

Kunray motor 003

Kunray Electric Brushless DC Motor 60V 2000W Instruction Manual

Model: motor 003

1. INTRODUCTION

This manual provides essential information for the safe and efficient operation, installation, and maintenance of your Kunray Electric Brushless DC Motor (BLDC) 60V 2000W. This high-speed, powerful mid-drive motor is designed for various electric vehicle applications, including go-karts, electric scooters, mini motorcycles, and other DIY projects. Please read this manual thoroughly before use to ensure proper handling and to maximize the lifespan of your motor.



Figure 1: Kunray 60V 2000W Brushless DC Motor. This image displays the overall appearance of the motor unit.

2. SAFETY INFORMATION

Important Safety Warnings:

- This product is not suitable for individuals under 14 years of age.
- The motor is designed for off-road use only. It is not intended for use on public roads. Always check and comply with local traffic regulations in your area.
- Ensure all electrical connections are secure and properly insulated to prevent electric shock.
- Avoid mechanical damage to the motor and its components.
- Protect the motor from severe impacts or collisions.
- While the motor offers IP54 protection against rain splashes, it cannot be directly soaked in water. Avoid submersion.
- Always wear appropriate safety gear when operating vehicles equipped with this motor.

For any issues, please contact customer service. Your satisfaction is our service tenet.

3. PRODUCT FEATURES

- **High Performance:** 60V 2000W Brushless DC Motor with a rated no-load speed of 4250 RPM and a maximum speed of 5300 RPM. Rated current is 35A.
- **Efficient Design:** Smaller and lighter body compared to traditional motors, ensuring higher power efficiency.
- **Durable Construction:** Features a high-quality aluminum shell for sturdiness and reliability.
- **Advanced Heat Dissipation:** Equipped with a snap-in radiator that reduces motor heat by up to 30%, extending the motor's service life. The radiator is made of extruded aluminum for fast heat conduction.
- **Removable Heatsink:** The heatsink is detachable, allowing for adaptability to different vehicle models. A thermal grease pad is included to ensure effective heat transfer.
- **Industrial Grade Protection:** IP54 level protection provides daily defense against rain splashes.
- **Versatile Application:** Ideal for electric scooters, mini motorcycles, dirt bikes, electric go-karts, quad ATVs, and various DIY electric vehicle projects.

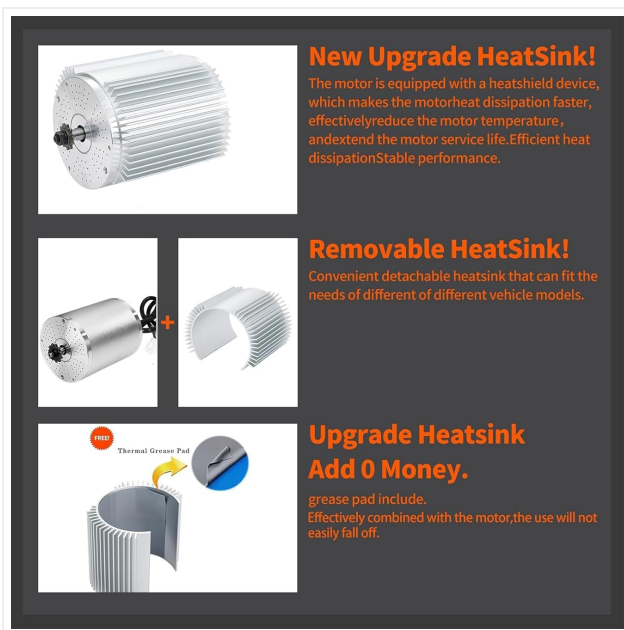


Figure 2: Motor with integrated heatsink. This image shows the motor equipped with its heat dissipation device.

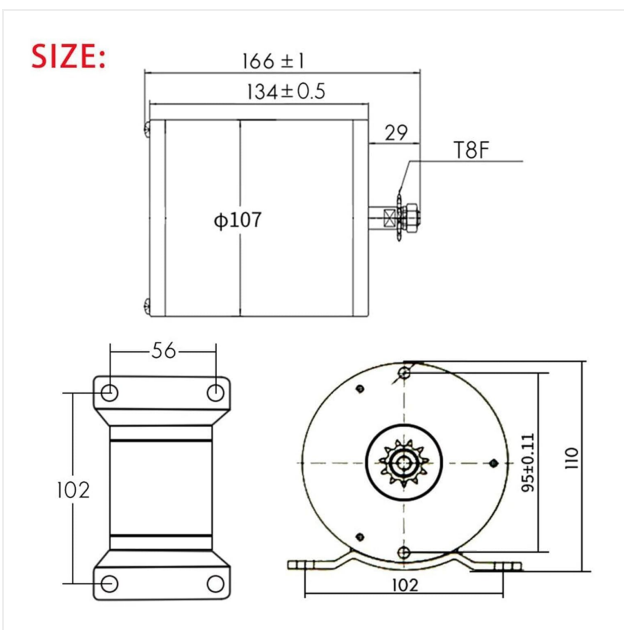


Figure 3: Motor and removable heatsink. This image illustrates the motor and its detachable heatsink component.



Figure 4: Heatsink with thermal grease pad. This image shows the heatsink along with the included thermal grease pad for improved heat transfer.



