BETAFPV 1103 11000KV

BETAFPV 1103 11000KV Brushless Motors User Manual

Model: 1103 11000KV

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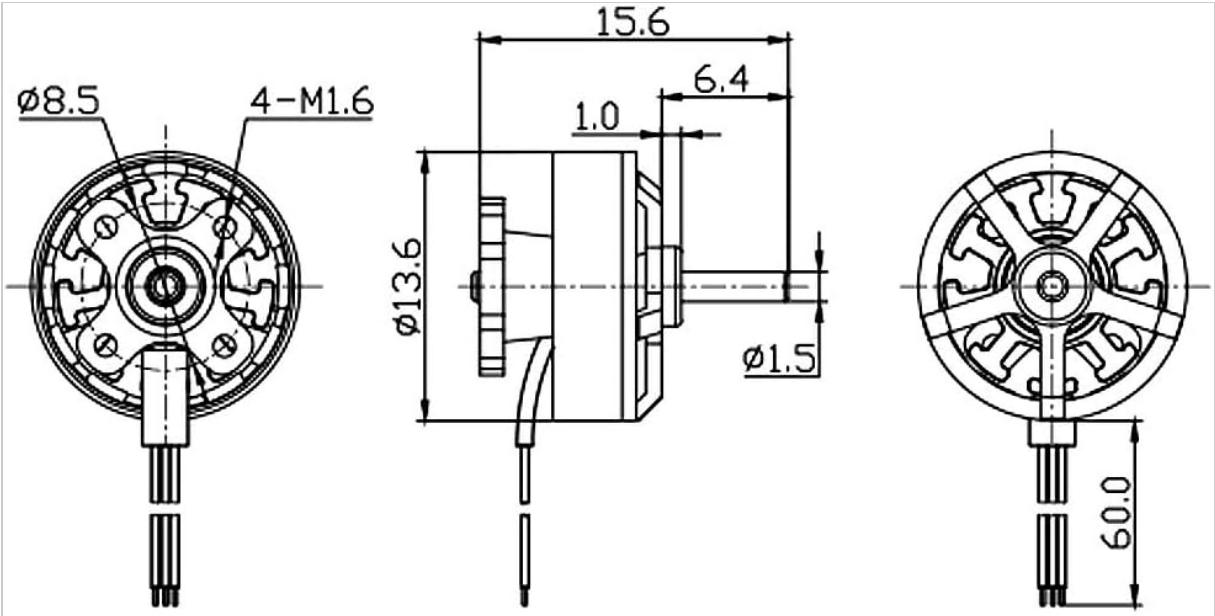
1. Introduction

The BETAFPV 1103 11000KV Brushless Motors are designed for high-performance FPV micro drones, specifically optimized for 2S Lipo battery systems and the Beta75X frame. These motors provide efficient power delivery for agile flight characteristics. This manual outlines the essential information for proper installation, operation, and maintenance to ensure optimal performance and longevity of your motors.



Note: The 1103 11000KV brushless motors with 8.5mm hole distance and M1.6 screw **only fit** for our **Beta75X** frame now.

Figure 1: BETAFPV 1103 11000KV Brushless Motors

2. Specifications

Refer to the table below for detailed technical specifications of the BETAFPV 1103 11000KV Brushless Motors.

Specification	Value
Item	BETAFPV 1103 11000KV Motor
KV (rpm/V)	11000KV
Shaft Diameter	1.5mm
Axis Length	6.4mm
Motor Mount Holes	8.5mm (M1.6 screw)
Motor Dimensions	13.5mm x 13.5mm x 16mm (Diameter x Diameter x Height)
Weight (per motor)	3.25g
Voltage	7.4V (2S Lipo Battery)
Load Current	1.8-3.8A
Pull	23-40g
Power	6.7-28W

Specification	Value
Efficiency	3.4-1.4g/W

Figure 2: Motor Dimensions

Figure 3: Motor Weight Measurement

3. Package Contents

The package includes the following items:

- 4 x BETAFPV 1103 11000KV Brushless Motors
- 16 x M1.6 Screws (for motor mounting)

Figure 4: Package Contents

4. Setup and Installation

Follow these steps for proper installation of the motors on your drone frame.

