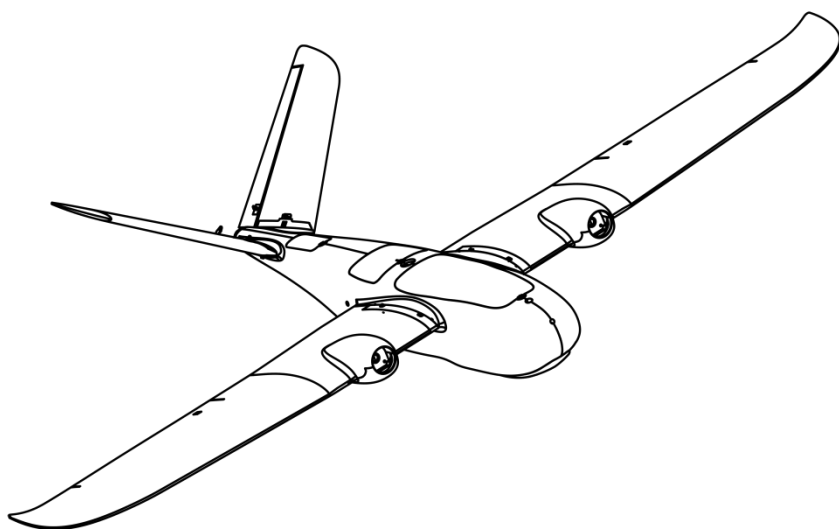


信仰者 *believer*

用户手册 V1.2

User Manual V1.2

2017.12



产品概述 Product Overview

简介 Introduction

信仰者是一款专业级航测飞行平台，具有携带易用，操作友好，稳定耐用等特点。整机模块化设计让航测外业的组装工作简单快捷，可快拆机翼、可快拆尾翼、机腹减震释能使飞机具有良好的便携性和优异的用户体验。分层设计的飞控舱，可搭载 4200W 像素相机的相机舱，可容纳 6S@22000mah 的电池舱，带来超长的续航时间和高质量的拍摄效果。配合飞控系统、遥测系统、动力系统、影像系统可以获得稳定安全的飞行性能，可应用于地形测绘、农林牧防护、电力巡线、环保、水利等方面。

The Believer, a type of professional grade aerial survey aircraft, which has the advantages such as portability, simplicity, stability and durability. Thanks for the Modular design of whole aircraft, it's very convenient to conduct the assembly during outside aerial photogrammetric field operation. Quick release wings, empennage and mechanical abdominal shock absorption provide excellent using experience for our customers. We have adopt various kinds of high technologies to the aircraft, the autopilot cabin has adopted hierarchical design, the camera cabin could carry 4200W pixel camera, the battery cabin could mount 6S@22000mah battery, benefits from all of the high technologies, our aircraft could provide extra long endurance and high quality shooting effect. Matching to the flight control system, remote monitoring system, dynamical system and image system, our aircraft has gained stable and safe flying performance which realized a wide-ranging application such as geography surveys, farmland, forestry land and grassland protection, power line inspection, environment protection, water conservancy and etc.

产品规格

材质：EPO、EVA、碳纤维、工程塑料等

翼展：1960mm

机身高：180mm

机身长：1070mm

翼面积：51.4dm²

推荐飞行速度 20m/s

失速速度 10m/s

最大起飞重量 5.5kg

Products specifications:

Materials :EPO, EVA, carbon fiber, engineering plastics and etc.

Wing span: 1960mm

fuselage height: 180mm

fuselage length: 1070mm

Wing area:51.4dm²

Suggested flying speed: 20m/s

Stalling speed: 10m/s

Max. Takeoff weight:5.5kg

产品使用注意事项 Products operating attentions

安装注意 Installing attentions

1. 在焊接大电流连接器时，一定要注意焊接线序要相互对应，以免烧毁电调、舵机。

1 Pay attention to the welding wires sequence which should be corresponding to each other during the welding of large current connector. Or maybe the electric regulator and servo suffered burning-out.

