

### Notes for safety:

1. This RC heli model is not a low motivity doll. It is with big force and high flying speed. Please try it under the guiding of somebody experienced.
2. Please fly under a safe condition.
3. After switch on the electricity, the heli might shake strongly or out of control when affected by electronic waves. Such as near the domestic electronic equipment, under a high pressure environment, or there is other remote controller using the same radio channel, or other unidentified wave. .So remember to keep a far and safe distance from these and people. Please be alert every minute and second.
4. The battery used here might cause a fire in case of short, dampness, bump, cracking and over loading.
5. This heli has a max rev. The max rev of the frame part is 3300rpm, and the max rev of main rotor, please look at the sign on the package. Please do not try to test it with the max rev. as in this situation the main rotor will be overloaded.
6. Please check and renew the main rotor frequently, as the stuff will be degraded and with less intensity after fierce and high speed movement.
7. Please electricize the battery according to the guide line related, so as to prevent any danger.
8. The players should be responsible for their own deed and responsible for the damage and injury happened during the operation process, if any.

# SJM400

## The Frame:

- ◆ The kit weight w/o the main blade: 218g
- ◆ RTF weight: about 580g
- ◆ Main rotor diameter: 655mm
- ◆ Main rotor's specification: 305×30mm
- ◆ Flybar rod's specification: 210×1.5mm
- ◆ Flybar's specification: 58×30mm
- ◆ Tail rotor diameter: 110mm
- ◆ Tail rotor's specification: 45×18mm
- ◆ Main shaft diameter: 4mm
- ◆ Tail rotor shaft diameter: 2mm
- ◆ Tail boom outside diameter: 11mm
- ◆ Belt's specification: 302MXL width: 2.5mm
- ◆ Main rotor : changeable screw distance  
adjustable mixing control  
flybar joint in the shape of ball  
directly connected flybar joy stick  
slowly moved rubber circle which is vertically arranged
  
- ◆ Rotating swash plates: ccpm120degrees
- ◆ Tail rotor: outer anti-syntony bearing in frame shape
- ◆ Main drive gear : M0.4 180teeth( in support of landing with the flame out)
- ◆ Autorotation tail drive gear : M0.4 100teeth
- ◆ Tail drive gear : M0.4 20teeth

Rotating speed ratio of main rotor and rail rotor: 1:5

Limitation of motor assembling(diameter) : 30mm

There are totally 28 bearings in the heli

The whole heli is processed with digital control technology and with the materials of aluminum alloy, carbon fiber and fiberglass

## Motor And Other Electronics:

A set of remote controller and receiver with over six channels( in support of ccpm120degree) (optional)

A set of motor, ESC and BEC4.8~6v (optional)

One or more batteries 11.1~14.8v (optional)






















4 micro servos (optional)

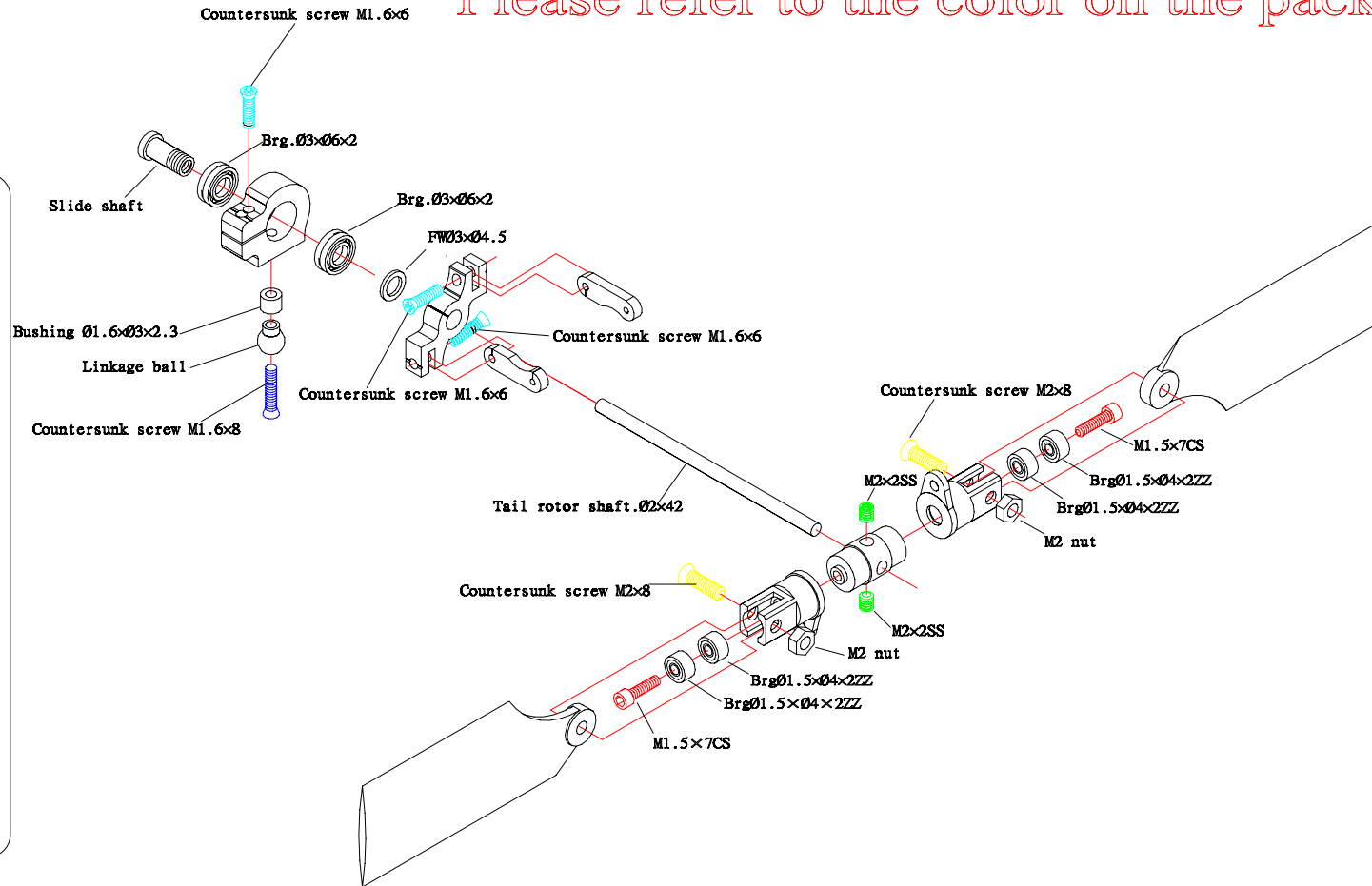
One gyro (optional)

One battery charger (optional)





1

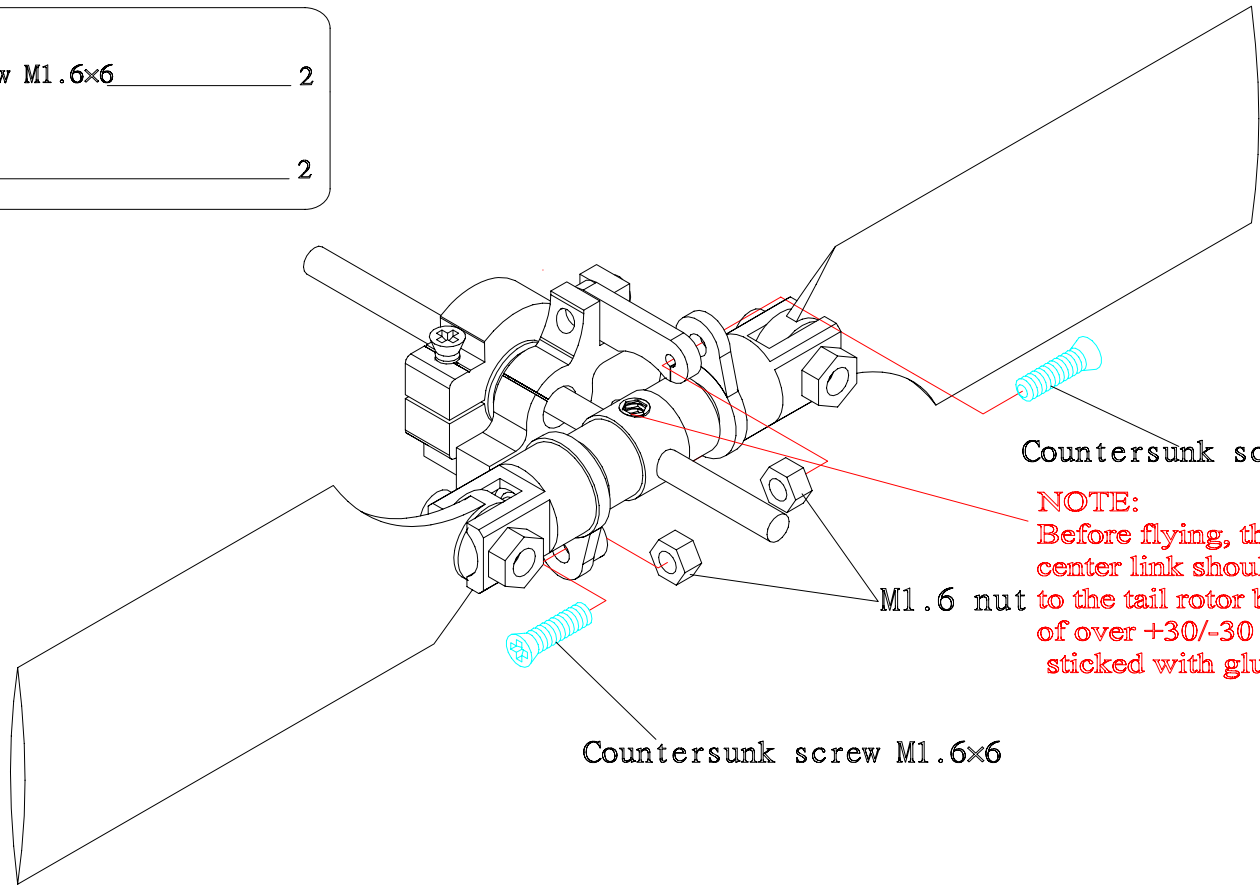
Please refer to the color on the package

		
		M1.5×7CS _____ 2
		BrgØ1.5×Ø4×2ZZ _____ 4
		Countersunk screw M2×8 _____ 2
		M2 nut _____ 2
		M2×2SS _____ 2
		Countersunk screw M1.6×6 _____ 3
		Countersunk screw M1.6×8 _____ 1
		Linkage ball _____ 1
		Bushing Ø1.6×Ø3×2.3 _____ 1
		FWØ3×Ø4.5 _____ 1
		Brg.Ø3×Ø6×2 _____ 2