Figure 5: Motor with IP54 protection. This image highlights the motor's industrial-grade protection against environmental elements.



Figure 6: Internal motor view. This image provides a cutaway view of the motor, showcasing its high-quality copper core.



Figure 7: Wide application examples. This image demonstrates the motor's suitability for various electric vehicle types, including go-karts and mini motorcycles.

4. SPECIFICATIONS

Attribute	Value
Brand	Kunray
Model Number	motor 003
Voltage	60 Volts
Power (Horsepower)	2000 Watts

Attribute	Value
Rated Speed (No-load)	4250 RPM
Maximum Speed	5300 RPM
Rated Current	35A
Material	Aluminum
Item Weight	11 Pounds (approx. 5 kg)
Wiring Length	Approx. 150 cm (59 inches)
Protection Level	IP54 (Daily protection against rain splashes)



Figure 8: Motor dimensions. This technical drawing provides precise measurements for installation planning.

5. PACKAGE CONTENTS

The package includes the following items:

- 1 x Kunray Electric Brushless DC Motor 60V 2000W (Model: motor 003)
- 1 x Removable Heatsink
- 1 x Thermal Grease Pad

Note: Additional components such as controllers, throttles, chains, or sprockets are typically sold separately unless specified in a complete kit.

6. SETUP AND INSTALLATION

The Kunray BLDC motor is designed for easy installation, especially with its integrated mounting bracket. Follow these general guidelines for setup:

1. **Mounting:** Securely mount the motor to your vehicle's frame using appropriate fasteners. Refer to Figure 8 for motor dimensions to ensure proper fitment and clearance. The motor's mounting bracket facilitates this process.
2. **Heatsink Installation:** Attach the removable heatsink to the motor. Ensure the thermal grease pad is correctly positioned between the motor and the heatsink for optimal heat transfer. The snap-in design ensures a secure fit.
3. **Electrical Connections:** Connect the motor to a compatible 60V brushless DC motor controller (not included). Ensure all wiring connections are correct according to the controller's manual and are properly insulated. The motor's wiring length is approximately 150cm (59 inches).
4. **Power Source:** Connect the controller to a suitable 60V battery pack (not included). Verify polarity before making final connections.
5. **Throttle and Accessories:** Connect your throttle and any other necessary accessories (e.g., ignition switch, brake levers with cut-off switches) to the controller as per the controller's instructions.
6. **Pre-Operation Check:** Before initial operation, double-check all connections, mounting points, and ensure there are no loose wires or obstructions.

Consult a qualified technician if you are unsure about any installation steps.

7. OPERATING INSTRUCTIONS

Once the motor is correctly installed and connected to a compatible controller and power source, follow these general operating procedures:

1. **Power On:** Activate the main power switch for your electric vehicle.
2. **Throttle Control:** Gently apply the throttle to initiate motor rotation. The motor provides high torque and high speed for responsive acceleration.
3. **Monitoring:** Pay attention to any unusual noises, vibrations, or excessive heat during operation. If any anomalies occur, power off immediately and inspect the system.
4. **Environmental Conditions:** The IP54 protection allows for use in light rain conditions, but avoid heavy downpours or submerging the motor in water.
5. **Power Off:** Always turn off the main power switch when the vehicle is not in use or when performing any maintenance.

8. MAINTENANCE

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

- **Cleaning:** Periodically clean the exterior of the motor and heatsink to remove dirt, dust, and debris. This helps maintain efficient heat dissipation. Use a dry cloth or soft brush.
- **Heatsink Check:** Ensure the heatsink remains securely attached and free from obstructions. The snap-in radiator is crucial for reducing motor temperature and prolonging its life.
- **Connection Inspection:** Regularly check all electrical connections for tightness and signs of wear or corrosion. Re-tighten or replace as necessary.
- **Physical Inspection:** Inspect the motor casing for any signs of damage, cracks, or deformation. Address any issues promptly.
- **Storage:** When not in use for extended periods, store the motor in a dry, clean environment away from direct sunlight and extreme temperatures.

9. TROUBLESHOOTING

This section provides solutions to common issues you might encounter. For more complex problems, contact customer support.

Problem	Possible Cause	Solution
Motor does not start	No power to controller; Loose electrical connections; Faulty controller or battery.	Check battery charge and connections. Ensure main power switch is ON. Inspect all wiring for secure connections. Test controller and battery if possible.
Motor runs intermittently	Loose wiring; Overheating; Controller issue.	Check all wiring connections. Allow motor to cool down if it feels hot. Consult controller manual for diagnostic steps.
Motor makes unusual noise or vibration	Loose mounting; Internal damage; Bearing issue.	Verify motor mounting bolts are tight. Discontinue use immediately. Contact customer support for inspection.
Reduced power or speed	Low battery charge; Controller settings; Overload.	Charge battery fully. Check controller settings. Ensure the load on the motor is within its specifications.
Motor overheating	Heatsink obstructed or improperly installed; Excessive load; Prolonged high-power operation.	Ensure heatsink is clean and properly attached with thermal grease. Reduce load or operating time. Allow motor to cool.

10. CUSTOMER SUPPORT

For any questions, technical assistance, or issues not covered in this manual, please contact Kunray customer service. We are committed to providing support and ensuring your satisfaction with our products.

You can visit the official Kunray store on Amazon for more information and contact options: [Kunray Store](#)