2. 推荐使用银燕 **ES3054** 数字舵机，或者其他相同尺寸的舵机及圆盘舵角，便于舵机安装，和尾翼快拆装置的安装。

2 We recommend the EMAX **ES3054** metal digital servo, or other same size servo and round board helmangle for the easy installing of servo and tail wings quick release devices.

3. 起飞重量大于 4.5kg 情况，需要用户自己加强机翼和尾翼。

3 Stiffening the wings and empennages when the takeoff weight was more than 4.5kg.

4. 安装顺序请参考信仰者组装流程图。

4 Please refer to the Believer assembly flow graph when you were confused by the Installing sequence.

飞行注意 Flying Attentions

1. 请避免在 10m/s 以下的速度飞行转弯，以免飞机失速。

1 Don't cornering when the aircraft flying speed was less than 10m/s, or the aircraft maybe stalling.

2. 飞行前请务必检查电机、螺旋桨安装正确稳固，电调信号线和电源线插头连接坚固可靠。

2 Ensure the motor and propeller were installed correctly and toughly before flying, inspecting the electronic regulating signal wires and power lines plug, ensure they were connected toughly.

3. 飞行时请远离不安全因数，如障碍物、人群、儿童、建筑物、高压线等。

3 Away from the unsafety facors such as barrier, crowd, children, buildings, high-voltage wires and etc while flying.

4. 务必在安全起飞重量下飞行，切勿在机场净空区范围飞行。

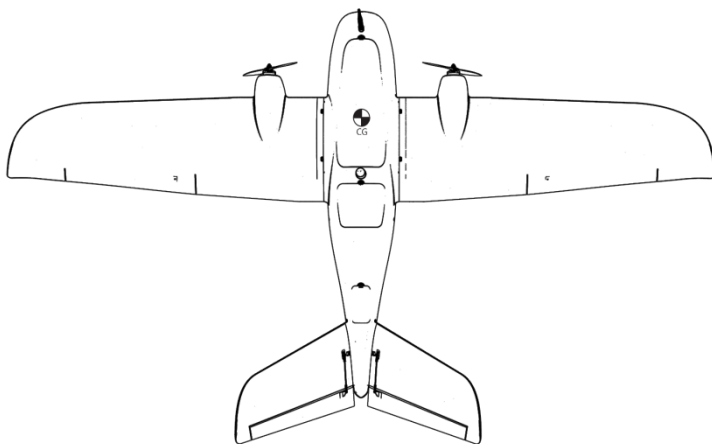
4 Takeoff under the safety weight and never flying in the area of airfield clearance zone.

5. 切勿贴近或接触旋转中的电机或螺旋桨，避免被旋转中的螺旋桨割伤。

5 Don't get too close to the rotating motor or propeller, avoid to the possible cuts.

6. 请按标识重心位置配重（位于机翼翼根塑料件下突起处）

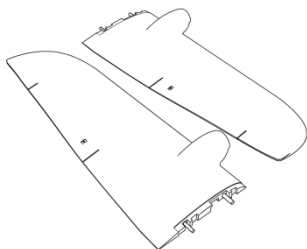
6 Conduct the counterweight at the marked center of gravity position. (At the protrusion which was under the plastic parts of wings root)



