起落架横管安装The installation of landing gear cross tube：





1. 先将单边起落架向侧面分开 First please separate landing gear to another side
2. 把电池板组件卡在另一边的支撑杆上 Fixing component of the battery board on another support rod
3. 分开的起落架复位 Resetting the separated landing gear frame
4. 电池板组件另一边卡扣卡在另一支撑杆上 Fixing another component of the battery board on another support rod



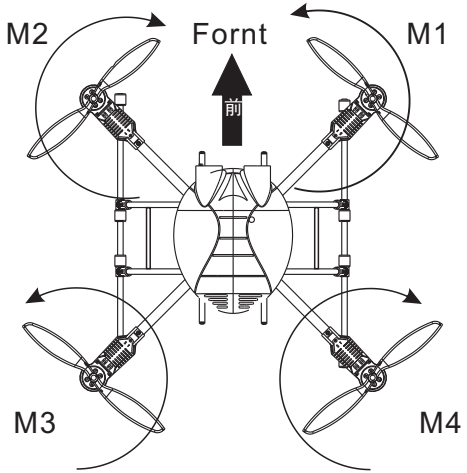
桨的安装 Propeller Installation：

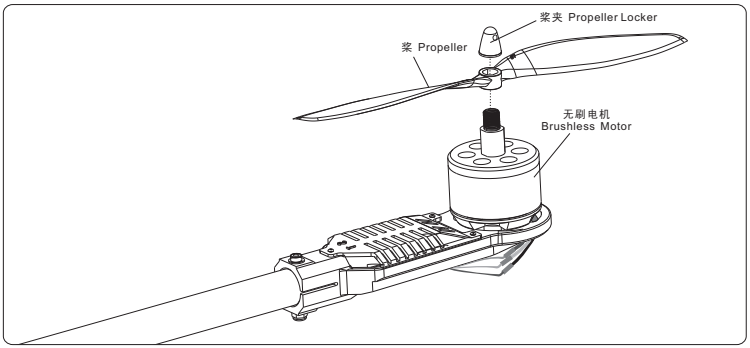


ST1038
正桨2pcs

ST1038P
反桨2pcs

螺旋桨有正反之分，安装前请仔细辨认！
M1、M3相同，M2、M4相同。
There are difference of pros and cons in the propeller, please identify it carefully before installation ! M1、M3 is the same, M2、M4 is the same too.





CAUTION 注 意

螺旋桨必须贴紧电机，以保证四个螺旋桨的高度一致性。



Close Motor Blade to motor to make sure 4 blades in the same height.

CAUTION 注 意

桨夹必须拧紧，以免飞行时脱桨造成危险。建议用螺丝刀穿过桨夹上的孔来拧紧桨夹。

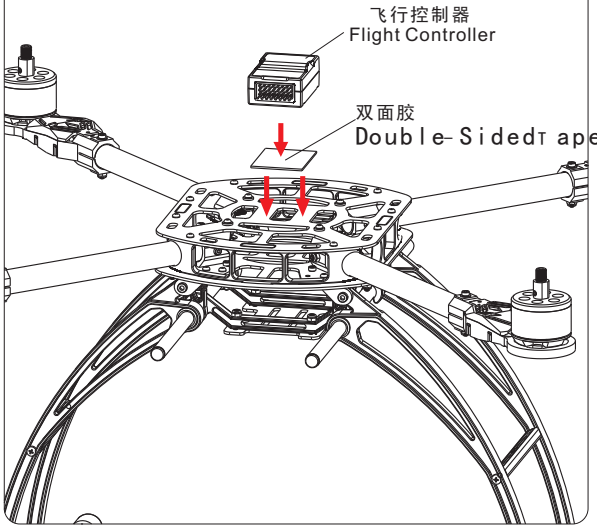
We recommend you use the driver to poke through the hole on the locker for better tighten in case of any loose of the screw during your flight.

