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› BAFANG Ebike Conversion Kit User Manual

BAFANG 48V500W Brushless Geared Front Hub Motor Conversion Kit

BAFANG Ebike Conversion Kit User Manual

Model: 48V500W Brushless Geared Front Hub Motor Kit

1. INTRODUCTION

This user manual provides comprehensive instructions for the installation, operation, maintenance, and troubleshooting of your BAFANG Ebike Conversion Kit. This kit is designed to transform a standard bicycle into an electric bike, offering enhanced power and versatility for various riding conditions.

The BAFANG 48V500W Brushless Geared Front Hub Motor Kit delivers robust performance with a 65N.m max torque and speeds up to 40KM/H, suitable for diverse terrains and commuting needs. Its durable design ensures reliable operation in various weather conditions.



Figure 1.1: Overview of the BAFANG Ebike Conversion Kit components, including the front hub motor wheel, controller, display, cables, and optional battery accessories.

2. SETUP AND INSTALLATION

The BAFANG Ebike Conversion Kit is designed for straightforward installation, with many components pre-assembled to simplify the process. This section guides you through the necessary steps for a successful conversion.

2.1 Compatibility Check

Ensure your bicycle is compatible with the kit. This kit is designed for 100mm quick-release front forks and is compatible with both V-brakes and disc brakes. Verify your wheel size (20", 26", 28"/29"/700C) to select the appropriate motor wheel.

Flexible And Compatible

Dropout: 100mm • Fit for Front Dropout: 100mm

①

Axle Length: 6.29" (160mm) **100MM**

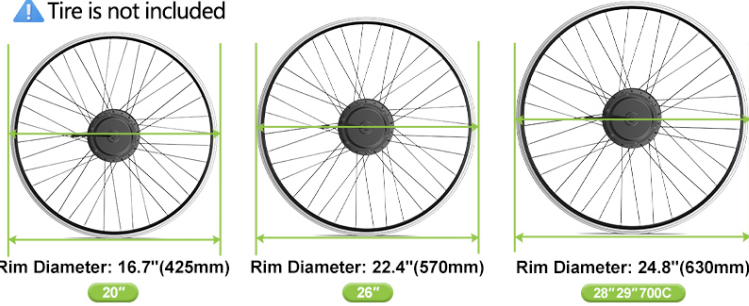
• Both fit with V brake and disc brake bike .

Thru Axle Dropouts

Figure 2.1: Diagram illustrating the 100mm dropout compatibility and V-brake/disc brake support for the conversion kit.

HOW TO CHOOSE THE CORRECT SIZE ?

⚠ Tire is not included



- Step 1:** Find where the tire size is marked on your bike
- Step 2:** Check the label number (example: if it says 26x1.95 as shown)
- Step 3:** Determine tire size. (Follow step 2 to determine and confirm that your bicycle tires are 26 inches.)



How to Choose?	20" X 1.95	26"	28" X 2.125
Rim Size	20"	26"	28" 29" 700C
Rim Diameter	425mm (16.7")	570mm (22.4")	630mm (24.8")
Compatible Brake	V brake & Disc Brake	V brake & Disc Brake	V brake & Disc Brake
Spoke Specification	36H*12G	36H*12G	36H*12G