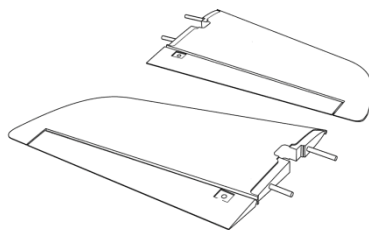
盒内物品清单 Contents in the box

EPO 部件 EPO Parts

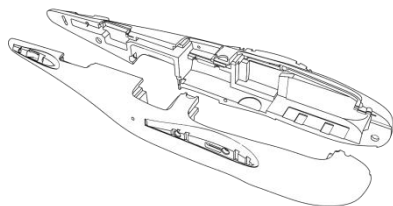
1 左右机翼 1 left & right wing



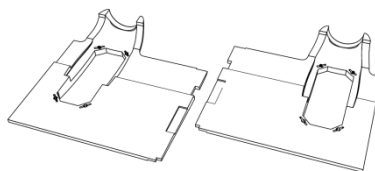
2 左右尾翼 2 left & right empennage



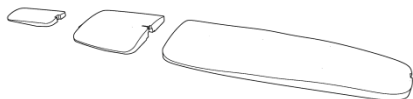
3 左右机身 2 left & right fuselage



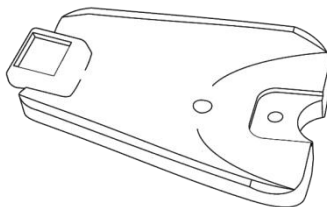
4 机翼盖板 4 Wings covering plate



5 机舱盖 5 Cabin cover



6 伞舱盖 6 Parachute cabin cover



碳管部件 Carbon tube parts

1 机身支撑碳管

1 Fuselage supporting carbon tube

14*12*206mm

12*10*206mm

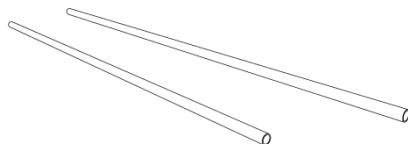


2 机翼对插碳管

2 Wings inserting carbon tube

12*10*700mm

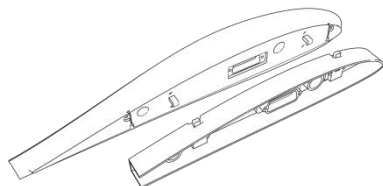
10*8*600mm



塑料件 Plastic parts

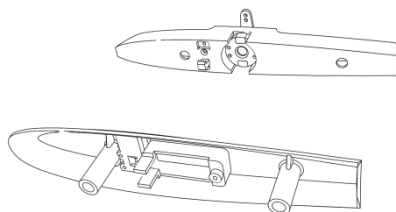
1 机翼连接件*2

1 Wings connecting parts*2



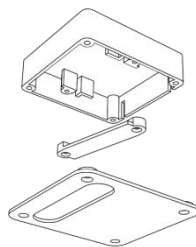
2 尾翼连接件*2

2 Empennages connecting parts*2



3 舵机固定件*2

3 Servo fixing parts*2



舵机安装座

servo installing base

舵机压片

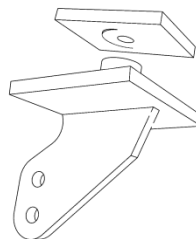
servo presser

舵机盖板

servo covering plate

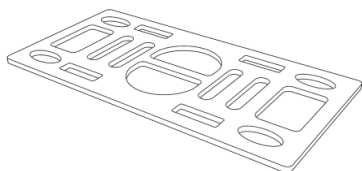
4 舵角*4

4 Servo angle*4



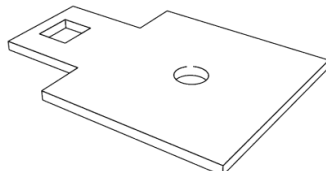
5 电池固定板*1

5 Battery fixing board*1



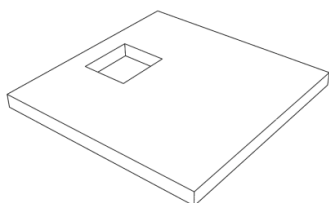
6 天线固定板*2

6 Antenna fixing board*2



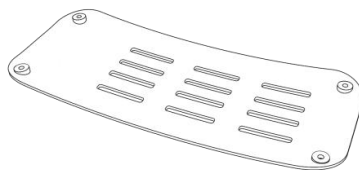
7 舱盖固定板*1

7 Cabin cover fixing board*1



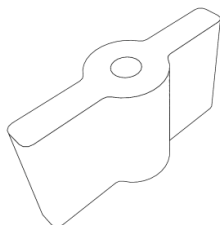
8 电调盖板*2

8 Electric regulating cover*2



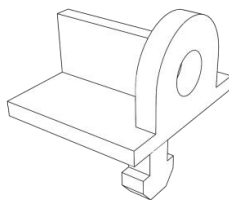
9 螺丝柱*12

9 Stud*12



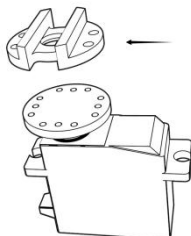
10 舱盖锁钉*3

10 Cabin cover locking nail*3



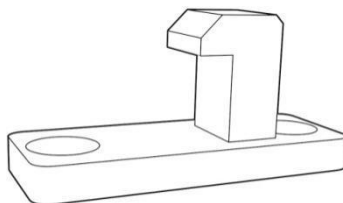
