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› BAFANG 48V500W Front Hub Motor Electric Bike Conversion Kit User Manual

BAFANG 48V500W Front Hub Motor Kit

BAFANG 48V500W Front Hub Motor Electric Bike Conversion Kit User Manual

Model: 48V500W Front Hub Motor Kit

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your BAFANG 48V500W Front Hub Motor Electric Bike Conversion Kit. Please read this manual thoroughly before installation and use to ensure proper function and safety. This kit is designed to convert a standard bicycle into an electric bicycle, offering enhanced propulsion and riding experience.

2. PRODUCT COMPATIBILITY

The BAFANG 48V 500W Front Wheel Hub Motor is designed for universal compatibility with various bicycle types. Ensure your bicycle meets the following specifications:

- **Front Dropout:** 100mm
- **Front Fork Aperture:** 10mm
- **Compatible Brake Types:** V Brake and Disc Brake
- **Compatible Tire Width:** 1.5-2.4 inches

The kit supports multiple wheel sizes:

Wheel Size	Rim Diameter	Spokes
28"/29"/700C	630mm (24.8")	12G*36H
26"	570mm (22.4")	12G*36H
20"	425mm (16.7")	12G*36H

Refer to the images below for visual guidance on compatibility and installation width.

• 28"/29"/700C



• 26"



• 20"



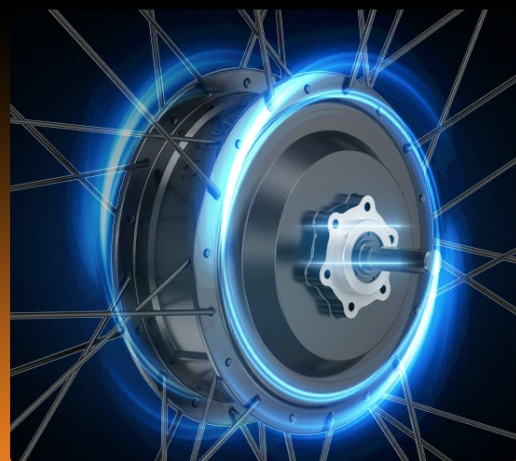
• How to Choose?			
• Rim Size	28"/29"/700C	26"	20"
• Rim Diameter	630mm(24.8 ")	570mm(22.4 ")	425mm(16.7 ")
• Spokes	12G*36H	12G*36H	12G*36H
• Compatible Brake	V Brake & Disc Brake	V Brake & Disc Brake	V Brake & Disc Brake
• Compatible Tire	1.5-2.4 inch		

• Installation Width / OLD 100mm



Image: Wheel size compatibility and front fork installation dimensions.

MOTOR SPECIFICATION



• Installation Width / OLD 100mm



• Type: Front Hub	• Noise : <55 dB
• Rated Voltage : 48V	• Operating Temperature: -20°C ~ 45°C
• Rated Power : 500W	• Waterproof Rating :IPX5
• Maximum Torque : 65N.m	• Compatible Frame Spacing: 97-103MM
• Max Load Speed (26") : 40KM/h	• Controller Max Current :18A
• No-load Current : ≤1.8A	• Controller Rated Current :9A
• Rated Current : ≤13.8A	• Controller Rated Voltage: 48V
• Wheel Diameter : 20"/26"/700C	• Controller Low Voltage Protection: 39 ± 1V
• Rated Speed: 340±15	• Controller Dimensions : L 93.8mm x W 49mm x H 29mm

Image: Brake type compatibility and motor installation details.

3. COMPONENTS OVERVIEW (PACKING LIST)

The BAFANG Front Hub Motor Kit includes the following components. Please verify all items are present upon unboxing.

- Front Hub Motor with Wheel (20"/26"/700C, optional)
- Motor Controller
- Thumb Throttle
- 1T4 Cable (main wiring harness)
- Ebike Display (optional, various models available)
- Brake Levers or Brake Sensors
- PAS Sensor (Pedal Assist System)
- Headlight
- Controller Box
- Plastic Straps
- 36V/250W Stickers
- Ebike Battery (optional, needs extra purchase if not included)

