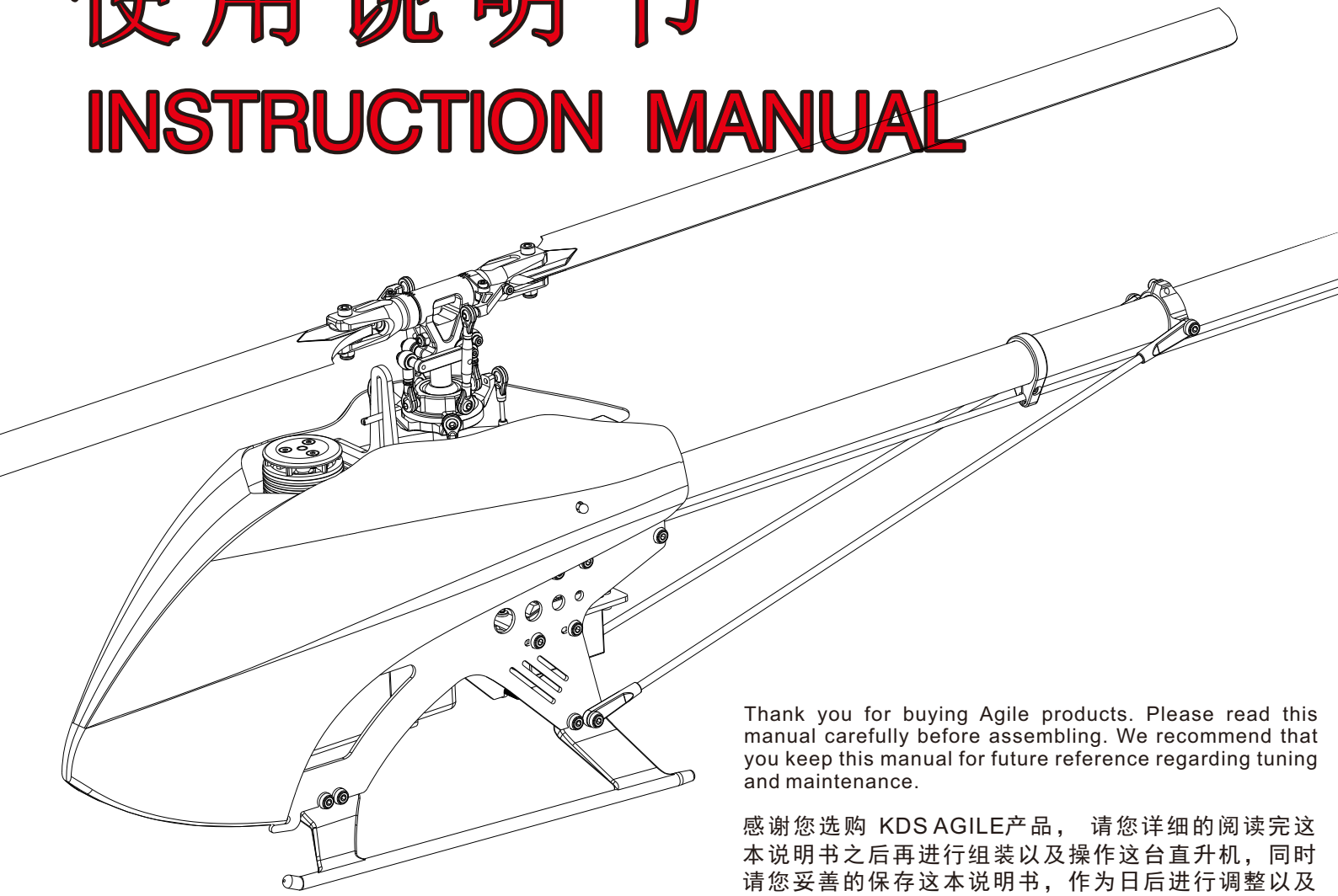
AGILE A-3
HELICOPTER

使用说明书

INSTRUCTION MANUAL



Thank you for buying Agile products. Please read this manual carefully before assembling. We recommend that you keep this manual for future reference regarding tuning and maintenance.

感谢您选购 KDS AGILE产品， 请您详细的阅读完这本说明书之后再进行组装以及操作这台直升机，同时请您妥善的保存这本说明书，作为日后进行调整以及维修与参考。

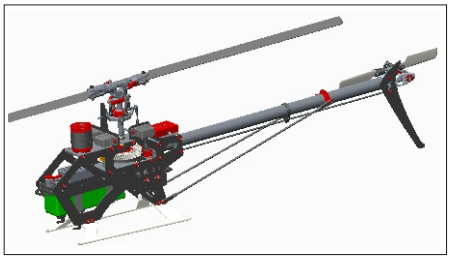
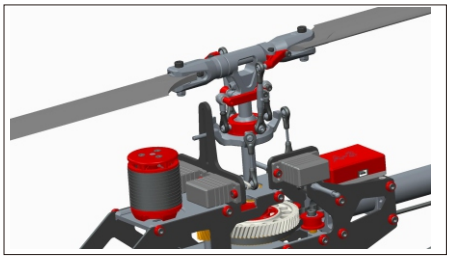
机身长度：690mm
机身高度：200mm
机身宽度：100mm
主旋翼直径：Ø808
主旋翼长度：360mm
尾旋翼直径：Ø169mm
尾旋翼长度：63mm
马达齿：19T
马达KV ：2520-1880KV
传动齿轮：(19/50)(15/66)
传动比：19T(11.57:1)
尾传动比：4.24:1
起飞重量：1100g
电池：22.2V 1450-2000mAh
电调：60A

Length：690mm
Height：200mm
Width：100mm
Main Rotor Diameter：Ø808
Main Blade Length：360mm
Tail Rotor Diameter：Ø169mm
Tail Blade Length：63mm
Motor Pinion：19T
Motor KV：2520-1880KV
Driving Gear：(19/50)(15/66)
Gear Ratio：19T(11.57:1)
Tail Gear Ratio: 4.24:1
Flying Weight: 1100g
Battery：22.2V 1450-2000mAh
ESC：60A

Version No **：*20211010***

1.INTRODUCTION

Congratulations on your purchase of the Agile A−3 remote controlled helicopter kit. Agile A−3 is proudly manufactured by KDS Model. Our goal was to offer you something different with a minimum of parts, easy maintenance, and outstanding flying performances.
It's time to fly different!...


Enjoy the built and have a great time with your Agile A−3 !

IMPORTANT NOTES

R/C helicopters, including the AGILE A−3 are not toys. R/C helicopters utilize various high-tech products and technologies to provide superior performance. Improper use of this product can result in serious injury or even death. Please read this manual carefully before using and make sure to be conscious of your own personal safety and the safety of others and your environment when operating all AGILE products. Agile A−3, KDS Model, their affiliates and authorized distributors are not responsible for personal injuries to the operators and others, and property damages that could occur from the assembly, maintenance or your use/misuse of this product. Always respect the rules provided by your local remote control aircraft organization.

NOTE FOR ASSEMBLY

The following manual provide important instructions to correctly assemble the model. It is structured in a logical way, based on the work done in previous step. If you change the order, it may result in additional or unnecessary steps. So we suggest you to read this user manual very carefully to understand correctly the assembly procedure. Failure to do so may not only downgrade performances but also increase the risk of danger. Apply thread lock as indicated, allow the threadlock to cure before mounting parts. It is recommended to use threadlock on each bolt or screw that are engaged with metal parts.

2.SAFETY NOTES

• LOCATE AN APPROPRIATE LOCATION

R/C helicopters fly at high speed, thus posing a certain degree of potential danger. Choose an appropriate flying site consisting of flat, smooth ground, a clear open field, or a large open room, such as gymnasium or warehouse without obstacles. Do not fly near buildings, high voltage cables, or trees to ensure the safety of yourself, others and your model. Do not play your model in inclement weather, such as rain, wind, snow or darkness.

• OBTAIN THE ASSISTANCE OF AN EXPERIENCED PILOT

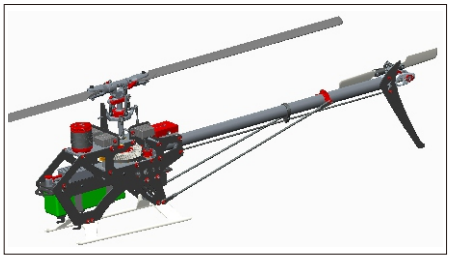
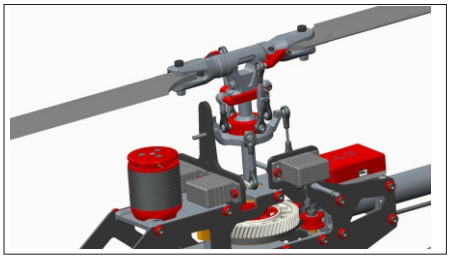
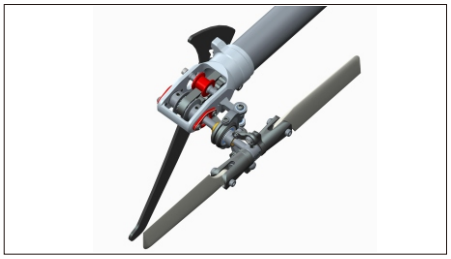
Before turning on your model and transmitter, check to make sure no one else is operating on the same frequency. Frequency interference can cause your model, or other models to crash. The guidance provided by an experienced pilot will be invaluable for the assembly, tuning, trimming, and actual first flight(recommend you to practice with computer-based flight simulator).

• ALWAYS BE AWARE OF THE ROTATING BLADES

During the operation of the helicopter, the main rotor will be spinning at a high rate of speed. The blades are capable of inflicting serious bodily injury and damage the environment. Be conscious of your actions, and careful to keep your face, eyes, hands, and loose clothing away from the blades. Always fly the model a safe distance from yourself and others, as well as surrounding objects. Never take your eyes off the model or leave it unattended while it is turned on. Immediately turn off the model and transmitter when you have landed the model.

1.简介

恭喜你购买 AGILE A-3 遥控直升机，AGILE A-3 由KDS 模型生产制造完成。我们的目标是用最少的配件，为客户提供高质量产品，容易维护以及达到出色的飞行效果。

享受您的Agile A-3 直升机并玩得愉快!

重要声明：

KDS AGILE A-3 遥控直升机并非玩具， 它是结合了许多高科技产品所设计出来的休闲用品，所以商品的使用不当或不熟悉都可能会造成严重伤害甚至死亡，使用之前请务必详读使用说明书，勿轻忽并注意自身安全， 任何遥控直升机的使用，制造商和经销商是无法对使用者于零件使用的损耗异常或组装不当所发生之意外负任何责任，本产品是提供有操作过模型直升机经验的成人或者有相当技术的人员在旁指导，以确保安全无虞下操作使用，产品售出后本公司将不负任何操作和使用控制上的任何性能与安全责任。KDS公司，附属子公司和授权分销商不承担任何的个人伤害以及其他，永远遵守当地为遥控模型飞机提供的规范。

2. 安全注意事项

- 远离障碍物及人群

直升机飞行时具有一定的速度，相对的也潜在一定危险性，场地的选择也相对的重要，请遵守法规到合适遥控飞行场地飞行。必须注意周围有没有人，高楼，建筑物，高压电线，树木等等，避免操控的不当造成自己与他人财产的损坏。 初次练习时，务必选择在空旷合法专属飞行场地并适当搭配练习架飞行，这对飞行失误造成的损伤将会大幅的降低。 请勿在下雨，打雷等恶劣天气下操作，以确保本身及机体的安全。

- 避免独自操控

至飞行场飞行前，需确认是否有相同频率的同行正进行飞行，因为开启相同频率的发射机将导致自己与他人立即干扰等意外危险。遥控飞行操控技巧在学习初期有一定的难度，要尽量避免独自操作飞行，需有经验的人士在旁指导，才可以操控飞行。（勤练模拟器及老手指导是入门必要的选择）。

- 远离运转中零件

当直升机主旋翼与尾旋翼运转时，切勿触摸并远离任何物件，以避免造成危险与损坏。

● PREVENT MOISTURE

R/C models are composed of many precision electrical components. It is critical to keep the model and associated equipment away from moisture and other contaminants. The introduction or exposure to water or moisture in any form can cause the model to malfunction resulting in loss of use, or a crash. Do not operate or expose to rain or moisture.

● KEEP AWAY FROM HEAT

R/C models are made up of various forms of plastic. Plastic is very susceptible to damage or deformation due to extreme heat and cold climate. Make sure not to store the model near any source of heat such as an oven, or heater. It is best to store the model indoors, in a climate-controlled, room temperature environment.

● PROPER OPERATION

Please use the replacement of parts on the manual to ensure the safety of instructors. This product is for R/C model, so do not use for other purpose.

● SAFE OPERATION

Operate this unit within your ability. Do not fly under tired condition or improper operation, which may cause danger.

3.Safety Check Before Flying

Before flying, for safety reasons, make sure that no one else is operating a R/C model on the same frequency as yours.
Before flying, please check that the power of your transmitter and your helicopter are sufficient for the flight.
Before turning on the transmitter, please check that the throttle stick is in its lowest position, IDLE UP switch must be on OFF position.
When turning off the model, please follow the power on/off procedure. Power ON: turn on the transmitter first, then turn on helicopter power. Power OFF: turn off the helicopter power first and then turn off the transmitter. Improper operating procedure
may cause the model to be out of control, so please do make this your habit.
Before operation, check that every movement is smooth and directions are correct. Inspect servos carefully for interferences and broken gears.
Check for missing or loose screws and nuts. See if there is any cracked and/or incomplete assembly of parts.
Check main rotor blades and rotor holders carefully. Broken and premature failures of parts might result in a dangerous situation or crash.
Check all ball links to avoid excess play and replace as needed. Failure to do so will result in poor flight stability.
Check that the battery and power plugs are fastened. Vibrations and violent flight might loosen the plugs and so lead to out of control.
Check for the tension of main drive belt.

