

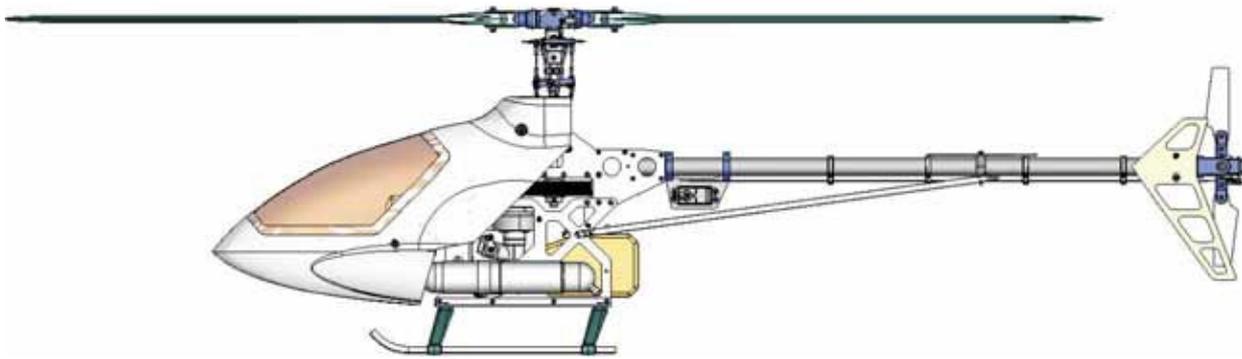
# Knight 50

电子混合式 (EM)  
机械混合式 (MM)

说明书

Electronic Mixing (EM)  
Mechanical Mixing (MM)

INSTRUCTION MANUAL



## ⚠ 注意事项

这个遥控模型并不是玩具

- 这个机器包含一个高速旋转的旋翼，并会造成危险。你需要为此模型的组装、安全（飞行地点、频率）检查及正确调校负责。
- 请在儿童接触不到的地方组装此模型。
- 运作前后都必需做足安全措施。在每次飞行后，请检查螺丝和螺母有否松脱，及零件有否磨损。为使本模型能安全运作，请即时更换、维修或调校损坏的零件。
- 请只用本公司所制造的零件作更换。使用其它公司零件或会造成意外或模型运作不良，本公司并不会对此所造成的意外或撞毁承担任何责任。
- 即使在完成安装后，请继续保留本说明书作参考。

总长度: 1270 毫米  
传动率: 8.7:1:5  
起飞重量: 3.55 公斤  
旋翼直径: 1360 毫米

## ⚠ SAFETY PRECAUTIONS

This radio control model is not a toy.

- The rotor on this model rotates with high speed and would possibly be dangerous. You are responsible for the safety operation check, assembly and adjustment of this model.
- Assemble this model only in places out of the reach of children.
- After every flights, check screws, nuts and parts for wear and looseness. For safety, damaged parts should be replaced or repaired immediately.
- For replacement, use only parts supplied by Compass Model. Parts not made by Compass Model could cause malfunctions or crashes of the model. Compass Model do not take any responsibility for any damage so caused.
- Keep this instruction manual as reference even after assembly.

Total length: 1270mm  
Transmission rate: 8.7:1:5  
Take-off weight: 3.55kg  
Rotating diameter: 1360mm

本手册内容可有变更，无需通知。

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未曾包括的其他必需品

NECESSARY ITEMS NOT INCLUDED IN THIS PACKAGE

以下各项并不包括在本产品内,为了正常使用,请自行购买。

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

油动直升机专用遥控设备及干电池

Radio for engine-powered R/C helis, and dry batteries.

●请使用油动直升机模型专用遥控器, 伺服器5个, 陀螺仪一个。

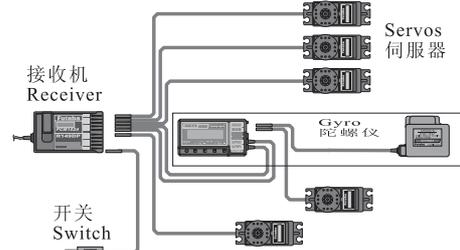
●使用方法请参照遥控器说明书。

●This model requires a EMS System radio for Engine-powered R/C heli with 5 servos and 1 gyro.

●For more information of the radio, please refer to the radio sets manual.

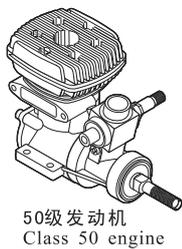


Transmitter 发射机

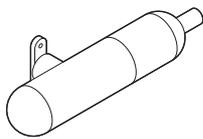


接收机 Receiver  
开关 Switch  
干电池 Ni-Cd Battery

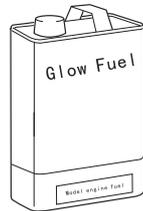
**注意 Caution** 使用非油动直升机模型专用遥控设备可能造成重大事故。  
USE ONLY RADIO FOR ENGINE-POWERED HELI MODEL (ANY OTHER RADIO IS PROHIBITED!)



50级发动机 Class 50 engine



50级排气管 Muffler for 50 class

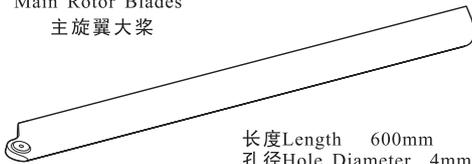


Glow Fuel 遥控模型专用燃料

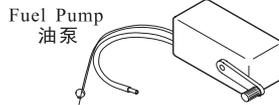
1. Use only GLOW fuel for model engines, \*Do not use gasoline or kerosine. \*GLOW fuel is highly flammable and explosive, always use with care!
2. Always keep the fuel and empty fuel cans away from children.
3. Never refuel before the engine has cooled down.
4. Be careful not to drink or allow the fuel in contact with eyes.

