

## **BAFANG FM G020.500.D**

# **BAFANG 48V 500W Front Hub Motor Electric Bike Conversion Kit User Manual**

Model: FM G020.500.D

## **1. INTRODUCTION**

---

This manual provides comprehensive instructions for the installation, operation, and maintenance of your BAFANG 48V 500W Front Hub Motor Electric Bike Conversion Kit. This kit is designed to transform a standard pedal bicycle into an electric bicycle, offering enhanced riding comfort and efficiency for various terrains including touring, commuting, and mountain biking.

Please read this manual thoroughly before attempting any installation or operation to ensure safe and correct usage of the product.



Figure 1.1: Overview of the BAFANG 48V 500W Front Hub Motor Electric Bike Conversion Kit components.

## 2. PRODUCT SPECIFICATIONS

The BAFANG 48V 500W Front Hub Motor Electric Bike Conversion Kit (Model: FM G020.500.D) features robust design and efficient performance. Key specifications are detailed below:

**Table 2.1: BAFANG Front Hub Motor Specifications**

Parameter	Value
Product Name	Front Hub Motor
Motor Option	48V500W
Rated Voltage	48V
Rated Power	500W

Parameter	Value
No-load Current	≤1.8A
Rated Current	≤13.8A
Wheel Diameter (inch)	20 / 26 / 700C
Max Torque	65 N.M
Max Speed	40 KM/H
Spoke Specification	36H*12G
Weight	7.100 KG
Efficiency	≥75%
Noise Grade	<55 dB
Waterproof Grade	IPX5
Installation Widths (OLD)	100±1 mm
Maximum Current (Controller)	18A

# About Wheel Size



660mm(26")



698mm(27.5")



700C

Rim Material	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy
Rim Diameter	57.5cm(22.64")	60cm(23.62")	63cm(24.80")
Compatible Brake	Both V and Disc Brake		
Compatible Tire	1.5"-2.1" Tire		



Fit Front Dropout 100MM

## How to choose my wheel size?



Where the tire is marked

## Example:

- 1-The tire is on the outer tire
- 2-The label reads 26\*1.95,
- 3-It can be judged that the tire is 26 inches

\* Tires are not included

Figure 2.1: BAFANG Front Hub Motor Specifications Diagram.

# DISPLAY SPECIFICATION

● ○ ●

Model	 • EKD01 	 • 500C	 • DZ40 Mini	 • DM03
PAS Level	3/5/9	3/5/9	0-5	3/5/9
Screen Size	2.4inch	2.2inch	1.68inch	1.3inch
Holder(mm)	22.2/25.4	22.2	22.2	22.2
Navigation				
Bluetooth				
USB Charger DC 5V 500mA	Type-c			
Model	 • C18-9	 • P860ML	 • 800S	 • SW2-M58
PAS Level	3/5/9	3/4/5/9UBE	0-3,1-3,0-5,1-5,0-9,1-9,UBE	3/5/9
Screen Size	3.1inch	3.5inch	2.8inch	3inch
Holder(mm)	22.2/25.4/31.8	22.2/25.4/31.8	22.2/25.4/31.8	22.2/25.4/31.8
Navigation				
Bluetooth				
USB Charger DC 5V 500mA				

Figure 2.2: Wheel Size Compatibility and Selection Guide.

# BATTERY SPECIFICATION

48V 13Ah  
48V 17.5Ah



48V 19.2Ah



Battery Model	Shark Battery 48V 13Ah	Shark Battery 48V 17.5Ah	Shark Battery 48V 17.5Ah	G70 Shark Battery 48V 19.2Ah
Battery Cell	18650 2600mAh	L*/G 18650 3500mAh	18650 3500mAh	Sam*/sung 21700 4800mah
BMS Max Protection Current	30A	30A	30A	30A
USB Port	✓	✓	✓	✗
Weight	4.25kg	4.045kg	4kg	4.8kg
Cycle Life	1000 times	1000 times	1000 times	1000 times
Battery Charger	✓	✓	✓	✓

48V 20Ah



52V 20Ah



48V 17.5Ah



Battery Model	G80 Shark Battery 48V 20Ah	YingWu Battery 52V 20Ah	Rear Rack Battery 48V 17.5Ah	Rear Rack Battery 52V 17.5Ah
Battery Cell	L*/G 21700 5000mAh	Sam*/sung 21700 5000mAh	18650 2600mah	18650 2500mah
BMS Max Protection Current	30A	30A	30A	30A
USB Port	✓	✗	✓	✓
Weight	4.7kg	5kg	6kg	6.3kg
Cycle Life	1000 times	1000 times	1000 times	1000 times
Battery Charger	✓	✓	✓	✓

Figure 2.3: Optional LCD Display Specifications.

