

BAFANG BBS02B

BAFANG BBS02B 36V/48V 500W Mid Drive Ebike Motor Conversion Kit User Manual

Model: BBS02B (M315 MM G340.500.C)

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your BAFANG BBS02B 36V/48V 500W Mid Drive Ebike Motor Conversion Kit. Please read this manual thoroughly before attempting installation or operation to ensure proper function and safety. This kit is designed to convert a standard bicycle into an electric bicycle, offering enhanced power and range.

2. PRODUCT OVERVIEW

The BAFANG BBS02B mid-drive motor kit is a comprehensive solution for converting a bicycle into an e-bike. It features a 500W motor with CAN protocol for stable performance and includes essential components for conversion.

2.1 Key Features

- **Motor Type:** Mid-drive motor, 500W, 36V/48V compatible.
- **Control System:** Upgraded CAN protocol for enhanced stability and smoother operation.
- **Performance:** Smooth, controlled starts with throttle-responsive acceleration. Adjustable speed limits for Pedal Assist and Throttle modes.
- **Compatibility:** Designed for bicycles with a 68-73mm bottom bracket.
- **Torque:** Maximum torque of 100 N.m.
- **Efficiency:** Greater than 80%.

2.2 Kit Components

The conversion kit typically includes the following items. Refer to the packing list image for visual confirmation.

