

Tips

Makeflyeasy team improved the production process of Believer and Freeman, improved production efficiency and reduced labor costs. The price of carrier products is lowered

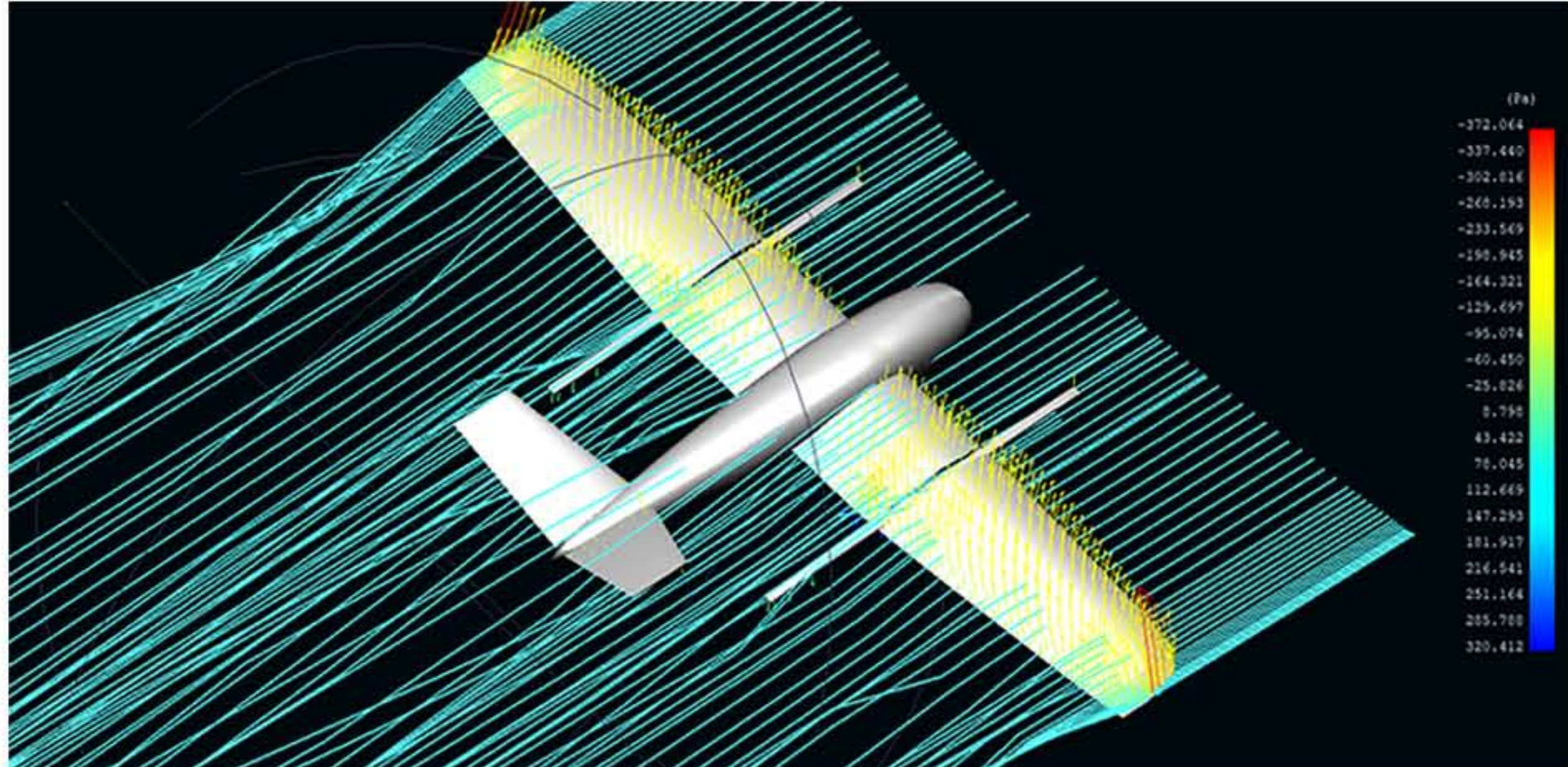
Overview Description

Freeman 2100 (Span 2.1m) is a VTOL fixed-wing aerial survey carrier modified on the basis of Believer

