# Johnny 4"

Carbon FPV quadcopter frame 4"
User manual



**Read the entire manual before building and flying for the first time, especially the safety instructions in Chapter 3.**

*Readytosky · importer Rotorama, s.r.o. · www.rotorama.com*

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# 1. Product description

## 1.1 Intended use

The Readytosky Johnny 4" is a lightweight carbon frame for building an FPV quadcopter with 4" propellers. The arms are made of 3 mm carbon plate, the other frame parts of 1.5 mm carbon plate. Thanks to its low weight, the frame is suitable not only for regular freestyle flying but also for building a small quadcopter for longer flights (micro long-range).

The frame is designed for a flight controller (FC) and electronic speed controller (ESC) stack with a 20 × 20 mm mounting hole pattern (M2 screws) and for a micro-size FPV camera (19 mm wide). The product is a kit – the bare frame without any electronics. You build the finished quadcopter yourself using your own components.



*Assembled frame without electronics*

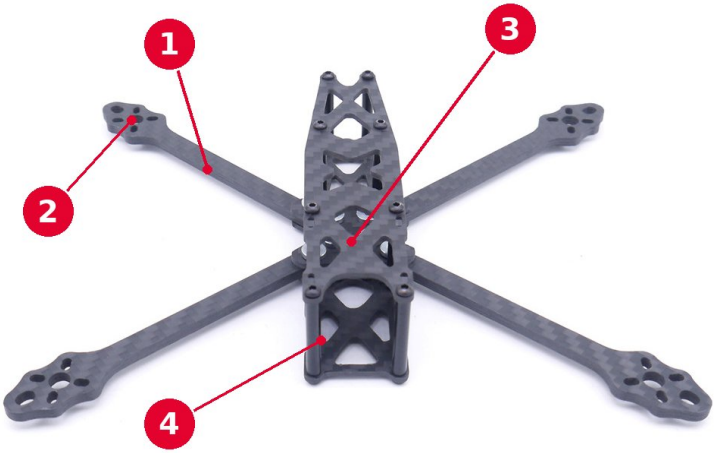
## 1.2 Specifications and package contents

| | |
|---|---|
| Product designation | Readytosky Johnny 4" |
| Product type | FPV quadcopter frame (kit) |
| Material | carbon fibre |
| Diagonal motor-to-motor distance | 180 mm |
| Arm thickness | 3 mm |
| Thickness of other plates | 1.5 mm |
| Frame weight | 35.5 g |
| FC/ESC stack mounting | 20 × 20 mm, M2 screws |
| FPV camera | micro size (19 mm) |
| Package contents | 1× frame |

**Not included:** motors, flight controller (FC) and speed controllers (ESC), FPV camera, video transmitter (VTX), receiver, antennas, propellers, battery, battery strap, radio transmitter, FPV goggles, charger and tools.

# 2. Use

## 2.1 Parts overview




*Frame parts*

① Arm – 3 mm carbon.

② Motor mount at the end of the arm.

③ Top plate – 1.5 mm carbon.

④ Side plate – 1.5 mm carbon.

## 2.2 What else you need

To build a flyable quadcopter, choose and purchase according to your intended use:

- four motors suitable for 4" propellers and for the mounting pattern at the ends of the arms,
- a flight controller (FC) and speed controller (ESC) stack with a **20 × 20 mm** mounting hole pattern (M2),
- a **micro-size (19 mm)** FPV camera, a video transmitter (VTX) with antenna and a receiver for your radio transmitter,
- 4" propellers, a battery matching the chosen motors and a battery strap,
- motor screws of a length matching the arm thickness and the thread depth of the motor, and common tools (hex keys, soldering iron).

**※ Before buying, check the dimensions and mounting hole pattern of each component. The frame does not accept a stack or camera of a size other than stated in Chapter 1.2.**

## 2.3 Building the quadcopter

① Unpack the frame and check that no part is cracked or damaged.

② Screw the motors to the ends of the arms. The screws must not be too long – the tip of the screw could touch the motor windings and damage them. Route the motor wires along the arms and secure them so they cannot get into the propeller.

③ Mount the FC/ESC stack in the centre of the frame using M2 screws. Use the rubber damping grommets supplied with the stack and make sure the circuit board does not touch the carbon anywhere.

