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› [BETAFPV Air75 II Brushless Whoop Frame Kit Instruction Manual](#)

## BETAFPV Air75 II

# BETAFPV Air75 II Brushless Whoop Frame Kit Instruction Manual

Model: Air75 II

## 1. INTRODUCTION

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The BETAFPV Air75 II Brushless Whoop Frame Kit is designed for DIY ultra-light 75mm 1S racing whoop drones. This frame features an ultra-light design, lowered profile, and motor fix slots, engineered for enhanced performance and durability.

# Air75 II Brushless Whoop Frame

New Form, Peak Performance



◦ Frame Reshaped:  
+11% Thrust

◦ Reliable  
Response

◦ Optimized Resilient  
Material

◦ 4g  
Ultra-light

Figure 1: Air75 II Brushless Whoop Frame Kit, showcasing its new form and design.

## Key Features:

- **Ultra-Light Design:** Weighing approximately 4.00g, the Air75 II frame is optimized for agility and performance.
- **Enhanced Thrust:** Redesigned arm braces and optimized ducts contribute to an 11% increase in thrust compared to the previous generation.
- **Reliable Flight Characteristics:** Structural refinements reduce frame vibration, leading to improved PID step response for precise maneuvers.
- **Optimized Resilient Material:** Constructed from a durable PP blend designed to withstand impacts and crashes.
- **Improved Details:** Features retained motor fixed slots for precise alignment, new motor screw protection structures, and enlarged 1.2mm FC holes for easier installation of 1.4mm screws.

## 2. SETUP AND ASSEMBLY

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This section outlines the general steps for assembling your Air75 II Brushless Whoop Frame Kit with compatible components. Ensure all parts are handled carefully during assembly.

## 2.1 Component Compatibility

The Air75 II frame is designed for specific component sizes. Refer to the specifications section for detailed dimensions.

- **Flight Controller:** Compatible with 25.5x25.5mm mounting patterns, such as Matrix 1S FC.
- **Motors:** Designed for 07XX, 08XX, and 1102 series brushless motors with a 3-M1.4-6.6mm mounting pattern.
- **Propellers:** Supports 40mm propellers.
- **Battery:** Features a battery slot size of 16.3x6.3mm.

## 2.2 Frame Assembly Details

The frame incorporates design elements to simplify assembly and enhance durability.

