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BAFANG BBS02B/BBS-HD

BAFANG Mid Drive Kit User Manual

MODEL: BBS02B/BBS-HD ELECTRIC BIKE CONVERSION KIT

Brand: BAFANG

1. INTRODUCTION

This manual provides comprehensive instructions for the installation, operation, and maintenance of your BAFANG Mid Drive Kit. Designed for converting standard bicycles into powerful electric bikes, this kit offers robust performance and versatile compatibility.

The BAFANG Mid-drive motor (available in 500W, 750W, and 1000W options) delivers significant torque, making it suitable for various terrains, from urban commutes to off-road adventures. It supports multiple riding modes including Throttle, Pedal Assistance, and Standard Cycling.

This kit is universally designed to fit most bikes with bottom brackets measuring 68-73mm, 100mm, and 120mm lengths, and 33.5-36mm inner diameters, adhering to JIS norms. Please note that 73mm screws are not included and may need to be acquired separately if required for your specific setup.

2. PRODUCT COMPONENTS

Your BAFANG Mid Drive Kit includes the following essential components to facilitate your electric bike conversion:



Figure 2.1: Overview of BAFANG Mid Drive Kit components.

- **BAFANG Central Motor:** The core mid-drive unit (BBS02B/BBS-HD).
- **LCD Display:** For monitoring speed, battery level, and other ride data (optional, various models available).
- **Brake Levers:** With motor inhibitor sensors for safety.
- **Thumb Throttle:** For effortless control of electric power assistance.
- **Chainwheel:** Available in various tooth counts (optional).
- **Crank Arms:** For pedal attachment.
- **Speed Sensor and Magnets:** For accurate speed measurement.
- **Cables:** Including the 1T4 EB-Bus cable for connecting components.
- **Nuts and Bolts:** Various fasteners for installation.
- **Instruction Manual:** This guide.
- **Battery and Charger:** (Optional, purchased separately).
- **Tools:** Includes a wrench, crank removal tool, and bottom bracket remover.
- **Headlight:** A 6V LED headlight is included for improved visibility.

PACKING LIST AND INSTALLATION



Figure 2.2: Detailed packing list of the conversion kit.

BATTERY PARAMETERS

• 48V 13Ah | Shark Battery

• 48V 17.5Ah

• 48V 19.2Ah | Shark Battery

• 48V 20Ah

Type	48V 13Ah	48V 17.5Ah
Watt Hour	624Wh	840Wh
Battery Cell	18650 2600mAh	L-G 18650 3500mAh
BMS	30A	30A
Charge voltage	54.6V	54.6V
Size (L*W*H)	365*90*110mm	365*90*110mm
Weight	4.25kg	4.25kg
USB Port	✓	✓
Cycle Life	1000 times	
Protection Function	Over charge, Over discharge, Over current, Short circuit, Balance	

Type	48V 19.2Ah	48V 20Ah
Watt Hour	921.6Wh	960Wh
Battery Cell	LG 21700 4800mAh	Sam-sung 21700 5000mAh
BMS	30A	30A
Charge voltage	54.6V	54.6V
Size (L*W*H)	365*90*127mm	365*90*127mm
Weight	5.0kg	5.0kg
USB Port	✓	✓
Cycle Life	1000 times	
Protection Function	Over charge, Over discharge, Over current, Short circuit, Balance	

• 52V 20Ah | Shark Battery

• 48V 20Ah | VoltzX Battery

• 48V 17.5Ah | Rear Rack Battery

Type	52V 20Ah	48V 20Ah	48V 17.5Ah
Watt Hour	1040Wh	960Wh	840Wh
Battery Cell	Sam-sung 21700 5000mAh	Sam-sung 21700 5000mAh	18650 2500mAh
BMS	30A	35A	30A
Charge voltage	58.8V	54.6V	54.6V
Size (L*W*H)	368*95*125mm	365*105*140mm	476*162*89mm
Weight	5.15kg	5.2kg	7.23kg
USB Port	✗	✓ USB & Type-C Fast Charge	✓
Cycle Life	1000 times		
Protection Function	Over charge, Over discharge, Over current, Short circuit, Balance		

Figure 2.3: Various battery options and their specifications.

3. SETUP AND INSTALLATION

The BAFANG Mid Drive Kit is designed for straightforward installation. For a visual guide, please refer to the official installation video below. Most installations on standard mountain bikes can be completed in under 30 minutes with basic tools and no specialized mechanical skills.

