ROTORAMA

EMAX TH0802 II 15000KV

Brushless motor for micro FPV drones
Spare part for EMAX Tinyhawk 3 and Tinyhawk 3 Plus



Read the entire manual before installation and the first flight. Always disconnect the battery and remove the propellers when working on the drone.

Contents

1. Product description

1.1 Intended use

1.2 Specifications and package contents

2. Use

2.1 Safety instructions

2.2 Replacing the motor

2.3 Check after replacement

2.4 Maintenance and troubleshooting

3. Information for the EU and Czech Market

3.1 Importer and responsible person in the EU

3.2 Disposal

4. Warranty and rights arising from defective performance

1. Product description

1.1 Intended use

EMAX TH0802 II 15000KV is a small brushless motor for micro FPV drones of the whoop type. It is a genuine spare motor that the manufacturer fits to the **EMAX Tinyhawk 3** and **Tinyhawk 3 Plus** drones; the motor is the second generation of the 0802 series and is supplied with a pre-installed connector, so it plugs into the drone without soldering.

You will most often use the motor to replace a damaged motor after a crash – motors are among the parts of micro drones that wear out or get damaged most often. According to the manufacturer, the motor is designed for 1–2S Li-Po batteries, so it can also be used in other lightweight builds with an electronic speed controller (ESC) rated for this voltage range.



EMAX Tinyhawk 3 drone – the TH0802 II 15000KV motors sit inside the propeller guards (ducts).

1.2 Specifications and package contents

Manufacturer	EMAX
Designation	TH0802 II 15000KV
Manufacturer code	TH3SP2
Stator size	0802
KV	15000KV
Power supply (per manufacturer)	1–2S Li-Po
Connection	pre-installed connector
Compatibility	EMAX Tinyhawk 3, Tinyhawk 3 Plus
Package contents	1× TH0802 II 15000KV motor with connector
Mounting screws	not listed in the package contents (see photo in Ch. 2.2); if missing, reuse the original screws
Not included	propellers, battery, ESC, drone, tools

2. Use

2.1 Safety instructions

- Before any work on the drone, **disconnect the battery** and remove the propellers. The motor may start spinning unexpectedly, even while working in the configuration software.
- Spinning propellers can cause injury. Test the motor with a propeller fitted only when the drone is securely fixed or standing on the ground out of reach of people, and never hold the drone in your hand.
- The motor is powered through an electronic speed controller (ESC). Never connect it directly to a battery or to a DC power source.
- Use only within the range stated by the manufacturer (1–2S Li-Po) and only with an ESC designed for this voltage.
- The motor heats up during operation. Let it cool down after the flight before touching it.
- The motor contains strong magnets. Protect it from metal filings and small metal objects that may be drawn into it.
- The product contains small parts (screws) – keep it out of the reach of children.

▶ Li-Po and LiHV batteries

Condition	per cell	1S	2S
fully charged (Li-Po)	4.20 V	4.20 V	8.40 V
fully charged (LiHV)	4.35 V	4.35 V	8.70 V
end the flight	3.5 V	3.5 V	7.0 V
storage	3.8 V	3.8 V	7.6 V

Always fit a fully charged battery before the flight and end the flight no later than when the voltage drops to 3.5 V per cell. Deeper discharge shortens battery life and overloads the motors and the ESC.

2.2 Replacing the motor

The following procedure describes replacing a motor in the EMAX Tinyhawk 3 / Tinyhawk 3 Plus drone. For other builds, proceed similarly according to the manual of the drone in question.



TH0802 II 15000KV motor with pre-installed connector (manufacturer's illustrative photo).

① Disconnect the battery and remove the propeller from the damaged motor.

② Unplug the motor connector from the flight controller (FC) / ESC. Do not pull on the wires; hold the connector itself.

③ Loosen the screws holding the motor to the frame and remove the old motor.

④ Seat the new motor so that its cable runs along the same path as that of the original motor, and fasten it with the screws. Tighten the screws gently – the thread in a small motor strips easily.

⑤ Plug the motor connector into the same position as the original motor. Route and secure the cable so that it cannot get into the propeller.

⑥ Do not fit the propeller yet – first carry out the check described in Chapter 2.3.

Use screws of the same length as on the original motor. A screw that is too long can touch the stator windings and destroy the motor – such damage is not a product defect.

2.3 Check after replacement

Carry out the check **without propellers fitted**.

① Connect the drone to a computer and open the *Motors* tab in Betaflight Configurator.

② After confirming the safety notice, briefly spin the replaced motor and check that it runs smoothly, without rubbing or unusual noise.

③ Check the direction of rotation – it must match the diagram on the *Motors* tab, or the direction in which the original motor spun.

④ If the motor spins the wrong way, change its direction in the ESC settings using the ESC configuration software. The motor connector cannot be swapped.

⑤ Fit a propeller of the correct orientation for the motor position (for the Tinyhawk 3, Avia TH propellers designed for the Tinyhawk 3) and make a short test hover in a safe area before the first flight.

※ Before the flight, check that after Arm (motors on) all motors spin evenly and the drone does not pull to one side on take-off.

2.4 Maintenance and troubleshooting

- After every flight, especially indoors, remove hair, fibres and dust from the motor – hair wound around the shaft brakes the motor and makes it overheat.
- After a crash, check that the shaft is not bent and that the motor bell turns freely, without play or rubbing.
- Do not lubricate the motor with oil or spray and do not wash it with water.
- Store it in a dry place, away from metal dust.

Problem	Possible cause and solution
Motor does not spin	Connector not fully seated or damaged – check the connection and wires. Test the motor in the *Motors* tab.

Problem	Possible cause and solution
Motor spins the wrong way	Change the direction of rotation in the ESC settings (Chapter 2.3).
Motor rubs, jerks or vibrates	Bent shaft, damaged propeller, hair or dirt in the motor – clean it, replace the propeller, replace the motor if the shaft is bent.
Motor is very hot after the flight	Wound-up hair, damaged propeller or bearing, overlong screw touching the windings – check and remove the cause.
Drone flips over after Arm	Propeller fitted in the wrong position or motor spinning the wrong way – check as described in Chapter 2.3.

3. Information for the EU and Czech Market

3.1 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

3.2 Disposal



- The crossed-out wheeled bin symbol on the product, its packaging or in the documentation means that at the end of its service life the product **must not be disposed of together with mixed municipal waste**.
- Hand it over at a take-back point for electrical equipment – at a collection yard, at a take-back point of a collective system, or at the retailer when purchasing a new equivalent product. Take-back is free of charge for the end user.
- The obligations under Act No. 542/2020 Coll., on end-of-life products, are fulfilled by the importer through a collective take-back system.
- Proper disposal helps prevent negative impacts on the environment and human health and contributes to the reuse of secondary raw materials.

Through its contractual partner **ASEKOL a.s.**, the company ensures the take-back of waste electrical equipment from households and the separate collection of waste electrical equipment, batteries and accumulators in accordance with the applicable legislation. The customer is entitled to hand over old electrical equipment or a battery or accumulator at any collection point of the above contractual partner. The addresses of these take-back points are listed at www.asekol.cz, www.ecobat.cz and also https://visoh2.mzp.cz/RegistrMistZO/RegistrMistZOPublic/MapaMistZpetOdberu.

4. 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 3.1.
- 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.