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.
- 9. The bearing would have cracks when the plan is crashed, You had better check it carefully or change it directly.
- 10. When the rotation became unusual, please change the bearing immediately. When you do your flying, please check it every 3 hours and change it every 9 hours.
- 11. The speed should not exceed 3200RPM and the weight of the blade should not over 20g_o. I mentioned those to avoid the fly off of the blade due to the damaged bearing. The high speed blade would have very strong destructive ability, please take care_o.

SJM400 PRO

KIT:

\triangleright	Kit weight (W/O main blade):	217g
\succ	RTF weight::	600g
\triangleright	Main rotor diameter:	655mm
\triangleright	Main rotor specification:	305×30mm
\triangleright	Flybar rod:	210×1.5mm
\triangleright	Flybar rod specification:	58×30mm
\triangleright	Tail rotor diameter:	110mm
\triangleright	Tail rotor specification:	45×18mm
\triangleright	Main shaft diameter:	4mm
\succ	Tail rotor shaft diameter:	2mm
\triangleright	Tail boom diameter (outer):	11mm
\triangleright	Drive belt specification:	302MXL, width 2.5mm
\succ	Main rotor:	Changeable screw distance
		Adjustable mixing control;
		Flybar in ball shape
		Direct connected flybar control rod
\triangleright	Revolving swash plate:	ccpm120 degree
\succ	Tail rotor blade:	anti-shaking outer bearing in box shape
\triangleright	Main drive gear:	M0.4 180T
\triangleright	Tail drive gear:	M0.4 36T
\triangleright	Speed ratio of main and tail drive gear:	1: 5.294
\triangleright	Motor diameter limitation: 26mm	

- Motor diameter limitation: 26mm
- \succ 43 bearings on the whole kit

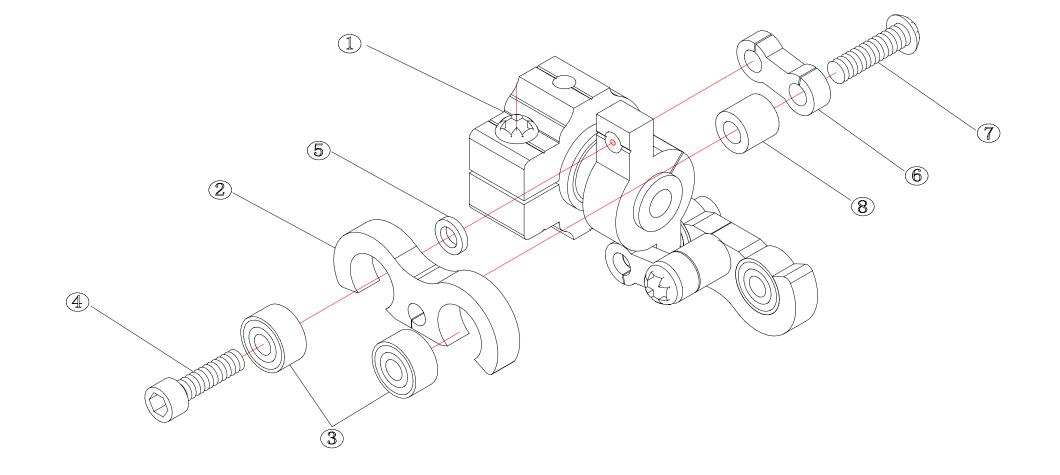
The whole heli is made of aluminum alloy, carbon fiber(SJM400 PRO-C), and fiberglass (SJM400 PRO-F) material and through CNC technology

Motor And Other Electronics:

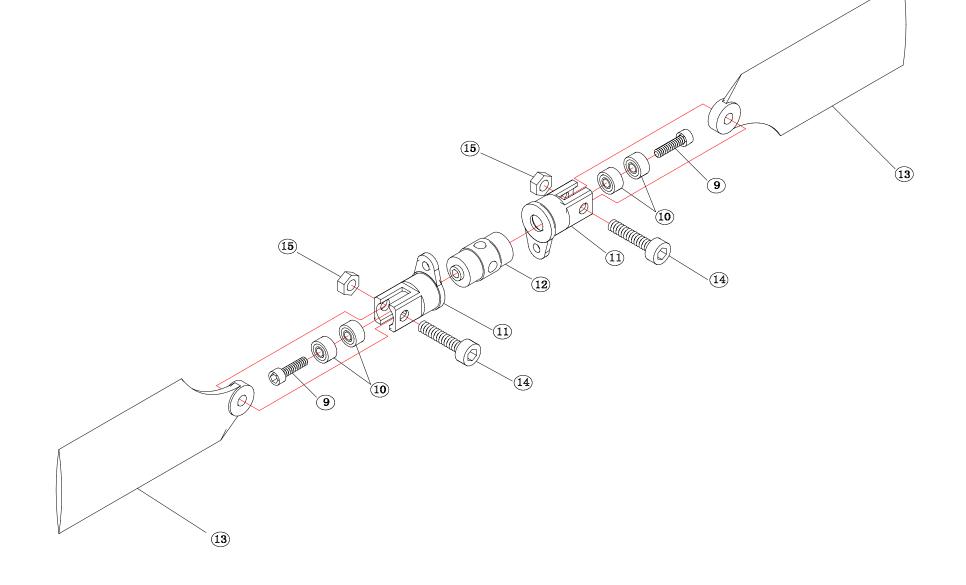
A set of remote controller and receiver with over six channels(in support of ccpm120degree) (optional)

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)

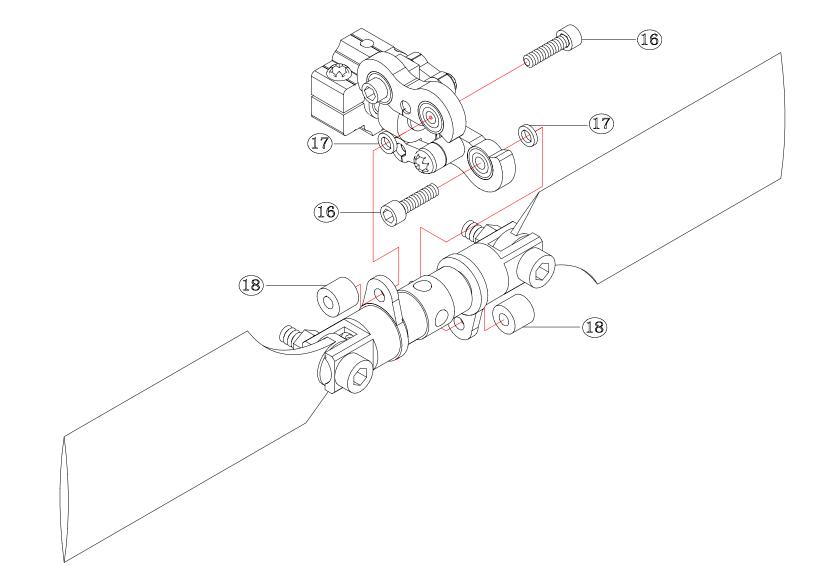
1									
NO.	Part NO.	Discription	Q' TY	Specification	NO.	Part NO.	Discription	Q' TY	Specification
1	AL3016	Sliding shaft	1		5	AL3036	Underlay	2	$\emptyset 1.5 \times \emptyset 2.5 \times 0.5 mm$
2	AL3018	Tail claw	2		6	AL3018	Safety botton	2	
3	SJ10007	Bearing	4	$\emptyset 1.5 \times \emptyset 4 \times 2$ mm	7	SJ40001	Round head screw	2	M1. 6×6 mm
4	SJ20002	Cap screw	2	M1.5 \times 7mm	8	AL3018	Cushion tube	2	$\emptyset 1.6 \times \emptyset 3 \times 2.9$ mm



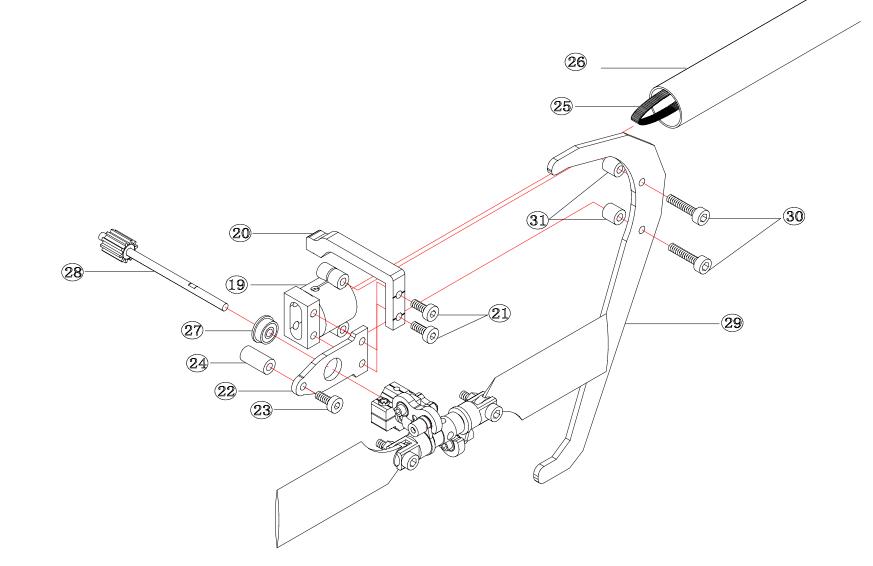
NO.	Part NO.	Discription	Q' TY	Specification	NO.	Part NO.	Discription	Q' TY	Specification
9	SJ20002	Cap screw	2	M1.5 \times 7mm	13	PL1006	Tail blade	2	
10	SJ10007	Bearing	4	$\emptyset 1.5 \times \emptyset 4 \times 2$ mm	14	SJ20004	Cap screw	2	$M2 \times 8mm$
11	AL3019	Tail blade clamp	2		15	SJ70001	Nut	2	M2
12	AL3020	Tail rotor head center	1						