Your browser does not support the video tag.

Video 3.1: Official BAFANG BBS Mid Drive Motor Installation Guide. This video demonstrates the step-by-step process of converting a bicycle with the BAFANG mid-drive kit.

3.1. Compatibility Check

Ensure your bike's bottom bracket is compatible. The kit fits bottom brackets with 68-73mm, 100mm, or 120mm lengths and 33.5-36mm inner diameters (JIS standard). For 73mm bottom brackets, additional screws may be needed. The kit is compatible with disc or V-brake equipped, chain-driven models only. It is not compatible with belt-drive chainrings, coaster bikes, or carbon fiber bikes.

IS THIS MOTOR COMPATIBLE WITH MY BIKE?

BBS01/BBS02 Motor

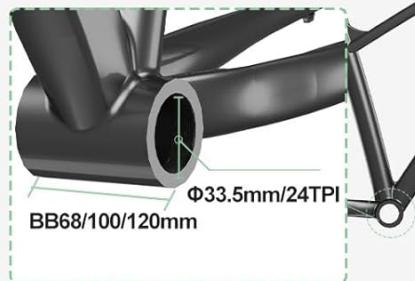


BBSHD Motor



FITS FOR

Bottom Bracket Size



- BB 68mm, Compatible for 68-73mm bottom bracket.
- BB 100mm, Compatible for 85-105mm bottom bracket.
- BB 120mm, Compatible for 105-125mm bottom bracket.
- IF NOT EXACT 68mm/100mm/120mm, PLEASE CONTACT US FOR EXTRA SCREWS AND WASHERS.



Figure 3.2: Guide to check motor compatibility with your bike's bottom bracket.

OPTIONAL CHAINRING

BBS Chainring (for 500W/750W)

36T

0.5mm



$\Phi 5.94"$ (15.1cm)

≤ 8 -speed

36T chainring fits ≤ 8 -speed bikes only—risk of chain drop on higher gears.

42T

18.5mm



$\Phi 7.04"$ (17.9cm)

≥ 9 -speed

Risk of 42T chainring hitting rear fork—measure dimensions carefully before ordering.

44T

6.5mm



$\Phi 7.16"$ (18.2cm)

≤ 9 -speed

52T

6.5mm



$\Phi 8.46"$ (21.5cm)

≤ 9 -speed

BBS-HD Chainring (Only for 1000W)

One piece 46T

16.5mm



$\Phi 7.36"$ (18.7cm)

≥ 9 -speed

Figure 3.3: Available chainring options for 500W/750W and 1000W motors.

3.2. Removing the Crankset

Begin by removing the existing crank arms and chainwheel from your bike's bottom bracket. Use the provided crank removal tool and bottom bracket remover for this step. Ensure all components are clean before proceeding.

3.3. Mid-Drive Motor Installation

Attach the appropriate chainwheel to the BAFANG motor unit. Carefully insert the motor into the bike's bottom bracket. Secure the motor using the Y-shaped motor mount bracket on the left side of the bike, followed by the lock nuts. Tighten all bolts with the provided wrench to ensure a secure fit.

3.4. Display and Controls Mount

Mount the LCD display, thumb throttle, and brake levers onto the handlebars. The brake levers include motor inhibitor sensors that cut off power when activated, enhancing safety. If your bike has hydraulic brakes, brake sensors are available as an option to maintain your original brake system.

Click on the “Customize” button for more details



UART



EKD01



500C



DZ40



P860ML



800S



P860ML



SM2-SW58

CAN



EKD01



BAFANG DPC080



BAFANG DPC010



VD61



VD618



P860ML



VD03

Figure 3.4: Different LCD display models and their features.

3.5. Cable Management

Connect all cables from the motor, display, throttle, and brake levers using the 1T4 EB-Bus cable. Use the provided zip ties to neatly organize and secure the cables along the bike frame, ensuring they do not interfere with moving parts.