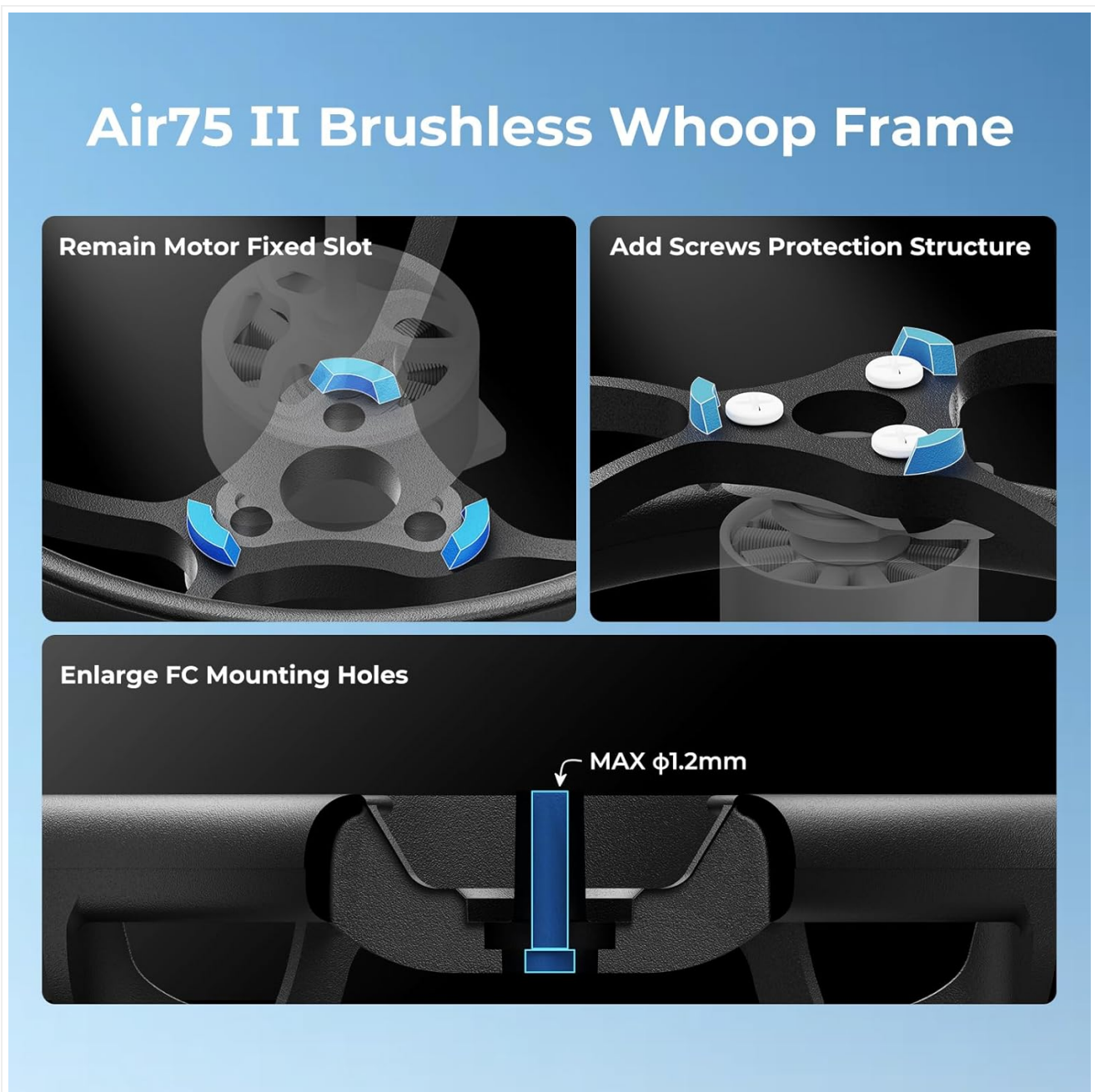


Figure 2: Frame assembly details, highlighting motor fixed slots, screw protection, and enlarged FC mounting holes.

- **Motor Installation:** Utilize the retained motor fixed slots for precise motor alignment. The frame includes screw protection structures to shield motor screws from impact.

- **Flight Controller Installation:** The enlarged 1.2mm FC mounting holes accommodate 1.4mm screws, facilitating easier installation of your flight controller.

### 3. OPERATING CHARACTERISTICS

The Air75 II frame's design directly influences the flight performance of your drone. Understanding these characteristics is crucial for optimal operation.

#### 3.1 Thrust Performance

The updated arm brace design and optimized duct aerodynamics contribute to a significant increase in thrust.

