Kunray MY1020

Kunray MY1020 Electric Brushless DC Motor User Manual

Model: MY1020 | Brand: Kunray

1. Introduction

This manual provides essential instructions for the safe and efficient use of your Kunray MY1020 Electric Brushless DC Motor. Please read this manual thoroughly before installation and operation to ensure proper function and longevity of the motor. This motor is designed for applications such as electric scooters, mini electric motorcycles, go-karts, and other DIY electric vehicle projects.

Important Safety Notice: This product is not suitable for individuals under 14 years of age. Always adhere to local laws and regulations regarding electric vehicle use. Kunray is not responsible for consequences arising from unlawful use. Exercise caution and yield to pedestrians. Riding on sidewalks may be prohibited in certain areas.

2. Safety Information

Observe the following safety guidelines to prevent injury or damage to the motor:

- **Electrical Safety:** Ensure all wiring connections are secure and correctly insulated. Disconnect power before performing any maintenance or installation.
- **Heat Warning:** The motor can become hot during operation. Avoid direct contact with the motor body during or immediately after use to prevent burns.
- **Mechanical Hazards:** Be aware of moving parts, such as the sprocket and chain. Keep hands, clothing, and other objects clear of rotating components.
- **Environmental Protection:** The motor has an IP54 protection level, offering daily protection against rain splashes. It is not designed to be submerged in water.
- **Installation:** Follow all installation instructions carefully. Incorrect installation can lead to motor damage or operational failure.

Image Description: A yellow warning sign with black text. It lists risk factors such as mechanical damage, electric shock, squeeze collision, object strike, and other injuries. It also states, "Please read the instructions carefully before operation" and "Dear customers, thank you for purchasing our products. If you encounter problems, please communicate with customer service to solve them. Your satisfaction is our service tenet."

Image Description: An image illustrating the IP54 protection level of the motor. It shows rain splashes on a surface, indicating protection against daily rain splashes but explicitly stating it cannot be directly soaked in water. This highlights the motor's industrial-grade protection against environmental elements.

3. Specifications

The Kunray MY1020 Brushless DC Motor offers robust performance for various electric vehicle applications. Key specifications are detailed below:

Feature	Specification
Model	MY1020
Rate Voltage	72V DC (Compatible with 48V-72V systems)
Rate Power	3000W (Peak)
Rate Current	50A
Rate Speed	4900 RPM
Max Speed	6700 RPM
Torque	5.4 N.m
Load Weight Capacity	Approximately 150-200 KG
Sprocket Type	T8F 11-Teeth Sprocket
Material	Aluminum Body, Full Copper Coil

Feature	Specification
Cooling	Naturally Air Cooled, Integrated Heat Sink
Protection Level	IP54
Dimensions (Approx.)	Length: 134mm (5.27in), Diameter: 107mm (4.21in)

Image Description: A diagram illustrating the dimensions of the Kunray MY1020 motor. Key measurements shown are a length of 134mm (5.27in) and a diameter of 107mm (4.21in). Detailed technical drawings of the motor's front and side profiles are also included, showing the T8F sprocket and mounting points.

4. Setup and Installation

Proper installation is crucial for the motor's performance and safety. This section outlines general steps. Specific wiring diagrams and mounting procedures may vary based on your application (e.g., scooter, go-kart). Always consult a qualified technician if you are unsure about any steps.

4.1 Unpacking and Initial Inspection

Carefully remove the motor from its packaging. Inspect for any visible damage during transit. The package typically includes one motor unit.

Image Description: The Kunray MY1020 Electric Brushless DC Motor, silver in color with cooling fins, is shown with its attached wiring harness. The motor features a sprocket on one end.

4.2 Mounting the Motor

1. Identify a secure and stable mounting location on your vehicle frame. Ensure adequate clearance for the motor, chain, and any associated components.
2. Use appropriate bolts and fasteners to firmly attach the motor to the frame. Avoid over-tightening, which can strip threads or damage the motor casing.
3. Ensure the motor is aligned correctly with the driven wheel's sprocket to prevent chain misalignment and excessive wear.

Image Description: This image displays the Kunray MY1020 motor and its heat sink, alongside examples of its installation in different electric vehicles. These include a go-kart, an electric scooter, and another small electric vehicle, demonstrating the motor's wide application range.