2

 	Countersunk screw M1.6x6	2
 	M1.6 nut	2



Countersunk screw M1.6x6

**NOTE:**

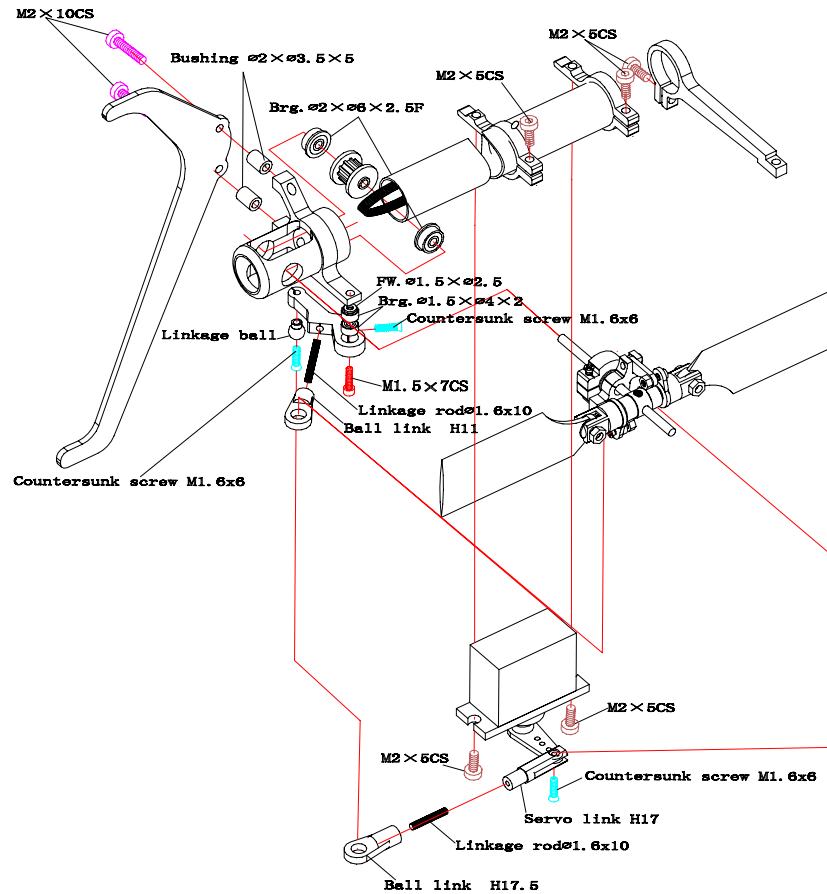
Before flying, the fixed screw of the tail rotor blade center link should be loosened and move the center link to the tail rotor blade. The pitch can move with an angle of over +30/-30 degrees. Finally, the screw should be sticked with glue and relocked.

M1.6 nut

Countersunk screw M1.6x6

3

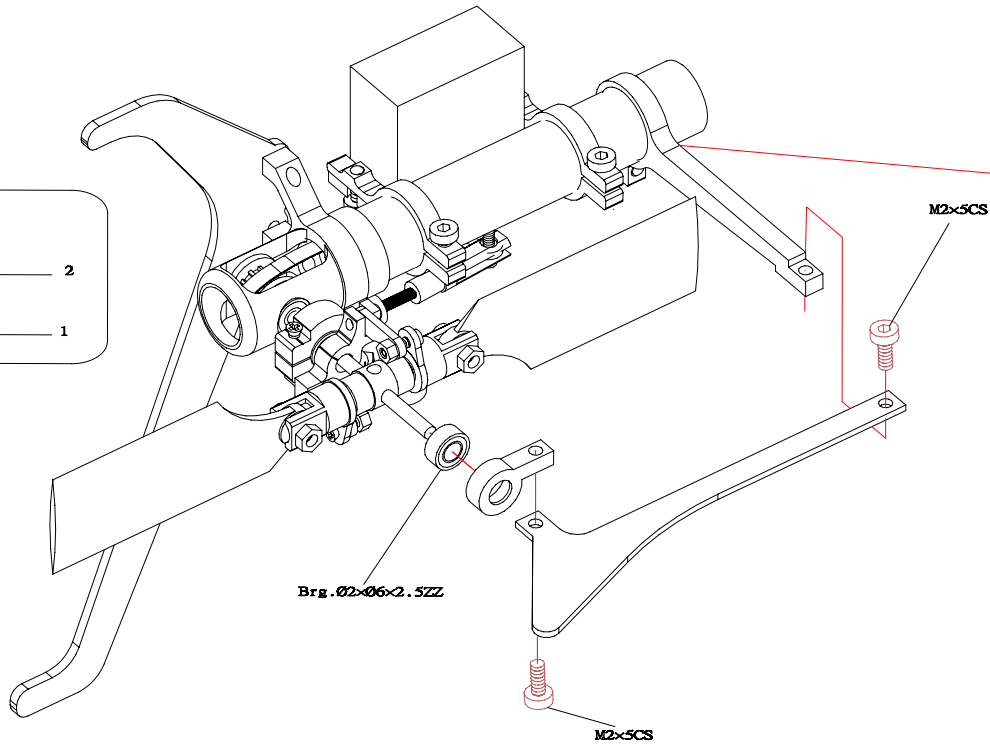
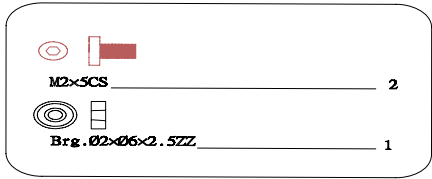
	M2 x 10CS	2
	M2 x 5CS	5
	M1.5 x 7CS	1
	Brg. ø1.5 x ø4 x 2	2
	Brg. ø2 x ø6 x 2.5F	2
	FW ø1.5 x ø2.5	1
	Linkage ball	1
	Countersunk screw M1.6 x 6	3
	Linkage rod ø1.6 x 10	2
	Ball link H11	1
	Ball link H17.5	1
	Servo link H17	1
	Bushing ø2 x ø3.5 x 5	2



When equipping the heli and making adjustments  
loosen the set screw and move it to the angle  
over +30 degree /-30 degrees





The tail rotor angle-adjusting  
servo arm is 12mm long.

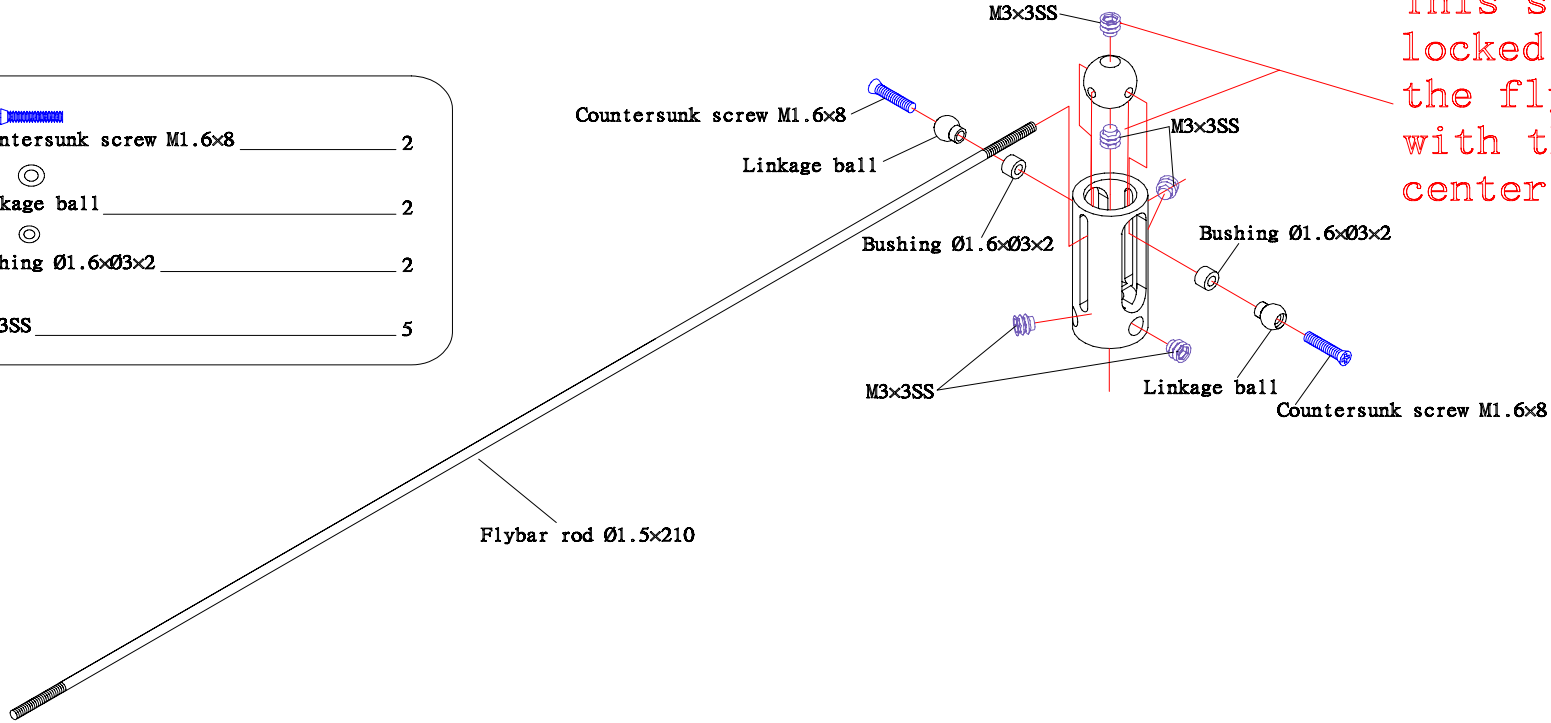
4



When setting up the horizontal paddle, this bracket should be adjusted properly according to the position of tail rotor shaft.

