Papafa 6

Carbon fiber frame for building a Toothpick
User manual



The package contains only the carbon fiber frame. Motors, flight controller, propellers, battery, camera, canopy and hardware are not included.

www.rotorama.com

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1. Product description

1.1 Intended use

Rotorama Papafa 6 is a carbon fiber frame designed for building a small **Toothpick** drone. The frame is cut from 2 mm thick carbon fiber and weighs 3.2 g. It has a cutout for AIO (all-in-one) flight controllers with the USB connector on the bottom side.

The frame can also be used to **convert Tinywhoops** such as the Mobula 6 – the plastic frame is replaced with a carbon fiber bottom plate. It accommodates propellers of 31–35 mm; with some canopies, 40 mm propellers can also be used. The battery is secured with rubber bands attached to the designated mounting points of the frame.



Example of a drone built on the Papafa frame (electronics, motors, propellers and canopy are not included)

1.2 Technical data and package contents

Product designation	Rotorama Papafa 6
Manufacturer	Rotorama, s.r.o.
Type	carbon fiber frame (bottom plate) for Toothpick / Tinywhoop
Diagonal motor distance	70 mm
Weight	3.2 g
Carbon thickness	2 mm
Propeller size	31–35 mm; 40 mm with some canopies
Mounting holes for AIO board	25.5 × 25.5 mm, M2
Mounting holes for motors	6.6 mm, M1.4
Package contents	1× carbon fiber plate

❌ NOT included: motors, flight controller (FC) / AIO board, receiver, camera and video transmitter (VTX), canopy, propellers, battery, screws, standoffs or battery rubber bands.

2. Use

2.1 What else you need

- an AIO flight controller with a 25.5 × 25.5 mm mounting pattern (ideally with the USB connector on the bottom side),
- four motors with mounting holes matching the frame (6.6 mm, M1.4 screws),
- 31–35 mm propellers (40 mm only with a canopy that allows it),
- a canopy with a camera, and a video transmitter and receiver depending on the electronics used,
- M2 and M1.4 screws of suitable length, and standoffs and rubber dampers as needed,
- a battery and rubber bands to secure it,
- a soldering iron, screwdrivers and a radio transmitter (RC system) with goggles.

The battery type, voltage and power system parameters are determined by the motors and flight controller used – follow the instructions of their manufacturers.

2.2 Assembly

① Inspect the frame before assembly. Sharp edges can be carefully deburred with fine sandpaper – always wet, so that no carbon dust is produced (see Chapter 3.1).

② Screw the motors onto the ends of the arms with M1.4 screws. The screws must not be so long that they touch the motor windings.

③ Mount the AIO flight controller in the centre of the frame on the 25.5 × 25.5 mm holes with M2 screws. Position the USB connector in the prepared cutout so that it is accessible from the bottom side. Make sure the board is oriented correctly (arrow pointing forward).

④ Neither the board nor any solder joints may touch the carbon – carbon fiber is electrically conductive. Use insulating (nylon) standoffs or rubber dampers.

⑤ Solder the motor wires to the flight controller and route them so that they cannot reach the propellers or chafe against the edges of the frame.

⑥ Install the canopy with the camera and the other electronics according to the instructions of their manufacturer.

⑦ Configure the flight controller according to the electronics manufacturer's instructions (board orientation, motor order and direction of rotation). **Always** perform the first motor check **without propellers**.

2.3 Mounting the battery

The battery is secured to the frame with **rubber bands** hooked onto the designated mounting points. The rubber bands must hold the battery firmly so that it cannot shift in flight, and must not reach the propellers or cover the USB connector. Rubber bands lose their elasticity over time – replace them.



Bottom view – AIO board with USB connector and rubber bands securing the battery

2.4 Propellers

- The frame is designed for **31–35 mm** propellers.
- 40 mm propellers can only be used with some canopies. Before the first flight, slowly turn each propeller by hand and check that it does not touch the canopy, wires, antennas or the neighbouring propeller.
- The direction of rotation of the propellers must match the motor direction set in the flight controller.

