

KNIGHT 600E

More Power Better Efficiency



Instruction Manual



- * Hardened hollow main shaft.
- * Dual pin tail rotor pitch mechanism
- * Thrust bearings built in tail grips.
- * CCPM swash controls
- * Quick to build
- * Hardcore 3D of box
- * Fully Ball-Raced.
- * ± 12.5 degree collective pitch range for extreme 3D
- * Extra tough frame design.
- * High Torque Brushless Motor.
- * High efficiency direct belt drive system.
- * High CG design.
- * Push-pull control.

Gear Ratio: 1:8.7:4.8

Blade Length: 600-620mm

Take-off Weight: 3.3kg

- *加硬空心主轴
- *两点支撑尾螺距机构
- *尾桨夹含压力轴承
- *CCPM 控制系统, 反应更快
- *拆装维修容易
- *无需升级即具备全面3D飞行能力
- *全方位轴承润滑
- * ± 12.5 度大桨螺距范围
- *超强主架结构
- *超大扭力无刷马达
- *高效传动系统
- *高重心设计
- *双推拉控制系统

传动比: 1:8.7:4.8

大桨: 600-620mm

起飞重量: 3.3kg

As we continue to improve our products. This manual may not reflect all recent product amendments. Please refer to the received product and check our website: www.compassmodel.com

由于产品不断更新, 此说明书或有错漏, 请参照实物及我公司网页: www.compassmodel.com. 不便之处, 敬请原谅.

Introduction 简介

Thank you for choosing the Knight 600E and welcome to Compass Model. The Knight 600E has been carefully designed to offer out standing flight performance and includes many innovative features along with proven components to provide you with a model which is accurate, durable and agile. The 600E was developed with input from leading pilots to meet the requirements of the most demanding aerobatic flight styles, both now and in the future. The control system incorporates a closed loop push-pull system for all swash plate linkages and optimum ccpm geometry to ensure unrivalled control accuracy and rapid head response. Similarly, the frame lay out has been designed to create an extraordinarily rigid platform which is both durable and further improves control accuracy. This compact layout features light weight and raised centre of gravity. Please read the complete manual before assembly, which has been designed to enable you to get the best from your model - please take careful note of all precautions and assembly tips. Please also keep the manual as a reference for part numbers and reassembly following maintenance.

多谢选用康柏模型公司产品。KNIGHT600E是康柏团队总结了以往产品的优劣并进一步创新的杰出作品。象康柏所有产品一样，KNIGHT600E无需升级即具有超凡3D性能。控制精准兼且灵敏，磨损小，寿命长。本机采用对称CCPM双推拉控制系统，轻强主架结构，高重心设计。采用超大扭力无刷电机。无论在马力，强度，控制方面均为同类别产品佼佼者。请保存次说明书以备日后使用。

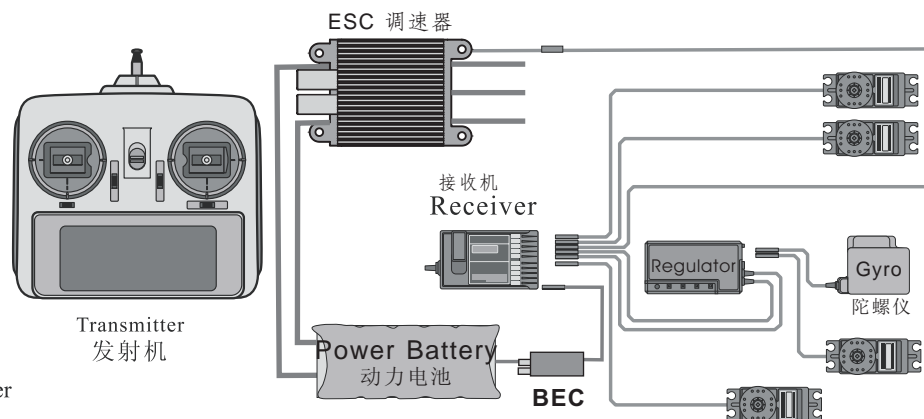
Necessary Items Not Included In this Package 必备物品

以下必备物品用户需自行购买，本产品没有提供

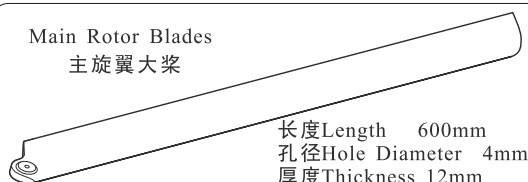
In order to operate this model, you need to purchase the following items which are not included in the package.

直升机专用遥控设备及动力电池 Radio For R/C heli models and Power batteries

- 请使用直升机模型专用遥控器
伺服器4个，陀螺仪一个，变压器(BEC)
一个。
- 使用方法请参照遥控器说明书。
- **This model requires radio for
R/C heli with 4 servos,
1 Gyro,
and 1 BEC.**
- For more information of the radio, please refer
to the radio sets manual.



Main Rotor Blades 主旋翼大桨



Loctite Loctite 胶水



Grease 润滑油



Instant Glue 厌氧胶水



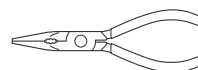
六角扳手 (1.5mm, 2mm, 2.5mm, 3mm) Hexagon wrench (1.5mm, 2mm, 2.5mm, 3mm)



Cutter Knife 裁纸刀



Needle Nose Pliers 尖嘴钳



Screw Driver 螺丝刀



The Meaning of Symbols 标志含义



Mishandling due to failure to follow these instructions may result in damage, personal injury or danger.
疏忽此项说明可能导致严重损失，严重身体伤害，造成危险。



Blue Thread lock should be applied.
此处应采用蓝色螺丝固定剂

Warning 重要声明

This radio controlled helicopter model is not a toy. It is a sophisticated piece of equipment for hobby use only. Improper operation or assembly of this product can cause serious injury or death for both operator and spectators. This product is not recommended for use by children.

Manufacturer and Sellers assume no responsibility for using and operating this product. The customer must take full responsibility for the safe operation of this product.

遥控直升机并非玩具,而是精密复杂的休闲产品。组装,使用或操作不当都会造成严重财产损失,自己或他人身体伤害,甚至死亡。请详细阅读本说明书,切勿忽视安全。

制造商,销售商无法对使用者由于组装,维护,操作及使用不当造成的损失或伤害负任何责任。产品一经售出,本公司将不负任何操作和使用上的安全责任。

AMA INFORMATION

We strongly encourage all prospective and current R/C aircraft pilots to join the Academy of Model Aeronautics. The AMA is a non-profit organization that provides services to model aircraft pilots. As an AMA member, you will receive a monthly magazine entitled *Model Aviation*, as well as a liability insurance plan to cover against possible accident or injury. All AMA charter aircraft clubs require individuals to hold a current AMA sporting license prior to operation of their models. For further information, you can contact the AMA at:

Academy of Model Aeronautics
5151 East Memorial Drive
Muncie, IN 47302

我们强烈建议所有遥控飞行爱好者加入Academy of Model Aeronautics(简称AMA)。AMA是一个为遥控飞行爱好者提供服务的非盈利性组织。AMA的会员会收到该会的月刊*Model Aviation*,并享有有关遥控飞行的保险。所有AMA标示的俱乐部都会要求会员拥有AMA牌照。详细资料请参照:

Academy of Model Aeronautics
5151 East Memorial Drive
Muncie, IN 47302

Safety Notes 安全注意事项



Operate in safe areas. 在安全场所飞行

Do not fly r/c helicopter model near buildings, high voltage cables, trees or other obstacles. Do not fly r/c helicopters in poor weather such as rain, snow or fog. Do not fly r/c helicopters over crowds of people, cars or other property. Flying field should be a smooth, clear and flat field.

遥控飞行时远离建筑物,高压线,树及其他障碍物。切勿在雨,雪,雾等不良天气下飞行。切勿在人群,车辆及建筑上空飞行。飞行场地一定要平整,开阔,视野清。



Obtain assistance from experienced pilots 避免独自操控

Certain level of skill is required to operate R/C helicopter. The Guidance provided by experienced pilots is valuable and sometimes necessary for assembly, tuning, and flights. It is also recommended that you practice with a computer based flight simulator.

遥控直升机是相对较为复杂的休闲产品。操作遥控直升机需要一定技术及经验。专家在装配,调整,及飞行上的帮助是非常必要的。并强烈建议在使用本产品前先在电脑模拟器上练习熟练。



Keep a safe distance when operating 保持安全距离

During operation, the main blades and tail blades on a r/c helicopter spin at a very high rate of speed. The blades are capable of inflicting serious bodily damage or injury to yourself or others. Keep the model at a safe distance away from yourself and other people. Never take your eyes off the model whenever the blades are spinning.

遥控直升机启动以后,主旋翼尾旋翼高速旋转,可以给自己或他人身体造成严重伤害甚至死亡。所以,在操作过程中务必保持安全距离,时刻注意模型动向及姿态。



Do not expose to rain or moisture 远离潮湿环境

R/c helicopter models are comprised of many electrical components. Water, moisture or other contaminants can cause failure or malfunction of those components, and result in crashes or accidents. 模型直升机包含有很多电子设备。请远离潮湿环境以免水气损坏电子设备造成危险。



Keep Away From Heat

Caution

远离热源

R/c Helicopters are made up various forms of plastic. Extreme heat can introduce damage or deformation of those plastic parts. Do not store the model near any source of heat such as an oven or heater. Do not store in a car under severe insolation.

直升机包含有很多塑料元件. 务必远离热源, 切勿暴晒, 以免塑料性质发生改变导致危险.



Frequency Check

Caution

避免同频干扰

Make sure there is no same frequency been used in the operation area. Frequency interference can cause crash and even serious personal injury.

同频无线电干扰会导致飞行事故及人员伤亡. 务必在飞行前确认飞行范围没有同频干扰.



Proper Maintenance

Caution

正确维护

Only use genuine parts to replace or repair this model. Always check if there is any damage or looseness of parts on the model before and after any flights. Replace worn or damaged parts before the flight.

飞行前后务必检查有无零件损坏或过度磨损. 及时更换有问题的零件. 务必使用康柏模型提供的配件.



Operation under good condition

Caution

操作状态良好

Flying a r/c helicopter requires good mental attention. Do not fly when you are tired, sick or under the influence of alcohol. Operation under bad mental or physical condition may cause danger to you or others.

只在良好状态下操作, 切勿在疲劳, 酒醉, 生病或精神不集中的情况下操作.



Keep this product away from children

Caution

远离儿童

R/C helicopters are not toys. It must not be used without adult supervision.

本品并非玩具. 储藏, 维修, 使用务必请远离儿童, 免招危险.

Standard Equipment 标准装备

This model is packed according to assembling steps. Do not open all the bags at one time. Open only one bag for each step of assembly when building. 本产品是按照装配步骤依次包装. 不要一次打开所有包装袋. 每一步骤请只打开相关的包装袋。



Canopy



Frame Set



Rotor Head



Long items



Step 1



Step 3



Step 4



Step 5



Step 6



Step 9



Decal

ORDER OF SWITCH ON/OFF 启动/关闭顺序

When switching the R/C system ON or OFF, always proceed in the following order:

When switching ON:

Place the throttle control stick into motor stop position.