EASY TO INSTALL

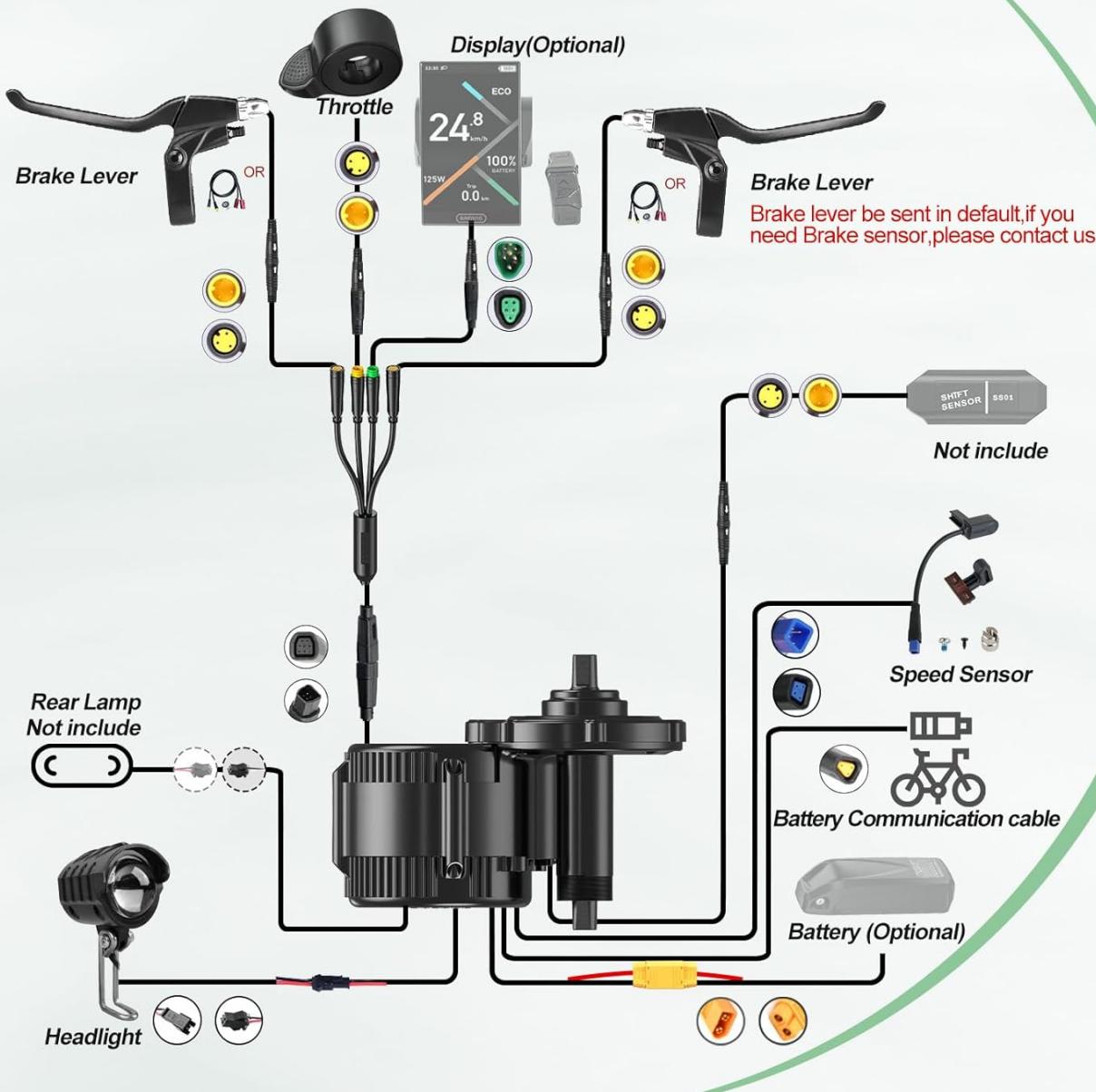


Figure 3.5: Simplified wiring diagram for the BAFANG Mid Drive Kit.

4. OPERATION

Once installed, the BAFANG Mid Drive Kit offers three primary modes of operation:

- **Throttle Mode:** Provides electric power directly via the thumb throttle, allowing for propulsion without pedaling.
- **Pedal Assistance Mode (PAS):** The motor provides assistance based on your pedaling input, making riding easier and extending range.
- **Standard Cycling Mode:** The motor is disengaged, and the bike operates as a traditional bicycle, relying solely on pedal power.

The LCD display provides real-time information such as speed, battery level, and selected assistance level, allowing you to monitor your ride effectively.