- 远离潮湿环境
  直升机内部也是由许多精密的电子零器件组成，所以必须绝对的防止潮湿或水气，避免在浴室或雨天时使用，防止水气进入机身内部而导致机件及电子零件故障而引发不可预期的意外！

远离热源

- 遥控飞机多半是以PA维修或聚乙烯，电子商品为主要材质，因此要尽量远离热源，日晒以避免因高温而变形甚至熔毁损坏的可能。

- 勿不当使用本产品
  请勿自行改造加工，任何的升级改装或维修，请使用KDS产品目录中的零件，以确保结构的安全，请确认于产品界限内操作，请勿过载使用，并勿用于安全，法令外其它非法用途。

- 安全操作
  请于自己能力内及需要一定技术范围内操作这台直升机，过于疲劳，精神不佳或不当操作，意外风险可能会提高。

3.飞行前安全检查重要事项

每次飞行前应先确认所使用的频率是否会干扰他人，已确保你自身与他人的安全。

每次飞行前确定你发射机与直升机电池的电量是否足够飞行的状态。

开机前确认油门摇杆是否位于最低点，熄火降落开关，定速开关（IDLE）是否于关闭状态。

关机时必须遵守电源开关机程序，开机时应先开启发射机后，再开启直升机电源，关机时应先关闭直升机电源，再关闭发射机电源，不正确的开关机程序会造成失控现象，影响自身与他人的安全，请养成正确的习惯。

开机请先确定直升机的各个动作是否顺畅，及方向是否正确，并检查伺服的动作是否有干涩或崩齿的情形，使用故障的伺服将会导致不可预期的危险。

飞行前确认没有缺少或者松眼的螺丝与螺帽，确认没有组装不完整或损毁的零件，仔细检查主旋翼是否有损坏，特别是接近主旋翼夹座的部位。

损坏或组装不完整的零件不仅影响飞行，更会造成不可预期的危险。

注意：对损坏，有裂痕零件更新及定期保养检查的要性，检查所有的连杆头是否有松脱的情形，过松的连杆头应先更新，否则将造成直升机无法操控的危险。

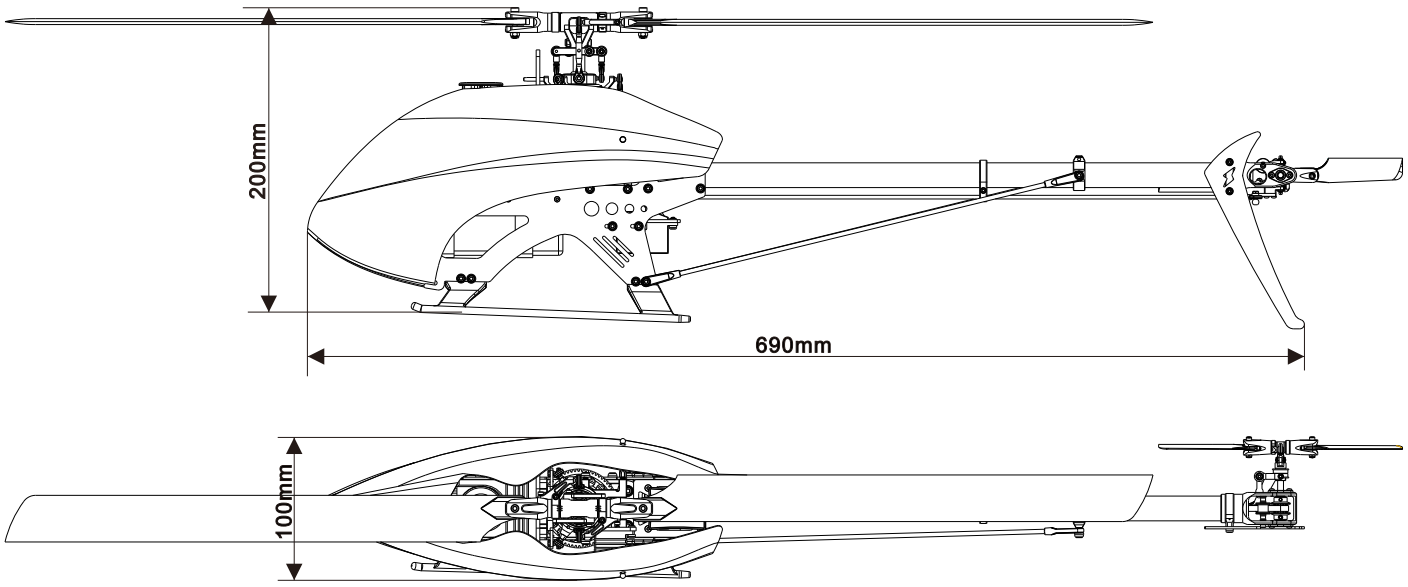
确认电池及电源接头是否固定牢靠，以及主传动皮带的拉力，飞行中的震动或激烈的飞行，可以造成接头松脱/皮带磨损及失控的危险。

4.Equipment Required for Assembly

RADIO TRANSMITTER AND ELECTRONIC EQUIPMENT REQUIRED FOR ASSEMBLY

•Brushless electric motor: 2520-1880KV
(3mm Bolt holes, 16-19mm mount width, 3.5mm motor shaft)
•Speed controller: minimum 60A
(ESC specs limits should be rated accordingly to the maximum amps handling by the motor)
•Lipo Batteries: 6s 1450-2000 mAh
•Electronic flybarless system
•3 pcs swashplate +1 pcs tail servo's
•360 mm main rotor blades
•63 mm tail rotor blades (included)
•6 channel or more helicopter transmitter system, 2.4 Ghz frequency preferred
•Receiver 6 channel or more (working with your transmitter specs)

5.Specification

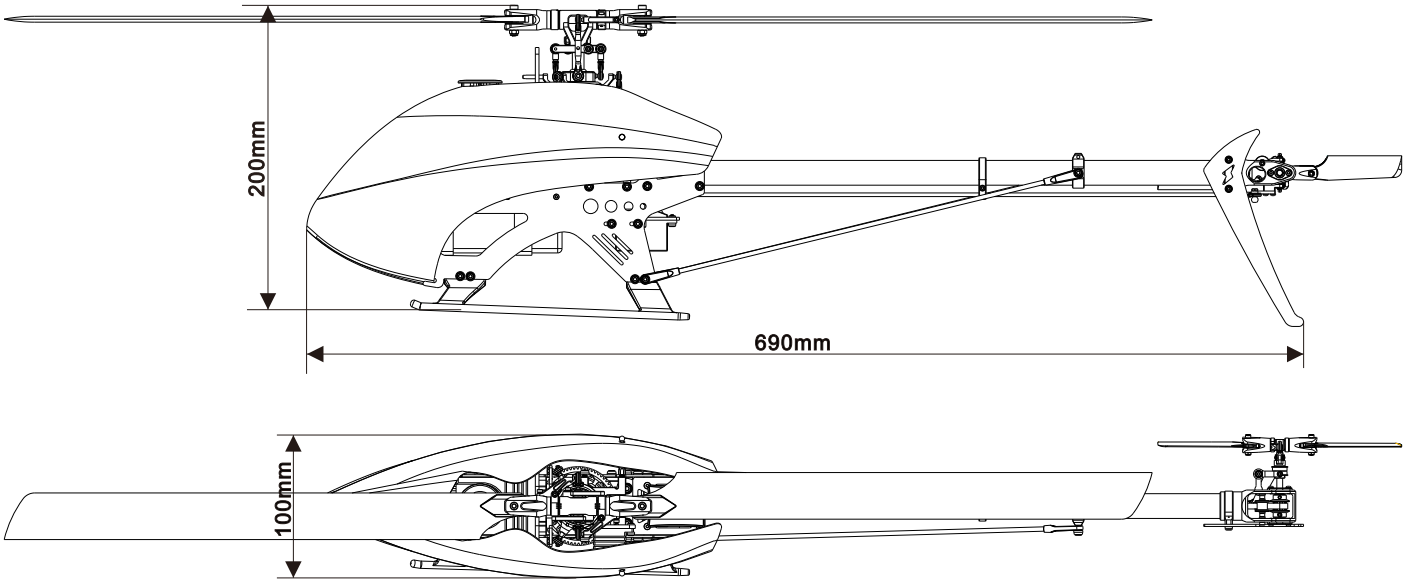


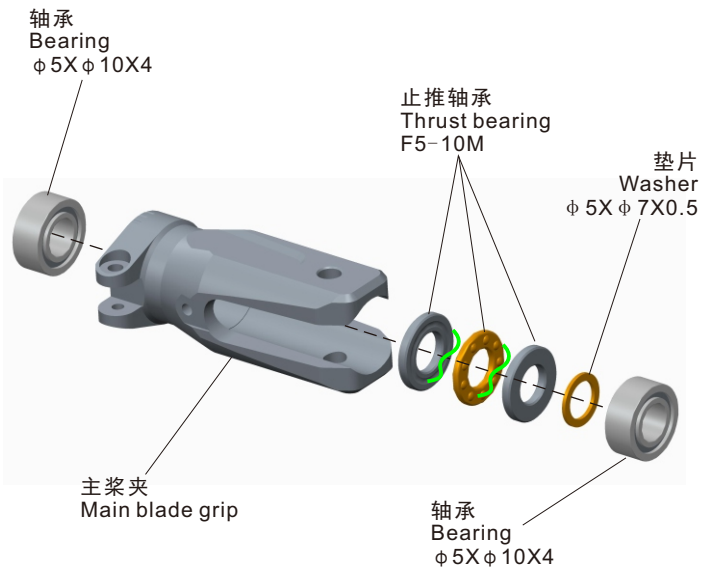
5.飞机所需的配置

发射机和电子配件

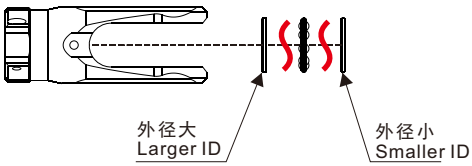
- 无刷马达：2520-1880KV（3mm 螺丝孔，16-19mm安装宽度，3.5mm马达轴）
- 电子调速器：最低60A
- 锂电池：6S 1450-2000mAh
- 3个十字盘舵机+1个锁尾舵机
- 360mm 主旋翼碳纤桨叶
- 63mm 尾旋翼碳纤桨叶
- 6通以上，2.4G 遥控器
- 6通以上接收机与发射机匹配