Turn on the transmitter.

Turn on the receiver.

Connect the motor battery.

Operate your model.

When switching OFF:

Turn off the motor (place the throttle control stick into motor stop position).

Wait until the rotor head has stopped spinning.

Disconnect the motor battery.

Turn off receiver.

Turn off transmitter.

在启动或关闭遥控系统时务必按照以下顺序进行：

当启动遥控系统时：

油门控制杆方在最低位置。

打开遥控器。

打开接受机。

接通马达电源。

开始飞行。

关闭遥控系统时：

油门控制杆方在最低位置。

等到旋翼停止转动。

切断马达电源。

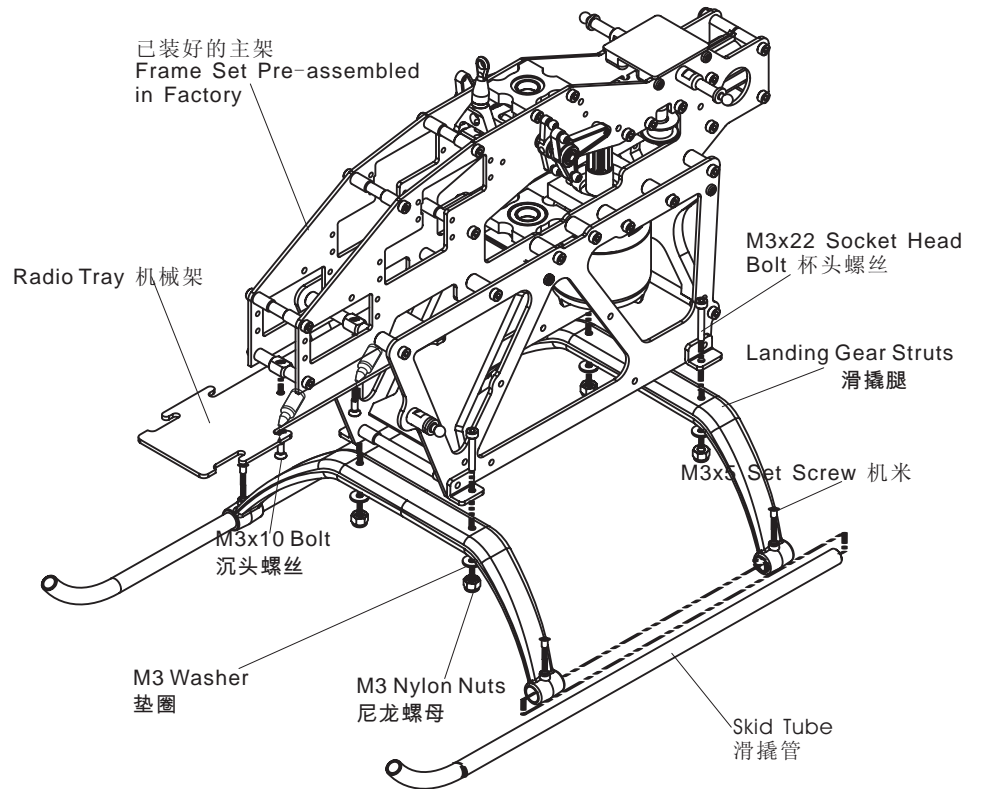
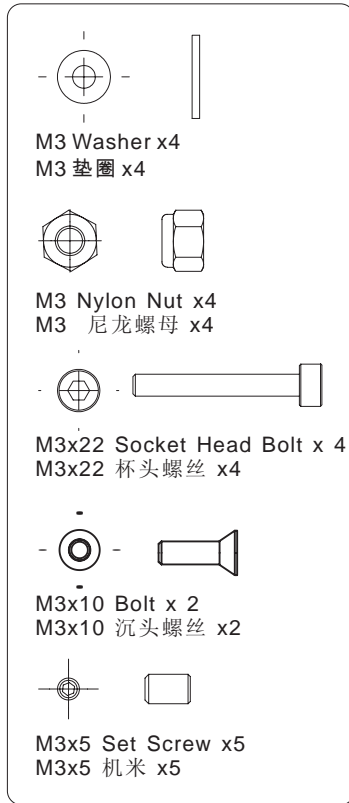
关闭接受机。

关闭发射机。

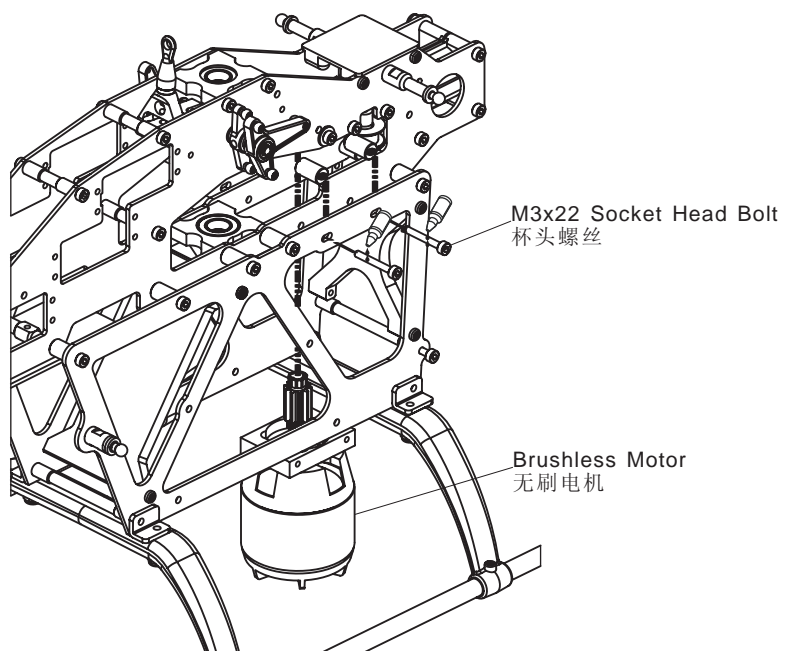
Assembling 组装

- * Always apply blue Loctite when fixing Bolts on Metal parts. 所有金属元件上的螺丝需用蓝色厌氧胶加固.
- * Always apply green Loctite where Bearings fit in Metal parts. 所有轴承位需用绿色厌氧胶加固.
- * Do not over tight Self-Tapping Bolts into plastic, otherwise plastic part could be damaged. 切勿过分收紧塑料元件上的自攻螺丝以免破坏塑料元件.

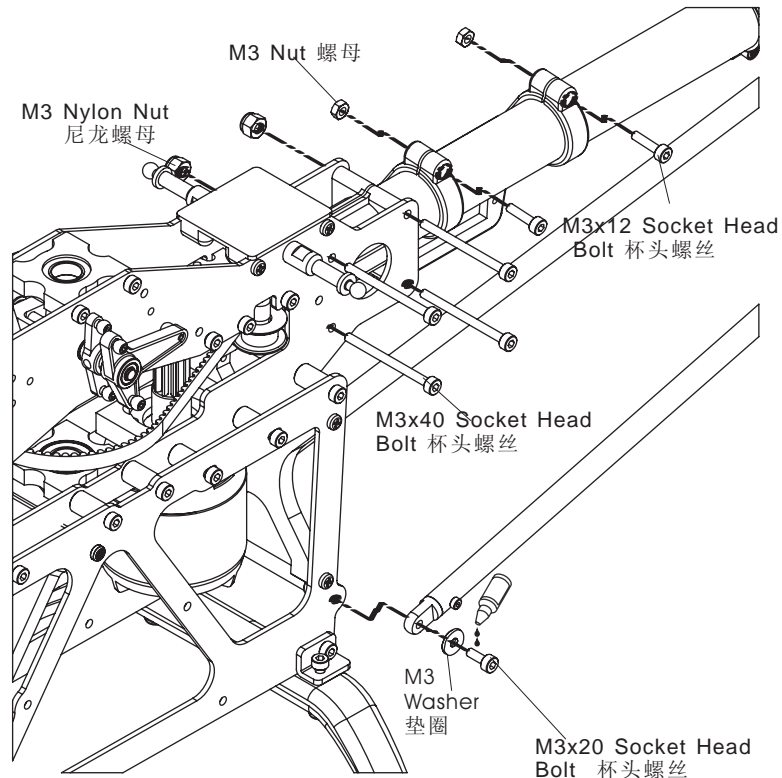
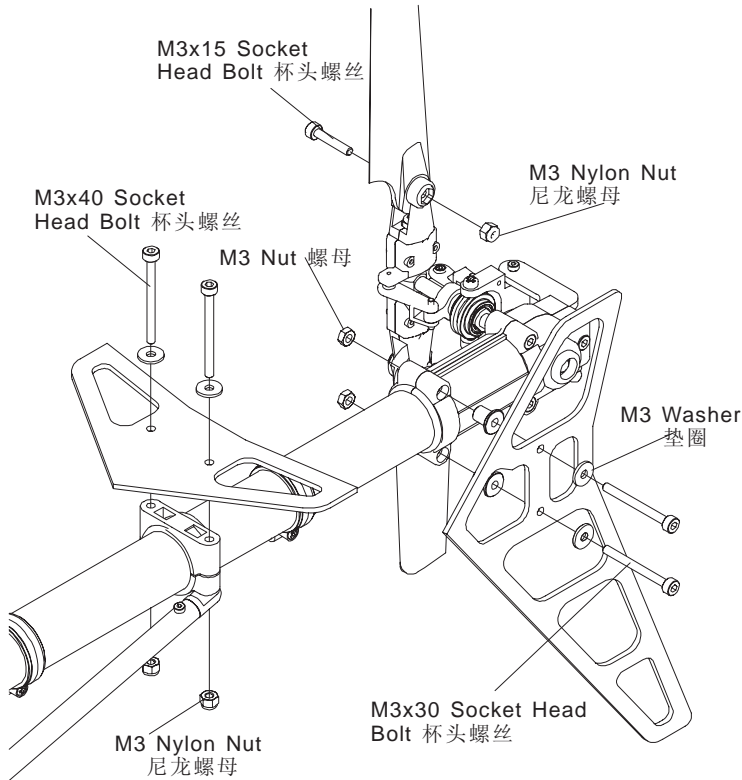
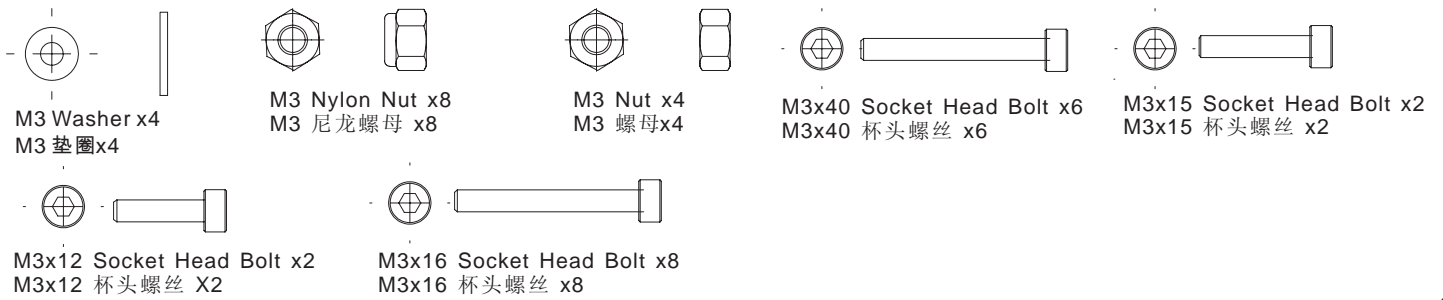
Step 1 Landing Gear Installation 脚架的装配