The market positioning of Freeman 2100 is high cost perform and entry-level, and aim to help more traditional surveying team to take the lead to fly and complete aerial survey projects and use data to create value



High-quality Aerodynamic Figure



Excellent aerodynamic figure, efficient and stable, equipped with A7R7 camera can endurance 80km

Fast Folding Arm



Using self-locking and folding structure
One button can be folded and turned to lock

Aluminum alloy and carbon tube are fixed by 4 rivets, light and reliable



The folding arm is durable

Waterproof and Dustproof Motor Frame



Simplified Servo, ESC wiring, beautiful and practical

ESC has good heat dissipation effect, without fear of harsh external environment of work

Can be built with 25Kg level dual-axis tilt servo



Aviation aluminum alloy CNC machined, waterproof and dustproof

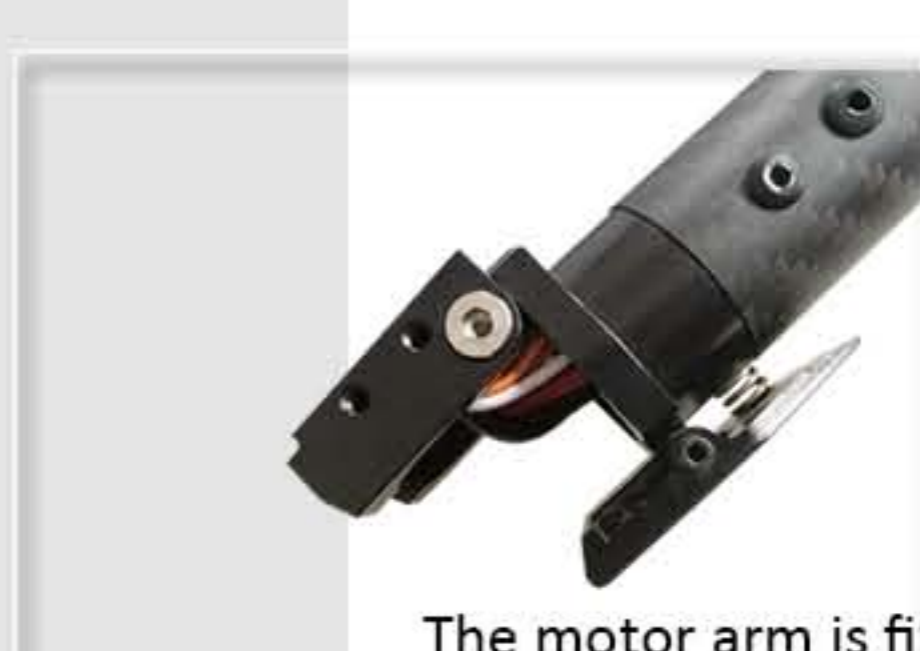
Can accommodate Hobbywing 40 / 60A ESC



High Strength of Multi-axis Structure



Overall skin of 3M sticker strengthened with light



The motor arm is fixed with 25mm 3K round carbon tube double rivets



Use high electric current connectors to achieve rapid electrical separation



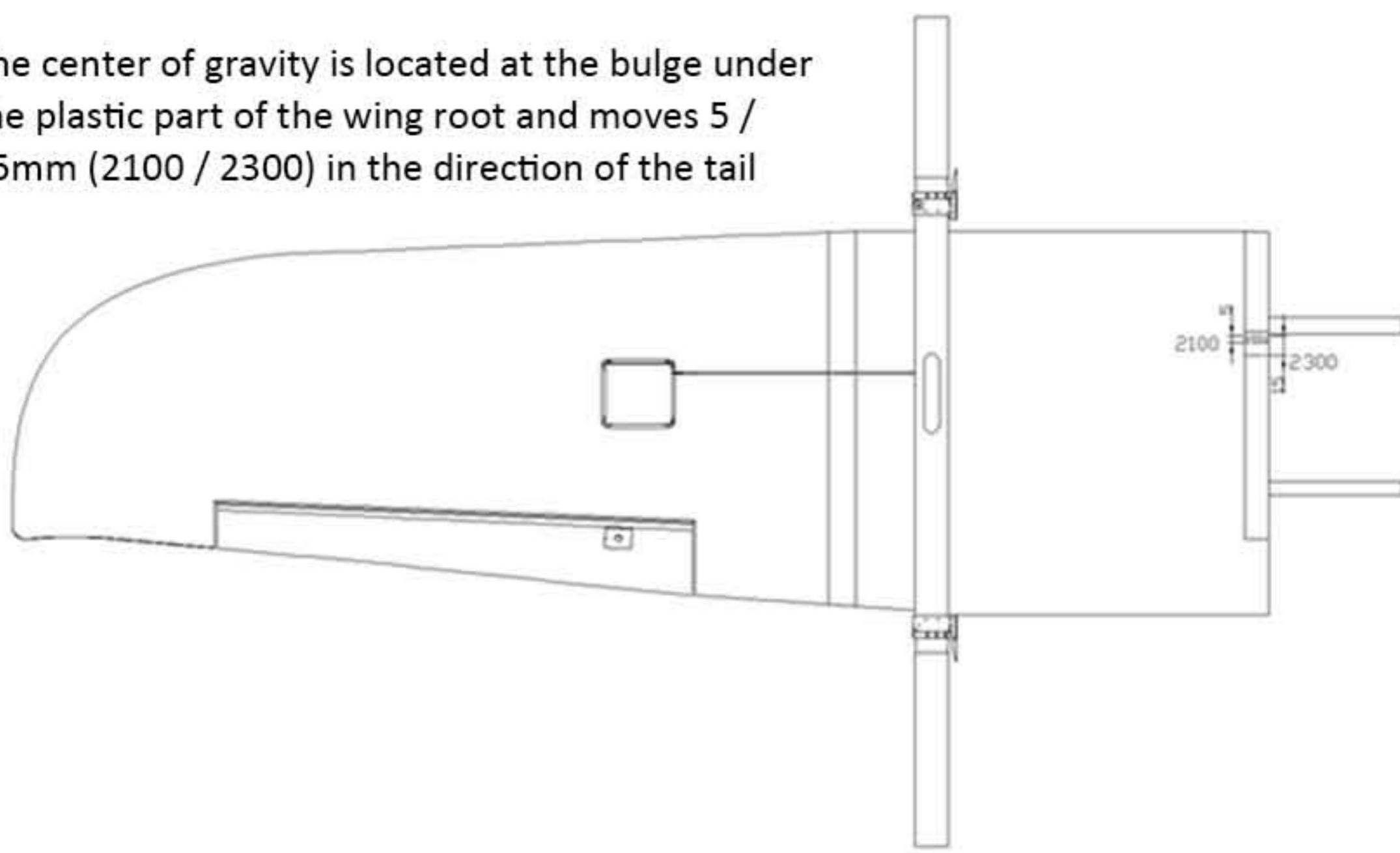
The wing is penetrated by two 3K carbon tubes of 12 * 10mm and 10 * 8mm



The body arm adopts 25mm 3K square carbon tube with high strength and large space to wiring and weld wire easily

Center of Gravity

The center of gravity is located at the bulge under the plastic part of the wing root and moves 5 / 15mm (2100 / 2300) in the direction of the tail