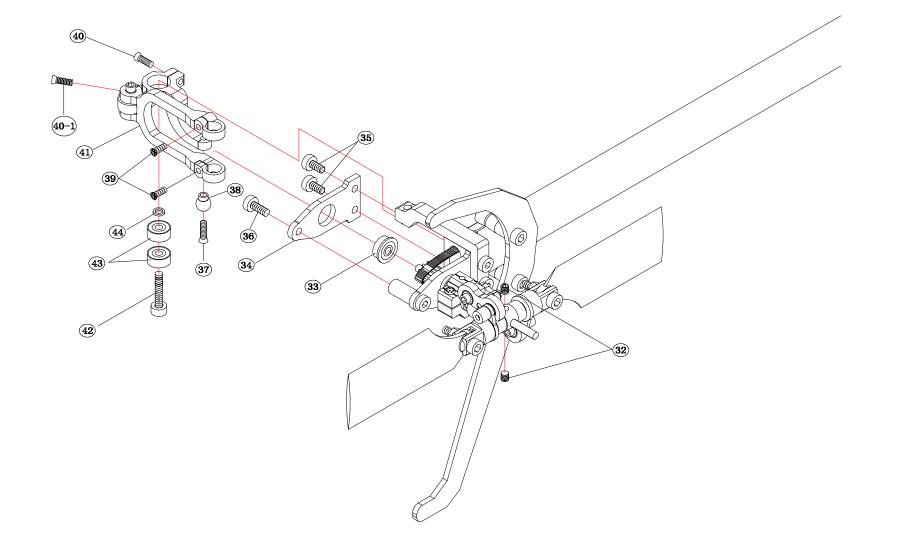
. 0									
NO.	Part NO.	Discription	Q' TY	Specification	NO.	Part NO.	Discription	Q' TY	Specification
16	SJ20002	Cap screw	2	M1.5 \times 7mm	18	AL2042	Screw cap	2	$\emptyset 1.5 \times \emptyset 3.5 \times 3$ mm
17	AL3036	Underlay	2	$\emptyset 1.5 \times \emptyset 2.5 \times 0.5 mm$					



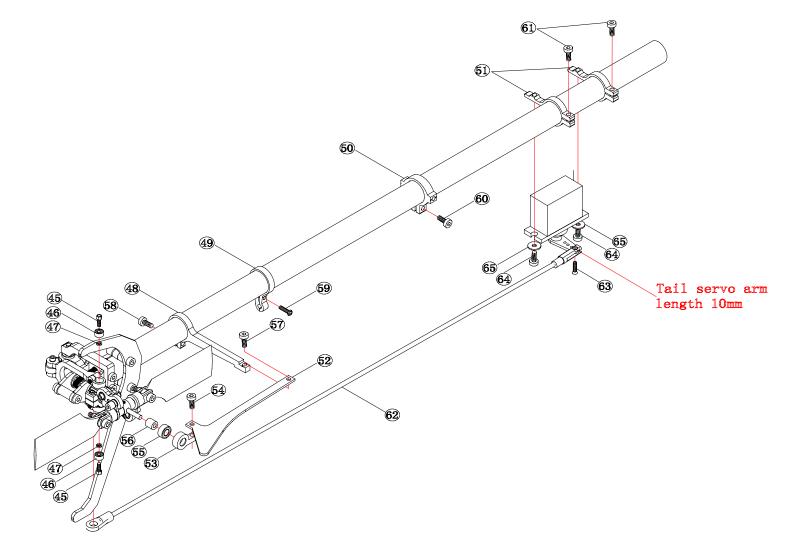
NO.	Part NO.	Discription	Q' TY	Specification	NO.	Part NO.	Discription	Q' TY	Specification
19	AL3017	Tail shaft housing	1		26	AL2044/CF2003	ALU/Carbonfiber tail boom	1	
20	AL3015	Adjusting tail mount	1		27	SJ10005	Flange bearing	1	$\emptyset 2 imes 42$ mm
21	SJ20003	Cap screw	2	$M2 \times 5$ mm	28	HS3006	Tail shaft on belt wheel	1	$\emptyset 1.5 \times \emptyset 3.5 \times 3$ mm
22	FG3011-F/C	Fiberglasslateral (F) / Carbonfiber (C) plate	1		29	FG3004-F/C	Fiberglasslateral (F) / Carbonfiber	1	
23	SJ20003	Cap screw	1	$M2 \times 5$ mm	29	FG3004-F/C	(C) vertial paralle blade	1	
24	FG3011-F/C	Linkage tube	1	$\emptyset 2 imes \emptyset 4 imes 8$ mm	30	SJ20004	Cap screw	2	M2 imes 12mm
25	DB1001	Drive belt	1		31	FG3004-F/C	Vertial stabilizer cushion tube	2	$\emptyset 2 \times \emptyset 4 \times 4$ mm



NO.	Part NO.	Discription	Q' TY	Specification	NO.	Part NO.	Discription	Q' TY	Specification
32	SJ20007	Set screw	2	$M2 \times 2mm$	39	SJ30007	Countersunk screw	2	M1. 6×5 mm
33	SJ10005	Flange bearing	1	$\emptyset 2 \times \emptyset 6 \times 2.5$ mm	40	SJ30001	Countersunk screw	1	M1. 6×4 mm
34	FG3011-F/C	Fiberglasslateral (F) / Carbonfiber (C) lateral plate	1		40—1	SJ30007	Countersunk screw	1	M1. 6×5 mm
35	SJ20012	Cap screw	2	$M2 \times 4mm$	41	AL3015	Tail torque converter	1	
36	SJ20003	Cap screw	1	M2 imes 5mm	42	SJ20005	Cap screw	1	$M2 \times 10$ mm
37	SJ30002	Countersunk screw	1	M1. 6×6 mm	43	SJ10010	Bearing	2	$\emptyset 2 \times \emptyset 6 \times 2.5$ mm
38	AL1039	Ball link	1		44	AL3036	Underlay	1	M2