PACKING LIST

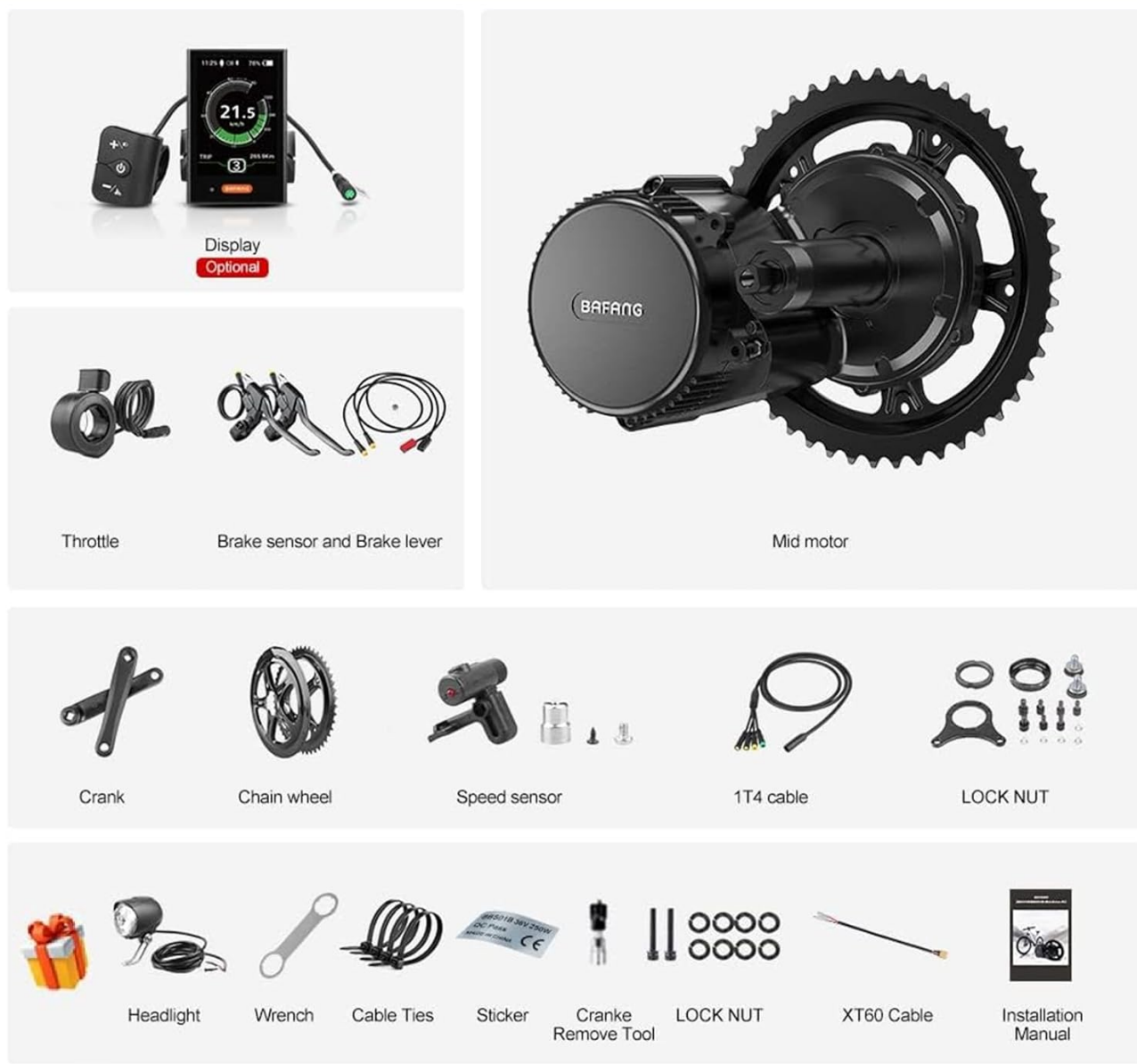


Image 2.2.1: Packing list showing all included components such as the mid motor, display, throttle, brake sensors/levers, chainring, cranks, speed sensor, 1T4 wire, nuts, headlight, and tools.

- BAFANG BBS02B Mid-drive Motor (36V/48V 500W)
- LCD Display (optional, various models available)
- Brake Levers or Brake Sensors (for hydraulic brakes)
- Thumb Throttle
- Chainring Wheel (various tooth counts available)
- Crank Arms
- Speed Sensor and Magnets
- 1T4 Wire Harness
- Lock Nuts and Fasteners
- Headlight (optional)
- Crank Removal Tool (optional)
- XT60 Cable (optional)

Note: An optional battery and charger are required for operation and are typically sold separately. Various battery types are

compatible, including Hailong, G80 Shark, Yingwu Shark, Rear Rack, and U004 Triangle batteries, with different capacities and cell types.

BATTERY OPTIONAL

Type	Hailong Shark Battery			G80 Shark Battery	
Parameter	48V 13Ah	48V 17.5Ah	48V 19.2Ah	48V 20Ah	48V 18Ah
Watt	624Wh	840Wh	921Wh	960Wh	864Wh
Battery Cell	18650 2600mah	Samsung / LG / Panasonic 18650 3500mah	LG 21700 4800mah	LG / Samsung 21700 5000mah	21700 4500mah / 18650 3000mah
Array Mode	13S5P 65PCS	13S5P 65PCS	13S4P 52PCS	13S4P 52PCS	13S4P 52PCS / 13S6P 78PCS
BMS	30A	30A	30A	30A	30A
Weight	4.25KG	4.25KG	4.9KG	5KG	4.8KG
USB Port	YES	YES	YES	YES	YES
Protection Function	Over charge, Over discharge, Over current, Short circuit, Balance				

Type	Yingwu Shark Battery	Rear Rack Battery	U004 Triangle Battery	
Parameter	52V 20Ah	48V 17.5Ah	48V 20Ah	52V 20Ah
Watt	1040Wh	840Wh	960Wh	1040Wh
Battery Cell	Samsung 21700 5000mah	18650 2500mah	2500mah	2500mah
Array Mode	14S4P 56PCS	13S7P 91PCS		
BMS	30A	30A	30A/50A	30A
Weight	5.15KG	7.23KG	7.8KG	8.2KG
USB Port	NO	YES	YES	YES
Protection Function	Over charge, Over discharge, Over current, Short circuit, Balance			

Image 2.2.2: Overview of various optional battery types and their specifications, including Hailong, G80 Shark, Yingwu Shark, Rear Rack, and U004 Triangle batteries.

3. SETUP AND INSTALLATION

Proper installation is crucial for the safe and efficient operation of your e-bike. This kit is designed for relatively easy installation with basic tools.

3.1 Bottom Bracket Compatibility

Before installation, verify that your bicycle's bottom bracket width is compatible with the BAFANG BBS02B motor. This kit is designed to fit standard 68-73mm bottom brackets.

1. Measure the width of your bike's bottom bracket shell using calipers or a ruler.
2. Ensure the measurement falls within the 68-73mm range.

HOW DO I KNOW IF THIS MOTOR KIT FIT MY BIKE OR NOT?



Measure the width of the bracket's shell using calipers or a ruler.



Choose the suitable bottom bracket size



Chain Wheel Optional






BBS01B/ BBS02B Chainwheel					
	36T	42T	44T	46T	52T
Material	Aluminum Alloy	Aluminum Alloy	Iron	Iron	Iron
Offset	No Offset	16.5mm(0.64 ")	6.5mm(0.25")	6.5mm(0.25")	6.5mm(0.25")
Recommended Rear Sprockets	≤9 Speed	≤11 Speed	≤9 Speed	≤9 Speed	≤9 Speed

Image 3.1.1: Visual guide on measuring the bottom bracket shell to confirm compatibility with the BAFANG mid-drive motor.

