EX1202.5 8000Kv

Happymodel brushless motor
User manual



Read the entire manual before installation and first use. Always remove the propellers before working with the motors on a connected drone.

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1. Product description

1.1 What it is for

The **Happymodel EX1202.5 8000Kv** is a small brushless motor for lightweight FPV drones – primarily small toothpicks with 2" propellers and a 2S–3S LiPo battery. The manufacturer lists it as the original motor of the Happymodel Cine8 drone. The motor leads end in a connector for easy connection to a flight controller (FC) with an integrated electronic speed controller.

The motor has no electronics of its own: it only turns when driven by an electronic speed controller (ESC), which controls both its speed and its direction of rotation. A quadcopter needs four motors; the package contains one.

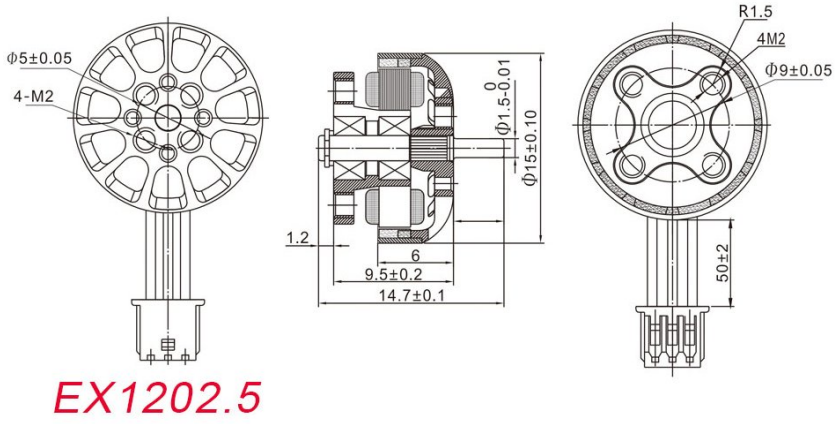


Underside of the motor – mounting base with four M2 threaded holes and the cable exit

1.2 Specifications and package contents

Product designation	Happymodel EX1202.5, 8000Kv version
Kv	8000 rpm/V (measured by the manufacturer: 8130)
Configuration	9N12P
Stator	12 mm diameter, 2.5 mm height
Shaft	output Φ1.5 mm, inner Φ2 mm
Motor dimensions	Φ15 × 15 mm (diameter × length)
Mounting	4× M2 thread on a Φ9 mm bolt circle
Cable length	50 ± 2 mm (per manufacturer's drawing)
Weight	4.4 g (manufacturer's figure)
Battery	2S–3S LiPo
Package contents	1× motor with leads and connector
Not included	propellers, electronic speed controller (ESC), flight controller (FC), battery

1.3 Dimensional drawing



Manufacturer's dimensional drawing (dimensions in mm)

1.4 Manufacturer's performance data

The manufacturer tested the motor with a 48 mm three-blade propeller at 11.1 V (3S). With no load at 2 V, the motor reached 16,260 rpm at a current of 0.3 A.

Voltage (V)	Current (A)	Thrust (g)	Efficiency (g/W)	Power (W)
11.1	1	28.4	2.559	11.1
11.1	2	51.7	2.329	22.2
11.1	3	69.9	2.099	33.3
11.1	4	88.3	1.989	44.4
11.1	5	102.9	1.854	55.5
11.1	6	115.1	1.728	66.6
11.1	7	126.9	1.633	77.7
11.1	7.2	127.8	1.599	79.92

Values measured by the manufacturer on a test stand; actual values depend on the propeller, battery and ESC.