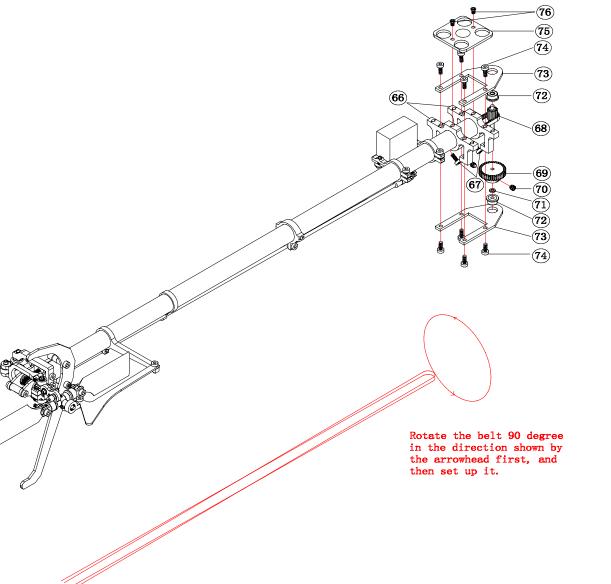


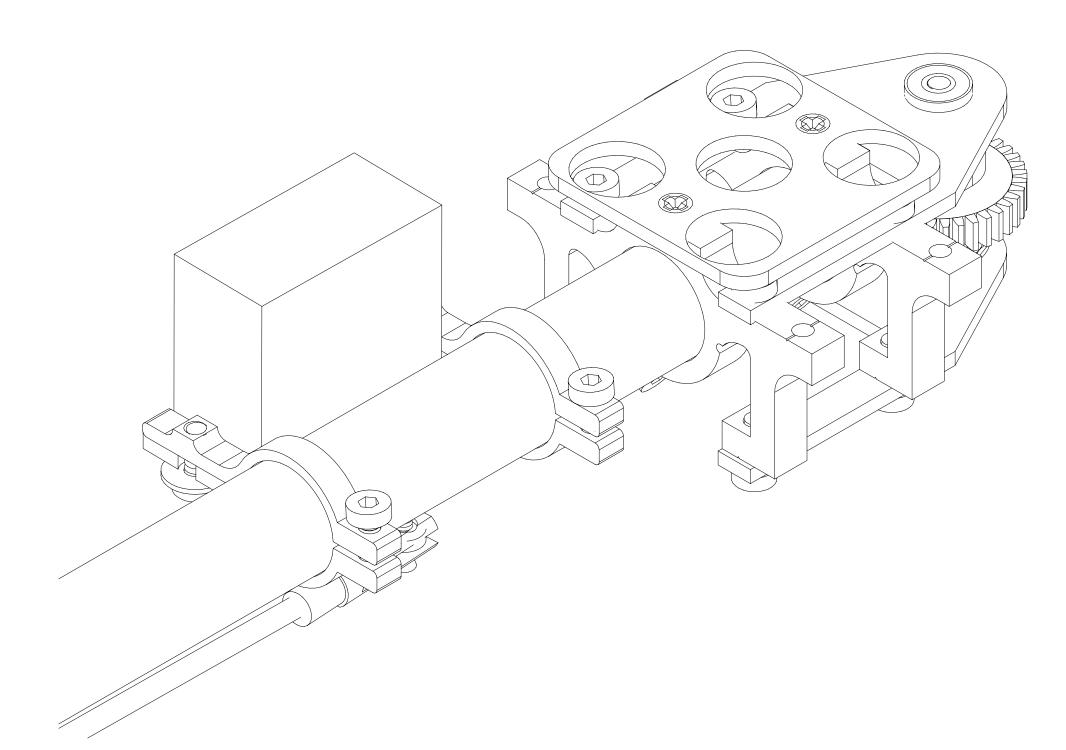
NO.	Part NO.	Discription	Q' TY	Specification	NO.	Part NO.	Discription	Q' TY	Specification
45	SJ20001	Cap screw	2	M1.5 \times 4mm	56	AL3021	Tail shaft tube	1	$\emptyset 2 \times \emptyset 4 \times 4$ mm
46	SJ10007	Bearing	2	$\emptyset 1.5 \times \emptyset 4 \times 2$ mm	57	SJ20003	Cap screw	1	M2 imes 5mm
47	AL3036	Underlay	2	$\emptyset 1.5 \times \emptyset 2.5 \times 0.5 mm$	58	SJ20003	Cap screw	1	M2 imes 5mm
48	AL3025	Horizontal stand	1		59	SJ40002	Round head screw	1	M1. 6×4 mm
49	AL3024	Connecting rod rest	1		60	SJ20003	Cap screw	1	M2 imes 5mm
50	AL3023	Tail boom stand	1		61	SJ20003	Cap screw	2	M2 imes 5mm
51	AL3022	Tail servo mount	2		62	CF2002	Tail servo link	1	
52	FG1007-F/C	Fiberglasslateral (F) / Carbonfiber (C) Level blade	1		63	SJ30002	Tstainless steel screw	1	M1. 6×6 mm
53	AL3021	Bearing stand of tail rotor shaft	1		64	SJ20003	Cap screw	2	M2 imes 5mm
54	SJ20003	Cap screw	1	$M2 \times 5$ mm	65	AL30236	Underlay	2	M2.5
55	SJ10010	Bearing	1	$\emptyset 2 \times \emptyset 6 \times 2.5$ mm					



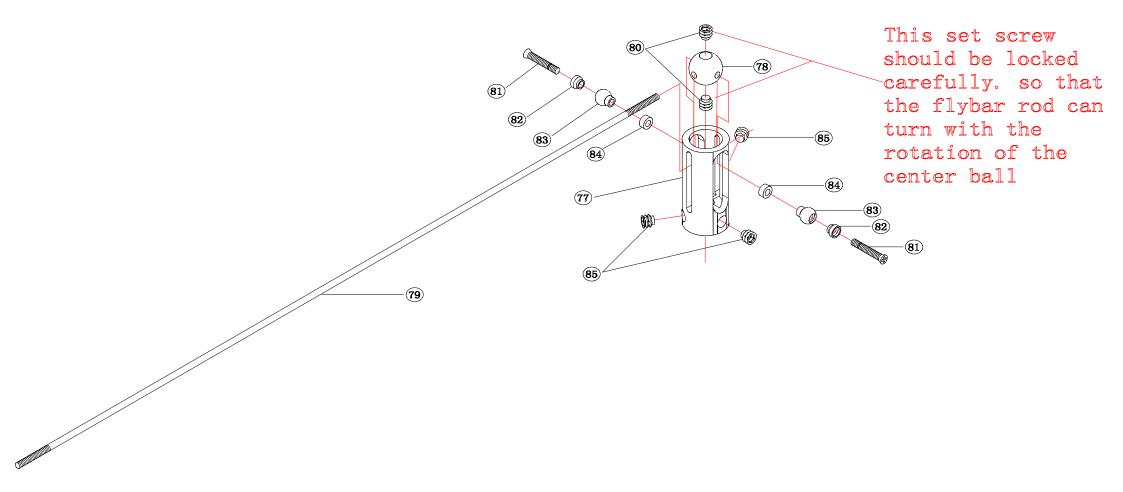
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NO.	Part NO.	Discription	Q' TY	Specification	NO.	Part NO.	Discription	Q' TY	Specification
66	AL3006	Tail boom link	2		72	SJ10005	Flange bearing	2	$\emptyset 2 \times \emptyset 6 \times 2.5$ mm
67	SJ20004	Cap screw	2	$M2 \times 8mm$	79	FG3012-F/C	Fiberglasslateral (F) / Carbonfiber (C) Tail drive gear	0	
68	HS3008	Front shaft belt wheel	1		13	FG3012-F/C	board	Ζ	
69	PL2003	Tail drive gear set	1		74	SJ20003	Cap screw	8	$M2 \times 5$ mm
70	SJ20009	Set screw	2	$M3 \times 3mm$	75	FG3008-F/C	Fiberglasslateral (F) / Carbonfiber (C) Gyro board	1	
71	SJ3036	Underlay	1	M2	76	SJ30009	Countersunk screw	2	$M2 \times 3mm$

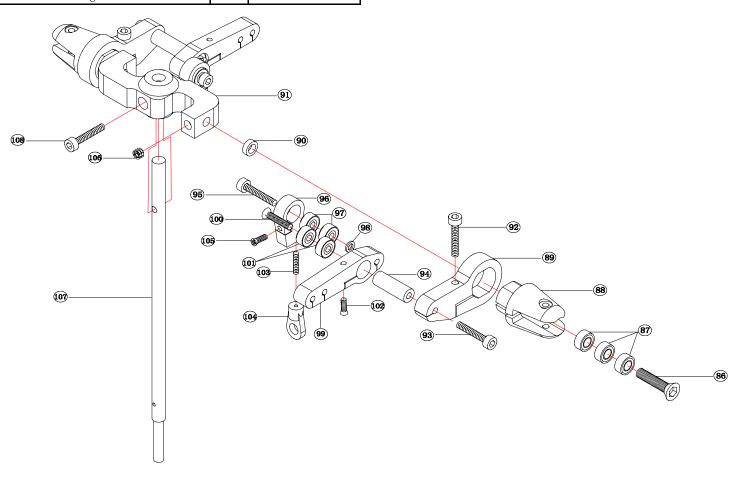




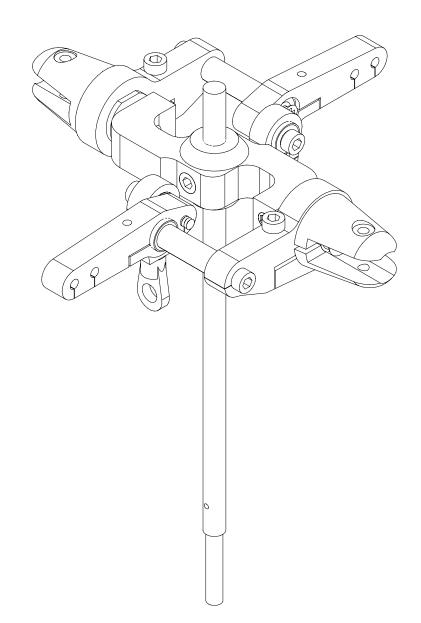
NO.	Part NO.	Discription	Q' TY	Specification	NO.	Part NO.	Discription	Q' TY	Specification
77	AL3011	flybar stand	1		82	AL3037	linkage ball safety botton	2	M2
78	AL3012	flybar ball	1		83	AL1039	linkage ball	2	
79	HS1001	flybar rod	1	$\emptyset 1.5 \times 210$ mm	84	AL3012	washer	2	$\emptyset 1.6 \times \emptyset 3 \times 1.4$ mm
80	SJ20009	set screw	2	M3 imes 3mm	85	SJ20009	set screw	3	M3 imes 3mm
81	SJ30006	countersunk screw	2	M1. 6×10 mm					



