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## BAFANG TBA48V 500W 20RDC 500C CA

# BAFANG 48V 500W Rear Hub Motor 20-Inch Electric Bike Conversion Kit User Manual

Model: TBA48V 500W 20RDC 500C CA

## 1. INTRODUCTION

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This manual provides comprehensive instructions for the installation, operation, and maintenance of your BAFANG 48V 500W Rear Hub Motor Electric Bike 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 pedal assistance and throttle control.

## 2. SAFETY INFORMATION

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Always prioritize safety when working with electrical components and operating an electric bicycle. Failure to follow safety guidelines can result in serious injury or damage to the product.

- **Professional Installation Recommended:** If you are not confident in your mechanical or electrical skills, seek assistance from a qualified bicycle mechanic or e-bike specialist for installation.
- **Electrical Safety:** Always disconnect the battery before performing any maintenance or installation. Avoid exposing electrical components to water or extreme moisture. Ensure all connections are secure and properly insulated.
- **Mechanical Safety:** Regularly inspect your bicycle's brakes, tires, and frame for wear or damage. Ensure all bolts and fasteners are tightened to the manufacturer's specifications.
- **Riding Safety:** Always wear a helmet and appropriate safety gear. Obey all local traffic laws and regulations. Be aware of your surroundings and ride defensively.
- **Battery Safety (if purchased separately):** If you have purchased a battery, refer to its specific manual for charging, storage, and handling instructions. Do not use damaged batteries or chargers.

## 3. PACKAGE CONTENTS

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Verify that all components listed below are present in your package. If any items are missing or damaged, contact customer support immediately.

Figure 3.1: Included Components (Packing List)

- 500W Rear Cassette Wheel Hub Motor with Rim and Spokes
- Controller and Controller Box
- Optional Display (e.g., 500C)
- Brake Levers (or Brake Sensors, depending on kit)
- 1T4 Cable (main wiring harness)
- Thumb Throttle
- PAS (Pedal Assist Sensor)
- Headlight
- Stickers
- User Manual
- Optional: Battery and Charger (if ordered together)

## 4. PRODUCT OVERVIEW

The BAFANG 48V 500W Rear Hub Motor Electric Bike Conversion Kit transforms a standard bicycle into a powerful e-bike. The kit features a robust rear hub motor, a controller for managing power, and a display for monitoring ride data. It is designed for compatibility with 20-inch wheels and cassette-type freewheels.



Figure 4.1: BAFANG 48V 500W Rear Hub Motor

The motor provides a stable and powerful drive system with a maximum torque of 65 N.m, allowing speeds up to 38-40 KM/H. The kit supports both disc brake and V brake systems and is compatible with rear dropouts measuring 135-142mm.

## 5. COMPATIBILITY AND SPECIFICATIONS

Ensure your bicycle meets the following compatibility requirements before installation.

### 5.1 Wheel Size and Frame Compatibility



Figure 5.1: Wheel Size and Frame Compatibility Options

- **Wheel Diameter:** 20 inches (This specific kit is for 20-inch wheels).
- **Rear Dropout (OLD):** 135-142mm.
- **Brake Type:** Compatible with both disc brake and V brake systems.
- **Gear Shift:** Designed for cassette type flywheels (up to 9 speeds).

## 5.2 Motor Specifications



Figure 5.2: BAFANG 500W Rear Hub Motor Specifications

Parameter	Value
Rated Voltage	48V
Rated Power	500W
Max Torque	65 N.m
No-load RPM (n0)	390 ± 15 RPM
Rated RPM (nT)	345 ± 15 RPM
Efficiency	80%
Installation Width (OLD)	138mm (compatible with 135-142mm)
Spoke Specification	36H*12G

## 5.3 Display Options



Figure 5.3: BAFANG Display Options (500C is included with this kit)

The kit typically includes a 500C display. Refer to the display comparison chart for features of various BAFANG displays. The 500C display features a 2.2-inch screen, shows voltage/percentage for battery, supports speed limit, is compatible with 24V/36V/48V/52V systems, and offers 3 or 5 PAS levels.

## 5.4 Optional Battery Specifications

If a battery was purchased with your kit, refer to the following specifications. Note that the battery is an optional component and not included in the base kit.



Figure 5.4: Optional Battery Specifications

## 6. INSTALLATION GUIDE

Follow these steps carefully for proper installation of your e-bike conversion kit. It is recommended to watch official BAFANG installation videos or consult a professional if you are unsure about any step.

## 6.1 Prepare Your Bicycle

- Ensure your bicycle is clean and stable, preferably mounted on a repair stand.
- Remove the existing rear wheel and any associated components (cassette, brake rotor if applicable).

## 6.2 Install the Rear Hub Motor Wheel

- Install your existing cassette onto the new hub motor wheel.
- Mount the new hub motor wheel into the rear dropouts of your bicycle frame. Ensure the motor cable exits towards the front of the bike, typically on the left side.
- Secure the wheel with the provided axle nuts, ensuring it is centered and tight.
- Reinstall your brake rotor and caliper, or adjust V brakes as necessary.