2. Use

2.1 Safety

- Whenever you work on a drone with the battery connected – configuration, motor checks, firmware updates – keep the **propellers removed**. A spinning propeller causes cuts.
- Never hold a drone with a connected battery in your hand and keep your hands out of the propeller area. Arm (start the motors) only in a safe place.
- Use the motor only with a **2S–3S LiPo** battery and a propeller of suitable size. A propeller that is too large or too heavy will overload both the motor and the ESC.
- The motor heats up during operation. Let it cool down after a flight before touching it.
- Do not block the rotor and do not run a motor that is mechanically damaged (bent shaft, scraped bell, damaged windings).
- Keep small parts, screws and propellers out of the reach of children.
- When flying a drone, observe the regulations of the country in which you fly. The law of the country in which the product is operated always prevails.

2.2 Mounting on the frame

The motor is screwed to the frame arm with four M2 screws into the threaded holes on its underside (Φ9 mm bolt circle, see Chapter 1.3). Screws are not included.

① Choose screws of a length that **does not reach the stator windings** when tightened. A screw that is too long damages the winding insulation and causes a short circuit that can destroy both the motor and the ESC. The right length depends on the thickness of the frame arm.

② Tighten the screws gently – the threads in the aluminium base are small and strip easily. A small amount of medium-strength threadlocker can be used to prevent loosening.

③ Route the leads along the frame arm so that they cannot touch the propeller, and secure them (e.g. with tape or a cable tie).

④ After mounting, turn the bell by hand – it must spin freely, without rubbing or scratching noises.

2.3 Connecting to the ESC

Plug the motor connector into the matching socket on the flight controller (FC) with integrated ESC. Always insert and remove the connector by its housing; never pull on the wires.

- If your flight controller does not have a matching socket, the connector can be cut off and the wires soldered directly to the motor pads on the ESC. Insulate

the joints and make sure the pads are not bridged.

- The order of the three wires is not fixed. Swapping any two wires reverses the motor's direction of rotation.
- The direction of rotation can also be changed in software in the ESC settings (for example in ESC Configurator or BLHeliSuite) – this is more convenient than re-soldering.

2.4 Checking motor order and direction

Before the first flight, check that each motor is connected in the correct position and spins in the correct direction. **The propellers must be removed.**

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

② Connect the battery and confirm the safety warning (*I understand the risks…*).

③ Use the individual motor sliders to spin each motor briefly at low speed.

④ Compare the position and direction of each motor with the diagram in Betaflight Configurator. If the direction is wrong, change it as described in Chapter 2.3; if the position is wrong, adjust the motor assignment in Betaflight.

⑤ Disconnect the battery and only then fit the propellers.

2.5 Fitting the propeller

The output shaft has a diameter of 1.5 mm. Use a propeller made for a 1.5 mm shaft (typically a press-fit 2" propeller); the manufacturer tested the motor with a 48 mm three-blade propeller.

- Fit the propeller straight and push it onto the shaft all the way. Support the motor from below so that the shaft does not shift and the bearings are not loaded.
- Make sure the propeller direction (CW / CCW) matches the motor's direction of rotation.
- Remove the propeller with a straight pull, ideally with a propeller tool, not by levering it sideways – the shaft could bend.
- Always replace a damaged or cracked propeller.

2.6 Maintenance and troubleshooting

- After every crash, check that the shaft is not bent, the bell does not rub, and the leads and connector are not damaged.
- Remove dust, grass and small metal particles caught on the magnets with compressed air or a soft brush. Do not lubricate the motor and do not wash it with water.
- Store the motor in a clean, dry place, protected from mechanical damage.

Problem	Possible cause and solution
Motor does not spin or only twitches	Loose or incorrectly inserted connector, broken wire, faulty solder joint. Check the connection; if the fault persists, try the motor in another position to tell a motor fault from an ESC fault.
Motor spins the wrong way	Change the direction of rotation in the ESC settings or swap two wires (Chapter 2.3).
Drone flips over after Arm	Wrong motor order, reversed direction of rotation or propellers fitted the wrong way round. Carry out the check in Chapter 2.4.
Strong vibration, noise	Bent shaft, damaged propeller, dirt in the motor or worn bearings.
Motor overheats	Propeller too large, rubbing bell, damaged winding or bearing. Do not use the motor until the cause has been eliminated.

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 of electrical equipment



- 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.