GTS V3 0702 27000Kv

RCinPower – brushless motor
User manual



Before mounting and first use, read the entire manual, in particular the safety instructions in Chapter 3.

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1. Product description

1.1 Intended use

RCinPower GTS V3 0702 27000Kv is a small brushless motor designed for the smallest FPV drones – **1S tinywhoops of the 65 mm class** and toothpicks. The motor is mounted on the drone frame and connected to the electronic speed controller (ESC), which on these drones is usually part of an AIO flight controller (FC).

The motor has a **Unibell** bell for better durability and **ball bearings** for a longer service life. The cables are terminated with a connector and are **soldered to a printed circuit board** on the underside of the motor. If the cable is torn off in a crash, the risk of damaging the motor windings is minimised – you can easily solder a new cable to the board and keep flying.



GTS V3 0702 27000Kv

1.2 Technical data and package contents

Parameter	Value
Product designation	RCinPower GTS V3 0702 27000Kv
Motor size	0702
Kv	27000
Configuration	9N12P
Intended for	1S 65 mm tinywhoops and toothpicks
Shaft diameter	1 mm
Mounting holes	6.6 mm, M1.4 screws
Cables	3 cm, terminated with a connector, soldered to the motor PCB
Bell / bearings	Unibell / ball bearings
Package contents	1× motor, 1× screw set
Not included	propellers, ESC / flight controller (FC), battery, frame, tools

2. Mounting and use

2.1 What else you need

- A 1S 65 mm tinywhoop or toothpick frame with motor mounting holes matching Chapter 1.2.
- An electronic speed controller (ESC), on small drones usually integrated in an AIO flight controller (FC), with a connector matching the motor connector.
- Propellers designed for a 1 mm shaft.
- A small screwdriver matching the supplied screws and, for cable repairs, a fine-tip soldering iron.

2.2 Mounting the motor on the frame

① Place the motor on the frame so that the mounting holes of the motor line up with the holes in the frame and the cable points towards the centre of the drone, to the flight controller.

② Fasten the motor with the screws from the supplied set. Tighten the screws gently – the M1.4 thread is very fine and strips easily.

③ The screw must not be too long. If it protrudes through the frame further than the thread depth in the motor, it can touch the windings and short-circuit or damage the motor. After mounting, check that the bell turns freely and easily and nothing rubs.

※ Always mount the motor on the frame without the propeller and with the battery disconnected.

2.3 Connecting to the ESC

Plug the motor connector into the corresponding motor connector on the flight controller (FC) or ESC. Observe the motor position according to the diagram of your flight controller (motor 1–4). Route the cable so that it cannot get into the propeller and is not under tension – in a crash, the connector will then pull out more easily than the cable from the circuit board.

2.4 Checking the direction of rotation

The direction of rotation of a brushless motor is determined by the order of the phases through which the ESC drives it. **Always perform the check without propellers**:

① Connect the drone to a computer and, in the flight controller configuration (e.g. in Betaflight, *Motors* tab), spin up each motor individually.

② Compare the direction of rotation with the diagram of the selected motor layout (normal or reversed direction – *Motor direction is reversed*).

③ Reverse any motor that spins the wrong way in the ESC configurator. If the cables are soldered, the direction can also be changed by swapping any two of the three phase wires.

2.5 Fitting the propeller

Push the propeller onto the 1 mm shaft straight and all the way down, without forceful twisting. Support the shaft from below while doing so, so that it does not bend and the bell is not pushed out of the bearings. Make sure the propeller direction (CW / CCW) matches the direction of rotation of the motor.

3. Safety instructions

- Rotating propellers can cause injury, especially to eyes and fingers. Before connecting the battery, remove the propellers or make sure the motors cannot spin up unintentionally.
- Disconnect the battery whenever you work on the drone (mounting, soldering, configuration). For bench tests, use a setup without propellers.
- The motor is designed to be powered by the ESC of a drone with a **single-cell (1S)** battery. A fully charged Li-Po cell has 4.20 V, a LiHV cell 4.35 V; end the flight at 3.5 V per cell at the latest.
- The motor may be hot after a flight. Let it cool down before touching it.
- The motor contains strong permanent magnets. Keep it away from metal filings and small iron objects that could be attracted into the air gap.
- Do not use a motor with a bent shaft, damaged windings or damaged cable insulation – there is a risk of a short circuit and damage to the ESC.
- The product contains small parts (screws). Keep it out of the reach of children.

The operation of the drone in which you install the motor is governed by the regulations of the country in which you fly the drone. In the European Union, Regulation (EU) 2019/947 applies in particular, but national rules (registration, zones, insurance) differ from country to country. **The law of the country in which the product is operated is always decisive.**

4. Maintenance and repairs

4.1 After every flight

- Check that the bell turns freely and smoothly, without rubbing and without play.
- Remove grass, hair, dust and small debris from the motor, especially around the shaft and in the air gap.
- Check that the shaft is not bent and that the screws holding the motor on the frame are not loose.
- Check the cable and the solder joints on the underside of the motor.

4.2 Replacing a torn-off cable

The cables are soldered to a circuit board on the underside of the motor, so a torn-off or broken cable can easily be replaced:

① Disconnect the battery and remove the propeller. If necessary, unscrew the motor from the frame.

② Remove the remains of the old wire and the solder from the pads and clean the pads.

③ Tin the new wire and solder it quickly with a small amount of solder so that the heat does not pass into the windings. The pads must not be bridged with solder.

④ Before fitting the propeller, check the function and direction of rotation of the motor (Chapter 2.4).

4.3 Troubleshooting

Problem	Possible cause and solution
Motor does not spin or stutters	Check that the connector is fully inserted and the cable is not broken. Check the solder joints on the motor PCB.
Motor spins in the wrong direction	Change the direction in the ESC configurator (Chapter 2.4).
Motor rubs or is noisy	Debris in the air gap, bent shaft or worn bearings. Clean the motor; do not use a bent or damaged motor.
Motor gets excessively hot after a flight	Check that the bell turns freely, that the propeller is not damaged and that the screws do not reach the windings.
Drone vibrates	Damaged or unevenly fitted propeller, bent shaft, loose motor mounting.

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 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.

6. 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 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.