## 6.3 Mount the Controller and Display

- Find a suitable location on your bike frame for the controller box, typically near the bottom bracket or on the downtube. Secure it using zip ties or mounting straps.
- Mount the display (e.g., 500C) onto your handlebars. Position it for easy viewing and access to buttons.

## 6.4 Install Brake Levers/Sensors, Thumb Throttle, and PAS Sensor

- **Brake Levers:** Replace your existing brake levers with the provided e-bike specific levers. These levers typically include a motor cut-off switch.
- **Thumb Throttle:** Install the thumb throttle on your handlebars, usually on the left side, next to the grip.
- **PAS Sensor:** Install the PAS sensor on the bottom bracket spindle, ensuring the magnet disc is properly aligned with the sensor.

## 6.5 Wiring Connections

Carefully connect all components using the provided 1T4 cable and other wiring. Refer to the wiring diagram for correct connections.



Figure 6.1: Wiring Diagram



Figure 6.2: Connection Instructions

- Connect the motor cable from the rear hub motor to the controller.
- Connect the 1T4 cable to the controller.
- Connect the display, brake levers/sensors, thumb throttle, and PAS sensor to the corresponding ports on the 1T4 cable.
- Connect the headlight to its designated port.
- If using an optional battery, connect it to the controller.
- Ensure all connections are firm and waterproof where applicable. Route cables neatly and secure them with zip ties to prevent snagging.

## 7. OPERATING INSTRUCTIONS

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Once installed, follow these steps to operate your BAFANG e-bike kit.

## 7.1 Powering On/Off

- Ensure the battery (if applicable) is securely connected and charged.
- Press and hold the power button on your 500C display to turn the system on. The display will illuminate.
- To turn off, press and hold the power button again until the display shuts down.

## 7.2 Display Functions (500C)

The 500C display provides essential ride information and allows you to adjust settings.

- **Speed Display:** Shows current speed.
- **Battery Indicator:** Displays remaining battery charge (voltage or percentage).
- **PAS Level:** Indicates the current level of pedal assistance (typically 0-3 or 0-5). Use the '+' and '-' buttons to adjust.
- **Trip Distance/Odometer:** Cycle through different data screens to view trip distance, total odometer, etc.
- **Headlight Control:** Some displays allow you to turn the headlight on/off.

## 7.3 Pedal Assist System (PAS)

The PAS sensor detects your pedaling motion and provides motor assistance based on the selected level.

- Select a PAS level (e.g., 1 for minimal assistance, 5 for maximum assistance) using the display buttons.
- Begin pedaling, and the motor will engage to assist you.

## 7.4 Thumb Throttle

The thumb throttle provides on-demand power, allowing you to propel the bike without pedaling.

- Gently press the thumb throttle to engage the motor. The amount of pressure typically corresponds to the power output.
- Release the throttle to disengage the motor.

# 8. MAINTENANCE

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Regular maintenance ensures the longevity and safe operation of your e-bike kit.

- **Regular Checks:** Before each ride, check tire pressure, brake function, and ensure all quick releases and axle nuts are tight. Periodically check all bolts and fasteners for tightness.
- **Cleaning:** Keep the motor, controller, and display clean. Use a damp cloth to wipe down components. Avoid high-pressure washing directly on electrical parts.
- **Motor Care:** The hub motor is largely maintenance-free. Avoid submerging it in water. If you hear unusual noises, consult a professional.
- **Battery Care (if applicable):** Charge the battery regularly, even if not in use, to maintain its health. Store the battery in a cool, dry place. Avoid fully discharging the battery.
- **Wiring:** Periodically inspect all cables for wear, cuts, or loose connections. Secure any loose wiring.

# 9. TROUBLESHOOTING

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

Problem	Possible Cause	Solution
Motor not assisting / No power	Battery low or disconnected; Loose wiring; Brake levers engaged; PAS sensor issue; Display off.	Check battery charge and connection. Inspect all wiring connections. Ensure brake levers are fully released. Check PAS sensor alignment. Turn on display.
Display not turning on	Battery low or disconnected; Loose display cable.	Check battery charge and connection. Ensure display cable is securely plugged into the 1T4 cable.
Inconsistent pedal assist	PAS sensor misalignment or damage; Loose PAS sensor connection.	Check PAS sensor and magnet disc alignment. Ensure PAS sensor cable is securely connected.
Throttle not working	Loose throttle connection; Faulty throttle.	Check throttle cable connection. If problem persists, throttle may need replacement.

## 10. WARRANTY AND SUPPORT

BAFANG is committed to providing high-quality products and reliable customer service.

- **Technical Support:** Our team of professional technicians is available to provide technical support whenever needed. For detailed installation guides or troubleshooting assistance, please contact us.
- **Customized Service:** If you have any special requirements or requests, please reach out to us. Effective communication can make a significant difference.
- **UL Certificate:** The batteries (if purchased) are investigated by UL in accordance with ANSI/CAN/UL/ULC 2271 - Batteries for Use In Light Electric Vehicle (LEV) Applications.



Figure 10.1: UL Certificate of Compliance (for Batteries)

For warranty claims or further assistance, please refer to your purchase documentation or contact BAFANG customer service through the platform where the product was purchased.