450C MANUAL

Features:

1. RTF version
2. CCPM control system
3. Auto-rotation system
4. Rear tail servo mount
5. Professional main rotor head design

Thank you for buying our company products. The 450C is RTF RC helicopter, whick is design for 3D beginers. It can finish all kinds of 3D performences.

USER HANDBOOK:

Before operating the helicopter, please read the manual carefully which can help you to operate your helicopter. Be sure to remain the manual for future reference, routine maintenance, and turning.

1. MPORTANT NOTESA:

R/C helicopters, including the GL-450 are not toys, R/C helicopter 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 GULANG products. Manufacturer and seller assume no liability for the operation or the use of this product. Intended for use only by adults with experience flying remote control helicopters. After the sale of this product we cannot maintain any control over its operation or usage.

We recommend that you obtain the assistance of an experienced pilot before attempting to fly our products for the first time. A local expert is the best way to properly assemble, setup, and fly your model for the first time. The GL-450 requires a certain degree of skill to operate, and is a consumer item. Any damage or dissatisfaction as a result of accidents of modifications is not covered by any warrantee and cannot be returned for repair or replacement.

Note: Fly only in safe areas, away from other people. Do not operate R/C aircraft within the vicinity of homes or crowds of people. R/C aircraft are prone to accridents, failures, and crashed due to a variety of reasons including, lack of maintenance, pilots are responsible for their actions and damage or injury occurring during the operation or as of a result of R/C aircraft models.

2. Tools Required for assembly

					
Lubricant	knife	Scissors	Nipper	Ball Link Pliers	screwdriver

SOFETY NOTES:

01. Lacate an appropriate location:

R/C helicopters fly at hight 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 obsetacles. Do you fly near buildings, high voltage cables, or threes ti ensure the safety of yourself, others, and your model. Do not fly your model in in-clement weather, such as rain ,wind, snow, or darkness.

02. Obtain the ass istance of an experienced pilot:

Befor turning on your model and transmitter, check to make sur no one else id operating on the same frequency. Frequency interference can sausse your model, or other models to crash. The guidance provided by and experienced pilot will be invaluable for the assembly, tuning, trimming, and actual first flight.

03. Always be aways of the rotating blades:

During be operation of the helicopter, the main rotor and tail rotor will be spinning at a high rate of speed. The blades are capable of inflicting serious bodily injury and damage to 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 smitter when you have landed the model.

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.


snow

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.


rain

KEEP AWAY FROM HEAT

R/C models are made up various forms of plastic.

Plastic is very susceptible to damage or deformation due to heat.


thermometer hot

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.

3. wanning

3.1 SAFE OPERATION

Operate this unit with your ability. Do not fly under tired condition and improper operation may cause in danger.

3.2 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, turning, trimming, and actual first flight. (Recommend you to practice with computer-based flight simulator.)

4. FORBIDDEN

4.1 PROPER OPERATION

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

4.2 LOCATE AN APPROPRIATE LOCATION

R/C helicopters fly at high speed, thus posing a certain degree of potential. 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 cable s turned on. Immediately turn off the model and transmitter when you have landed the model.

crowd

high buildings

4.3 ALWAYS BE AWARE OF THE ROTATING BLADES

During the operation of the helicopter, the main rotor and will be spinning at a high rate of speed. The blades are capable of inflicting serious bodily and damage to the environment. Be conscious of your actions, one else is operating on the same frequency for the safety.

5. CAREFULLY INSPECT BEFORE REAL FLGHT

5.1 Before flying, please check to make sure to no or trees to ensure the safety of yourself, others, and you model. Do not fly you model in inclement weather, such as rain, wind, snow or darkness.

5.2 Before flight, please check if the batteries of transmitter and receiver are enough for the flight.

5.3 Before turn on the transmitter, please check if the throttle stick is in the lowest position. IDLE switch is OFF.

5.4 When turn off the transmitter, please follow the power on/off procedure. Power ON-Please turn on the transmitter first, and then turn on receiver. Power OFF-Please turn off the receiver first and turn off the transmitter. Improper procedure may cause out of control, so please to have this correct habit.

5.5 Before operation, checking every movement is smooth and directions are correct. Carefully inspect servos for interference and broken gear.

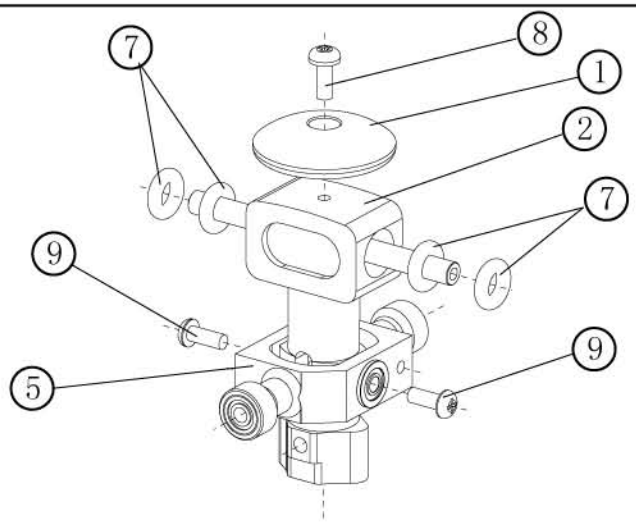
5.6 Check for missing or loose screws and nuts. See if there is any cracked and incomplete assembly of parts. Carefully check main rotor blades and rotor holders. Broken and premature failures of parts possibly cause resulting in a dangerous situation.

5.7 Check all ball links to avoid excess play and replace as needed. Failure to do so will result in poor flight stability.

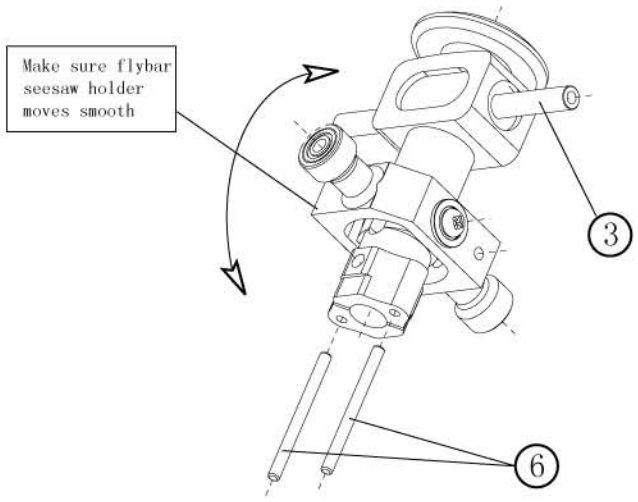
5.8 Check the battery and power plug are fastened. Vibration and violent flight may cause the plug loose and result out of control.

5.9 Check for the tension of tail drive belt.

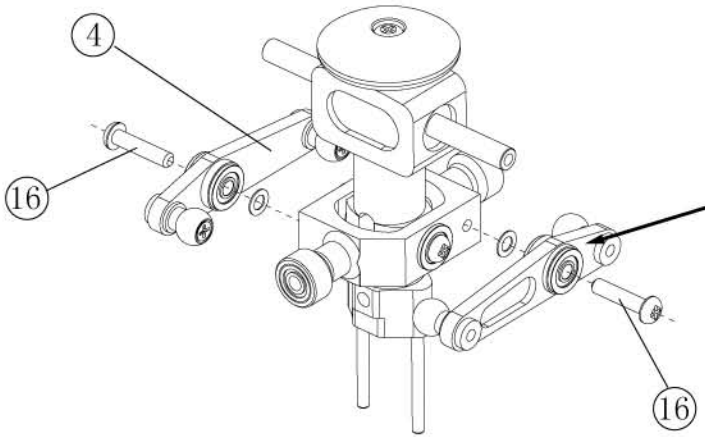
Installation steps of main rotor -1:



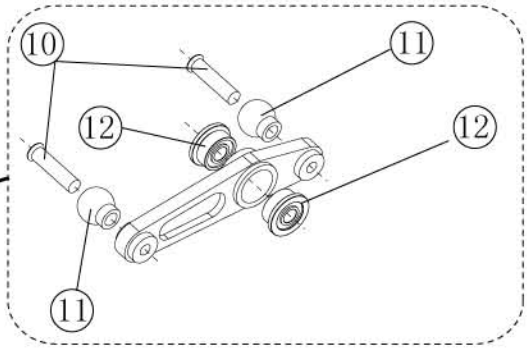
Fly frame main rotor housing set -1



Fly frame main rotor housing set -2

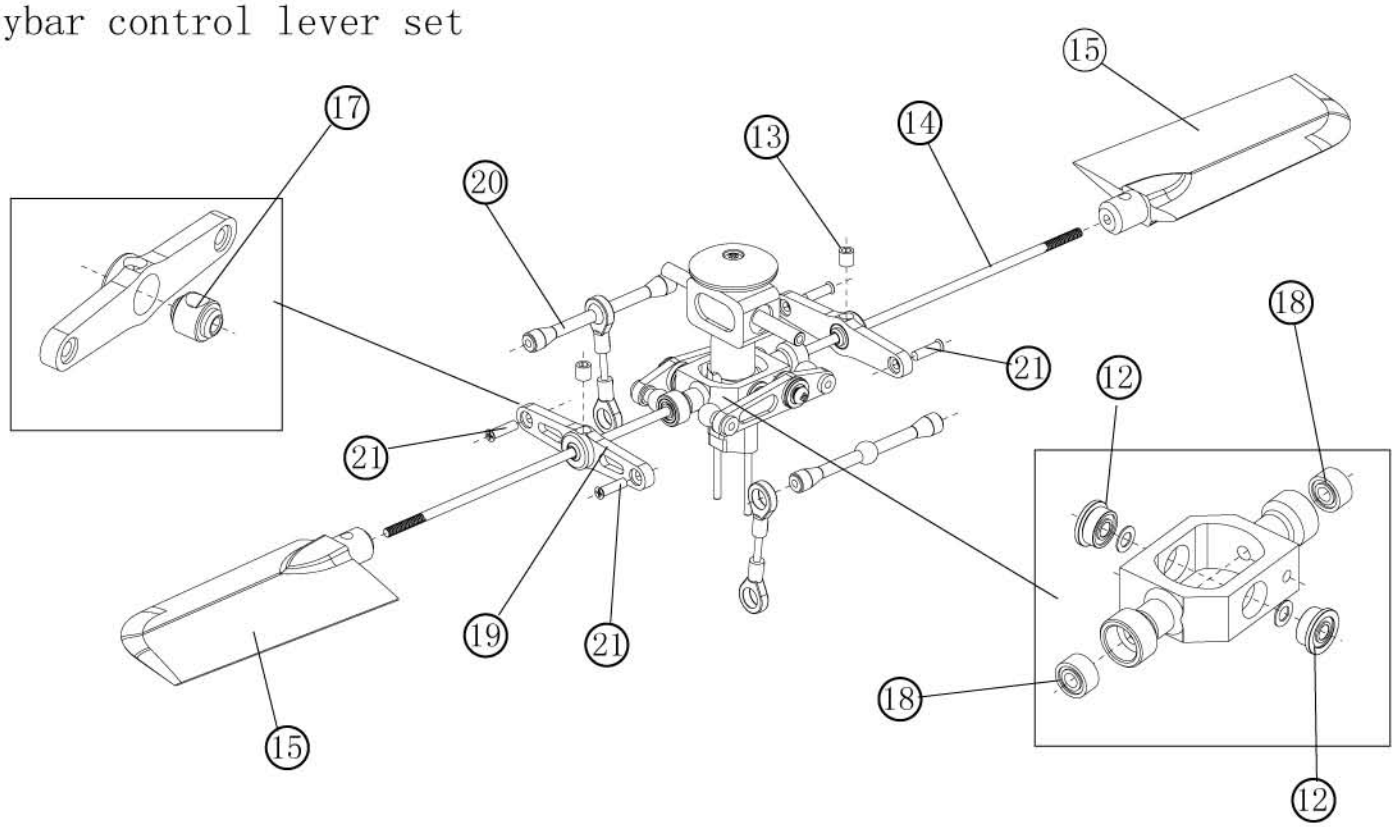


Control lever main rotor housing set

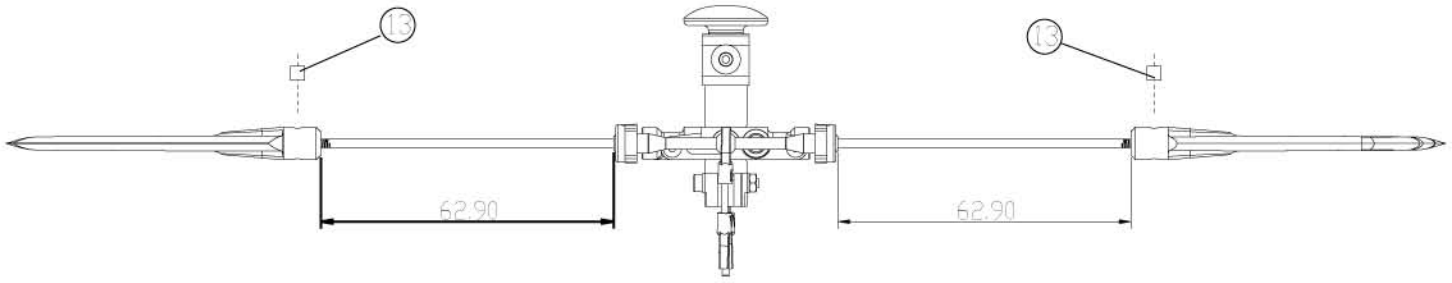


Control lever arm set

Flybar control lever set

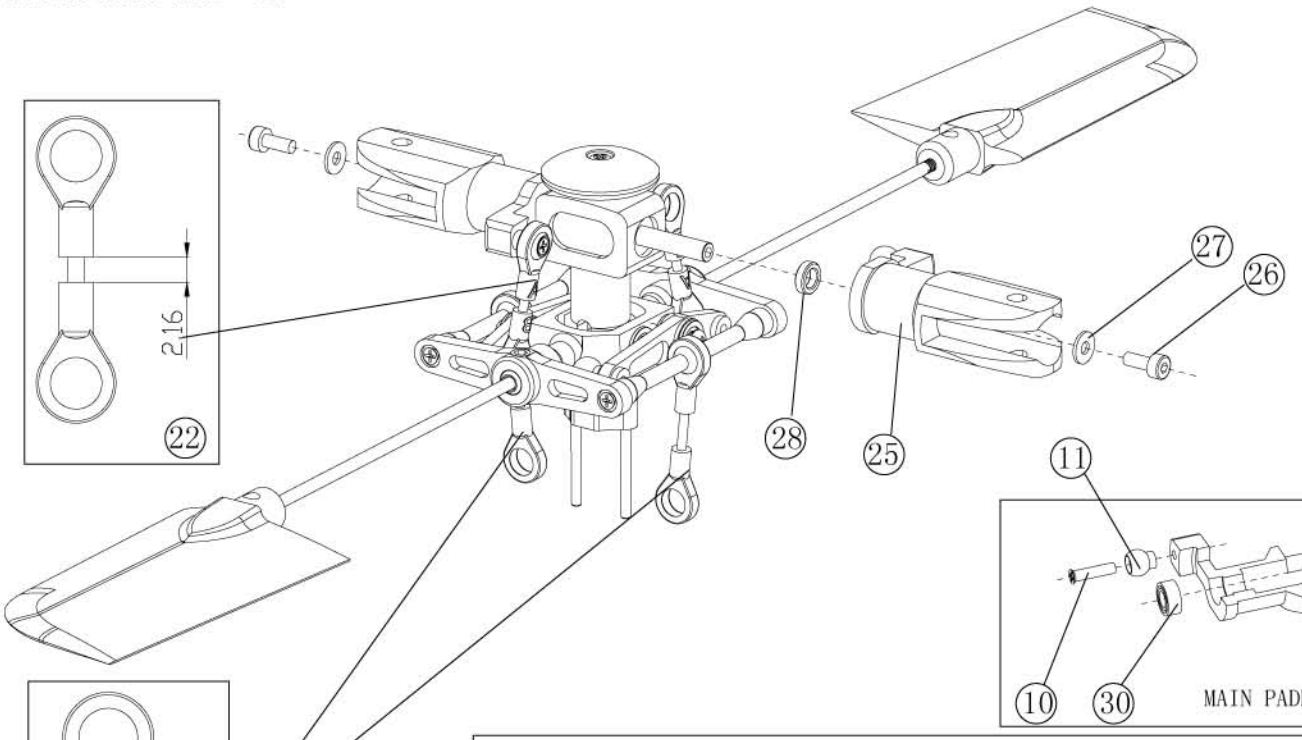


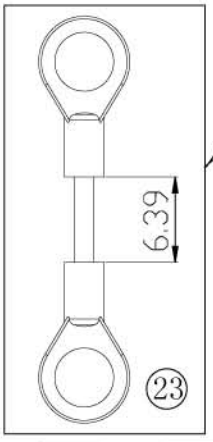
Installation steps of main rotor -2:



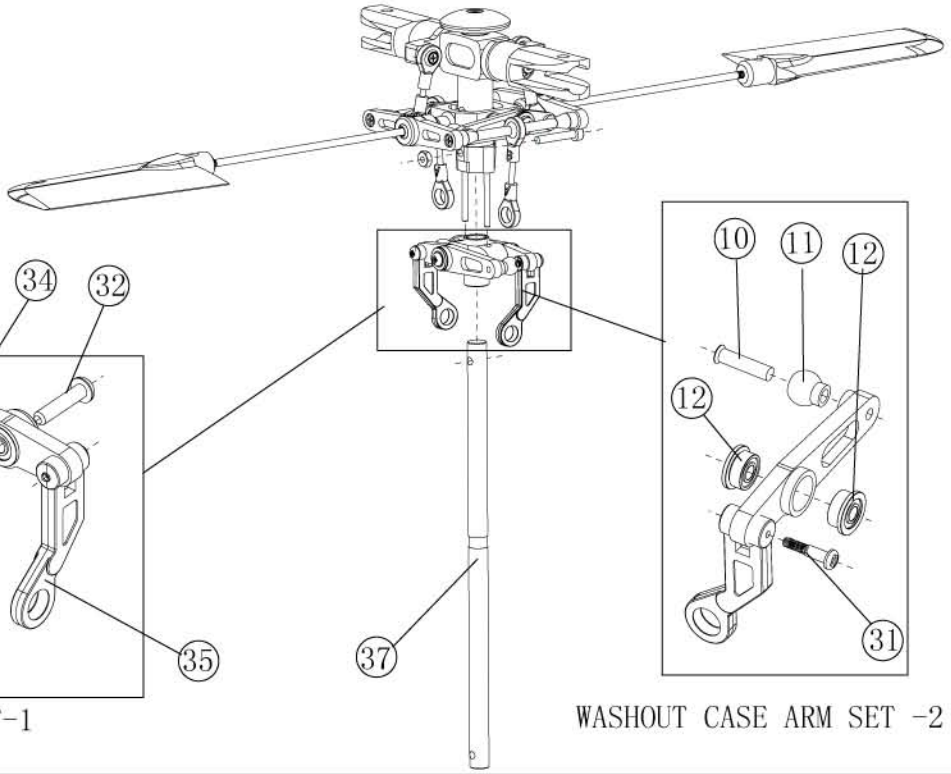
MAIN ROTOR HOUSING FLYBAR PADDLE SET

ROTOR PART SET -1:





ROTOR PART SET -2:

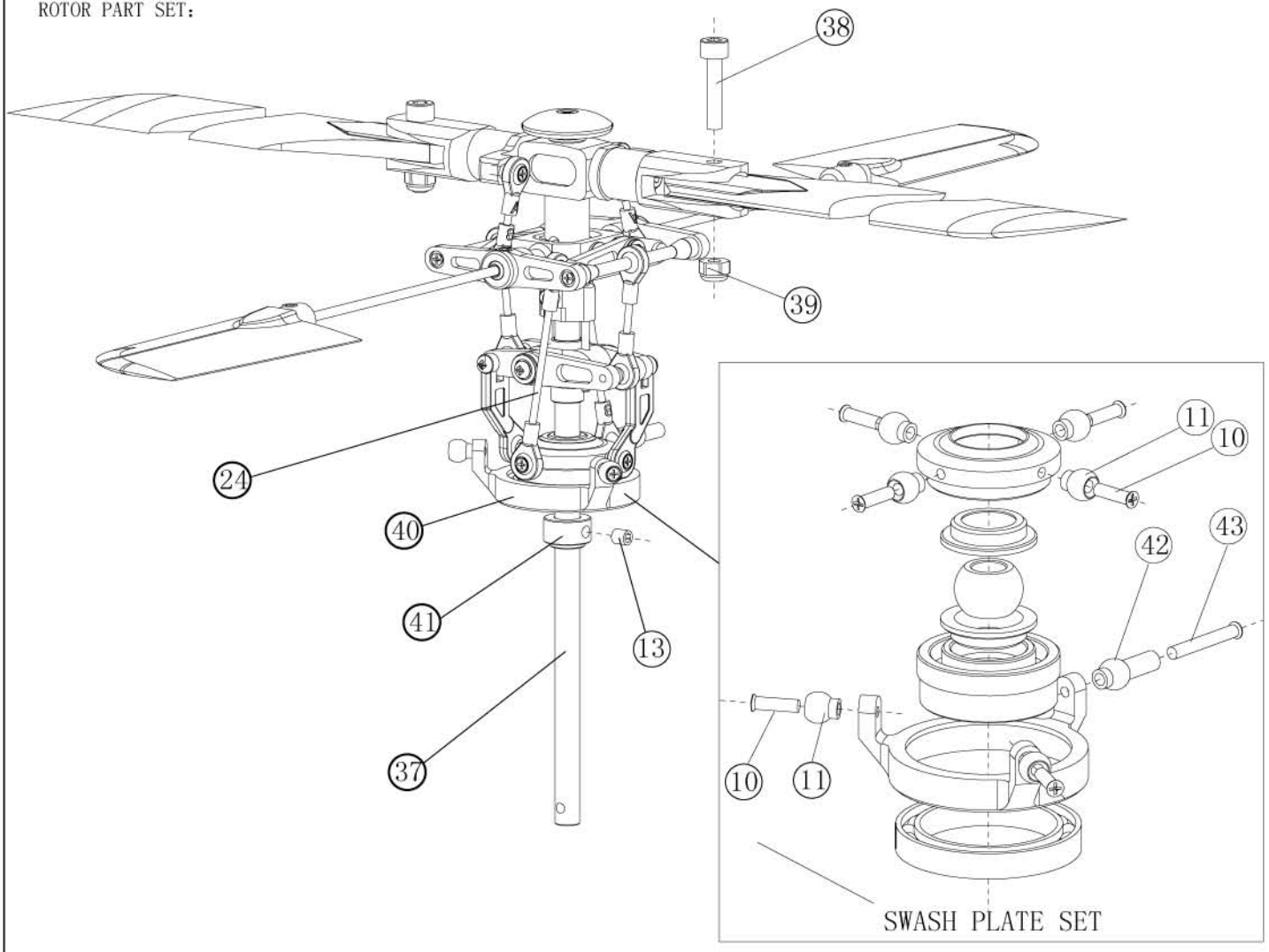


WASHOUT CASE ARM SET-1

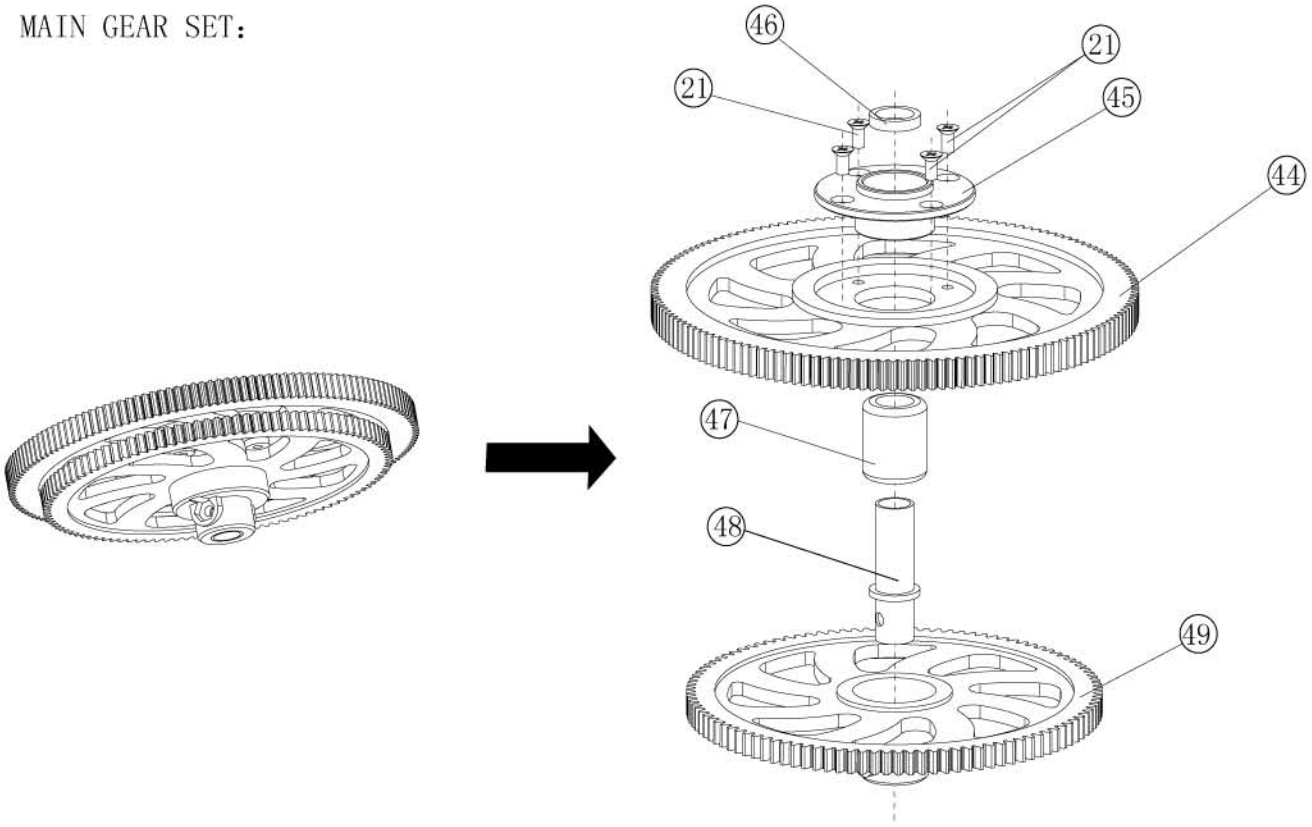
WASHOUT CASE ARM SET -2

Installation steps of main rotor -2:

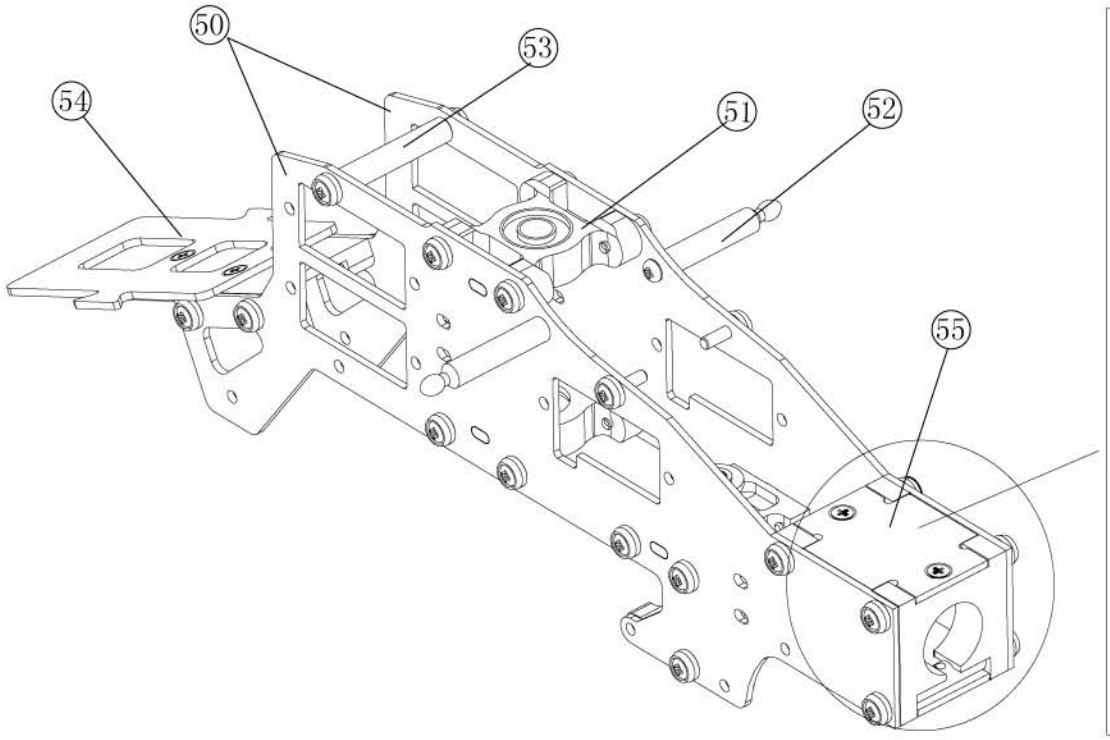
ROTOR PART SET:

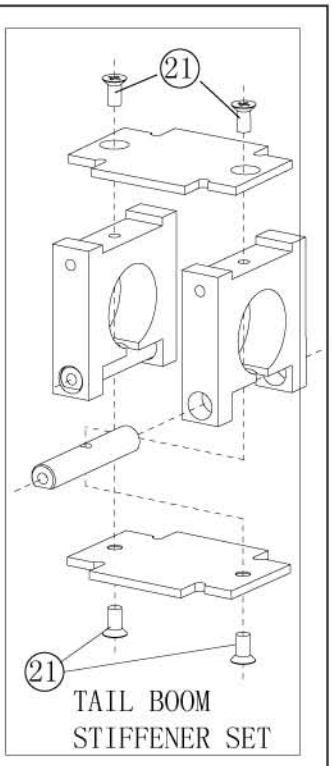


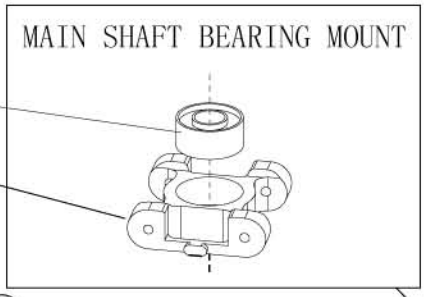
MAIN GEAR SET:

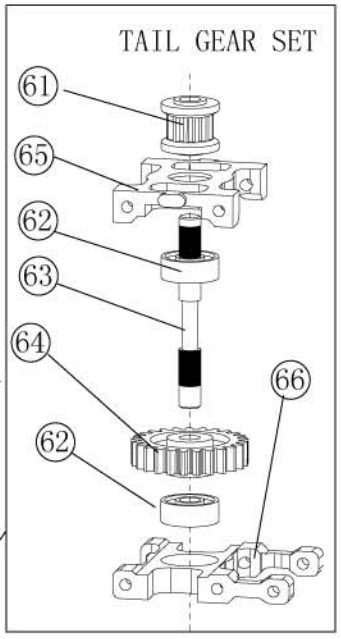


INSTALLATION ILLUSTRATION OF UPPER AIRFRAME SET:

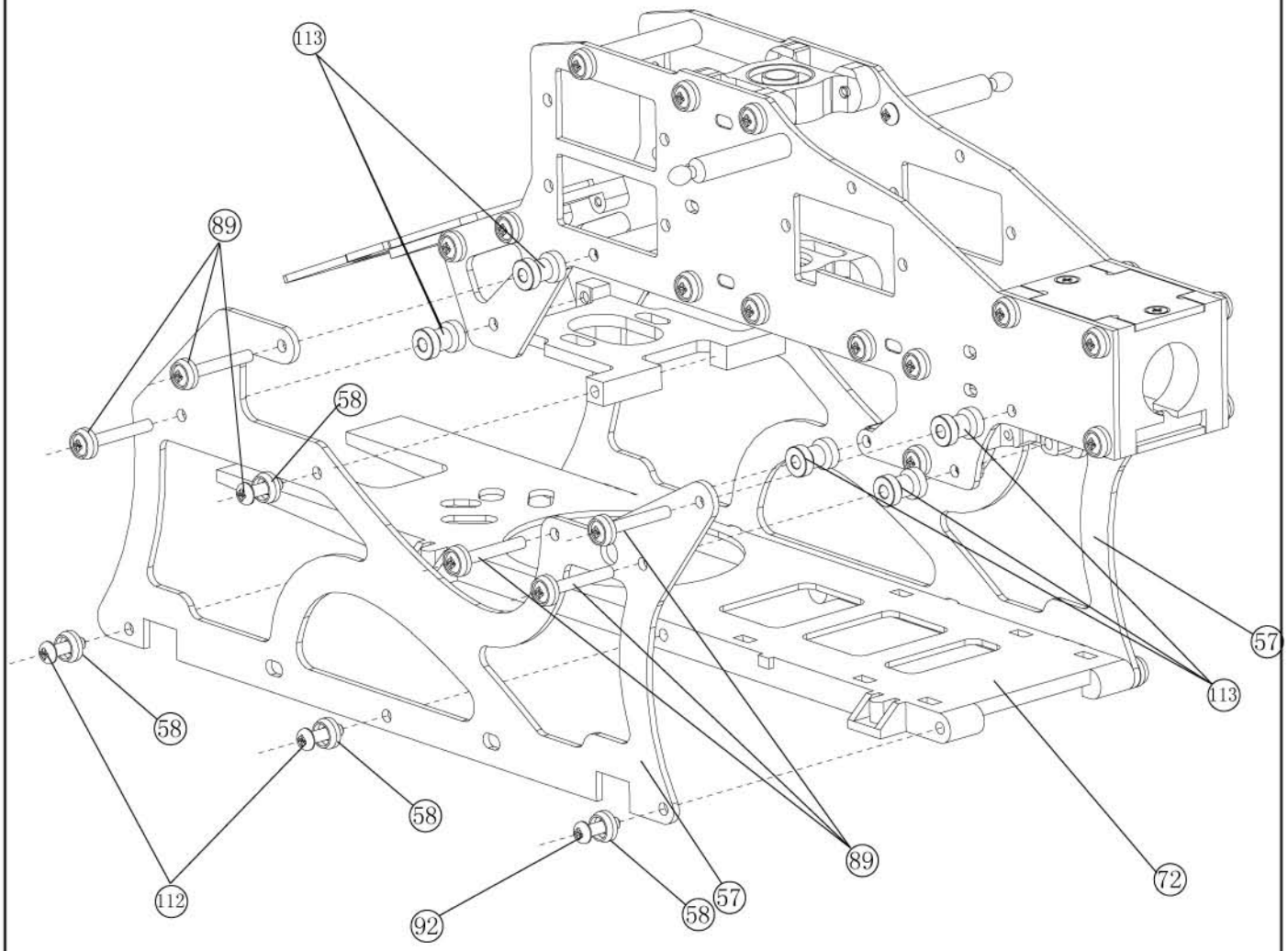




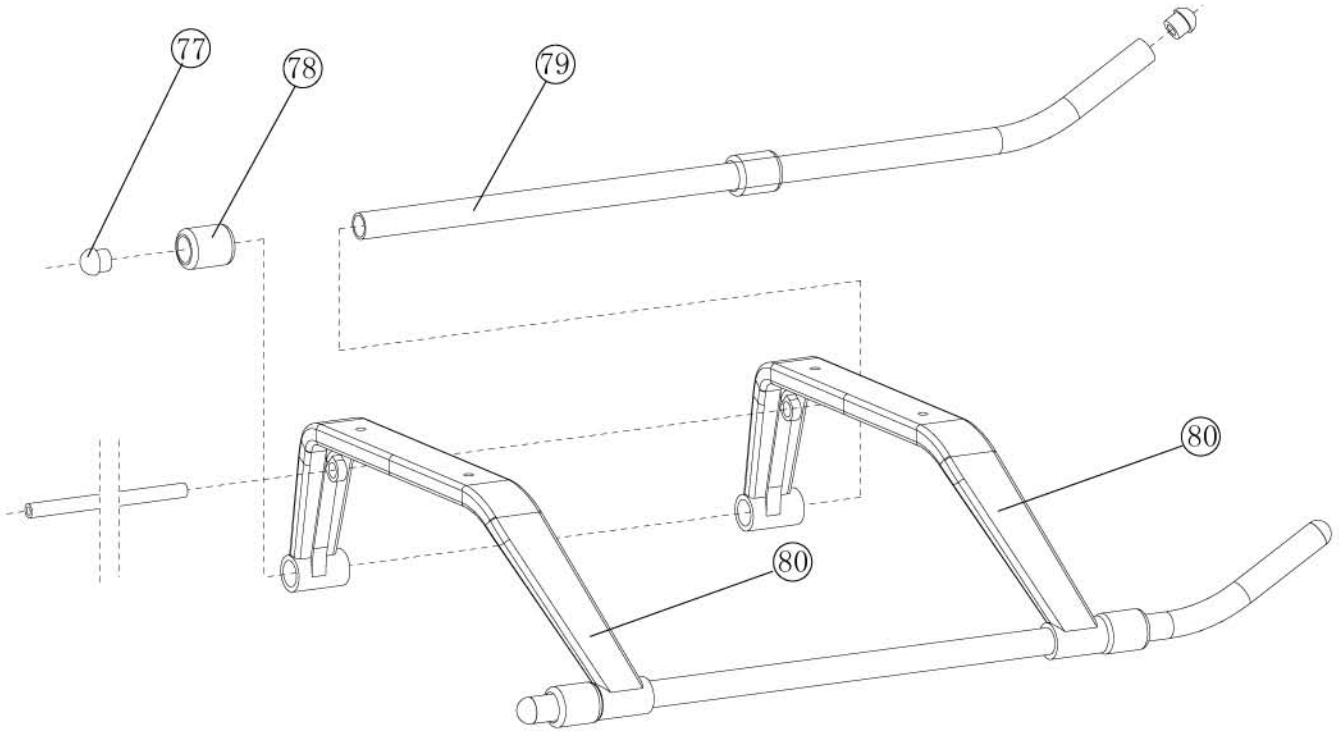




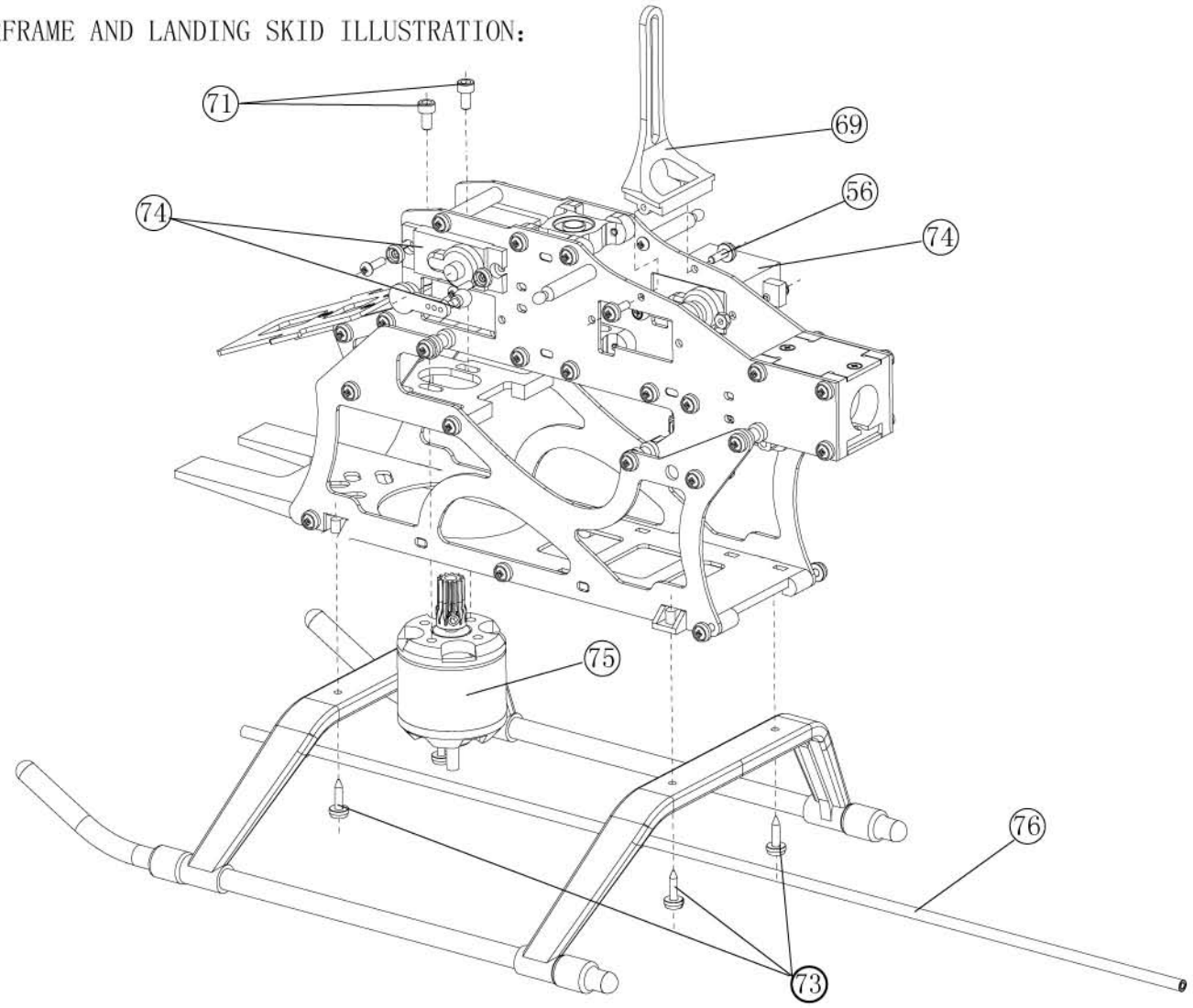
UPPER AND LOWER AIRFRAME INSTALLATION SKETCH MAP:



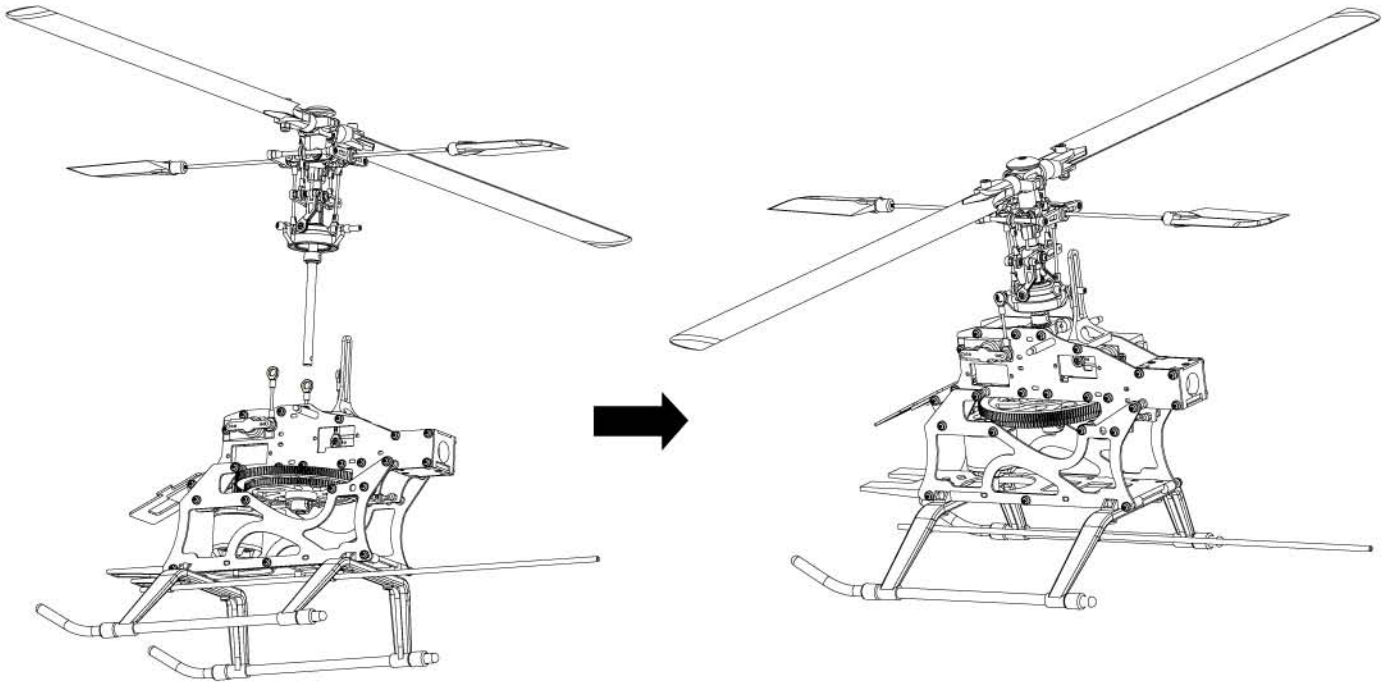
LANDING SKID ILLSTRATION:



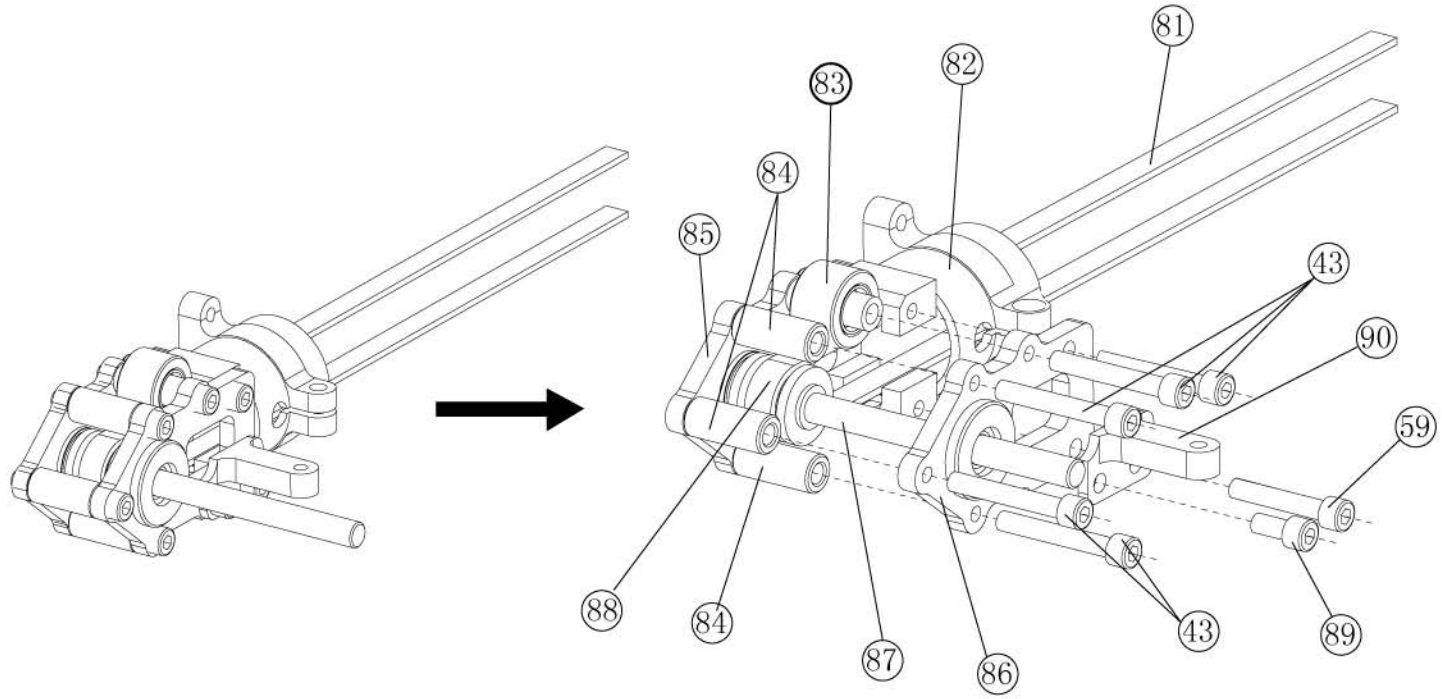
AIRFRAME AND LANDING SKID ILLUSTRATION:

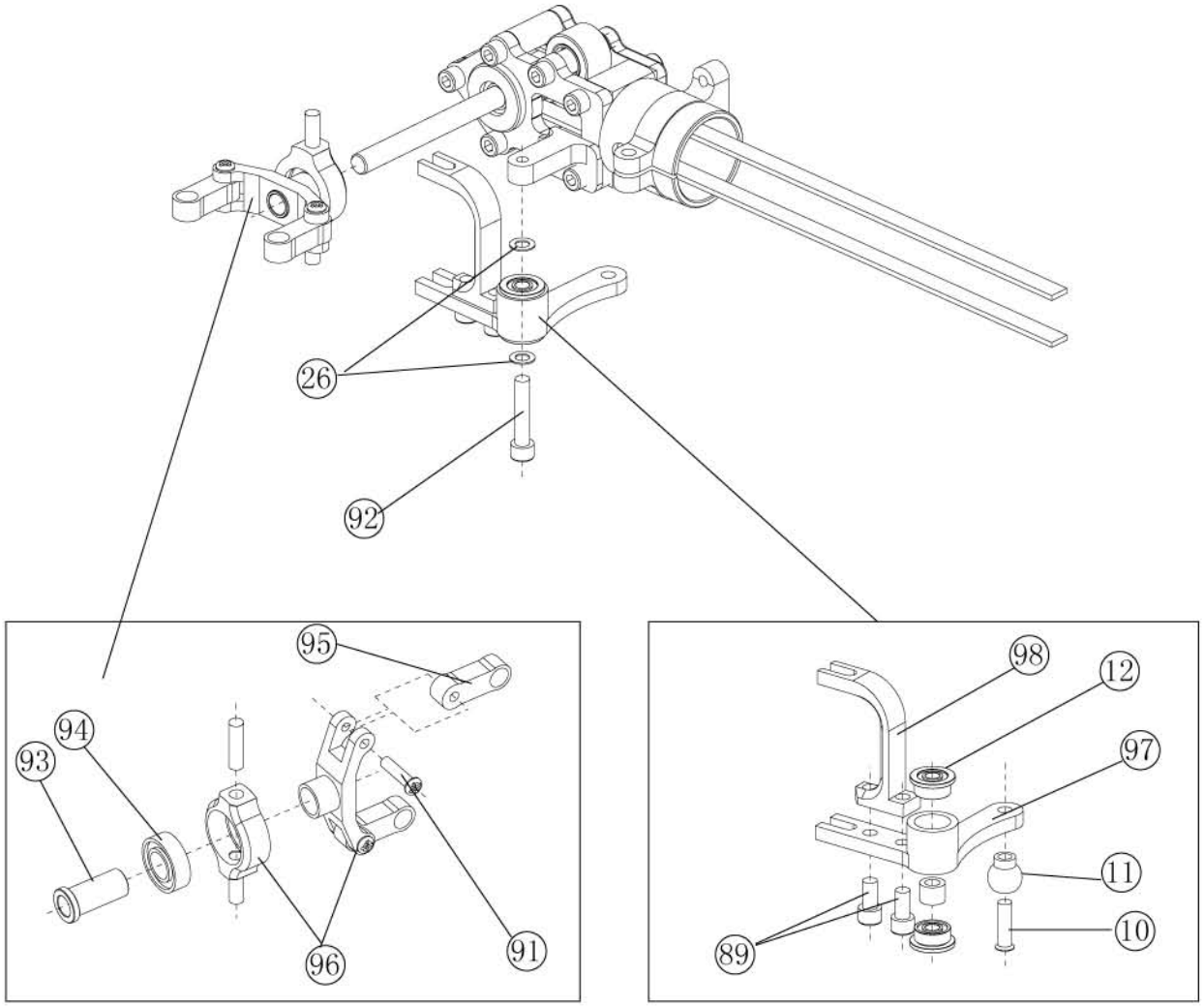


INSTALLATION OF MAIN ROTOR SET:



INSTALLATION ILLUSTRATION OF TAIL GEAR HOLDER SET:

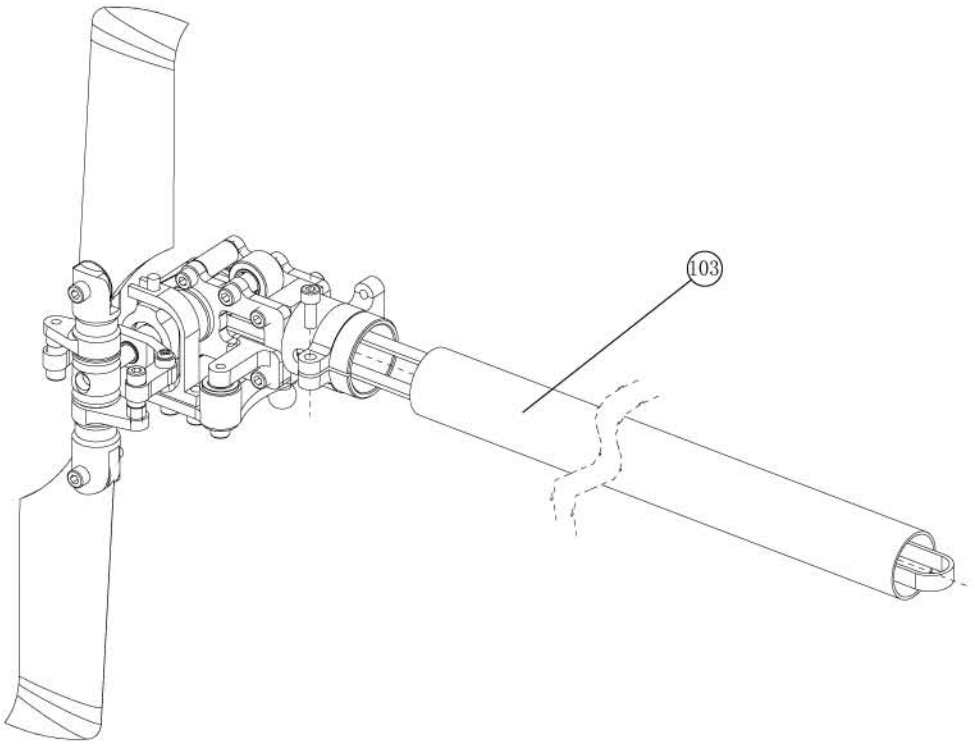


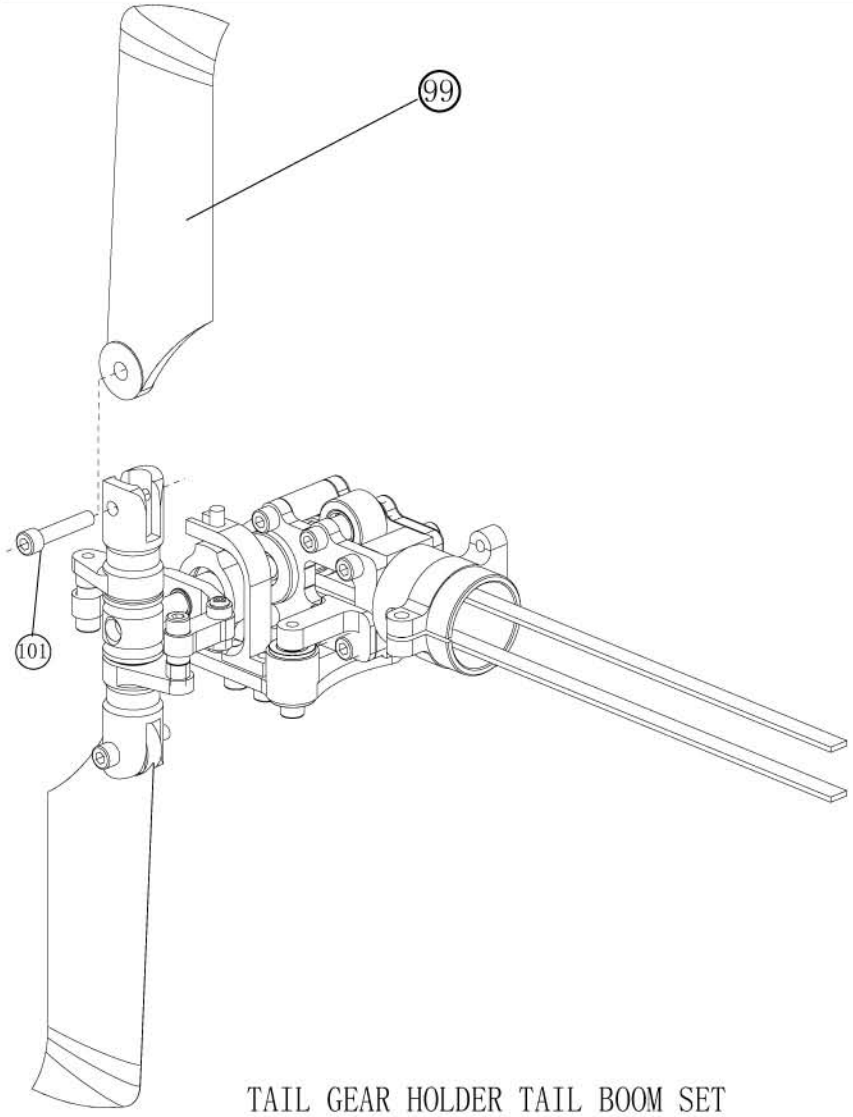


TAIL SLIDING PART SET

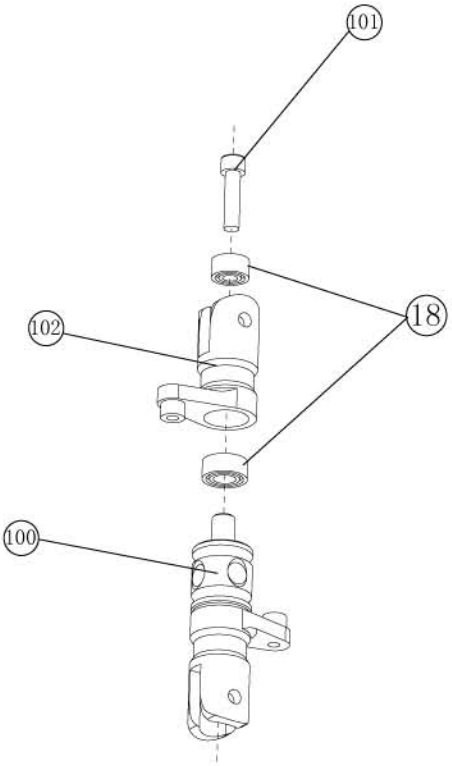
TAIL CONTROL LEVER

INSTALLATION ILLUSTRATION OF TAIL ROTOR:





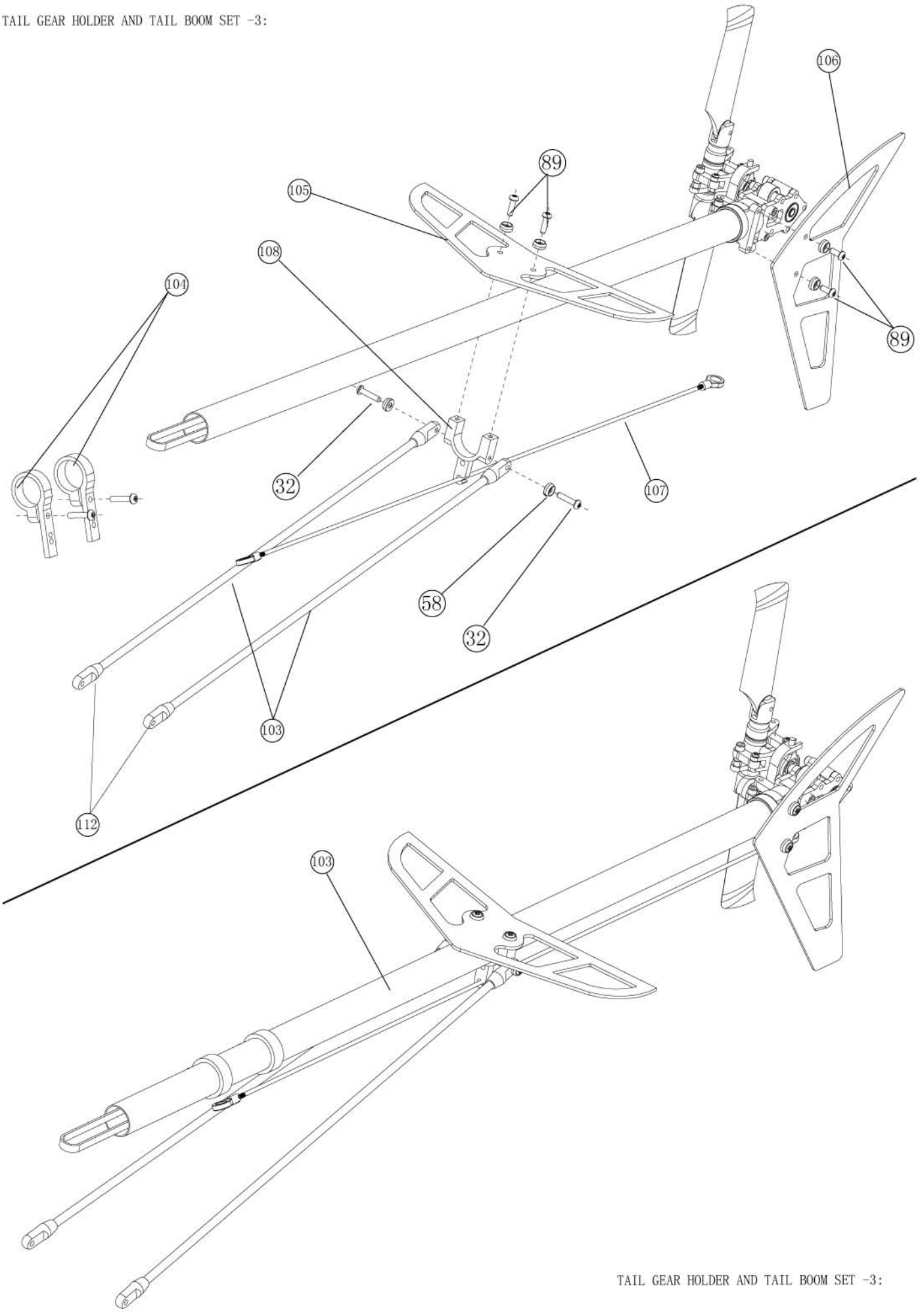
TAIL GEAR HOLDER TAIL BOOM SET



TAIL PADDLE SET

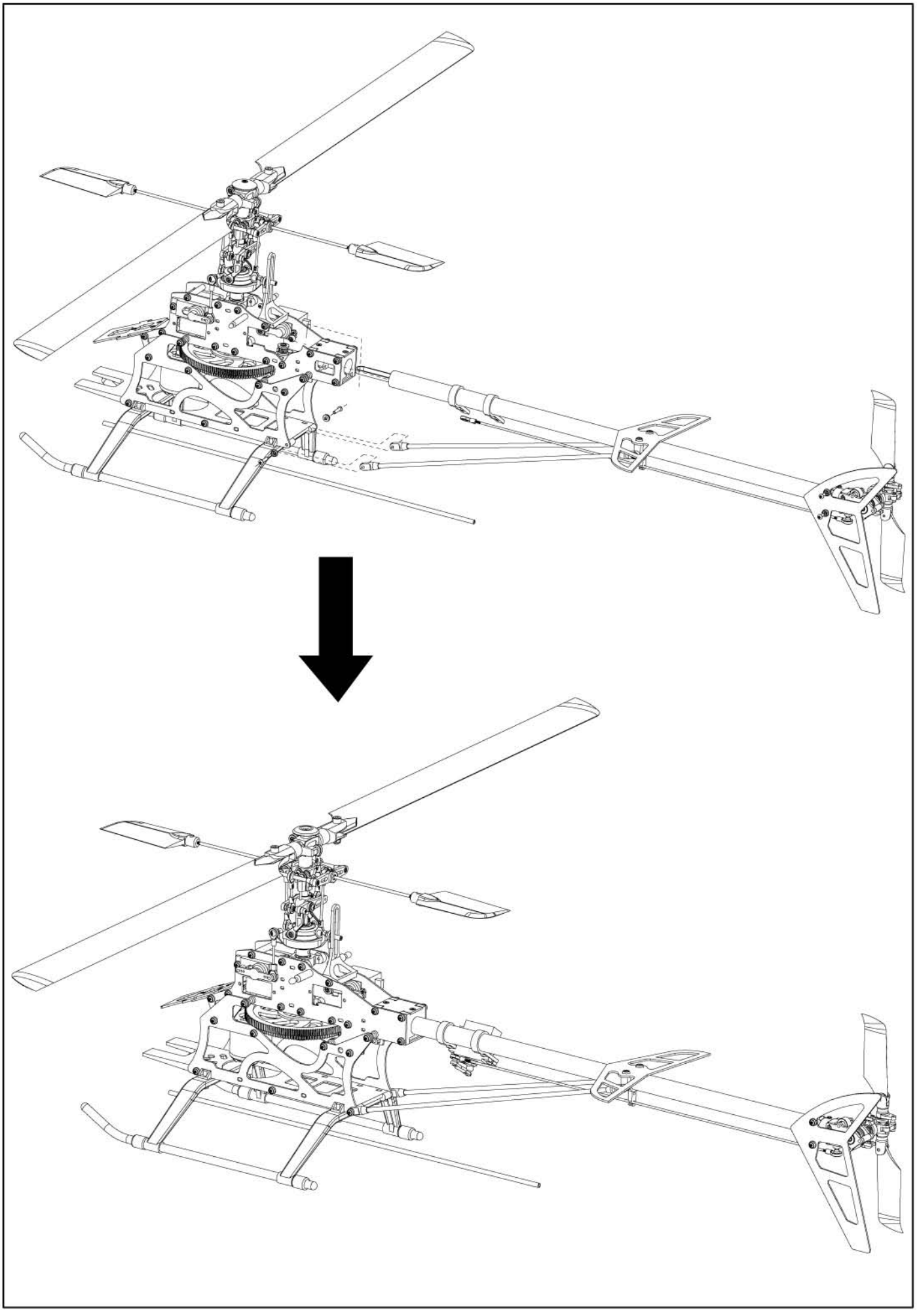
INSTALLATION ILLUSTRATION OF TAIL ROTOR:

TAIL GEAR HOLDER AND TAIL BOOM SET -3:



TAIL GEAR HOLDER AND TAIL BOOM SET -3:

INSTALLATION ILLSTRATION OF TAIL BOOM



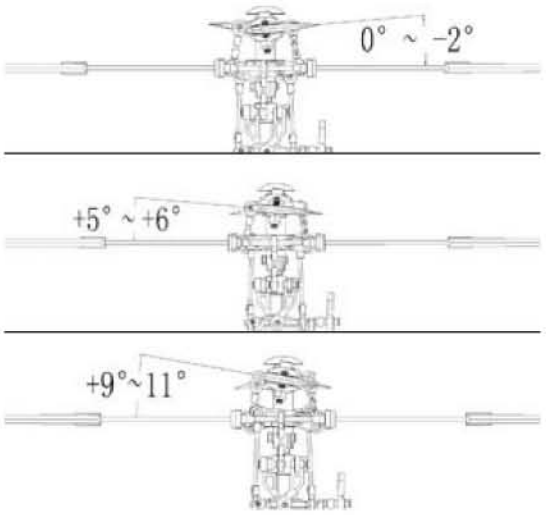
NO.	NAME
1	Brake plate
2	Main rotor housing
3	Main rotor feathering shaft
4	Washout control arm
5	Flybar seesaw holder
6	Washout case mounting heedle
7	O shape circle
8	Socket screw M2*6
9	Pileus screw M2*6
10	Cross screw M2*7
11	Ball part
12	Flange bearing 2*5*2.5
13	Set screw M3*3
14	Flybar
15	Flybar paddle
16	Collar screw M2*9
17	copper ring 2*5.5*6.5
18	Bearing 2*5*2.5
19	Mount arm
20	Ball part connection part
21	Cross screw M2*5
22	Linkage rod
23	Linkage rod
24	Linkage rod
25	Main rotor holder
26	Socket screw M2*5
27	Feathering shaft copper washers
28	Feathering shaft copper aluminum washers
29	Bearing 3*8*4