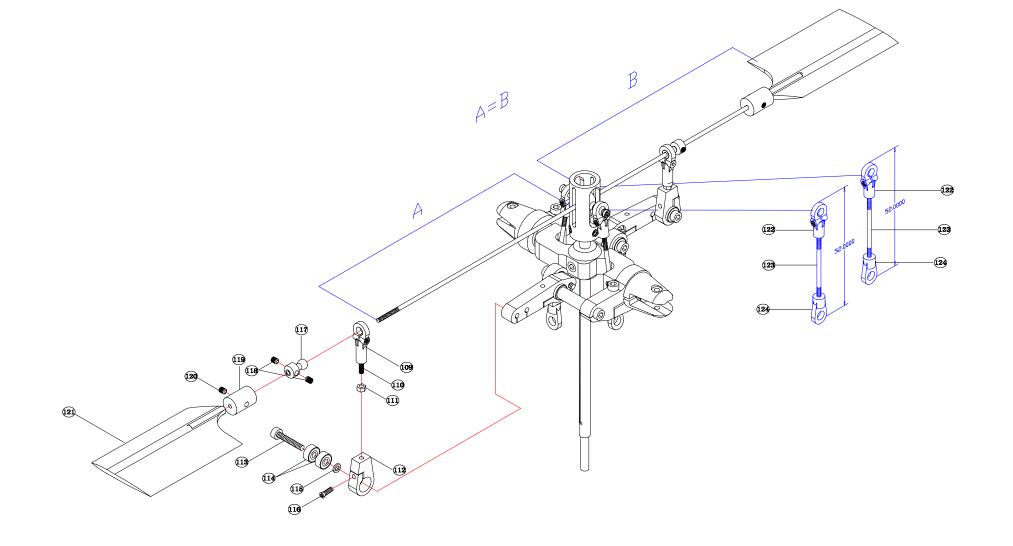
NO.	part No	Discription	Q' TY	Specification	No	part No	Discription	Q' TY	Specification
86	HS3003	Feathering shaft screw	2	M3 imes 16mm	98	AL3036	Underlay	2	$\emptyset 2 \times \emptyset 3.5 \times 0.5 mm$
87	SJ10008	Bearing	6	$\emptyset 3 \times \emptyset 6 \times 2.5$ mm	99	AL3013	Mixing arm	2	
88	AL3007	Main blade clincher	2		100	SJ30006	Countersunk screw	2	M2 imes 10mm
89	AL3008	Main blade clincher arm	2		101	SJ10010	Bearing	4	$\emptyset 2 \times \emptyset 6 \times 2.5$ mm
90	HS3004	Stainless steel masher	2	$\emptyset 3 \times \emptyset 5 \times 1.5$ mm	102	SJ40001	Round head screw	2	M1. 6×6 mm
91	AL3010	Main rotor head center	1		103	HS1007	Linkage rod	2	M1. 6×7 mm
92	SJ20005	Cap screw	2	M2 imes 10mm	104	PL1010	Ball link	2	H11mm
93	SJ20005	Cap screw	2	M2 imes 10mm	105	SJ40001	Round head screw	2	M1. 6×6 mm
94	AL3009	Main blade clincher link	2	$\emptyset 2 \times \emptyset 4 \times 13$ mm	106	SJ20009	Set screw	2	M3 imes 3mm
95	SJ20005	Cap screw	2	M2 imes 10mm	107	HS1002	Main shaft	1	$\emptyset4\! imes\!109$ mm
96	AL3004	Mixing linkage rod subassembly	2		108	SJ20005	Cap screw	1	M2 imes 10mm
97	SJ10010	Bearing	4	$\emptyset 2 \times \emptyset 6 \times 2.5$ mm					



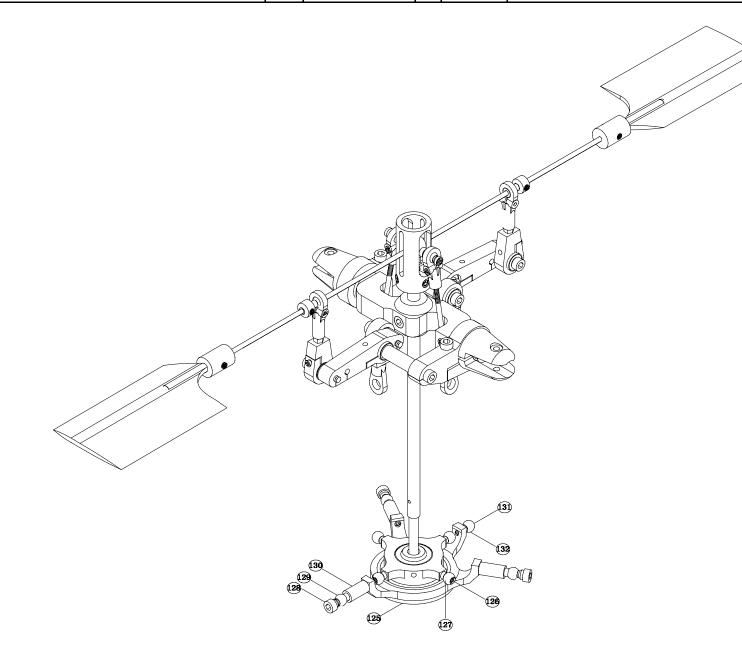




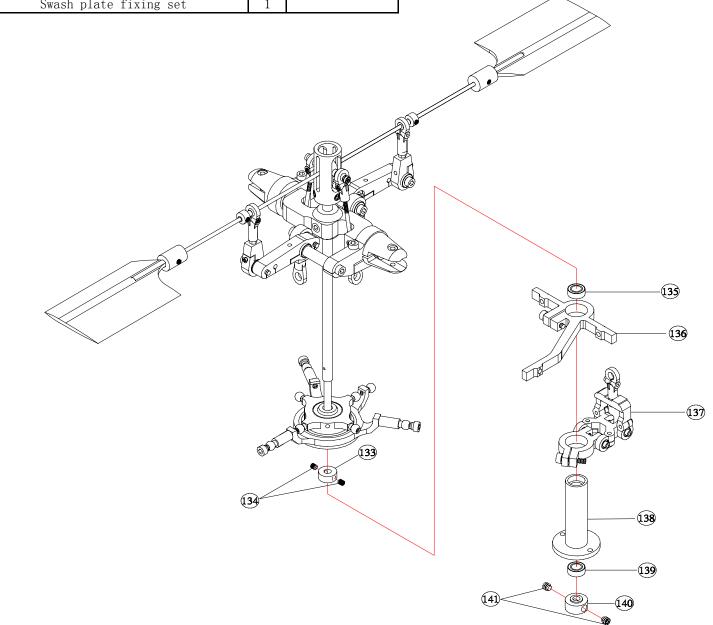
NO.	part No	Discription	Q' TY	Specification	No	part No	Discription	Q' TY	Specification
109	PL1009T	Adjustable ball link	2	H17.5mm	117	TB0025	Flybar linkage ball	2	
110	HS1005	Linkage rod	2	$\emptyset 1.6 \times 10$ mm	118	SJ20007	Set screw	4	$M2 \times 2mm$
111	SJ70002	Nut	2	M1.6	119	C01001	Copper ingot	2	
112	AL3004	Mixing linkage rod subassembly	2		120	SJ20007	Set screw	2	$M2 \times 2mm$
113	SJ20005	Cap screw	2	$M2 \times 10$ mm	121	PL1007	Playbar paddel	2	M1. 6×7 mm
114	SJ10010	Bearing	4	$\emptyset 2 \times \emptyset 6 \times 2.5$ mm	122	PL1008T	Adjustable ball link	2	H13.5mm
115	AL3036	Underlay	2	$\emptyset 2 \times \emptyset 3.5 \times 0.5$ mm	123	HS1005	Linkage rod	2	$\emptyset 1.5 \times 35$ mm
116	SJ40001	Round head screw	2	M1. 6×6 mm	124	PL1010	Ball link	2	H11mm



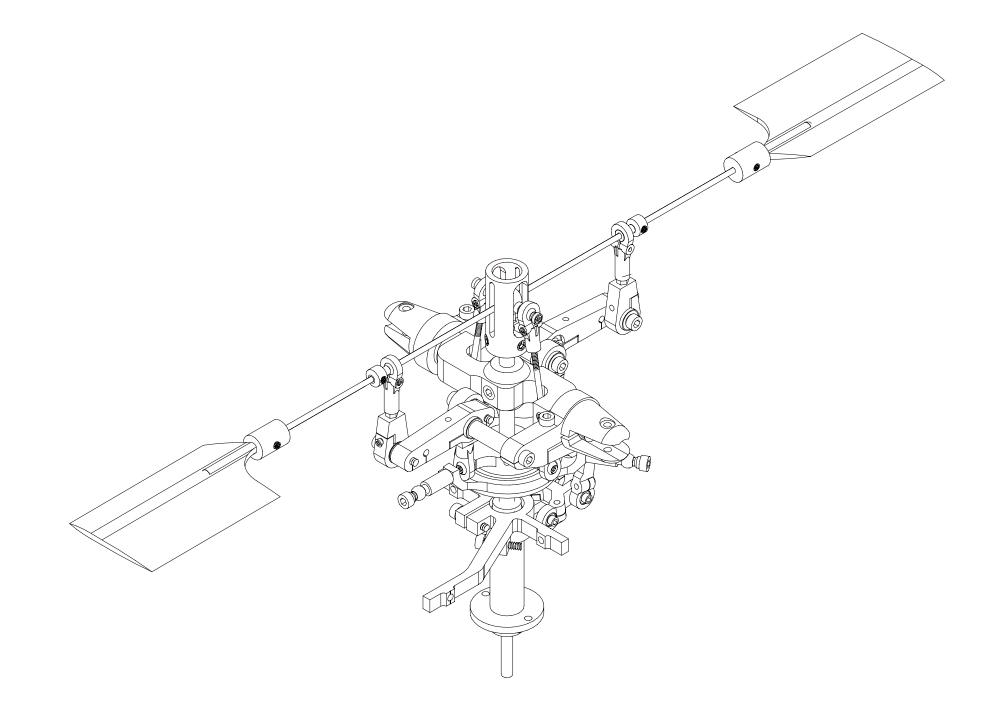
NO.	part No	Discription	Q' TY	Specification	No	part No	Discription	Q' TY	Specification
125	AL3014	swash plate	1		129	AL1039	ball link	3	
126	SJ30002	countersunk screw	4	$\emptyset 1.6 \times 6$ mm	130	AL3014	swash plate washer	3	$\emptyset 2 \times \emptyset 4 \times 8$ mm
127	AL1039	ball link	4		131	SJ30002	countersunk screw	1	$\emptyset 1.6 \times 6$ mm
128	SJ20006	cap screw	3	$M2 \times 16$ mm	132	AL1039	ball link	1	