1. 只可以使用遥控模型专用燃料。 \*不可以使用煤油或汽油。 \*此燃料是高挥发性, 易燃, 易爆物品。使用时务必注意安全。
2. 注意保持燃料及其容器远离儿童。
3. 一定要在发动机冷却后才可加油。
4. 该燃料不可饮用, 注意不要使其接触眼睛。

Main Rotor Blades 主旋翼大桨



长度Length 600mm  
孔径Hole Diameter 4mm  
厚度Thickness 12mm



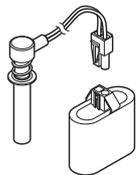
Fuel Pump 油泵



Starter Shaft 启动头



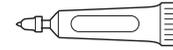
Fuel Filter 滤油器



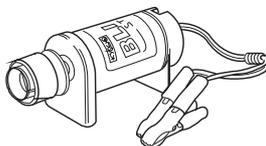
Plug Heater 加热器



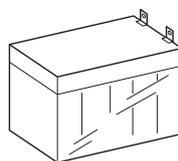
Loctite Loctite 胶水



Grease 润滑油



Engine Starter 起动机



Battery for Engine Starter 蓄电池



Instant Glue 厌氧胶水

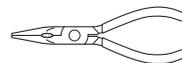
装配工具 Tools necessary for assembly

✧ 使用工具时注意安全! Handle the Tools Carefully!