Step 2 Motor & Pinion Installation 电机的装配



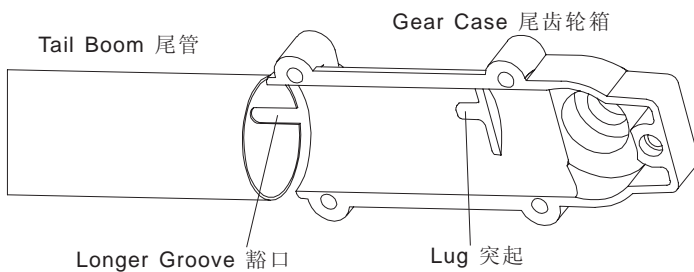
Step 3 Tail Boom, Tail Boom Brace & Tail Rotor Installation 尾部的装配



Caution

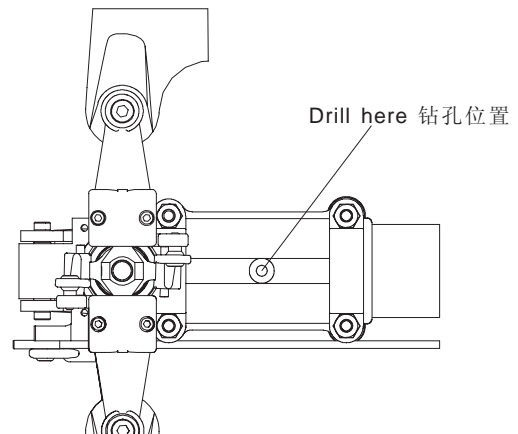
Crimping damages the tensile cords and will result in premature failure.

勿折皮带, 以免引起损坏.



There are 2 grooves in the Boom. There is a lug inside the Tail Gear Case. Line up the longer groove with the lug when assembling.

装配时, 将尾管上的豁口对准尾齿轮箱内的突起.



To avoid any tail gear case rotation drill a hole in the boom through the guide hole on the tail gear case and fix it using a bolt.

也可在尾齿轮箱指示位置钻孔, 并以螺丝穿入以防止尾管转动.

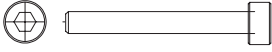
Step 4 Main Gear Installation 齿轮的装配



M3 Nylon Nut x1
M3 尼龙螺母 x1



M3x25 Socket Head Bolt x 1
M3x25 杯头螺丝 x1



M3x10 Socket Head Bolt x 1
M3x10 杯头螺丝 x1

Note: The Mast Collar is installed underneath the upper bearing block.
主轴挡块装在主架轴承座下方。

M3 Nylon Nut
尼龙螺母

Mast Collar
主轴挡块

M3x10 Socket Head Bolt
杯头螺丝

Upper Bearing Block
轴承座

M3x25 Socket Head Bolt
杯头螺丝

Rotate the tail drive belt 90° to the right before mounting it onto the main pulley. It is extremely important to install the belt in the proper direction to insure correct rotation of the tail rotor blades.

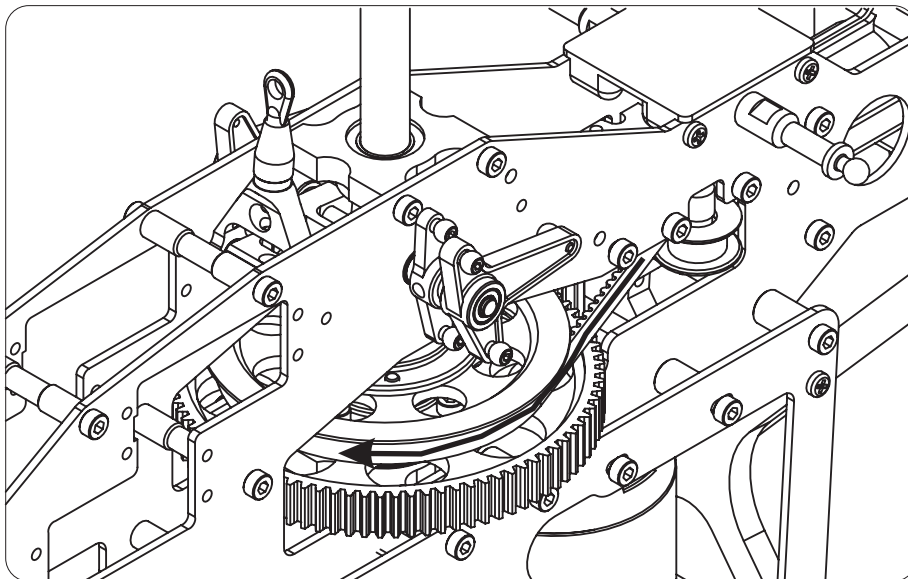
装配同步带时需拧转90度。



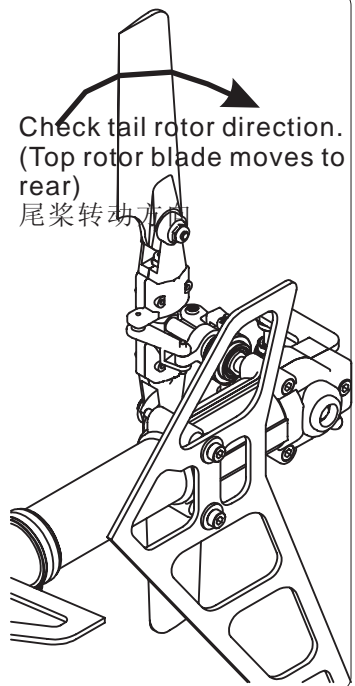
主轴挡块务必锁紧以免主轴飞行时上下移动。

Caution

Make sure mast lock collar is tightened securely onto the mast. Double-check to make sure the mast lock collar is properly seated onto the mast and main shaft can not move up or down.



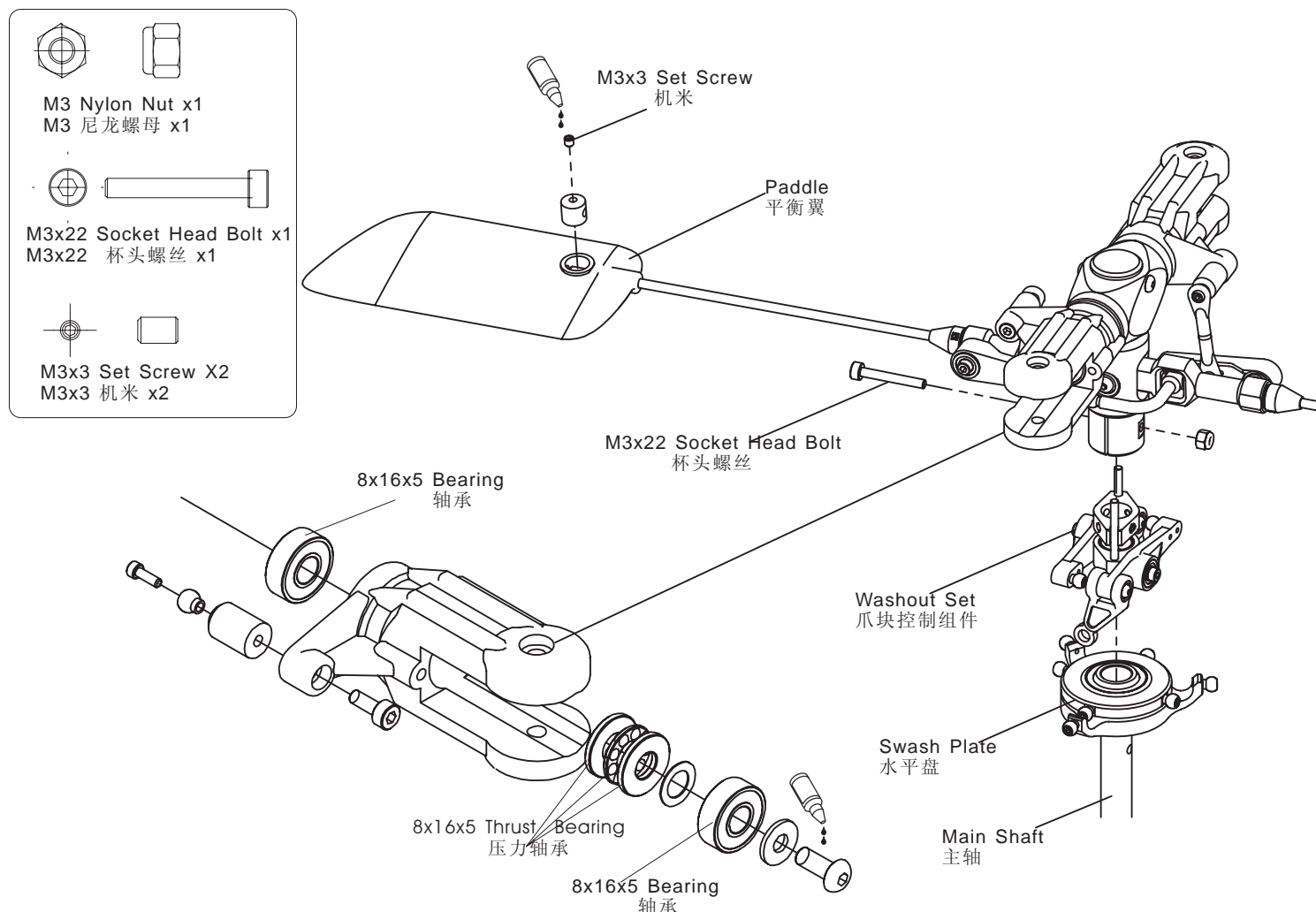
Check tail drive belt direction.
同步带运行方向



Check tail rotor direction.
(Top rotor blade moves to rear)
尾桨转动方向

If the tail rotor rotates incorrectly, simply pull out the main shaft and twist the belt in the other direction
当同步带如上图方向运行时,尾桨应向后方转动,如右上图示.如尾桨转动方向相反,则同步带的安装方向错了。

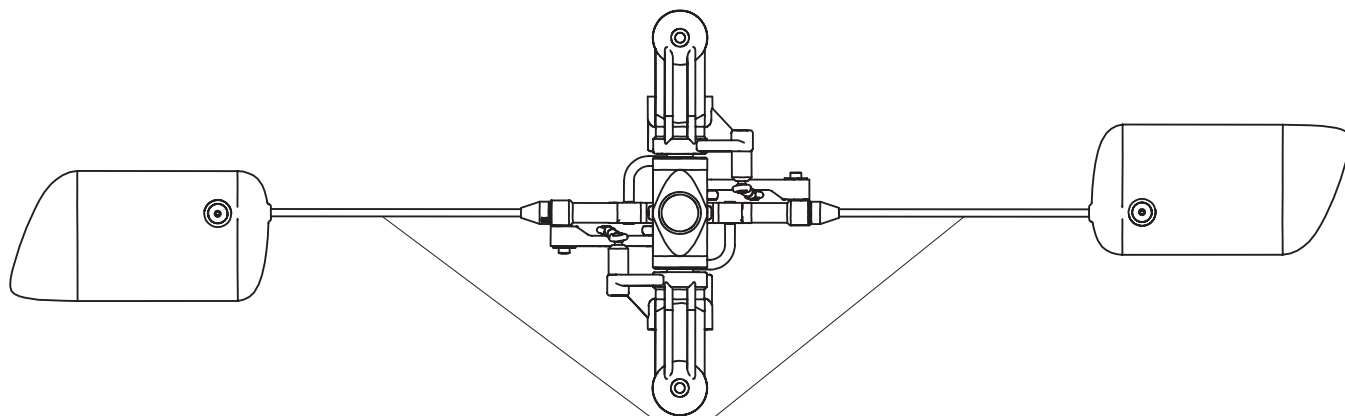
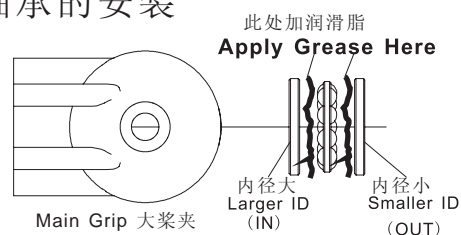
Step 5 Rotor Head, Washout & Swashplate Installation 旋翼头的装配



Thrust Bearing Direction 压力轴承的安装

Main grips are factory preassembled, in case of reassembling; be sure to note correct placement of large/small I.D. washers during assembly.