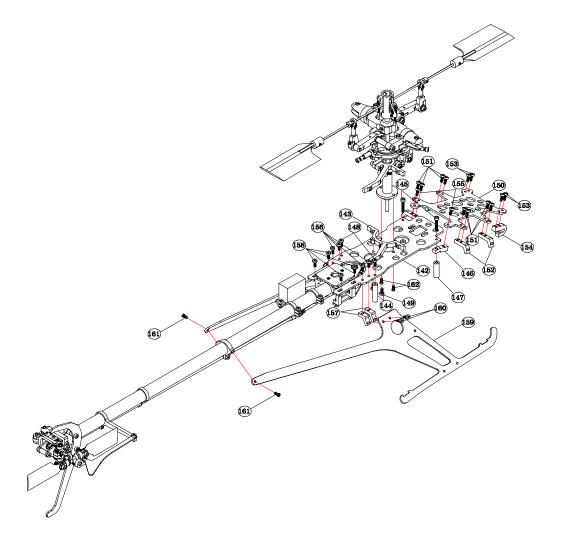
NO.	part No	Discription	Q' TY	Specification	No	part No	Discription	Q' TY	Specification
133	AL1040	Main shaft fixing	1		138	AL3005	Main shaft stand	1	
134	SJ20007	Set screw	2	$M2 \times 2mm$	139	SJ10003	Bearing	1	$\emptyset4 \times \emptyset7 \times 2.5$ mm
135	SJ10003	Bearing	1	$\emptyset4 \times \emptyset7 \times 2.5$ mm	140	AL2035	Main shaft fixing (underside)	1	
136	AL3002	Up servo mount	1		141	SJ20007	Set screw	2	$M2 \times 2mm$
137	AL3001	Swash plate fixing set	1						



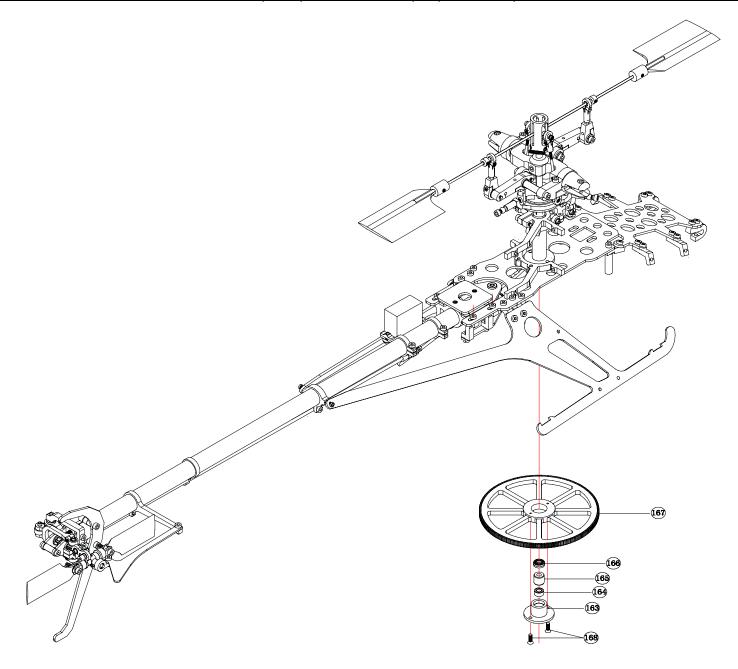




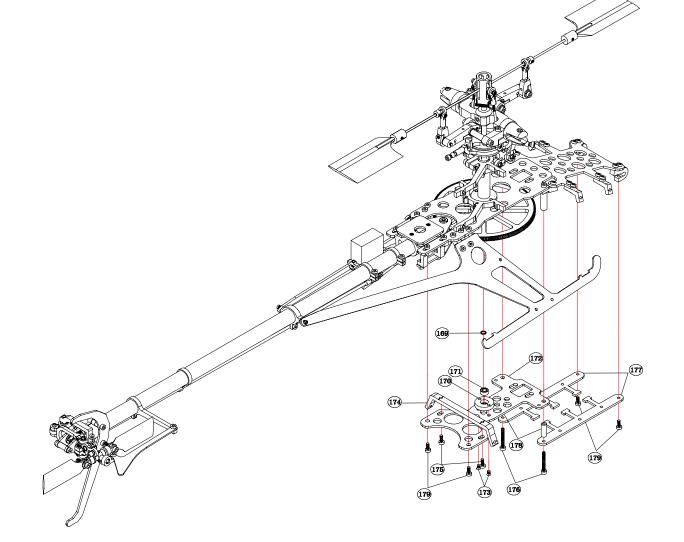
NO.	part No	Discription	Q' TY	Specification	No	part No	Discription	Q' TY	Specification
142	FG3001-F/C	Fiberglasslateral (F) / Carbonfiber (C)	1		152	AL3029	Canopy device	4	
142	FG3001-F/C	board over main frame	1		153	SJ20003	Cap screw	4	$M2 \times 5$ mm
143	AL3003	Down servo mount	1		154	AL3031	Battery board front link	2	
144	SJ20003	Cap screw	2	$M2 \times 5mm$	155	SJ20003	Cap screw	2	$M2 \times 5$ mm
145	SJ20004	Cap screw	2	$M2 \times 8mm$	156	SJ20003	Cap screw	4	$M2 \times 5$ mm
146	AL3030	Feathering shaft screw	2		157	AL3032	Landing skid link	4	
147	AL3034	Front frame board washer	2	$\emptyset 2 imes \emptyset 4.5 imes 15$ mm	158	SJ20003	Cap screw	4	$M2 \times 5$ mm
148	SJ20003	Cap screw	2	$M2 \times 5mm$	159	FG3003-F/C	Fiberglasslateral (F) / Carbonfiber (C)	9	
149	AL3033	Back frame board washer			109	FG3003-F/C	landing skid link	2	
150	FG3006-F/C	Fiberglasslateral (F) / Carbonfiber (C)	1		160	SJ20003	Cap screw	4	$M2 \times 5$ mm
190	FG9000-F/C	battery board	1		161	SJ20012	Cap screw	2	$M2 \times 4mm$
151	SJ20003	Cap screw	8	$M2 \times 5$ mm	162	SJ20012	Cap screw	2	$M2 \times 4mm$



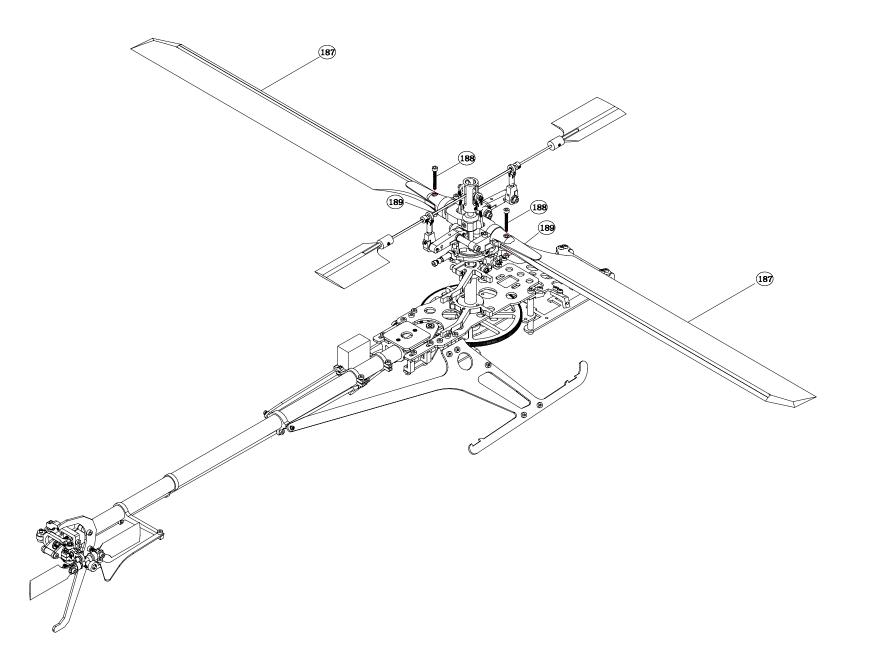
NO.	part No	Discription	Q' TY	Specification	No	part No	Discription	Q' TY	Specification
163	AL3026	One-way bearing stand	1		166	SJ10009	Bearing	1	$03 \times 07 \times 2$ mm
164	SJ10008	Bearing	1	$\emptyset 3 \times \emptyset 6 \times 2.5$ mm	167	PL1005	Main drive gaer	1	
165	SJ10001	One-way bearing	1	$\emptyset3 \times \emptyset6.5 \times 6$ mm	168	SJ30004	Countersuk screw	2	$M2 \times 6$ mm

