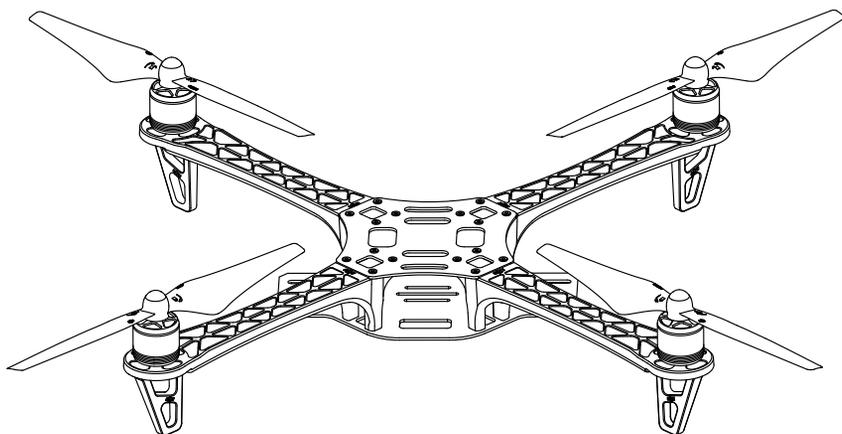# FlameWheel 450

User Manual V2.2

2015.05 Revision

dji

Disclaimer

Read this disclaimer carefully before using FlameWheel 450. By using this product, you hereby agree to this disclaimer and signify that you have read them fully. FlameWheel 450 is an excellent multi-rotor. With a good autopilot, it will even offer tremendous flight features for low altitude flight working in restricted space. Despite the controller of autopilot operates in the safest manner when the main power battery is connected, we strongly recommend customers to remove all propellers, use power supply from R/C system or flight pack battery, and keep children away during system calibration and parameter setup. Please respect the AMA's National Model Aircraft Safety Code.Please install and use this product in strict accordance with the User Manual. SZ DJI Technology Co., Ltd. and its affiliated companies assume no liability for damage(s) or injuries incurred directly or indirectly from using, installing or refitting this product improperly, including but not limited to using non-designated accessories.

This device complies with part 15 of the FCC Rules.

DJI FLAME WHEEL is registered trademark of DJI Innovations. Names of product, brand, etc., appearing in this manual are trademarks or registered trademarks of their respective owner companies. This product and manual are copyrighted by DJI Innovations with all rights reserved. No part of this product or manual shall be reproduced in any form without the prior written consent or authorization of DJI Innovations. No patent liability is assumed with respect to the use of the product or information contained herein.

F450 Profile

FlameWheel 450 (F450) is a multi-rotor designed for all pilots for fun or AP. With DJI WKM or NAZA autopilot system, it can achieve hovering, cruising, even rolling and other flight elements. It can be applied for entertainment, aerial photography, FPV and other aero-modeling activities.

⚠ Product Usage Cautions

When flying, the fast rotating propellers of FlameWheel 450 will cause serious damage and injury. Therefore, please fly with a high safety consciousness.

1. Keep flying multi- rotor away from objects, such as obstacles, human beings, high- voltage lines and so on.
2. Do not get close to or even touch the working motors and propellers, which will cause serious injury.
3. Do not over load the multi- rotor.
4. Check that the propellers and the motors are installed correctly and firmly before flight.
5. Check whether all parts of multi- rotor are in good condition before flight. Do not fly with old or broken parts.
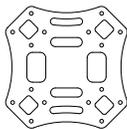6. Use DJI parts as much as possible.

If you have any problem you cannot solve during installation, please contact our customer service.
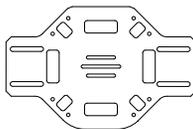
Contents

In the Box

Top Board 450FBT × 1	Bottom Board 450FBB × 1
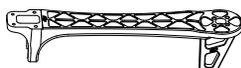
Frame Arms 450FAC × 2	Frame Arms 450FAW × 2
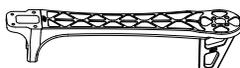
Motors CW × 2	Motors CCW × 2
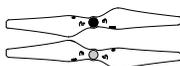
Propeller Pairs × 3	ESC × 4
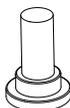
Screws 450-M3 × 8 × 16	Screws 450-M2.5 × 6 × 24

Propeller Removal Clamp × 1	Magic Strap 450MSX × 1
	Battery Band 450BBX × 11
	Power Line Pair 450PLP × 1

Tools Needed

| Tools	Use
2.0mm Hex Wrench	For frame and motors installation.
Screw Glue	For fastening screws.
Nylon Cable Tie, Scissors, Diagonal Cutting Pliers	For binding devices and wires.
Foam Double Sided Adhesive Tape	For fixing receiver, controller and other modules.
Soldering-iron & wires	For connecting ESCs' power cables to bottom board.