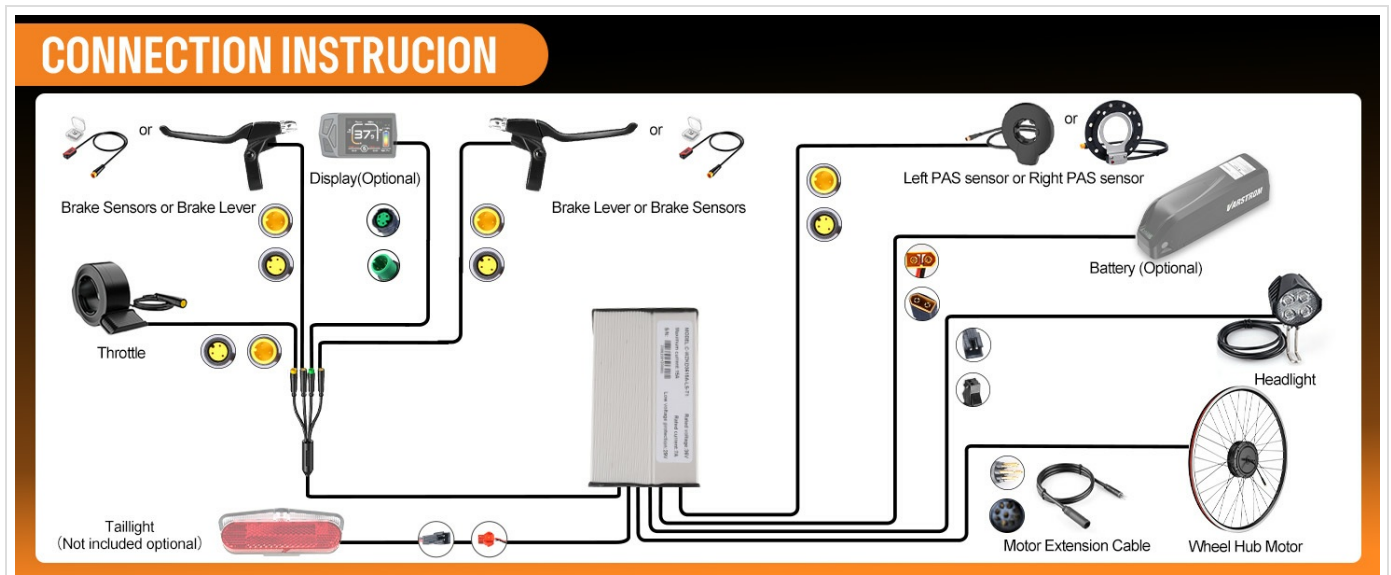


Image: Detailed packing list of the conversion kit components.

4. INSTALLATION

Follow these steps to install your BAFANG Front Hub Motor Conversion Kit:

1. **Prepare the Bicycle:** Remove the existing front wheel from your bicycle. Ensure the front fork dropouts are clean and free of obstructions.
2. **Install the Motor Wheel:** Carefully insert the BAFANG front hub motor wheel into the front fork dropouts. Ensure the axle is fully seated and secure it with the provided nuts. The motor cable should exit towards the bottom or rear of the fork.
3. **Mount the Controller:** Attach the controller box to a suitable location on your bicycle frame, typically near the battery or motor, using the provided plastic straps or mounting hardware. Ensure it is protected from water and impact.
4. **Install Display and Throttle:** Mount the display and thumb throttle on the handlebars. Position them for comfortable and safe access during riding.
5. **Install Brake Levers/Sensors:** Replace your existing brake levers with the provided e-bike specific brake levers, or install the brake sensors onto your existing brake levers. These are crucial for motor cut-off during braking.

- Install PAS Sensor:** Attach the Pedal Assist System (PAS) sensor to the bottom bracket area of your bicycle. Ensure the magnet disc is correctly aligned with the sensor for accurate pedal detection.
- Connect Wiring:** Use the 1T4 cable to connect all components to the controller. Refer to the connection diagram below for proper wiring. Each connector is typically color-coded and uniquely shaped to prevent incorrect connections.
- Install Headlight:** Mount the headlight to the front of your bicycle and connect it to the designated port on the controller or 1T4 cable.
- Install Battery:** Securely mount the battery to your bicycle frame (if purchased separately). Connect the battery to the controller using the appropriate power cable. Ensure the XT60 connector on the motor cable is compatible with your battery connector.
- Cable Management:** Neatly route and secure all cables using plastic straps to prevent them from interfering with moving parts or getting damaged.



Image: Kit connection diagram for electrical components.

