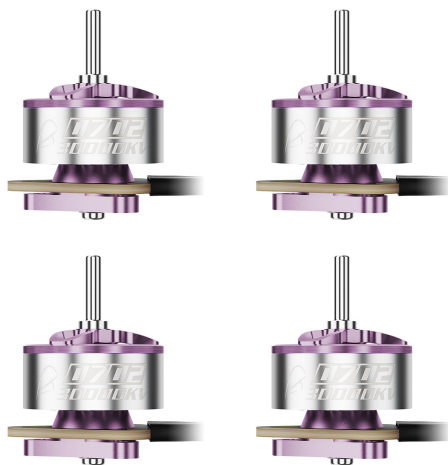




0702 30000KV

BETAFPV 0702 Brushless Motors (2026) – Racing version
Brushless motors for the Air65 II 1S whoop · set of 4



Read this entire manual before installation and the first flight, especially the safety instructions in chapter 1. Keep this manual for future reference.

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1. Safety instructions

1.1 Before you start

- The motors are intended for installation in an FPV micro drone (whoop). Installation, wiring and setup require basic knowledge of FPV drone building and of working with configuration software.
- This product is not a toy. It is not intended for children; small parts (M1.4 screws) can be swallowed.
- Use the motors only in accordance with the specifications in chapter 3 – with 1S power and with the recommended propellers.

1.2 Rotating parts and propellers

- The motor rotor (bell) spins at very high speed. Do not touch the motor or propeller while running and keep fingers, hair, loose clothing and cables away from them.
- Carry out all installation work, motor direction checks and configuration in the software **with the propellers removed**.
- Disconnect the battery whenever you work on the drone.
- Do not use a damaged or cracked propeller or a motor with a bent shaft.

1.3 Power, temperature and batteries

- Never connect the motor directly to a battery. It is powered and controlled exclusively by an electronic speed controller (ESC), which on whoops is usually integrated in the flight controller (FC).
- The rated voltage of the motor is **4.2 V (1S)**. Do not use batteries with a higher cell count.
- The motors heat up during operation. Do not touch them after a flight until they have cooled down.
- Charge Li-Po batteries only with a suitable charger, under supervision and on a non-flammable surface; do not use a damaged or swollen battery.

1.4 Operating environment

- Protect the motors from moisture, water, dust and metal filings – the rotor magnets attract small iron particles.
- Do not fly near people or animals or in places where the drone could cause damage.

2. Product description

2.1 Package contents

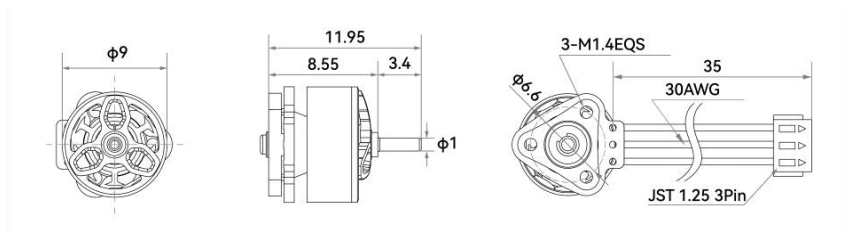
- 4× 0702 30000KV brushless motor (Racing)
- 12× M1.4 × 3 mm screw

2.2 Description and intended use

The BETA FPV 0702 Brushless Motors (2026) in the **Racing (30000KV)** version are 0702-size brushless motors designed by the manufacturer for the **Air65 II** whoop. According to the manufacturer, the Racing version is engineered for high RPM and instant response on technical race courses.

- Stator with **0.10 mm** laminations – according to the manufacturer they minimise magnetic losses and heat generation and improve efficiency by 0.1–0.2 g/W compared with 0702 motors with a 0.15 mm core.
- Upgraded rotor housing material and reinforced shaft design for better crash durability.
- Brass bushings.
- 30AWG lead, 35 mm long, terminated with a JST 1.25 3-pin connector.

2.3 Dimensions



Motor outline drawing (dimensions in mm) – source: BETA FPV

- Motor diameter Ø9 mm, motor body height 8.55 mm, total height including shaft 11.95 mm.
- Shaft Ø1 mm, protruding 3.4 mm.
- Mounting: 3 M1.4 threaded holes on a Ø6.6 mm pitch circle (3-M1.4EQS).
- 30AWG lead, length 35 mm, JST 1.25 3-pin connector.

3. Specifications

3.1 Parameters

Parameter	0702 Racing
KV	30000KV
Maximum power	23.3 W
Maximum current	6.03 A
Bearing type	brass bushings
Weight (1 motor)	1.50 g
Rated voltage	4.2 V (1S)
Shaft diameter	Ø1.0 mm
Shaft length	3.4 mm
Wire gauge	30AWG
Wire length	35 mm
Connector	JST 1.25 3-pin
Mounting holes	3× M1.4, Ø6.6 mm pitch circle

Data provided by the manufacturer BETAFPV.

3.2 Load performance

Manufacturer's test results with the **GF 1207-3P** (three-blade) propeller:

Voltage (V)	Throttle (%)	Current (A)	Thrust (g)	Efficiency (g/W)	Input (W)	Speed (RPM)
3.93	20	0.42	1.8	1.09	1.65	14,757
3.92	30	1.01	5.1	1.28	3.97	23,541
3.91	40	1.71	9.3	1.39	6.69	31,298
3.90	50	2.39	13.5	1.45	9.32	37,570
3.89	60	3.01	17.9	1.53	11.70	43,046
3.89	70	3.62	22	1.56	14.07	47,557
3.88	80	4.35	26.8	1.59	16.85	52,514
3.87	90	5.07	31.3	1.60	19.60	56,887
3.86	100	6.03	35.7	1.54	23.23	60,394

The above data represents the test samples only (according to the manufacturer).