5

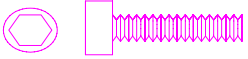

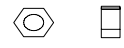
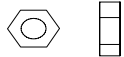

	Countersunk screw M1.6x8	2
	Linkage ball	2
	Bushing Ø1.6xØ3x2	2
	M3x3SS	5

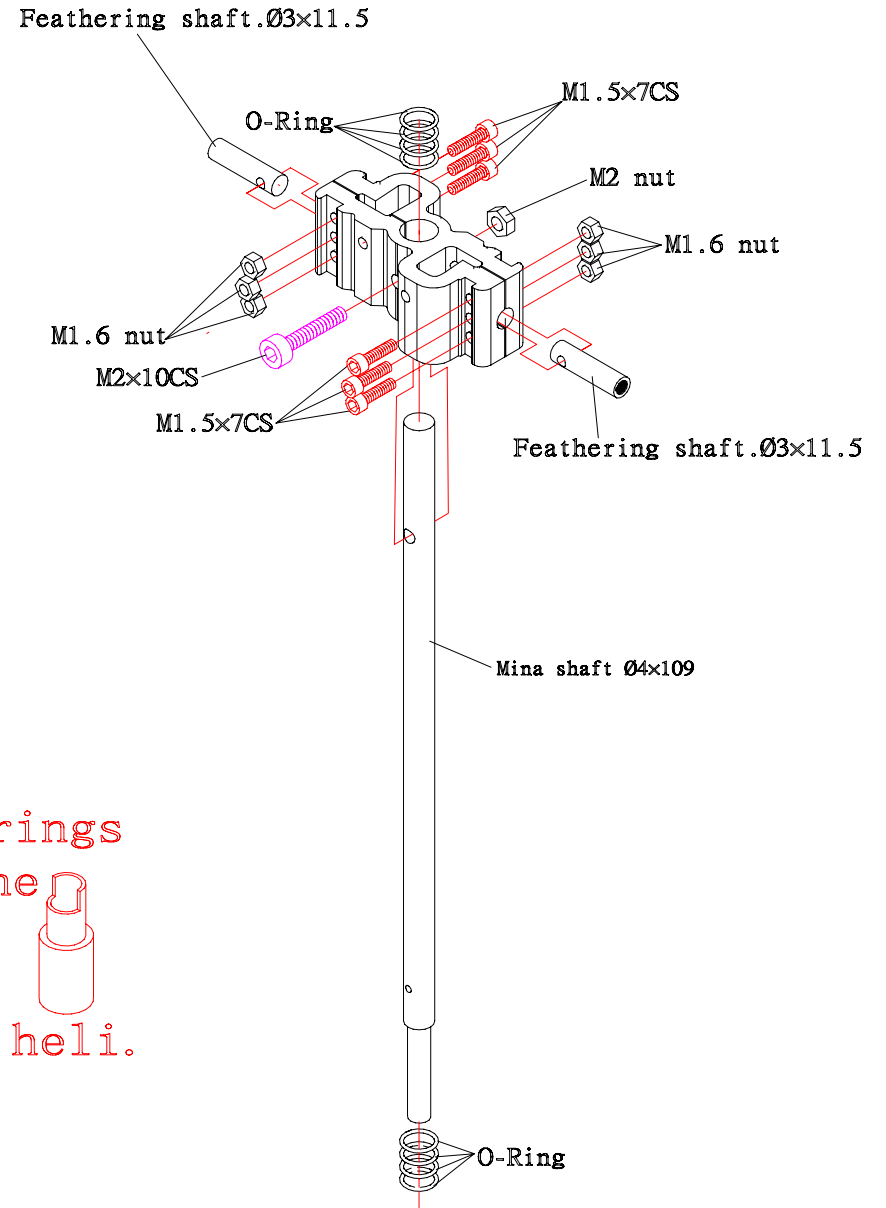


This set screw should be locked carefully. so that the flybar rod can turn with the rotation of the center ball



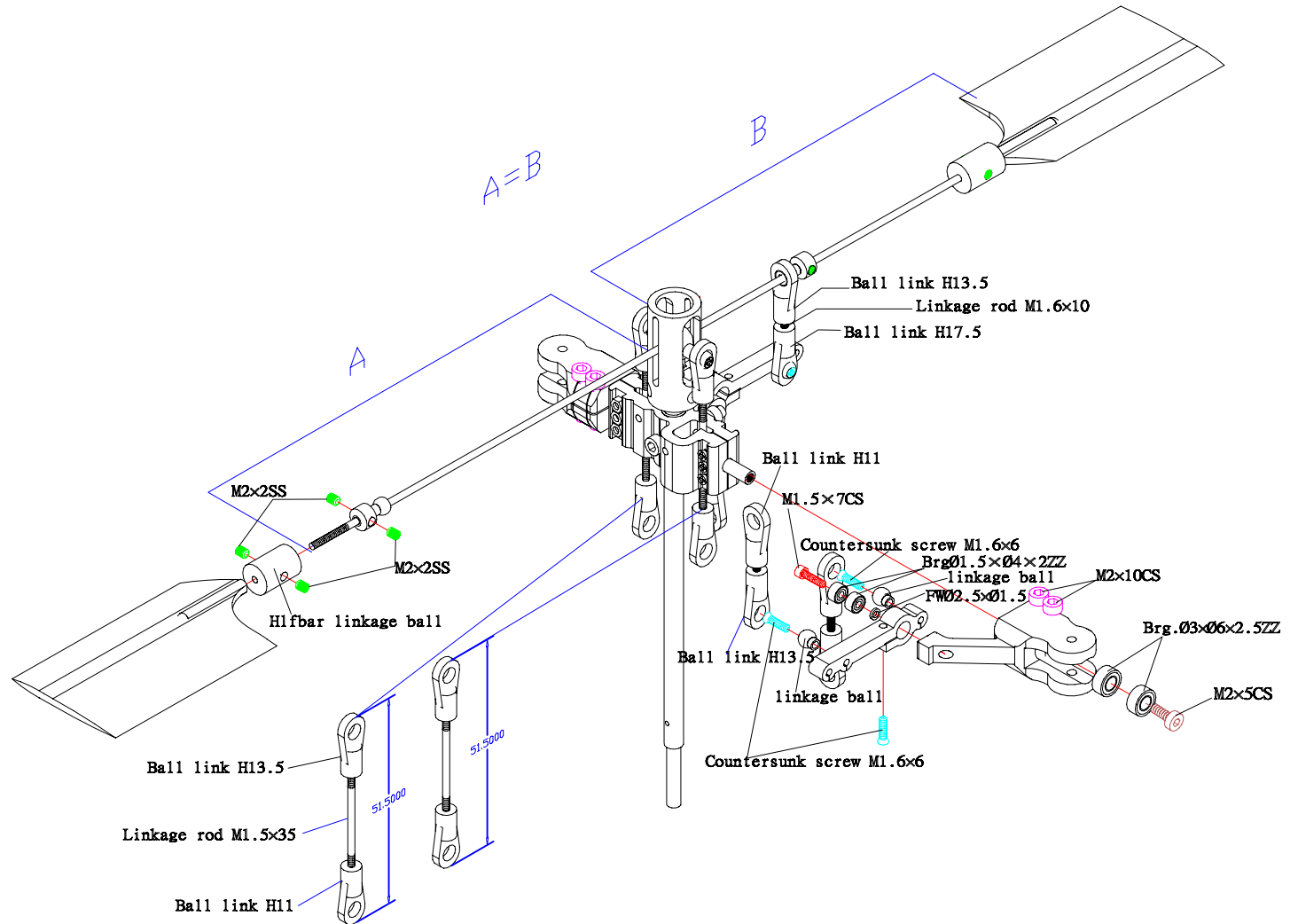
6

	M2x10CS	1
	M1.5x7CS	6
	M1.6 nut	6
	M2 nut	1
	O-Ring	8







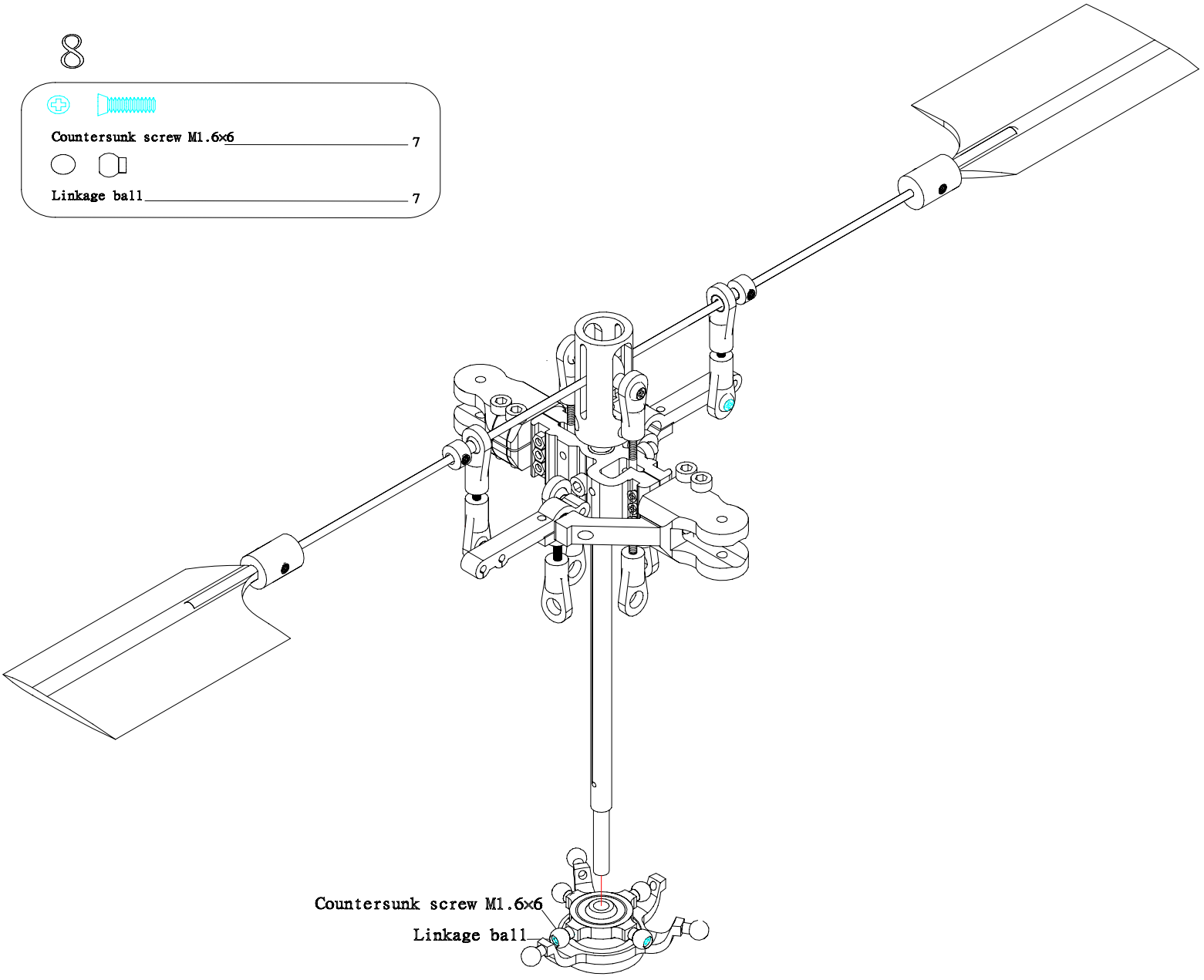
There are 4 o rubber rings at both the top and the bottom. When fixing them, please use tied tools coming with the heli.

