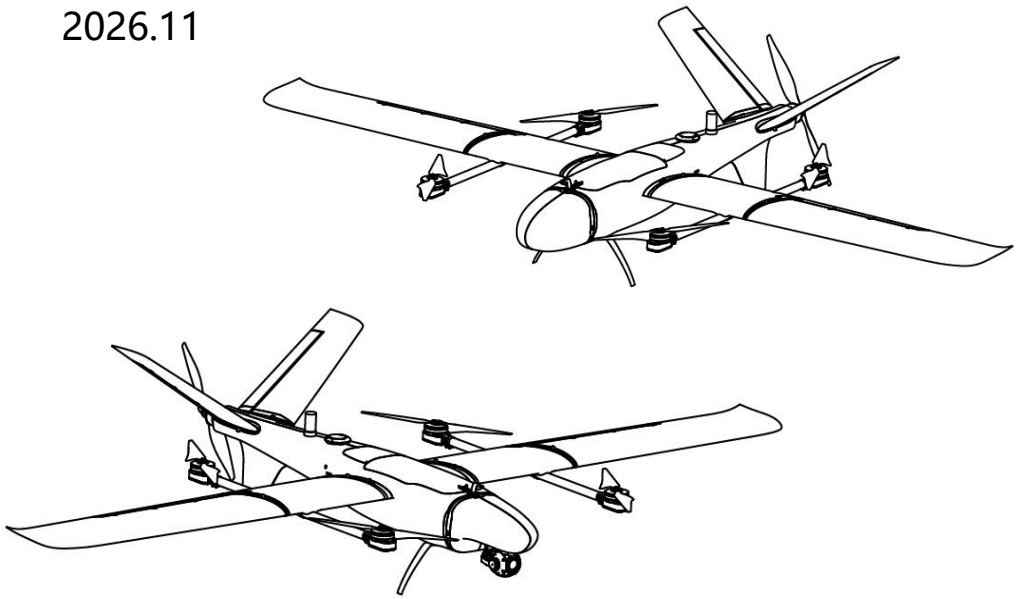
逆行者2180

HERO2180

用户手册 V5

User Manual V5

2026.11



makeflyeasy

产品概述

简介 Introduction

逆行者 2180 VTOL 是一款多用途垂直起降固定翼。机头可更换设计，既能搭载正射相机或倾斜相机用于测绘领域，又能搭载光电吊舱用于监测领域。多用途设计扩大了应用范围，降低了飞行成本，提高了航测效率。

模块化设计理念让飞机组装工作简单快捷，可快拆机头，可快拆机翼、可快拆尾翼、使飞机具有实用的便携性和友好的用户体验。机头可挂载光电吊舱，载荷舱可放置 Sony A7R 系列全画幅相机或五镜头倾斜相机，最大支持 6S@22000mah 锂聚合物电池，可以实现超长续航和高质量的拍摄效果。

测绘成果满足 1:1000 和 1:2000 航测标准，可应用于地形测绘、实景三维；挂载光电吊舱可用于遥感监测、智能巡查、公共安全等方面。

Hero2180 VTOL is a multi-purpose vertical take-off and landing fixed wing. With interchangeable nose design, it can carry ortho or tilt camera for surveying and mapping field, as well as optoelectronic pod for monitoring field. The multi-purpose design expands the range of applications, reduces flight costs and improves aerial survey efficiency.

The modular design concept makes the airplane easy to assemble and quick to disassemble, quick to disassemble the nose, quick to disassemble the wing, quick to disassemble the tail, which makes the airplane has practical portability and friendly user experience. The nose can be mounted with an optoelectronic pod, and the load bay can hold a Sony A7R series full-frame camera or a five-lens tilt camera, and the maximum support for a 6S@22000mah Li-polymer battery, which can realize ultra-long endurance and high-quality shooting results.