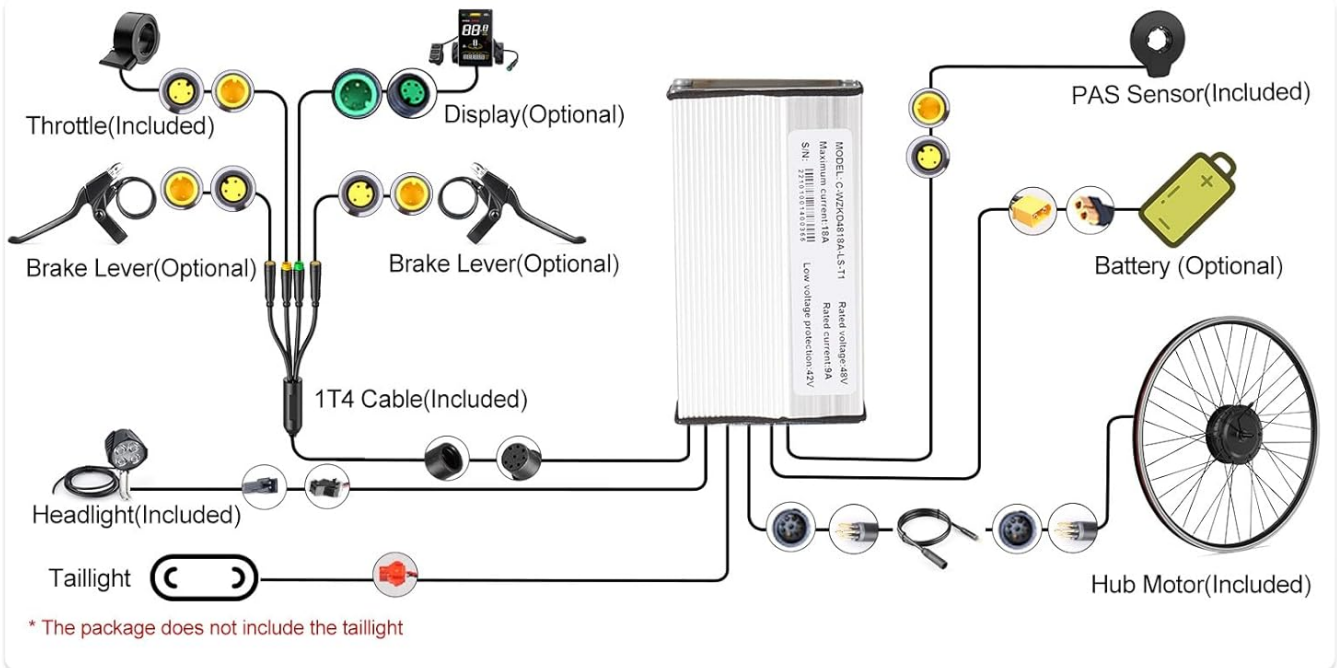


Figure 2.2: Instructions on how to determine the correct wheel size for your bicycle, based on rim diameter and tire markings.

2.2 Component Identification and Connection

Familiarize yourself with the main components and their connections. The kit includes the front hub motor wheel, controller, PAS sensor, thumb throttle, 1T4 cable, and optional display and headlight. An optional battery is required for operation.

KIT CONNECTION DIAGRAM



PAS Sensor - Left



PAS Sensor - Right



Figure 2.3: Detailed connection diagram showing how to connect the hub motor, controller, battery, PAS sensor, throttle, display, and brake levers.

Key Connections:

- **Hub Motor:** Install the front hub motor wheel into your bicycle's front fork.
- **Controller:** Mount the controller securely, typically in a controller box.
- **Battery:** Connect your 48V battery to the controller. Ensure the battery is fully charged before first use.
- **PAS Sensor:** Install the Pedal Assist Sensor (PAS) on your bike's bottom bracket. Ensure correct left or right side installation as per the diagram.
- **Throttle:** Attach the thumb throttle to your handlebar.
- **Display:** If using an optional display, connect it to the 1T4 cable.
- **Brake Levers:** Connect the brake levers (or brake sensors if preferred) to the system. The kit defaults to brake levers; contact the seller if brake sensors are desired.
- **1T4 Cable:** This central cable connects multiple components (throttle, display, brake levers) to the controller.

Ensure all connections are secure and waterproof. The system features durable waterproof connectors for enhanced

reliability.



Figure 2.4: Illustration of the durable waterproof connectors used in the BAFANG Ebike Conversion Kit, ensuring reliable performance in various conditions.

3. OPERATING INSTRUCTIONS

Once installed, your BAFANG Ebike Conversion Kit offers multiple riding modes to suit your preferences and riding conditions.

3.1 Riding Modes

The kit supports four distinct riding modes:

- **Pure Electric Mode (Throttle):** Engage the thumb throttle for full electric power without pedaling. Ideal for quick acceleration or when you need a break from pedaling.
- **Pedal Assisted Mode (PAS):** The motor provides assistance as you pedal. The level of assistance can typically be adjusted via the display, offering a natural riding feel while reducing effort.
- **Walking Assisted Mode:** Provides low-speed motor assistance (e.g., 6 km/h) to help you push the bike when walking alongside it, useful for navigating crowded areas or steep ramps.
- **Physical Riding Mode:** The motor is disengaged, and the bike operates as a traditional bicycle, relying solely on pedal power.

48V 500W FRONT HUB MOTOR KIT FM G020.500.D



Pure Electric
Mode



Pedal Assisted
Mode



Walking Assisted
Mode



Physical Riding
Mode



48V

Rated Voltage



500W

Rated Power



65N.M

Max Torque

**DISC BRAKE &
V BRAKE**

Rim brake



40KM/H (26")

Max Speed



18A

Controller Current

Figure 3.1: Visual representation of the four riding modes and key specifications of the 48V 500W Front Hub Motor Kit.

3.2 Digital Display (Optional)

If you have opted for a digital display, it provides essential information and control over your ebike system. Displays can track speed, battery life, mileage, and allow adjustment of pedal assist levels. Some advanced displays offer Bluetooth connectivity for GPS navigation and smartphone integration.