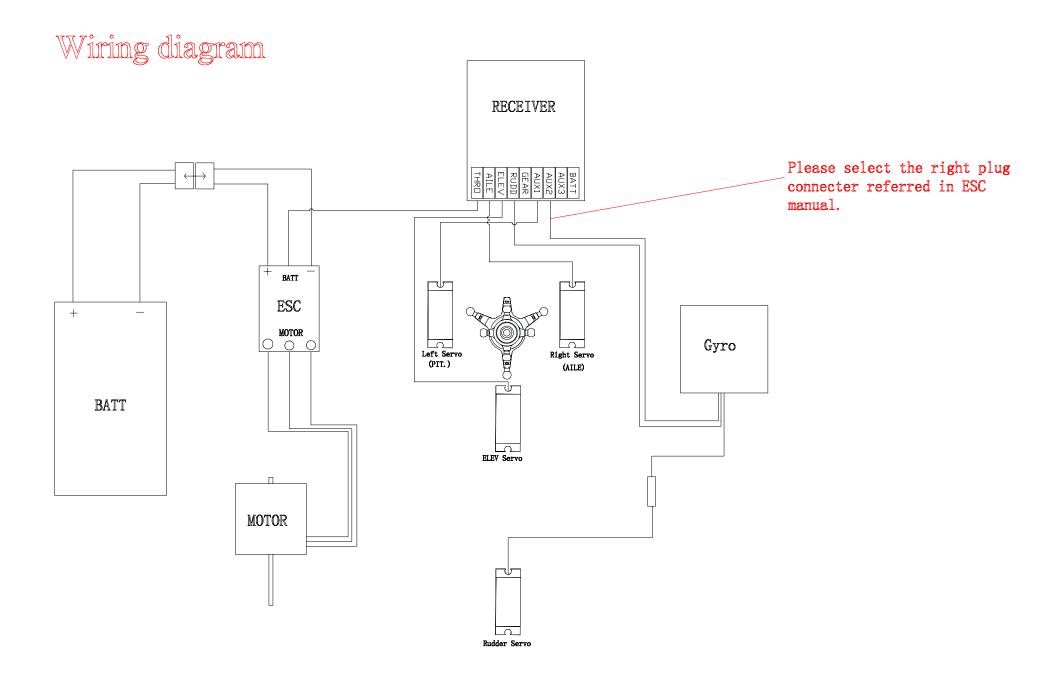


NO.	part No	Discription	Q' TY	Specification	No	part No	Discription	Q' TY	Specification
169	AL3036	Underlay	1	M3	178	AL3035	Down front board washer	2	$\emptyset 2 \times \emptyset 4 \times 10$ mm
170	AL3027	Bearing tand under main shaft	1		179	SJ20003	Cap screw	4	M2 imes 5mm
171	SJ10008	Bearing	1	$\emptyset3 \times \emptyset6 \times 2.5$ mm	180	SJ20005	Cap screw	2	M2 imes 10mm
172	FG3002-F/C	Fiberglasslateral (F) / Carbonfiber (C) board under main frame	1		181	FG3010-F/C	Fiberglasslateral (F) / Carbonfiber (C) strengthen landing skid board-2	2	
173	SJ30009	Countersuk screw	2	$M2 \times 3mm$	182	SJ70002	Nut	2	M2
174	AL3028	Beam	1		183	SJ20004	Cap screw	2	$M2 \times 8mm$
175	SJ20003	Cap screw	2	$M2 \times 5$ mm	101	FG3009-F/C	Fiberglasslateral (F) / Carbonfiber (C)	9	
176	SJ20006	Cap screw	2	M2 imes 16mm	104	FG3009-F/C	strengthen landing skid board-1	2	
177	FG3005-F/C	Fiberglasslateral (F) / Carbonfiber (C)	9		185	SJ20003	Cap screw	4	M2 imes 5mm
111	LP2002-L/C	dowm-front board	2		186	SJ70002	Nut	4	M2



NO.	part No	Discription	Q' TY	Specification	No	part No	Discription	Q' TY	Specification
187	CF2001	Carbonfiber main blade	2		189	SJ70001	Nut	2	M2
188	SJ20011	Cap screw	2	$M2 \times 12$ mm					





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.

.

 $\rm II$ Switch on the transmitter, and choose the ccpm120 mode.



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.

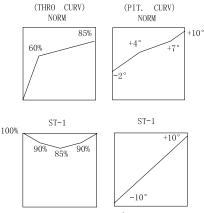
 ${\rm V}$ Turn on the transmitter, and the electricity on the heli.(before the adjustment has been finished, do not wire the motor. Switch on the servos.

(1) Check whether the right and left tail blades are at the same angle. You can move central connecter 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.

 \mathbb{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)

VW 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 connecter 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 SJM400 Pro 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. (SJM400 PRO 's main rotor gear is 180T)

V (battery voltage) \times Kv (motor rev /v of) \times the number of motor's teeth \div 180(main rotor gear) = the rev of the main rotor

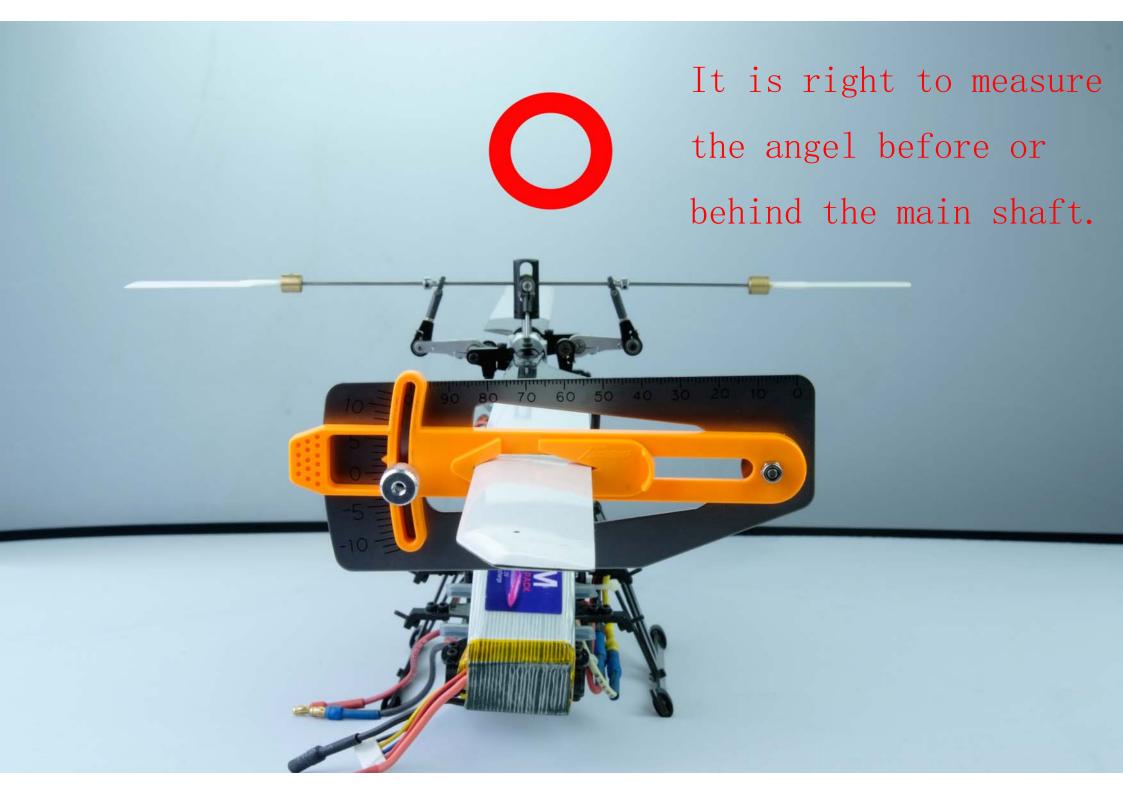
3) Our ESC (25A/30A, BEC3A) can be matched with .3s 11.1V and 4s 14.8V Li-battery.

4) Please use (3s) 11.1V, 1300~2000mAH, and over 12c Li-battery.