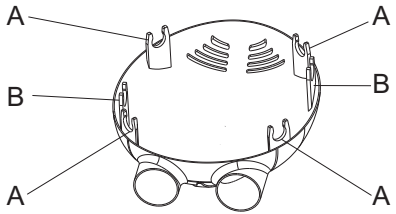


飞行控制器和机头罩 Flight Controller And Canopy:

CAUTION 注意 安装飞控时，将飞控贴在机架上板的正中间,贴纸上的箭头指向机头方向

Caution: When installing flight control, flight control will be attached to the rack on the middle plate,Arrow on the sticker which point to direction of the nose.

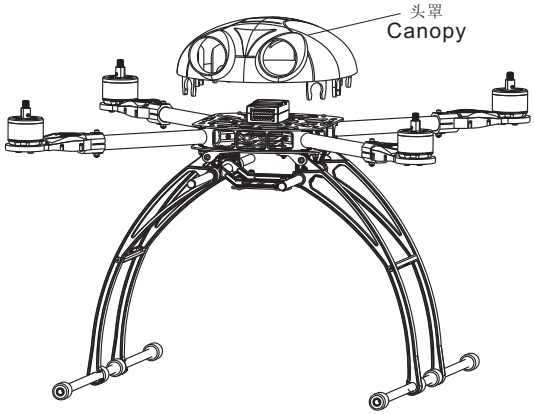




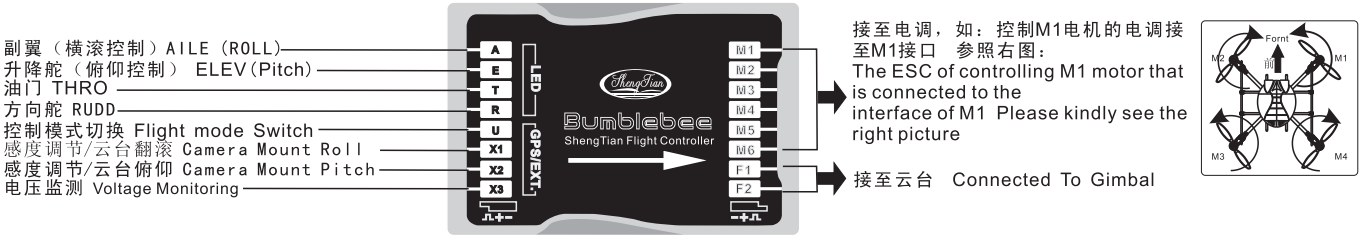
A:四个支臂展开时使用
Four rotor wings is use for expending

B四个支臂折叠时使用
Four rotor wings is use for folding

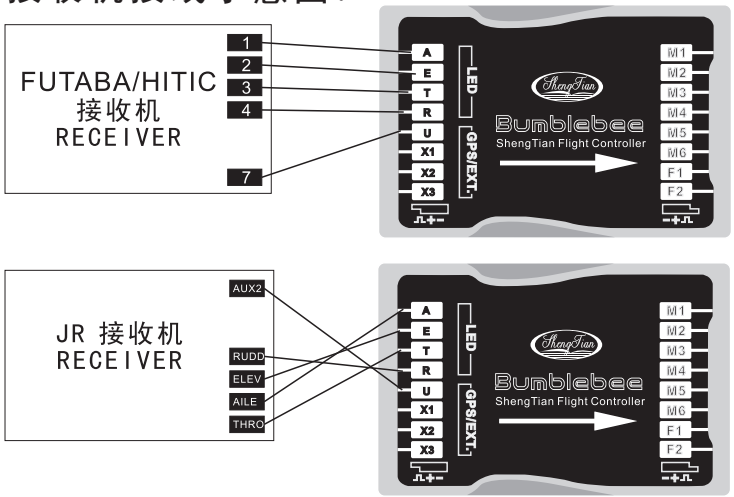
将头罩沿箭头方向卡在飞行器的支臂上
Canopy along the direction of the arrow support arm stuck in the aircraft



电路接线示意图Circuit Wiring



接收机接线示意图：



遥控器接收机：

■这些只是连接方式示例，请先在遥控器上设置好横滚、俯仰、油门，舵机控制通道，选择一个二位或三位开关/通道作为控制模式开关，然后将接收机连接到主控相应的通道。

■X1, X2通道用于感度调节，因此您可以选择遥控器上的两个旋钮开关作为远程感度调节通道，并将接收机上相应的通道连接至X1、X2.