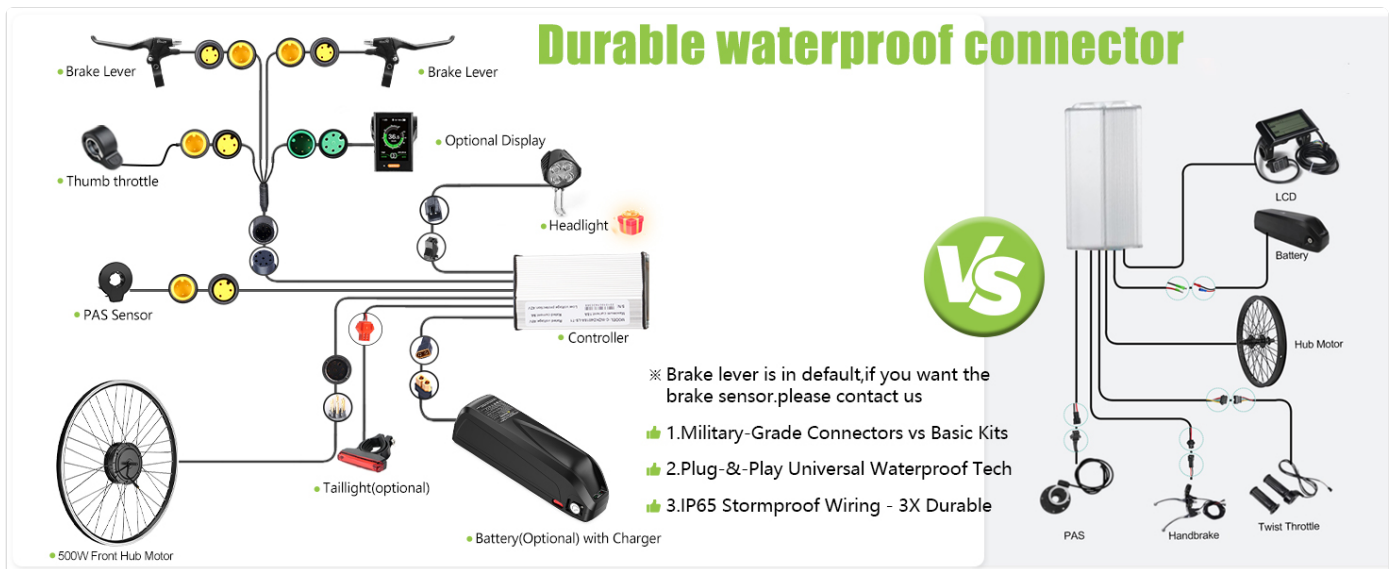


Figure 3.2: Comparison table of various optional digital displays, highlighting features like screen size, PAS levels, USB function, and Bluetooth connectivity.

Refer to your specific display's manual for detailed operation instructions, including power on/off, mode switching, and settings adjustments.

4. MAINTENANCE

Proper maintenance ensures the longevity and optimal performance of your BAFANG Ebike Conversion Kit. Regular checks and care are essential.

4.1 General Care

- **Cleaning:** Clean the motor, controller, and other components with a damp cloth. Avoid high-pressure washing directly on electrical parts.
- **Connections:** Periodically check all electrical connections for tightness and ensure they are free from dirt or corrosion. The kit features IPX5 waterproofing, but proper care extends component life.
- **Cables:** Inspect cables for any signs of wear, fraying, or damage. Replace damaged cables immediately.
- **Fasteners:** Ensure all bolts and fasteners on the motor, controller, and other mounted components are secure.

4.2 Battery Care (Optional Component)

While the battery is an optional component purchased separately, proper care is crucial for its lifespan and safety:

- **Charging:** Use only the charger provided or recommended by the battery manufacturer. Do not overcharge.
- **Storage:** Store the battery in a cool, dry place, away from direct sunlight and extreme temperatures. If storing for extended periods, maintain a charge level between 40-60%.
- **Water Exposure:** Although many batteries are weather-resistant, avoid submerging them in water. If the battery gets wet, ensure it is completely dry before charging or using.
- **Security:** Utilize the built-in lock mechanism (if available) to secure the battery to your bike.

HUB MOTOR SPECIFICATIONS



Product Name	Motor option	Rated Voltage (DCV)	Rated Power (W)
Front hub motor	48V500W	48V	500W
No-load current	Rated Current	Wheel Diameter (Inch)	Max Torque (N.m)
≤1.8A	≤13.8A	20/26/700C	65N.M
Max Speed	Spoke Specification	Weight	Efficiency (%)
40KM/h	36H*12G	7.100KG	>75%
Noise Grade (dB)	Waterproof Grade	Installation Widths (mm/OLD)	Maximum current (Controller)
<55	IPX5	100±1	18A

Figure 4.1: Information on battery features such as 100% testing, 85% capacity after 1000 cycles, waterproof technology, BMS security, anti-theft lock, and USB port connection.