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



Cutter Knife 裁纸刀

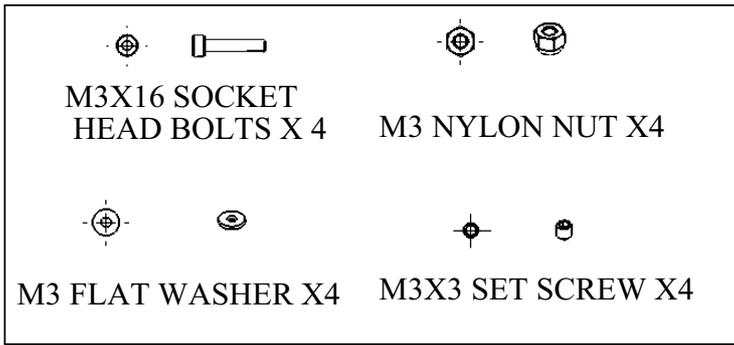


Needle Nose Pliers 尖嘴钳

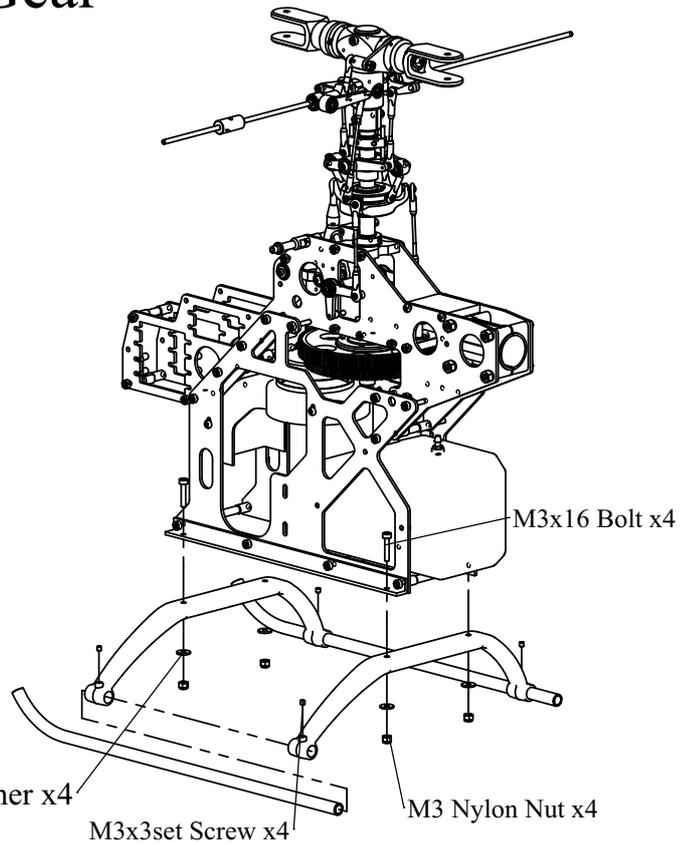


Screw Driver 螺丝刀

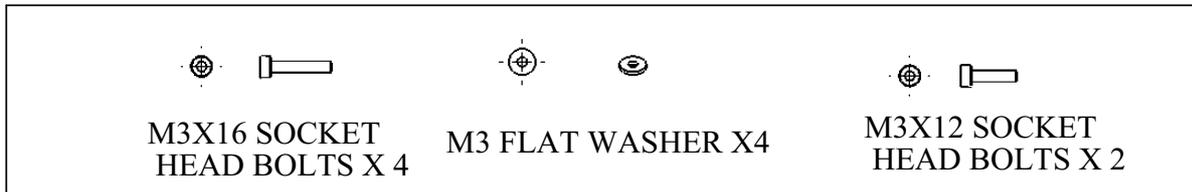
# Landing Gear



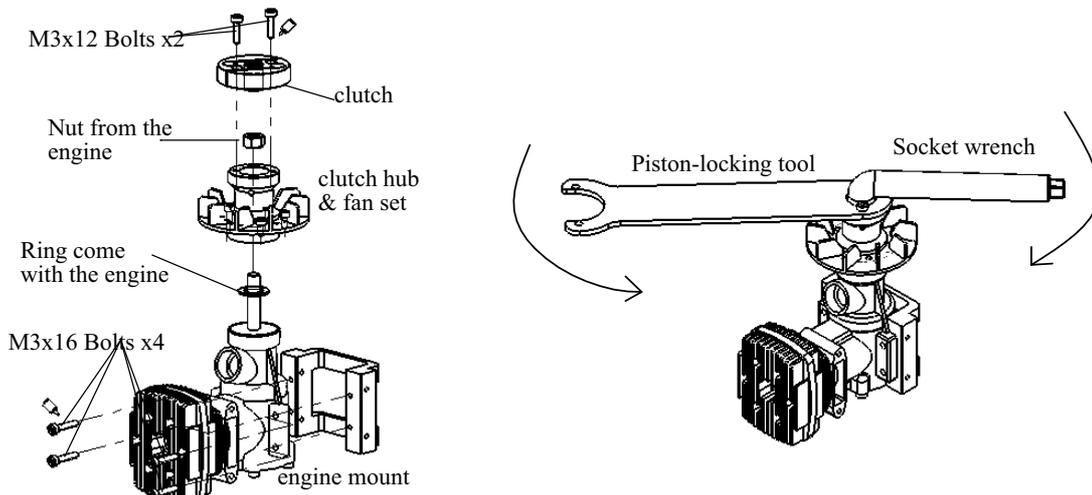
- Step 1. Install the skid foot on the frame, watch out the direction.
- Step 2. Insert the skid tube into the skid foot, watch out the direction. Tight the set screw to fix the tube.



# Engine Set

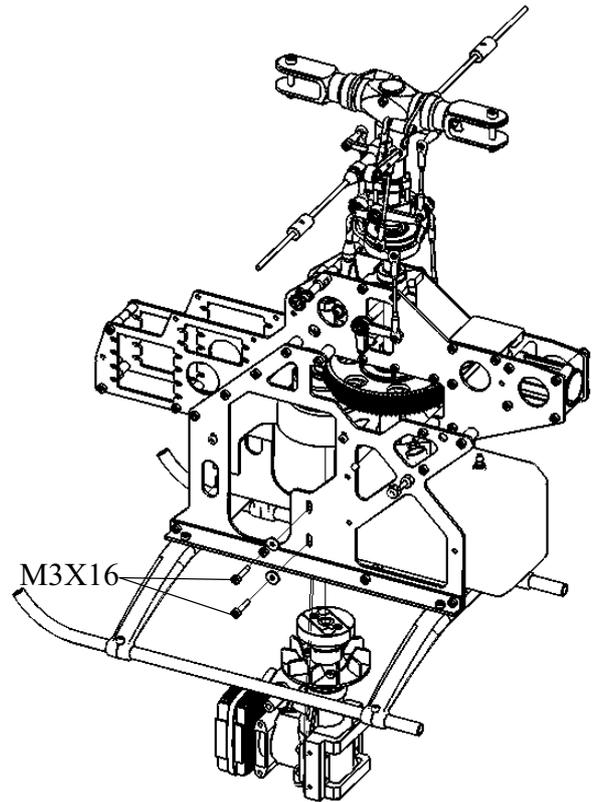


- Step1: install the engine on the engine mount.
- Step2: install the clutch hub & fan set on the crankshaft. a piston-locking tool and a socket wrench are standard tools to do that. Make sure the clutch hub is tightly fixed on the shaft.
- Step 3: install the clutch on the clutch hub. # Use loctite anywhere showed in the drawings.



Step 4: Push the whole engine set from bottom of the frames up into the clutch bell. Turn the drive gear when tightening the M3x16 bolts to fix the engine mount on the frames. Adjust the bolts so that the driving gear can turn smoothly.

It might be necessary to remove the carburater before step 4 and reinstall it afterwards, depends on the type of engine used.



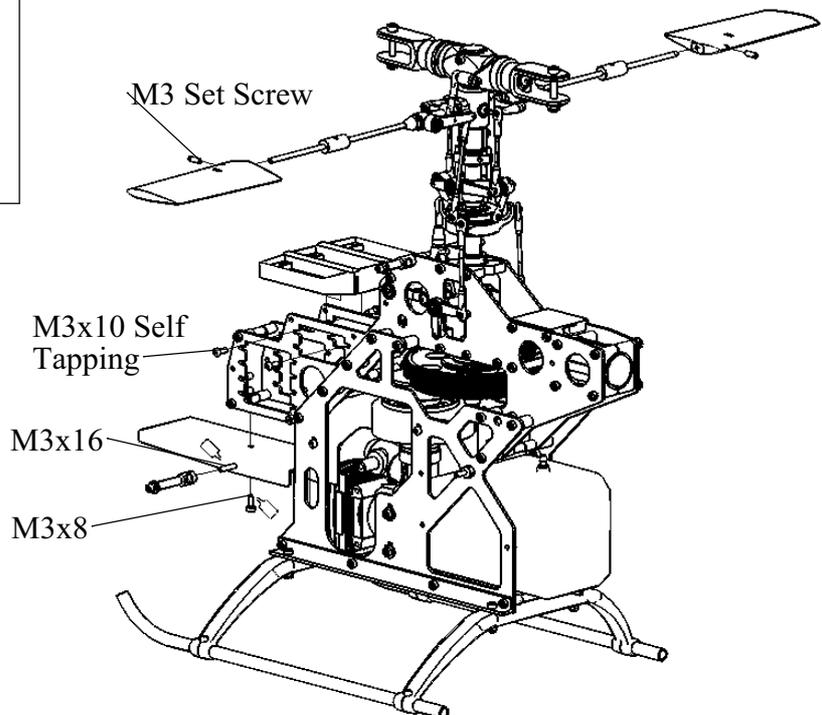
### Front and Top

	
M3x10 SELF TAPPING BOLT x 4	M3x8 SOCKET HEAD BOLTS X 2
	
M3 SET SCREW X2	M3X16 SOCKET HEAD BOLTS X 2

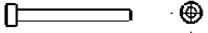
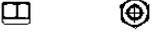
# Do not hold flybar mixing arm as a wrench when fixing the paddle on the flybar.