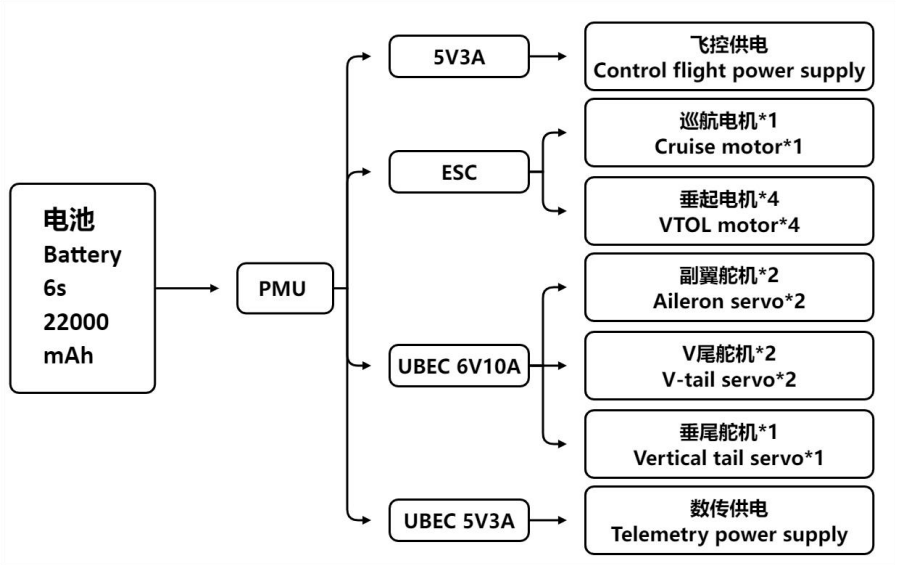
The mapping results meet the 1:1000 and 1:2000 aerial survey standards, and can be applied to topographic mapping and real-view 3D; the mounted optoelectronic pod can be used for remote sensing monitoring, intelligent inspection, and public safety.

产品规格 Products specifications

材质 Material	EPO、EVA、碳纤维、PC、工程塑料等 EPO,EVA,carbon fiber,PC,engineering plastics etc.
翼展 Wing Span	2180mm
垂起机臂 Dropped Boom	755mm （含电机座） 755mm(including motor mount)
机身高 Fuselage height	255mm（含脚架） 255mm (with stand)
机身长 Fuselage length	1140mm
翼面积 Wing area	53dm2
实用升限 Practical ceiling height	4000m
飞机迎角 Aircraft Angle of Approach	0-2°
机翼安装角 Wing Mounting Angle	2.9°
转换空速 Airspeed	14m/s
最大横滚角 Max Roll Angle	30°
最大俯冲角 Max Dive Angle	5°
最大爬升角 Max Climbing Angle	3.5°
推荐飞行速度 Suggested flight speed	17~22m/s

失速速度 Stalling speed	10m/s（测试条件:海拔 500米,7kg 起飞重量） 10m/s (test: altitude 500m, 7kg take-off weight)
最大有效载荷 Max payload	< 1 kg
载荷舱尺寸 Payload bay size	180*150*110mm
最大起飞重量 Max take-off weight	< 7 kg
最大起飞高度 Max take-off height	3000m
工作温度 Working Temp.	-10℃~50℃
副翼转角 Aileron Angle	向上 22° 向下 28° Up 22° Down 28°
V 尾转角 V-tail angle	向上 28° 向下 20° Up 28° Down 20°
抗风能力 Wind resistance	5（正常作业） 5 (normal operations)
起降方式 Take-off and landing mode	垂直起降 VTOL
拆装方式 Dismounting way	无工具拆装 tool-free
运输箱尺寸 Transport case seize	1100*350*430mm