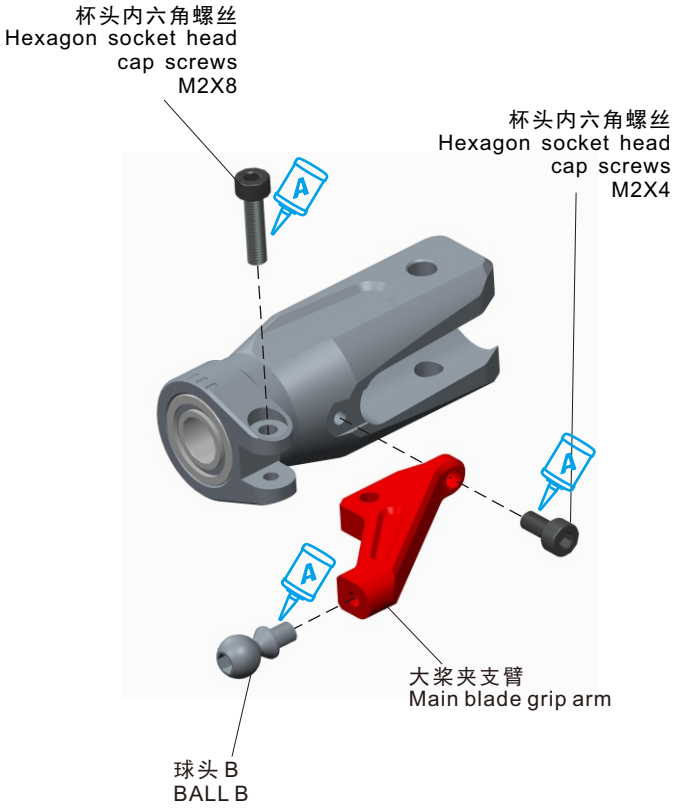
6. 规格说明

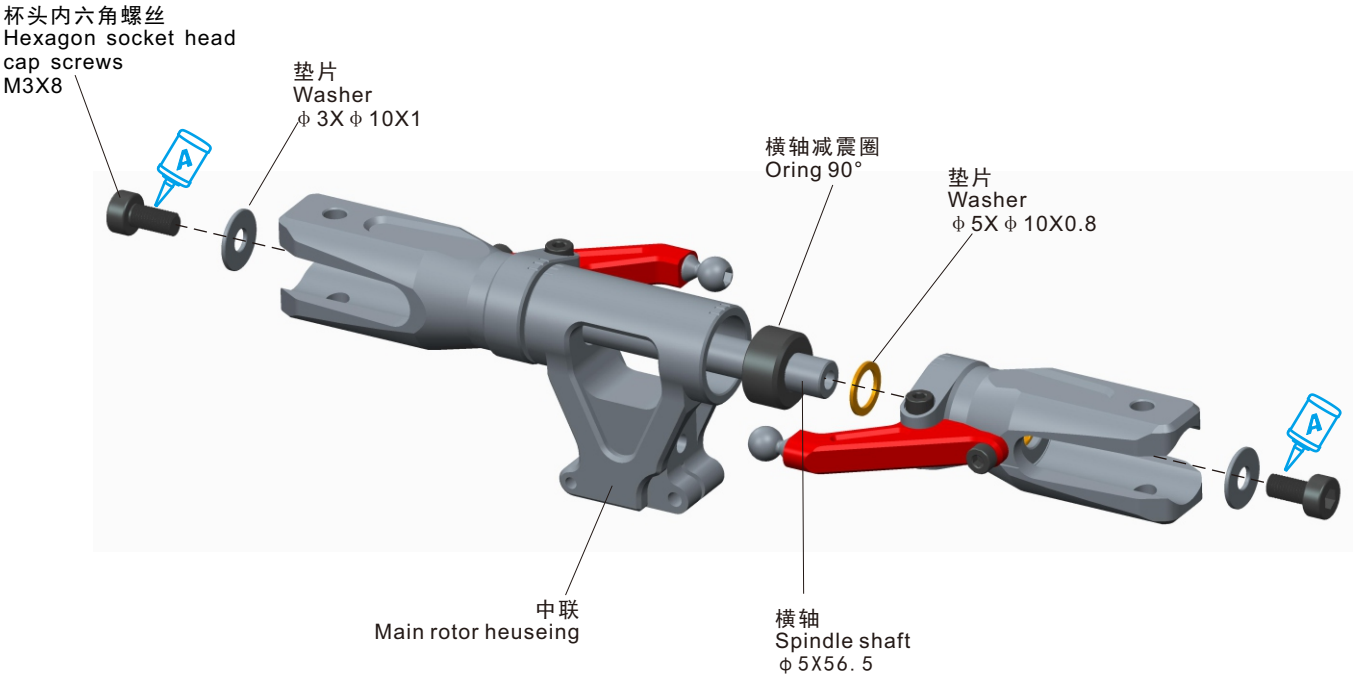


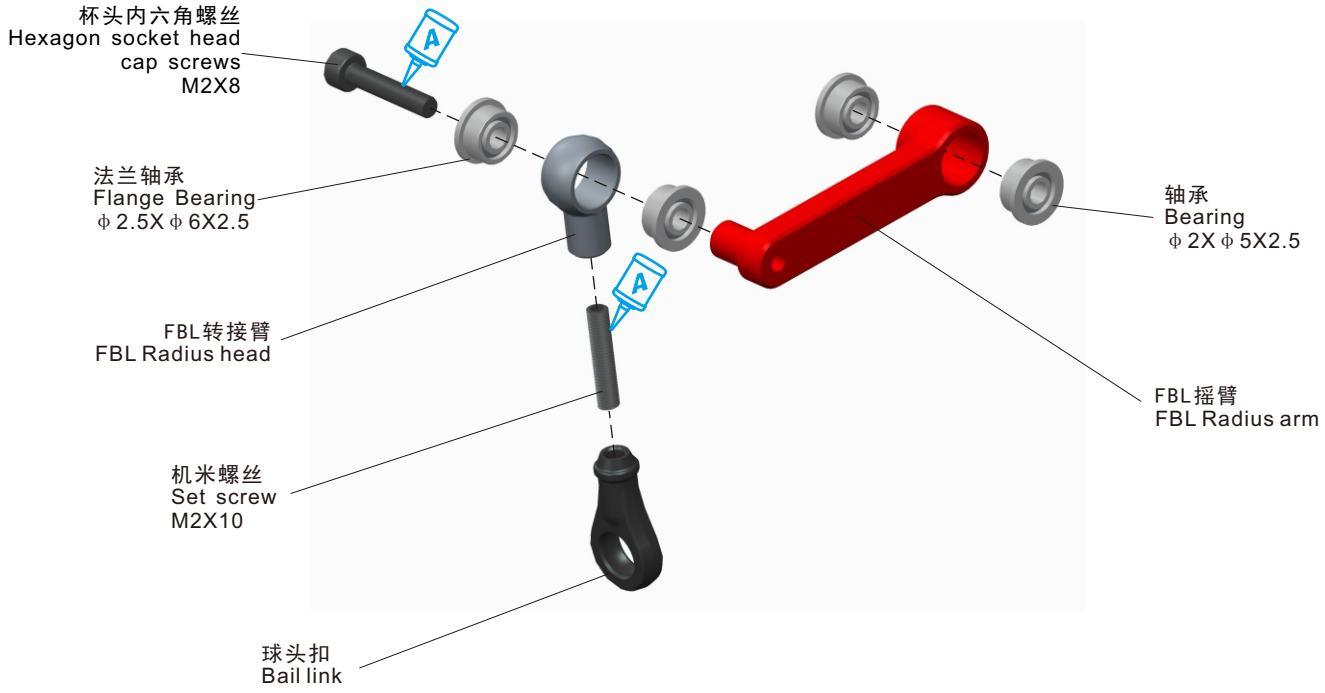


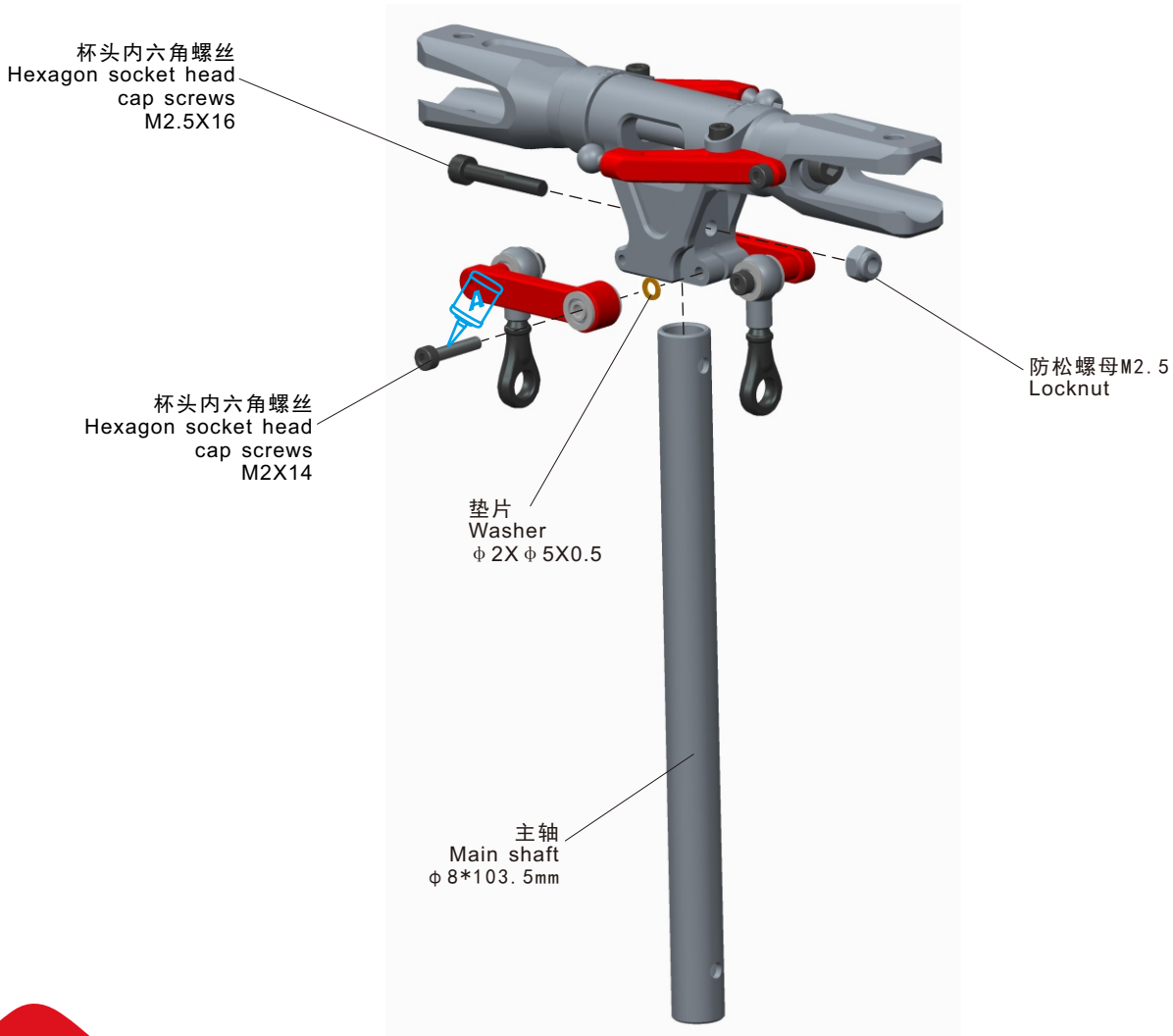
止推轴承滚珠涂润滑油
Thrust bearings need lubricating oil