Preparing for Mounting

Motor Mounting Description

The size of the assembly hole is shown below.
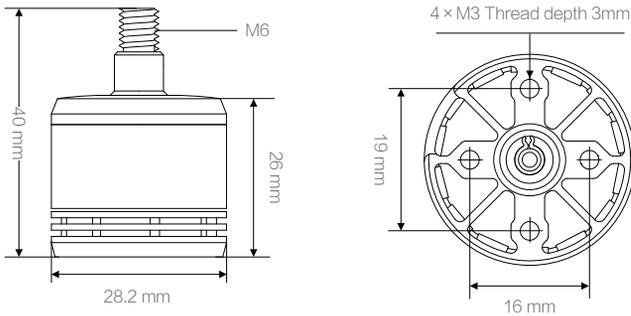
⚠ • The screw size is M3. Mount the motors using appropriate screws.
   • Note the thread depth and the size of the screws. Using screws that are too long or too large may damage the motor.

Propeller Mounting Description

Attach the propeller with a silver nut onto the counter clockwise motor.

Attach the propeller with a black nut onto the clockwise motor (which has an indent on the screw).

Silver nut (9450)   Black nut (9450 cw)
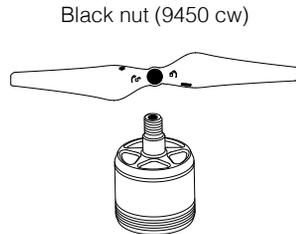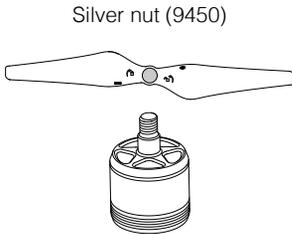
Lock: Tighten the propeller by rotating it in this direction.

Unlock: Remove the propeller by rotating it in this direction.

ESC and Motor Wiring Description

1. Please solder each ESC to the power pads on the bottom board as shown in the figure below. Make sure that the solder is firmly attached on the power pads and that there is no possibility for a short circuit. The power cable is a coaxial power cable. Do not damage the protector on the red cable to avoid short circuit. The red core of the coaxial power cable is positive, and the shielding layer of the coaxial power cable is negative. Make sure to solder them correctly at the proper length (the wires should be just long enough to reach the soldering point, face outwards, and should not be bunched up in front of the soldering point).

2. Connect the signal cable to your controller. The orange wire of the signal cable is for the control signal; the brown wire of the signal cable is for the GND.

3. Connect the motor to the ESC. Test the motor and make sure the rotation direction of each motor is correct. If not, switch the position of any two cables that are connecting the motor to the ESC to change the rotation direction.

To the controller

ESC cable

Motor   ESC

Power cable

Connect to the battery
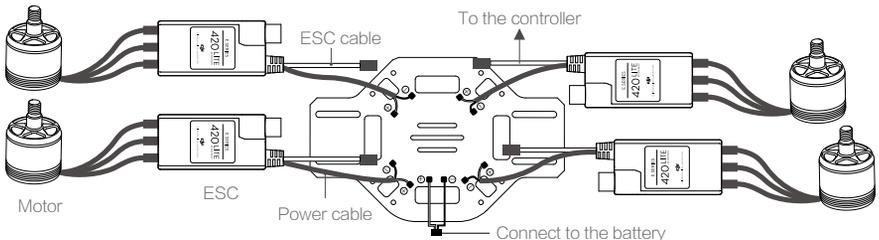
⚠ • Please solder ESCs to power pads on bottom board as the figure shows.
- Use any insulating method at all soldering spots. Make sure there is no short or open circuit.
- Make sure the side of power pads is upward.