电力拓扑图 topological map



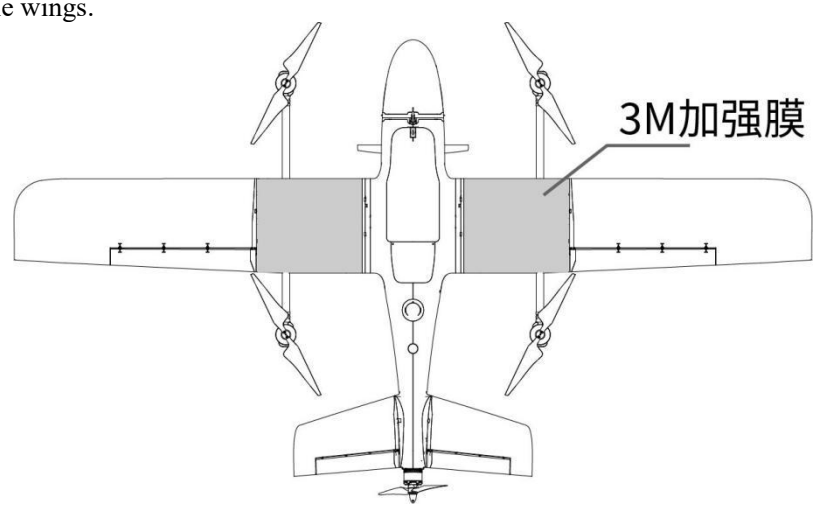
配置与性能 Configuration & performance

种类 Types	型号 Model	数量 Qty
巡航电机 Cruise motor	3500 kv500	1 个 1PCS
垂起电机 VTOL motor	5008 kv450	4 个 4PCS
巡航电调 Cruise ESC	6S 100A	1 个 1PCS
垂起电调 VTOL ESC	6S 50A	4 个 4PCS
副翼/尾翼舵机 Aileron/tails servo	S3054	5 个 5PCS

巡航电机桨 Cruise motorrotor	APC1510 正桨 APC1510 propeller	1 把 1PCS
多旋翼电机桨 VTOL motor rotor	1550 碳纤维正反桨 1550 propeller of positive and negative	2 对 2pair
UBEC	6V@10A	1 个 1 PCS
飞控 Flight control	Pixhawk	1 套 1group
动力电池 Power battery	6S@22000mah 锂聚合物 6S@22000mah lithium polymer	1 组 1group
测绘续航 Endurance	136min/144km（速度 19m/s 载荷 600g 起飞重量 6.65kg）	
监测续航	125min/126km（速度 18m/s 载荷 450g 起飞重量 6.5kg）	
测试条件 Test condition	海拔 500 米，温度 15 摄氏度，3 级风 Altitude:500m,Temperature:15℃,Wind behavior:3	

警告：请使用配套的 3M 背胶加强贴膜对机翼进行加强。

Be sure to use the supporting 3M gummed reinforcement film to reinforce the wings.



产品使用注意事项 Usage Attentions

安装注意 Installation Attentions

1. 在焊接大电流连接器时，注意线序一一对应，以免烧毁电调、舵机。

1.When soldering high-current connectors, pay attention to the wire sequence one-to-one correspondence, so as not to burn the ESC and servo.

2. 副翼和尾翼推荐使用 **MFE3054** 数字舵机，或者其他相同尺寸的舵机，便于舵机安装和尾翼快拆装置的安装。

2. We recommend the MFE3054 metal digital servo,or other same size servo for the easy installing of servo and tail wings quick release devices.

3. 在安装多旋翼电机座时注意调至水平。

3.Take care to level the multi-rotor motor mount when installing it.

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.Avoid turning when the aircraft flying speed was less than 10m/s,or the aircraft may stall.

2. 飞行前请检查电机、螺旋桨、电调信号线和电源线插头安装连接紧固，飞行时远离不安全因数，如障碍物、人群、儿童、建筑物、高压线等。

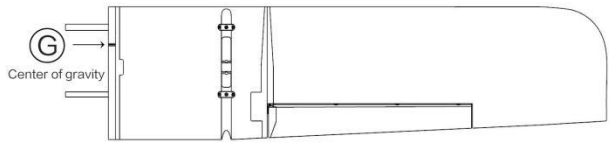
2.Check that the motor, propeller, ESC signal cable and power cord plug are connected tightly before flying, and keep away from unsafe factors such as obstacles, crowds, children, and high-voltage lines when flying.

3. 务必在安全起飞重量下飞行，切勿在机场净空区范围飞行。

3.Fly at a safe take-off weight and never fly within the airport clear zone.