3.2 Installation Steps (General Guide)

The following steps provide a general overview. Always refer to the detailed wiring diagram and any specific instructions provided with your kit.

- 1. Prepare the Bicycle:** Remove the existing crankset, bottom bracket, and any front derailleur. Clean the bottom bracket shell.
- 2. Mount the Motor:** Insert the BAFANG mid-drive motor into the bottom bracket shell. Secure it using the provided lock nuts and plates.
- 3. Install Chainring and Cranks:** Attach the new chainring to the motor and then install the crank arms.
- 4. Install Display:** Mount the LCD display on the handlebars in a convenient viewing position.
- 5. Install Throttle:** Mount the thumb throttle on the handlebars.
- 6. Install Brake Levers/Sensors:** Replace existing brake levers with the e-bike specific ones, or install brake sensors if using hydraulic brakes.
- 7. Install Speed Sensor:** Attach the speed sensor to the chainstay and the magnet to a spoke on the rear wheel, ensuring proper alignment and gap.

8. **Wiring Connections:** Connect all components to the 1T4 wire harness and then to the motor. Ensure all connections are secure and waterproof. Refer to the wiring diagram below.
9. **Battery Installation:** Mount your chosen battery securely to the bike frame (e.g., bottle cage mounts, rear rack) and connect it to the motor's power cable.
10. **Cable Management:** Secure all cables neatly along the frame using cable ties to prevent snagging or damage.



Image 3.2.1: Simplified wiring diagram illustrating connections between the motor, display, throttle, brake sensors, and battery. Note: Brake lever is default; contact seller for brake sensor if needed.

4. OPERATING INSTRUCTIONS

Once installed, your BAFANG mid-drive motor kit offers various modes to enhance your cycling experience.

4.1 LCD Display Functions (500C Display Example)

The LCD display provides essential information and allows you to control the motor's settings. The 500C display typically features 3, 5, or 9 levels of pedal assist.



Image 4.1.1: The BAFANG 500C display interface, highlighting indicators for power, speed, mileage, battery level, PAS level, error codes, headlight status, and brake status.

- **Power Indicator:** Shows the current power output.
- **Speed Display:** Current riding speed (KM/H or MPH).
- **Mileage Indicator:** Displays trip distance and total odometer.
- **Battery Indicator:** Shows remaining battery charge level.
- **PAS (Pedal Assist System) Level:** Adjusts the level of motor assistance (0-3, 0-5, or 0-9).
- **Error Indicator:** Alerts to system malfunctions.
- **Headlight Power On:** Indicates if the connected headlight is active.
- **Brake Indicator:** Shows when brakes are applied.

4.2 Riding Modes

The BAFANG BBS02B kit supports various riding modes to suit different terrains and preferences.



Image 4.2.1: Illustration of different e-bike riding modes (Ebike Mode, Pedal Assistance Mode, Push Assistance Mode) and their application across various terrains like mountain roads, city roads, beach roads, and snow roads.

- **Ebike Mode (Throttle):** Provides power directly via the thumb throttle, allowing for propulsion without pedaling. Useful for quick acceleration or resting.
- **Pedal Assistance Mode (PAS):** The motor provides assistance proportional to your pedaling effort. The level of assistance can be adjusted via the display. This mode is ideal for extending range and reducing fatigue.
- **Push Assistance Mode:** A low-speed assist function, typically activated by holding a button on the display, which helps when walking the bike uphill or through difficult terrain.

5. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your BAFANG mid-drive motor kit.

- **Cleaning:** Keep the motor, display, and electrical connections clean. Use a damp cloth; avoid high-pressure washing directly on electrical components.
- **Electrical Connections:** Periodically check all electrical connections for tightness and corrosion. Ensure they are securely plugged in.
- **Battery Care:** If using an optional battery, follow the manufacturer's instructions for charging, storage, and discharge cycles. Avoid extreme temperatures.
- **Chain and Drivetrain:** Keep your chain clean and lubricated. Inspect the chainring for wear.
- **Fasteners:** Regularly check all bolts and nuts, especially those securing the motor and other components, to ensure they are tight.
- **General Bike Maintenance:** Continue with regular bicycle maintenance, including tire pressure, brake function, and gear adjustments.

6. TROUBLESHOOTING

This section addresses common issues you might encounter. For complex problems, contact customer support.