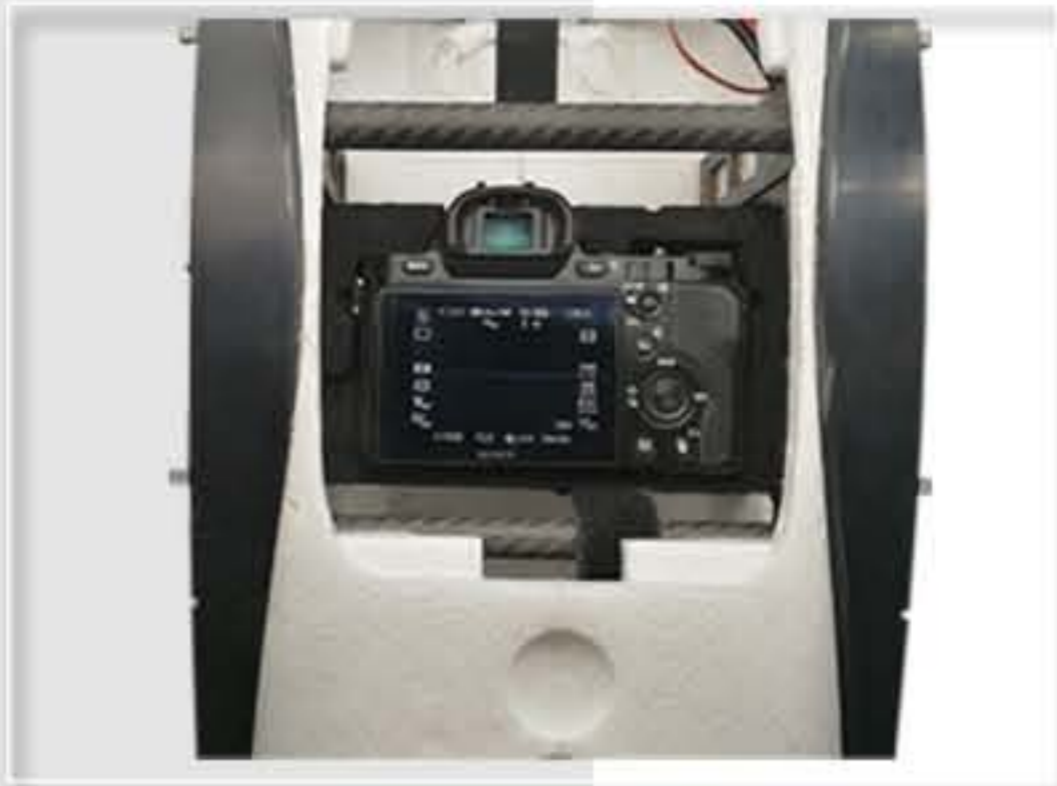


Large Cabin Space



The battery cabin can accommodate 6S@16000 / 22000 mah batteries

The load cabin can accommodate A7R, A7R2 cameras, or 5 A5100 weight-reduced cameras



The PPK antenna is reserved to facilitate carrying the PPK module to improve the POS positioning accuracy

Quick Disassembly Without Tool



The newly added vertical rear wing enhances the flight stability of the aircraft, making the course more accurate

The rear wing adopts a self-locking structure, which is automatically locked after insertion. It can be removed with one press, and the mechanical transmission is synchronously separated



Customized EPS Transport Box



Made of high-expansion EPS foam, light weight, good impact resistance and good shock resistance

Folding Landing Gear (Optional)

It supports the installation of folding landing gear, which can be self-locked when pulled and retracted immediately with one press



It can be used with the hanging bracket to prevent the camera from hitting the ground

Hanging Bracket (Optional)