The main shaft of SJM400 Pro is 3 degree forward leaning

3°

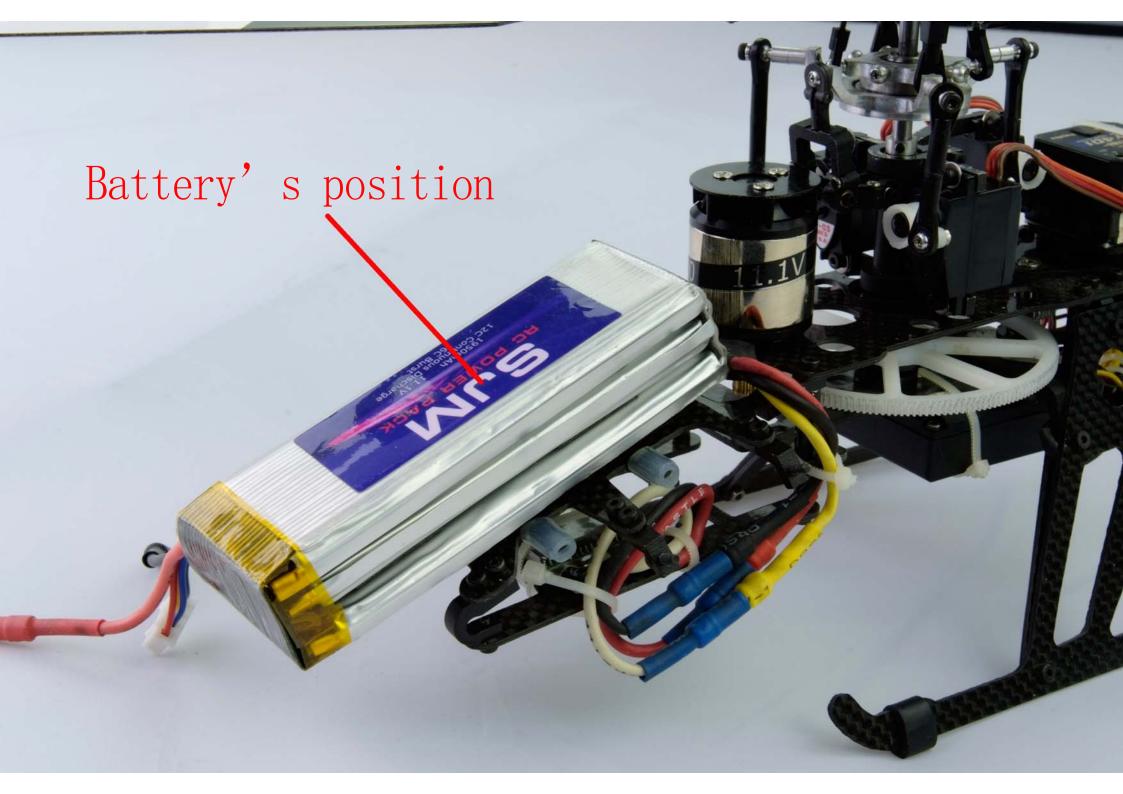


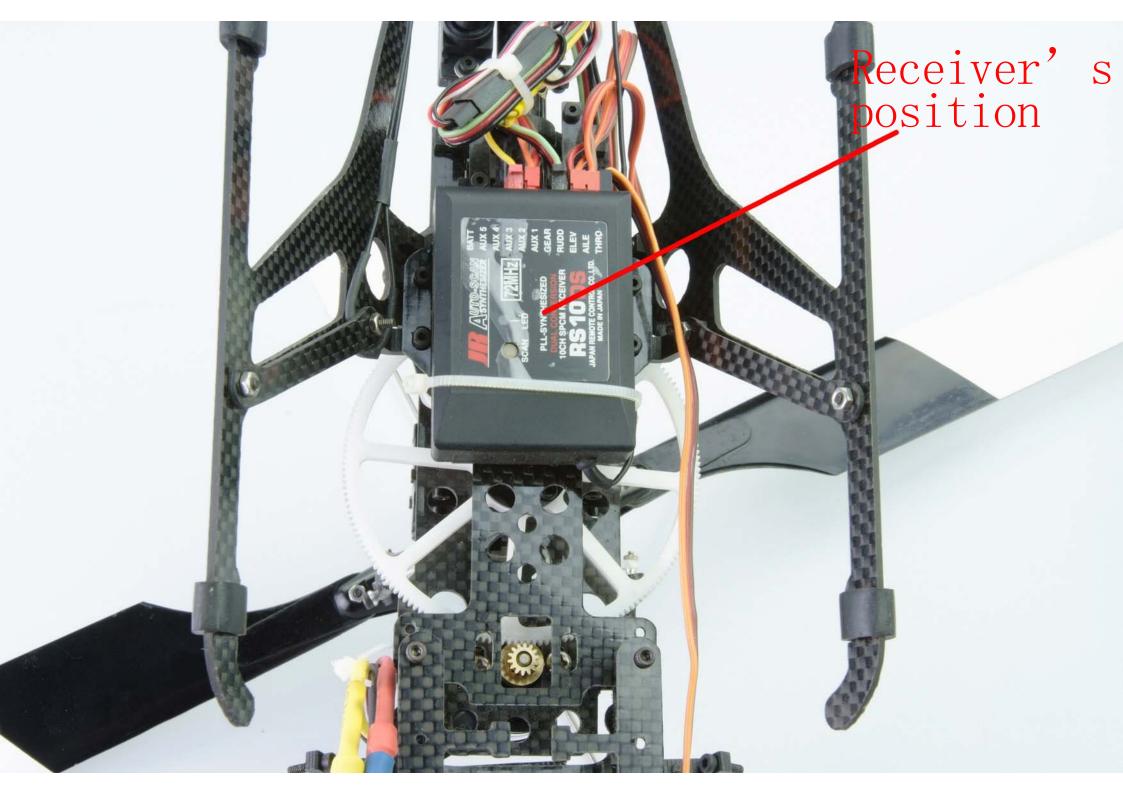


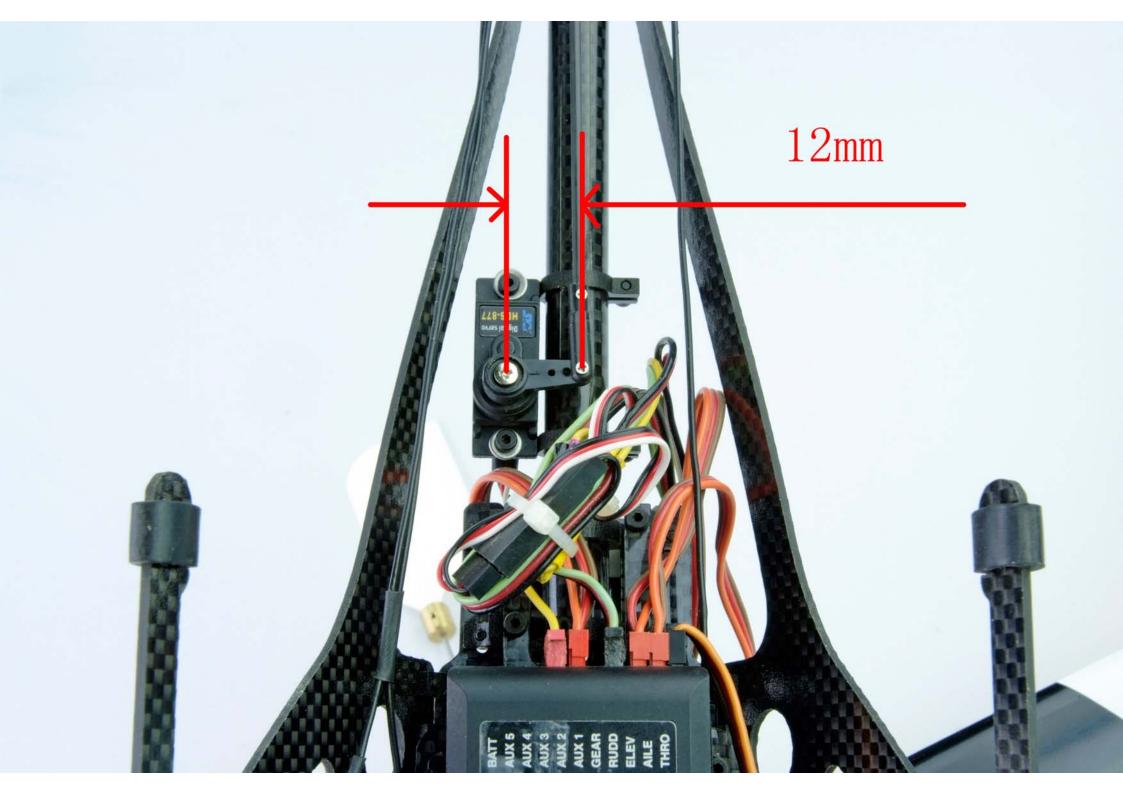
The linkage rod length should be adjusted according to the servo size. If you fail to adjust the main blade to +-11 degree, you need to readjust the rod's length, in order to change the height of the swash plate for the needed +attack angle..