大桨夹已经事先组装好了, 如果想自己重新检查, 在重新组装时请注意压力轴承的安装方向。



Adjust so that each side has exactly the same length 两边距离要一致

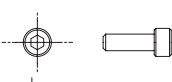
Step 6 Servo & ESC Installation 舵机的装配



M2.5 Washer x16
M2.5 垫圈 x16



M2 Nut x7
M2 螺母 x7



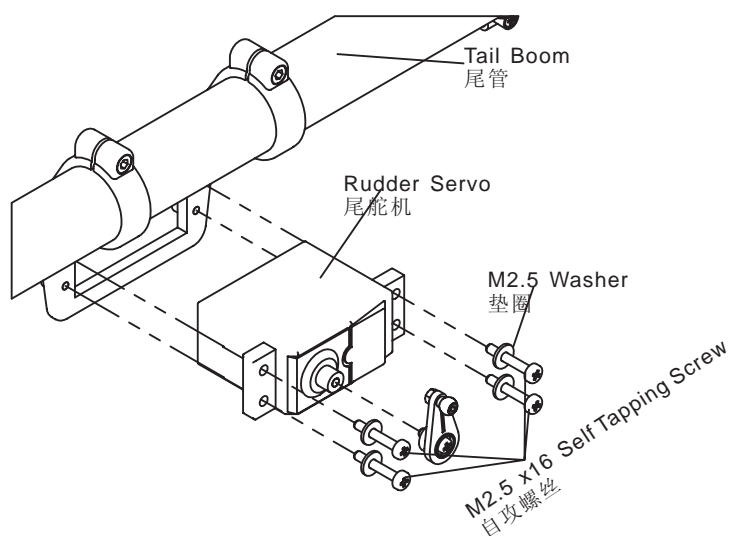
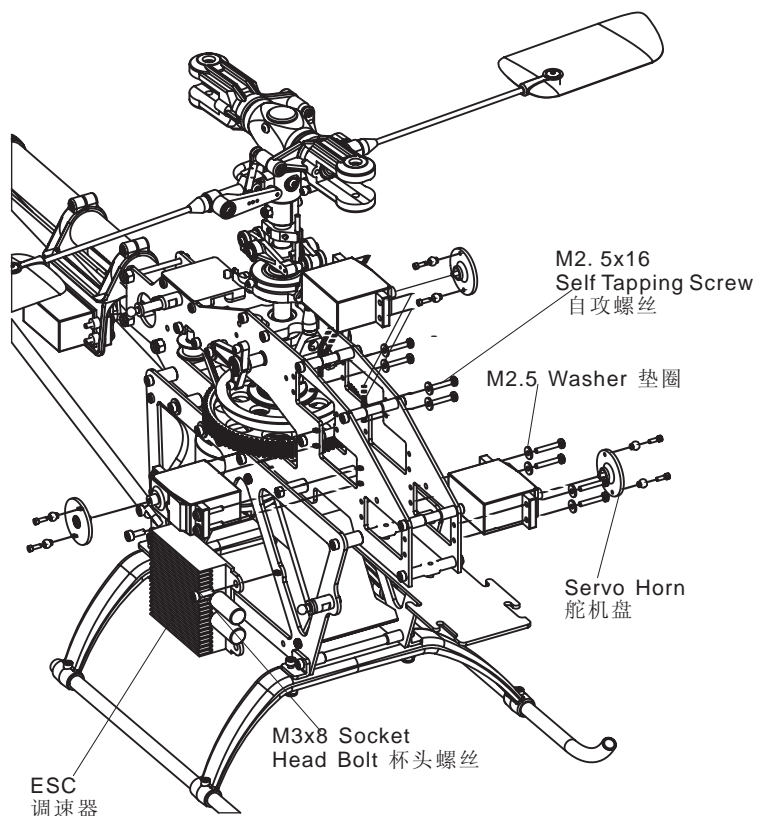
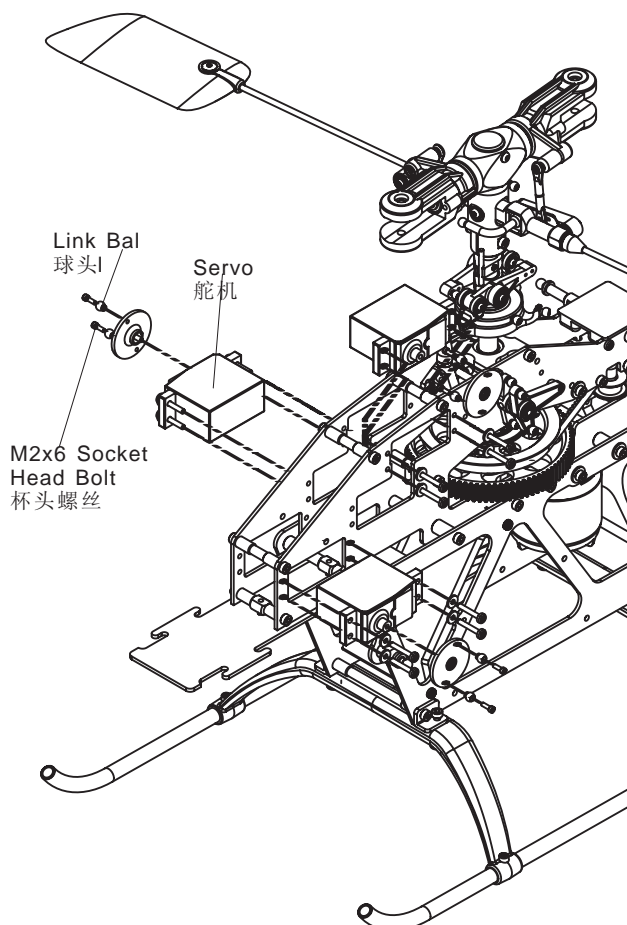
M2x6 Socket Head Bolt x7
M2x6 杯头螺丝 x7