1. **Compatibility Check:** These motors are designed specifically for the Betafpv 2S FPV frame. Ensure your frame has 8.5mm motor mount holes and uses M1.6 screws. These motors are **not** compatible with other 80-110mm frames.
2. **Mounting:** Securely attach each motor to the drone frame using the provided M1.6 screws. Ensure the screws are tightened sufficiently to prevent vibration but do not overtighten, which could damage the motor windings.
3. **Wiring:** Connect the motor wires to the Electronic Speed Controller (ESC) on your flight controller. Pay close attention to the wiring diagram of your ESC to ensure correct motor rotation direction. If the motor spins in the wrong direction, you can reverse two of the three motor wires (if soldering) or adjust in your flight controller software (e.g., Betaflight).
4. **Propeller Installation:** Once motors are mounted and wired, install the propellers. Ensure propellers are balanced and correctly oriented for lift.

Figure 5: Motor installed on Beta75X frame

5. Operating Instructions

These motors are designed for use with 2S Lipo batteries (7.4V). Adhere to the following guidelines for safe and effective operation:

- **Battery Voltage:** Only use 2S Lipo batteries (7.4V). Using higher voltage batteries can lead to motor overload and damage.
- **Propeller Size:** Use propellers recommended for the Beta75X frame or similar 2S micro drones. Using oversized propellers can cause motor overload and reduced flight performance.
- **Initial Test:** After assembly, perform a low-power test flight to verify motor function and stability before engaging in aggressive maneuvers.

6. Maintenance

Regular maintenance helps extend the lifespan and maintain the performance of your motors.

- **Cleaning:** Periodically inspect motors for dirt, dust, or debris. Use compressed air or a soft brush to gently clean the motor bell and stator. Ensure no foreign objects are lodged within the motor.
- **Bearing Check:** Gently spin the motor bell by hand to check for any roughness or excessive play in

the bearings. Worn bearings can lead to increased vibration and reduced efficiency.

- **Wire Inspection:** Check motor wires for any cuts, fraying, or loose connections. Repair or replace damaged wires promptly.
- **Screw Tightness:** Ensure all mounting screws remain tight. Loose screws can cause vibrations and potential motor detachment during flight.

7. Troubleshooting

This section addresses common issues you might encounter with your motors.

Problem	Possible Cause	Solution
Motor not spinning or stuttering	Loose wire connection; damaged motor winding; ESC issue; foreign object obstructing motor.	Check all wire connections. Inspect motor for physical damage or debris. Test with a different ESC or motor if possible to isolate the problem.
Motor overheating	Oversized propeller; excessive voltage; motor overload; short circuit.	Ensure correct propeller size and battery voltage (2S Lipo). Reduce throttle input. Check for any short circuits in wiring.
Motor making unusual noise/vibration	Bent motor shaft; damaged bearings; loose mounting screws; unbalanced propeller.	Inspect motor shaft for bends. Check bearings for smooth rotation. Tighten mounting screws. Ensure propellers are balanced and undamaged.
Motor burnt out	Overload voltage; foreign objects aspirated; motor shell deformation; incompatible ESC.	Replace the motor. Review precautions to prevent recurrence. Ensure all components are compatible.

8. Important Precautions

Adhering to these precautions will help prevent damage to your motors and ensure safe operation:

- These motors are specifically designed for the **Betafpv 2S FPV frame**. Using them with other frames (e.g., 80-110mm) may lead to incompatibility and performance issues.
- Avoid working with **oversized propellers** or providing **overload voltage input**, as this can cause the motor to overload, overheat, and potentially burn out or go out of control.
- Prevent the motor from aspirating **foreign objects**, especially metal items. These motors have strong magnets, making them prone to attracting metal, which can cause the motor to seize and burn out.
- Ensure the **motor shell is not deformed**. Any deformation can cause the motor to bind, leading to a stall and burnout.
- Verify that the motor is **compatible with other drone components**, particularly the Electronic Speed Controller (ESC). Incompatibility can result in erratic motor behavior or burnout.
- For beginners, it is recommended to build and set up the drone under the guidance of an experienced FPV pilot.

9. Warranty and Support

For warranty information or technical support, please refer to the official BETAFPV website or contact their customer service directly. Keep your purchase receipt as proof of purchase for any warranty claims.