# KIT CONNECTION DIAGRAM

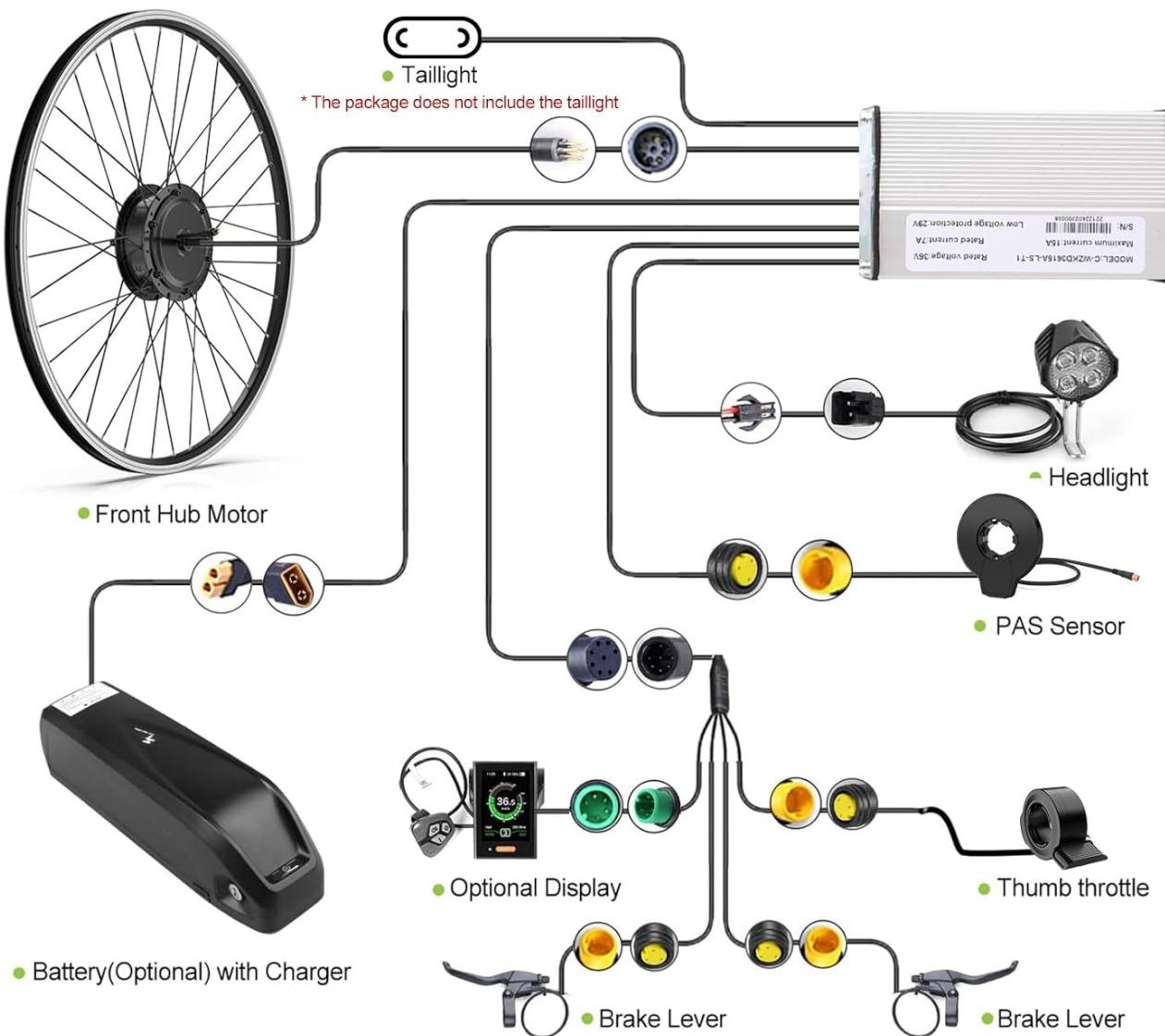


Figure 2.4: Optional Battery Specifications.

## 3. PACKING LIST

Upon receiving your BAFANG conversion kit, please verify that all components listed below are present and undamaged. If any items are missing or damaged, contact customer support immediately.