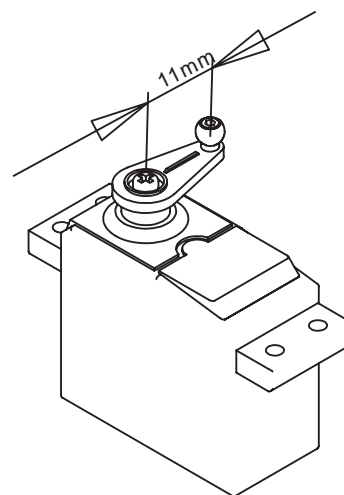
M3x8 Socket Head Bolt x2
M3x8 杯头螺丝 x2



M2.5x16 Self Tapping Screw x16
M2.5x16 自攻螺丝 x16

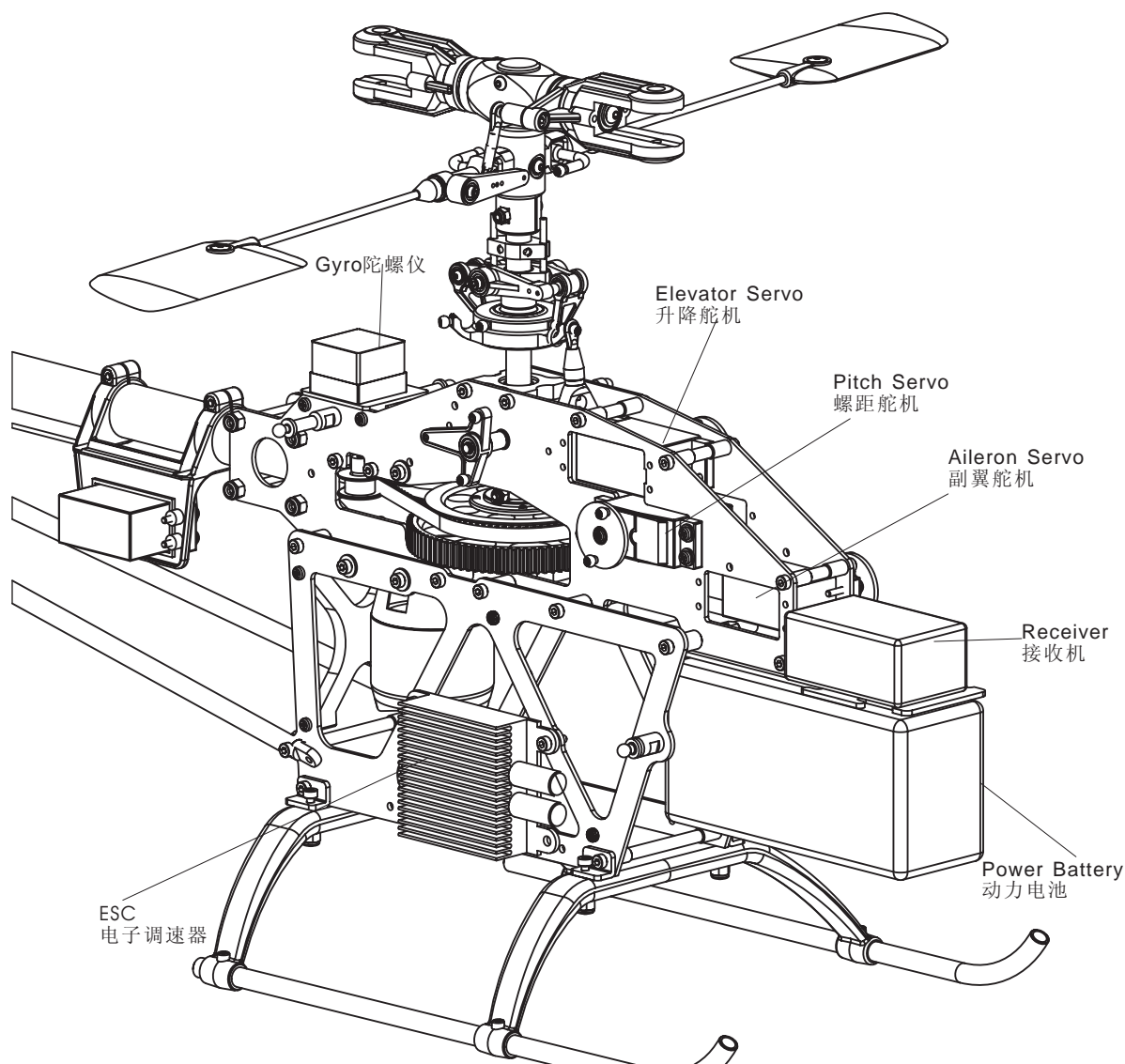


Rudder Servo Installation
尾舵机的装配

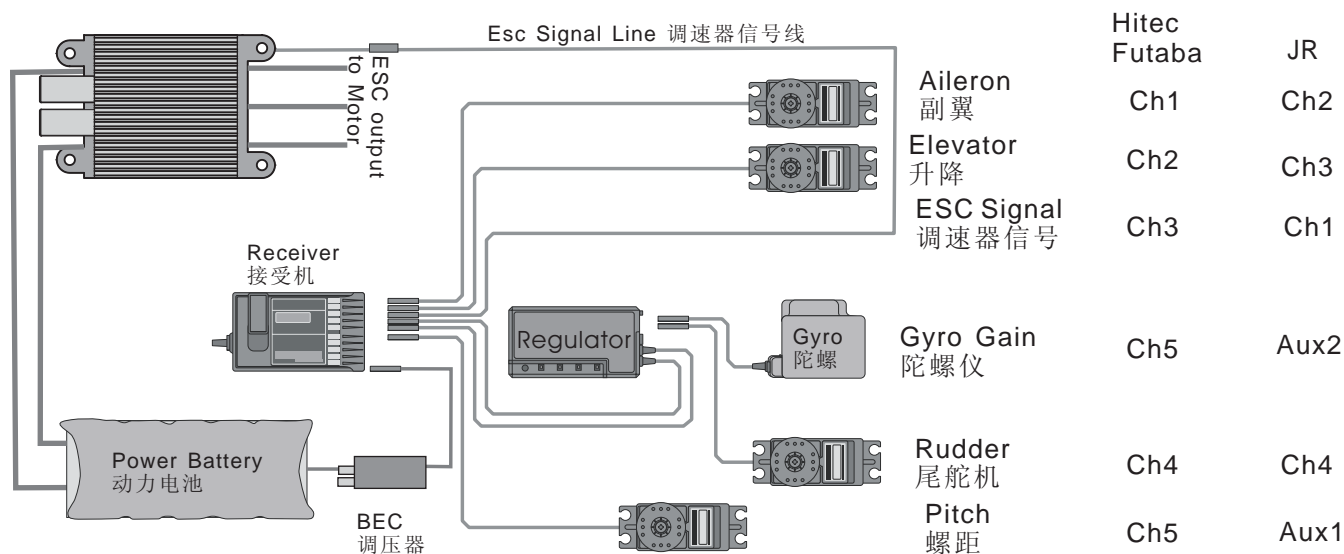


All control balls should be set to **11mm** from the center.
所有舵机控制臂上的球头应设置在距中心11毫米的距离上。

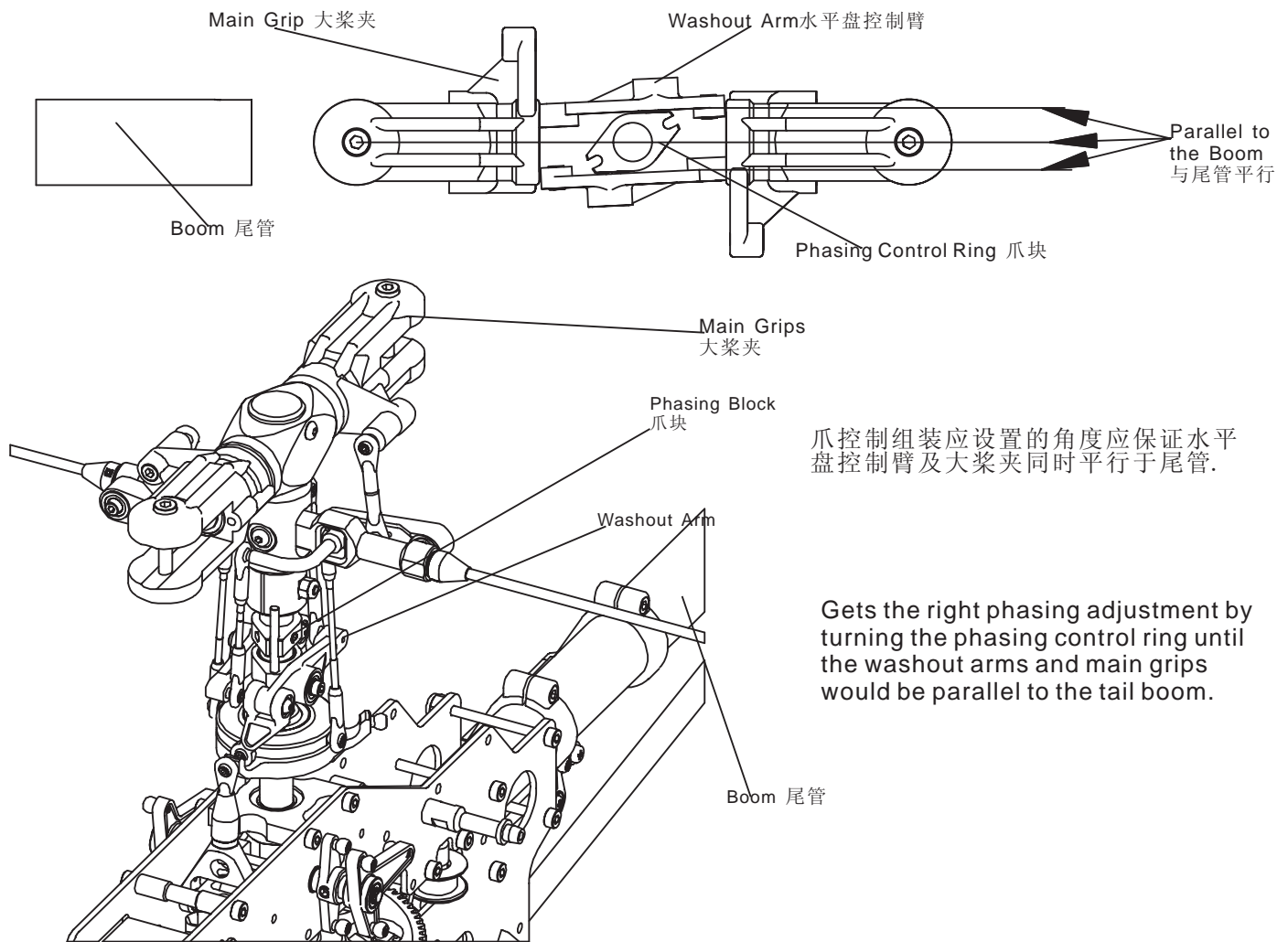
Step 7 Electronic Devices Arrangement 电子设备的装配



Please check first your radio and ESC manuals before connecting these electronic devices as shown below.
以下电子设备连线前请详细参阅遥控器和调速器的说明书。



Step 8 Phasing Control Ring Adjustments 相位角度



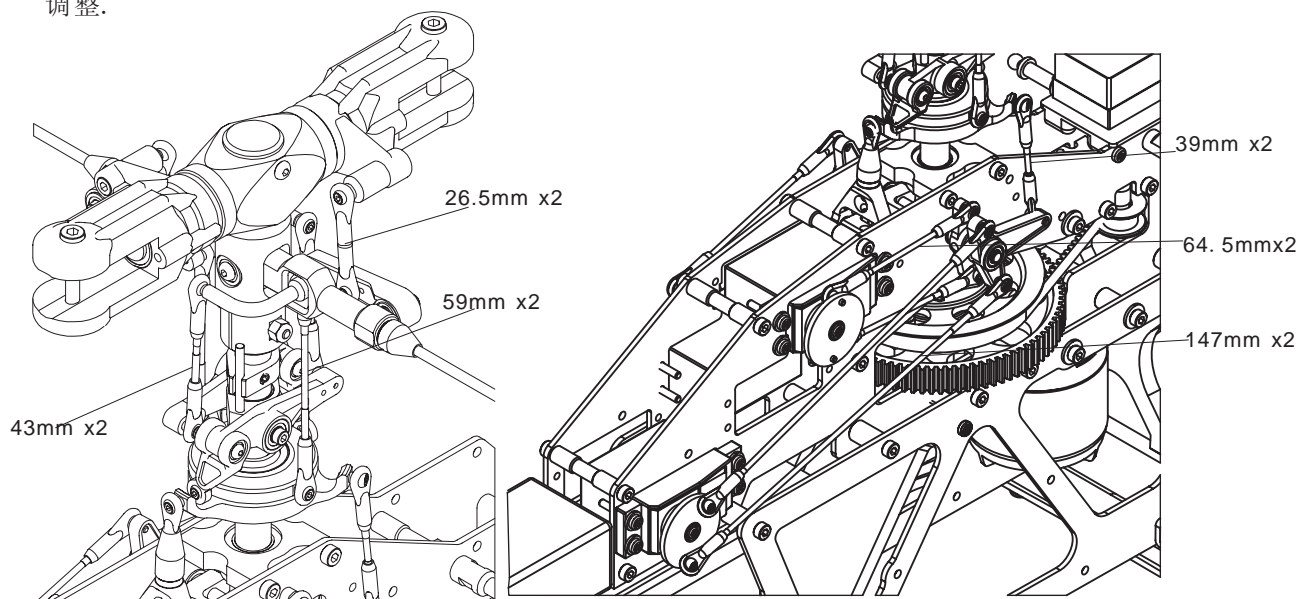
Step 9 Linkage Length Adjustments 连杆长度

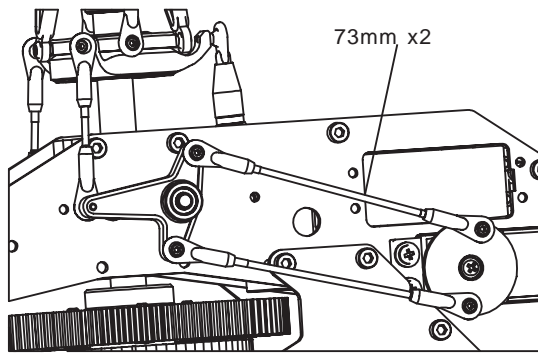


The following linkage lengths indications are basic values which could vary depend on used servos.

Some fine adjustments are still needed in following setup steps.