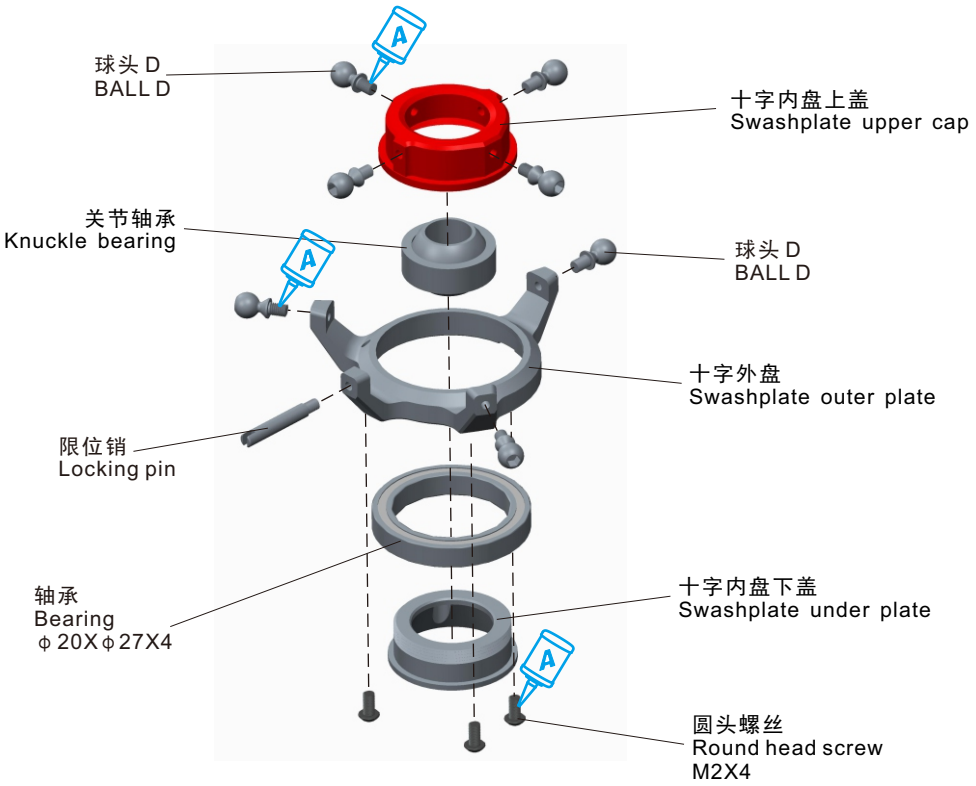


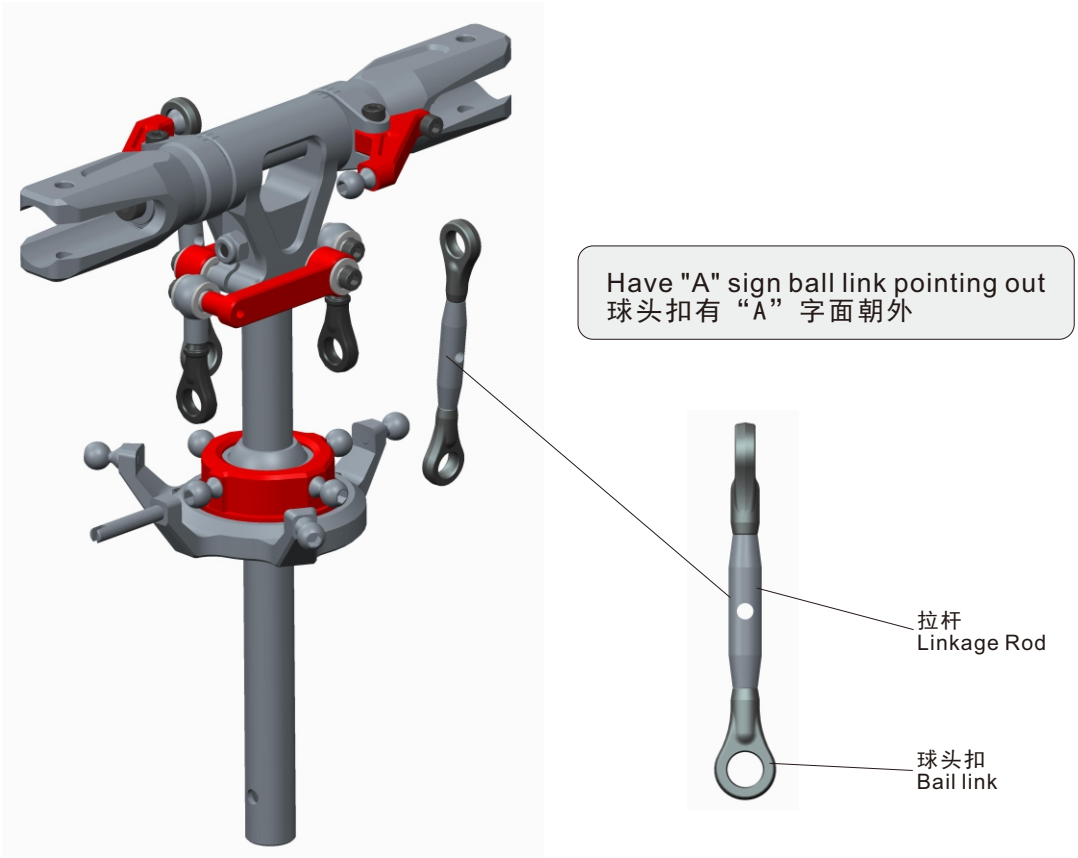


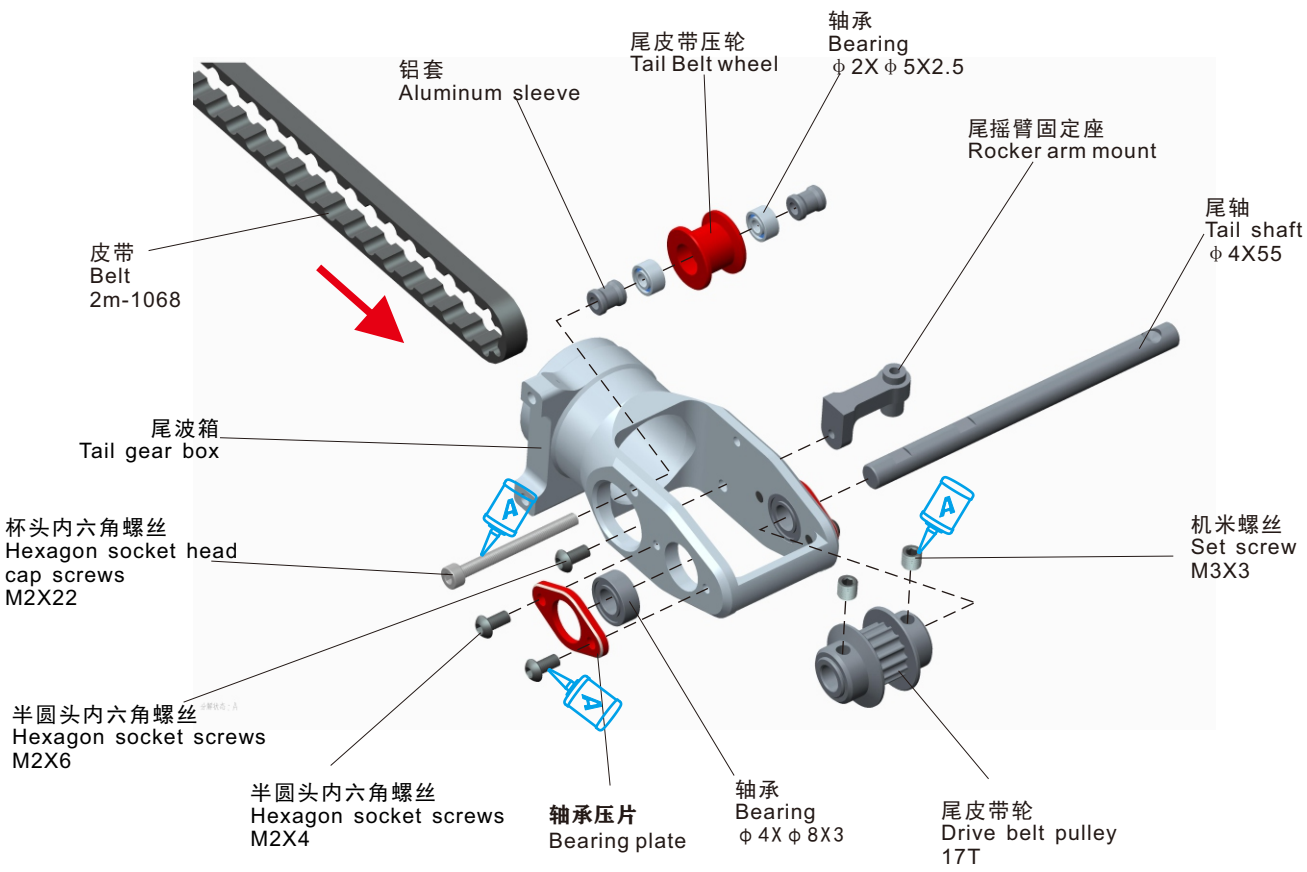


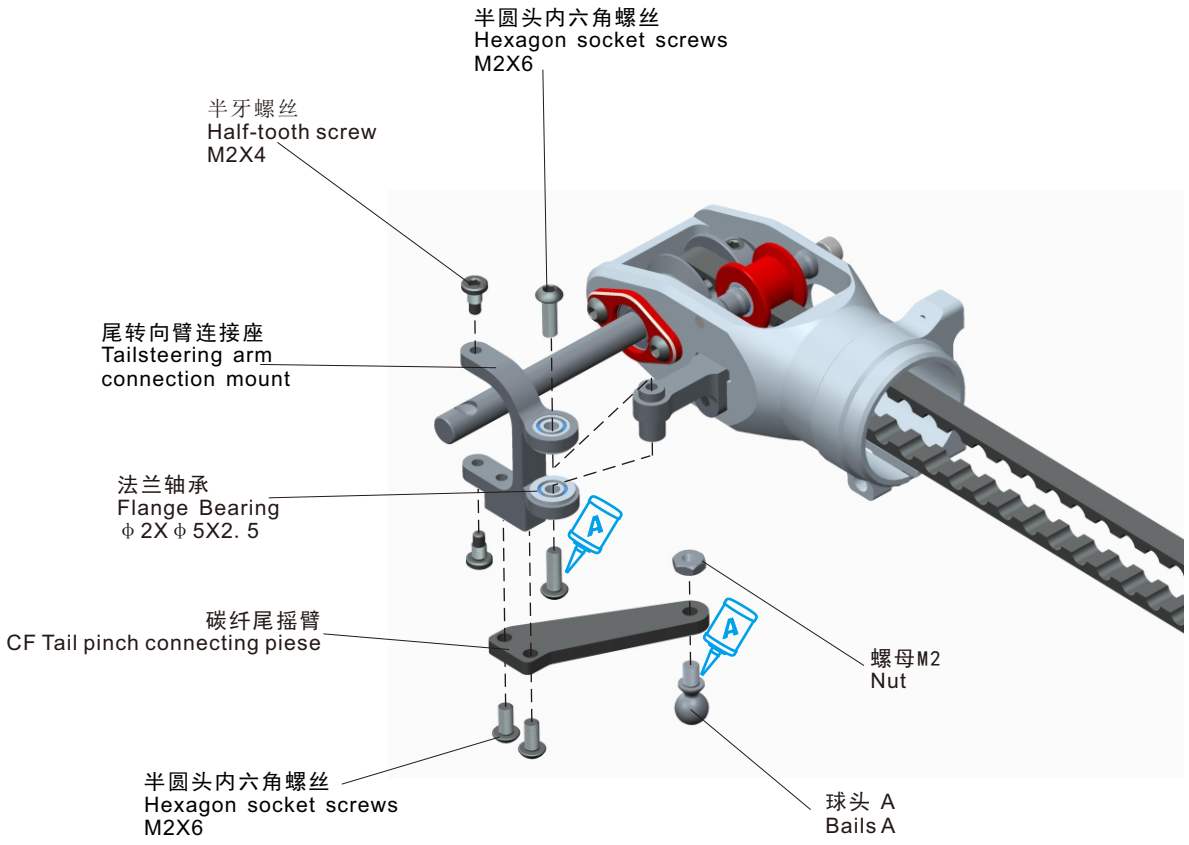

杯头内六角螺丝
Hexagon socket head
cap screws
M2X8
法兰轴承
Flange Bearing
φ2.5Xφ6X2.5
FBL转接臂
FBL Radius head
机米螺丝
Set screw
M2X10
球头扣
Bail link
轴承
Bearing
φ2Xφ5X2.5
FBL摇臂
FBL Radius arm

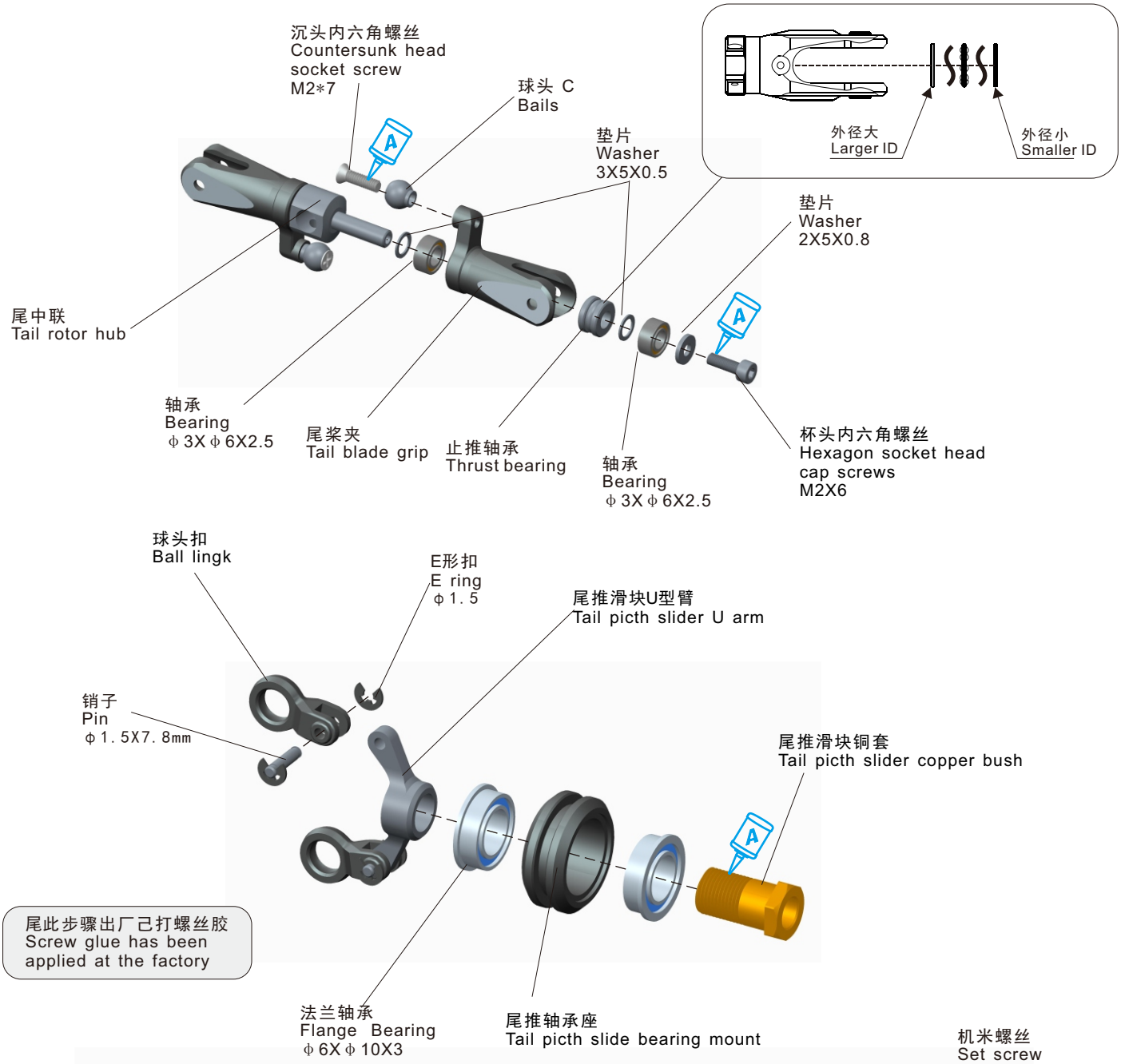

杯头内六角螺丝
Hexagon socket head
cap screws
M2.5X16
杯头内六角螺丝
Hexagon socket head
cap screws
M2X14
垫片
Washer
φ2Xφ5X0.5
主轴
Main shaft
φ8*103.5mm
防松螺母M2.5
Locknut

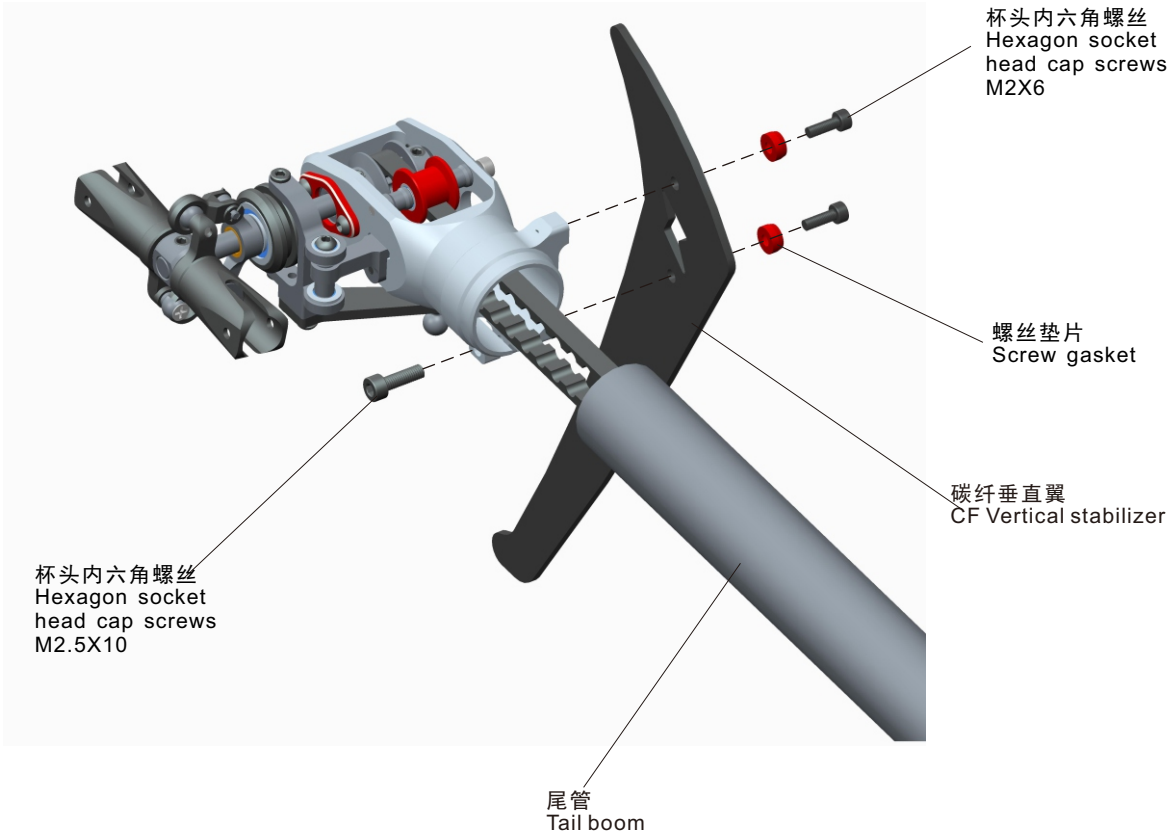

球头 D
BALL D
十字内盘上盖
Swashplate upper cap
关节轴承
Knuckle bearing
球头 D
BALL D
十字外盘
Swashplate outer plate
限位销
Locking pin
轴承
Bearing
φ20Xφ27X4
十字内盘下盖
Swashplate under plate
圆头螺丝
Round head screw
M2X4

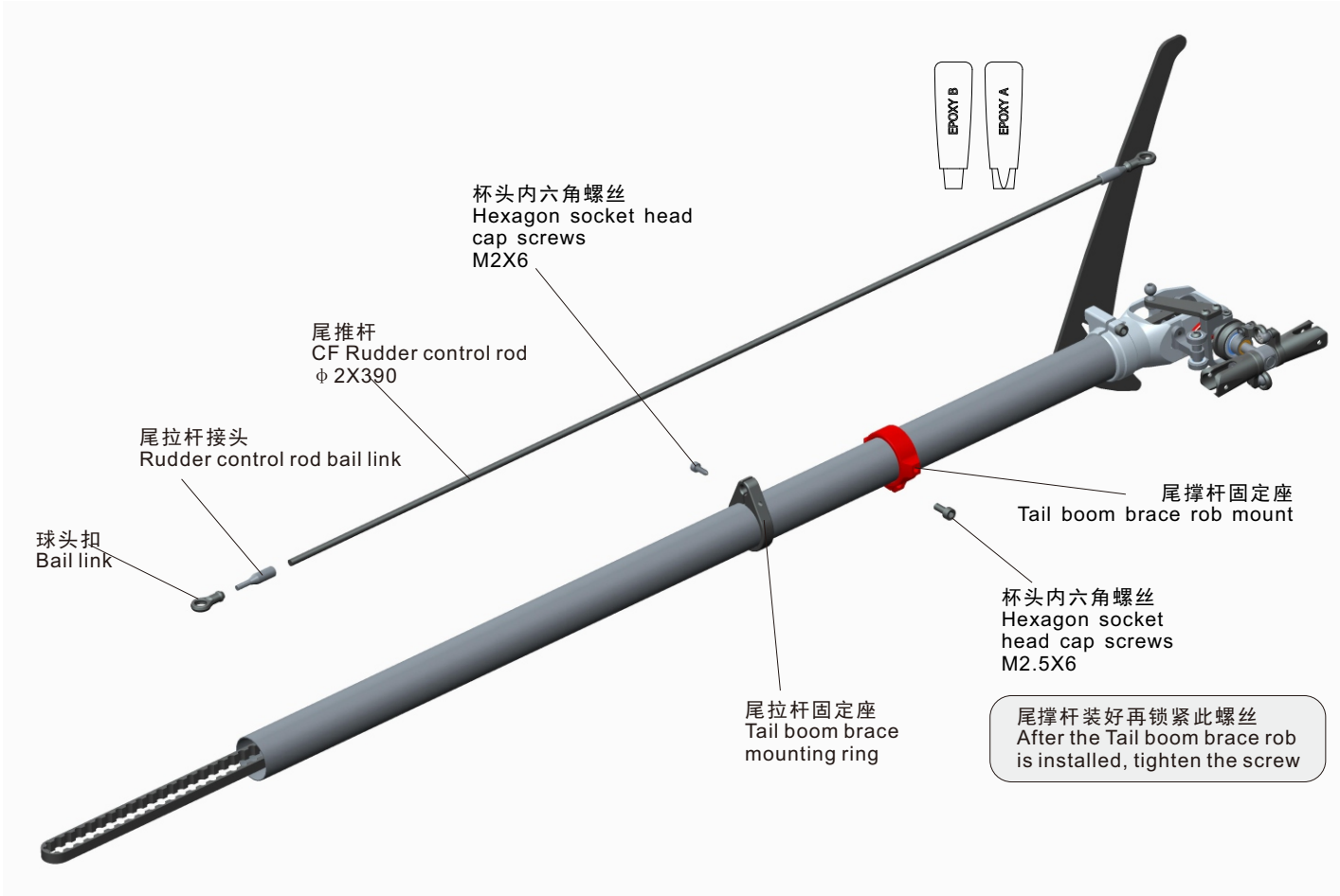

Have "A" sign ball link pointing out
球头扣有“A”字面朝外
拉杆
Linkage Rod
球头扣
Bail link

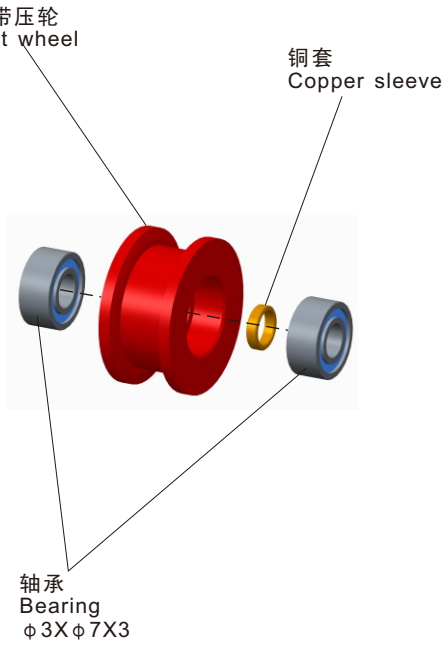

铝套
Aluminum sleeve
尾皮带压轮
Tail Belt wheel
轴承
Bearing
φ2X φ5X2.5
尾摇臂固定座
Rocker arm mount
尾轴
Tail shaft
φ4X55
皮带
Belt
2m-1068
尾波箱
Tail gear box
杯头内六角螺丝
Hexagon socket head
cap screws
M2X22
机米螺丝
Set screw
M3X3
半圆头内六角螺丝
Hexagon socket screws
M2X6
半圆头内六角螺丝
Hexagon socket screws
M2X4
轴承压片
Bearing plate
轴承
Bearing
φ4X φ8X3
尾皮带轮
Drive belt pulley
17T