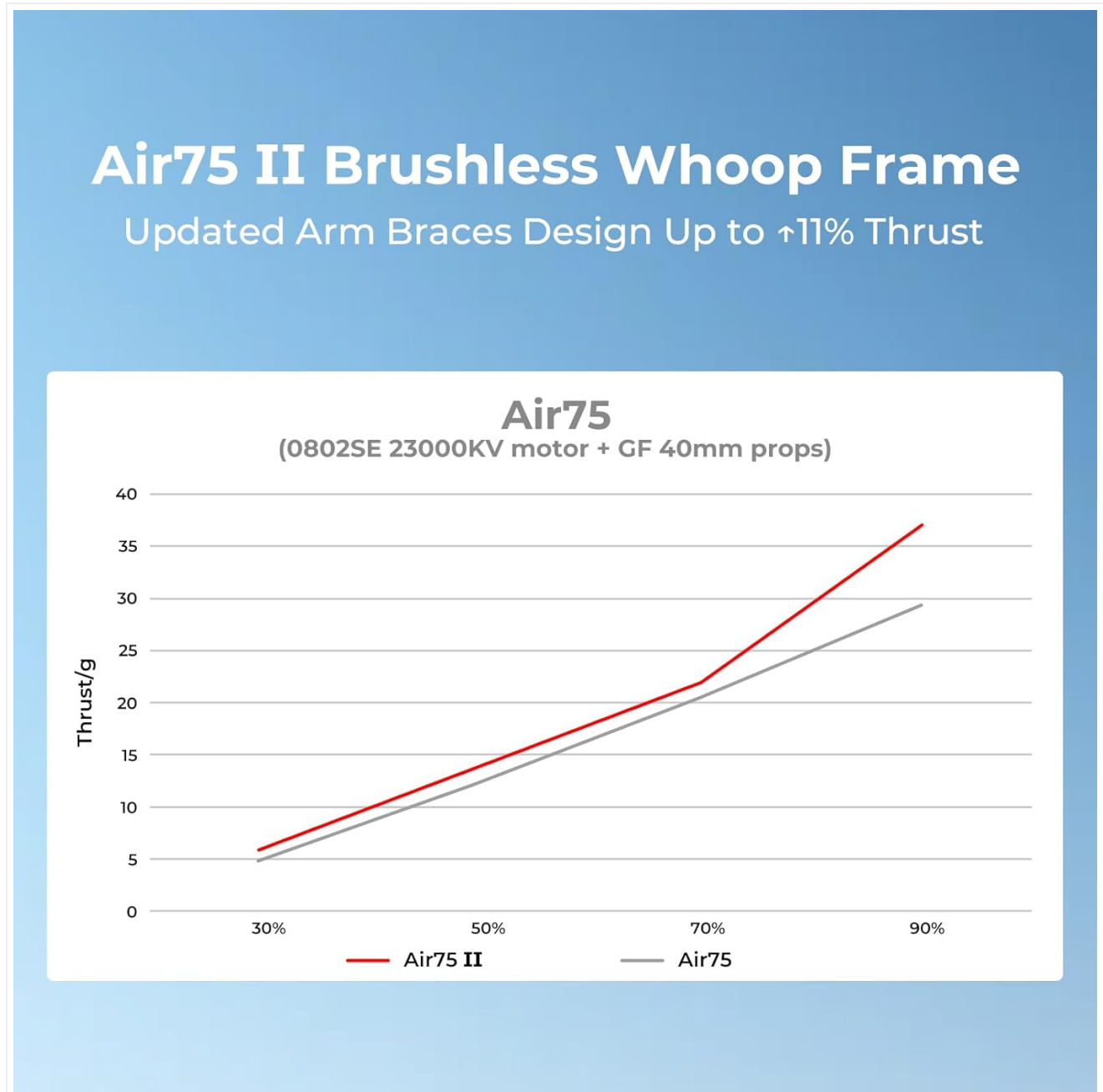


Figure 3: Thrust comparison graph, showing the Air75 II's improved thrust output.

As shown in Figure 3, the Air75 II frame provides up to 11% more thrust compared to the Air75 (Gen 1) frame when using 0802SE 23000KV motors and GF 40mm propellers. This results in a more responsive and powerful flight experience.

## 3.2 Flight Stability and Response

Structural refinements in the frame design minimize vibration, leading to a more stable flight and precise control.