所有连杆长度测量方式如左图所示。以下所示连杆长度仅为初步设定, 后续步骤中仍需进一步精确调整。

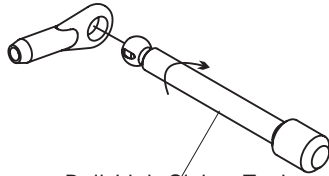




Caution

Do not apply plier to resize Ball links. Pliers could cause hidden damage to ball links and hence result in failure when operation.

切勿用钳子挤捏球头接头, 钳子会造成球头接头的潜在伤害从而导致飞行事故.



Ball Link Sizing Tool
球头接头工具

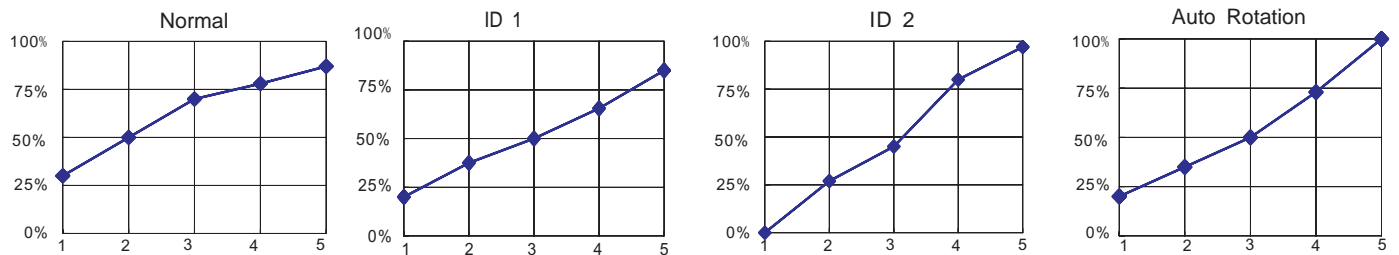
If Ball Links are too tight, to resize tight ball links only use the Compass Model ball link sizing tool (E-XQT-01)

The Ball Link Sizing Tool is very sharp, use it with caution, do not over size Ball Links, and do not adjust with pliers.

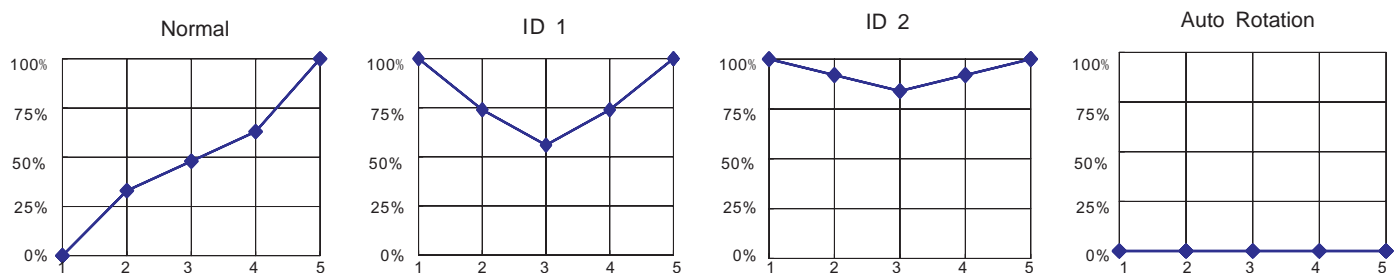
如果球头接头太紧, 请采用如右图的球头接头工具扩大球头接头尺寸. 切忌用钳子挤捏, 以免造成潜在危险.

Step 10 Radio Setting 遥控器的设定

Pitch Curve 螺距曲



Throttle Curve 油门曲线



Pitch Setting 螺距范围

	Normal	ID1 Sport	ID2 3D	Autoration
High Pitch	9~10	10	12	12
Hovering	5~5.5	4~5	0	N/A
Low Pitch	-4	-6	-12	-7

Swash Type Setting 水平盘混合比设定

JR		Futaba
Swash Type		SWH
S3 120		SR3
Aile	Elev	Pitch
65%	65%	65%

For any radio setup please refer to your radio instructions first.

The data's shown above provide some general suggestions for radio setting. This information varies according to types of main blades, motor, pinion gear and battery pack. Adjustment has to be made during the actual flight. 以上设定仅为参考, 请根据实际情况及要求自行调节.

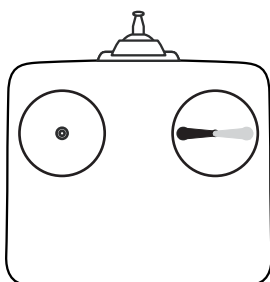
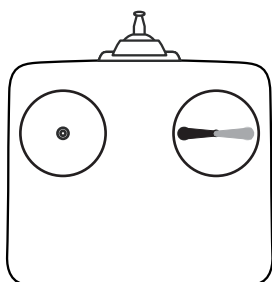
Step 11 Servo Direction Check 舵机方向的检查

Turn on the radio, position the heli tail point to yourself. Make sure radio is set to 120 degree CCPM mode. Move the stick and check the reaction of the Swash Plate, Throttle and Tail Pitch Plate. Adjust radio settings accordingly.

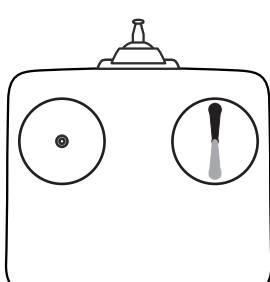
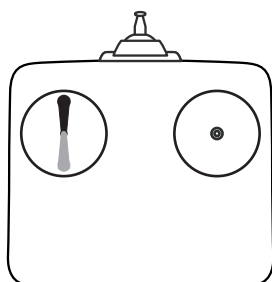
打开遥控器, 将直升机尾部指向自己. 注意将遥控器设为120度ccpm模式. 如下图摇动控制杆检查各个舵机运动是否正常.

Mod 1

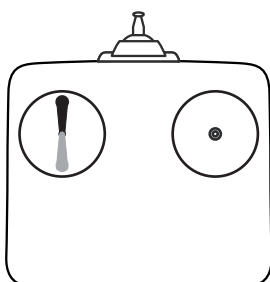
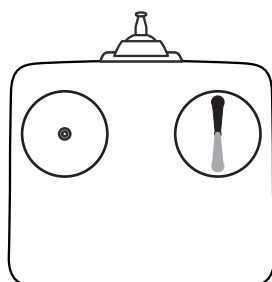
Mod 2



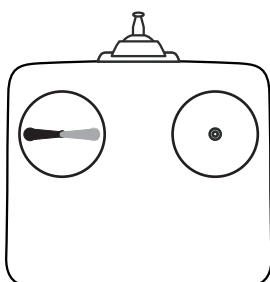
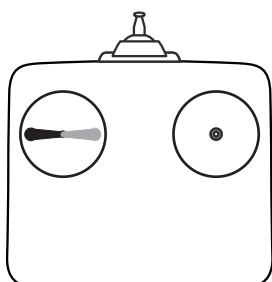
Aileron Check 副翼检查



Elevator Check 升降检查

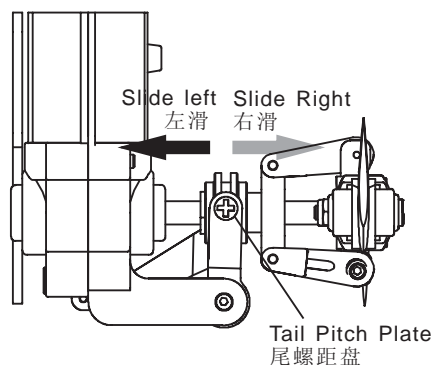
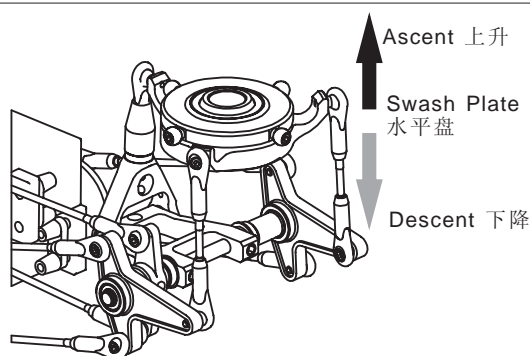
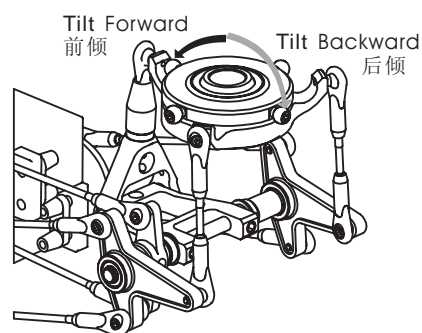
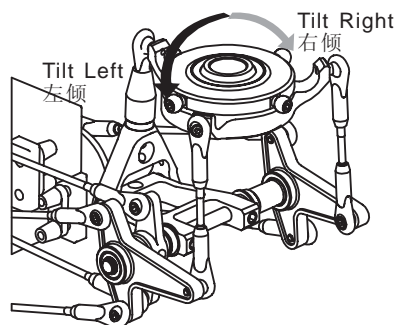


Pitch Check 螺距检查

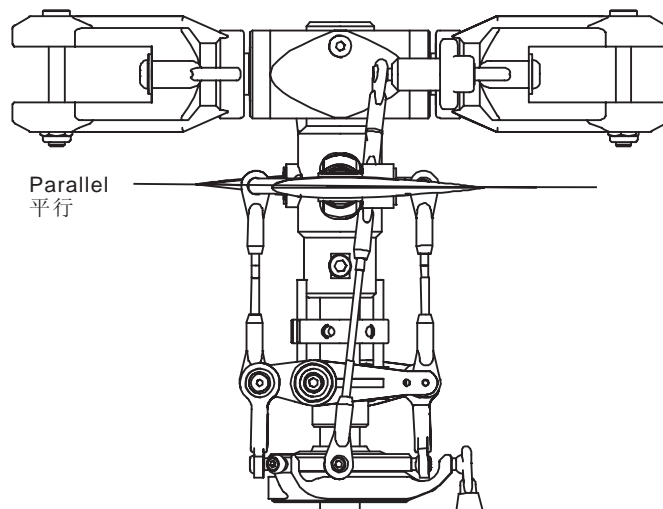
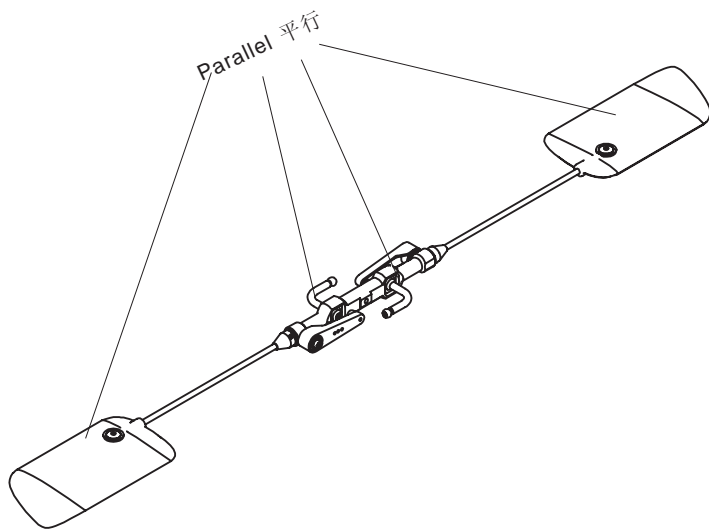