NO.	NAME
30	Bearing 3*6*2.5
31	Collar screw M1.4*6.5 PA
32	Socket screw M2*8
33	Washout base
34	Stabilizer control lever arm
35	Stabilizer control arm connerting part
36	Coper washer 3.5*2*0.2
37	Main shaft
38	Socket screw M3*16
39	Nylon nut M3
40	Swash plate set
41	Main shaft mount aluminum ring
42	Long ball part
43	Cross screw M2*13
44	Main gear
45	Main gear center mount
46	Aluminum washer
47	One-way bearing 6*10*12
48	One-way bearing ring
49	Tail driver gear
50	Upper frame
51	Main gear mount
52	Canopy mount part
53	Airframe mount part
54	Battery plate
55	Tail boom mount
56	Cross screw M2*4
57	Lower frame
58	Frame screw washer

NO.	NAME	NO.	NAME
59	Socket screw M2*14	86	Tail gear mount (Right)
60	Battery aluminum plate	87	Tail feathering shaft
61	Tail driver gear	88	Tail belt wheel
62	Gear 3*8*3	89	Socket screw M2*4
63	Tail gear shaft	90	Tail gear control arm mount
64	Tail main gear	91	Socket screwM1.4*6.5 PM
65	Tail gear mount (Top)	92	Socket screw M2*12
66	Tail gear mount (Bottom)	93	Copper slive 4*10*2
67	Mail shaft bearing mount	94	Bearing 4*8*3
68	Certripetal bearing 5*11*5	95	Tail control lever
69	Swash plate anti rotation bracket	96	Tail rotor control set
70	Motor mount	97	Tail rotor control arm
71	Socket screw 2.5*6	98	Tail rotor control lever
72	Bottom chassis	99	Tail rotor
73	M3*10 PA	100	Tail rotor housing
74	Servo	101	Socket screw M2*8
75	Motor	102	Tail rotor holder
76	Antenna boom	103	Tail boom
77	Skid pipe cover	104	Tail servo mount
78	Skid pipe plastic ring	105	Horizontal stabilizer
79	Landing skid aluminum pipe	106	Vertical stabilizer
80	Landing skid	107	Tail servo linkage rob
81	Driver belt	108	Horizontal stabilizer bracket
82	Tail gear mount	109	Tail boom brace
83	Belt wheel	110	Tail boom brace connecting
84	Tail gear unit pin	111	Pipes washers
85	Tail gear mount (Left)	112	Collar screw M2*8 PA

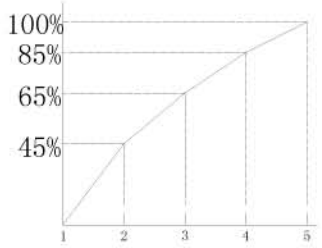
Pitch and throttle setting

General Flight mode



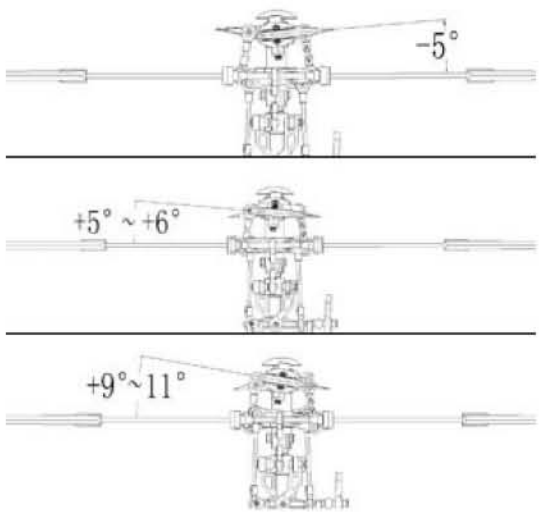
General Flight

Throttle		Pitch	Current	Rotation speed
1	0%	0～-2		0
2	40%			
3	50%	+4～+5		1500
4	85%			
5	100%	+9		1800



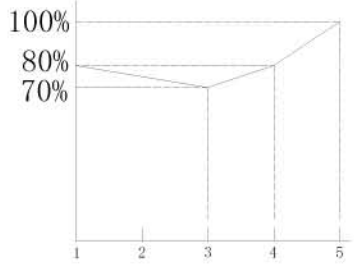
Throttle Curvel(Hovering Flight)

Aerobatic flight mode



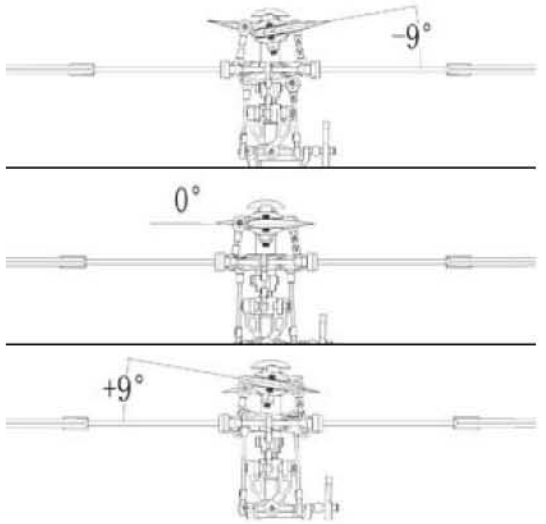
Aerobatic flight mode

Throttle		Pitch	Current	Rotation Speed
1	80%	-5		1700
2	75%			
3	70%	+4～+5		1500
4	75%			
5	100%	+9		1800



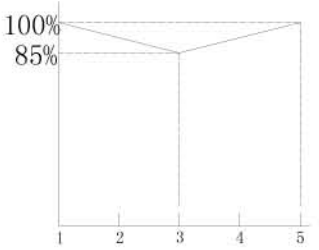
Throttle Curvel(Simple Aerobatic Flight)

3D Fright mode



3D Fright Model

Throttle		Pitch	Current	Rotation Speed
1	100%	-9		2000
2	95%			
3	85%	0		1800
4	95%			
5	100%	+9		2000



Throttle Curvel(3D Flight)

Flight adjustment and setting

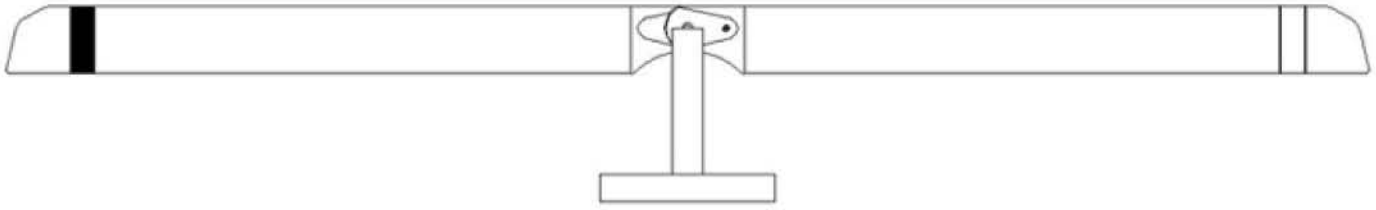
Esc setting(35A):

- 1-1 Brake: Off
- 2-1 Battery type: Battery choice: li-ion/li-poly
- 3-1 Cutoff mode: Reduce power
- 4-3 cutoff threshold: high
- 5-3 Startup mode: Super soft
- 6-3 Timing: High

Caution: as to the specific setting way, you can refer to the user handbook of ESC.

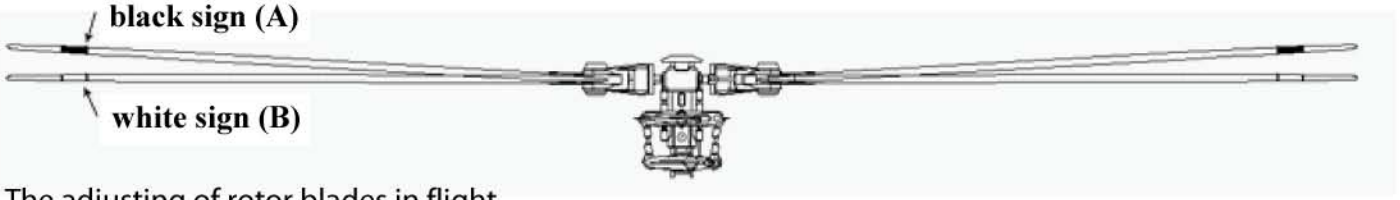
Main rotor adjustments

Caution: It is very dangerous to adjust rotor blade, pleas keep a certain distance to adjust them.



Before flying, balancing of the blades is very important.

Screw the rotor blades together as illustration, apply o r paint different colors mark on the blades. When they are suspended exactly horizontally, the rotor blades are properly balanced. If not, you need to adjust them.



The adjusting of rotor blades in flight.

1. Slowly adjust throttle to certain position, before the heli taking off, though the lateral of the heli, you can watch the run of big rotor blade.
2. If the blade tracking is correctly, a line will be shaped. If not, you should adjust the higher one or lower one.
3. Short pitch linkage rod is used for adjusting general pitch (when the rotor blades are bigger).Long pitch is used for trimming(when the difference of two blades is small).

A. Rotating blades, the higher rotor indicates that the pitch is bigger. You can adjust short linkage rod A, if it needs smaller pitch trimming, please adjust long linkage rod A.

B. Rotating blades, the lower blade indicates that the pitch is smaller. You can adjust long linkage rod B, if it needs smaller pitch trimming, please adjust long linkage rod B.

Specifications & Equipment:

Length: 650mm
Height: 228mm
Main rotor diameter: 700mm
Tail rotor diameter: 150mm
Motor drive gear: 13T
Main drive gear: 150T
Tail drive gear: 25T
Drive gear ratio: 1:1.25:4.24
Weight (w/o power): 380g
Weight (w/power): 380g
Transmitter: 6-channel
Receiver: 6-channel
Li-Poly battery: 11.1V 2200mah 15C
Gryo: dual rate head rock gyro GM700
Servo: 9g×4pcs
Brushless motor 3500KV×1pc
Brushless ESC: 40A×1pc

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