	M2x10CS	4
	M2x5CS	2
	M1.5x7CS	2
	M2x2SS	8
	Countersunk screw M1.6x6	6
	Linkage rod M1.6x10	4
	Ball link H17.5	2
	Linkage rod M1.5x35	2
	Brg.03x06x2.5ZZ	4
	Brg.01.5x04x2ZZ	4
	Hlfbar linkage ball	2
	linkage ball	4
	Ball link H13.5	4
	FW02.5x01.5	2
	Ball link H11	6



8

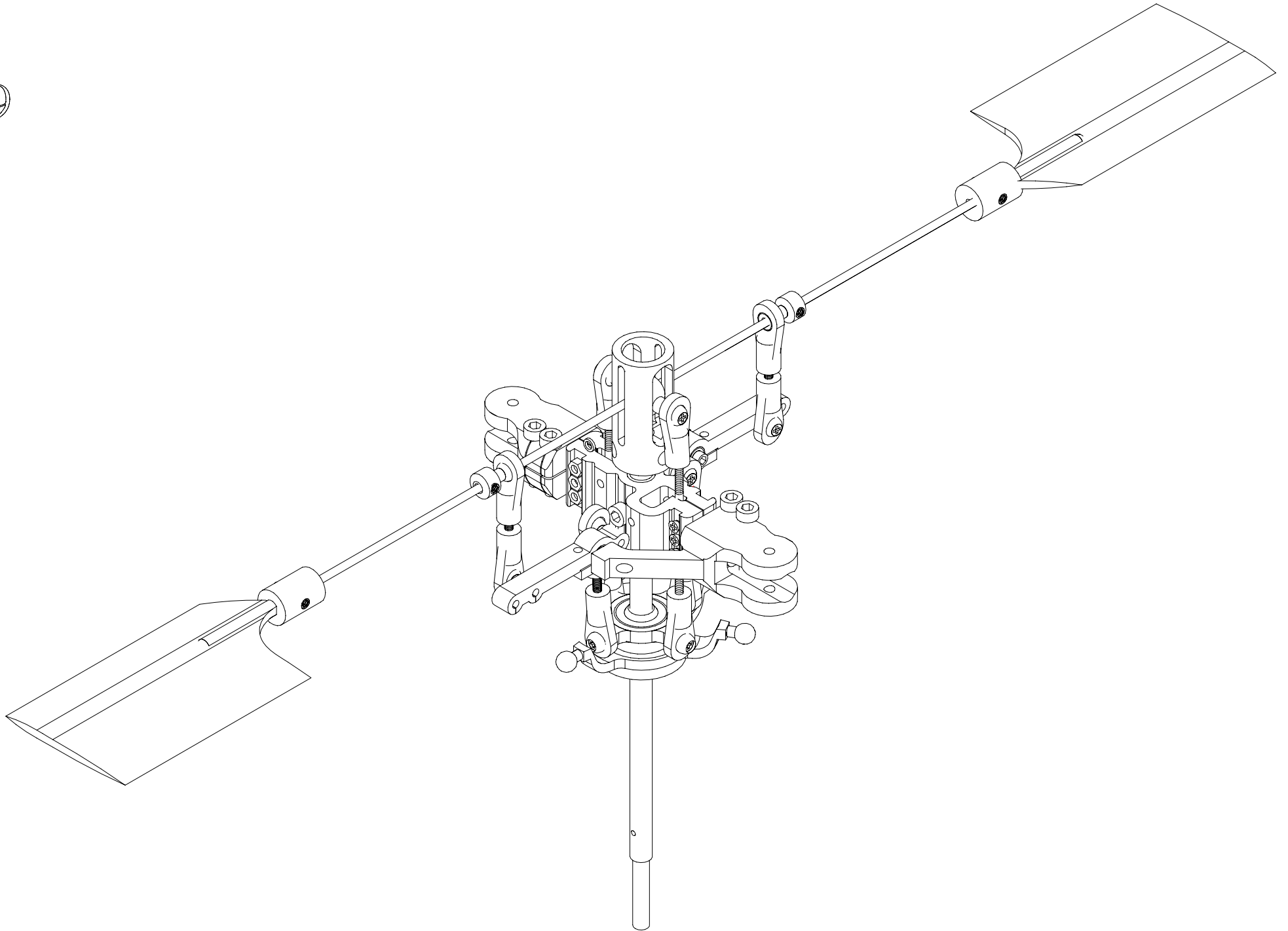
 	
<b>Countersunk screw M1.6x6</b>	7
 	
<b>Linkage ball</b>	7



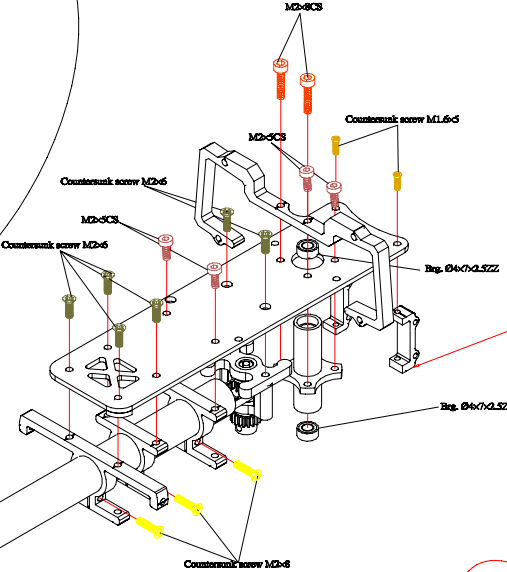
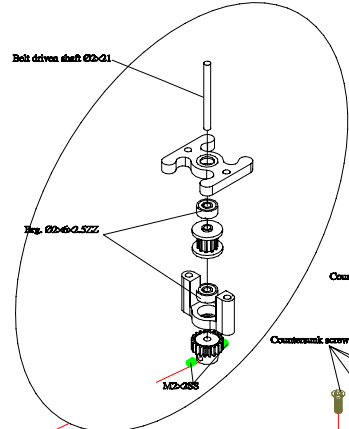
Countersunk screw M1.6x6

Linkage ball

9

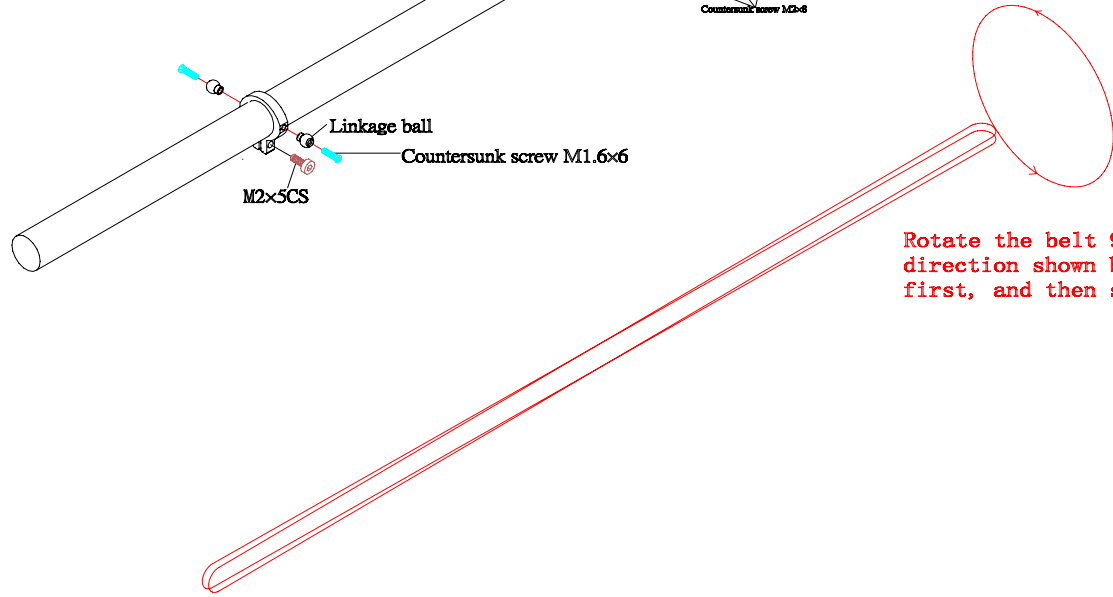


	M2-2SS	1
	Countersunk screw M1.6-5	1
	Countersunk screw M2-6	4
	Countersunk screw M2-6	3
	M2-6CS	3
	M2-6CS	4
	Fig. 02-6/2.5ZZ	1
	Fig. 04-7/2.5ZZ	1