5. TROUBLESHOOTING

This section provides solutions to common issues you might encounter with your BAFANG Ebike Conversion Kit. For problems not listed here, please contact customer support.

Table 5.1: Common Troubleshooting Guide

Problem	Possible Cause	Solution
Motor not engaging/no power	Battery low or not connected Loose electrical connections Brake levers engaged (safety cut-off) PAS sensor misalignment or damage	Check battery charge and connection. Inspect all cables and connectors for secure fit. Ensure brake levers are fully released. Verify PAS sensor position and integrity.
Display not turning on	Loose display cable connection Battery not providing power Display unit fault	Check display cable connection to the 1T4 cable/controller. Confirm battery is charged and connected to the controller. If issues persist, contact support.
Inconsistent pedal assist	PAS sensor issues (dirty, loose, misaligned) Controller malfunction	Clean and re-align the PAS sensor. Ensure magnets are intact. Check for error codes on the display (if applicable).
Motor making unusual noise	Loose spokes or wheel components Internal motor issue	Check wheel for loose spokes or components. If noise persists and is from the motor, discontinue use and contact support.

6. SPECIFICATIONS

Detailed technical specifications for the BAFANG Ebike Conversion Kit components.

6.1 Hub Motor Specifications



Figure 6.1: Table detailing the specifications of the BAFANG Front Hub Motor, including voltage, power, torque, speed, and waterproofing.





Table 6.1: BAFANG 48V500W Front Hub Motor

Parameter	Value
Product Name	Front hub motor
Motor Option	48V500W
Rated Voltage (DCV)	48V
Rated Power (W)	500W
Max Torque (N.m)	65N.m
Max Speed	40KM/H
Wheel Diameter (inch)	20/26/700C
Spoke Specification	36H*12G
Waterproof Grade	IPX5
Installation Widths (mm/OLD)	100±1
Material	Aluminum

6.2 Display Specifications (Optional)

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	✓	✗	✗	✗
Speed limit	0-99km/h	10km/h-60km/h	0-61km/h	10km/h-99km/h
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	3.8inch
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	✗	✗	✗	✗
Speed limit	12km/h-90km/h	10km/h-99km/h	10km/h-99km/h	0-100km/h
USB Charger DC 5V 500mA	✓	✓	✗	✗

Figure 6.2: Table outlining specifications for various optional digital displays, including model, PAS levels, screen size, and features like navigation and USB charging.

6.3 Battery Specifications (Optional Component)

BATTERY SPECIFICATION

48V 13Ah
48V 17.5Ah



48V 19.2Ah
48V 20Ah



Battery Model	Shark Battery 48V 13Ah	Shark Battery 48V 17.5Ah	G80 Shark Battery 48V 19.2Ah	G80 Shark Battery 48V 20Ah
Battery Cell	18650 2600mAh	L*/G Sam*/sung 18650 3500mAh	L*/G 21700 4800mah	L*/G 21700 5000mAh
BMS Max Protection Current	30A	30A	30A	30A
USB Port	✓	✓	✓	✓
Weight	4.25kg	4.045kg	4.95kg	4.7kg
Cycle Life	1000 times	1000 times	1000 times	1000 times
Battery Charger	✓	✓	✓	✓

48V 20Ah



52V 20Ah



48V 17.5Ah



Battery Model	VoltzX Battery 48V 20Ah	YingWu Battery 52V 20Ah	Rear Rack Battery 48V 17.5Ah
Battery Cell	Sam*/sung 21700 5000mAh	Sam*/sung 21700 5000mAh	18650 2600mah
BMS Max Protection Current	30A	30A	30A
USB Port	✓ USB/TYPER-C	✗	✓
Weight	5.2kg	5kg	6kg
Cycle Life	1000 times	1000 times	1000 times
Battery Charger	✓	✓	✓

Figure 6.3: Table providing specifications for various optional battery types, including voltage, capacity, cell type, BMS current, weight, and cycle life.

7. WARRANTY AND SUPPORT

BAFANG products are manufactured with high-quality standards. For specific warranty terms and conditions, please refer to the documentation provided with your purchase or contact the seller directly. BAFANG and its distributors, such as Greenergia, maintain cooperative service points globally to assist with product inquiries and support.

For technical assistance, troubleshooting beyond this manual, or warranty claims, please reach out to the authorized seller or BAFANG customer service.