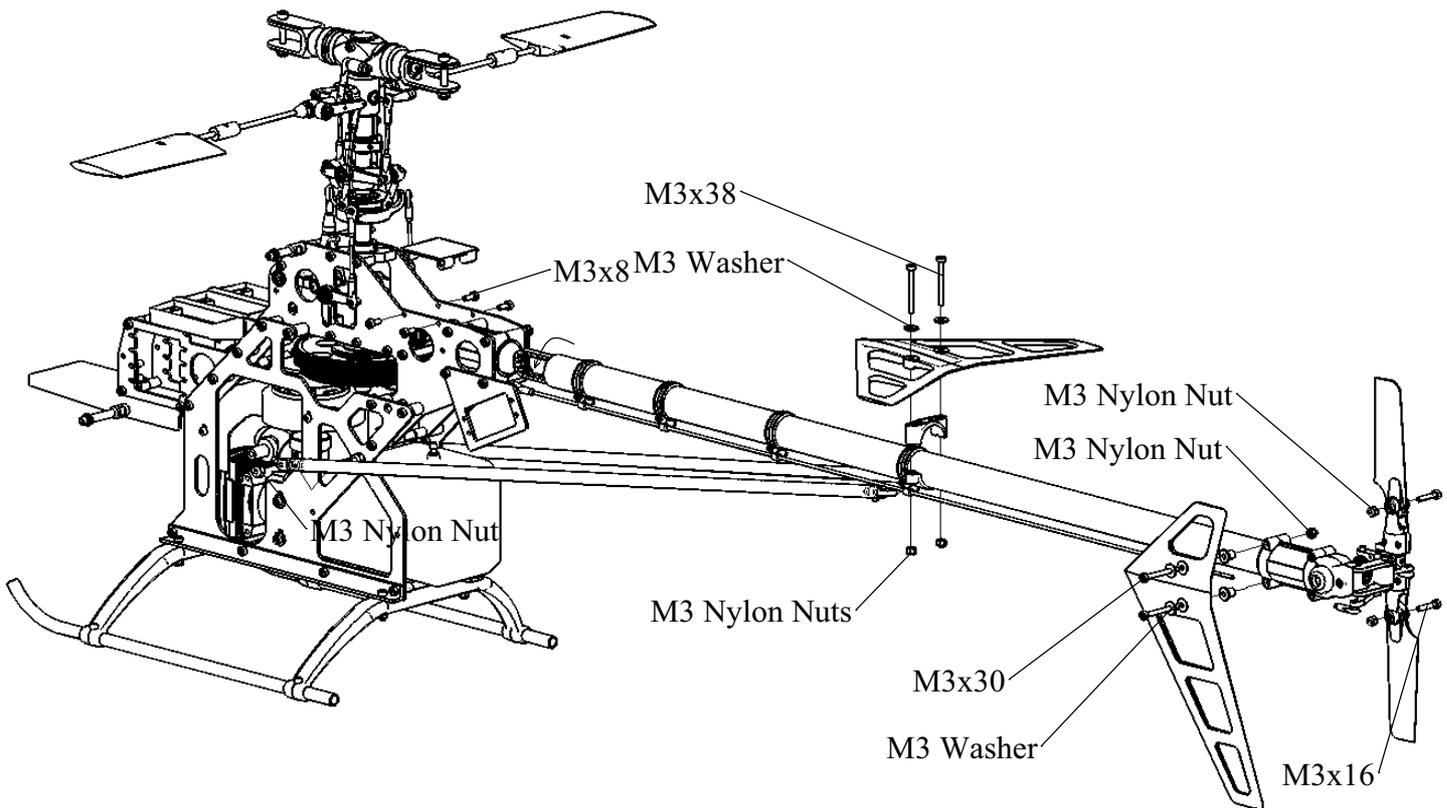
# Screw the two paddle on the flybar until you can see the flybar from the gap in the paddles.

# Make sure the centerline of two Paddles and two fly bar mixing arm are parallel.



# Tail Set

		
M3x8 Socket Head Bolts x 4	M3x38 Socket Head Bolts x 2	M3x16 Socket Head Bolts x 2
		
M3x30 Socket Head Bolts x 2	M3 Nylon Nuts x 8	M3 Plain Washer x 4



Step 1. Uninstall the Gyro plate.

Step 2. Pull the belt through the boom, turn the belt as showed and install it around the pulley wheel. line up the small gap on both end of the boom with the guid holes in tail gear box and side frame so that the tail blades is vertial.