- Front Hub Motor with Wheel (1 PC)
- Motor Controller (1 PC)
- Brake Lever (default) or Hydraulic Brake Sensor (1 Pair)
- Thumb Throttle (1 PC)
- PAS Sensor (1 PC)
- 1T4 Cable (1 PC)
- Headlight (1 PC)
- Controller Box (1 PC)

- Sticker (1 PC)
- Plastic Straps (Several)
- Optional: Ebike Display (1 PC)
- Optional: Battery with Charger (1 PC)

Designed for upgrading standard bicycles and tricycles to convenient

## eRoad, eMTB, Efat and eCity bikes.



Figure 3.1: Visual Representation of Packing List Components.

## 4. INSTALLATION AND SETUP

This section outlines the general steps for installing the BAFANG front hub motor conversion kit. For detailed visual instructions, please refer to the official installation video provided by BAFANG or Greenergia. Ensure your bicycle is compatible with a 100mm front dropout and either V-brake or disc brake systems.

### 4.1 Safety Precautions

- Always disconnect the battery before performing any installation or maintenance.

- Wear appropriate safety gear, including gloves and eye protection.
- Ensure your workspace is clean, well-lit, and free of obstructions.
- If you are unsure about any step, seek professional assistance.

## 4.2 Installation Steps

1. **Prepare Your Bicycle:** Remove the existing front wheel from your bicycle. Ensure the front fork dropout width is 100mm.
2. **Install the Front Hub Motor Wheel:** Carefully insert the BAFANG front hub motor wheel into the front fork dropouts. Secure it firmly using the provided axle nuts. Ensure the motor cable is routed correctly and not pinched.
3. **Mount the Controller Box:** Find a suitable location on your bike frame for the controller box, typically near the battery or motor. Secure it using the provided straps or mounting hardware.
4. **Install Brake Levers/Sensors:** Replace your existing brake levers with the new ones provided, or install the brake sensors if using your original levers. Connect the brake cables/hoses and adjust for proper braking function. These components are designed to cut off motor power when brakes are applied.
5. **Install Thumb Throttle:** Mount the thumb throttle on your handlebar in a comfortable position.
6. **Install PAS Sensor:** Attach the Pedal Assist System (PAS) sensor to your bicycle's bottom bracket area. Ensure the magnet disc is properly aligned with the sensor.
7. **Install Display (Optional):** Mount the LCD display on your handlebar.
8. **Install Headlight:** Mount the headlight on your bicycle and connect it.
9. **Connect Wiring:** Refer to the wiring diagram to connect all components: motor to controller, controller to battery, brake levers/sensors to controller, throttle to controller, PAS sensor to controller, display to controller, and headlight to controller. Ensure all connections are secure and waterproof.
10. **Install Battery (Optional):** Mount the battery securely on your bike frame, typically on the downtube or rear rack, depending on the battery type. Connect the battery to the controller.

# packing list

- Controller box
- Optional Battery with Charger
- Optional Display
- Thumb throttle



• Controller



• Front Hub Motor



• Motor cable



• PAS Sensor



• 1T4 cable



Figure 4.1: Kit Connection Diagram.

## 5. OPERATING INSTRUCTIONS

The BAFANG conversion kit offers multiple riding modes for versatile use.

### 5.1 Riding Modes

- **E-bike Mode (Throttle Only):** Use the thumb throttle to control the motor's power directly, without pedaling. This mode is ideal for effortless cruising or when you need an extra boost.
- **Pedal-Assisted Bicycle Mode (PAS):** The motor provides assistance as you pedal. The level of assistance can be adjusted via the LCD display (if equipped). This mode extends battery range and reduces rider fatigue.
- **Push-Assisted Bicycle Mode:** This mode provides low-speed assistance for walking the bike, useful when pushing the bike uphill or through crowded areas. Consult your display manual for activation.
- **Normal Bicycle Mode:** The motor is off, and the bike functions as a standard pedal bicycle.

## 5.2 Display Operation (If Applicable)

If your kit includes an LCD display, refer to its specific manual for detailed operation. Common functions include:

- Power On/Off
- Adjusting Pedal Assist Levels (PAS)
- Viewing Speed, Distance, Battery Level
- Controlling Headlight
- Accessing Settings (e.g., wheel size, speed limit)

## 5.3 First Ride Checklist

- Ensure all connections are secure.
- Check tire pressure.
- Verify brake functionality.
- Test throttle and PAS functions in a safe, open area.
- Familiarize yourself with the display controls.