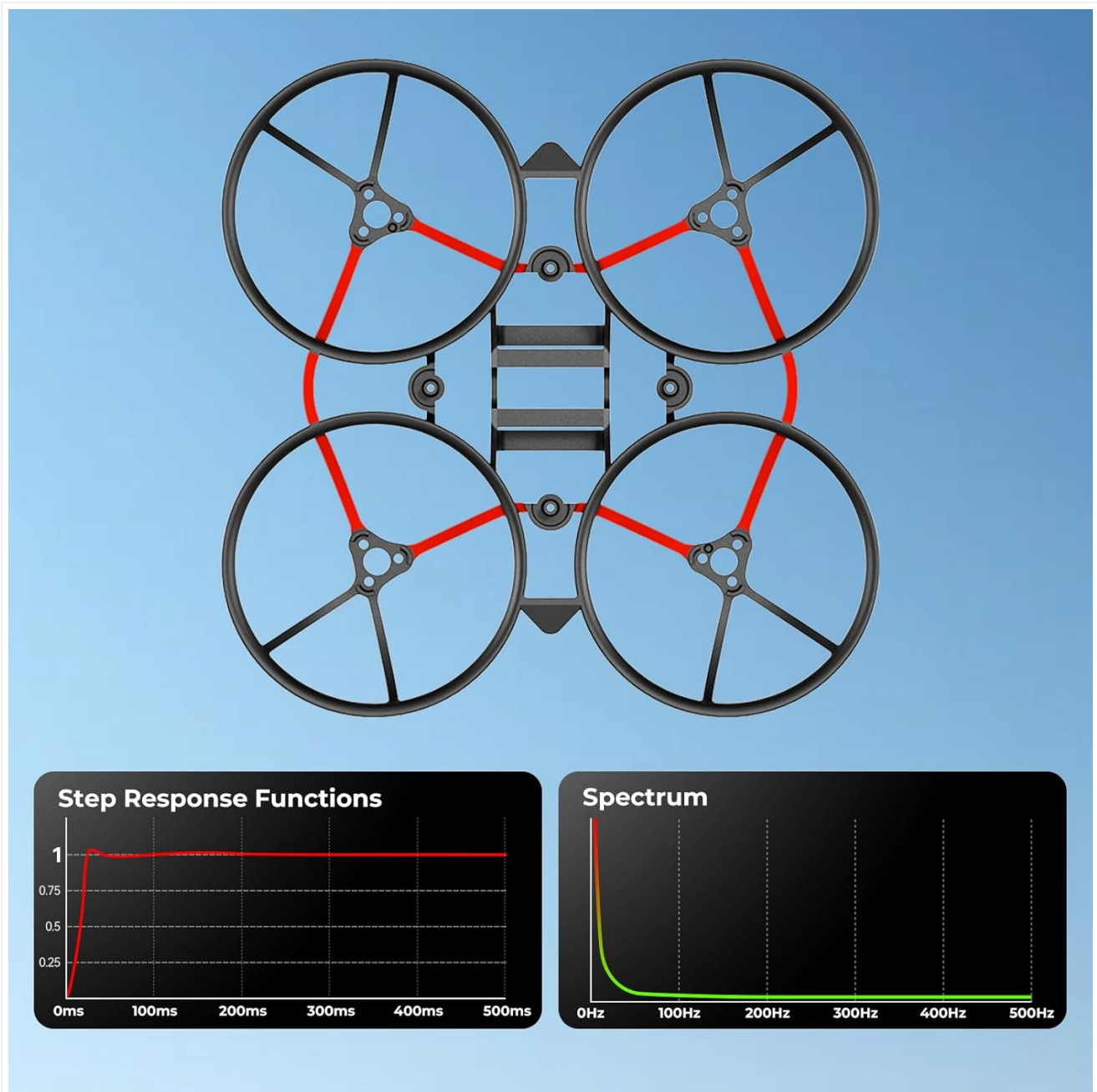


Figure 4: Step response and spectrum analysis, demonstrating the frame's contribution to reliable flight and crisp maneuvers.

The optimized design, combined with proper PID tuning, achieves a near-perfect PID step response, which translates to enhanced maneuverability and a smoother freestyle flying experience.

## 4. MAINTENANCE

Regular inspection and maintenance will prolong the lifespan of your Air75 II frame.

- **Inspection:** After each flight, visually inspect the frame for any cracks, deformities, or loose components. Pay close attention to the motor mounts and duct areas.
- **Cleaning:** Clean the frame with a soft, dry cloth. Avoid using harsh chemicals that may degrade the PP material.
- **Damage:** While the frame is made from a resilient PP blend designed to absorb crashes, severe impacts can still cause damage. If significant damage occurs, replacement of the frame is recommended to maintain flight

performance and safety.

## 5. TROUBLESHOOTING

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This section addresses common issues related to the frame itself.

### 5.1 Frame Damage

- **Symptom:** Visible cracks, broken ducts, or deformed motor mounts.
- **Solution:** The Air75 II frame is a structural component. If it sustains significant damage that compromises its integrity or affects component mounting, it must be replaced. Attempting to repair severely damaged frames may lead to unstable flight or further component damage.

### 5.2 Vibration Issues

- **Symptom:** Excessive vibration during flight, even after checking propellers and motors.
- **Solution:** While the Air75 II frame is designed to reduce vibration, persistent issues may indicate a damaged frame, improperly mounted motors, or an unbalanced propeller. Ensure all components are securely fastened and inspect the frame for any subtle damage not immediately obvious.

## 6. SPECIFICATIONS

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Detailed technical specifications for the BETA FPV Air75 II Brushless Whoop Frame.

