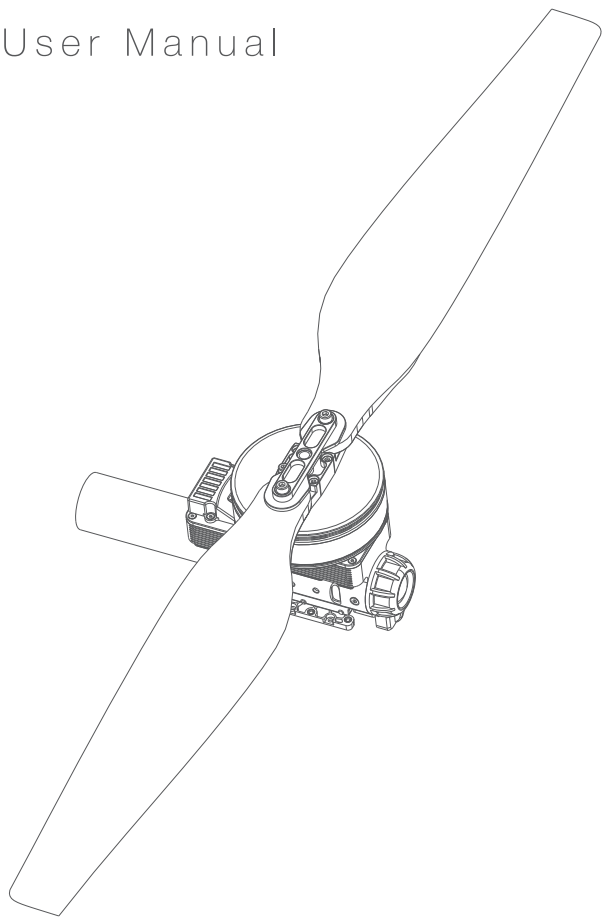


XRotor Pro

X9-Plus

9620-100KV CCW

User Manual



Disclaimer

Thank you for purchasing this HOBBYWING product! Brushless has big power. Any improper use may cause personal injury and damage to the device. We strongly recommend you read this user manual carefully before use and strictly abide by the stipulated operation procedures. We are not responsible for any using or alteration of the product, including but not limited to reimbursement for incidental or indirect loss.

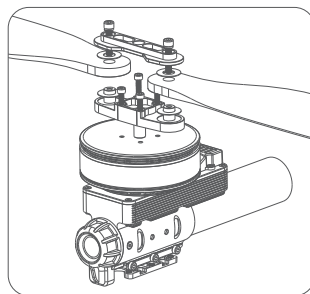
Introduction

The COMBO-XRotor Pro-X9 brushless power system is a plant protection power system which adapts to uniaxial 11-13kg load. The maximum pulling force of uniaxial is 27 kg, integrated with 40mm carbon fiber tube arm. The waterproof grade is IPX7. It is resistant to rainwater, pesticides, salt spray, high temperature, sand and dust, impact, mud and soil. ESC FOC-motor PMS system has optimized computing, with multiple protection functions such as power-on self-check, power-on voltage abnormal protection, over current protection, lock-up protection and etc. as well as real time data transmission.

Attentions

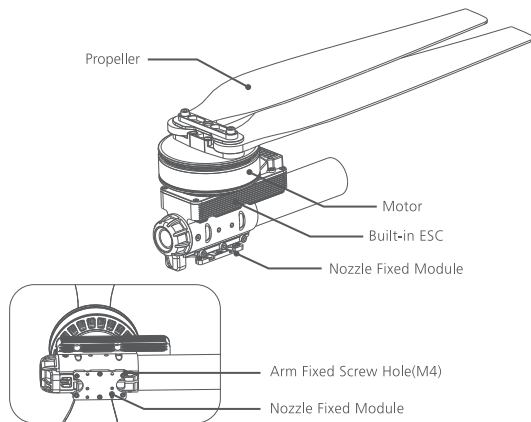
- When use it please keep away from crowd, high voltage cable and obstacles and conform to safety norm.
- Never approach to the high-speed rotating propeller & motor so as to avoid being injured by blade.
- Check if all the components are good before use. If there is any damaged component, please contact after-sale service for replacement.
- Check if the screw of connecting parts is loose or whether the motor is horizontal before flight.
- Power system can adjust LED color, acceleration rate, deceleration rate and brake force via software.
- You can use water to wash the motor after each operation to keep it clean.