2.5 Converting a Tinywhoop

The frame allows a Tinywhoop (e.g. Mobula 6) to be converted into a Toothpick: the plastic frame with propeller guards (ducts) is replaced with the Papafa carbon fiber bottom plate. The electronics, motors and canopy are transferred from the original drone. Proceed according to Chapter 2.2 and check that the mounting holes of the original board and motors match the dimensions in Chapter 1.2.

❋ Without propeller guards the propellers are exposed. After the conversion, fly the drone only where there is no risk of the propellers coming into contact with people.

3. Safety and maintenance

3.1 Safety instructions

- **Carbon fiber is electrically conductive.** Contact of the frame with solder joints, bare wires or battery contacts can cause a short circuit and damage to the electronics or a battery fire.
- The edges of carbon fiber parts may be sharp. Handle them with care.
- Carbon dust irritates the skin, eyes and respiratory tract. Sand, drill or cut carbon fiber only wet, wearing safety glasses and a respirator, and do not inhale the dust.
- The product is not a toy. Keep it and its small parts out of the reach of children.
- An assembled drone with propellers fitted can cause injury. Always disconnect the battery or remove the propellers when configuring or repairing.
- Handle Li-Po batteries according to their manufacturer's instructions: do not charge them unattended and do not use damaged or swollen cells.
- When operating the assembled drone, comply with the regulations on unmanned aircraft operation in force in the country where you fly.

3.2 Inspection and maintenance

- Before every flight and after every crash, check the frame for cracks, broken arms or frayed (delaminated) edges. Do not continue to use a damaged frame.
- Check that the motor and flight controller screws are tight.
- Check the condition of the rubber bands and the cable insulation where the cables touch the frame.
- Clean the frame with a dry or slightly damp cloth; protect the electronics from moisture.

4. Information for the EU and Czech Market

4.1 Importer and responsible person in the EU

The product is placed on the European Union market by the importer stated below, who is at the same time the responsible person within the meaning of Article 16 of Regulation (EU) 2023/988 of the European Parliament and of the Council on general product safety (GPSR).

Importer / responsible person in the EU	Rotorama, s.r.o.
Company ID (IČO)	051 57 692
VAT ID (DIČ)	CZ05157692
Registered office	Okrajová 1351, 674 01 Třebíč, Czech Republic
E-mail	info@rotorama.cz
Phone	+420 252 252 098
Website	www.rotorama.com

4.2 Disposal

- The frame contains no electronics or battery, **is not electrical equipment** and is not subject to the take-back of electrical equipment.
- Before disposal, remove all electronics (flight controller, motors, camera, receiver) and the battery from the frame. These are electrical waste or waste batteries respectively and **must not** be disposed of with mixed municipal waste – hand them in at a take-back point, a collection yard or a retailer.
- Dispose of the carbon fiber frame itself with mixed municipal waste or according to your municipality's instructions. Do not burn the carbon composite.
- Outside the Czech Republic, follow the waste management regulations in force in the country where you dispose of the product.

5. Warranty and rights arising from defective performance

The rights and obligations of the contracting parties are governed by Czech law, in particular by Act No. 89/2012 Coll., the Civil Code, and Act No. 634/1992 Coll., on consumer protection.

- The seller is liable to the buyer for the product being free of defects on receipt. If the buyer is a consumer, a defect may be notified **within two years of receipt** of the product (Section 2165 of the Civil Code).
- If a defect appears within **one year** of receipt, the product is deemed to have been defective already at the time of receipt (Section 2161(5) of the Civil Code).
- When purchasing online, a consumer has the right to **withdraw from the contract within 14 days** of receiving the goods without giving a reason (Section 1829 of the Civil Code).
- Claims should be made with the retailer from whom you purchased the product. The importer's contact details are given in Chapter 4.1.
- The competent body for out-of-court settlement of consumer disputes is the **Czech Trade Inspection Authority**, Štěpánská 796/44, 110 00 Prague 1, www.coi.cz.