■X3为电压监测。

Remote controlled receiver

These are just the example for connection , firstly please set the barrel roll, pitching, throttle, steering gear control through, choosing a double-position or three-position switch/channel as the control mode switch, then connect the receiver to the corresponding channel at main controller.

X1, X2 channel is use for sensitivity adjustment, so you can choose the switch of two knobs on the remote control switch to be the access of remote sensitivity adjustment, and the corresponding channel on the receiver is connected to X1, X2.

X3 is Voltage monitoring

无桨通电测试 Power-on Test without Propellers:

电路安装完成后，请勿安装螺旋桨，进行Bumblebee无桨通电测试。

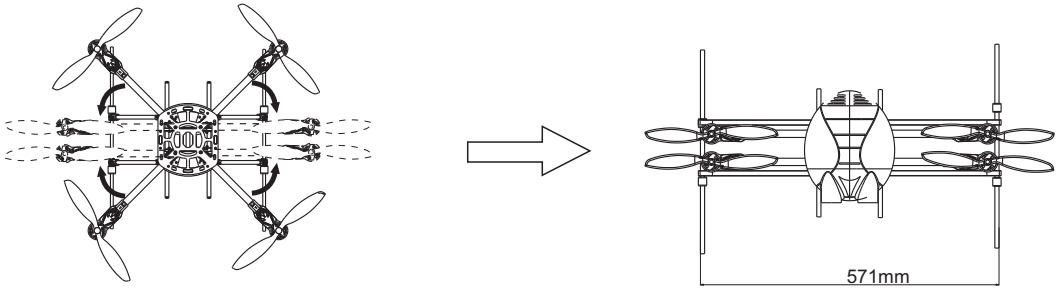
1 将遥控器油门收到最小后打开遥控器开关。
2 Bumblebee接通电源。
3 轻推油门。
4 观察四个电机启动是否顺畅，旋转方向是否正确。
   a) 如果电机没有启动或启动不畅，则将油门收到最小，断开Bumblebee的电源，检查电路和电机后重新测试，直到正常。
   b)如果旋转方向不正确，则将油门收到最小，断开Bumblebee电源，对调任意两条电机线，直到电机旋转方向都正确。
5 推动各操纵杆，观察电机的转速是否有变化。
6 测试完成，将油门收到最小，断开Bumblebee的电源。

After electronic parts installation, DO N OT install the propellers and follow in steps.

1 Lowest the RC throttle then turn on the transmitter.
2 Power on Bumblebee.
3 Apply the throttle slowly.
4 Note if four motors rotate sm oothly
   a)If motor does not r otate or not sm oothly enough, please throttle down to the lowest t hen unplug Bumblebee . Check on electronic circuit and motors to retest until it works fine.
   b)If not in the right direction, dwer the throttle to m inim um and power off Bumblebee. Swap any motor wire of three connecting to the holes until it works in the right way.
5 Poke all control sticks to observe motor rotation speed changes or not.
6 Throttle back to lowest and power off Bumblebee.

折叠方式 Folding Method:

支臂的折叠 Folding Arm:



起落架的折叠 The folding of landing gear:

1. 先取下电池板组件
First pletake of component as battery board

2. 沿箭头方向将起落架拉平
Along the arrow direction to even the landing gear out

3. 起落架和支臂折叠后
After folding of landing gear and rotor wings

