Flash 2506 1550KV

FlyFishRC · brushless motor for FPV multirotors
User manual



Read this manual carefully before installation and first start-up, in particular the safety instructions in Chapter 2.

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1. Product description

1.1 Intended use

The **FlyFishRC Flash 2506 1550KV** is a brushless outrunner motor designed to power FPV multirotors. The manufacturer specifies it for a **6S LiPo** battery and carried out its thrust measurements with 6" propellers (HQ 6×2.5×3 and Gemfan 6030).

The motor bell is made in one piece (Unibell) from 7075 aluminium alloy and the shaft is made of titanium alloy. The motor uses NMB bearings, N52SH magnets and copper windings resistant to temperatures of up to 220 °C. The base is reinforced and has a wire outlet protection, and the prop seat has a non-slip design. The motor is connected to an electronic speed controller (ESC), which powers and drives it.



FlyFishRC Flash 2506 1550KV (Grey & Gold)

1.2 Technical data and package contents

Manufacturer	FlyFishRC, Shenzhen, Guangdong, China sales@flyfish-rc.com, www.flyfish-rc.com
Product designation	Flash 2506 1550KV (Grey & Gold)
Manufacturer code	M000308
KV	1550 KV
Power supply	6S LiPo (manufacturer's test voltage 24 V)
Configuration	12N14P
Dimensions (diameter × length)	31.4 × 31.9 mm
Shaft	5 mm diameter, M5 prop thread, protrudes 13.5 mm
Mounting	4× M3, 16 × 16 mm pattern

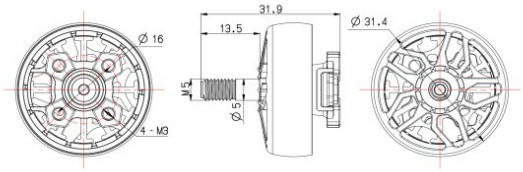
Wires	3× 20AWG, 150 mm long
Weight	36.2 g (including wires)
Max. thrust	1818.3 g (GF 6030 propeller, 24 V)
Max. power (10 s)	785.7 W
Peak current (10 s)	33.35 A
Materials	7075 aluminium bell (Unibell), titanium alloy shaft, NMB bearings, N52SH magnets, windings rated up to 220 °C

Package contents

- 1× Flash 2506 1550KV motor
- 1× hardware set

Not included: propellers, electronic speed controller (ESC), flight controller (FC), frame or battery. The product is sold individually; a quadcopter requires four motors.

1.3 Dimensional drawing



Dimensions in mm (according to the manufacturer's drawing)

1.4 Manufacturer's test data

The values were measured by the manufacturer at a supply voltage of 24 V. They are for guidance and comparison only; actual values depend on the propeller, battery, ESC and temperature.

▶ Propeller HQ 6×2.5×3

Throttle (%)	Voltage (V)	Current (A)	Thrust (g)	Speed (RPM)	Power (W)	Efficiency (g/W)
50	23.99	6.34	586.5	15,754	152.1	3.86
60	23.92	10.07	807.0	18,477	240.9	3.35
70	23.84	14.50	1042.7	20,967	345.7	3.02
80	23.79	19.74	1304.0	23,310	469.6	2.78
90	23.64	25.67	1572.6	25,161	606.8	2.59
100	23.58	32.31	1806.2	27,072	761.9	2.37

▶ Propeller GF 6030

Throttle (%)	Voltage (V)	Current (A)	Thrust (g)	Speed (RPM)	Power (W)	Efficiency (g/W)
50	23.98	6.75	598.0	15,784	161.9	3.69
60	23.91	10.18	819.5	18,507	243.4	3.37
70	23.82	15.12	1052.5	20,997	360.2	2.92
80	23.77	20.56	1313.7	23,340	488.7	2.69
90	23.62	26.89	1584.4	25,191	635.1	2.49
100	23.56	33.35	1818.3	27,072	785.7	2.31

