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Goolsky XES2658751801819QC

Goolsky Surpass 2204 1400KV Brushless Motor

Instruction Manual

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1. Introduction

This manual provides essential information for the safe and efficient use of your Goolsky Surpass 2204 1400KV Brushless Motor. This high-performance motor is designed for RC airplane fixed-wing applications, offering a balance of quality and performance. Please read this manual thoroughly before installation and operation to ensure proper function and longevity of the product.



Figure 1: Overview of the Goolsky Surpass 2204 1400KV Brushless Motor.

2. Safety Information

Always observe the following safety precautions when handling and operating brushless motors:

- Keep hands, face, and loose clothing away from rotating parts, especially the propeller, during operation.
- Ensure all connections are secure before applying power. Loose connections can cause damage or injury.
- Operate the motor within its specified voltage and current limits to prevent overheating and damage.
- Use appropriate safety gear, such as eye protection, when working with RC components.
- Store the motor in a dry, cool place, away from direct sunlight and moisture.
- This product is not a toy. Keep out of reach of children.

3. Setup and Installation

3.1 Motor Features

- **Design:** 14 Pole 12 slot hi-torque motor design.
- **Construction:** CNC machined 6061 T6 billet aluminum heatsink can.
- **Efficiency:** High purity copper windings maximize efficiency.
- **Bearings:** High RPM ABEC5 oversized bearings for durability.
- **Rotor:** Precision balanced rotor for smoothness and maximum RPM.
- **Stator:** Super-thin (0.2mm) laminations for maximum energy conversion.

3.2 Mounting the Motor

The motor features a robust CNC machined 6061 T6 billet aluminum heatsink can, providing a secure and efficient mounting surface. Ensure the motor is firmly attached to your RC airplane's motor mount using appropriate screws. Refer to the dimensions provided in Figure 2 for precise fitment.



Figure 2: Motor shaft and mounting points detail.



Figure 3: Technical drawing with motor dimensions.

3.3 Electrical Connections

Connect the motor to your Electronic Speed Controller (ESC) using the three 3.5mm golden banana connectors. Ensure a secure and correct connection to avoid damage to the motor or ESC. The order of connection for brushless motors typically determines the rotation direction; if the motor spins in the wrong direction, swap any two of the three wires.



Figure 4: Motor showing the 3.5mm golden banana connectors.

3.4 Propeller Installation

Attach the recommended propeller to the motor shaft. Ensure the propeller is balanced and securely fastened. Recommended propeller sizes for this motor include 7.5 * 3.5, 8 * 4, or 9 * 5. Always check for proper propeller rotation direction before flight.



Figure 5: Diagram illustrating motor and propeller assembly.

4. Operating Instructions

The Goolsky Surpass 2204 1400KV motor is designed for optimal performance within its specified parameters. Ensure your power source (battery) and ESC are compatible with the motor's voltage and current requirements.

- **Voltage Range:** 7-15V
- **Max Amps:** 13A
- **Watt:** 160W
- **KV (RPM/Volt):** 1400KV

Always perform a pre-flight check to ensure all components are functioning correctly and securely. Gradually increase throttle to check motor response and propeller balance. Avoid prolonged operation at maximum throttle without adequate cooling, especially in enclosed spaces.

5. Maintenance

Regular maintenance ensures the longevity and optimal performance of your brushless motor:

- **Cleaning:** Keep the motor free from dirt, dust, and debris. Use compressed air or a soft brush to clean the motor, especially around the bearings and stator.
- **Inspection:** Periodically inspect the motor for any signs of wear, such as damaged wires, loose connections, or unusual noise from the bearings.
- **Bearings:** The motor is equipped with high RPM ABEC5 oversized bearings for reliability. If unusual noise or resistance is detected, the bearings may need lubrication or replacement. Consult a qualified technician if unsure.
- **Storage:** When not in use, store the motor in a clean, dry environment.

6. Troubleshooting

If you encounter issues with your Goolsky Surpass 2204 1400KV motor, consider the following:

- **Motor Not Spinning:**
  - Check all electrical connections between the motor, ESC, and battery.
  - Ensure the battery is charged and providing sufficient voltage.
  - Verify the ESC is properly calibrated and receiving signals from the receiver.
  - Inspect motor wires for breaks or shorts.
- **Motor Runs Rough or Vibrates Excessively:**
  - Check for a bent motor shaft or damaged propeller.
  - Ensure the propeller is balanced and securely attached.
  - Inspect motor bearings for wear or damage.
  - Verify that the motor is securely mounted and not loose.
- **Low Power or Overheating:**
  - Ensure the propeller size is within the recommended range. An oversized propeller can overload the motor.
  - Check battery capacity and discharge rate.
  - Verify ESC settings are appropriate for the motor.
  - Ensure adequate airflow for cooling the motor and ESC.

For advanced troubleshooting, refer to your Electronic Speed Controller (ESC) manual or consult with experienced RC enthusiasts.

7. Specifications

Feature	Specification
Item No.	C2204-25
KV (RPM/Volt)	1400KV
Watt	160W
Voltage Range	7-15V
Max Amps	13A
IO	0.5A

Feature	Specification
Resistance	0.307 Ω
Motor Size	Ø28 * 22mm
Stator Size	2204
Recommended Propeller	7.5 * 3.5 / 8 * 4 / 9 * 5
Connector	3.5mm golden banana connector
Weight	28.7g
Material	Aluminum (6061 T6 billet heatsink)

8. Warranty & Support

8.1 Warranty Information

Specific warranty details for the Goolsky Surpass 2204 1400KV Brushless Motor are typically provided at the point of purchase or on the manufacturer's official website. Please retain your proof of purchase for any warranty claims. The warranty generally covers manufacturing defects under normal use conditions.

8.2 Customer Support

For technical assistance, troubleshooting, or further inquiries, please visit the official Goolsky store or contact their customer support channels. You can find more information and contact details on the Goolsky Store on Amazon.

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