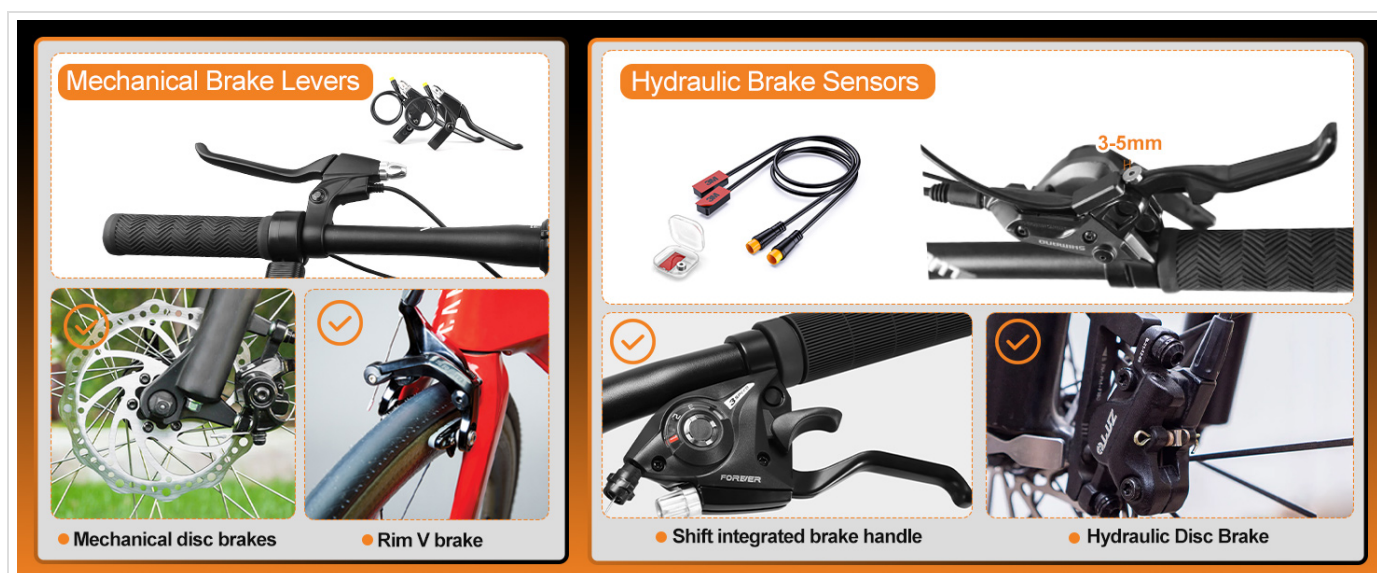


Image: Brake lever and sensor installation options.

5. DISPLAY OPTIONS

The kit supports various display models, each offering different features and interfaces. Choose the display that best suits your needs. Common display models include 500C, DPC18, P860ML, DZ40, EKD01, 800S, SW2-M58, and DM03.

Display Model	Screen Size	Battery Indicator	Handlebar Diameter	USB Port	Speed Limit	Compatible Voltage	PAS Level
VD18MT	1.45 inch	Voltage/Percentage	22.2mm	No	Yes	36V/48V/52V	3-5-9-U
DZ40	1.6 inch	Percentage	22.2mm	No	Yes	24V/36V/48V	5
EKD01	2.4 inch	Voltage/Percentage	25.4mm/22.2mm	Yes	Yes	12V/32V/48V/60V	3, 5, 9
VD04	3.5 inch	Voltage/Percentage	31.8mm/25.4mm/22.2mm	Yes	Yes	36V/48V/52V	3, 5, 9
SWM58	3.8 inch	Voltage/Percentage	31.8mm/25.4mm/22.2mm	No	Yes	24V/36V/48V/52V	3, 5, 9






	VD18MT	DZ40	EKD01	VD04	SWM58
Display					
Screen	1.45 inch	1.68 inch	2.4 inch	3.5 inch	3.8 inch
Battery Indicator	Voltage/Percentage	Percentage	Voltage/Percentage	Voltage/Percentage	Voltage/Percentage
Holder(mm)	22.2mm	22.2mm	25.4mm/22.2mm	31.8mm/25.4mm/22.2mm	31.8mm/25.4mm/22.2mm
Speed Limit	✓	✓	✓	✓	✓
Compatible Voltage	36V/48V/52V	24V/36V/48V	12V/32V/48V/60V	36V/48V/52V	24V/36V/48V/52V
Brightness	✓	✗	✓	✓	✓
PAS Level	3-5-9-U	5	3, 5, 9	3, 5, 9	3, 5, 9
USB Port	✗	✗	✓	✓	✗

Image: Detailed comparison of available display options.

6. BATTERY COMPATIBILITY

The BAFANG Front Hub Motor is compatible with 48V and 52V electric bike batteries. If you selected the 'without battery' option, ensure you prepare a compatible battery in advance. The motor is equipped with a male XT60 connector, so your battery connector must be compatible.