5. MAINTENANCE

Regular maintenance is crucial to ensure the longevity and optimal performance of your BAFANG Mid Drive Kit. Keep

the motor and all electrical connections clean and dry. Periodically check all bolts and fasteners for tightness, especially after initial rides.

Inspect the chain, chainwheel, and crank arms for wear and tear. Lubricate the chain regularly. Ensure the battery is charged according to the manufacturer's guidelines to prolong its lifespan. Avoid exposing electrical components to extreme temperatures or prolonged moisture.

6. TROUBLESHOOTING

If you encounter any issues with your BAFANG Mid Drive Kit, consider the following common troubleshooting steps:

- No Power:** Check battery connection, ensure the battery is charged, and verify all electrical cables are securely connected.
- Motor Not Engaging:** Confirm the display is on and the correct assistance level is selected. Check the speed sensor and magnet alignment. Ensure brake levers are not engaged, as they cut motor power.
- Unusual Noises:** Inspect the motor and chainwheel for any obstructions or loose components. Lubricate the chain if it's dry.
- Display Errors:** Refer to your specific LCD display manual for error codes and their meanings. Often, re-connecting the display or battery can resolve minor glitches.

For persistent issues or complex problems, please contact BAFANG customer support for assistance.

7. SPECIFICATIONS

Feature	Detail
Brand Name	BAFANG
Model Name	BBS02B/BBS-HD
Part Number	US JJ DZ 48V/52V Mid Drive Kit
Color	Black
Material	Aluminum
Voltage	48 Volts (compatible with 52V options)
Rated Power	500W, 750W, 1000W (depending on model)
Max Torque	100/120/160 N.m (depending on model)
Max Speed	38-60 KM/H (depending on model)
Suggested Users	Unisex-adult
Manufacturer	Bafang Electric (Suzhou) Co., Ltd.
Date First Available	October 28, 2024

MOTOR SPECIFICATION

- RATED POWER: **500W**

- MAX TORQUE: **100Nm**

- WEIGHT: **4.2KG**

- MAX SPEED **38-45KM/H**



Front Lamp
250mm

- RATED POWER: **750W**

- MAX TORQUE: **120Nm**

- WEIGHT: **4.3KG**

- MAX SPEED **45-55KM/H**



Rear Lamp
250mm



Battery
500mm



1T4
450mm



Speed Sensor
350mm



Gear Shift Sensor
250mm



Battery
communication
500mm




Front Lamp
250mm



Rear Lamp
250mm



Battery
500mm



1T4
500mm



Speed Sensor
400mm



Gear Shift Sensor
250mm



Battery
communication
500mm

- RATED POWER: **1000W**

- MAX TORQUE: **160Nm**

- WEIGHT: **5.8KG**

- MAX SPEED **50-60KM/H**

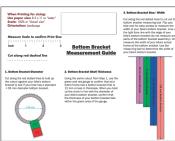


Figure 7.1: Detailed motor specifications for 500W, 750W, and 1000W models.

8. WARRANTY AND SUPPORT

BAFANG offers a **30-day return policy** and a **365-day repair or replacement warranty** for this product. Our expert tech support team, based in the US, is available to assist you with any queries or uncertainties you may encounter.

For support, please follow these steps from your order on Amazon: Click *Account & Lists* → *Orders* → *Get help with order* → (Enter information) → *Send e-mail*. We are committed to providing exceptional customer care and a hassle-free experience.

	<p>Bafang Bottom Bracket Measurement Guide for BBS02/BBSHD E-bike Mid-Drives</p> <p>Download and print this Bafang measurement guide to accurately determine your bicycle's bottom bracket diameter, shell thickness, and width. Essential for ensuring proper fitment of Bafang BBS02 (750W) and BBSHD (1000W) mid-drive motors. Includes printable template and instructions.</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 BBS Mid Drive Electric Bike Conversion Kit User Manual</p> <p>Comprehensive user manual for the Bafang BBS mid-drive electric bike conversion kit, covering installation, operation, maintenance, and troubleshooting for BBS01, BBS02, and BBSHD models. Includes detailed steps, safety information, and problem-solving advice.</p>
	<p>BAFANG & GREENERGIA: E-bike Motor and Battery Compatibility Guide</p> <p>A comprehensive guide from GREENERGIA STORE detailing how to check BAFANG electric bicycle motor and battery compatibility. Includes step-by-step instructions for bottom bracket measurement and printable templates for various battery models.</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>
	<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>