

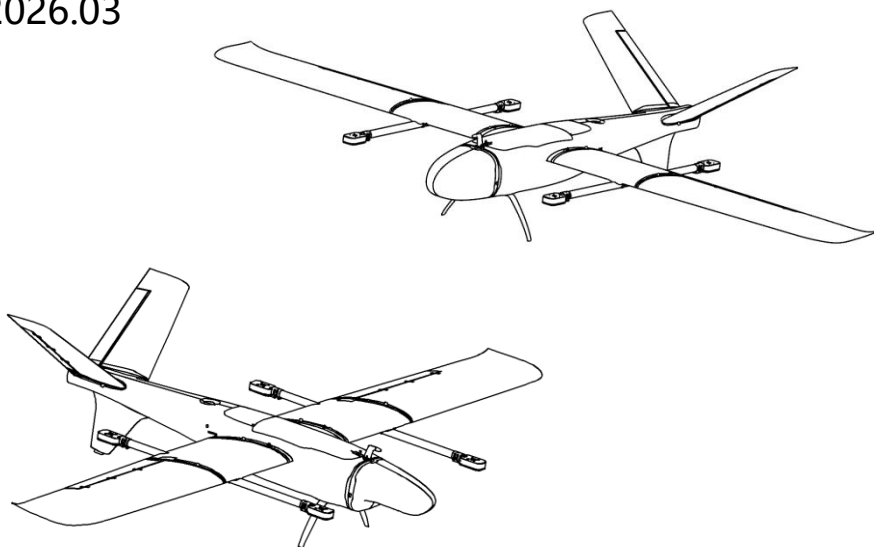
# 逆行者

## HERO2180

用户手册 v4.0

User ManualV4.0

2026.03



**mfe**  
makeflyeasy

# 产品概述

## 简介 Introduction

逆行者是一款 EPO 多用途垂直起降固定翼飞机壳体。逆行者配备两个机头，机头可更换，实现更多的使用场景。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。

The Hero is a multi-purpose VTOL fixed-wing aircraft airframe made of EPO material. It is equipped with two interchangeable nose cones, enabling a wider range of application scenarios. Adopting a modular design, the aircraft features fast and easy assembly. With quick-detachable nose, wings and empennage, it delivers excellent portability and an optimized user experience.

## 免责声明 Disclaimer

Makeflyeasy 系列产品为通用航模/无人机零配件，任何理由引起的直接，间接衍生性意外伤害造成的后果，厂家不承担任何责任。

禁止用于军事相关用途，禁止用于涉密及违禁飞行场景，严禁擅自闯入机场、军事管理区、禁飞区飞行，使用者承担全部飞行责任。

请把飞行器放置儿童触及范围之外，确保飞行器飞行时远离人群及危险物品，切勿在饮酒，疲劳或精神不佳情况下进行任何飞行器操作。

All products of the Makeflyeasy series are general model aircraft and UAV spare parts. The manufacturer shall not be held liable for any consequences arising from direct, indirect or consequential personal injury caused by any reason.

This product is prohibited for military-related purposes, confidential operations and prohibited flight scenarios. Unauthorized flight into airports,

military restricted areas and no-fly zones is strictly prohibited. The end user shall bear full responsibility for all flight activities.

Keep the aircraft out of the reach of children. Always operate it away from crowds and hazardous objects. Do not operate the aircraft under the influence of alcohol, when fatigued, or in poor mental condition.

## 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 Wingspan	2180mm
垂起机臂 VTOL 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	53 dm <sup>2</sup>
机翼安装角 Wing Mounting Angle	2.9°
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°
产品净重 Net Weight	3.4 Kg
装箱重量 Gross Weight	7.5 Kg
包装箱尺寸 Transport case size	1100*350*430mm

# 产品使用注意事项 Usage Attentions

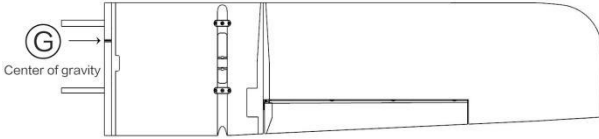
## 安装注意 Installation Attentions

1. 在焊接大电流连接器时，注意线序——对应，以免烧毁电调、舵机。  
1. When soldering high-current connectors, match the wiring sequence strictly to avoid damaging ESC and servos.
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 making turns at airspeed below 10 m/s to prevent 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素，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.