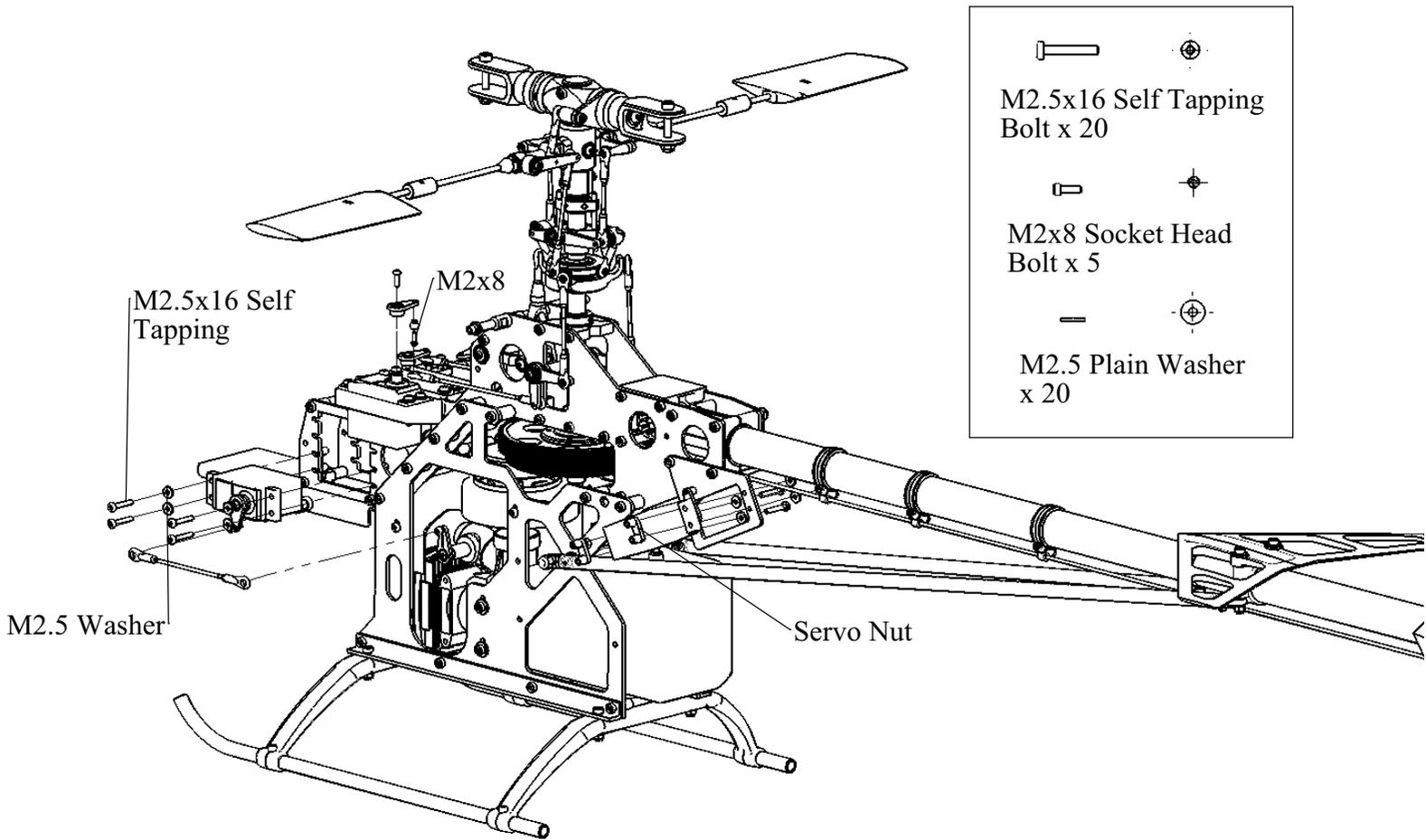
Step3. Install vertical fin, Horizontal fin and restall the gyro plate.

Step4. adjust the belt to the right tightness and tightup the bolts on Boom holders

Step 5. install the tail boom supporters.

Step6. install the rudder link mounts and the tail rudder link.

# Servo Installation



## Linkage Length



Linkage Length 31mm x 2: main blade holder to mix arm

Linkage Length 53mm x 2: fly bar control arm to wash out control arm

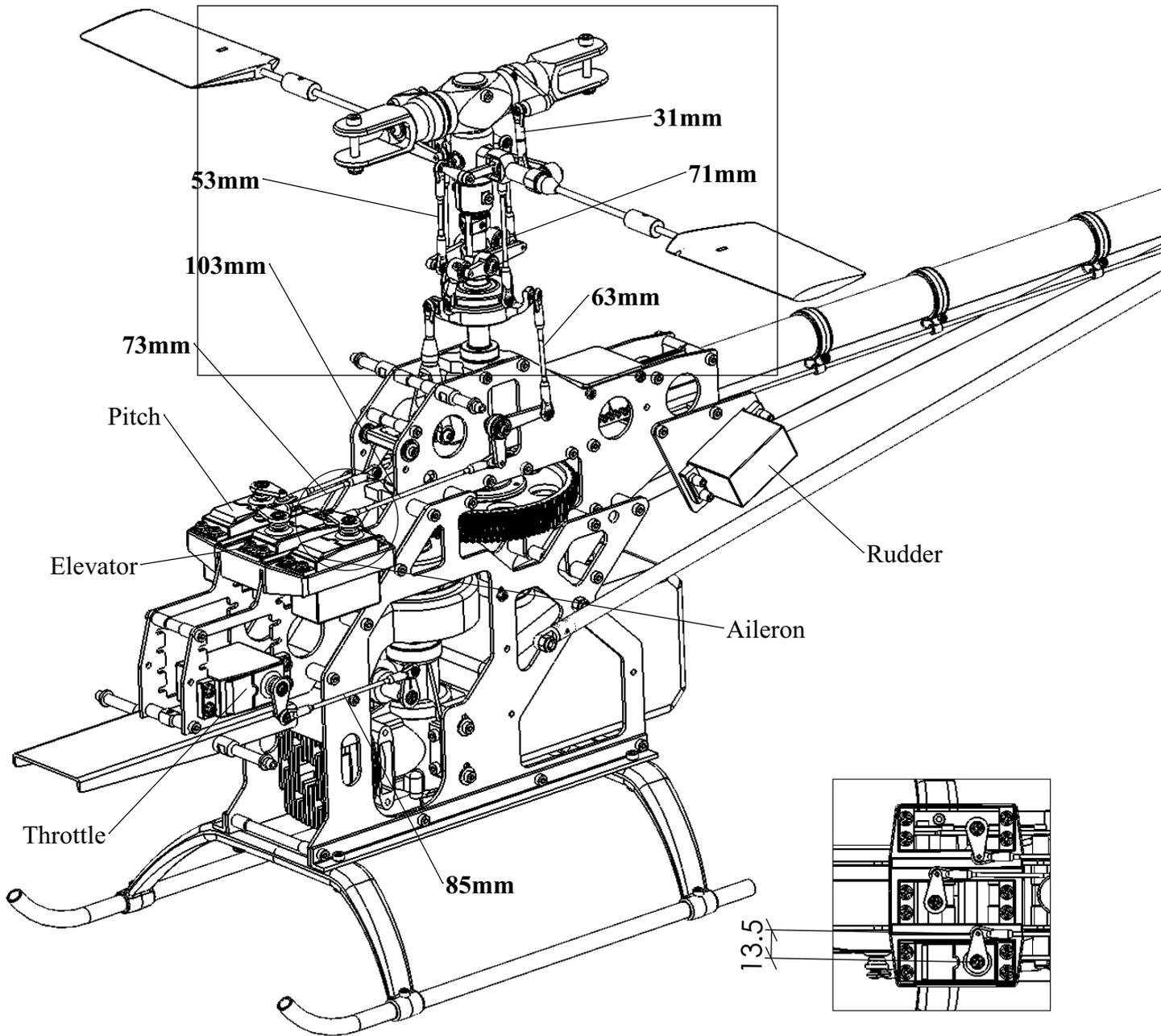
Linkage Length 71mm x 2: mixing arm to swash plate inner ring