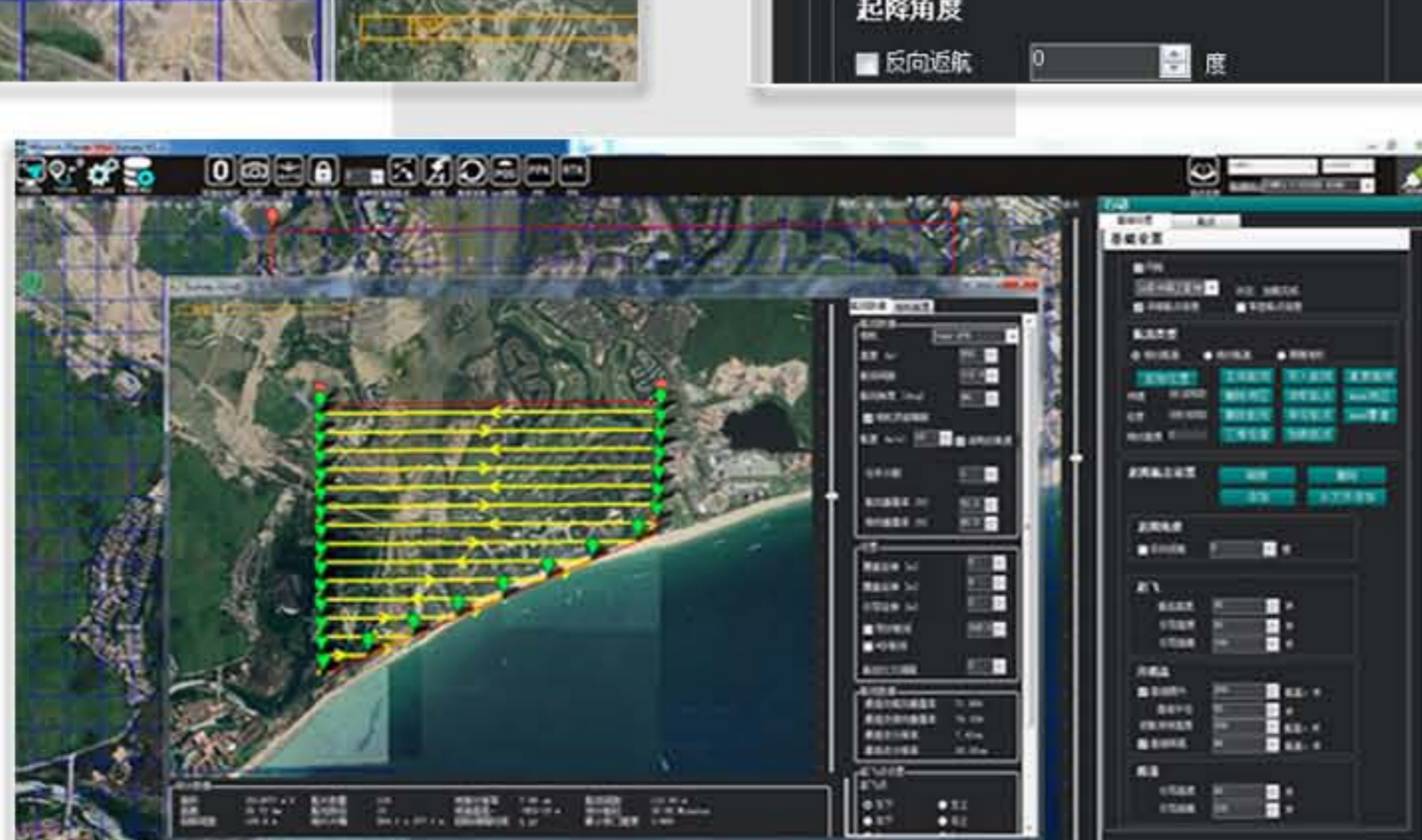
The hanging pillar is made of aviation aluminum alloy CNC machined, which perfectly matches the internal structure of the fuselage



The hanging board is made of 1.5mm carbon plate CNC machined, which is stable and durable and supports the installation of multiple loads

Note: The gimbal is exhibit, need to buy it yourself

Deeply Optimized Ground Station (Always Free)



Mission Planner Vtol Survey ground station is based on Mission Planner, which is deeply optimized according to the characteristics of aerial survey operations. It is concise and efficient, and is suitable for new users to get start quickly