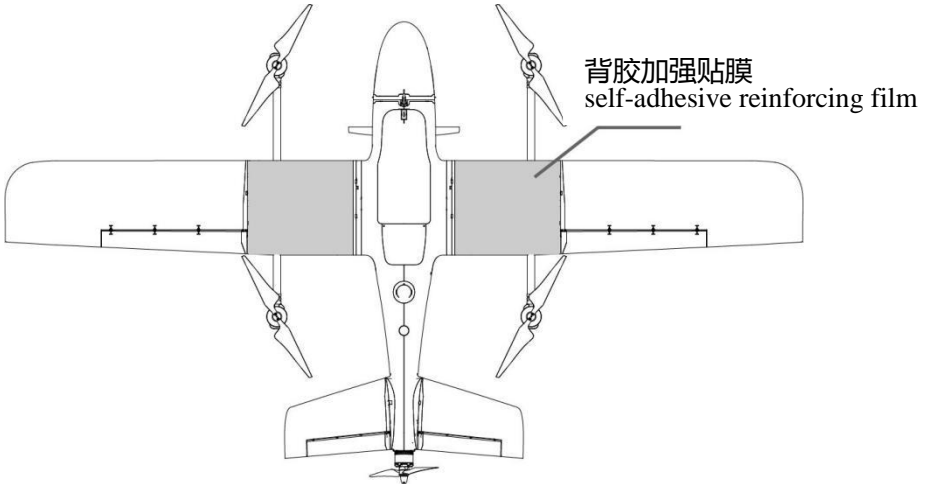
4. 请按标识重心位置配重（位于机翼翼根塑料件下凸起处）。
4. Conduct the counterweight at the marked center of gravity position.  
(Located at the protrusion underneath the wing root plastic fitting.).



### 警告 Warning

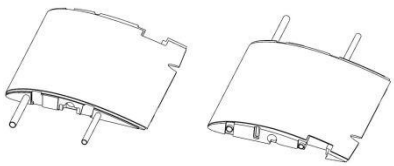
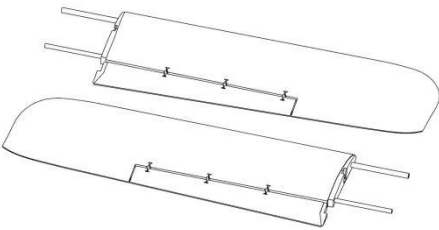
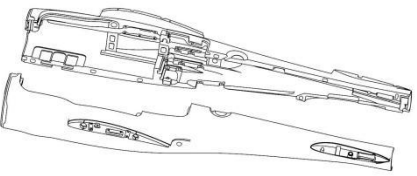
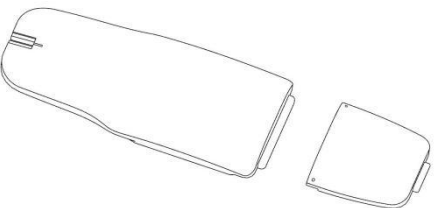
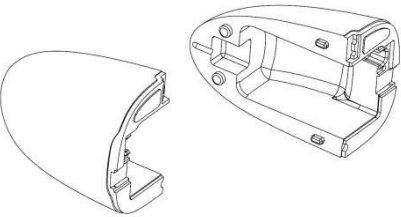
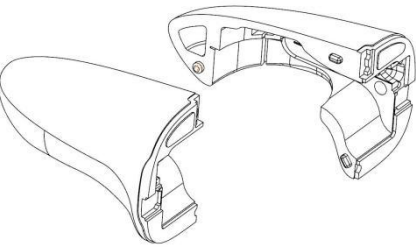
垂直起降版本请使用配套的背胶加强贴膜对机翼进行加强。

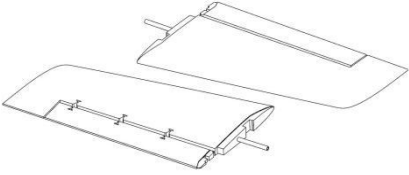
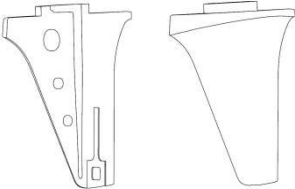
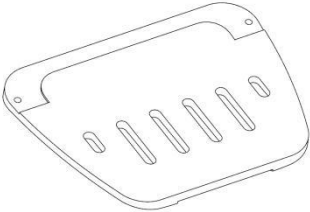
For the VTOL version, please reinforce the wings with the original matching self-adhesive reinforcing film.