Linkage Length 63mm x 2: swash plate outer ring to L arm

Linkage Length 103mm x 2: L arm to Horns of outter servos

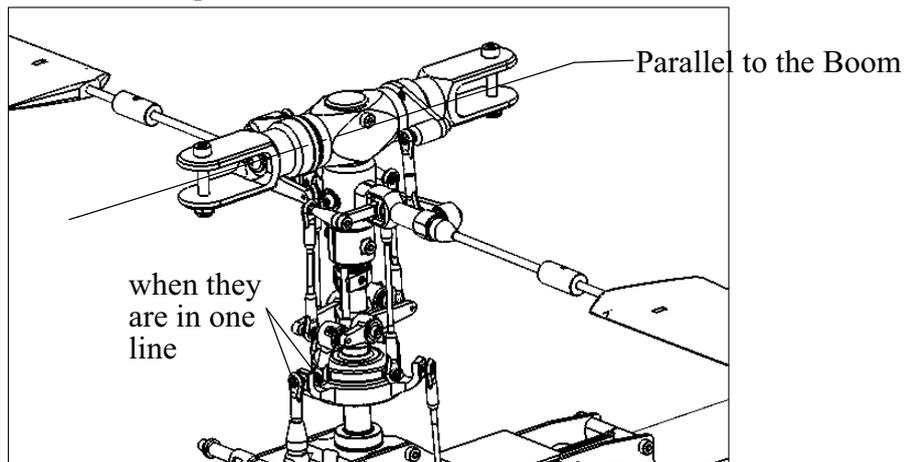
Linkage Length 73mm x 1: front arm to horn of inner servo.

Linkage Length 85mm x 1: engine control

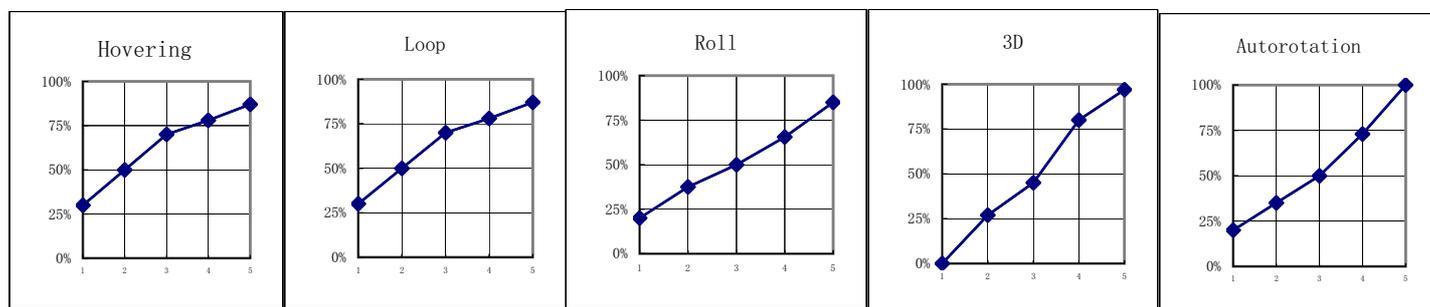


Suggest use the third hole on the horn for Futaba servo. For JR horn, you might need to drill a hole 13.5mm from the center.

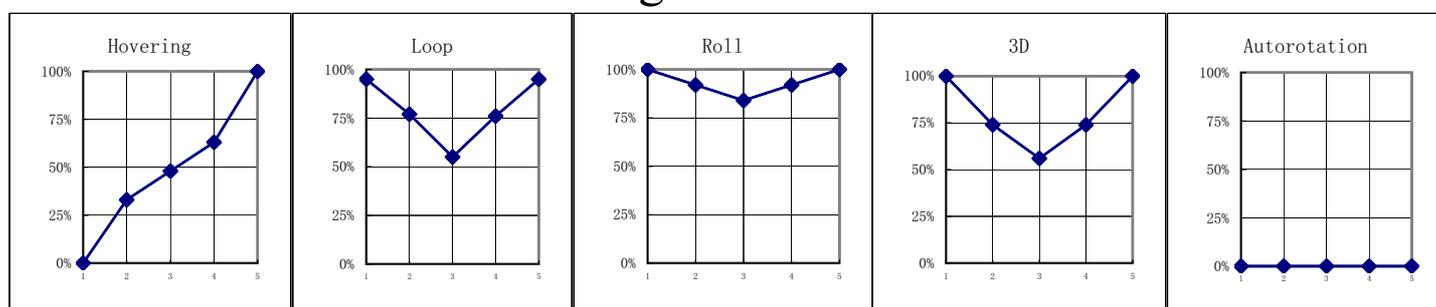
Phasing block: when the one of the link balls on the swash plate inner ring is on the same line of the ball on the A arm, the main blade holder should be parallel to the boom. This is standard setup, for advanced pilots, you can change the angle to get a better rolling. Fix the radius block when the two pins can stay in the gap of radius when both highest and lowest pitch.