Composition of the Power System



- Motor x 1
- ESC x 1
- Brush centrifugal nozzle ESC x 1
- Blade x 1
- Motor base x 1
- Fastening screw x several
- LED Set x 1

Installation of the Power System



- The whole power system has been assembled before leaves the factory. Unpack and take out the power kit to install on the rack of plant-protection plane as per the rotation direction of motor.
- The hole diameter is 40mm so please use 40mm circular tube arm to install.
- The yellow/red/green color lines array plugs are data output and updating signal line (The yellow line is ground lead). The adjacent black and white lines plug is throttle signal line. The separated black and white plug line is throttle signal line of nozzle ESC.
- Data signal line real-time outputs input/output throttle, motor rotation speed, bus current, phase line current, bus voltage, capacitor temperature, temperature of MOS tube and other datas. ESC data communication bus divides CAN protocol and serial port communication protocol.
- The ESC throttle is solidified at 1050~1050μs.

General Specifications & Parameters

- Adapted uniaxial load: 11- 13 kg
- Maximum pulling force: 27 kg
- Adapted lithium cell: 14S(Maximum 61 V)
- Use ambient temperature: -20°C---50°C
- Applicable carbon tube : 40mm
- Total weight: 1760g
- Protection grade: IPX7

Motor

- Model: 9620
- External diameter: 104mm
- KV value: 100KV

Blade: 36×19 inch ESC

- Continuous current: 40A(Good heat dissipation)
- Support lithium cell: 6-14S
- Transient current: 150A(Good heat dissipation)
- Solidified throttle: 1050~1050μs

Explanations for Protection

• Start-up Protection:

When the motor is not started within 2 seconds after increase the throttle, ESC will close power output. Restart the motor only after the throttle trigger is at the bottom position. (Possible causes of this problem are: poor connection between ESC and motor or disconnection of individual output line; propellers are blocked by other objects.)

• Motor Lock-up Protection:

The ESC will close output thoroughly and won't try to restart the motor when it detects the motor lock-up. At this time you need to place the throttle trigger to the bottom position first and then push it upward. Then clear the error and restart the ESC to resume the power output.

• Current Protection:

The ESC will close output immediately when the transient current gets close to 300A. It will restore normal after you re-power on.

• Throttle Signal Loss Protection:

The ESC will close output immediately when it detects throttle signal loss above 0.25 seconds. Prevent the propeller from rotating at high speed thus cause greater loss. After restoring signal, ESC will restore corresponding power output.

Troubleshooting & Alarming sounds

Trouble	Alarming sound	Possible Cause	Solution
The motor was unable to start after power on.	"BBB..." a single beep that repeats rapidly.	The throttle trigger was not moved to the bottom position.	Move the throttle trigger to the bottom position.
The motor was unable to start after power on.	"B, B, B..." a single beep that repeats (the time interval is 1 second).	No throttle signal output of receiver's throttle channel.	Check if the transmitter and receiver are well cooperated; check if the wiring of throttle control channel is normal.
The power-on voltage was below 18V.	"BB, BB, ..." a double beep that repeats (the time interval is 1 second.)	The battery voltage was too low.	Change a suitable full-charge battery.
The power-on voltage was above 65V.	"BBB, BBB, ..." a triple beep that repeats (the time interval is 1 second).	The battery voltage was too high.	Change a suitable full-charge battery.

Daily Use

1. 1.Adjust parameters of ESC

Use DATALINK to connect parameter-adjusting software. It can adjust LED color (DIP switch can also adjust LED color.), rotation direction of motor, acceleration rate and deceleration rate of ESC and brake. The adjustment mode is interface type. Convenient and intuitive.

2. Replace Propeller

- Use tool to remove the blade's fastening screw HM5×22 in order and then replace intact blade. If you need to change the blade clamp, also use tool to remove the blade clamp's fastening screw M4×16 and then replace the whole set of blade and blade clamp.
- Install the bottom cover onto the motor before installing blade clamp and blade. Then install the blades, propeller pad, top cover(blade clamp) in order and fasten them by screws. When install blade clamp and fastening screw, the screw glue must be used.