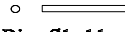




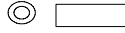






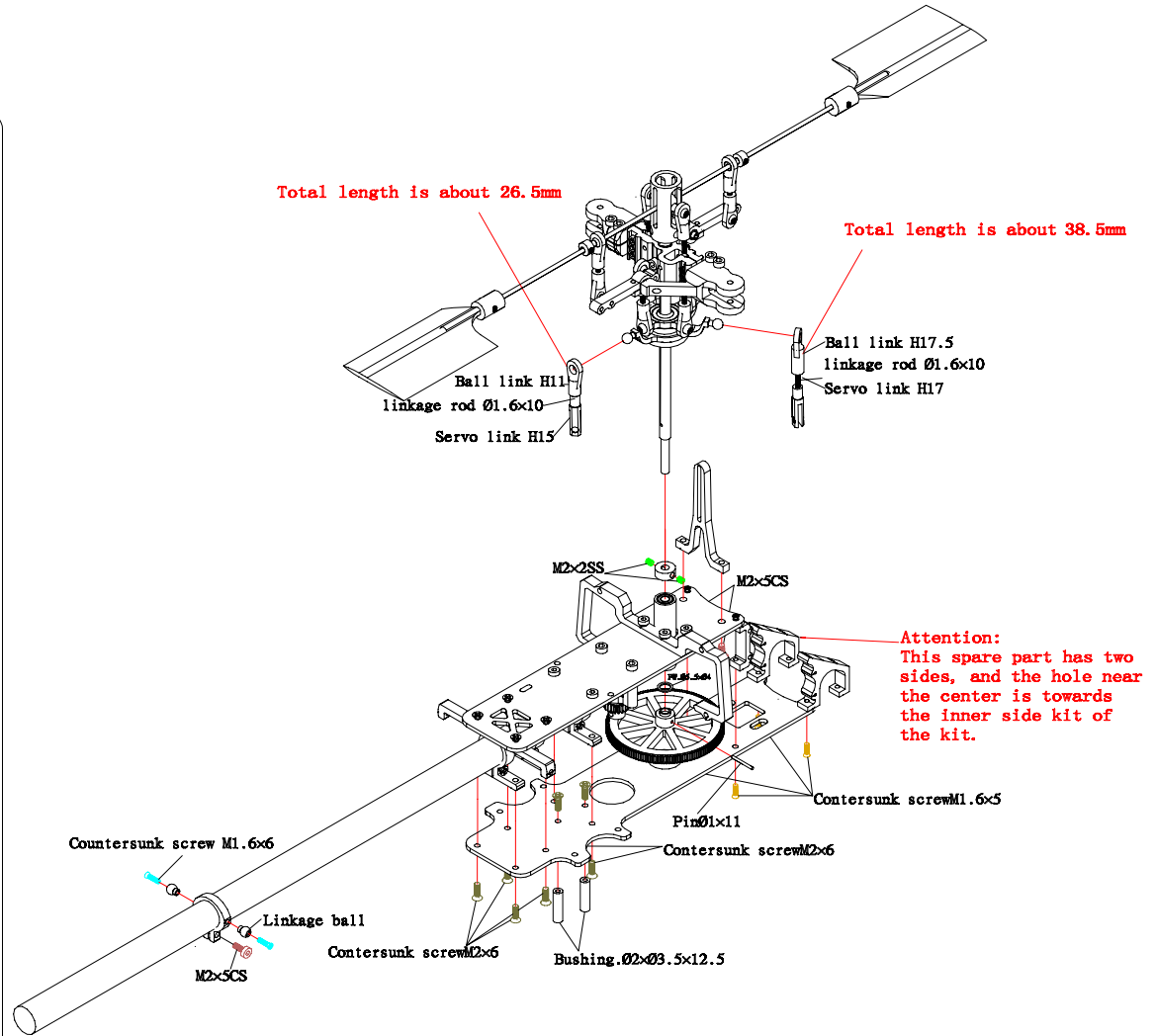
First spread AB glue on the shaft, then fix up the tail drive gear set, in case of loosing and racing.

Attention : This spare part has two sides, and the hole near the center is towards the inner side of the kit.

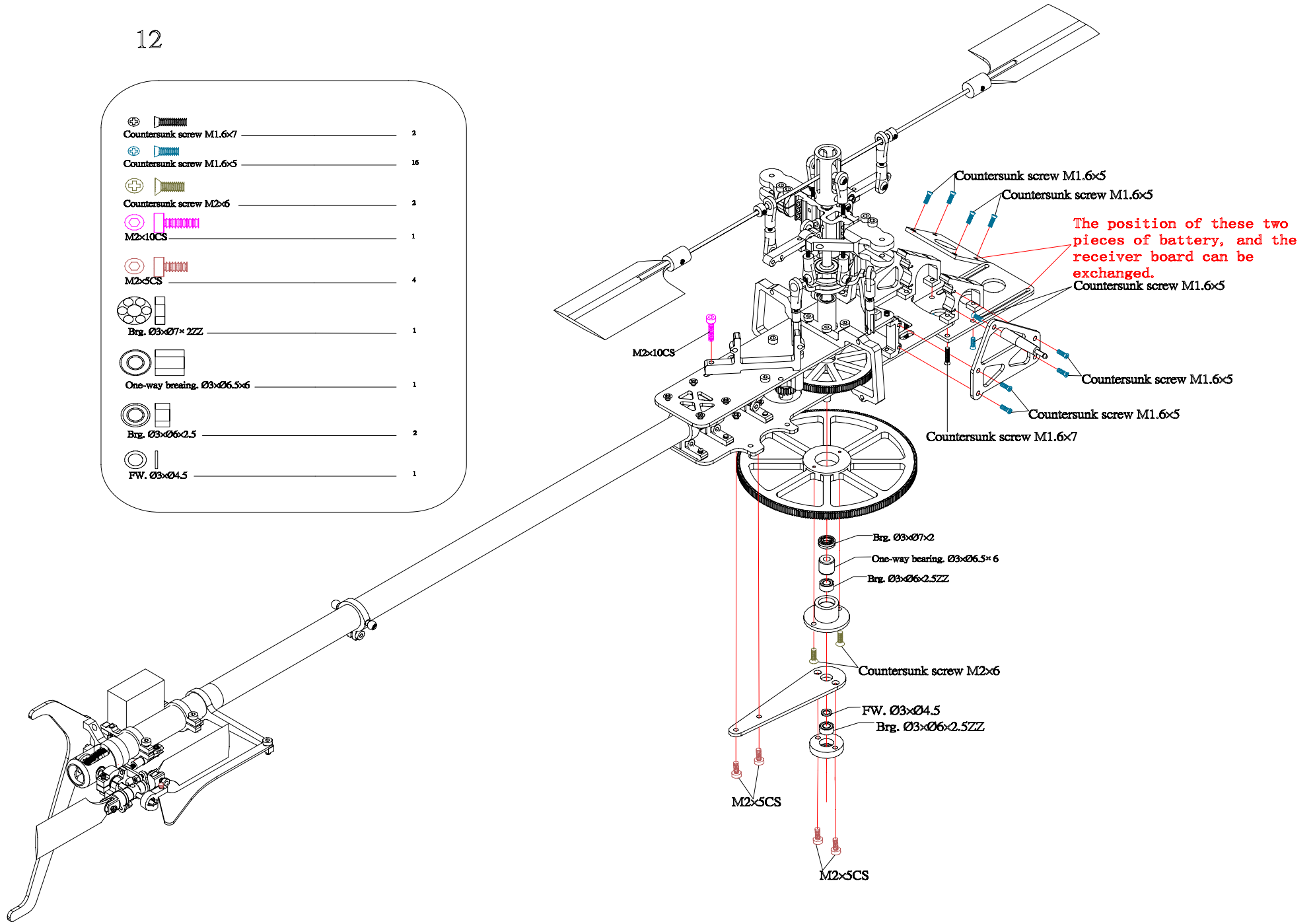


Rotate the belt 90 degree in the direction shown by the arrowhead first, and then set up it.







	M2x5CS	1
	Countersunk screw M1.6x5	4
	Countersunk screw M2x6	10
	FW.05.5x04	1
	Pin 01x11	1
	linkage rod 01.6x10	3
	Ball link H11.5	1
	Ball link H11.5	2
	M2x2SS	2
	Bushing.02x03.5x12.5	2
	Servo link H15	1
	Servo link H17.5	2
	Countersunk screw M1.6x6	2
	Linkage ball	2



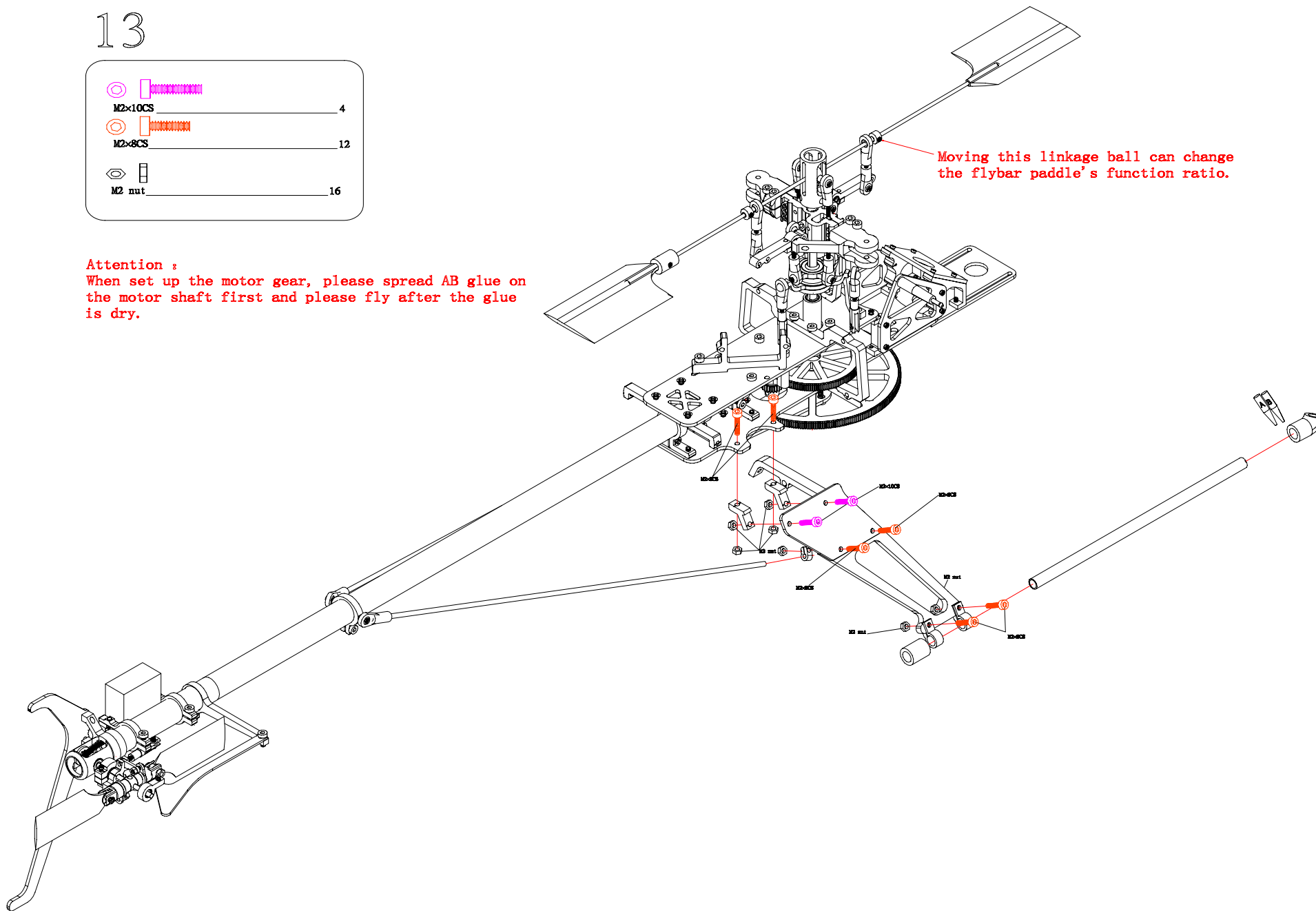
	Countersunk screw M1.6x7	2
	Countersunk screw M1.6x5	16
	Countersunk screw M2x6	2
	M2x10CS	1
	M2x5CS	4
	Brg. Ø3xØ7x2ZZ	1
	One-way bearing. Ø3xØ6.5x6	1
	Brg. Ø3xØ6x2.5	2
	FW. Ø3xØ4.5	1



