BGNing A2212

BGNing A2212 1400KV Brushless Motor and 30A ESC Instruction Manual

Introduction

This manual provides essential information for the safe and effective use of your BGNing A2212 1400KV Brushless Outrunner Motor and DT-30A Brushless Electronic Speed Controller (ESC) combination. This system is designed for various remote-controlled aircraft applications, including quadcopters and other RC models. Please read these instructions carefully before installation and operation.

Image: The BGNing A2212 1400KV Brushless Motor and DT-30A ESC unit, showing both components connected.

Product Components

The package typically includes:

- 1 x BGNing A2212 1400KV Brushless Outrunner Motor
- 1 x BGNing DT-30A Brushless Electronic Speed Controller (ESC)

Specifications

A2212 1400KV Brushless Motor

KV Rating:	1400KV
Max Efficiency:	80%
Max Efficiency Current:	4-10A (>75%)
Current Capacity:	12A/60s

No Load Current @ 10V:	0.5A
Number of Cells (Li-Poly):	2-3 Li-Poly
Motor Dimensions:	27.5 x 30mm
Shaft Diameter:	3.17mm
Weight:	47g

Image: Top view of the A2212 1400KV Brushless Motor, showing the gold casing and internal windings.

DT-30A Brushless ESC

Current:	30A
BEC Output:	5V/3A
Number of Cells (Li-Poly):	2-4S Li-Poly

Image: Close-up view of the DT-30A Brushless ESC, showing the '30A' rating and BEC specifications.

Setup

The ESC and motor are provided without pre-soldered bullet connectors for the motor or battery connectors for the ESC. Users will need to solder appropriate connectors (e.g., bullet connectors for motor wires, XT60 or Deans for battery) to integrate these components into their RC system.

Connection Steps:

1. **Solder Connectors:** Solder suitable bullet connectors to the three motor wires and the three corresponding wires on the ESC. Solder a battery connector (e.g., XT60) to the power input wires (red and black) of the ESC.
2. **Motor to ESC:** Connect the three motor wires to the three ESC output wires. The order of connection may affect motor rotation direction; this can be adjusted later by swapping any two motor wires.
3. **ESC to Receiver:** Connect the signal cable from the ESC (usually a three-wire servo-style connector) to the throttle channel of your RC receiver.
4. **Mounting:** Securely mount the motor and ESC in your RC model, ensuring adequate ventilation for the ESC.

Image: The DT-30A Brushless ESC showing its input and output wires, ready for connector soldering.

Operating Instructions

The ESC comes pre-programmed from the manufacturer and generally does not require additional programming. However, it is crucial to calibrate the ESC with your remote control's throttle range before first use.

ESC Calibration Steps:

WARNING: Do not install propellers on the motor when calibrating the ESC. This is a critical safety measure to prevent injury.

1. **Prepare Remote Control:** Turn on your remote control and adjust the throttle stick to its highest position.
2. **Power On ESC:** Connect the battery to the ESC. You will hear a slow beep sound.
3. **Disconnect Power:** After hearing the slow beep, disconnect the battery from the ESC.
4. **Reconnect Power:** Reconnect the battery to the ESC. You should hear two distinct beeps.
5. **Adjust Throttle to Lowest:** Immediately after hearing the two beeps, move the throttle stick on your remote control to its lowest position.
6. **Confirmation:** You will hear a long beep, indicating that the ESC calibration is complete.

7. **Power Off:** Disconnect the battery from the ESC and turn off your remote control.

The ESC is now calibrated and ready for use with your remote control.

Maintenance

Regular maintenance ensures the longevity and reliable performance of your motor and ESC.

- **Inspection:** Periodically inspect all wires and connectors for signs of wear, fraying, or damage. Ensure all connections are secure.
- **Cleaning:** Keep the motor and ESC free from dirt, dust, and moisture. Use a soft brush or compressed air to clean components.
- **Motor Bearings:** While brushless motors are generally low maintenance, listen for unusual noises from the motor, which could indicate worn bearings.
- **ESC Cooling:** Ensure the ESC has adequate airflow during operation to prevent overheating.

Troubleshooting

If you encounter issues, consider the following common troubleshooting steps:

- **Motor Not Spinning:**
  - Check all connections between the motor, ESC, receiver, and battery.
  - Ensure the battery is fully charged.
  - Re-perform the ESC calibration procedure.
  - Verify that the throttle channel on your remote control is functioning correctly.
- **ESC Beeping Continuously/Irregularly:**
  - This often indicates a low battery voltage or an issue with the motor connection. Check battery charge and motor wire connections.
- **Motor Runs in Wrong Direction:**
  - Swap any two of the three motor wires connected to the ESC. This will reverse the motor's rotation direction.
- **Overheating:**
  - Ensure proper ventilation for the ESC.
  - Check if the propeller size is too large for the motor/ESC combination, causing excessive load.

Safety Information

Operating RC components requires adherence to safety guidelines to prevent injury and damage.

- **Propeller Safety:** Always remove propellers before performing any setup, calibration, or maintenance on the motor or ESC. Rotating propellers can cause severe injury.
- **Battery Handling:** Use appropriate Li-Po batteries and chargers. Never overcharge or over-discharge Li-Po batteries. Store them in a safe, fire-resistant location.
- **Ventilation:** Ensure the ESC and motor have adequate airflow to prevent overheating during operation.

- **Electrical Connections:** Double-check all electrical connections before powering on. Incorrect polarity can damage components.
- **Supervision:** Always operate RC models under supervision, especially when new to the hobby.

Warranty and Support

This product comes with a limited warranty. For specific details regarding the warranty period and coverage, please refer to the product packaging or contact BGNing directly.
For technical support, troubleshooting assistance beyond this manual, or warranty claims, please contact the manufacturer, BGNing, through their official channels or the retailer from whom the product was purchased.