## Pitch Curve



## Engine Curve



## Pitch Setting

	Hovering	ID1 Loop	ID2 Roll	ID3 3D	Autorotation
High Pitch	9~10	9~10	7	8.5~9	12
Hovering	5~5.5		3	0	N/A
Low Pitch	-4	-6	-7	-8.5~9	-7

## Swash Type Setting

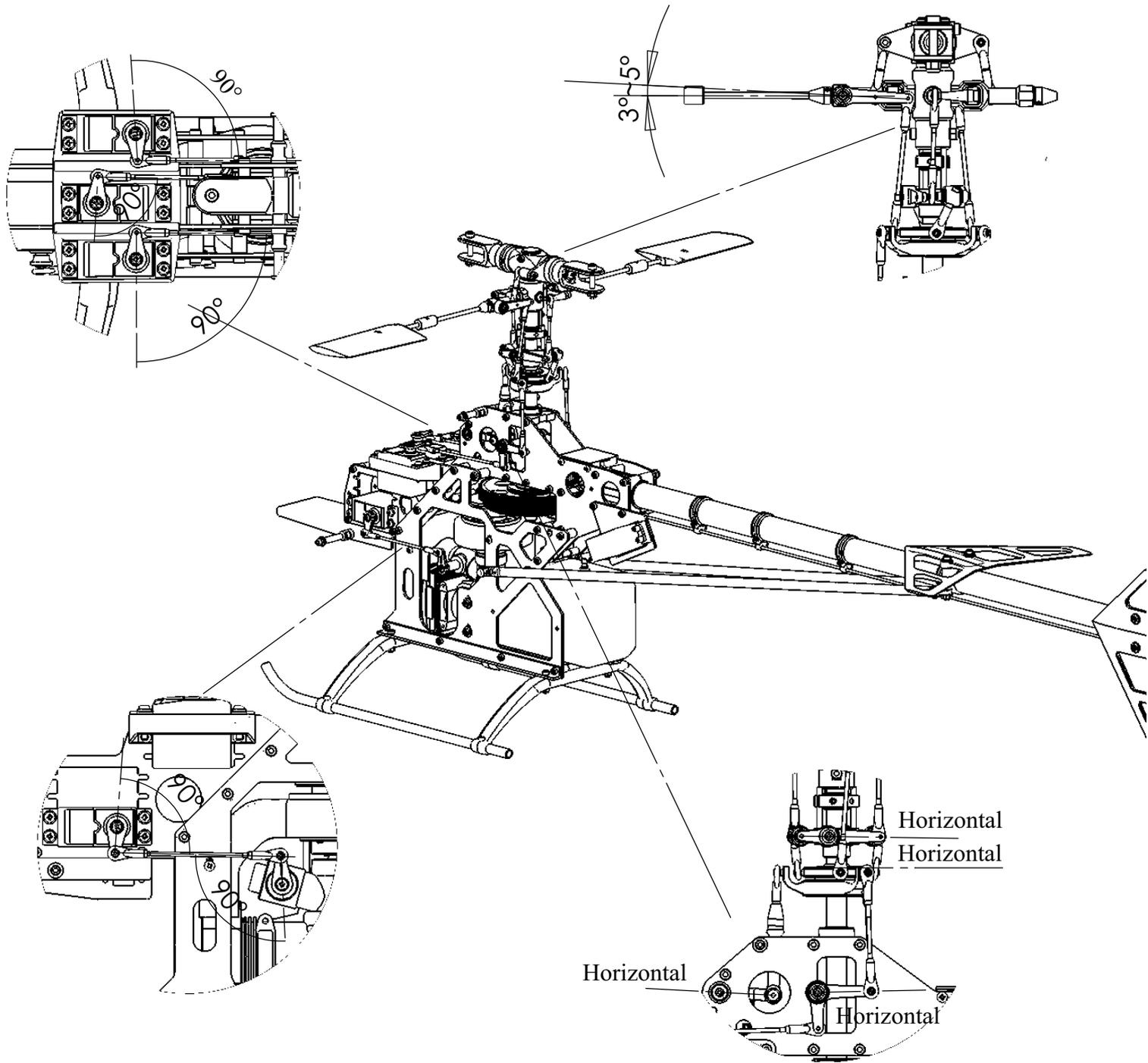
JR		Futaba
Swash Typ		SWH
S3 120°		SR3
Aile	Elev	Pitch
70%	70%	55%

Above data just give some general idea of setting. It varies by engine, blades, muffler and pilot's style. Adjust by actual flight.

## Setup of Linkage

Install fuel tube, install gyro, main blade, muffler. check the servos and gyro, reverse them if necessary. at 0 pitch (for 3D pitch stick in the middle) adjust as following:

1. Adjust the horn and sub trim so that the horns are 90 degree to links.
2. Adjust the link between the horn and front arm (and L arm) so that the L arm and Front arm are horizontal.
3. Adjust the link between L arm and swash plate so that the swash plate is horizontal.
4. Adjust the link between the washout control arm and flybar control arm so that the washout control arms are horizontal.
5. Adjust the link between mixing arm and swash plate inner ring so that the mix arm is 3~5 degree lower than the fly bar.
6. Adjust the link between the Mixing arm and blade holder to get 0 pitch of the main blade.
7. When gyro is in 0 point, adjust the horn and sub trim so that the horn on rudder servo is 90 degree to the tail rudder link.
8. Adjust the length of tail rudder link so that the tail blades have 7 degree positive pitch (wind force towards the tail).