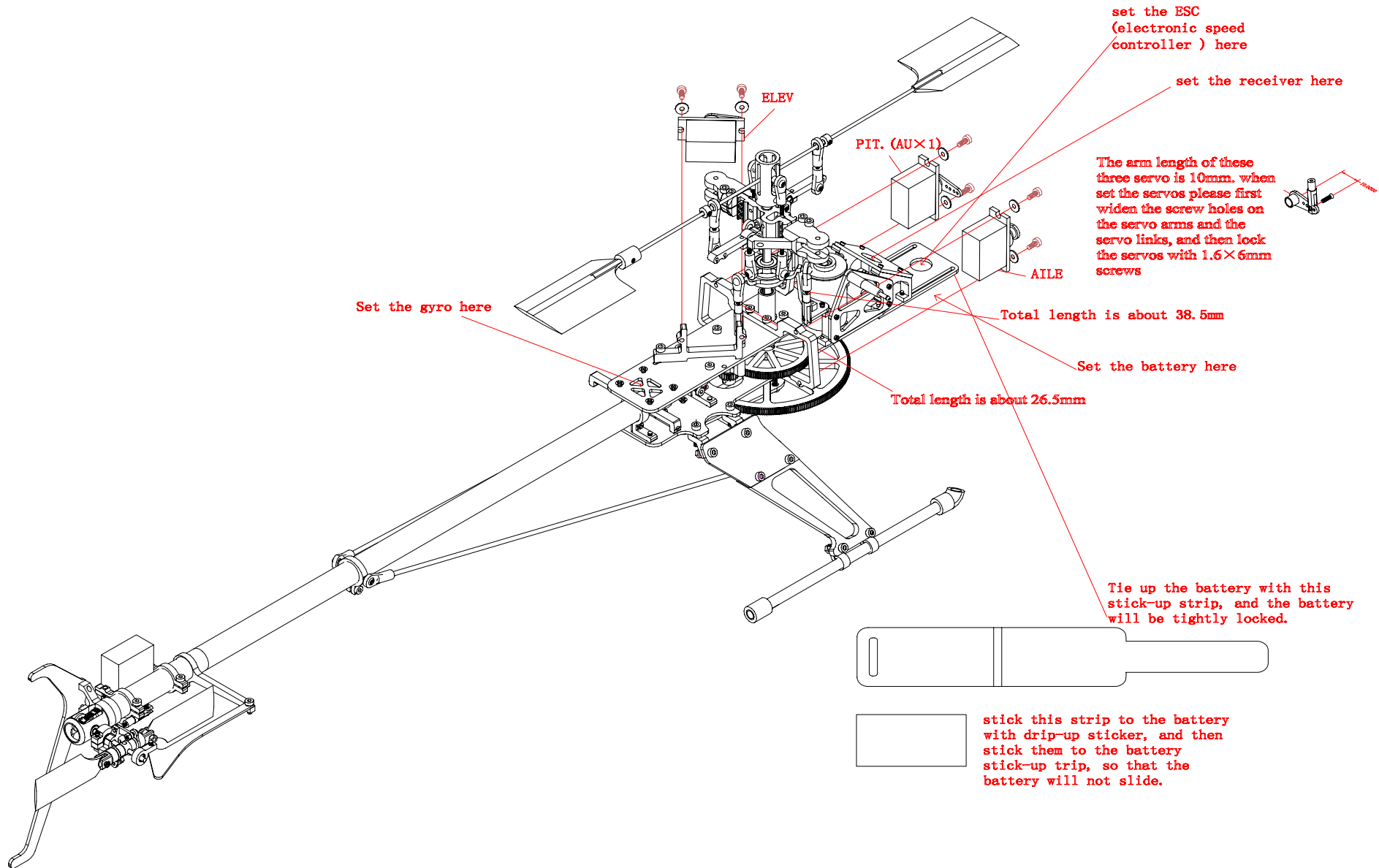
13

		4
		12
		16

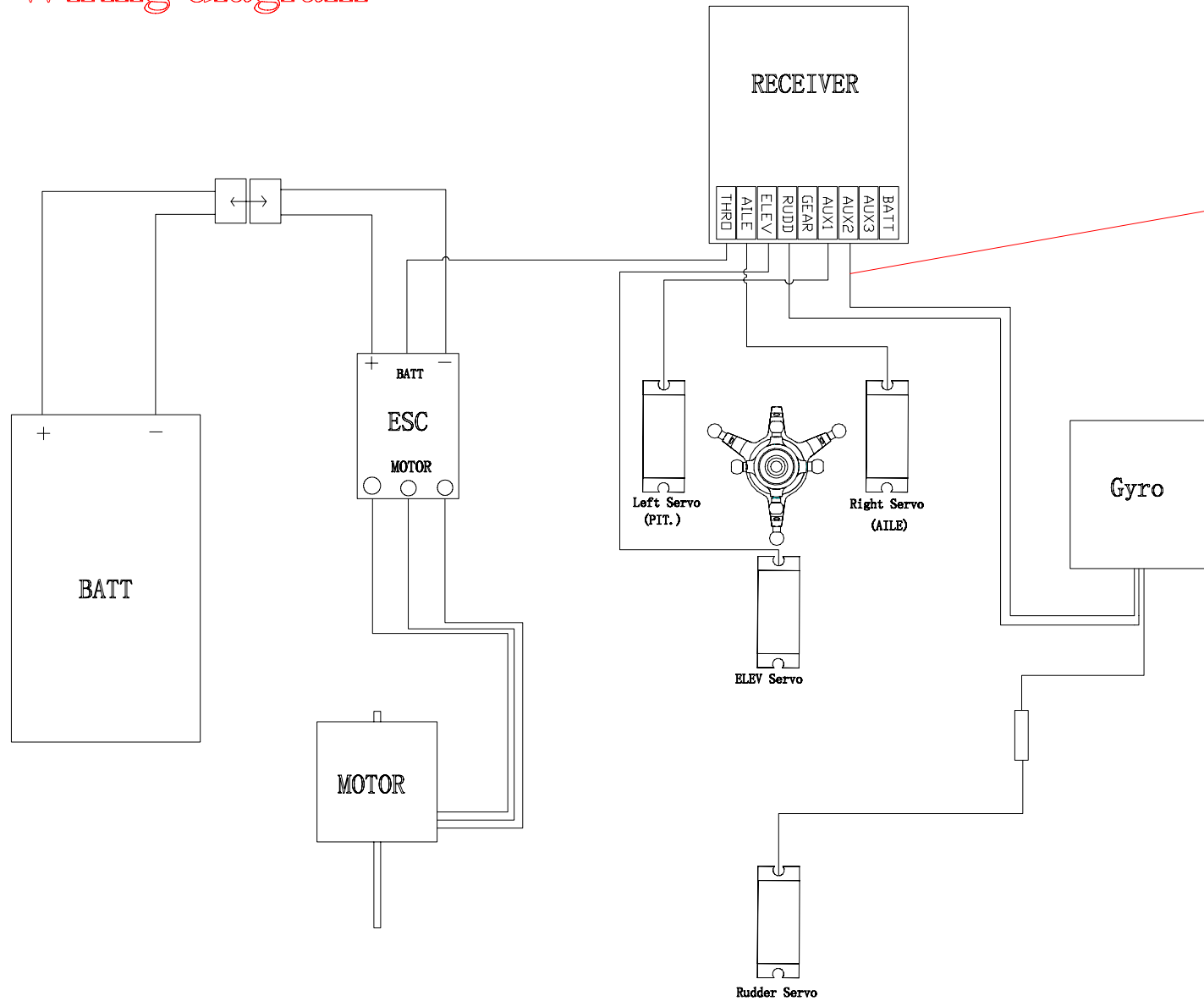
**Attention :**  
When set up the motor gear, please spread AB glue on the motor shaft first and please fly after the glue is dry.







# Wiring diagram



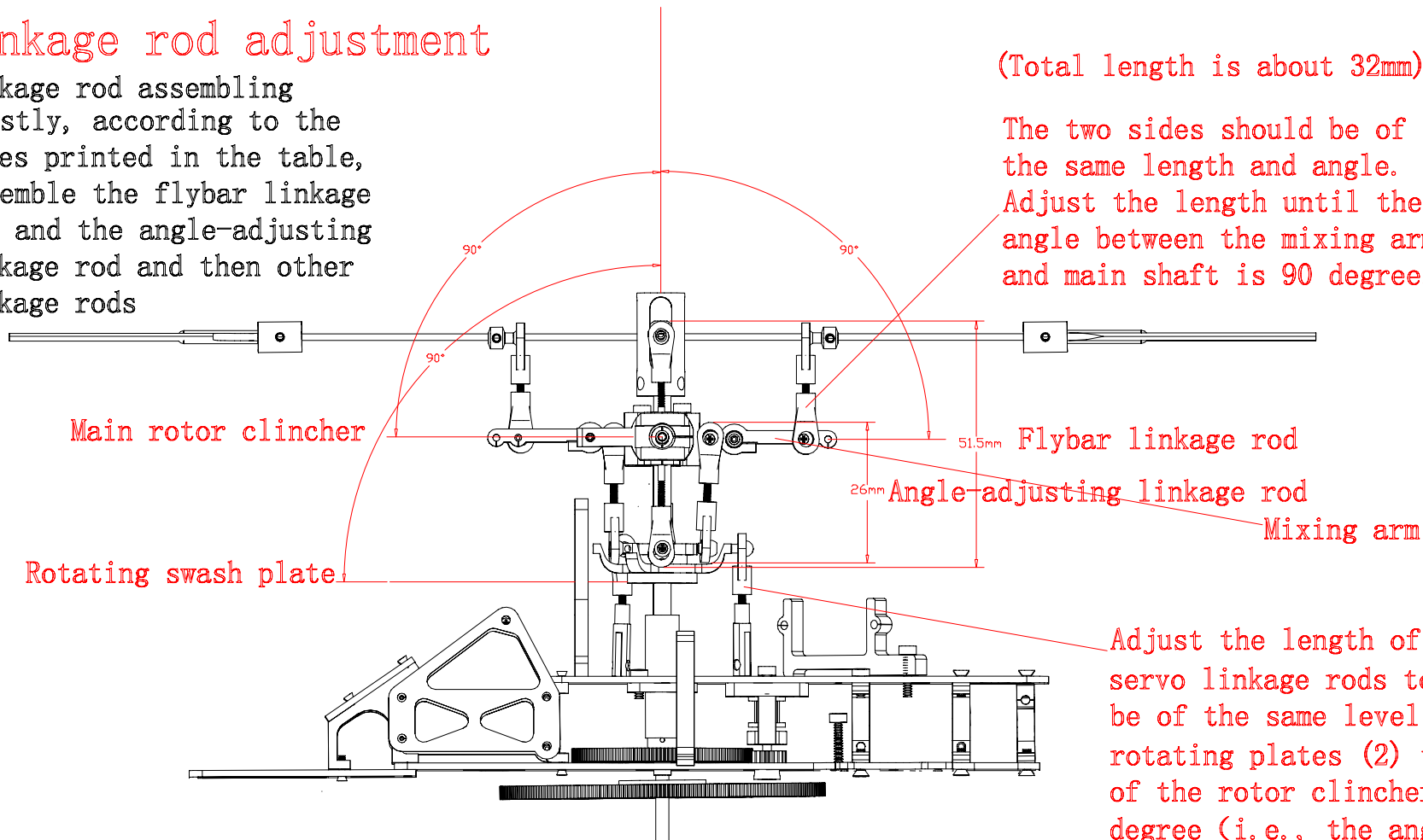
Please select the right plug connector referred in ESC manual.