Maintenance & Repair

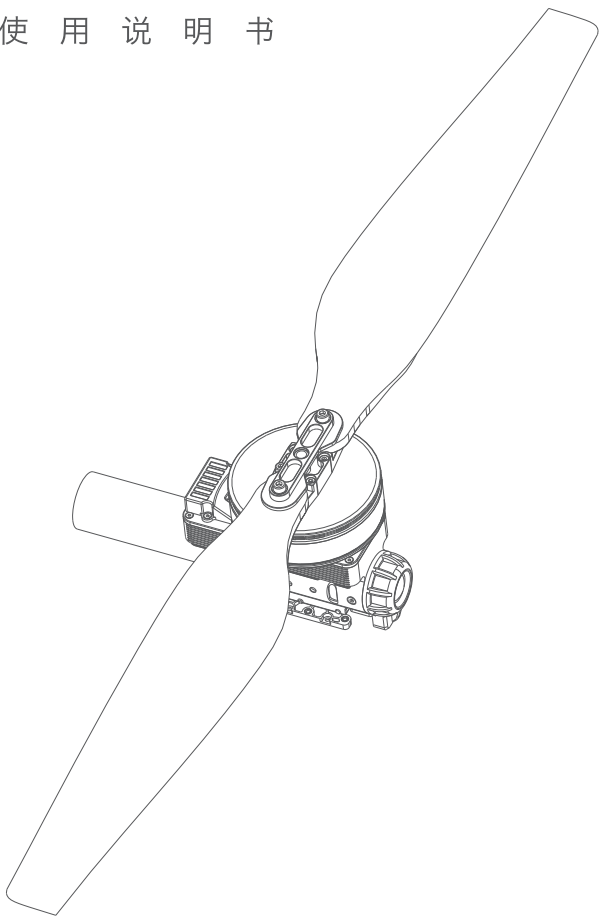
On the premise of not affecting performance, please contact Hobbywing's after-sales service in time if power system device is damaged. Make sure to contact after-sales service before replace the parts and outsourcing parts is not allowed (such as screw, blade clamp, blade). Contact after-sales to repair if serious damage occurs.

XRotor Pro

X9-Plus

9620-100KV CCW

使用说明书



声明

感谢您购买本产品！无刷动力系统功率强大，错误的使用可能导致人身伤害和设备损坏，为此的我们强烈建议您在使用设备前仔细阅读本说明书，并严格遵守规定的操作程序。我们不承担因使用本产品或擅自对产品进行改造所引起的任何责任，包括但不限于对附带损失或间接损失的赔偿责任。

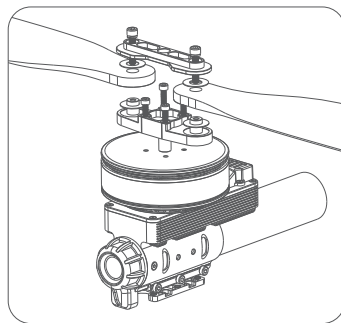
简介

COMBO-XRotor Pro-X9无刷动力系统是一款适配单轴11-13kg负载的植保动力系统，单轴最大拉力 27 kg；搭配40mm碳纤维机臂，整体防水等级IPX7，不惧雨水农药、盐雾、高温、沙尘，抗撞击，耐泥浆、沙土，电调FOC-电机PMS系统算法优化，系统具备上电自检，上电电压异常保护，过电流保护，堵转保护等保护功能，具备实时数据传输。

注意事项

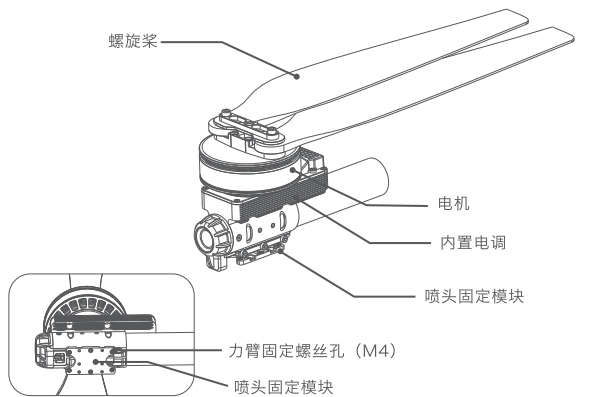
- 使用时请远离人群，高压线，障碍物等，务必遵守安全规范使用。
- 请勿靠近高速旋转的螺旋桨和电机，防止被桨叶割伤。
- 试用前请检查各部件是否完好，如有损坏及时联系客服后更换。
- 飞行前检查连接结构件螺钉是否松动，电机是否水平。
- X9-Plus 动力系统连接管径为40mm，已经包含适当长度的碳纤维机臂。
- 动力系统可软件调整灯色、动力加速率、动力减速率、刹车力度等等。
- 每次作业完成之后可用水对电机进行冲洗，注意保持电机干净整洁。