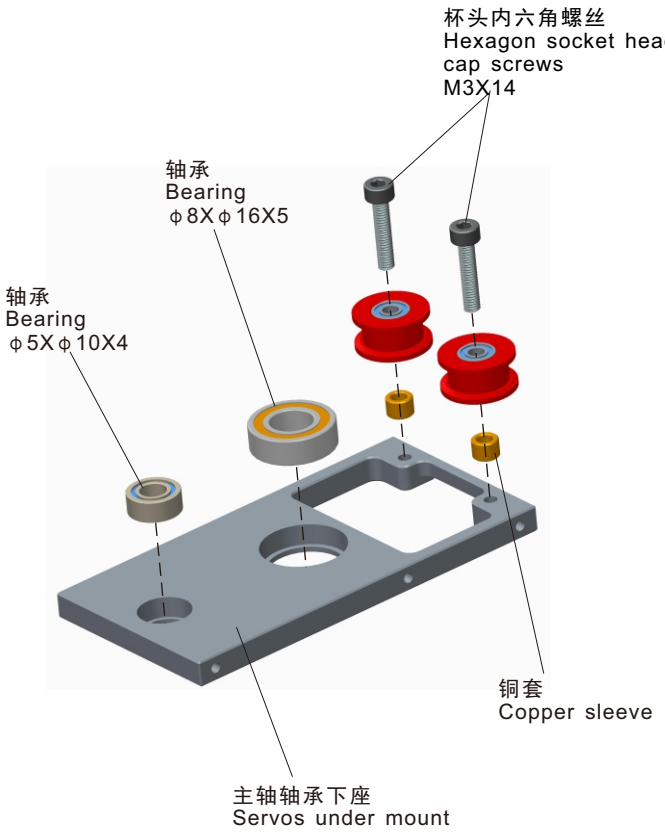

半圆头内六角螺丝
Hexagon socket screws
M2X6
半牙螺丝
Half-tooth screw
M2X4
尾转向臂连接座
Tailsteering arm
connection mount
法兰轴承
Flange Bearing
φ2X φ5X2. 5
碳纤尾摇臂
CF Tail pinch connecting piese
螺母M2
Nut
半圆头内六角螺丝
Hexagon socket screws
M2X6
球头 A
Bails A

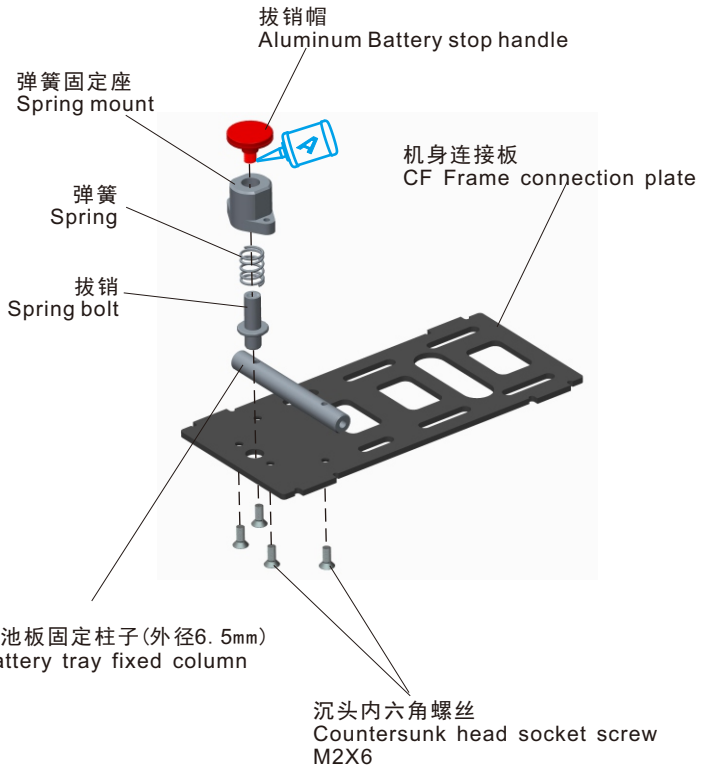

沉头内六角螺丝
Countersunk head
socket screw
M2*7
球头 C
Bails
垫片
Washer
3X5X0.5
垫片
Washer
2X5X0.8
尾中联
Tail rotor hub
轴承
Bearing
φ3Xφ6X2.5
尾桨夹
Tail blade grip
止推轴承
Thrust bearing
轴承
Bearing
φ3Xφ6X2.5
杯头内六角螺丝
Hexagon socket head
cap screws
M2X6
外径大
Larger ID
外径小
Smaller ID
球头扣
Ball lingk
E形扣
E ring
φ1.5
尾推滑块U型臂
Tail picth slider U arm
销子
Pin
φ1.5X7.8mm
尾推滑块铜套
Tail picth slider copper bush
尾此步骤出厂已打螺丝胶
Screw glue has been
applied at the factory
法兰轴承
Flange Bearing
φ6Xφ10X3
尾推轴承座
Tail picth slide bearing mount
机米螺丝
Set screw
M3X3

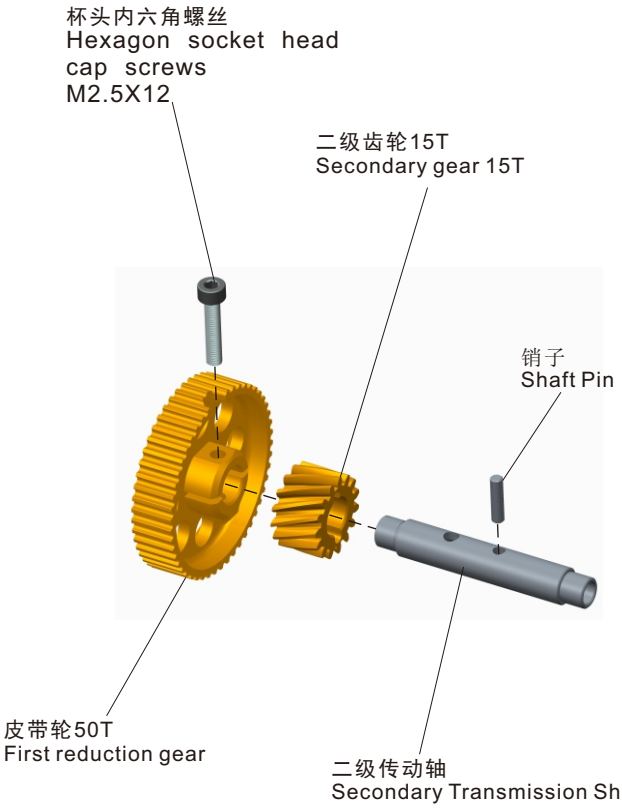

杯头内六角螺丝
Hexagon socket
head cap screws
M2X6
螺丝垫片
Screw gasket
碳纤垂直翼
CF Vertical stabilizer
杯头内六角螺丝
Hexagon socket
head cap screws
M2.5X10
尾管
Tail boom

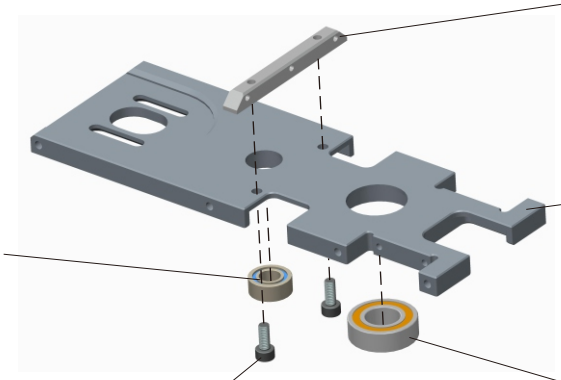

EPOXY B
EPOXY A
杯头内六角螺丝
Hexagon socket head
cap screws
M2X6
尾推杆
CF Rudder control rod
Φ 2X390
尾拉杆接头
Rudder control rod bail link
球头扣
Bail link
尾撑杆固定座
Tail boom brace rob mount
杯头内六角螺丝
Hexagon socket
head cap screws
M2.5X6
尾拉杆固定座
Tail boom brace
mounting ring
尾撑杆装好再锁紧此螺丝
After the Tail boom brace rob
is installed, tighten the screw

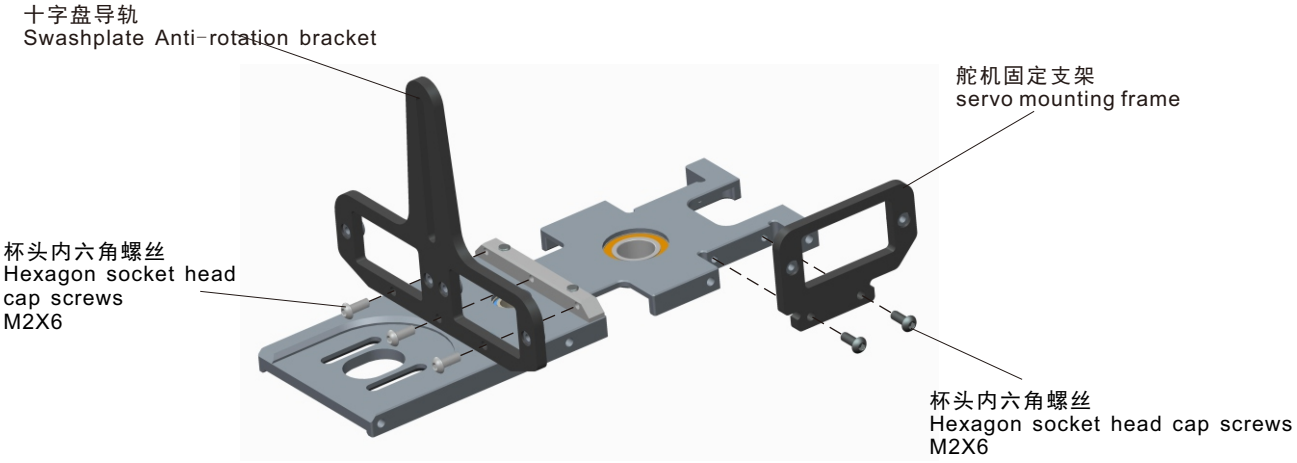

皮带压轮
Belt wheel
铜套
Copper sleeve
轴承
Bearing
φ3Xφ7X3

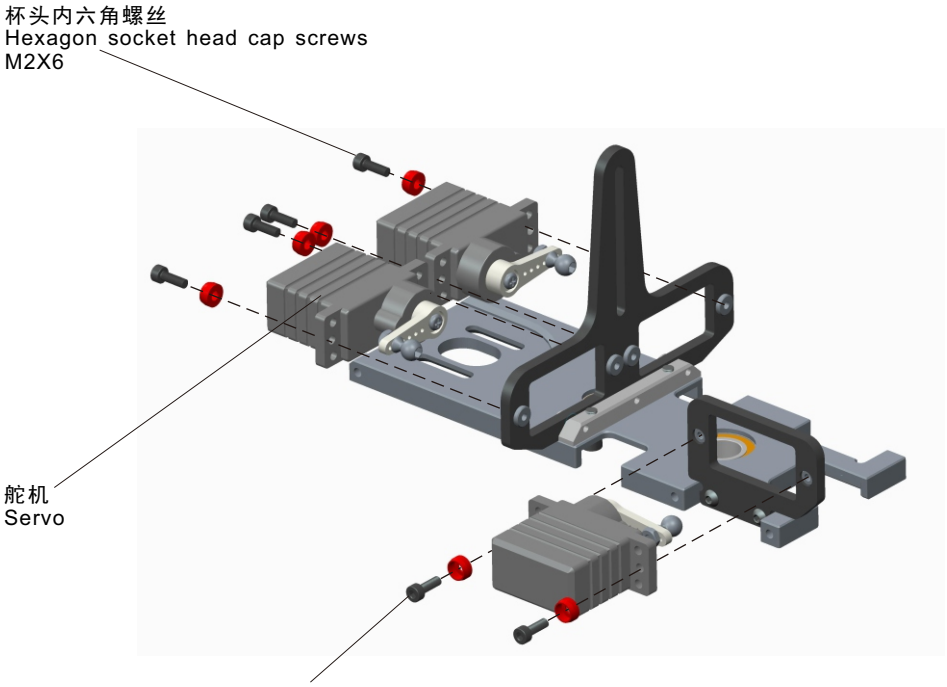

杯头内六角螺丝
Hexagon socket head
cap screws
M3X14
轴承
Bearing
φ8Xφ16X5
轴承
Bearing
φ5Xφ10X4
铜套
Copper sleeve
主轴轴承下座
Servos under mount

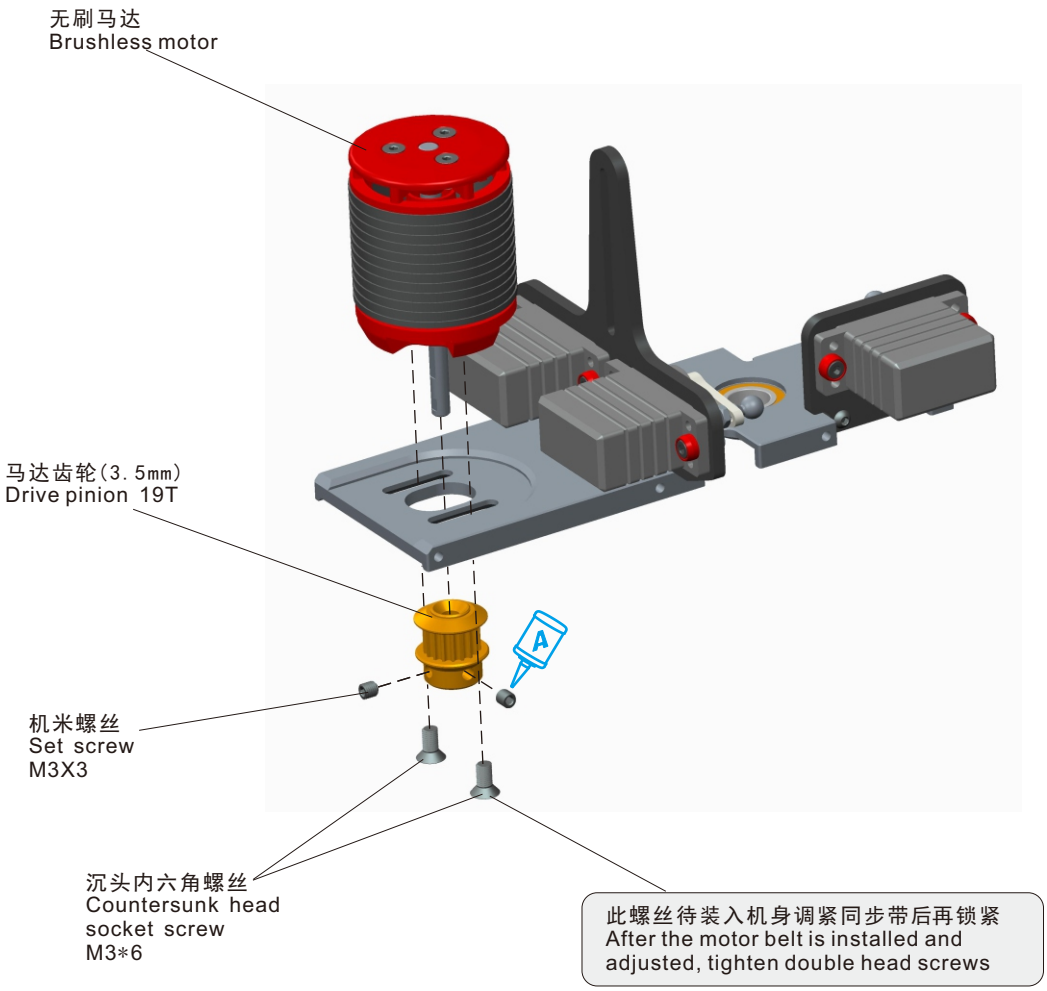

拔销帽
Aluminum Battery stop handle
弹簧固定座
Spring mount
机身连接板
CF Frame connection plate
弹簧
Spring
拔销
Spring bolt
电池板固定柱子(外径6. 5mm)
Battery tray fixed column
沉头内六角螺丝
Countersunk head socket screw
M2X6