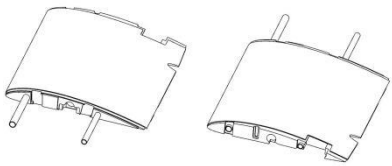
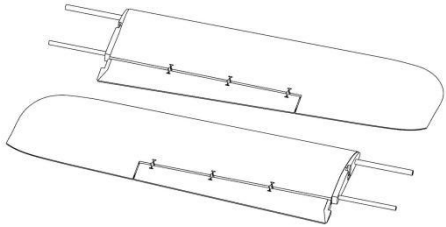
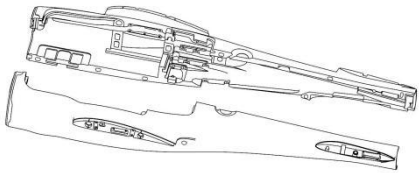
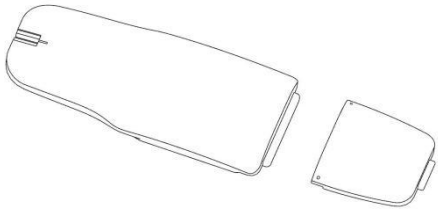
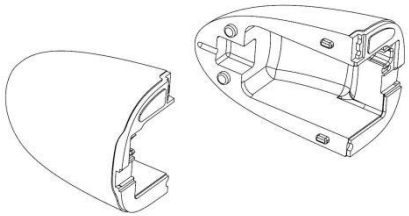
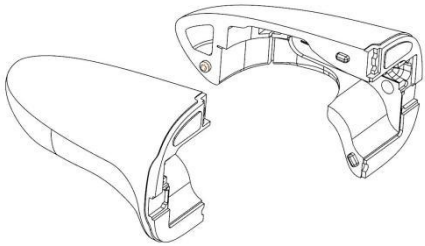
4. 请按标识重心位置配重（位于机翼翼根塑料件下凸起处）。

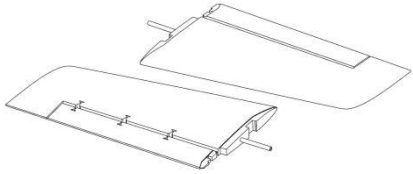
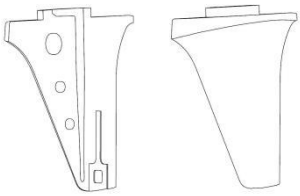
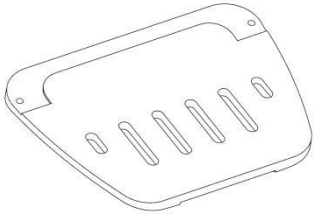
4.Conduct the counterweight at the marked center of gravity position.
(Located at the marking on the plastic part under the wing).



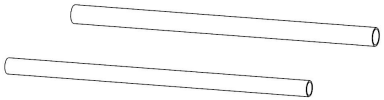
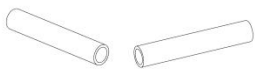
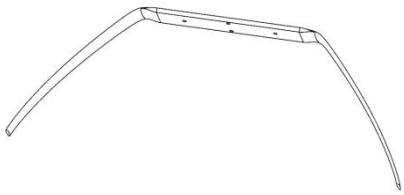
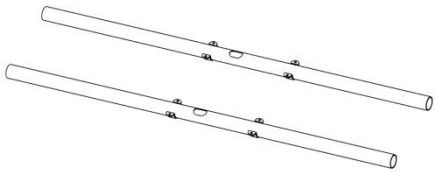
盒内物品清单 Contents in the box

EPO 部件 EPO Parts

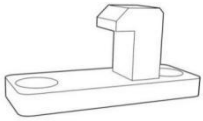
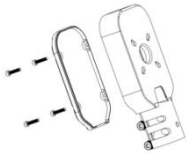
1 机翼翼根 1 left & right wing 	2 机翼翼尖 2 wingtip 
3 左右机身 Left and right fuselage 	4 机舱盖 4 bonnet 
5 测绘机头 5 Surveyor head 	6 监测机头 6 Monitoring of heads 