3.3 Recommended parts

The manufacturer recommends the following parts for the 0702 Racing motors:

Propellers	Gemfan 1207 3-Blade Propellers (1.0 mm shaft)
Frame	Air65 II Frame, Air65 Champion Frame
Flight controller (FC)	Matrix 1S 5IN1 II
Battery	LAVA II 1S 280 mAh / 320 mAh

4. Installation

4.1 What you will need

- a screwdriver matching the heads of the supplied M1.4 × 3 mm screws,
- a propeller removal tool or another suitable tool (never lever the propeller off by pulling on the blades against the shaft),
- a computer with the flight controller configuration software (Betaflight Configurator).

4.2 Removing the original motor

- ① Disconnect the battery.
- ② Remove the propeller from the motor.
- ③ Pull the motor connector out of its socket on the flight controller (FC). Pull on the connector body, not on the wires.
- ④ Loosen the mounting screws and remove the motor from the frame.

4.3 Mounting the motor

- ① Place the motor on the frame mount so that the holes in the frame line up with the M1.4 threads in the motor base.
- ② Fasten the motor with three of the supplied M1.4 × 3 mm screws. Tighten the screws gently – the small thread strips easily.
- ③ Route the lead so that it cannot get into the rotor or the propeller and is neither under tension nor pinched.

Do not use screws longer than the supplied ones. A screw that is too long can reach the stator windings and destroy the motor.

4.4 Connecting to the flight controller

The motor is fitted with a **JST 1.25 3-pin** connector. Plug it into the motor socket on the flight controller (FC) with integrated speed controller (ESC) – into the position from which the original motor was removed. Insert the connector straight and all the way in.

5. Connection and setup

5.1 Check without propellers

Carry out all steps in this chapter with the propellers removed.

- ① Connect the drone to the computer and start Betaflight Configurator.
- ② On the *Motors* tab, confirm that the propellers are removed and briefly spin each motor in turn at low speed.
- ③ Check that the correct motor spins in the correct position and that it runs smoothly, without rubbing or unusual noise.

5.2 Direction of rotation

Each motor must spin in the direction that matches the frame diagram in the configuration software. With a single three-pin connector, the direction cannot be changed by swapping wires; it is set in software – in Betaflight Configurator (*Motors* tab, motor direction function) or in the speed controller (ESC) configurator.

5.3 Fitting the propellers

- ① Use propellers designed for a 1.0 mm shaft – the manufacturer recommends Gemfan 1207 3-Blade Propellers.
- ② Fit each motor with a propeller of the correct rotation direction according to the frame diagram.
- ③ Push the propeller on straight and all the way down. Do not load the shaft sideways, so that it does not bend.

6. Operation

6.1 Pre-flight check

- The motor screws are tight and the motors do not wobble in the frame.
- The rotor turns freely without rubbing, the shaft is not bent and there is no debris between rotor and stator.
- The propellers are undamaged, correctly oriented and pushed fully down.
- The leads are undamaged and cannot get into the propeller.
- Insert a **fully charged** battery before the flight: Li-Po 4.20 V/cell (1S = 4.20 V).

6.2 During and after the flight

- End the flight no later than when the voltage drops to **3.5 V/cell** (1S = 3.5 V). Deep discharge damages the battery.
- After a crash, Disarm (motors off) immediately. A blocked motor under power overheats quickly.
- Check the motor temperature after the flight. If one motor is noticeably warmer than the others, find the cause (chapter 7.3).

6.3 The law of the country of operation applies

Aviation regulations apply to the operation of the drone in which you install the motors. 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 transmitter power. If you operate the drone in a country other than the Czech Republic, you must follow the regulations of the country in which you fly.

7. Maintenance and troubleshooting

7.1 Maintenance

- After flying, remove dust, grass, hair and dirt from the motors, especially from the gap between rotor and stator.
- Check the shaft play. Brass bushings wear over time; replace a motor with increased play, noisy running or rubbing.
- Do not lubricate the motors with oil or spray – lubricant attracts dirt.
- Do not straighten a bent shaft; replace the motor.

7.2 Storage

Store the motors in a dry place at room temperature, away from magnetically sensitive objects and metal filings. Store the drone batteries at 3.8 V/cell (1S = 3.8 V).

7.3 Troubleshooting

Problem	Possible cause and solution
Motor does not spin	Connector not fully inserted or in the wrong socket – check the connection. Damaged wire or connector – replace the motor.
Motor spins in reverse	Change the direction of rotation in software (chapter 5.2).
A different motor spins on the <i>Motors</i> tab	The motor is plugged into a different socket – reconnect it or adjust the motor assignment in the configuration software.
Motor overheats	Bent shaft, debris in the motor, damaged or unsuitable propeller, worn bushings – remove the fault, replace a damaged motor.
Vibration, noise, stuttering	Bent shaft, damaged propeller, loose screws, play in the bushings – check and replace the damaged part.

8. Information for the EU and Czech Market

8.1 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@rotorاما.cz
Phone	+420 252 252 098
Website	www.rotorاما.cz

8.2 Product conformity



- The product bears the **CE** marking and complies with the requirements of the applicable European Union harmonisation legislation.
- A copy of the **EU Declaration of Conformity** is available from the importer at the address stated above or at the e-mail address info@rotorاما.cz.
- **Product identification:** the type designation (0702 30000KV) is marked on the housing (bell) of each motor.

8.3 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>.

9. 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 8.1.
- 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.