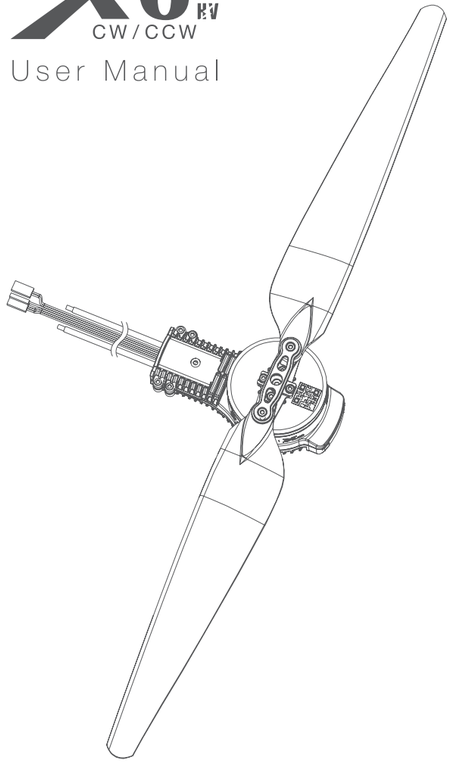
XRotor Pro X6 6S CW/CCW

User Manual



Disclaimer

Thank you for purchasing this HOBBYWING product! Brushless power systems can be very dangerous. Any improper use may cause personal injury and damage to the product and related devices.We strongly recommend reading through this user manual before use. Because we have no control over the use, installation, or maintenance of this product, no liability may be assumed for any damage or losses resulting from the use of the product. We do not assume responsibility for any losses caused by unauthorized modifications to our product.We, HOBBYWING, are only responsible for our product cost and nothing else as result of using our product.

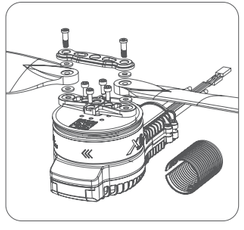
Introduction

The XRotor Pro X6 brushless power system is a power system capable of carrying a load of 3~5kg (per axis) for agricultural drones. It can provide the thrust of up to 11.9kg and match28/30mm carbon fiber tube arms. It's waterproof and dustproof to IPX7 standard and resistant to rainwater, pesticides, salt spray, sand, dust, mud, sandy soil, high temperature and impact. It also features the algorithm used for optimizing the FOC ESC &motor system and making the system more balanced, multiple protections like power-on self detection, power-on abnormal voltage, over-current and motor lock-up, and the real-time data output function.

Attentions

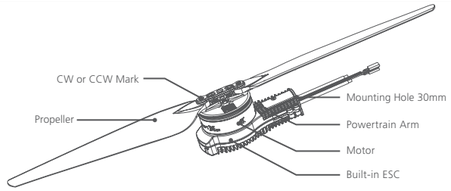
- Always keep your drone away from crowd, high-voltage power lines and obstacles, fly your drone in accordance with relevant safety regulations.
- Never get close to the high-speed rotating propeller & motor, otherwise you may get hurt.
- Check if all the parts are in good condition before use. If there exists any damaged part, please contact the factory for replacement.
- Check if any screw for connecting the parts is loose and the motors are horizontal before each flight.
- The bore diameter of the arm for the X6 power system is 30mm, if you want to use the 28mm tube, then install the tube adapter (included in the product box) into the projecting tube on the motor mount first.
- You can change the light color of the LED set. In that case, you need to disassemble the light cover and slide the DIP switches accordingly.
- You can rinse the motor with fresh water after each flight to keep it clean.

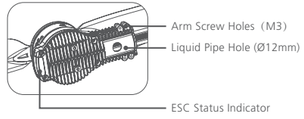
Composition of the Power System



- Motor x 1
- ESC x 1
- Propeller x 1
- Motor Mount x 1
- Screws x (several)
- LED Set x 1
- Tube Adapter x 1 (from 30mm to 28mm)

Installation of the Power System





- The whole power system has been assembled before leaving the factory, it's ready-to-use and you can directly mount it on your agricultural drone as per the rotation direction (CW/CCW) marked on the motor.
- The bore diameter (of the arm) is 30mm, if you want to use the 28mm tube, then tube adapter will be needed.
- The (Black/Red/White) tri-color cable is for outputting data & updating ESC firmware, the (White/Black) bi-color cable is the throttle signal cable, and the yellow wire is the RPM signal output wire.
- The data signal wire is for outputting throttle input, throttle output, motor RPM, input current, output current, input voltage, capacitor temperature, MOS temperature, and etc.
- The throttle range of the ESC is fixed at 1100~1940μs.