④ Mount the micro camera between the side plates at the front of the frame and set the desired tilt angle.

⑤ Install the video transmitter and receiver; route the antennas as far as possible from the carbon parts and the propellers.

⑥ Finish the frame: tighten all screws and check that no wire or antenna reaches into the propeller area.

⑦ Configure the electronics according to the manuals of the component manufacturers. Fit the propellers only after the configuration is complete and the motor rotation direction has been checked.

**※ Carbon is electrically conductive. Bare solder pads, connectors or wires must not touch the frame – risk of short circuit and damage to the electronics.**

## 2.4 Before the first flight

- Without propellers, check that the FC responds correctly to the radio transmitter, that the motors spin in the correct direction and that Arm (motors on), Disarm (motors off) and failsafe work.
- Fit the propellers in the correct direction and tighten them firmly.
- Insert a **fully charged** battery (Li-Po 4.20 V/cell, LiHV 4.35 V/cell) and secure it with a strap so it cannot shift in flight.
- End the flight at the latest when the voltage drops to 3.5 V/cell; store batteries at 3.8 V/cell.

# 3. Safety instructions

## 3.1 The law of the country where you fly applies

The assembled quadcopter is an unmanned aircraft. Regulations (EU) 2019/947 and 2019/945 apply in all member states of the European Union, but national implementing rules differ from country to country – registration portals, minimum pilot age, geographical zones, mandatory insurance, permitted frequency bands and maximum transmit power. The information in this chapter describes the situation in the Czech Republic. If you operate the drone in another country, you must follow the rules of the country in which you fly.

- A quadcopter built on this frame has no C0–C4 class. It is operated as a privately built unmanned aircraft in the open category (subcategory A1 with a maximum take-off mass below 250 g, otherwise A3) or within a club or association.
- If the quadcopter has a camera, the operator must be registered (in the Czech Republic with the Civil Aviation Authority) regardless of weight, and the registration number must be displayed on the drone.
- Fly no higher than 120 m above the ground, within visual line of sight, and never over assemblies of people. In subcategory A3, keep a distance of 150 m from residential, commercial, industrial and recreational areas.
- When flying with FPV goggles, an observer must stand next to the pilot and watch the quadcopter with the naked eye.
- Actually weigh the resulting take-off mass of the quadcopter including the battery. We recommend taking out liability insurance.

## 3.2 Working with a carbon frame

- The edges of carbon parts may be sharp. Work carefully during assembly and lightly sand sharp edges if necessary.
- Carbon dust is irritating. Sand or drill parts only when wet, outdoors or with extraction and wearing a respirator; do not spread or inhale the dust.
- Carbon can interfere with radio signals. Do not place receiver and video transmitter antennas right next to carbon plates.

## 3.3 Operating the finished quadcopter

- Spinning propellers can cause serious injury. Always remove the propellers when working on the quadcopter with a battery connected.
- Charge Li-Po and LiHV batteries only under supervision, on a non-flammable surface and with a charger intended for the cell type. Do not use a damaged or swollen battery.
- Do not fly near people, animals, vehicles or power lines, in rain, strong wind or poor visibility. The product is not a toy and is not intended for children.

# 4. Maintenance

- After every flight, and especially after a crash, check the arms and plates of the frame. Replace a cracked, partly broken or delaminated part immediately – it could fail in flight.
- Regularly check that all frame and motor screws are tight. Secure screws that keep loosening with medium-strength threadlocker.
- Check the wire insulation where wires touch the frame edges and repair any chafed spot immediately.
- Clean the frame with a dry or slightly damp cloth. Do not use solvents.
- When replacing an arm, proceed as during the build (Chapter 2.3) and afterwards repeat the check according to Chapter 2.4.

# 5. Information for the EU and Czech Market

## 5.1 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 |

## 5.2 Disposal

- The frame itself is a mechanical part made of carbon fibre and metal fasteners; it contains no electronics or battery and is not electrical equipment.
- Dispose of an unwanted frame according to the rules of your municipality (usually at a waste collection centre). Do not burn carbon parts.
- Dispose of the electronics, motors and batteries used in the build separately as electrical waste and batteries according to their manufacturers' instructions. They do not belong in mixed household waste.

# 6. Warranty and rights arising from defective performance

## 6.1 Rights of the buyer under Czech law

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 5.1.
- 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.