Compatible battery capacities include 48V 13Ah, 17.5Ah, 19.2Ah, 20Ah, and 52V 20Ah. Refer to the tables below for detailed battery parameters.

Battery Type	Watt Hour	Battery Cell	BMS	Battery Charger	Size (L*W*H)	Weight	USB Port
HL Downtube 48V 13Ah	624Wh	DMEGC 18650-26E 2600mAh	30A	54.6V 2A	368*90*111mm	4.25kg	Yes
HL Downtube 48V 16Ah	768Wh	CMICR 18650 F8M 3200mAh	30A	54.6V 3A	368*90*111mm	4.23kg	Yes
HY Downtube 48V 20Ah	960Wh	L/G INR21700 M48A 4800mAh	30A	54.6V 3A	365*85*107mm	5.0kg	No
Rear Rack 48V 18.2Ah	873.6Wh	CMICR 18650 F8M7-2600mAh	30A	54.6V 4A	476*165*89mm	6.1kg	No
G80 Downtube 48V 20Ah	960Wh	SAM-SUNG INR21700-50E 5000mAh	30A	54.6V 3A	367*90*127mm	4.7kg	No

BATTERY PARAMETERS

HL Downtube Battery
• 48V 13Ah
• 48V 16Ah

HY Downtube Battery
• 48V 20Ah

Rear Rack Battery
• 48V 18.2Ah

G80 Downtube Battery
• 48V 20Ah

Type	48V 13Ah	48V 16Ah	48V 20Ah	48V 18.2Ah	48V 20Ah
Watt Hour	624Wh	768Wh	960Wh	873.6Wh	960Wh
Battery Cell	DMEGC 18650-26E 2600mAh	CMICR 18650 F9M 3200mAh	L/G INR21700 M48A 4800mAh	CMICR 18650 F8M7-2600mAh	SAM-SUNG INR21700 - 50E 5000mAh
BMS	30A	30A	30A	30A	30A
Battery Charger	54.6V 2A	54.6V 3A	54.6V 3A	54.6V 4A	54.6V 3A
Size (L*W*H)	368*90*111mm	368*90*111mm	365*85*107mm	476*165*89mm	367*90*127mm
Weight	4.25kg	4.23kg	5.0kg	6.1kg	4.7kg
USB Port	✓	✓	✗	✓	✓
Cycle Life	1000 times				
Protection Function	Over charge, Over discharge, Over current, Short circuit, Balance				

Image: Parameters for various 48V ebike batteries.

Battery Type	Watt Hour	Battery Cell	BMS	Battery Charger	Size (L*W*H)	Weight	USB Port
YW DP-5 52V 20Ah	1040Wh	SAM-SUNG INR21700-50E 5000mAh	30A	58.8V 3A	368*95*125mm	5kg	No
YW DP-7 48V 25Ah	1200Wh	EVE INR21700-50E 5000mAh	40A	54.6V 3A	368*95*156mm	5.9kg	No
YW DP-7 52V 25Ah	1300Wh	L/G INR21700 M50LT 5000mAh	40A	58.8V 3A	368*95*156mm	5.9kg	No
Lithium Ion 48V 10.4Ah	499.2Wh	FEB 18650 2600mAh	30A	54.6V 3A	274.5*83.5*68.5mm	2.65kg	No
Voltz X 48V 20Ah	960Wh	SAM-SUNG INR21700-50GB 5000mAh	30A	54.6V 3A	365*109*140mm	5.2kg	No

BATTERY PARAMETERS

	YW DP-5 Battery • 52V 20Ah	YW DP-7 Battery • 48V 25Ah • 52V 25Ah	Lithium Ion Battery • 48V 10.4Ah	Voltz X Battery • 48V 20Ah
Type	52V 20Ah	48V 25Ah	52V 25Ah	48V 20Ah
Watt Hour	1040Wh	1200Wh	1300Wh	499.2Wh
Battery Cell	SAM-SUNG INR21700 - 50E 5000mAh	EVE INR21700-50E 5000mAh/L*G INR21700M50LT 5000mAh	FEB 18650 2600mAh	SAM-SUNG INR21700 - 50GB 5000mAh
BMS	30A	40A	40A	30A
Battery Charger	58.8V 3A	54.6V 3A	58.8V 3A	54.6V 3A
Size (L*W*H)	368*95*125mm	368*95*156mm	368*95*156mm	274.5*83.5*68.5mm
Weight	5kg	5.9kg	5.9kg	2.65kg
USB Port	✗	✗	✗	✓
Cycle Life			1000 times	
Protection Function	Over charge, Over discharge, Over current, Short circuit, Balance			

Image: Parameters for various 52V ebike batteries.