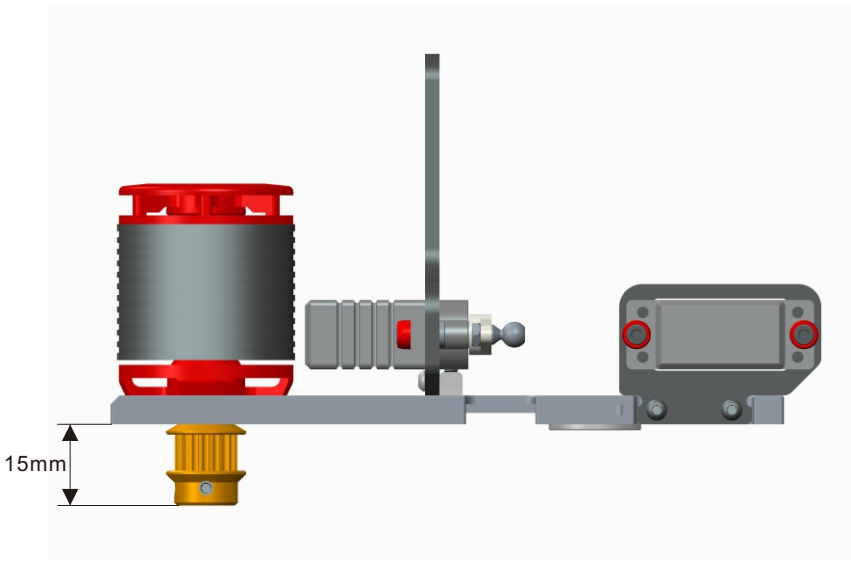

杯头内六角螺丝
Hexagon socket head
cap screws
M2.5X12
二级齿轮15T
Secondary gear 15T
销子
Shaft Pin
皮带轮50T
First reduction gear
二级传动轴
Secondary Transmission Shaft

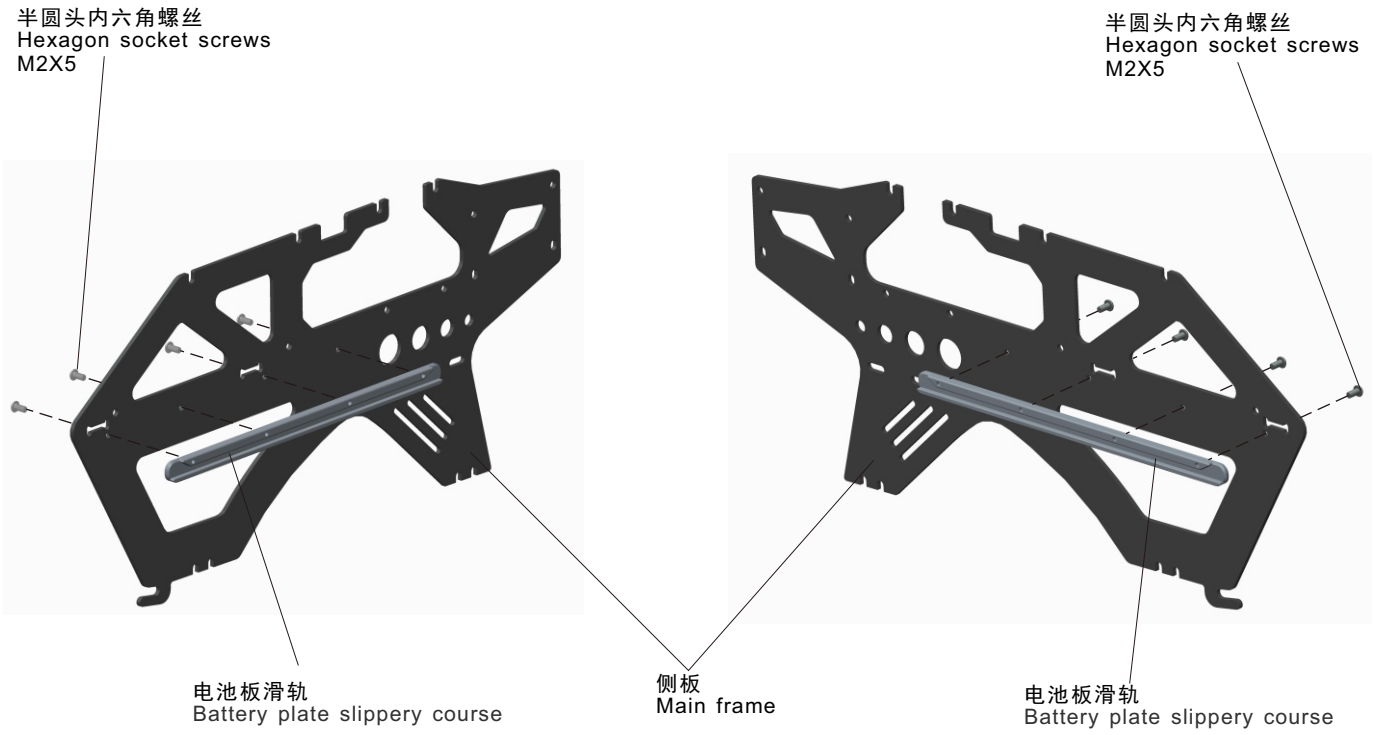

舵机固定座
Servo mount
主轴轴承上座
Main shaft under mount
轴承
Bearing
φ5Xφ10X4
轴承
Bearing
φ8Xφ16X5
杯头内六角螺丝
Hexagon socket head cap screws
M2.5X6


十字盘导轨
Swashplate Anti-rotation bracket
舵机固定支架
servo mounting frame
杯头内六角螺丝
Hexagon socket head
cap screws
M2X6
杯头内六角螺丝
Hexagon socket head cap screws
M2X6

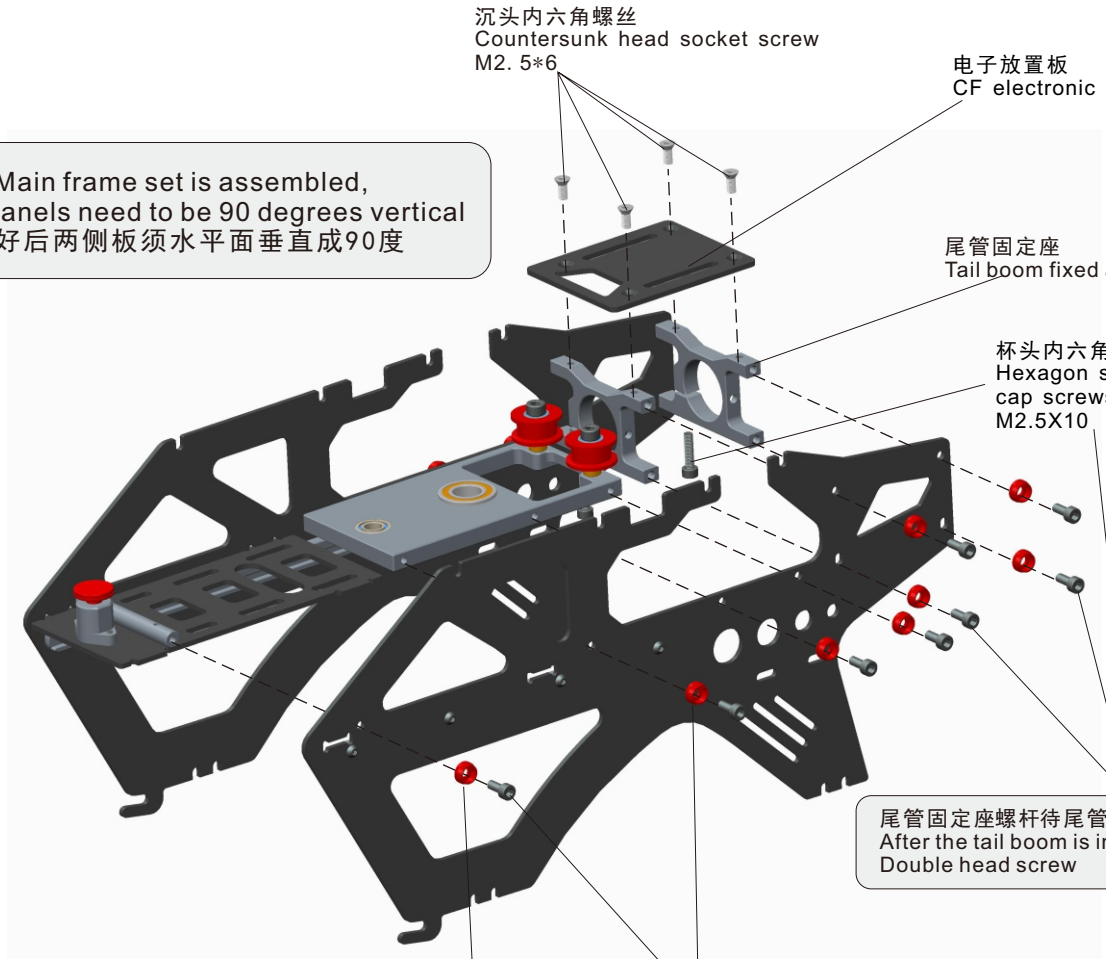

杯头内六角螺丝
Hexagon socket head cap screws
M2X6
舵机
Servo
杯头内六角螺丝
Hexagon socket head cap screws
M2X6

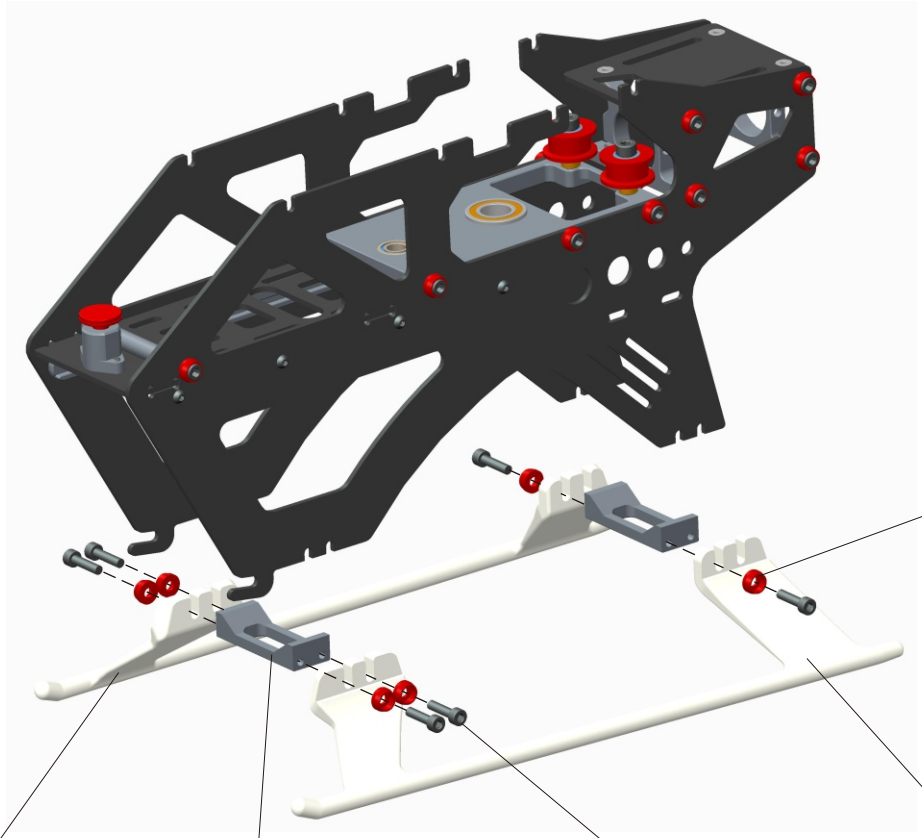

无刷马达
Brushless motor
马达齿轮(3.5mm)
Drive pinion 19T
A
机米螺丝
Set screw
M3X3
沉头内六角螺丝
Countersunk head
socket screw
M3*6
此螺丝待装入机身调紧同步带后再锁紧
After the motor belt is installed and
adjusted, tighten double head screws