动力组成



- 电机 x 1pcs
- 电调 x 1pcs
- 有刷离心喷头电调 x 1pcs
- 桨叶 x 1pcs
- 电机座 x 1pcs
- 紧固螺钉 x 若干
- LED灯组

动力安装



- 整套动力系统出厂已经组装完成，可拆开包装直接取出动力套，根据电机旋转方向安装在植保飞机机架。
- 安装孔径为40mm，请使用40mm圆形管机臂配合组装。
- 黄红绿三色排线插头为数据输出和升级信号线（黄线是地线），相邻黑白线插头为油门信号线；另外单独的黑白插头线为喷头电调油门信号线。
- 数据信号线实时输出输入输出油门、电机转速、母线电流、相线电流、母线电压、电容温度、MOS管温度等数据，电调数据通信总线分CAN协议和串口通信协议。
- 电调油门固化为1050-1950us。

规格参数

适配单轴负载:11- 13kg
最大拉力: 27 kg
适配锂电池: 14S (最高 61V)
使用环境温度: -20℃ — 50℃
适用碳管: 40mm
总重量: 1760g
防护等级: IPX7

电机

型号: 9620
外径: 104mm
KV值: 100KV

桨叶: 36x19 inch

电调

持续电流 40A (散热条件良好)
支持锂电 6-14S
瞬时电流 150A (散热条件良好)
固化油门 1050-1950us

保护功能

· 启动保护

当加大油门后两秒内未能正常启动马达，电调将关闭动力输出，油门摇杆需再次置于最低点后可以重新启动。（出现这种情况的原因可能有：电调和马达连线接触不良或有个别输出线断开、螺旋桨被其他物体阻挡等）。

· 堵转保护

当电调检测到电机发生堵转时，电调会彻底关闭输出并不再尝试重启电机，此时需将油门摇杆置于最低后重新推动油门摇杆，方可清除错误并重启电调恢复动力输出。

· 电流保护

当瞬间电流异常达到接近300A时，电调立即关断输出，重新上电后可恢复正常。

· 油门信号丢失保护

当电调检测到油门遥控信号丢失0.25秒以上即立即关闭输出，以免因螺旋桨继续高速转动而造成更大的损失。信号恢复后，电调也随即恢复相应的功率输出。

警示音说明

故障现象	警示音	可能原因	解决办法
上电后电机无法启动	“哔哔哔...”的急促单音	油门未归零	将油门打至最低点
上电后电机无法启动	“哔、哔、哔、.....”（每个间隔1秒）	接收机油门通道无油门信号输出	检查发射机与接收机配合是否正常；检查油门控制通道接线是否正常
上电电压低于18V	“哔哔”、“哔哔”、（每个间隔1秒）	电池电压过低	更换合适的满电电池
上电电压高于65V	“哔哔哔”、“哔哔哔”、（每个间隔1秒）	电池电压过高	更换合适的满电电池

日常使用

1、调整电调参数

使用DATALINK工具连接调参软件，可以调节LED灯色（拨码开关也可以调整灯色），电机转向，电调加速率，减速率，以及刹车。调节方式为界面式，方便直观。

2、更换桨叶

- 用工具依次将桨叶紧固螺钉HM5x22取出，换上完好桨叶，若需要更换桨夹则继续使用工具将桨夹紧固螺钉M4x16取出更换整套桨夹加桨叶。
- 安装桨夹桨叶时先将底盖安装在电机上面，再依次安装桨片、螺旋桨垫片、上盖（桨夹）以及最后的螺钉紧固；注意安装桨夹与电机紧固螺钉拧紧同时使用螺丝胶。

售后维护

动力系统设备损坏请及时联系好盈售后客服，在不影响性能的前提下，并确保跟客服联系后可自行使用好盈配件进行更换，禁止用户外购配件（如螺钉，桨夹，桨叶）更换使用；若造成严重损害请联系售后及时返修。