7 V 型尾翼 7 V-tail 	8 垂直尾翼 8 Vertical tail 
9 腹部舱盖 9 pelvic hatch 	

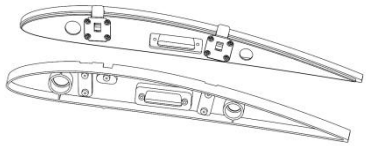
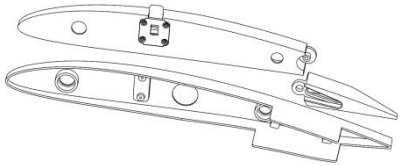
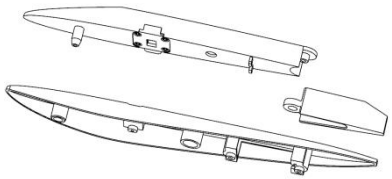
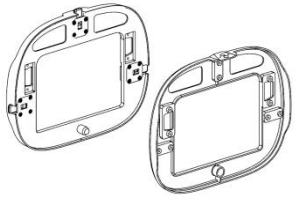
碳纤维部件 Carbon tube parts

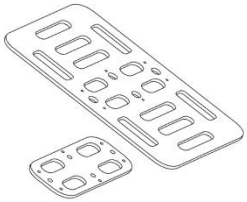
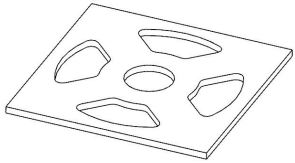
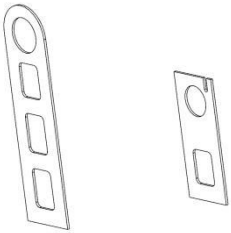
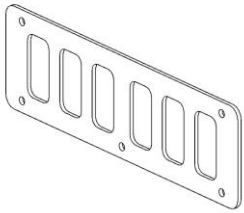
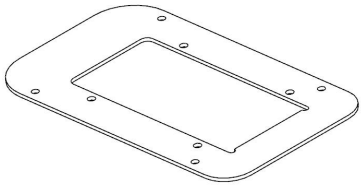
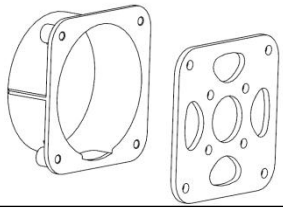
1 机身支撑碳管 1 Fuselage supporting carbon tube 15.3*13*253.5mm 13.3*11*253.5mm 	2 平尾对插碳管 2 horizontaltailscarbon tube 8*6*45mm 
3 起落架 3 undercarriage 	4 垂起机臂 4 hoisting arm 

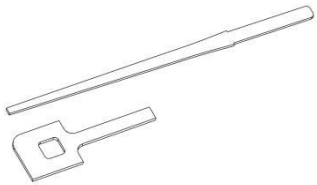
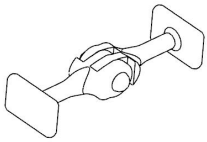
金属部件 Metal parts

1 重心挂环*2 1 Parachute mount *2 	2 金属锁钩*11 2 Mental latching hook*11 
3 垂起电机座*4 3 Motor frame*4 	

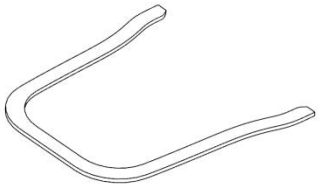
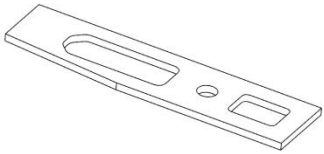
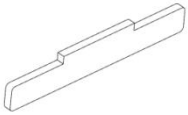
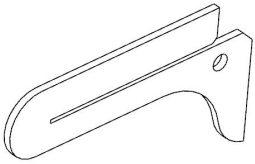
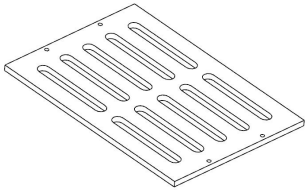
塑料部件 Plastic parts

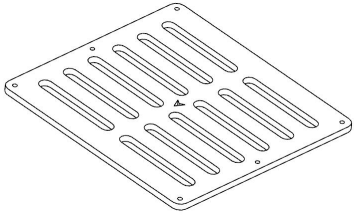
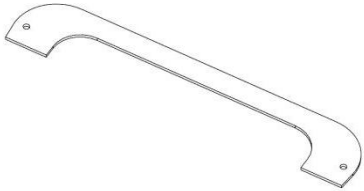
1 机翼连接件*2 1 Wings connecting parts*2 	2 机翼分段连接件*2 2 Wing segment connectors*2 
2 尾翼连接件*2 2 Tailsconnecting parts*2 	4 机头连接件*2 4 Head Connector*2 