Rudder Check 尾舵检查

Swash Plate Reaction
水平盘反应



Step 12 Setup 设定



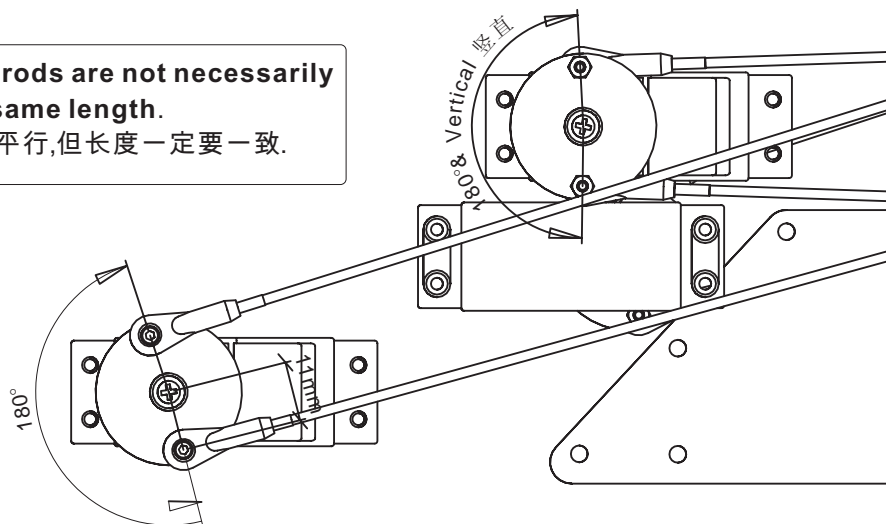
Make sure the Flybar Control Arm and Paddle are in line as in the diagram. Then start to setup.
保证平衡翼控制臂和平衡翼相互平行, 开始设定.

A) Turn on the radio, set throttle to middle position for 0 degree. Use the subtrim in radio program to adjust all the servo to get control horn to the right angle.

打开遥控器, 在0度螺距时, 油门控制杆在中位. 用遥控设定功能中的 "Subtrim" 微调各个舵机使其达到下图的角度

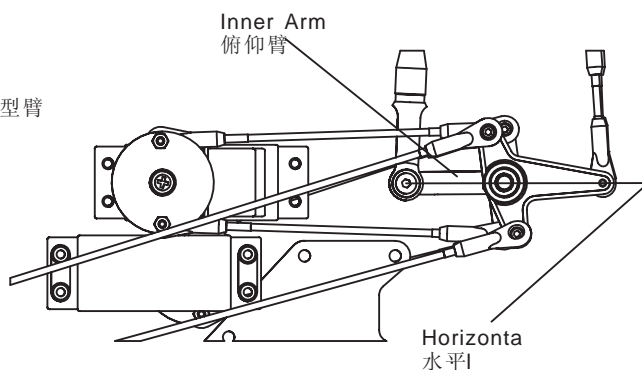
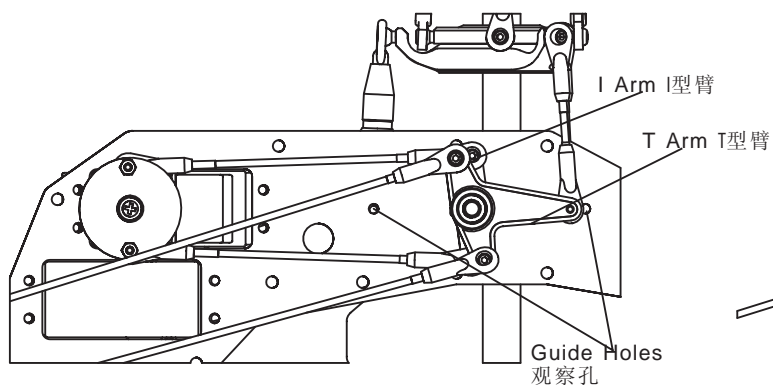
Note: The 2 Push-pull link rods are not necessarily parallel, but must be the same length.

注意: 双推拉两个连杆不一定平行, 但长度一定要一致.



B) Next is to adjust the link from servo to the T Arm and I Arm so that the T Arm is Horizontal and the Inner Arm is Horizontal. Use the 2 Guide Holes on the frame to make sure the 2 Arms being horizontal.

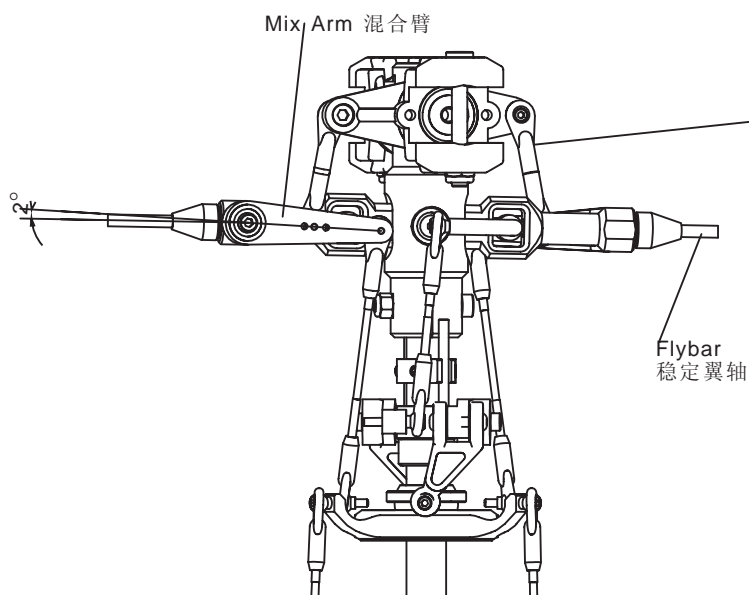
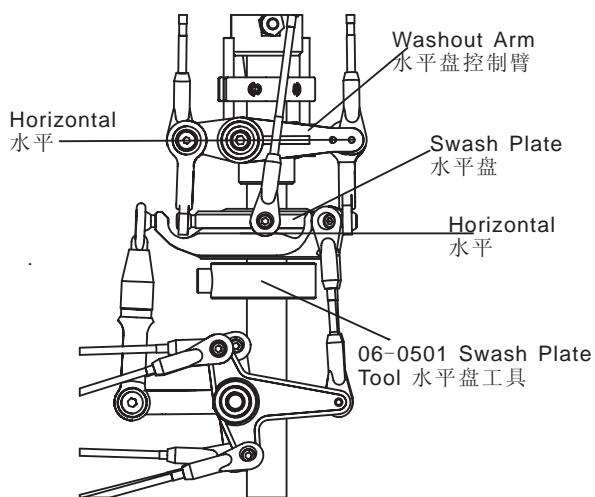
下一步, 调节连杆长度使T型臂及俯仰臂水平. 可以用主架上的观察孔确认T型臂及俯仰臂是否水平.



C) Next adjust the links from T Arms to Swash Plate to level Swash Plate. A compass Swash Plate Tool can be applied here as a guide.
调节T型臂与水平盘之间的连杆使水平盘水平。此步骤中可以采用水平盘工具作为帮助。

D) Set the Washout Arms horizontal.
设定水平盘控制臂水平。

E) Set Mix Arm 2° downwards to Flybar
将混合臂设为与稳定翼成2°角度。



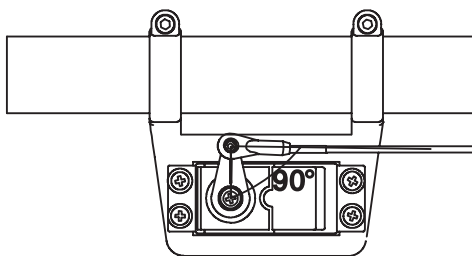
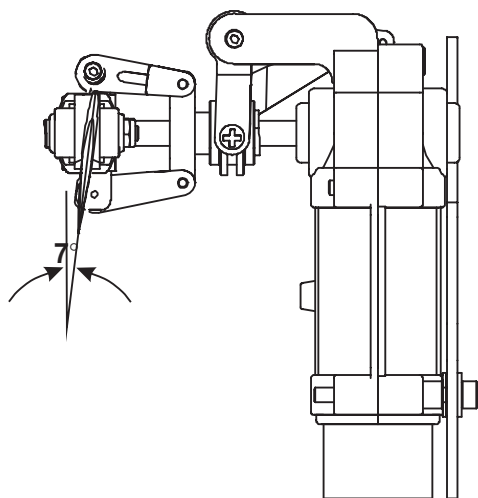
F) Install the main blade and set the Main Blade to 0° pitch. 2 Ball Links might need to be cut shorter to get the right pitch.

装好大桨后，调节连杆长度使大桨设为0°螺距。此步骤中，有两个球头接头可能要切短以便设定。

G) Carefully read the manual of ESC (Brushless Motor Speed Controller), Set up the ESC accordingly.
详细阅读电子调速器的说明书，然后设定好调速器。

Note: Set the timing to Middle.

注意：调速器设为中进角。



H) At Rudder middle stick, set Rudder Servo 90 degree to the tail link. And set Tail Blade to 7° pitch.

调节连杆使尾舵机摇臂与连杆成90度时，尾桨螺距为7度。

Step 13 Canopy Installation 头罩的装配

Drill holes after checking correct position
确定位置后再钻孔。

This Mark is only a guide, please put the canopy on the heli frame to obtain the exact position before drilling the hole here.