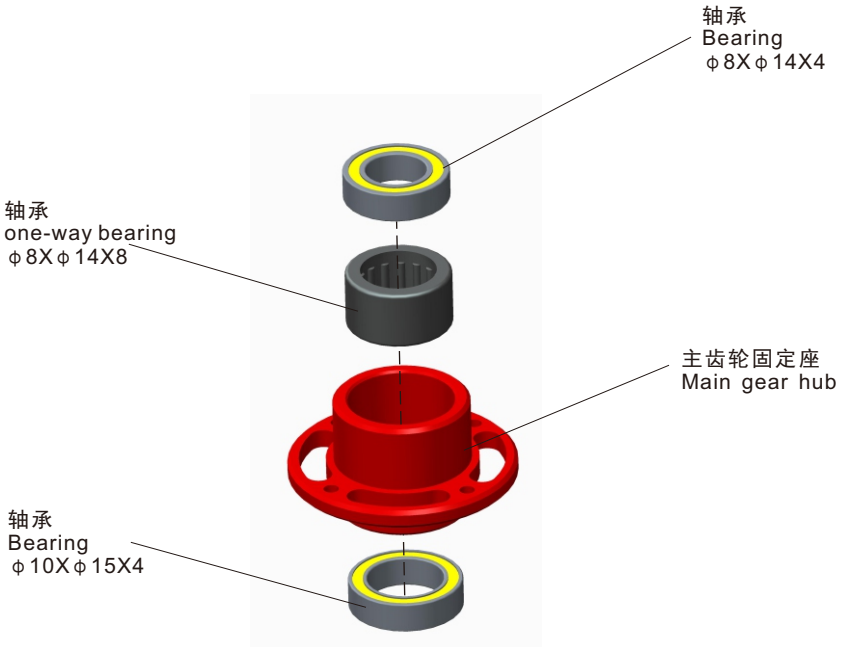

15mm

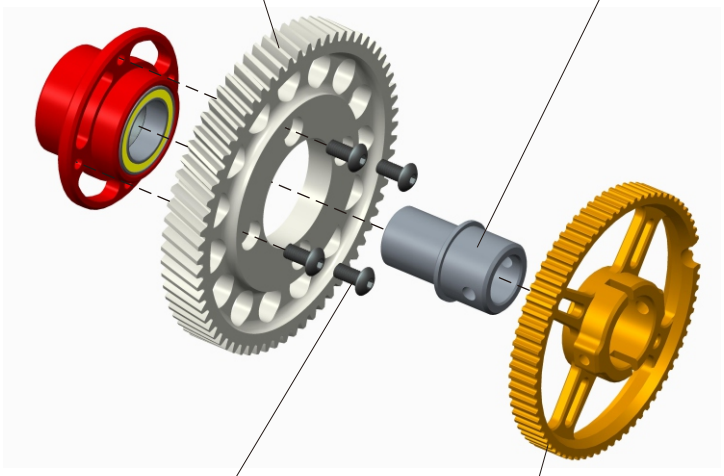


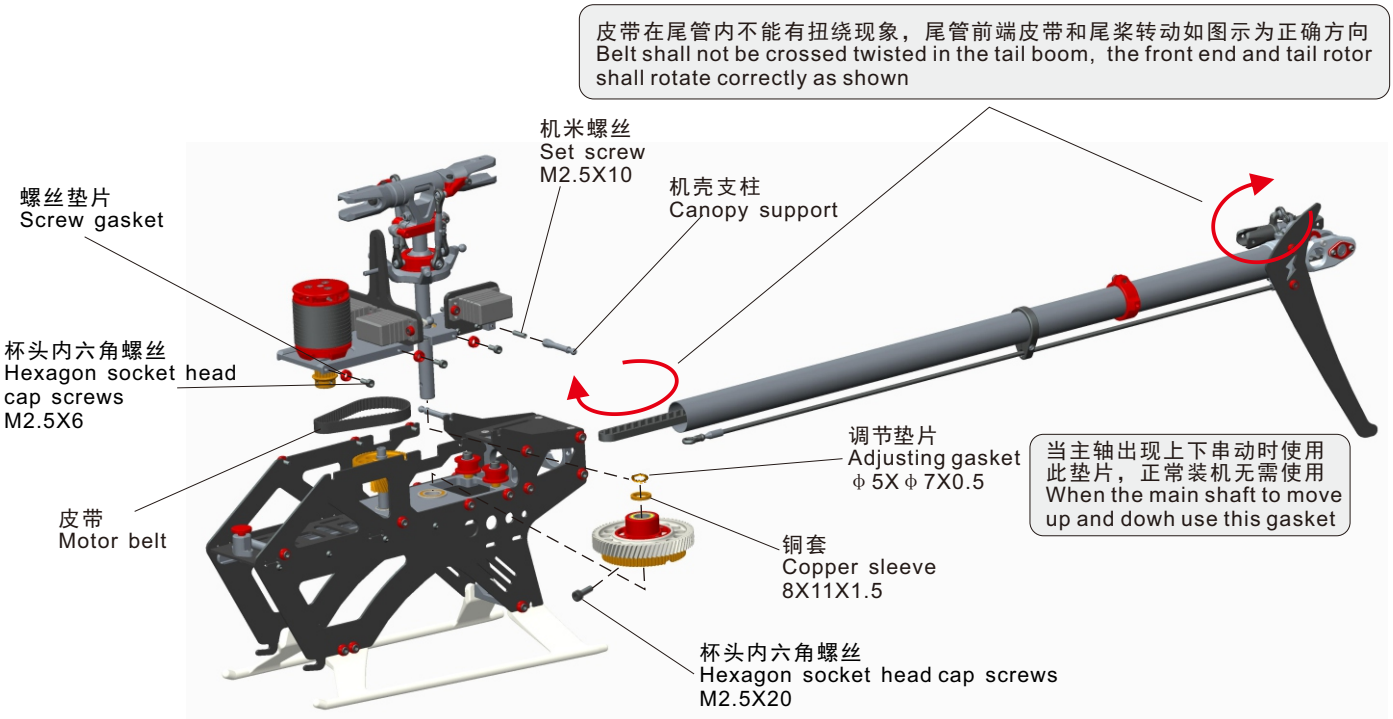
After the Main frame set is assembled,
the side panels need to be 90 degrees vertical
机身组装好后两侧板须水平面垂直成90度

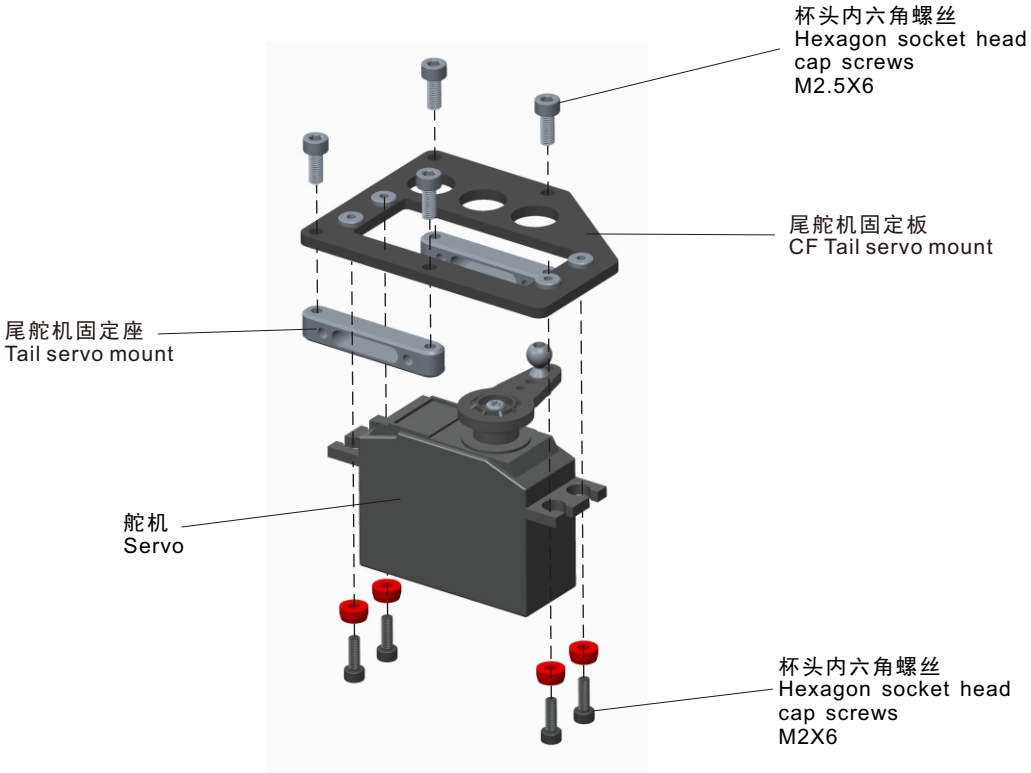


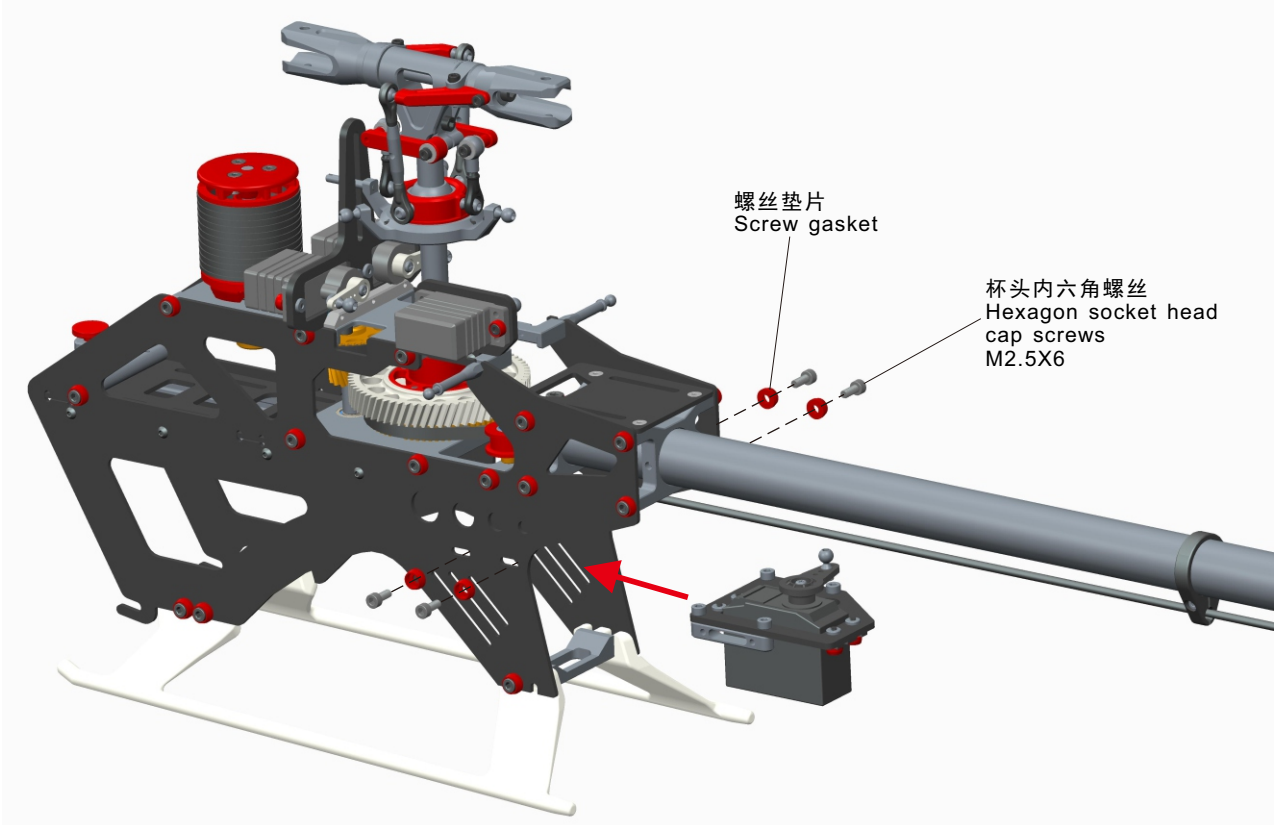

螺丝垫片
Screw gasket
脚架
Landing gear
脚架固定座
Landing gear mount
杯头内六角螺丝
Hexagon socket head
cap screws
M2.5X10
脚架
Landing gear


轴承
Bearing
φ8Xφ14X4
轴承
one-way bearing
φ8Xφ14X8
主齿轮固定座
Main gear hub
轴承
Bearing
φ10Xφ15X4


主齿轮66T
Main gear
单向轴承套
One-way bearing center shaft
半圆头内六角螺丝
Hexagon socket screws
M2.5X5
皮带轮72T
Belt pulley 72T

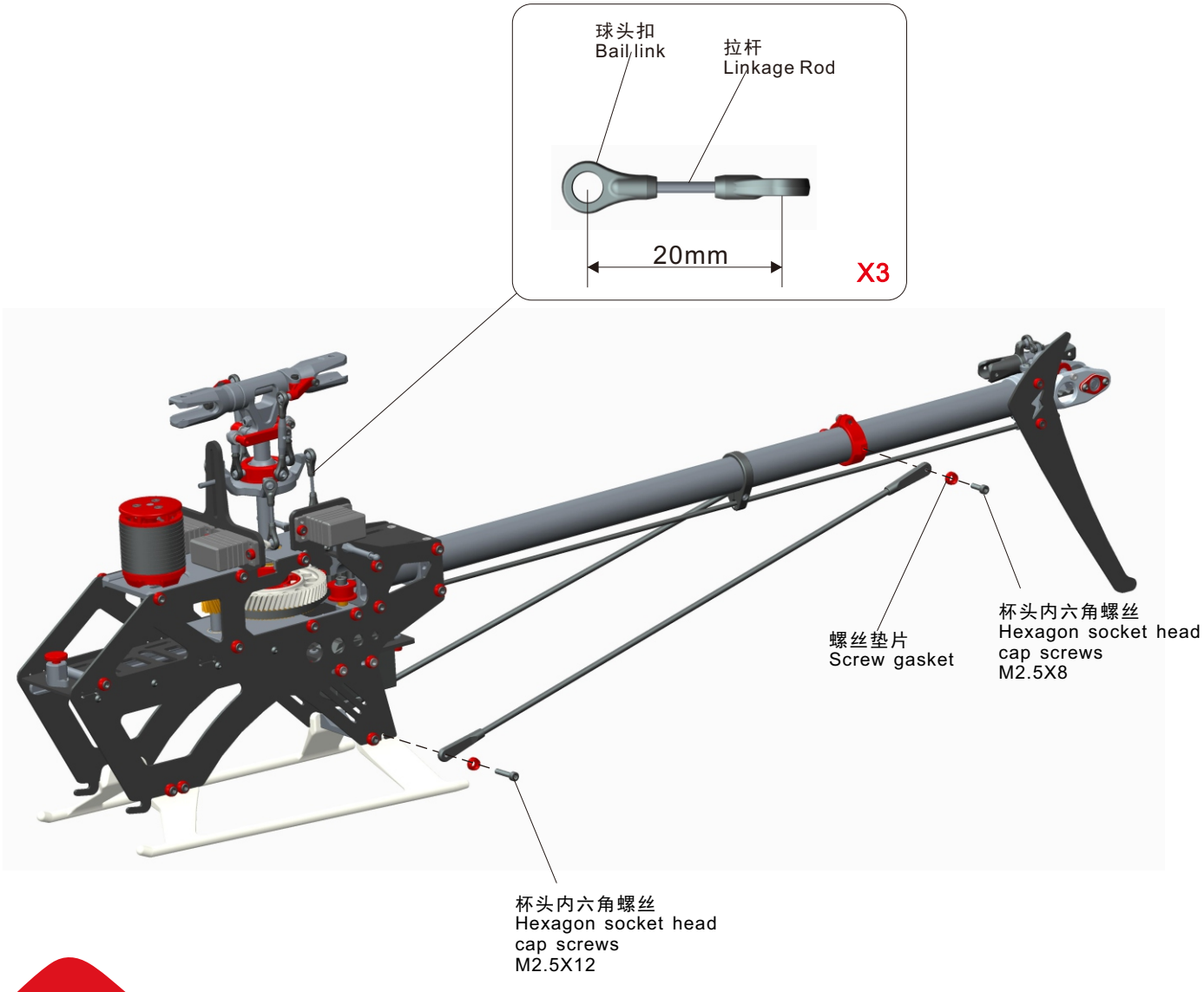

皮带在尾管内不能有扭绕现象，尾管前端皮带和尾桨转动如图示为正确方向
Belt shall not be crossed twisted in the tail boom, the front end and tail rotor shall rotate correctly as shown
机米螺丝
Set screw
M2.5X10
机壳支柱
Canopy support
螺丝垫片
Screw gasket
杯头内六角螺丝
Hexagon socket head cap screws
M2.5X6
调节垫片
Adjusting gasket
Φ 5X Φ 7X0.5
当主轴出现上下串动时使用此垫片，正常装机无需使用
When the main shaft to move up and dowh use this gasket
皮带
Motor belt
铜套
Copper sleeve
8X11X1.5
杯头内六角螺丝
Hexagon socket head cap screws
M2.5X20