**Check:**

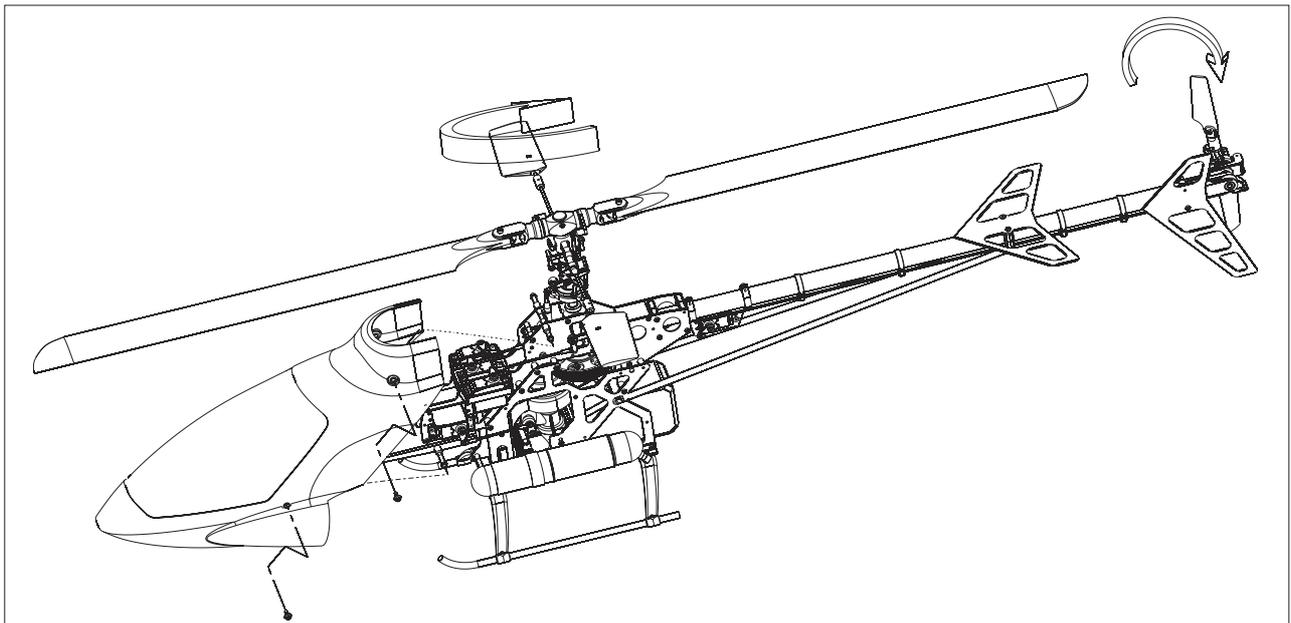
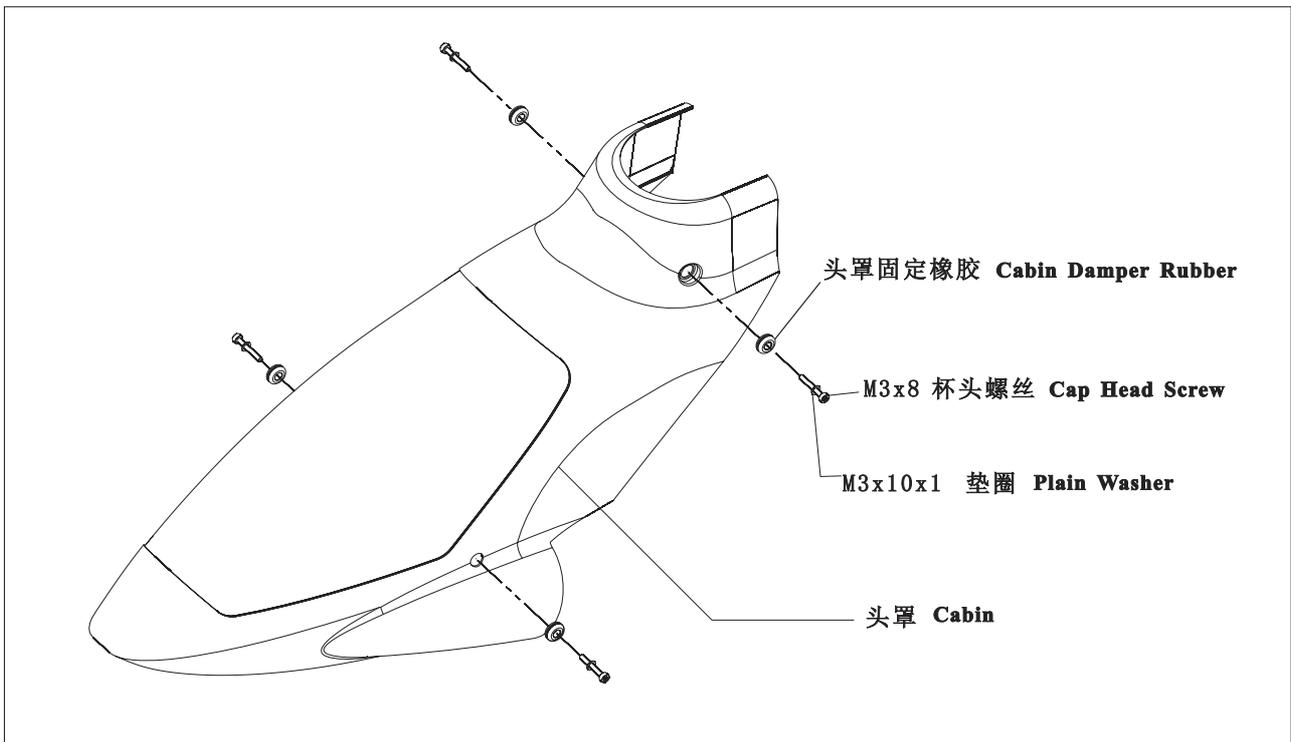
**Tail Balance:**

Heli Tail rotating at very high speed, regular check the balance of the tail is important for safe flights.

**Antenna:**

It is strongly suggest not place the Antenna around boom supporter, boom or other metal parts. Suggest place the Antenna underneath the plastic skid foot. Wrongly installation of Antenna would result a larger chance of interference.

## 头罩的安装 ASSEMBLY OF THE CABIN



装配完后检查,当主旋翼顺时针旋转(从上向下看)时,尾桨应顺时针旋转(机头在左,尾管在右时的视角)。如图示。否则,则有装配错误。

After assembling, when the main rotor rotates clockwise (view from top), tail blade should rotate clockwise (view when the heli head on your left and the tail on your right).

# 关于贴纸 ABOUT THE DECAL