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Technical Support

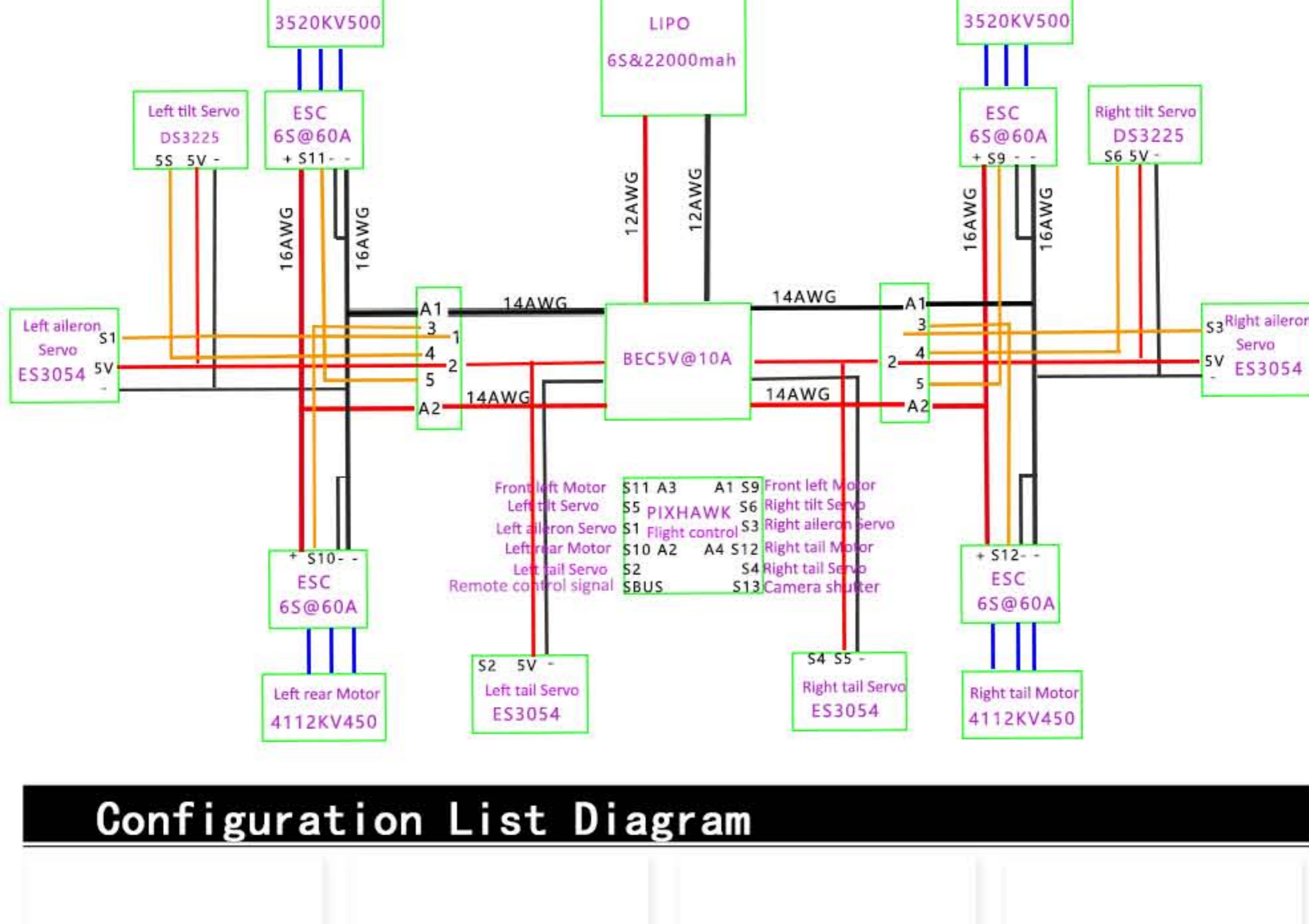


We have complete user manuals which can be downloaded in our website, and welcome to join our QQ group, aerial survey enthusiasts and technical support are waiting for you here!