Installation of the Power System

- Recommended Load (/Axis): 3-5kg
- Max. Thrust: 11.9kg
- Recommended LiPo Battery: 6-12S (Up to 52.2V)
- Operating Temperature-20℃-50℃
- Recommended Carbon Fiber Tube: 30mm/28mm
- Total/Combo Weight: 720g
- Waterproof & Dustproof Standard: IPX7

Propeller: 2388 Inch

ESC
- Cont. Current: 80A (w/ Good Heat Dissipation)
- Recommended Input Voltage: 6-12S LiPo
- Peak Current: 100A (w/ Good Heat Dissipation)
- Fixed Throttle Range: 1100-1940μs

Motor
- Model: 6215
- Outer Diameter: 70mm
- KV Rating: 180KV

Advanced Parameters

Voltage (V)	Propeller	Throttle (%)	Thrust (g)	Ampere (A)	Power (W)	Efficiency (g/W)
48V (12S LiPo)	23 Inch Foldable Propeller	40%	1996	3.5	172.0	11.6
		47%	3014	6.3	306.2	9.8
		54%	4005	9.6	468.6	8.5
		60%	4987	13.4	656.1	7.6
		66%	5986	17.8	870.0	6.9
		71%	7017	22.8	1112.0	6.3
		76%	7973	27.8	1357.5	5.9
		81%	8995	34.0	1659.4	5.4
		85%	10026	40.7	1984.1	5.1
		100%	11910	56.8	2761.3	4.3

Explanations for Protections

- **Start-up Protection:**
  The ESC will shut down the motor if it fails to start the motor normally within 2 seconds by increasing the throttle input. In this case, you need to move thethrottle stick back to the bottom position and restart the motor. (Possible causes of this problem: poor connection/ disconnection between the ESC and motor wires, propellers are blocked, and etc.)
- **Motor Lock-up Protection:**
  The ESC will cut off its output to the motor immediately and won't try to restart the motor when it detects the motor is locked up.In this condition, you need to pull the throttle stick to the bottom position first and then push it upward to clear the error and restart the ESC to resume the output.
- **Over-current Protection:**
  The ESC will cut off its output immediately when the peak current gets close to 300A. It only restarts after you power it off and then back on.
- **Throttle Signal Loss Protection:**
  When the ESC detects loss of signal for over 0.25 second, it will cut off the output immediately to avoid an even greater loss which may be caused by the continuous high-speed rotation of propellers. The ESC will resume the corresponding output after normal signals are received.

Daily Use

1. How to Change the Light Color

Unscrew the two M3*8 screws for fastening the light cover with a screw driver, slide the DIP switches accordingly (as shown below) to change the light color (it's Green by default), mount the cover back after setting.

DIP Switch 1	DIP Switch 2	DIP Switch 3	Color of the LED
ON	ON	ON	White
ON	OFF	ON	Light Blue
ON	ON	OFF	Purple
ON	OFF	OFF	Blue
OFF	ON	ON	Yellow
OFF	OFF	ON	Green
OFF	ON	OFF	Red
OFF	OFF	OFF	LED Disabled

2. How to Replace a Propeller

- Unscrew the two M4 *13.5 screws for fastening the blades with a screw driver and change the blade(s). If you also want to change the propeller adapter, then you need to unscrew the four M3*8 screws for fixing the adapter with another screw driver and change the whole set of propeller.
- When mounting the propeller, you need to mount the bottom cover (of the propeller adapter) on the motor first, then blades, spacers and the top cover (of the propeller adapter), and then fix them with screws. Please note that the blades can rotate freely after fastening them with M4 screws, and ensure that you will also apply some glue to the screws after fastening the propeller adapter to the motor with M3 screws.

Maintenance & Repair

Please contact Hobbywing for after-sales service timely when the power system is damaged. You can replace the damaged part(s) with the replacements (included in the product box) on condition that the coming operation won't affect the performance of the power system, you've contacted and confirmed with the customer service representative; it's forbidden to replace the damaged part(s) with other parts you configure. Please contact Hobbywing for repair timely when serious damage occurs.

Troubleshooting & Warning Tones

Trouble	Warning Tone	Possible Cause	Solution
The ESC was unable to start the motor.	"BBB..." a single beep that repeats rapidly.	The throttle stick wasnot moved to the bottom position.	Move the throttle stick to the bottom position.
The ESC was unable to start the motor.	"B, B, B..." a single beep that repeats (the time interval is 1 second).	There was no throttle signal output from the TH channel on the receiver.	Check if the transmitter & receiver are well bound; check if the throttle control cable has been properly plugged into the TH channel.
The power-on voltage was 18V.	"BB, BB, ..." a double beep that repeats (the time interval is 1 second.)	The battery voltage was too low.	Change a suitable and fully charged battery.
The power-on voltage was above 55V.	"BBB, BBB, ..." a triple beep that repeats (the time interval is 1 second).	The battery voltage was too high.	Change a suitable and fully charged battery.