

XFLY-MODEL XF-DFS002

XFLY-MODEL 50mm EDF Ducted Fan User Manual

Model: XF-DFS002

1. INTRODUCTION

This manual provides essential information for the safe and effective operation of your XFLY-MODEL 50mm 12-Blade EDF Ducted Fan with 4S 2627-KV4600 Brushless Outrunner Motor. This high-performance unit is designed for model jet aircraft, offering significant thrust and efficient operation. Please read this manual thoroughly before installation and use.

2. KEY FEATURES

- **Advanced Appearance:** Features laser technology on the CNC metal spinner surface for a realistic spiral pattern. The EDF housing and blades have a matt finish for enhanced aesthetics.
- **Powerful Motor:** Equipped with a brushless outrunner 2627-KV4600/4S motor, designed for continuous operation, high temperature resistance, and wear resistance. Provides stable and balanced performance.
- **High Thrust Output:** The optimized design of the EDF and blades, combined with the efficient 2627-KV4600 motor, can achieve up to 900g of thrust when powered by a compatible LiPo battery.
- **Durable Construction:** Manufactured from high-quality engineering materials, ensuring a sturdy body and stable structure.
- **Optimized Design:** Features a removable guide ring for adaptability to various models. Streamlined design and CFD simulation analysis effectively reduce noise, providing a more lifelike sound effect during high-speed operation.
- **Precision Manufacturing:** High-precision mold manufacturing and advanced injection-molded techniques ensure consistency of fan blades and dynamic balance. A 0.5mm gap between blades and shell optimizes performance.

3. PRODUCT COMPONENTS



Complete 50mm EDF Ducted Fan assembly with motor and wiring.



Front view showcasing the 12-blade fan and intake lip.



Rear view displaying the brushless motor and power connectors.

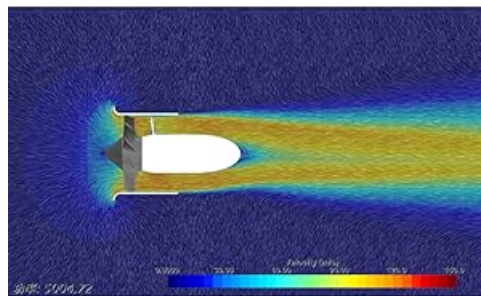


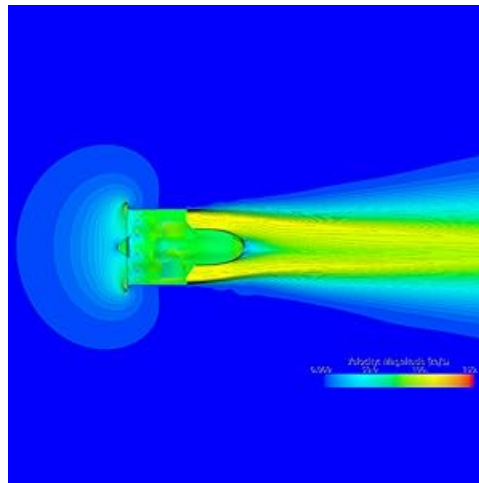
Illustration of the components included in the packaging, showing the assembled EDF unit, fan blades, motor, and mounting hardware.

4. SETUP AND INSTALLATION

Proper setup is crucial for optimal performance and safety. The EDF unit comes assembled and dynamically balanced from the factory.

4.1 Wiring Diagram

Refer to the diagram below for correct electrical connections. Ensure all connections are secure to prevent power loss or damage.



This diagram illustrates the connections between the LiPo battery, Electronic Speed Controller (ESC), Receiver (Connect to CH3), and the EDF unit. It also shows a wired control mode setup. Note the outflow direction and the instruction to swap any two wires if the outflow direction is incorrect.

4.2 Recommended Components

- **Electronic Speed Controller (ESC):** A 40A ESC is recommended for optimal performance with the 2627-KV4600/4S motor.
- **Battery:** A 4S LiPo battery is recommended.

4.3 Installation into Aircraft

Integrate the EDF unit into your model jet aircraft's airframe. Utilize the mounting tabs on the EDF housing for secure attachment. Ensure adequate airflow for both intake and exhaust to maintain efficiency and prevent overheating.

5. OPERATING INSTRUCTIONS

Before operating, ensure all connections are correct and secure. Always perform a pre-flight check of your aircraft and power system.

5.1 Powering On and Thrust Testing

When powered by a 4S LiPo battery, the 50mm EDF unit can achieve a maximum thrust of approximately 900g. The maximum continuous current is 40A.

Your browser does not support the video tag.

This video demonstrates the thrust testing of various XFLY-MODEL EDF systems, including the 50mm unit. It shows the setup for measuring thrust and current draw, highlighting the performance capabilities of these ducted fans. The video also features flight demonstrations of model jets utilizing XFLY-MODEL EDFs.

5.2 Flight Operation

Operate the EDF unit via your aircraft's Electronic Speed Controller (ESC) and receiver. Gradually increase throttle to achieve desired thrust. Monitor battery voltage and motor temperature during operation to prevent damage.

6. MAINTENANCE

Regular maintenance ensures the longevity and reliability of your EDF unit.

- **Inspection:** Periodically inspect the fan blades for any damage, cracks, or debris. Ensure the motor is securely mounted and all wires are intact.
- **Cleaning:** Keep the intake and exhaust areas clear of foreign objects. Gently clean the fan blades and housing if dust or debris accumulates.
- **Storage:** Store the EDF unit in a dry, cool environment away from direct sunlight and extreme temperatures.

7. TROUBLESHOOTING

Problem	Possible Cause	Solution
Motor not spinning or low power.	Incorrect wiring, low battery voltage, ESC not calibrated, motor damage.	Check wiring against diagram. Charge battery. Calibrate ESC. Inspect motor for physical damage.
Excessive vibration or noise.	Damaged or unbalanced fan blades, foreign object in duct, loose motor mounting.	Inspect blades for damage and replace if necessary. Remove any foreign objects. Ensure motor is securely mounted.
Motor overheating.	Insufficient airflow, excessive load, incorrect propeller/fan size, prolonged high-throttle use.	Ensure proper ventilation in the aircraft. Reduce load. Verify fan size is appropriate. Allow motor to cool between runs.

8. SPECIFICATIONS

Attribute	Detail
Product Dimensions	1.97 x 1.97 x 1.97 inches (50mm x 50mm x 50mm)
Item Model Number	XF-DFS002
Motor Type	2627-KV4600 Brushless Outrunner
Recommended Battery	4S LiPo
Max Continuous Current	40A
Max Thrust	900g
EDF Unit Weight	78g (0.78 ounces)
Material	Metal (motor components), Engineering materials (fan housing/blades)
Voltage	16.5 Volts (nominal for 4S LiPo)

9. WARRANTY AND SUPPORT

Warranty information for this product is not provided in this manual. For specific warranty details, technical support, or service inquiries, please contact XFLY-MODEL directly through their official channels or the retailer from whom the product was purchased.

For additional resources and product information, you may visit the XFLY-MODEL Store on Amazon.