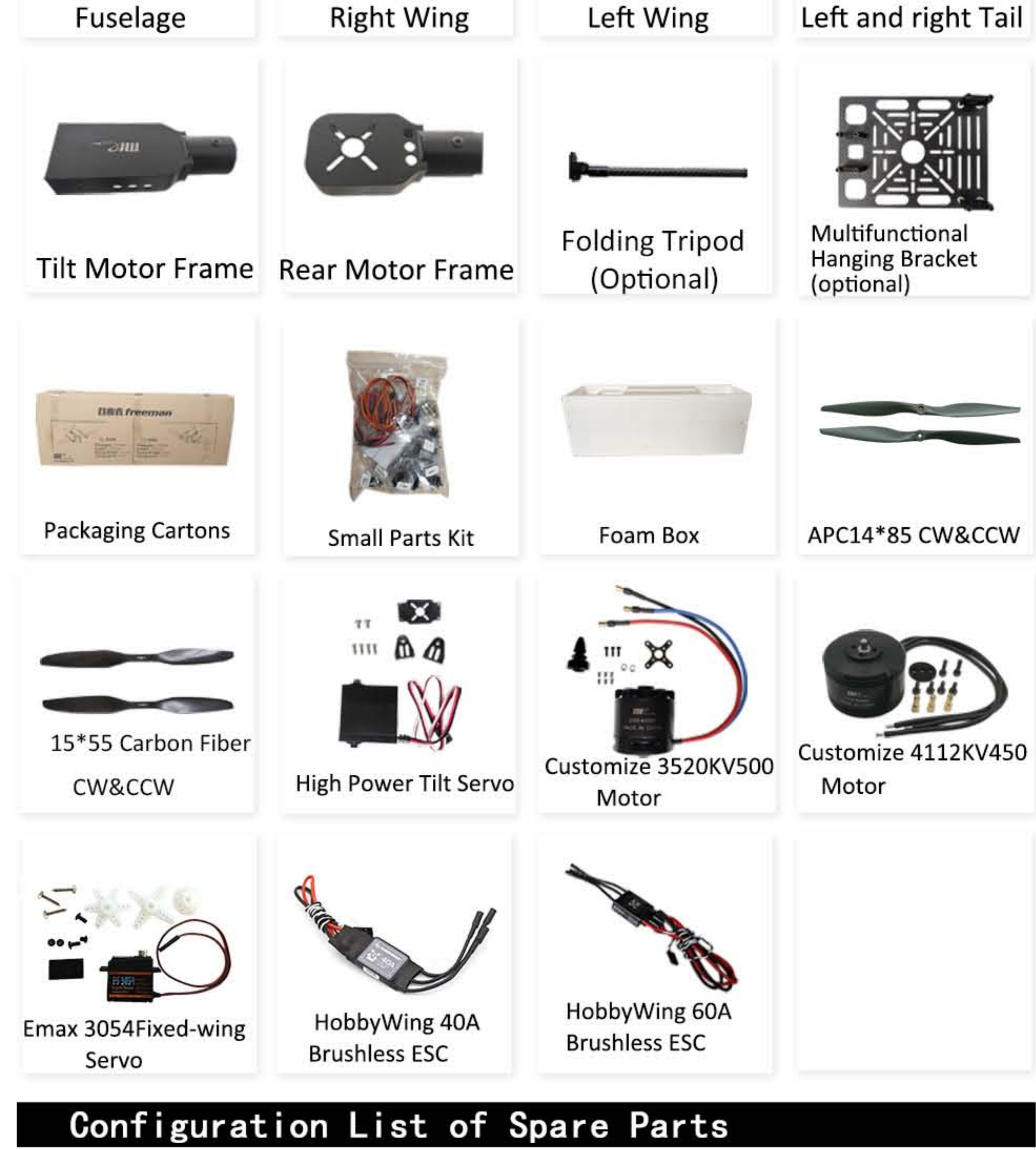
Basic Parameters

Freeman 2100 Basic Parameters		
Tilt VTOL Fixed Wing	Material	EPO, EVA, Carbon Fiber and Etc.
	Wing Span	2100 mm
	Fuselage	1070 mm
	Max take-off Weight	6.5 Kg
	Suggested Load	600 g
	Load Cabin Size	120*150*120 mm
	Longest Flight Range	80 Km (With 600g Load)
	Practical ceiling height	4000 m (Altitude)
	Flight Duration	80 Min
	Suggested Flight Speed	65 Km/h (18 m/s)
	Wind Resistance	Level 5
	Take-off and Landing Approach	VTOL
	Dismounting Way	No Tools Required
	Dismounting Step	6 Steps
Transport case seize	1.23m*0.45m*0.33m	

Wiring Diagram



Configuration List Diagram



Configuration List of Spare Parts

Freeman 2100 Spare Parts Configuration List				
Type	Model	KIT	PNP	
Aircraft	Left Wing	1	1	1
	Right Wing	1	1	1
	Titling Motor Frame	2	2	2
	Rear Motor Frame	2	2	2
	Fuselage	1	1	1
	Fuselage Parts	1	1	1
	Left Tail	1	1	1
	Right Tail	1	1	1
	Small Components Packet	1	1	1
	Foam Packing Box	1	1	1
	Carton	1	1	1
Power System	Customize 3520 KV500 Motor		2	
	Customize 4112S KV450 Motor		2	
	APC 1485 CW&CCW			2
	APC 1555 CW&CCW			2
	Hobbywing 40A Brushless ESC			2
	Hobbywing 60A Brushless ESC			2
	ES3054 Fixed-Wing Servo			4
Customize Vigorous Titling Servo			2	

F&Q

- Q:What is the difference between Freeman 2100 and Freeman 2300?**
A:The main difference is that the 2300 wing is 20cm longer than the 2100 wing. It has a larger aspect ratio, a larger load capacity, and high flight efficiency.
- Q:What do I do if I don't know how to adjust the PID of Freeman?**
A:With network connected, the Mission Planner Vtol Survey ground station can automatically load the parameters of the Freeman 2100/2300 and write the parameters to achieve a stable flight effect.