# Linkage rod adjustment

Linkage rod assembling  
Firstly, according to the sizes printed in the table, assemble the flybar linkage rod and the angle-adjusting linkage rod and then other linkage rods

(Total length is about 32mm)

The two sides should be of the same length and angle.  
Adjust the length until the angle between the mixing arm and main shaft is 90 degree.



Adjust the length of three servo linkage rods to (1) to be of the same level as the rotating plates (2) the angle of the rotor clincher is 0 degree (i.e., the angle between the clincher plane and the main shaft is 90 degree)

# The setting of transmitter and servo

- I 1) . Unplug the motor's tie-in before switching on the electricity to ensure the motor will not work after electrifying.  
 2) . Demount the four servo arms.



II Switch on the transmitter, and choose the ccpm120 mode.

(SWASH TYP)

3servos

120°



III Switch on the transmitter and the heli's battery electricity. Don't move the heli until the gyro opening program is finished. And then turn off the electricity. Then, the servo is in its central position



IV Join the servo arms and the linkage rods. Move the servo mount to (1) Make sure the angle between the linkage rod and servo arm is 90 degree (2) Make sure the angle between the linkage and the angle-adjusting device is 90 degree. (3) Make sure the tail rotor is in such a state, where the angle of attack of the balancing counterforce is 3-5 degree (that is, when the tail rotor is rotating, the thrust of the tail rotor and the main rotor's rotating are in the same direction) Please refer to the illustration one and two.



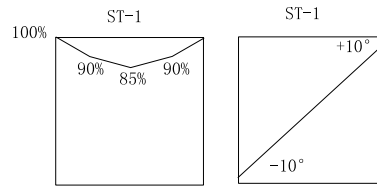
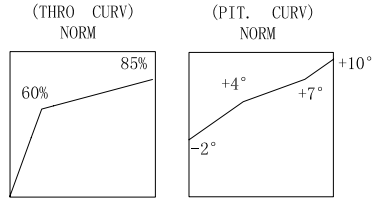
V Turn on the transmitter, and the electricity on the heli. (before the adjustment has been finished, do not wire the motor. Switch on the servos.

(1) Check whether the right and left tail blades are at the same angle. You can move central connector of tail rotor to adjust them at the same angle (after this, you should repeat all the actions in the last steps to make the joints at 90 degree). (2)when push the servo to its full capability, you must leave some space in the tail-adjusting device (otherwise, it can not work normally and life span will be reduced). And adjust the flying capacity on the gyro and transmitter.



VI Switch on the transmitter and the heli's electricity, push the gun in the center (PIT. 50%). Fix the 3 ccpm servo arms according to the page of linkage rod adjustment and the explanation, and keep the servo arm level and the linkage rod 90 degree with it.

VII Set up the main rotor, push the gun in the center position, switch on the transmitter and then the electricity of the heli, after that, set the screw distance and select the proper gun position.



or use constant speed

when measuring the main rotor's screw distance, make sure the consistency on the both sides. (You can adjust it with screw distance linkage rod)



VIII Find the most proper locked angle of the tail rotor. Wire the motor before switching on the electricity, then switch on the transmitter and select the right plug connector of gyro under 49 % ( in the unlocked mode)

(GYRO SENS)  
RUDD D/R

Rate:  
0:40%

push the gun to the lowest position, and switch on the electricity in a safe place. Keep the heli a safe enough distance from people, then start to test the flying with hanging in a height of about 1 meter in the air, and constantly readjust the angle of the tail rotor blades, until the heli can hang in the air itself without adjusting the rudder. After the heli lands on, turn off the electricity on the heli, and lock the gyro to the locked mode as

Rate:  
0:74~76  
1:65~75

Then switch on the battery electricity again. After the gyro finishes the opening program, you can then have a complete test of the heli ( to lock the mode you must switch on the electricity again)

## Power System:

- 1) The motor and the ESC need matching test. Please choose our motors and ESC. In the NORM condition, the highest speed of the main rotor of the SJM-400 is 2200~2600rpm; in the ST-1 condition, it is 2800~3200rpm.
- 2) Through gear decelerating structure, the motor can make the main rotor rotate. You can choose 10T, 12T, 14T motor copper gears (attached to the kit) to change the decelerating speed. (SJM-400's main rotor gear is 180T)  
$$V \text{ (battery voltage)} \times K_v \text{ (motor rev /v of)} \times \text{the number of motor's teeth} \div 180 \text{ (main rotor gear)} =$$
  
the rev of the main rotor
- 3) Our ESC (25A, BEC3A) can be matched with .3s 11.1V and 4s 14.8V Li-battery.
- 4) Please use (3s) 11.1V, 1300~1800mAH, and over 15c or 4s, 14.8V, 1000-1800mAH, and over 12c Li-battery.