# 6. MAINTENANCE

---

Regular maintenance ensures the longevity and optimal performance of your BAFANG conversion kit. Always disconnect the battery before performing any maintenance.

## 6.1 General Care

- **Cleaning:** Use a damp cloth to wipe down the motor, controller, and battery. Avoid high-pressure washing directly on electrical components.
- **Connections:** Periodically check all electrical connections for tightness and corrosion. Ensure waterproof connectors are properly sealed.
- **Cables:** Inspect all cables for wear, fraying, or damage. Replace damaged cables immediately.

## 6.2 Battery Care

- **Charging:** Use only the charger provided with your battery. Do not overcharge or deep discharge the battery.
- **Storage:** Store the battery in a cool, dry place, away from direct sunlight and extreme temperatures. If storing for extended periods, charge the battery to 50-70% capacity every 2-3 months.
- **Water Protection:** While the kit has an IPX5 waterproof rating, avoid submerging the motor or exposing the battery to heavy rain or water jets.

## 6.3 Motor and Wheel

- **Spokes:** Check spoke tension periodically, especially after the first few rides.
- **Bearings:** The motor bearings are sealed and generally maintenance-free. If you notice unusual noises, consult a professional.

# 7. TROUBLESHOOTING

---

This section provides solutions to common issues you might encounter. For problems not listed here, please contact customer support.

Table 7.1: Common Troubleshooting Guide

Problem	Possible Cause	Solution
Motor not working	Battery low or disconnected; Loose electrical connections; Brake levers engaged; Faulty throttle/PAS sensor.	Check battery charge and connection; Inspect all cables and connectors; Ensure brake levers are fully released; Test throttle and PAS sensor.
Display not turning on	Battery off or low; Loose display cable connection.	Turn on battery and check charge; Reconnect display cable securely.
Motor cuts out intermittently	Loose connections; Overheating; Battery issue.	Check all connections; Allow motor to cool down; Check battery health.
PAS not providing assistance	PAS sensor misaligned or damaged; PAS level set to zero.	Check PAS sensor alignment and connection; Increase PAS level on display.

## 8. WARRANTY AND SUPPORT

BAFANG products are manufactured to high quality standards. For warranty information and customer support, please refer to the warranty card included with your product or visit the official BAFANG website. As an officially authorized shop, Greenergia provides support and genuine products.

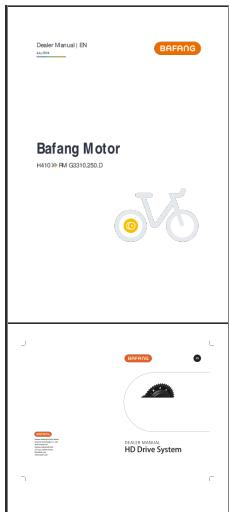
For technical assistance or inquiries, please contact your seller or the BAFANG customer service directly. Provide your model number (FM G020.500.D) and purchase details for faster service.

You can also visit the [BAFANG Store on Amazon](#) for more information and product offerings.

© 2024 BAFANG. All rights reserved.  
This manual is subject to change without notice.

## Related Documents

 <p>BAFANG TECHNICAL SPECIFICATION RM G020.250.DC</p>	<p><a href="#">Bafang RM G020.250.DC Technical Specification</a></p> <p>Detailed technical specifications for the Bafang RM G020.250.DC rear-drive electric bike motor, including performance parameters, dimensions, features, and warranty information.</p>
 <p>BAFANG BBS01/BBS02 Installation Manual <b>ATM</b> TECHNOLOGIES BAFANG</p>	<p><a href="#">BAFANG BBS01/BBS02 Mid-Drive Electric Bike Conversion Kit Installation Manual</a></p> <p>Detailed installation guide for BAFANG BBS01 and BBS02 mid-drive electric bike conversion kits. Covers system overview, technical specifications, step-by-step assembly, component connections, and warranty information for e-bike DIY enthusiasts.</p>

	<p><b><a href="#">Bafang Motor H410 RM G3310.250.D Dealer Manual</a></b></p> <p>This dealer manual provides comprehensive guidance on the Bafang Motor H410 RM G3310.250.D, covering critical safety information, product specifications, installation procedures, operational guidelines, and maintenance requirements for e-bike systems.</p>
	<p><b><a href="#">BAFANG HD Drive System Dealer Manual</a></b></p> <p>Comprehensive dealer manual for the BAFANG HD Drive System, covering installation, technical specifications, operation, and troubleshooting for the MM G32.1000 drive unit and DP C10.UART display.</p>