Assembly

1. Install the bottom board. Note to install the screws by appropriate force to prevent breaking threads. Use adequate screw glue for installing screws.
2. Install your flight control system and electronic system.
3. Install ESCs and motors. Make sure the rotation direction of each motor is the same as the way in the figure shows. If not, switch any of two wire connections of the incorrect motor to change its rotation direction.
4. Tidy all cables. Make sure all cables are not be cut by the frame boards and propellers. Smooth out the boards edge if necessary.
5. Install the top board.
6. Install the propellers. Please install the propellers after the flight control system configuration procedure. Make sure the rotation direction of propellers are the same as the figure shows. Tighten the propeller by rotating it in lock direction. Do not use any thread lock.

Screw M2.5x6 Top board

②

①

③

④

Screw M3x8   Bottom board
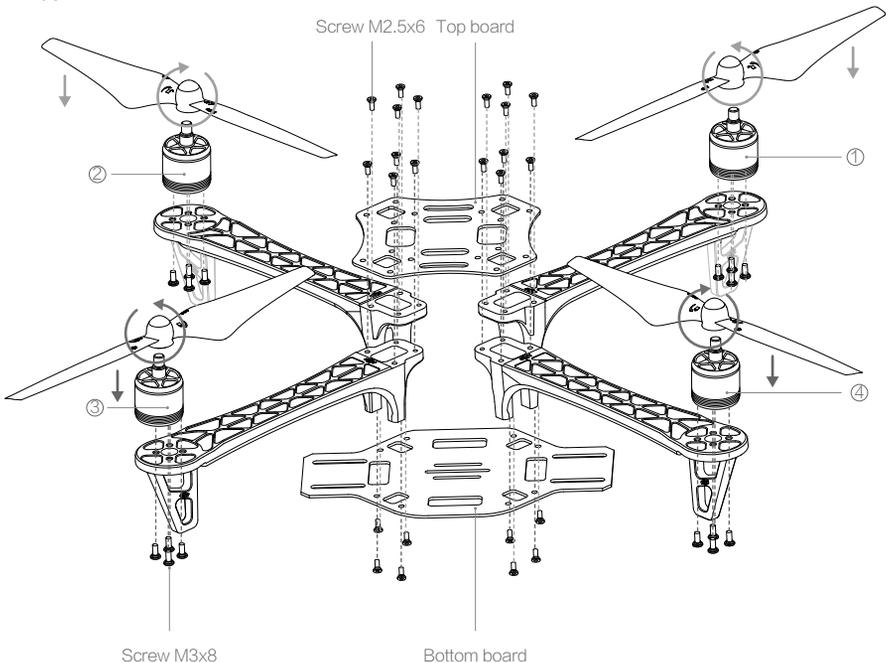
⚠️   Note that arms ①② point to the nose of aircraft and arms ③④ point to the tail of aircraft. It is recommended to choose the same color arms for the same direction. See from top, motors on arms ①③ rotate counter-clock wise and motors on arms ②④ rotate clock wise.

ESC Sound Description

Normal	Description
♪ 1234	Ready
Abnormal	Description
BBBBBB···	No signal input, or throttle stick is not in the bottom position

☀️ You can instantly tell what the unit's status is by listening to the sounds emitted from the ESC.

Specifications

Frame	
Diagonal Wheelbase	450 mm
Frame Weight	282 g
Takeoff Weight	800 g ~ 1600 g
ESC	
Max Allowable Voltage	17.4 V
Max Allowable Current (Persistent)	20 A
Max Allowable Peak Current (3 seconds)	30 A
PWM Input Signal Level	3.3 V / 5 V Compatible
Signal Frequency	30 Hz ~ 450 Hz
Battery	3 S ~ 4S LiPo
Weight (without cable)	12.5 g
Weigh (with cable)	27 g
Motor	
Stator size	23 × 12 mm
KV	960 rpm/V
Weight	57 g
Propeller	
Diameter / Thread Pitch	24 × 12.7 cm (9.4 × 5.0inch)
Weight (Single)	13 g

The content is subject to change.

Download the latest version from
http://www.dji.com/product/flame-wheel-arf

If you have any questions about this document, please contact DJI by
sending a message to **DocSupport@dji.com**.