Illustration one

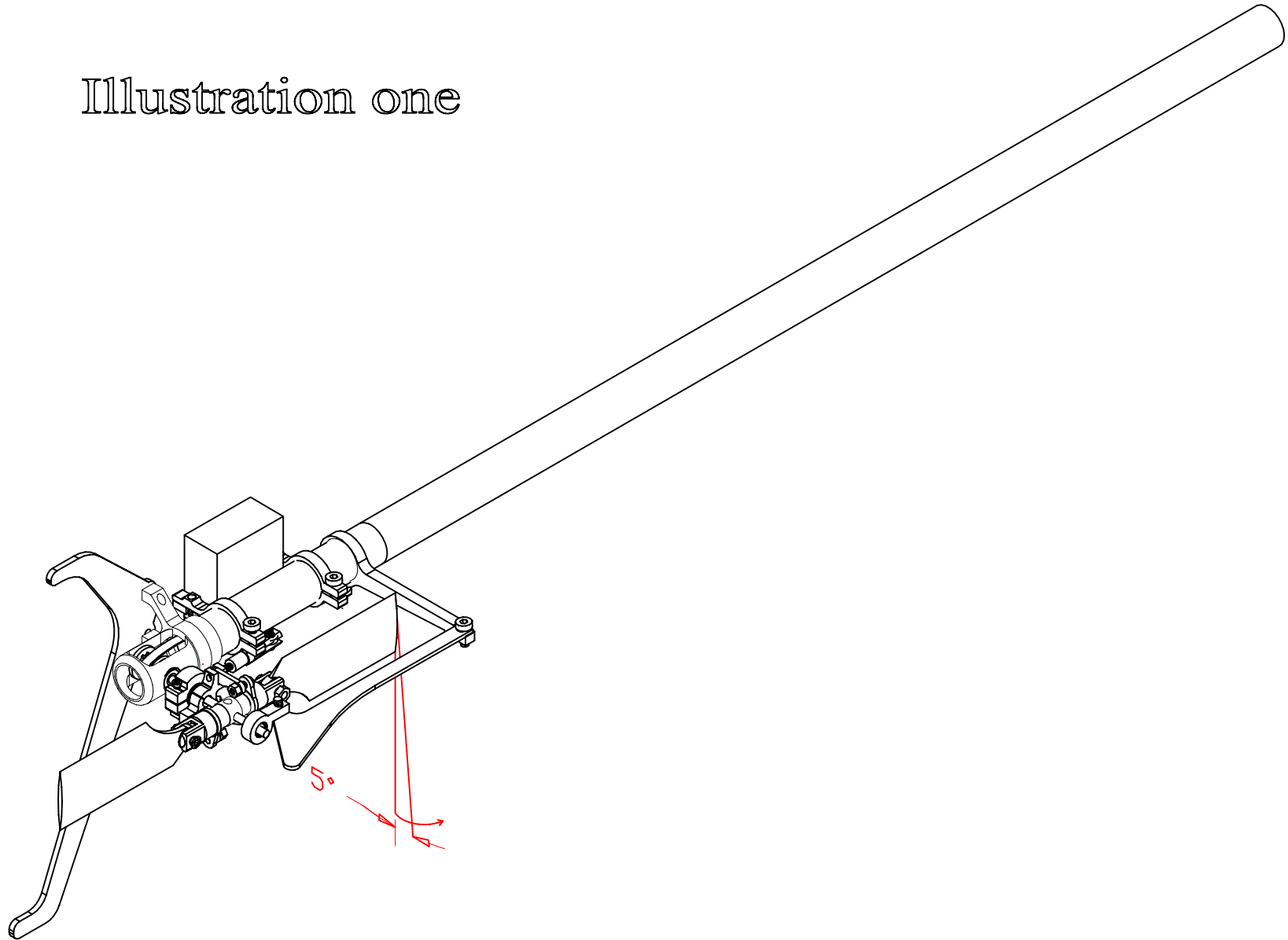
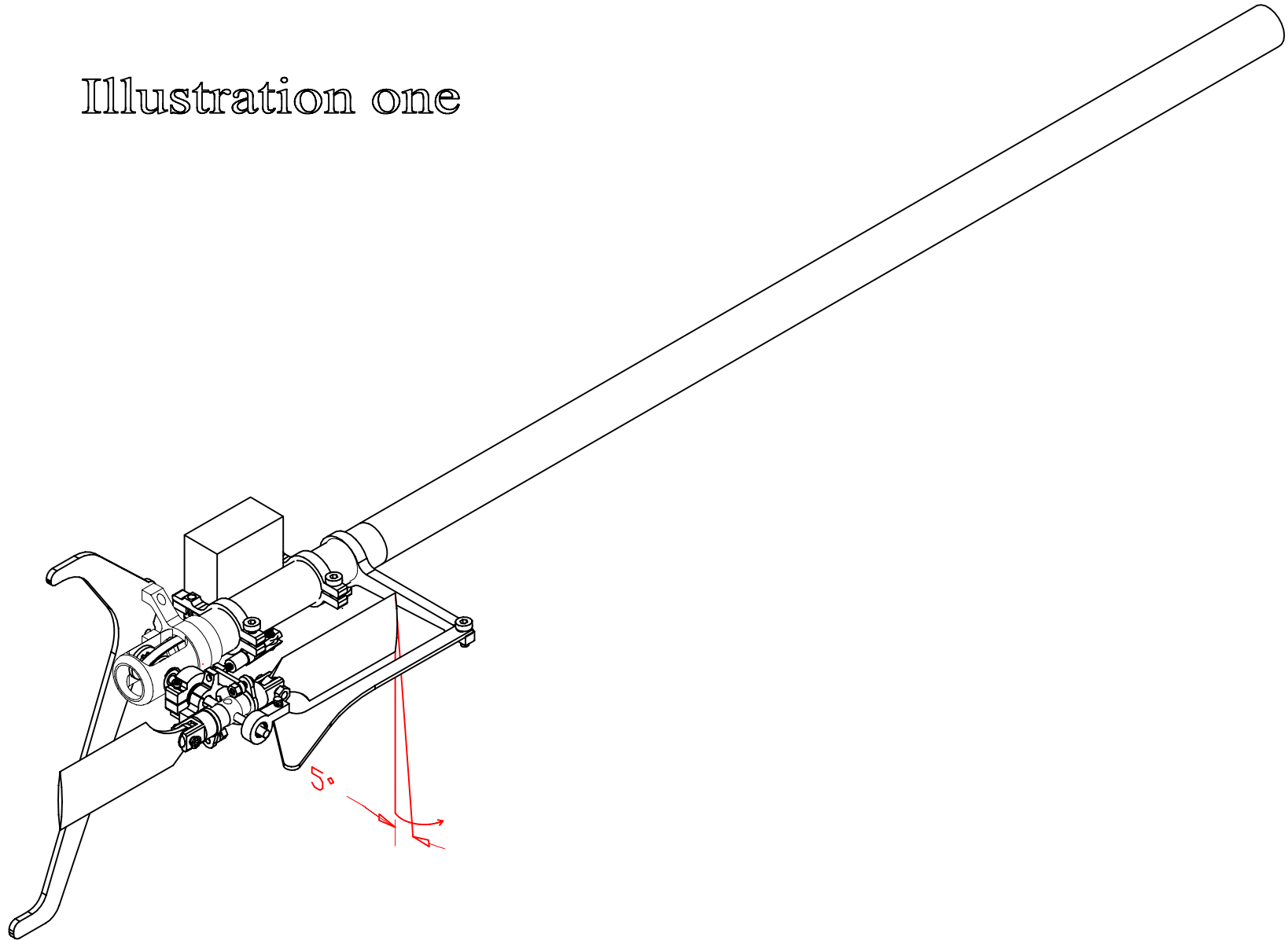
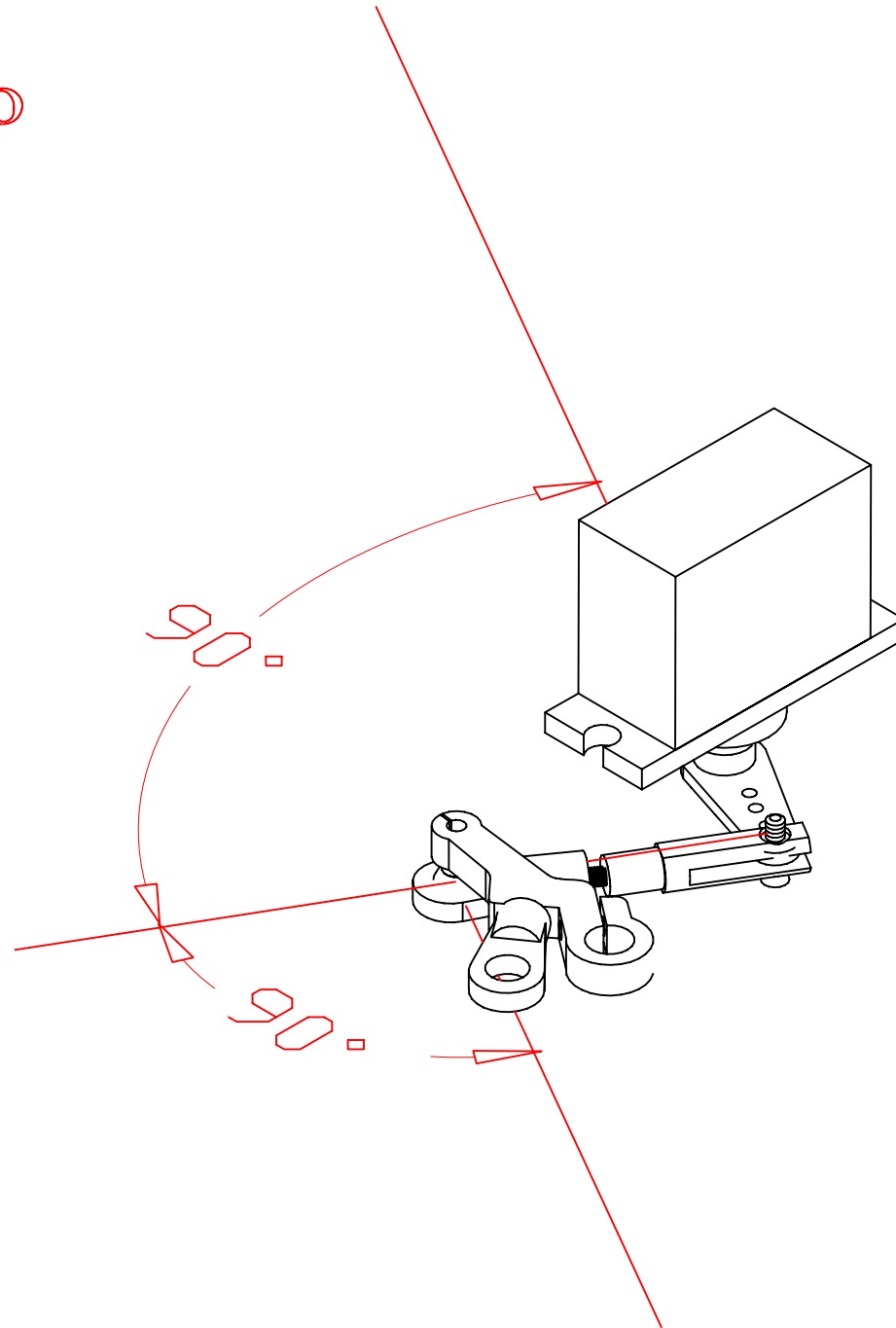


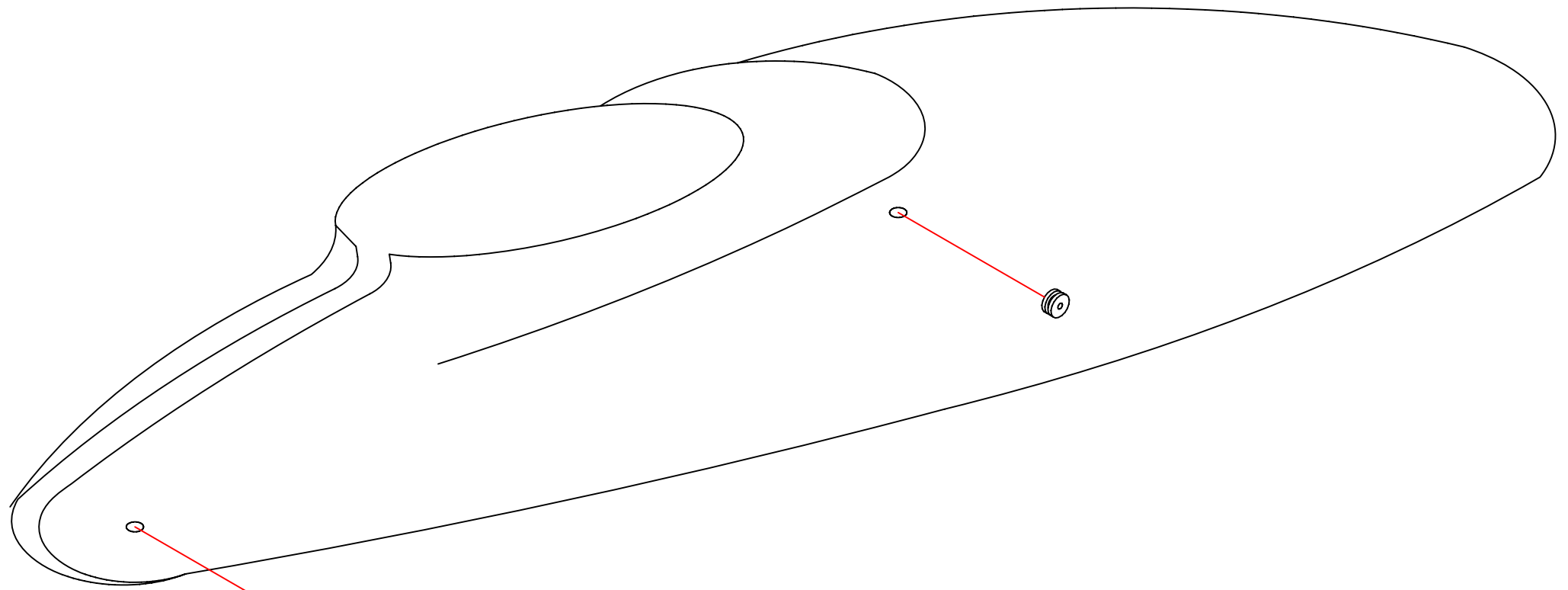
Illustration one



# Illustration two







**Canopy rubber**

M2 × 5CS