



SUZHOU TOSEVEN TECHNOLOGY CO.,LTD

ZM05-175DL

Brushless High Speed Hub Motor

User Manual

**Suzhou Toseven New Energy
Technology Co., Ltd**

ZM05-175DL Brushless High Speed Hub Motor

Instruction Manual

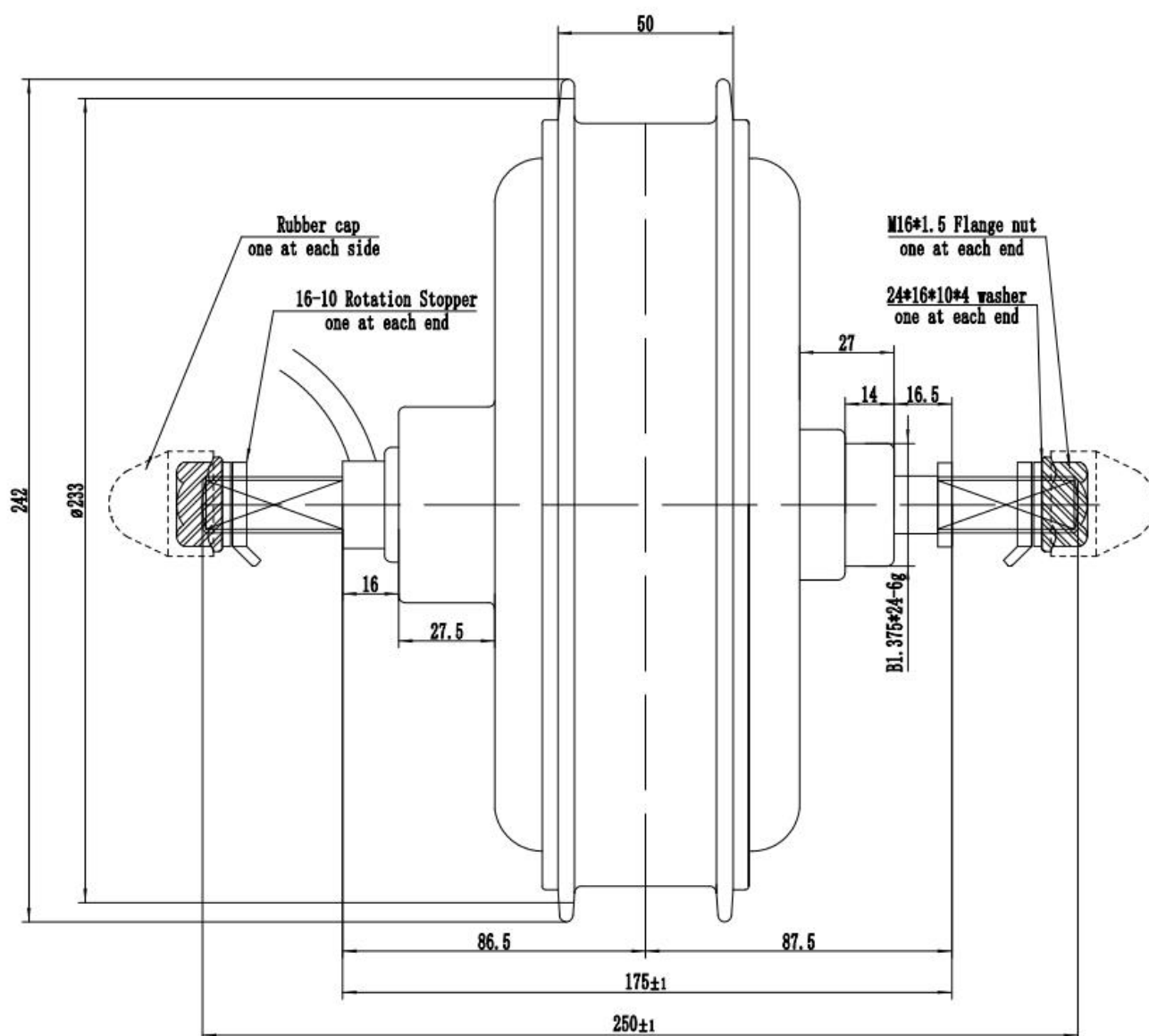
■ Product Overview:

The ZM05-175DL brushless high-speed hub motor, is specifically designed for power drive systems in e-bikes. This motor provides excellent stability, high torque output, and superior climbing capability, making it an ideal choice for demanding e-bike applications.

■ Motor Appearance Features :



■ **Motor structure and installation features:**



■ Main Technical Performance:

- ①Utilizes a stator core with a $\phi 195$ mm outer diameter, constructed from 3 mm-thick 45-grade high magnetic steel
- ②Features high efficiency and a broad performance range, enabling rapid start-up, strong climbing capability, and a maximum torque exceeding 120 N.m

■ **Key Technical Specifications:**

Model #	ZM05-175DL	Motor Pole Pairs	23 pairs
Rated Voltage	72V	Magnet Specs	45*13.65*3
Rated Power	3000W	Rated Current	50A
Peak Power	4000W	Max. Efficiency	82%
No-load Speed	860±10RPM	Net. Weight	9.4KG
Load Speed	700±10RPM	Applicable Models	Fat-tire Rear Wheel
Color	Matte Black	Spoke Hole Circle Diameter	233mm
Wheel Size	20"	Reduction Ratio	/
Motor O.L.D	175mm	Cable Routing	Left-sided
Brake Type	Disc Brake with Left Side 6 holes	Max. Torque	120N.m
No-load Noise	〈60dB	Motor Axle Thread Specs	M16*1.5
Motor Core Specs	300#	Motor Cable	62