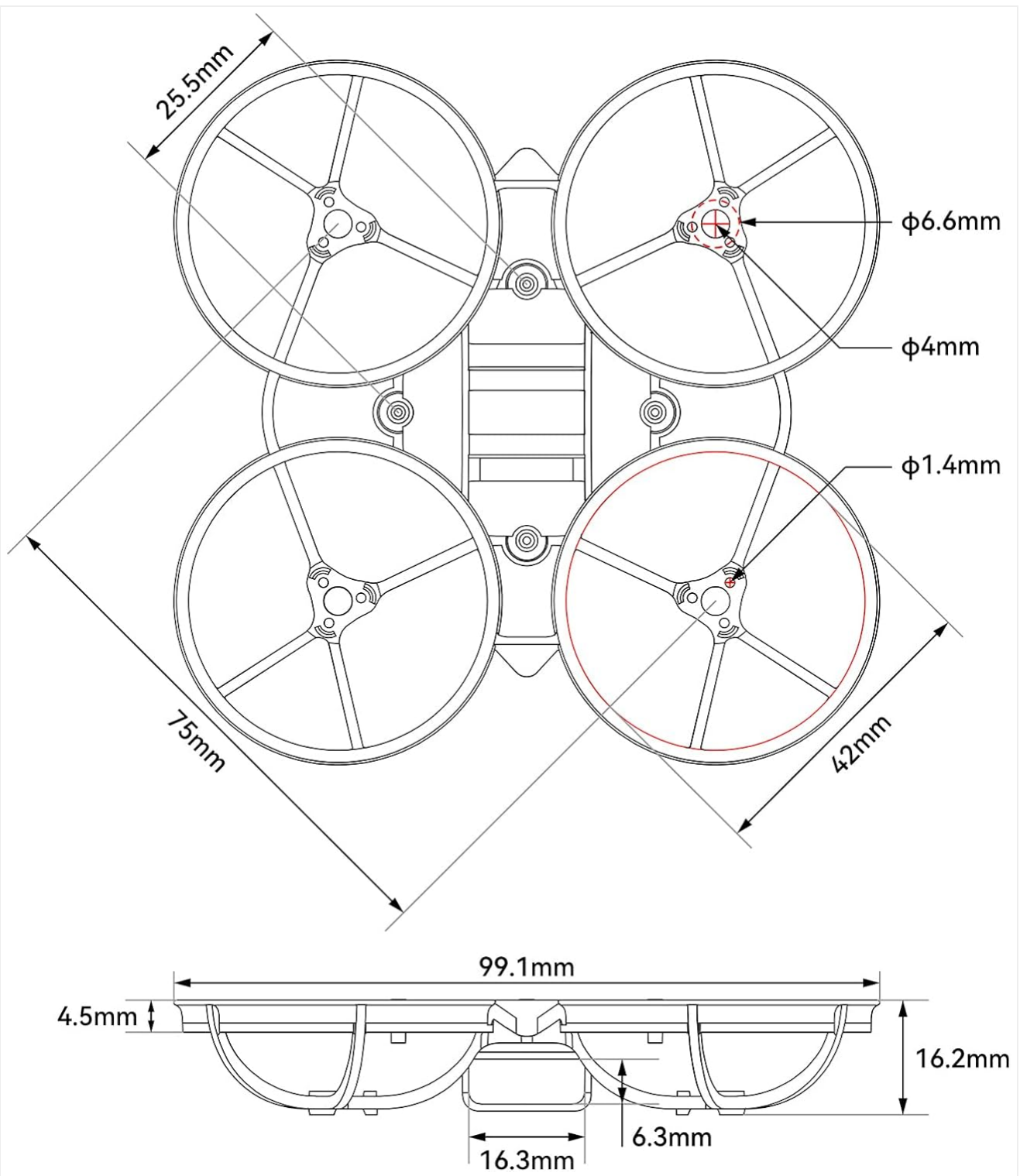


Figure 5: Air75 II Frame dimensions.

Feature	Specification
Item	Air75 II Brushless Whoop Frame
Material	PP (Polypropylene)
Weight	4.00g
Wheelbase	75mm
Motor Mounting	3-M1.4-6.6mm
Flight Controller Mounting Hole	25.5×25.5mm

Feature	Specification
Battery Slot Size	16.3×6.3mm
Maximum Size (L×W×H)	99.1×99.1×16.2mm
Color Options	Black, Transparent White



Figure 6: The Air75 II frame's ultra-light weight of 4.01g.

## 6.1 Recommended Parts

- **Battery:** LAVA 1S 450mAh 75C Battery, LAVA 1S 550mAh 75C Battery, BT2.0 550mAh 1S Battery, BT2.0 450mAh 1S Battery
- **Flight Controller (FC):** Air Brushless Flight Controller, Matrix 1S Brushless Flight Controller (3IN1/4IN1), Matrix 1S Brushless Flight Controller (5IN1)
- **Motors:** 0702 II Brushless Motors, 0802SE Brushless Motors, 1102 Brushless Motors
- **Canopy:** Air Canopy, Canopy for Micro Camera 2022, Micro Canopy Lite, Canopy for O4 Air Unit
- **Propellers:** GF 40mm 2-Blade Propellers, GF 1611 3-Blade Propellers

## 7. WARRANTY INFORMATION

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No specific warranty information is provided with this product. For details regarding returns or replacements, please refer to the retailer's policy where the product was purchased.

## 8. CUSTOMER SUPPORT

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For further assistance, technical support, or inquiries about BETAFPV products, please visit the official BETAFPV store or contact their customer service directly.

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