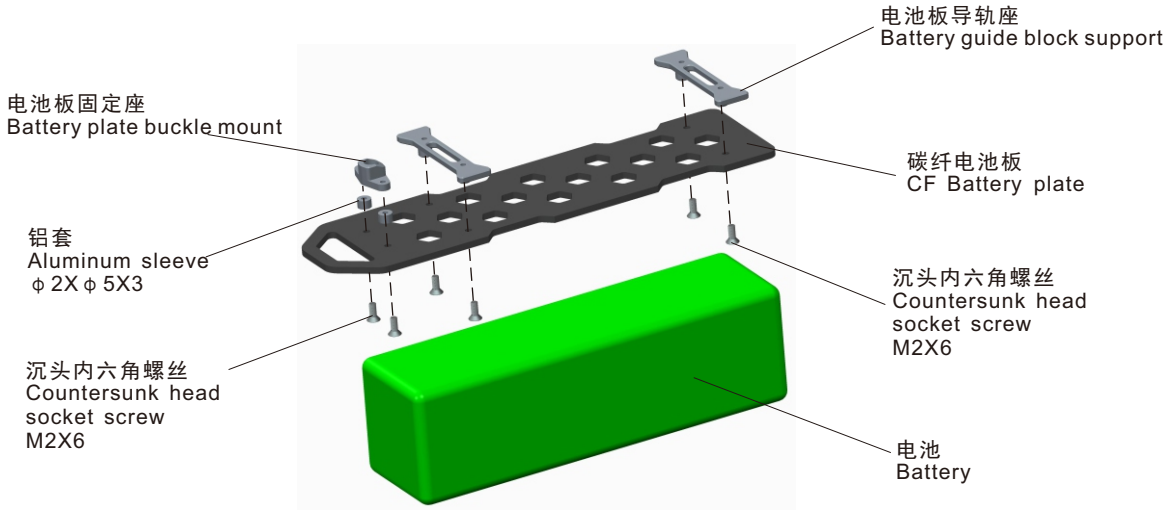


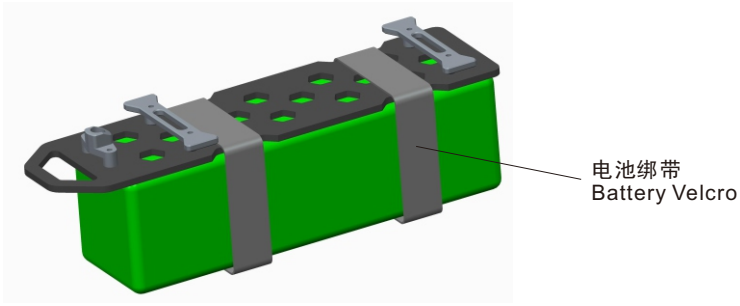


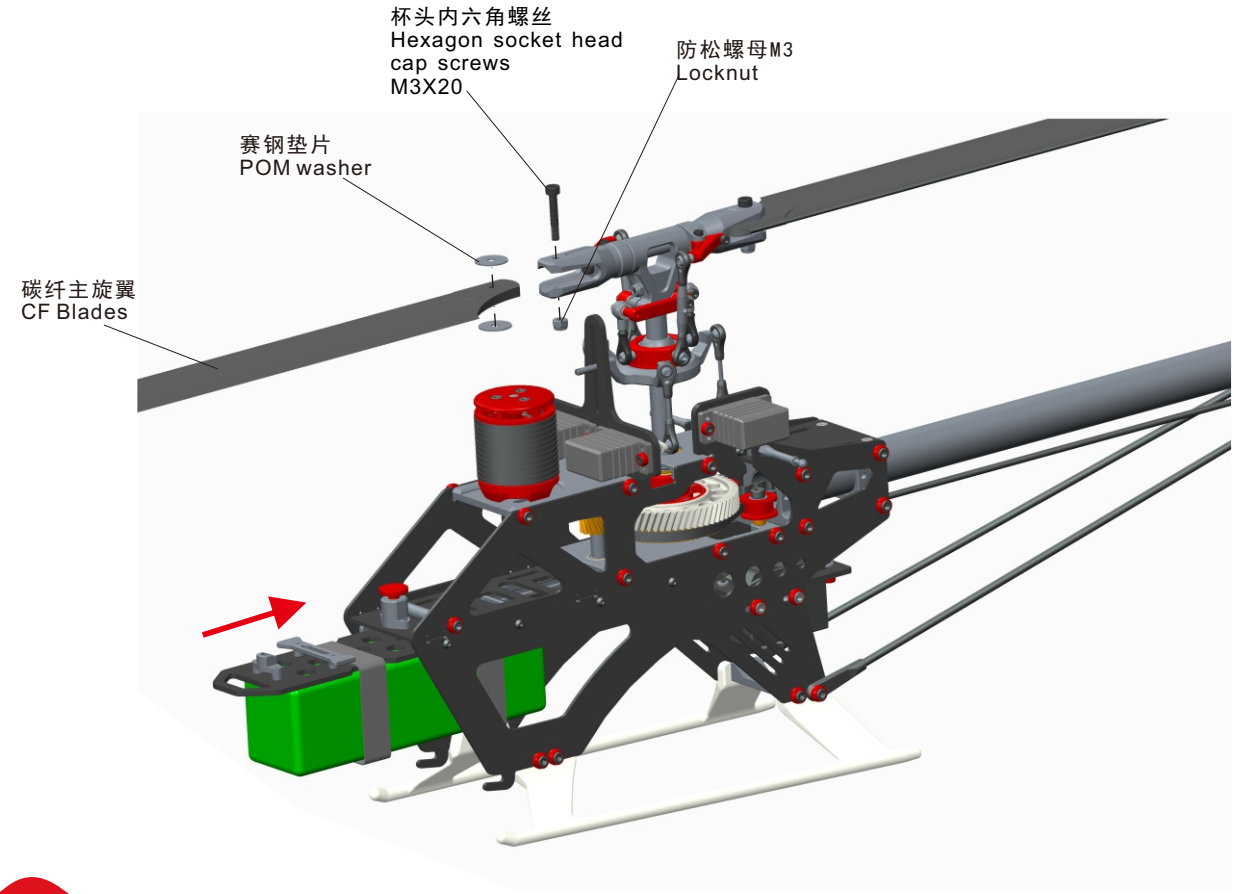
舵机装入机架前需调舵机中位设置好
Please adjust the middle position of the servo's before installing it

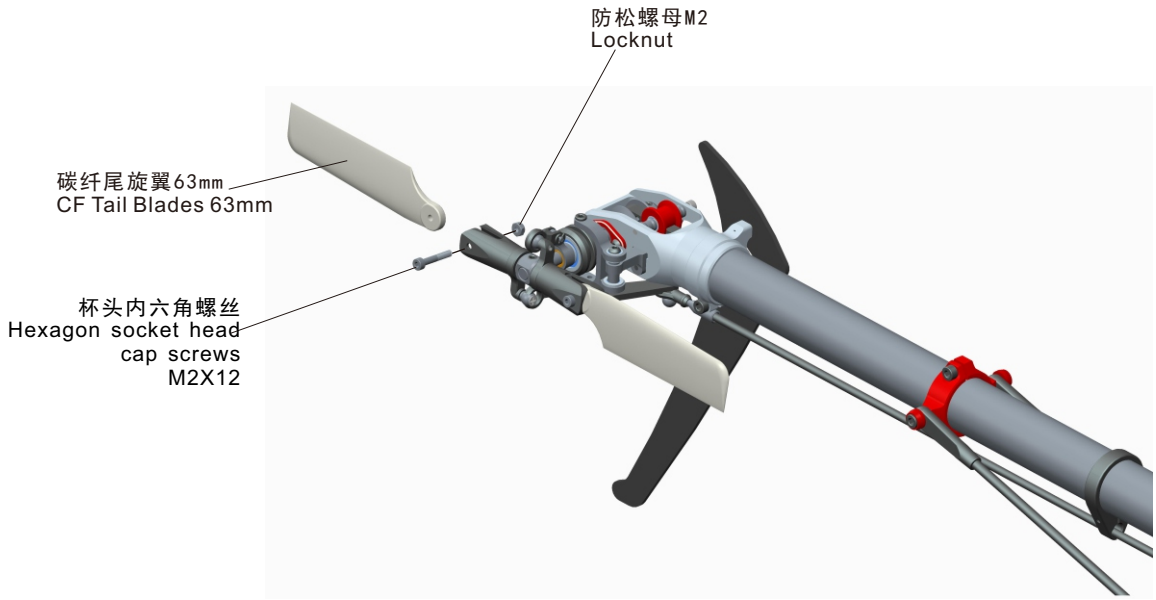

EPOXY B
EPOXY A
尾撑杆接头
Boom support head
尾撑杆
Tail boom brace rob

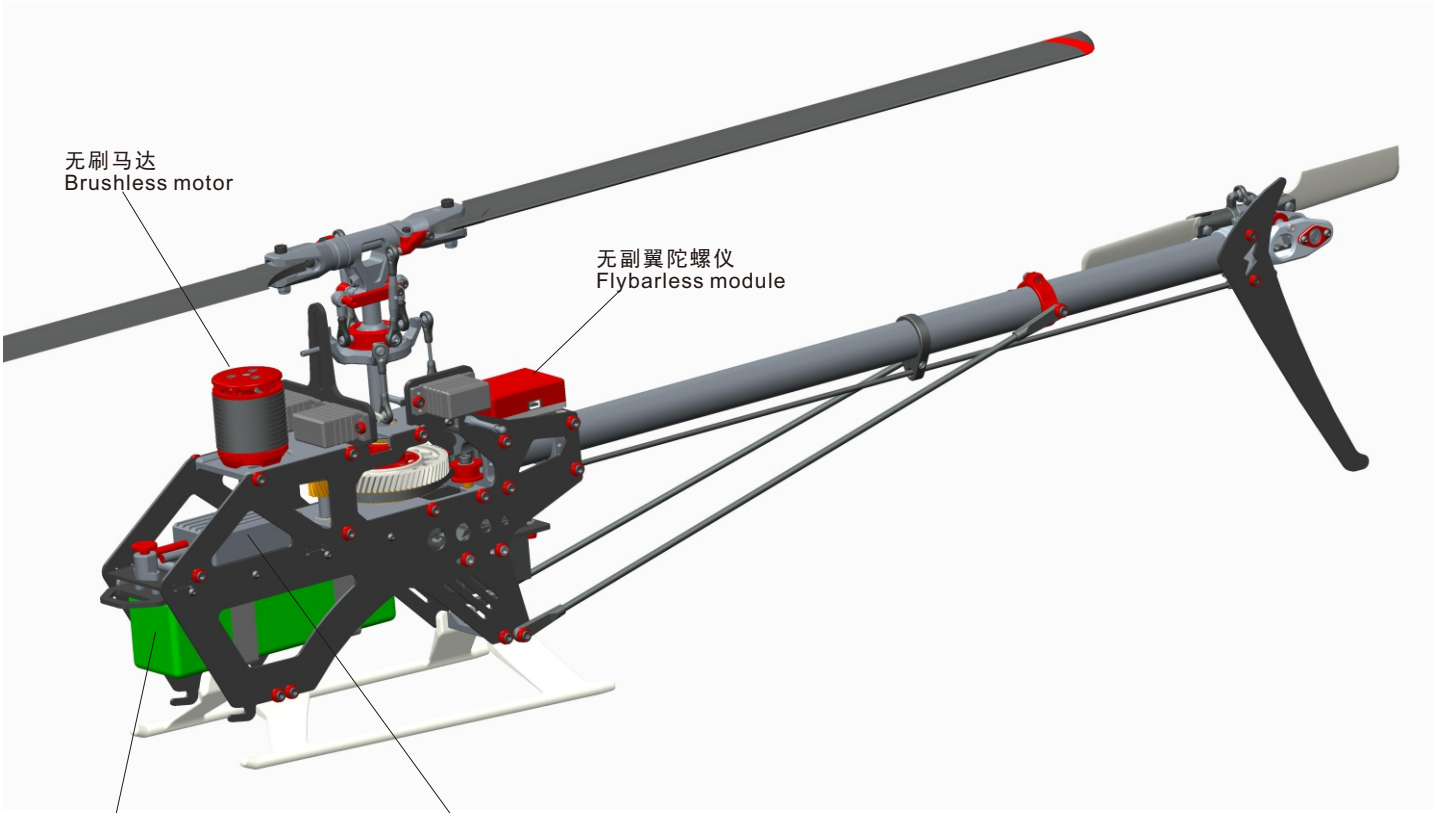

球头扣
Bail link
拉杆
Linkage Rod
20mm
X3
螺丝垫片
Screw gasket
杯头内六角螺丝
Hexagon socket head
cap screws
M2.5X8
杯头内六角螺丝
Hexagon socket head
cap screws
M2.5X12

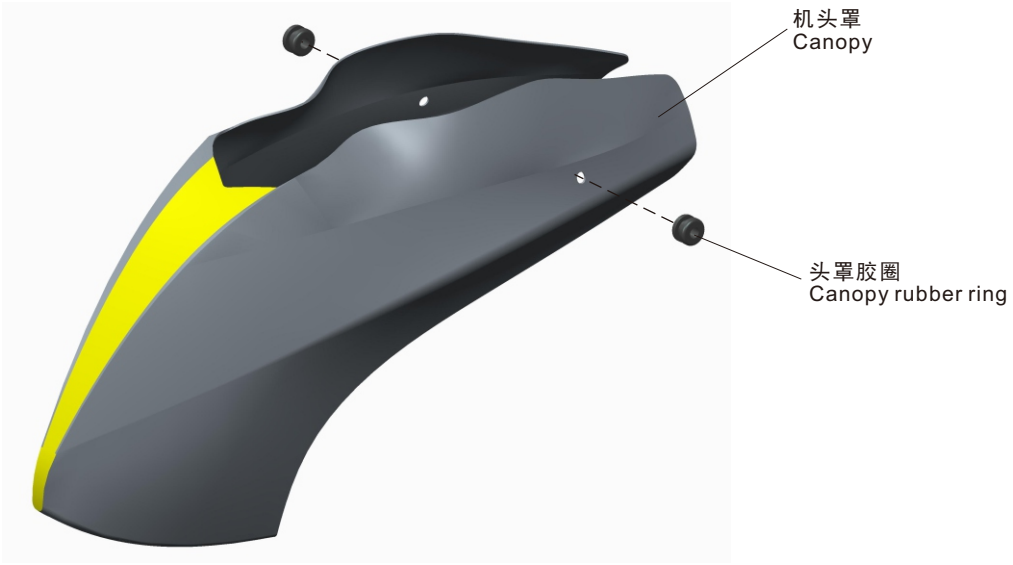

电池板导轨座
Battery guide block support
电池板固定座
Battery plate buckle mount
碳纤电池板
CF Battery plate
铝套
Aluminum sleeve
φ2Xφ5X3
沉头内六角螺丝
Countersunk head
socket screw
M2X6
沉头内六角螺丝
Countersunk head
socket screw
M2X6
电池
Battery


电池绑带
Battery Velcro


杯头内六角螺丝
Hexagon socket head
cap screws
M3X20
防松螺母M3
Locknut
赛钢垫片
POM washer
碳纤主旋翼
CF Blades


防松螺母M2
Locknut
碳纤尾旋翼63mm
CF Tail Blades 63mm
杯头内六角螺丝
Hexagon socket head
cap screws
M2X12


无刷马达
Brushless motor
无副翼陀螺仪
Flybarless module
锂电池
Battery
无刷电调
ESC(Speed controler)


机头罩
Canopy
头罩胶圈
Canopy rubber ring