■ **Appearance and installation dimension inspection**

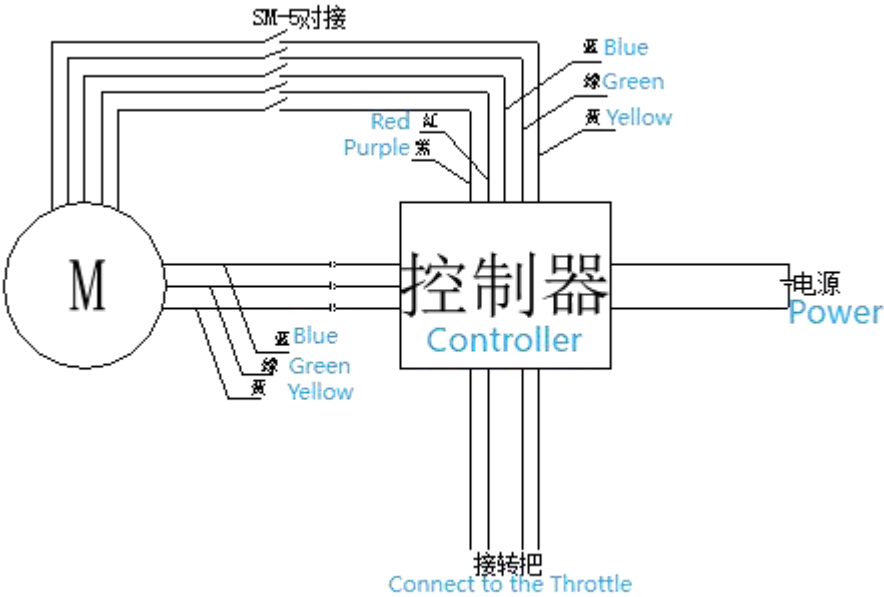
Item	Technical Requirements	Test Result	Diagnosis	Remarks
Motor O.L.D	175±1			
Freewheel Chain line	30.5			
Disc Brake Mount Spacing	16±0.5			
Total Length of Axle	250±1			
Appearance	No color variations, paint defects, or scratches			
Logo	Accurate representation			

■ Installation and Commissioning:

Accessory Kit :

Component	Specs (mm)	Qty	Material
Flat washer	24*16*2.4	2	Dacromet
Rotating Stopper	16*10*4mm	2	Dacromet
Flange Nut	M16-1.5	2	Dacromet
Rubber Sensor	Nonporous	2	Rubber

- ① Before installing the motor, please verify that the controller and motor are compatible, including matching rated voltage, control angle, and other relevant specifications.
- ② Securely install the motor onto the e-bike frame following the specified guidelines, ensuring all screws (SSS) are properly tightened.
- ③ Connect the power cord, motor three-phase wires, e-bike handlebar wires, and Hall sensor wires to the controller as indicated. After confirming all connections, power on the system, unlock the electric door lock, rotate the handbar, and start the motor.



Controller Connection Diagram

■ **Operating and Maintenance Instructions:**

- ① After powering on, please avoid touching the lead connectors to prevent short circuits, which could damage the motor or controller.
- ② Ensure the Hall sensor power line (+5V, red) and ground line (black) are connected correctly. Reversing these connections may cause permanent damage to the Hall sensor.
- ③ Annual Motor Maintenance Recommendations:

I Fastener Inspection: Check the tightness of all screws on each motor component to ensure secure assembly.

II Magnet and Front Cover Interface: Inspect the contact surface between the magnet and the motor's front cover for any signs of wear or damage.

III Hall Element Functionality: Verify the proper operation of the Hall effect sensor to ensure accurate motor control.

IV Electrical Connection Integrity: Examine the connections between the motor power line and the Hall sensor line for secure and reliable connectivity.

V Planetary Gear Set Lubrication: Assess the lubrication condition of the planetary gear set. If necessary, apply an appropriate amount of high-quality lubricating grease to maintain smooth operation

■ **Maintenance:**

Troubleshooting Guide: Common Motor Faults and Solutions

Common Motor Malfuctions	Cause Analysis	Solution
The motor fails to rotate	1.Imcompatibility between the controller and the motor 2.No power supplier	Inspect and, if necessary, replace the controller Verify that all circuit connections are properly established
The motor rotates but produces no power	Insufficient power supply voltage	Charge the battery or replace it if required
The motor runs in reverse	Incorrect wiring of the phase lines	Check and securely reconnect the motor phase wires
The motor operates irregularly, exhibiting vibrations, shaking, or unusual noises	1.Faluty Hall Sensor 2.Incorrect connection of the hall sensor signal wires	Replace the Hall sensor if it is faulty. Adjust the Hall sensor signal line

		connections to ensure correct wiring
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■ **Precautions**

- Please always turn off the power switch right away when the motor is not in use.
- Motor repairs must be performed exclusively by qualified professionals. Unauthorized personnel should not attempt to disassemble the motor. Ensure the power is turned off before any maintenance work.
- The motor is not designed to operate in environments with strong acids or alkalis, and it must not be used underwater.