4.3 Electrical Connections

The MY1020 is a brushless DC motor and requires a compatible brushless motor controller (not included with the motor unit). Refer to your controller's manual for specific wiring instructions.

- Connect the three phase wires from the motor to the corresponding phase terminals on your brushless controller.
- Connect the Hall sensor wires (typically a smaller connector with multiple wires) from the motor to the Hall sensor input on the controller.
- Ensure all connections are insulated to prevent short circuits.
- Connect the main power leads from your battery pack (72V recommended, 48-72V compatible) to the controller's power input.

5. Operating Instructions

Once the motor is correctly installed and wired with a compatible controller and power source, follow these general operating guidelines:

1. **Pre-Operation Check:** Before each use, inspect all connections, the chain, and mounting points to ensure they are secure.
2. **Power On:** Activate the power supply to your controller. The motor should remain stationary until throttle input is applied.
3. **Throttle Control:** Gradually apply throttle to initiate motor rotation. Avoid sudden, full-throttle inputs, especially from a standstill, as this can stress the motor and controller.
4. **Monitoring:** During operation, listen for unusual noises and observe for excessive heat. If any anomalies occur, cease operation immediately and troubleshoot.
5. **Power Off:** After use, ensure the throttle is released and then turn off the main power supply to the controller and motor.

Image Description: The Kunray MY1020 motor is displayed with four icons beneath it, representing its key features: "High Torque," "High Power," "High Energy Efficiency," and "Easy to Install." This visually communicates the motor's performance characteristics.

6. Maintenance

Regular maintenance helps ensure the longevity and optimal performance of your Kunray MY1020 motor.

- **Cleaning:** Keep the motor free from dirt, dust, and debris. The detachable heat sink design allows for convenient cleaning. Use a dry cloth or compressed air.
- **Inspection:** Periodically check all electrical connections for tightness and signs of corrosion. Inspect the motor casing for any cracks or damage.

- **Sprocket and Chain:** Ensure the sprocket teeth are not excessively worn. Lubricate the chain regularly according to your vehicle's recommendations.
- **Heat Sink:** Verify that the heat sink fins are clear of obstructions to allow for efficient cooling.
- **Storage:** When not in use for extended periods, store the motor in a dry, cool environment, protected from direct sunlight and moisture.

Image Description: This image displays two views of the Kunray MY1020 motor, highlighting its upgraded design. The top view shows the motor with an integrated heat sink for efficient cooling. The bottom view illustrates the motor's detachable design, allowing for easier cleaning and maintenance. An arrow points to a thermal grease pad, indicating its presence for improved heat transfer.

7. Troubleshooting

This section addresses common issues you might encounter with your Kunray MY1020 motor. For complex problems, consult a qualified technician.

Problem	Possible Cause	Solution
Motor does not turn on	No power to controller; Loose electrical connections; Faulty controller; Damaged motor wiring.	Check battery charge and connections; Verify all wiring is secure; Test controller (if possible); Inspect motor wires for damage.
Motor runs intermittently or with reduced power	Low battery voltage; Poor electrical connections; Hall sensor issue; Controller malfunction.	Charge battery; Check and secure all connections; Inspect Hall sensor wiring; Consult controller manual or technician.
Motor makes unusual noises or vibrates excessively	Misaligned chain/sprocket; Loose mounting; Internal motor damage; Bearing wear.	Check chain alignment and tension; Tighten mounting bolts; Discontinue use and seek professional inspection if internal damage is suspected.
Motor overheats	Excessive load; Insufficient cooling; Prolonged high-power operation; Obstructed heat sink.	Reduce load; Ensure adequate airflow around motor; Clear heat sink fins; Allow motor to cool down between heavy uses.

8. Warranty and Support

For warranty information and customer support, please refer to the terms and conditions provided at the time of purchase or contact Kunray customer service directly. Keep your purchase receipt as proof of purchase.
Contact Information: For assistance, please visit the Kunray Store on Amazon or refer to the contact details provided with your product documentation.

9. Disclaimer

Kunray Intelligent Tech Co., Ltd. is committed to the research, development, production, and sales of high-end electronic controller accessories. Please note that Kunray motors are designed for off-road use only. Always check and comply with your local laws before riding. Kunray is not liable for any consequences due to unlawful use. This device is not a toy. Please keep it away from children.