7. OPERATION

Once installed, operate your e-bike as follows:

- Power On:** Turn on the battery and then press the power button on your display unit.
- Select Assist Level:** Use the buttons on your display to select the desired pedal assist level (PAS). Higher levels provide more motor assistance.
- Pedal Assist:** Begin pedaling, and the motor will engage to provide assistance based on your selected PAS level.
- Throttle Use:** If equipped, the thumb throttle can be used to provide power without pedaling. Use it cautiously, especially when starting.
- Braking:** The brake levers/sensors will cut off motor power when engaged, ensuring safe stopping.
- Power Off:** When finished riding, turn off the display and then the battery.

8. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your e-bike kit:

- Cleanliness:** Keep the motor, controller, and battery clean and free from dirt and debris. Use a damp cloth; avoid high-pressure washing directly on electrical components.
- Connections:** Periodically check all electrical connections for tightness and corrosion. Ensure cables are not pinched or damaged.
- Battery Care:** Charge the battery regularly, even when not in use, to maintain its health. Store the battery in a cool, dry place. Avoid fully discharging the battery.
- Brakes:** Regularly inspect brake pads and cables (or hydraulic fluid) to ensure effective braking. Adjust or replace as needed.
- Tire Pressure:** Maintain correct tire pressure for optimal efficiency and safety.
- General Bike Maintenance:** Continue with regular bicycle maintenance, including chain lubrication, gear adjustments, and checking for loose bolts.

9. TROUBLESHOOTING

If you encounter issues, refer to the following common troubleshooting tips:

- **Motor Not Engaging:**

- Check if the battery is charged and powered on.
- Ensure all electrical connections are secure.
- Verify the PAS sensor is correctly installed and aligned.
- Check if brake levers are fully released; engaged brake sensors will cut motor power.

- **Display Not Turning On:**

- Confirm the battery is powered on and connected.
- Check the display cable connection to the 1T4 cable/controller.

- **Reduced Power/Range:**

- Ensure the battery is fully charged.
- Check tire pressure.
- Verify the selected PAS level is appropriate.
- Environmental factors (temperature, terrain) can affect performance.

- **Unusual Noises:**

- Inspect the motor for any loose components or obstructions.
- Check spokes for tightness.

If problems persist, contact customer support for further assistance.

10. SPECIFICATIONS

Key technical specifications for the BAFANG 48V500W Front Hub Motor Kit:

- **Motor Type:** Front Hub Motor
- **Rated Voltage:** 48V
- **Rated Power:** 500W
- **Maximum Torque:** 65N.m
- **Max Load Speed (28"):** 40KM/H
- **No-load Current:** <1.8A
- **Rated Current:** <13.8A
- **Wheel Diameter Compatibility:** 20"/26"/700C
- **Rated Speed:** 340±15 RPM
- **Noise Level:** <55 dB
- **Operating Temperature:** -20°C ~ 45°C
- **Waterproof Rating:** IPX5
- **Compatible Frame Spacing:** 97-103mm
- **Controller Max Current:** 18A
- **Controller Rated Current:** 9A
- **Controller Rated Voltage:** 48V
- **Controller Low Voltage Protection:** 39 ± 1V
- **Controller Dimensions:** L 93.8mm x W 49mm x H 29mm

WHETHER COMPATIBLE?



Rim Size	700C(28" / 29")	26"	20"
Rim Material	Aluminum Alloy	Aluminum Alloy	Aluminum Alloy
Type of Brake	V Brake or Disc Brake	V Brake or Disc Brake	V Brake or Disc Brake
Suitable Tyre	1.3"-2.0"/32C-50C Tyre	1.5"-2.4" Tyre	1.5"-2.4" Tyre
Rim Diameter	630mm(24.8")	570mm(22.4")	425mm(16.7")

Dropout: 100mm

• Fit for Front Dropout: 100mm



Axle Length: 6.29"(160mm)



100MM



Slotted Dropout

Thru Axle Dropouts

• Both fit with V brake and disc brake bike .



• Mechanical disc brakes



• Rim V brake

Image: Motor and controller specifications.

11. WARRANTY AND SUPPORT

Your BAFANG Front Hub Motor Electric Bike Conversion Kit comes with a warranty:

- **Return Policy:** 30 days return.
- **Repair or Replace:** 365 days repair or replace.

For technical support, warranty claims, or any questions regarding your product, please refer to the contact information provided with your purchase or visit the official BAFANG website.