11 卡盘*2

11 Chuck*2



12 锁钩*8

12 Latching hook



木板部件 Wooden parts

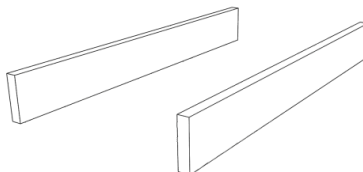
1 机身加强层板*2

1 Fuselage reinforcing plate*2



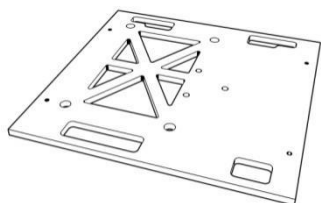
2 机尾加强层板

2 Tail reinforcing plate



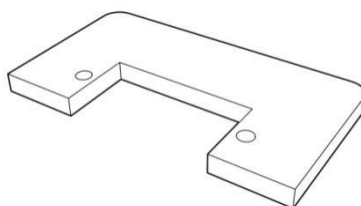
3 飞控放置板*1

3 Autopilot locating board*1



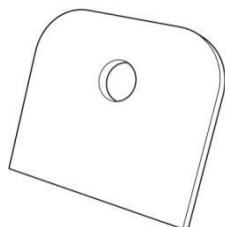
4 伞舱舵机座*1

4 Basement of parachute servo*1



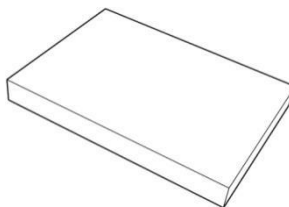
5 伞舱盖木板*1

5 Wooden plate of parachute hatch cover*1



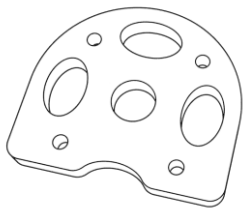
6 伞舱盖加强板*1

6 Stiffer of parachute hatch cover *1



7 电机安装座

7 Motor installing base



EVA 部件 (电池区缓冲垫、飞控区缓冲垫)

EVA parts(Cushion at battery area, cushion at flight control area)



其他配件 Other fittings

序号 NO.	名称及型号 Name & Model	数量 Qty	备注 Notes
1	大电流连接器 Large electronic current connector	2 套 2 groups	
2	尾翼舵机延长线 30cm Empennage servo extending wire	2 根 2 sets	
	舵机单端公头延长线 30cm Servo single-head male connector extending wire 30cm	2 根 2 sets	机翼部分 Wing section
	机身油门舵机单端母头延长线 30cm fuselage fuel gate servo single-head female connector extending wire 30cm	4 根 4 sets	机身部分 fuselage section
	副翼/油门 Y 线 10cm Aileron/Fuel gate Y wire 10cm	2 根 2 sets	
3	16AWG 硅胶线 (黑) 16AWG Silicone wire (black)	1 米 1 m	
	16AWG 硅胶线 (红) 16AWG Silicone wire (red)	1 米 1 m	
4	热缩管直径 2.5mm*15mm Diameter of heat shrink tubing 2.5mm*15mm	20 段 20 sections	
	热缩管直径 6mm*15mm Diameter of heat shrink tubing 6mm*15mm	12 段 12 sections	
5	束线管 Wire harness tube	1 米 1m	
	魔术扎带 Magic tie straps	2 根 2 sets	与电池固定板搭配使用 Matching the battery fixing board
6	透明泡沫胶 Transparent foam glue	2 支 2 PCS	