2. Safety instructions

- A motor with a propeller fitted is dangerous. A spinning propeller can cause serious injury. **Always remove the propellers during assembly, soldering, configuration and bench testing.**
- Disconnect the battery before any work on the model. Connect the battery only when the model is ready and nobody is within reach of the propellers.
- The motor heats up during operation. After a flight, do not touch the bell or the windings until they have cooled down.
- The motor contains strong neodymium magnets. Protect it from metal filings and small steel parts, which are attracted to the magnets and can damage the motor.
- Use an electronic speed controller (ESC) rated for at least the peak current of the motor stated in Chapter 1.2 and a battery corresponding to the 6S LiPo power supply.
- Do not operate the motor with a damaged shaft, cracked bell, damaged wire insulation or a damaged propeller.
- This product is not a toy. Keep it out of the reach of children; small parts from the hardware set can be swallowed.
- When flying, observe the regulations for unmanned aircraft that apply in the country in which you fly.

3. Installation and use

3.1 Mounting on the frame

① Place the motor on the frame arm so that the M3 holes in the base line up with the holes in the arm (16 × 16 mm pattern) and the wires run along the arm towards the centre of the frame.

② Fasten the motor with four M3 screws. Choose the screw length according to the thickness of the arm: the screw must engage the thread sufficiently but **must not touch the stator windings inside the motor**. A screw that is too long damages the winding insulation and causes a short circuit.

③ Tighten the screws evenly in a cross pattern. We recommend securing them with a medium-strength threadlocker.

④ Check that the bell rotates freely and does not rub against the frame or the wires.



Motor base with M3 holes and wire outlet

3.2 Connecting to the ESC

- Solder the three phase wires of the motor to the three solder pads of the corresponding motor output of the ESC. The order of the wires only affects the direction of rotation.
- Shorten the wires to the required length, tin the ends and solder with a sufficiently powerful iron so that the joint is shiny and solid; a cold joint can come loose in flight.
- Make sure adjacent joints do not touch and the wires do not run over sharp edges of the frame. Secure the wires along the arm so that they cannot reach the propeller.

3.3 Direction of rotation and settings

- The direction of rotation of each motor must match the layout selected in the flight controller (FC), e.g. in Betaflight on the *Motors* tab.
- If the motor spins in the wrong direction, swap any two of the three phase wires, or reverse the direction of rotation in the ESC configuration software.

- In the flight controller, set the number of motor poles (*Motor poles*) to **14** — this corresponds to the 12N14P configuration. The value is used by the RPM filter and for RPM display.

3.4 Fitting the propeller

- The propeller is fitted on the 5 mm shaft with an M5 thread and secured with an M5 nut. Use a self-locking nut and tighten it with care — overtightening can damage the propeller hub.
- Check that the propeller direction (CW / CCW) matches the direction of rotation of the motor and that the propeller sits fully on the bell's prop seat.
- Fit the propellers only after you have checked the direction of rotation of all motors.

3.5 First start-up

① Remove the propellers. Connect the battery and spin each motor individually at low speed in the FC configuration software (e.g. Betaflight, *Motors* tab).

② Check the direction of rotation, smooth running and that the motor makes no grinding or squeaking noise.

③ After a short test flight, touch the motors. If one is noticeably warmer than the others, find the cause before flying again (see Chapter 3.6).

3.6 Maintenance and troubleshooting

- After every crash, check the shaft for straightness, the bell for play, the wires for damage and the motor screws and prop nut for tightness.
- Remove sand, grass and dirt from the motor with a dry brush or compressed air. Do not wash the motor with water.
- Do not disassemble the motor unnecessarily. The bearings are lubricated by the manufacturer.

Problem	Possible cause and solution
Motor does not spin or only twitches	Loose or cold solder joint on a phase wire; damaged wire; ESC fault. Check the joints and the ESC.
Motor spins in the wrong direction	Swap two phase wires or reverse the direction in the ESC settings (Chapter 3.3).
Vibration, jello in the camera image	Bent shaft, damaged or unbalanced propeller, loose screws. Replace the propeller, check the shaft and screws.
Motor overheats	Propeller too large or too steep, oscillations from PID or filter settings, dirt in the motor, damaged windings.
Grinding, squeaking, irregular running	Dirt or metal filing between bell and stator, worn bearing, screw touching the windings.

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 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.

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.