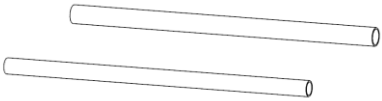

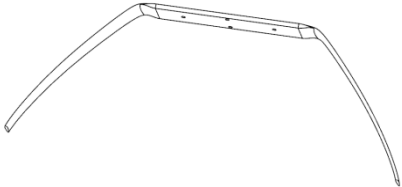
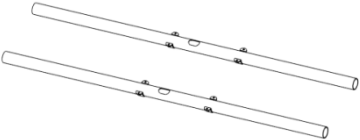
# 盒内物品清单 Contents in the box

## EPO 部件 EPO Parts


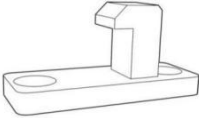
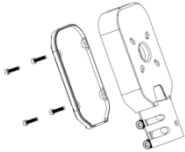
<p>1 机翼翼根 Left &amp; right wing panel</p> 	<p>2 机翼翼尖 Wingtip</p> 
<p>3 左右机身 Left &amp; right fuselage</p> 	<p>4 机舱盖 Bonnet</p> 
<p>5 封闭式机头 Closed-type nose</p> 	<p>6 挂载式机头 Mounting-type nose</p> 

<p>7 V 型尾翼 V-tail</p> 	<p>8 腹鳍 Ventral fin</p> 
<p>9 腹部舱盖 Lower cabin cover</p> 	

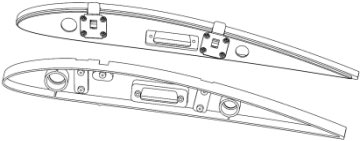
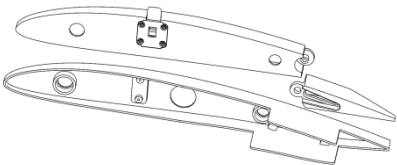
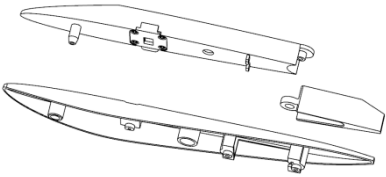
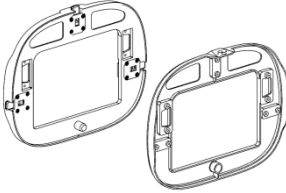
### 碳纤维部件 Carbon tube parts

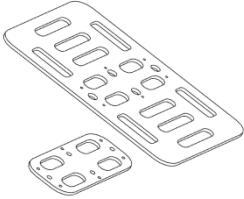
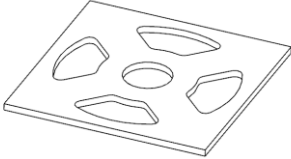
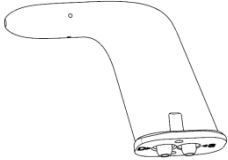
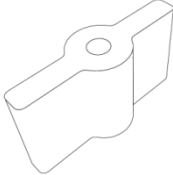
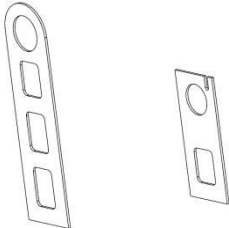
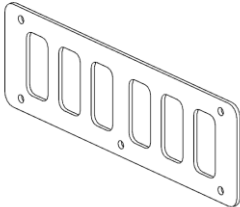
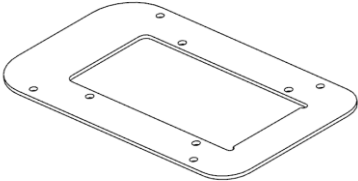
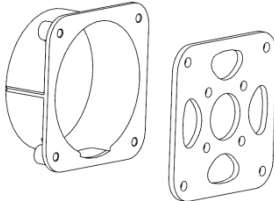
<p>1 机身支撑碳管 1 Fuselage supporting carbon tube 15.3*13*253.5mm 13.3*11*253.5mm</p> 	<p>2 平尾对插碳管 2 horizontaltails carbon tube 8*6*45mm</p> 
<p>3 起落架 3 undercarriage</p> 	<p>4 垂起机臂 4 VTOL boom</p> 