- Q:Are there installation instructions for Freeman?**
A:You can directly go to our official website www.makeflyeasy.com and click "Technical Support" to get detailed installation document.
- Q:What is the relationship between the stroke and position of the tilt servo?**
A:By default, the PWM = 1000 rocker arm is vertical to the servo, and the PWM = 2000 rocker arm is horizontal to the servo.
- Q:How to installed the tilt servo?**
A:The 25-30kg dual-axis tilt servo that are common on the market can be unscrewed and fixed directly on the front motor base, which greatly simplifies the installation of the servo and is artistic and practical.

Disclaimer

Makeflyeasy aerial survey series products are sensitive items, and the manufacturer does not bear any responsibility for the consequences of direct or indirect derivative accidental injury caused by any reason, and it is forbidden to use in military

Please keep the aircraft out of the reach of children. Make sure that the aircraft is far away from crowds and dangerous objects when flying. Do not carry out any aircraft operation while drinking, fatigue or mental discomfort

Specifications

Video Capture Resolution	Other	Operator Skill Level	Beginner
Indoor/Outdoor Use	Outdoor	Camera Mount Type	Other
State of Assembly	Unassembled Kit	Controller Mode	MODE1,MODE2
Control Channels	7 Channels	Controller Battery	0
Remote Distance	0	Power Source	Electric
Remote Control	Yes	Package Includes	Original Box
Material	Metal,Plastic,Carbon Fiber,Foam	Features	Auto Return
Origin	Mainland China	Recommend Age	18+
Aerial Photography	No	Type	Airplane