!头罩所示孔位仅作为指示。务必将头罩装上机身以精确确定孔位。

Cut along this line
沿此线切除

Drill a hole on this mark.
在此标记处钻孔

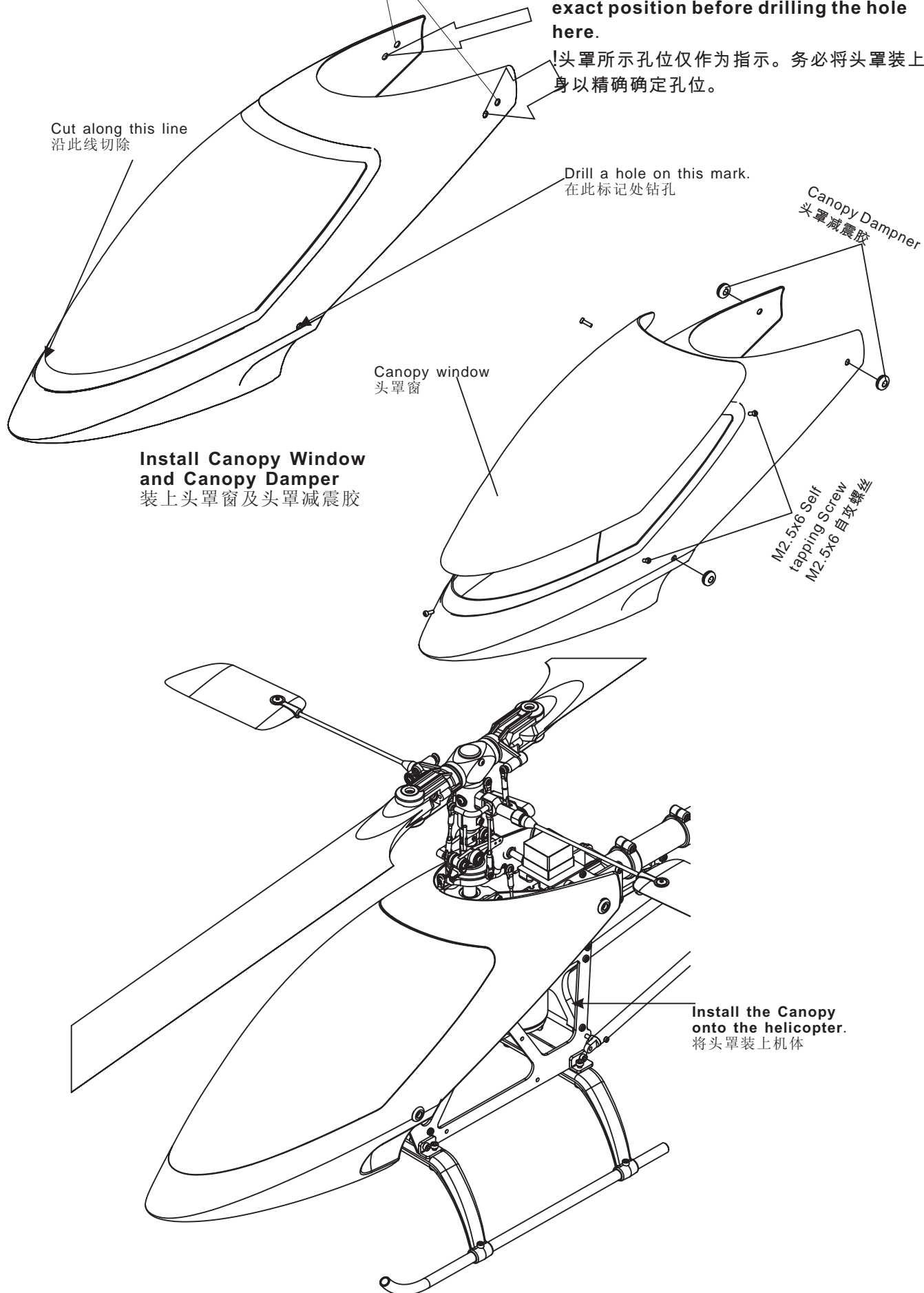
Canopy Damper
头罩减震胶

Canopy window
头罩窗

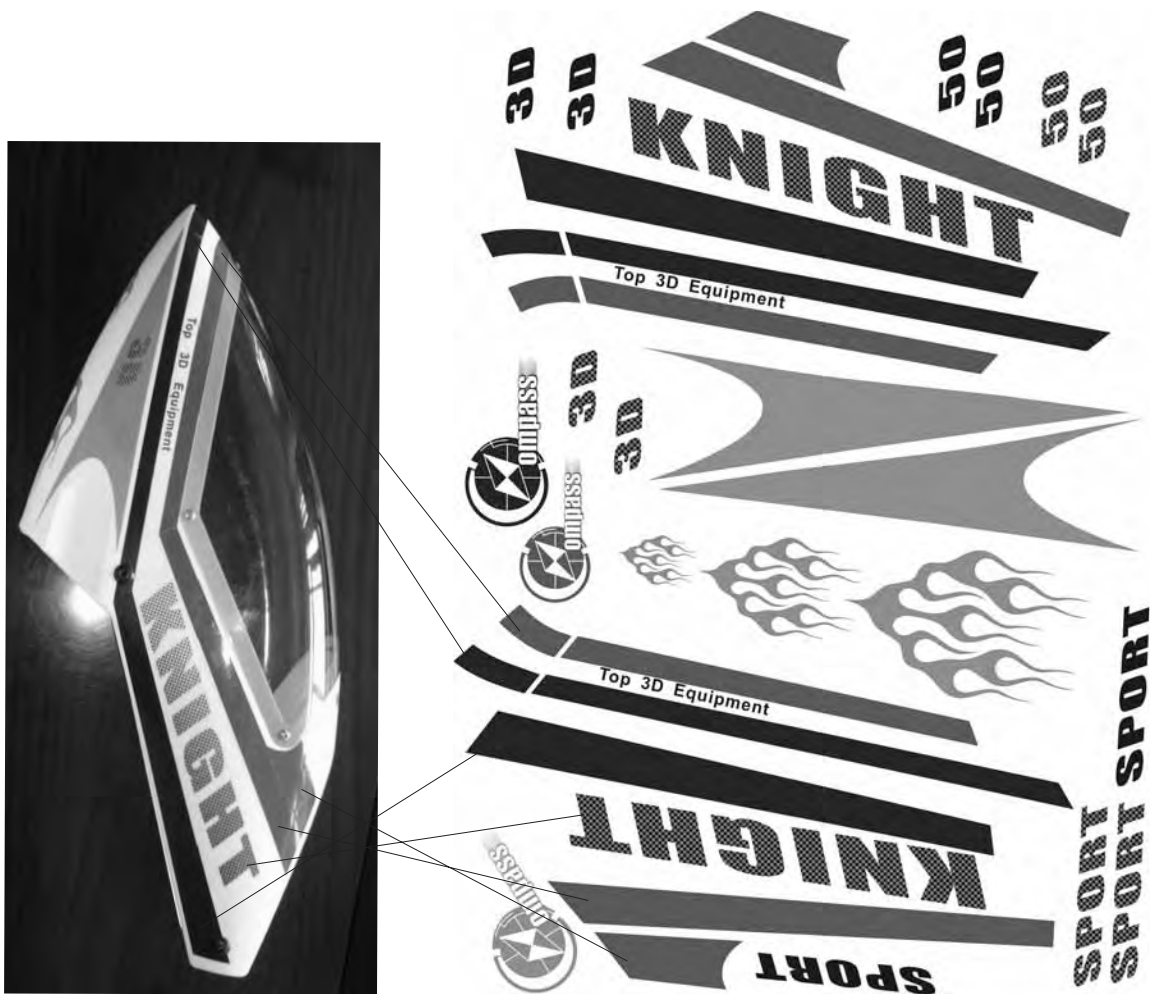
Install Canopy Window
and Canopy Damper
装上头罩窗及头罩减震胶

M2.5x6 Self
tapping Screw
M2.5x6 自攻螺丝

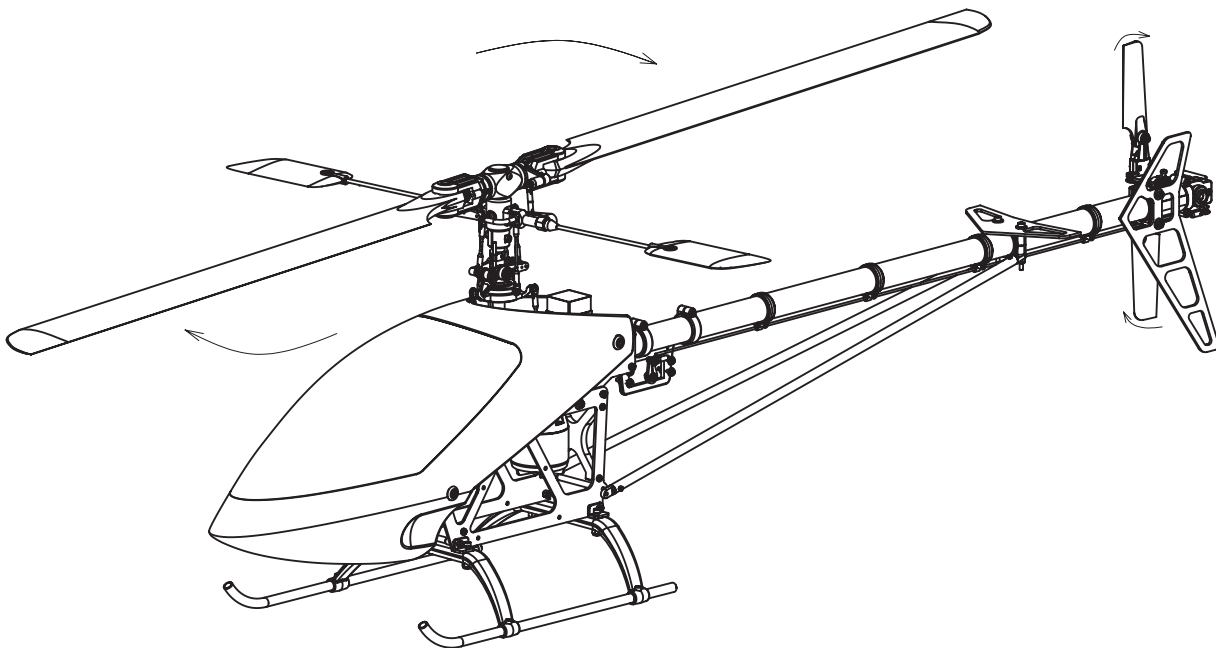
Install the Canopy
onto the helicopter.
将头罩装上机体



Decal 贴纸



Check belt direction 检查皮带方向

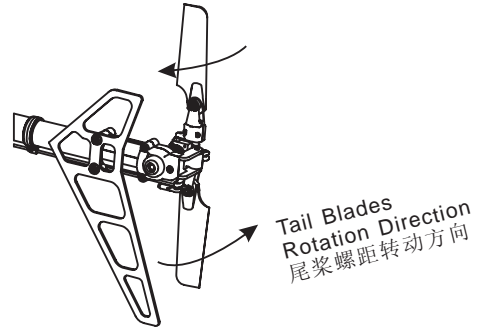


When Main Blades turn clockwise, tail blades should turn clockwise when view from the Tail Fin side. If not the belt is installed incorrectly.

当大桨顺时针旋转时,从垂直尾鳍方向看去,尾桨应顺时针旋转.如果不是,皮带的安装方向不对.

Pre-Flight Check 飞行前检查

1. **Ensure that receiver & transmitter battery are fully charged.** 确认接受机及发射机的电池充满电.
2. **Check all bolts and screws are tight.** 检查所有螺丝已上紧并已上胶.
3. **Repeat step 11 to check all Servo functions are correct.** 照第11步再次检查各舵机工作正常.
4. **Ensure Tail + Gyro direction are correctly set.** 确认尾舵机及陀螺仪的方向正确.



5. **Check that the Main Blades, Paddles and Tail Blades are installed in the right direction.**
检查大桨, 平衡翼及尾桨的安装方向是否正确.
6. **Check that there are no missing or damaged parts, never fly with any damaged parts.**
检查有无损坏或缺失的零件. 如有此情况立即更换. 切勿强行起飞.
7. **Make sure all electronic devices are firmly fastened and connected.**
确认所有电子元件都已连接妥当, 固定妥当.
8. **Before starting the motor make sure the IDLE switch is OFF and Throttle stick is in the low position.** 接通无刷马达电源之前, 确认IDLE开关关闭, 油门控制杆在最低位.
9. **Only turn off the transmitter after turning off the receiver.**
只在关闭接受机电源后才关闭发射机电源.



Compass Model (Hong Kong) Ltd.
康柏模型(香港)有限公司
www.compassmodel.com