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## Kuayi MY1016Z

# Kuayi MY1016Z Brushed DC Gear Motor User Manual

Model: MY1016Z

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## 1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of the Kuayi MY1016Z Brushed DC Gear Motor. This motor is specifically designed for use in electric wheelchairs, offering reliable and efficient performance. Please read this manual thoroughly before installation and operation to ensure proper use and to prevent damage to the product or injury.

## 2. SAFETY INFORMATION

Always observe the following safety precautions to reduce the risk of injury or damage:

- **Electrical Safety:** Ensure all electrical connections are made by a qualified technician. Disconnect power before performing any installation, maintenance, or troubleshooting.
- **Proper Voltage:** Only connect the motor to a power source that matches its specified voltage (24V or 36V, depending on the model variant).
- **Secure Mounting:** The motor must be securely mounted to the wheelchair frame to prevent movement during operation.
- **Avoid Overload:** Do not exceed the motor's rated torque or power output. Overloading can lead to overheating and premature failure.
- **Keep Clear:** Ensure no clothing, hair, or other objects can become entangled in moving parts of the motor or wheelchair.
- **Environmental Conditions:** Avoid exposing the motor to excessive moisture, dust, or extreme temperatures.

## 3. PRODUCT OVERVIEW

The Kuayi MY1016Z is a brushed DC gear motor designed for electric wheelchair applications. It features a robust construction for durability and a gear reduction system for high torque output at low speeds. The motor is designed for easy installation and reliable performance.

## Key Features:

- **Efficient Performance:** Rated torque of 0.80 N·m and a rated speed of 120 RPM, with motor efficiency exceeding 76%.
- **Flexible Rotation:** The motor's direction of rotation (clockwise or counter-clockwise) can be changed by reversing the power cord connections.
- **Low Noise:** Engineered for quiet operation, enhancing user comfort.
- **High Reliability:** Designed for long-term use with minimal maintenance.

## Components:



Figure 3.1: Side view of the Kuayi MY1016Z DC gear motor, showing the main housing and output shaft.



Figure 3.2: View of the motor highlighting the electrical connector for power input.



Figure 3.3: Rear view of the motor, showing the fan cover and mounting points.



Figure 3.4: Close-up of the motor's output shaft and the four-pin electrical connector.



Figure 3.5: Dimensional diagram of the motor's output shaft, indicating length (45mm) and diameter (17mm).



Figure 3.6: Example of the Kuayi MY1016Z motor integrated into an electric wheelchair system.

## 4. SPECIFICATIONS

The Kuayi MY1016Z motor is available in different voltage configurations. Please refer to the specific model variant for exact specifications.

### 4.1. 24V 250W Variant

Parameter	Value
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Parameter	Value
Rated Power	250W
Rated Voltage	24V
Unload Current	Less than 2.2A
Rated Torque	0.80 N·m
Rated Speed	120 RPM
Rated Current	Less than 13.4A
Motor Efficiency	More than 76%

#### 4.2. 36V 250W Variant (General Information)

Parameter	Value
Rated Power	250W
Rated Voltage	36V
Unload Current	Less than 2.0A
Rated Torque	0.80 N·m
Rated Speed	120 RPM
Rated Current	Less than 9.0A
Motor Efficiency	More than 76%

#### 4.3. General Physical Specifications

Parameter	Value
Product Dimensions	7.87"W x 6.3"H
Item Weight	3.2 Kilograms (7.04 pounds)
Material	Alloy Steel
Shaft Diameter	17 mm (0.67 inches)
Shaft Length	45 mm (1.77 inches)

### 5. SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of the motor. It is recommended that installation be performed by a qualified technician.

#### 5.1. Pre-Installation Checks

- Verify that the motor's voltage (24V or 36V) matches the wheelchair's power system.

- Inspect the motor for any visible damage from shipping.
- Ensure all necessary mounting hardware is available and compatible with the wheelchair frame.

## 5.2. Mounting the Motor

1. Position the motor on the designated mounting points of the wheelchair frame.
2. Align the motor's mounting holes with those on the frame.
3. Secure the motor using appropriate bolts, washers, and nuts. Ensure all fasteners are tightened to the manufacturer's specifications to prevent vibration and loosening during operation.
4. Confirm that the motor's output shaft aligns correctly with the wheelchair's drive mechanism (e.g., wheel axle).

## 5.3. Electrical Connections

1. **Disconnect Power:** Ensure the wheelchair's battery is disconnected before making any electrical connections.
2. **Connect Power Wires:** Connect the motor's power wires to the wheelchair's control system. Pay close attention to polarity. The motor's rotation direction can be changed by reversing the polarity of the power connection.
3. **Secure Connections:** Use appropriate connectors and ensure all electrical connections are secure and insulated to prevent short circuits.
4. **Cable Management:** Route cables away from moving parts and secure them to prevent chafing or damage.

## 6. OPERATION

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The Kuayi MY1016Z motor is designed to be controlled by a compatible joystick or control system typically found in electric wheelchairs.

### 6.1. Initial Power-Up

1. After installation, reconnect the wheelchair's battery.
2. Turn on the wheelchair's main power switch.
3. Perform a low-speed test in a safe, open area to confirm proper motor function and direction.

### 6.2. Direction Control

The motor's direction of rotation is determined by the polarity of the DC voltage applied to its terminals. If the motor rotates in the incorrect direction for a specific side of the wheelchair, the power connections to that motor will need to be reversed. This is typically managed by the wheelchair's control unit or by manually swapping the positive and negative wires at the motor's connector.

## 7. MAINTENANCE

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Regular maintenance helps ensure the longevity and optimal performance of your Kuayi MY1016Z motor.

### 7.1. Routine Checks

- **Visual Inspection:** Periodically inspect the motor for any signs of wear, damage, or loose connections. Check for frayed wires or cracked housing.
- **Mounting Security:** Ensure all mounting bolts are tight. Re-tighten if necessary.
- **Cleanliness:** Keep the motor free from dust, dirt, and debris. Use a dry cloth or compressed air to clean the exterior. Avoid using liquids directly on the motor.
- **Noise and Vibration:** Listen for any unusual noises or feel for excessive vibrations during operation, which could

indicate an issue.

## 7.2. Brush Inspection (if applicable)

As a brushed DC motor, the carbon brushes will wear down over time. If the motor experiences reduced performance or intermittent operation, the brushes may need inspection and replacement. This procedure should be performed by a qualified technician.

## 8. TROUBLESHOOTING

This section provides solutions to common issues you might encounter with the Kuayi MY1016Z motor.

Problem	Possible Cause	Solution
Motor does not run	No power supply Loose electrical connections Faulty control unit Worn carbon brushes	Check battery charge and power switch Inspect and secure all wiring connections Consult wheelchair manual for control unit diagnostics Have brushes inspected and replaced by a technician
Motor runs in wrong direction	Incorrect wiring polarity	Reverse the positive and negative power connections to the motor. This can often be done at the motor's connector or through the wheelchair's control system settings.
Unusual noise or vibration	Loose mounting bolts Internal motor damage Obstruction in drive mechanism	Check and tighten all mounting hardware Contact a qualified technician for inspection Inspect the drive system for foreign objects
Motor overheats	Overload Insufficient ventilation Internal fault	Reduce load on the wheelchair Ensure motor is not obstructed and has adequate airflow Discontinue use and have motor inspected by a technician