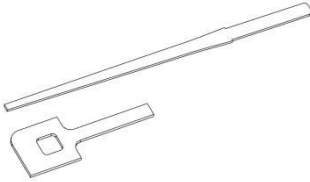
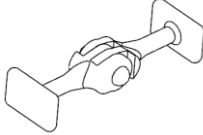
## 金属部件 Metal parts

<p>1 重心挂环*2 1 Center of gravity suspension ring *2</p> 	<p>2 金属锁钩*11 2 Metal latching hook*11</p> 
<p>3 垂起电机座*4 3 Motor frame*4</p> 	

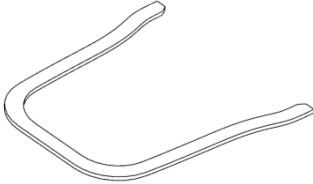
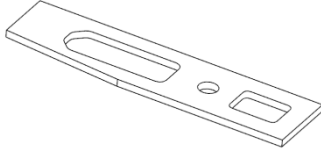
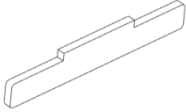

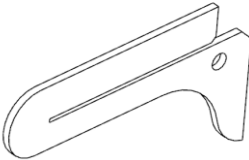
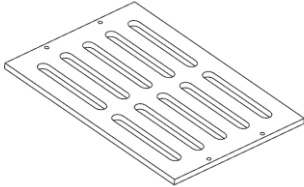
## 塑料部件 Plastic parts

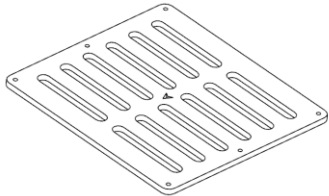
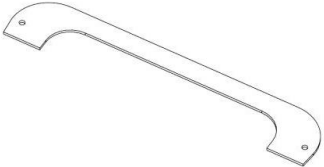
<p>1 机翼连接件*2 1 Wings connecting parts*2</p> 	<p>2 机翼分段连接件*2 2 Wing segment connectors*2</p> 
<p>2 尾翼连接件*2 2 Tailsconnecting parts*2</p> 	<p>4 机头连接件*2 4 Head Connector*2</p> 

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

<p>13 机身尾部支撑件 13 Fuselage tail support</p> 	<p>14 铰链*12 14 Hinges*12</p> 
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## 木板部件 Wooden parts

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

<p>7 飞控放置板 7 Flight controller plate</p> 	<p>8 腹部舱盖固定板 8 Lower cabin cover mount plate</p> 
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## 动力部件

编号 NO.	名称及型号 Name & Model	数量 Qty	规格		备注 Notes
			重量 Weight	尺寸 Size	
1	定制电机 Motor X3520 kv500	1	重量 Weight	218g	
			尺寸 Size	42.5*45mm	
			额定电压	22.2v	
			运行功率	约 0.19kw	
			最大功率	约 1.75kw	
2	定制电机 Motor M4112 kv460	4	重量 Weight	177g	
			尺寸 Size	49.8*27mm	
			额定电压	22.2v	
			运行功率	约 0.27kw	
			最大功率	约 0.96kw	
3	螺旋桨 15 英寸正反桨 Propeller 15in E&EP	2	重量 Weight	28g	
			尺寸 Size	381mm	
4	螺旋桨 15 英寸正桨 Propeller 16in E	1	重量 Weight	45g	
			尺寸 Size	381mm	
5	电调 ESC MFE6100 6S 100A	1	重量 Weight	85g	
			尺寸 Size	74*37*16mm	
6	电调 ESC MFE650 6S 50A	4	重量 Weight	49g	
			尺寸 Size	67*37.5mm	

7	舵机 Servo MFE3054	5	重量 Weight	23g	
			尺寸 Size	38.4*13*31.1mm	
8	UBEC 14S 10A	1	重量 Weight	57g	
			尺寸 Size	55*33*13mm	

## 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 Socket 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 High-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 Siliconewire	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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