5 电池固定板 5 Battery fixing board 	6 天线固定板*2 6 Antenna fixing board*2 
7 空速管 7 airspeed tube 	8 螺丝柱*14 8 Stud*14 
9 机身碳管加强件*2 9 Fuselagecarbon tube reinforcement*2 	10 机身线材固定板*2 10Fuselage wire plate *2 
11 电调盖板 11 Head ESC hatch cover 	12 巡航电机安装座 12 Head motor mounting mount 

13 机身尾部支撑件 13 Fuselage tail support 	14 铰链*12 14 Hinges*12 

木板部件 Wooden parts

1 机头加强板 1 Head Reinforcement Plate 	2 机身尾部加强层板*2 2 Fuselage Tail Reinforcement Plate *2 
3 起落架安装支撑板*2 3 Landing gear mounted support plate*2 	4 飞控舱盖固定板 4 Flight control module cover fixing plate 
5 监测机头加强板*2 5 Monitor head reinforcement plate*2 	6 放置板 6 locating board 

7 飞控放置板 7 Flight Control Plate 	8 腹部舱盖固定板 8 Abdominal hatch fixing plate 

其他配件 Other fittings

编号 NO.	名称及型号 Name &Model		数量 Qty	备注 Notes
1	割尾圆头螺丝 M2*4 Round head flat tail screw M2*4		20	
2	割尾圆头螺丝 M2*8 Round head flat tail screw M2*8		40	
3	割尾圆头螺丝 M2*10 Round head flat tail screw M2*10		15	
4	带垫螺丝 M2.6*8 Gasket screw M2.6*8		30	
5	内六角螺钉 M3*6 Soket head cap screw M3*6		8	
6	金属挂钩*2+锁钩*11 Metal hanger		13	安装降落伞、测量重心 Mounted parachute& Measuring the center of gravity
7	一字螺柱 Plastic stud		22	
	尼龙螺柱 Hexagon nylon stud		14	
9	平尾传动螺柱 4.2-M2*8 Horizontal tail drive stud 4.2-M2*8		2	平尾部分 The part of the horizontal tail
	圆头螺钉 Button head screw M2*10		5	
	平尾传动舵角 The transmission leg of the horizontal tail		2	
10	热缩管 heat shrink tubing	直径 5mm*15mm	10	
		直径 2mm*15mm	40	

11	球头 Ball head		6	球头连杆 Ball link rod
	连杆 Link rod		3	
	圆头螺钉 Button head screw M2*10		7	
	自锁螺母 Block nut M2		7	
13	舱盖锁扣 Plastic latch		1	
14	铰链 Hinge		12	
15	大电流连接器 7W2 Large electronic current connector 7W2		2	
	D-SUB 连接器 DB9P D-SUB connector DB9P		2	
16	魔术扎带 Magic tie straps		2	与电池固定板搭配使用 Matching the battery fixing board
17	硅胶线 Silicone wire	14 AWG 红色 1.2 米 14 AWG Silicone wire (red) 1.2M	1	
		14 AWG 黑色 1.2 米 14 AWG Silicone wire (black) 1.2M	1	
18	舵机线材 The servo wire	单端公头线 30cm Single head servo wire(male) 30cm	7	尾翼部分 Tails section
		单端母头线 33cm Single head servo wire(Female)33cm	7	机身部分 Fuselage section

辅助安装工具和材料（自备）Auxiliary installation tools and materials (Self-provided)

工具 Tools	用途 Usage
3.0mm 十字螺丝刀 3.0mm cross screwdriver	安装螺丝 Installing the screws
1.5mm-3mm 内六角 1.5mm-3mm Hexagon socket head cap screw	电机座安装 Installing the motor frame
电烙铁、焊锡丝 Electric iron,solder wire	焊接电源、舵机线 Welding the power line and servowire
打火机 Lighter	固定热缩管 Fix 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 temporary positioning,local reinforcement

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