 $32^{\sim}35$ mm

10mm

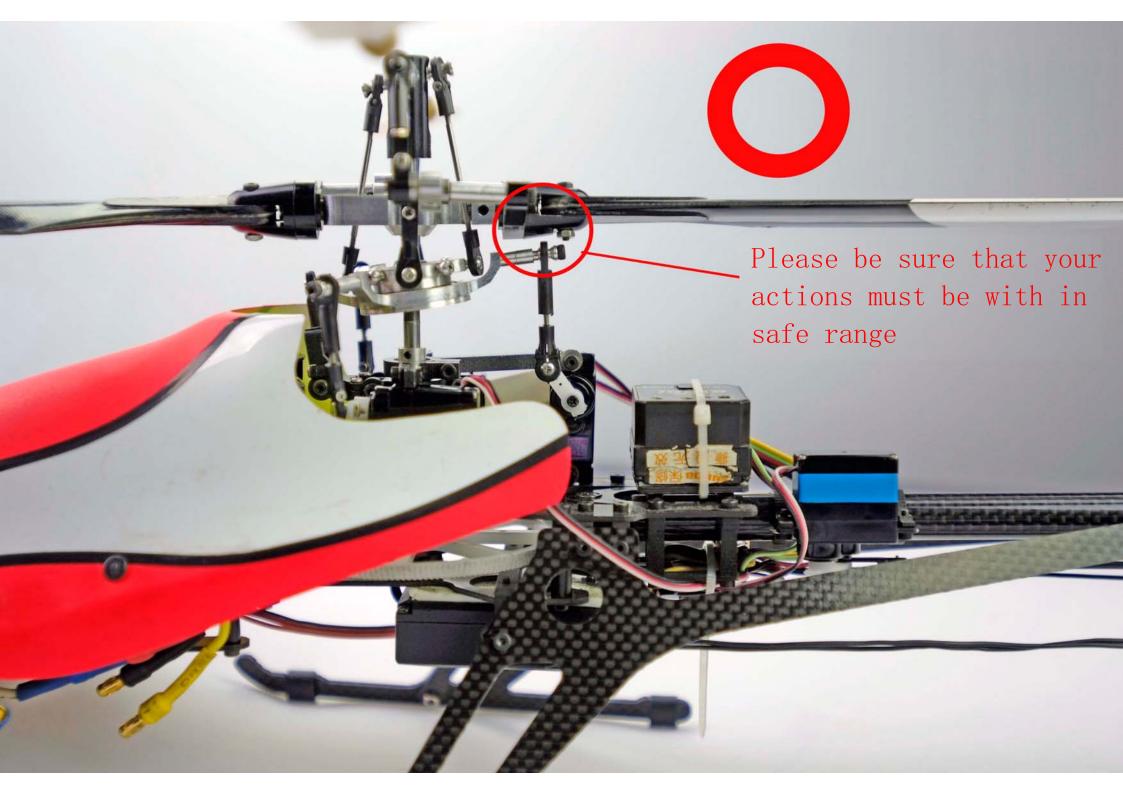


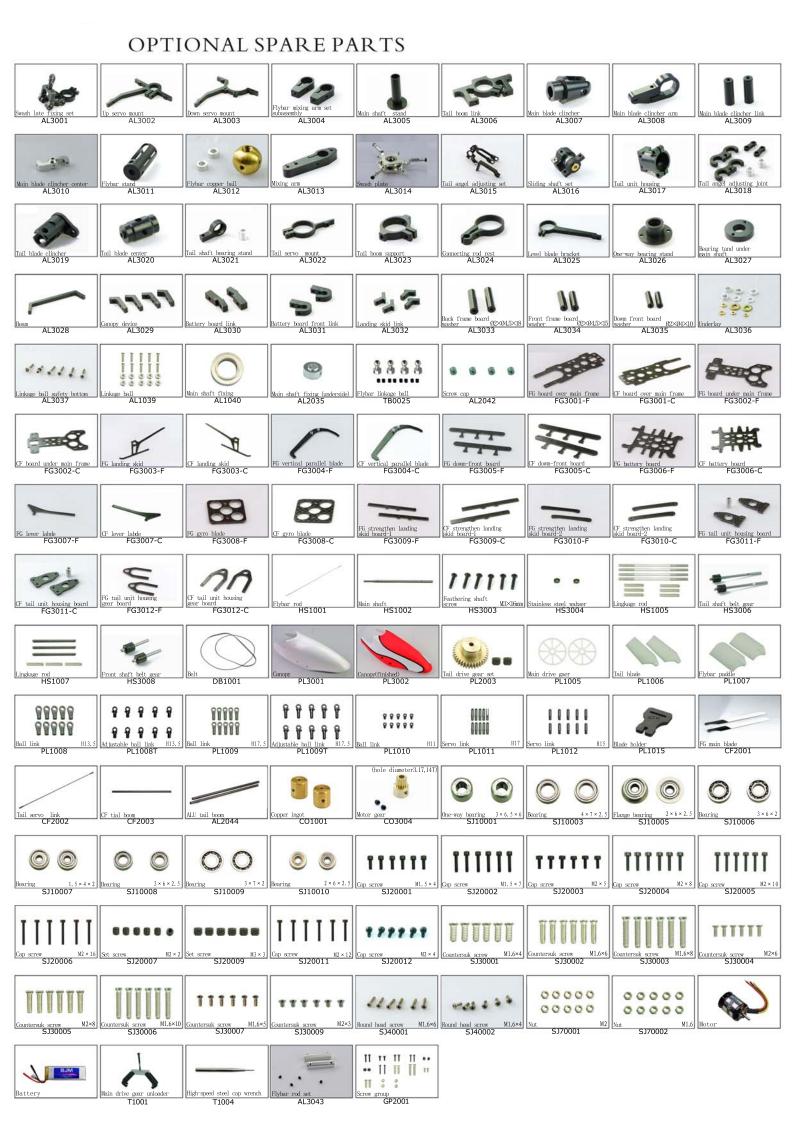




ESC's position

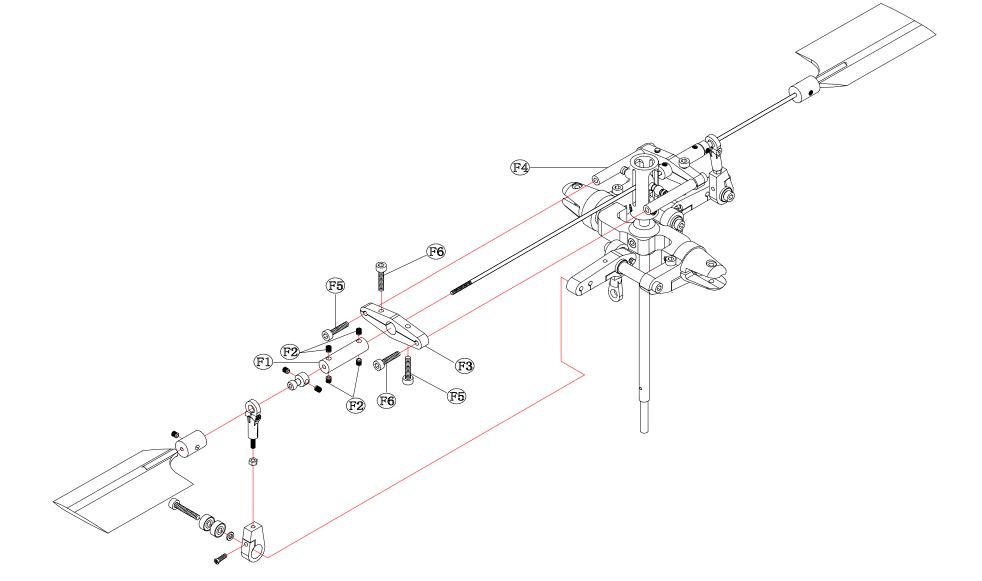
Gyro's position



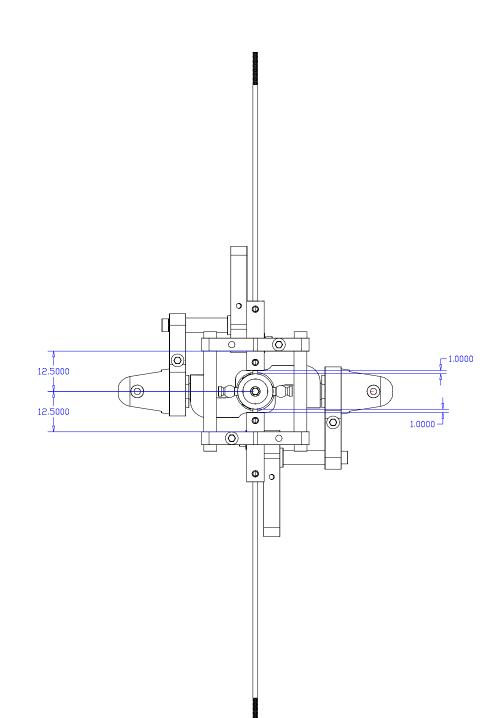


Assembly drawing of upgrade kit (Flybar frame)

NO.	Part NO.	Discription	Q' TY	Specification	NO.	Part NO.	Discription	Q' TY	Specification
F1	AL3043	Flybar rod set	2		F4	FUP003	Flybar frame linkage	2	
F2	SJ20007	Set screw	8	$M2 \times 2mm$	F5	SJ20004	Cap screw	4	$M2 \times 8mm$
F3	FUP003	Flybar frame mount	2		F6	SJ20004	Cap screw	4	$M2 \times 8mm$



Assembly drawing of upgrade kit(Flybar frame)



Assembly drawing of upgrade kit(Flybar frame)