7	球头 Ball head	8 个 8PCS	球头连杆 Ball link rod
	连杆 Link rod	4 根 4 sets	球头连杆 Ball link rod
	圆头螺钉 M2X10 Button head screw M2X10	8 颗 8PCS	球头连杆 Ball link rod
	防松螺母 M2 Block nut M2	8 颗 8 PCS	球头连杆 Ball link rod
8	塑料锁扣 Plastic latch	3 个 3PCS	舱盖锁定 Hatch cover locking nail
9	断尾圆头螺丝 M2X8 Tail button head screw M2X8	34 颗 34PCS	机翼舵角、尾翼舵角、锁 钩、电调盖板、舵机盖板 Wing servo angle, empennage servo angle, latching hook, electrically controlled cover plate, servo covering plate
10	断尾圆头螺丝 M2X10 Tail button head screw M2X10	8 颗 8PCS	舵机压片、飞控放置板 Servo presser, autopilot locating board
11	断尾圆头螺丝 M2.5X8 Tail button head screw M2.5X8	10 颗 10PCS	大电流连接器、伞舵机 Large electronic current connector, parachute servo
12	带垫螺钉 M3X8 Screws with pad M3*8	8 颗 8PCS	用于固定电机 Fixing the electric motor

辅助安装工具和材料 (自备)

Auxiliary installation tools and materials (Self-contained)

工具 Tools	用途 Usage
3.0mm 十字螺丝刀 3.0 Philips screwdriver	安装螺丝 Installing the screws
电烙铁、焊锡丝 Electric iron, solder wire	焊接电源、舵机线 Welding the power line and servo line
打火机 Lighter	固定热缩管 Fixed heat shrink tube
小刀 Knife	剥线 Wire stripping tool
纸胶、透明胶、纤维胶带(Transparent) adhesive tape, fabric adhesive tape	飞机粘合辅助定位、飞机局部加强 Aircraft bonding and auxiliary positioning, local reinforce

测试配置与性能 Test configuration & performance

	4S 测试动力配置 4S Test power configuration		6S 测试动力配置 6S Test power configuration	
种类 Types	型号 Model	数量 Qty	型号 Model	数量 Qty
电机 Motor	朗宇 Sunny sky 2814 KV900	2 个 2 sets	MFE2815KV550	2 个
电调 Electric regulator	好赢乐天 40A Hobbywing 40A	2 个 2 sets	好赢乐天 40A Hobbywing 40A	2 个 2 sets
舵机 Servo	银燕 ES3054 Yingyan ES3054	4 个 4 sets	银燕 ES3054 Yingyan ES3054	4 个 4 sets
桨 Propeller	APC1170 正反桨 APC1170 Forward & backward propeller	1 对 1 pair	APC1260 正反桨 APC1260 Forward & backward propeller	1 对 1 pair
电池 Battery	4S@20000mah	1 组 1 group	6S@16000mah	1 组 1 group
最大拉力 Max. tension	约 4.5kg About 4.5kg		约 5kg About 5kg	
负载重量 Carrying capacity	SONY a6000 (440g)	1 台 1 set	SONY a7r (670g)	1 台 1 set
起飞重量 Takeoff weight	约 4.2kg(含负载 440g) About 4.2kg (include carrying 440g)		约 4.6kg(含负载 670g) About 4.6kg (include carrying 670g)	
续航 Endurance	80km 左右 About 80KM		90km 左右 About 90KM	
测试条件 Test condition	巡航速度：20m/s 海拔：470 米 风速：3 级风 Endurance speed:20m/s Elevation:470m Wind speed: Grade 3			

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National University Science Park