Problem	Possible Cause	Solution
Motor not starting/no power	Battery low or disconnected; loose electrical connections; display off; brake sensor engaged.	Check battery charge and connection; ensure all cables are secure; turn on display; check if brake levers are fully released.
Display not turning on	Battery low or disconnected; loose display cable; faulty display.	Check battery and connections; ensure display cable is fully inserted; if problem persists, contact support.
Motor cuts out intermittently	Loose connections; overheating; faulty speed sensor.	Check all connections; allow motor to cool down if ridden hard; verify speed sensor alignment.
Error code on display	Specific system fault.	Consult the display's specific manual for error code meanings. Often requires checking specific components or connections.

7. SPECIFICATIONS

Detailed technical specifications for the BAFANG BBS02B 500W Mid Drive Motor.

SPECIFICATION



- Dimension A 215mm
- Dimension B 123mm
- Dimension C 68/73/83/90/100/110/120mm

- Dimension D 175/175/175/180/190/200/210mm
- Dimension E 88/90/96/99/103/108/113mm



Front Lamp



Gear Sensor



Speed Sensor



Battery



EB-BUS

• Motor Model	BBS02B	• No Load Speed(RPM)	120
• BAFANG Model	MM G340.500	• Load Speed(RPM)	113
• Power	500W	• PAS Sensor	Speed Sensor
• Voltage	48V	• Reduction Ratio	1 : 21.9
• Controller Current	48V18A	• Net Motor Weight	About 4.24 kg
• Efficiency	> 80%	• Bracket bottom length	68mm
• MAX Torque	100 N.m	• Motor Operation Temperature	-20°C-45°C
• Waterproof Grade	IPX5		

Image 7.1.1: Technical diagram and table detailing the dimensions and performance specifications of the BAFANG BBS02B mid-drive motor.




Parameter	Value
Motor Model	BBS02B
BAFANG Model Name	MM G340.500.C
Power	500W
Voltage	48V (also compatible with 36V)
Controller Current	48V 18A
Efficiency	> 80%
Max Torque	100 N.m
Waterproof Grade	IPX5
No Load Speed (RPM)	120
Load Speed (RPM)	113

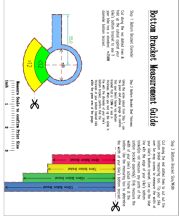
Parameter	Value
PAS Sensor	Speed Sensor
Reduction Ratio	1 : 21.9
Net Motor Weight	About 4.24 kg
Bracket Bottom Length	68mm
Motor Operation Temperature	-20°C~45°C

8. WARRANTY AND SUPPORT

BAFANG is committed to providing quality e-bike accessories. For specific warranty terms and conditions, please refer to the documentation included with your purchase or contact the seller directly. In case of technical issues or questions not covered in this manual, please reach out to the authorized BAFANG dealer or the point of purchase for assistance.

Related Documents - BBS02B

 <p>USER MANUAL BBS Series Drive System</p>	<p>Bafang BBS Series Drive System User Manual</p> <p>Comprehensive user manual for the Bafang BBS Series Drive System, covering installation, operation, maintenance, and troubleshooting for e-bike conversion kits.</p>
 <p>BAFANG BBS01/BBS02 Installation Manual</p>	<p>BAFANG BBS01/BBS02 Mid-Drive E-bike Motor Installation Manual eMax eBikes</p> <p>Comprehensive installation manual for the BAFANG BBS01 and BBS02 mid-drive electric bike motor kits. Includes technical specifications, assembly steps, wiring diagrams, and warranty information from eMax eBikes.</p>
 <p>USER Guidance MANUAL BBS Series Drive System</p>	<p>Bafang BBS Series Drive System User Guidance Manual</p> <p>Comprehensive user manual for Bafang BBS Series mid-drive eBike conversion kits, detailing models like M215, M315, M615, controller specifications, installation tools, maintenance, and safety precautions. Features Varstrom partnership.</p>



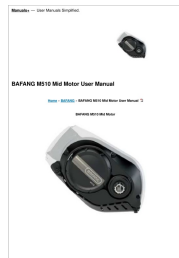
[Bicycle Bottom Bracket Measurement Guide](#)

A comprehensive guide to accurately measure your bicycle's bottom bracket diameter, shell thickness, and width using a printable gauge.



[BAFANG BBS01/BBS02 Mid-Drive Electric Bike Conversion Kit Installation Manual](#)

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.



[BAFANG M510 Mid Motor User Manual and Installation Guide](#)

Comprehensive user manual for the BAFANG M510 Mid Motor, covering specifications, installation procedures, maintenance, and troubleshooting for electric bicycles.