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**Varstrom 125EVH, 125XVH, 125XVH.500.DC, US JJ 125RX-750 DZ**

# Varstrom Ebike Conversion Kit User Manual

Models: 125EVH Series, 125XVH Series (48V 500W/750W Rear Hub Motor)

## 1. INTRODUCTION

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This manual provides comprehensive instructions for the installation, operation, and maintenance of your Varstrom Ebike Conversion Kit. This kit is designed to transform a standard bicycle into an electric bicycle, offering enhanced power and versatility. Please read this manual thoroughly before installation and use to ensure proper function and safety.

The Varstrom Ebike Conversion Kit is available in two primary versions:

- **Standard Version (125EVH Series):** Engineered for reliable, everyday performance, suitable for urban commuting, leisure rides, and general errands.
- **Performance Version (125XVH Series):** Designed for higher speeds, increased torque, and extended range, ideal for demanding applications such as food delivery, cargo transport, and challenging terrains.

**VARSTROM**

# Your Ride, Your Choice:

Standard or Performance.

## Standard Version 95EVH / 125EVH



A reliable, conventional design perfect for daily & recreational use.



Applications: Daily commuting, casual city riding, short-distance travel and other low-intensity use.



Cost-Effective



## Performance Version 125XVH



An upgraded architecture delivering higher speed, greater strength, better heat dissipation, and reduced noise for demanding applications. ↑



Applications: Food delivery, cargo carrying, long-distance tours, and other high-demand, high-intensity use. ↑



Premium Investment ↑



Image: Comparison of Varstrom Standard 125EVH and Performance 125XVH Hub Motors. The image shows two hub motors, one labeled 'Standard Version 95EVH / 125EVH' and the other 'Performance Version 125XVH', highlighting their design differences and intended applications.

## 2. SAFETY INSTRUCTIONS

Adherence to safety guidelines is crucial for preventing injury and damage. Always wear a helmet and appropriate safety gear when riding an ebike. Ensure all components are securely fastened before each ride.

- **Electrical Safety:** Do not expose electrical components to excessive moisture. Ensure all connections are dry and secure. Avoid tampering with the motor or controller.
- **Braking:** Electric bikes can reach higher speeds. Always test your brakes before riding and maintain them regularly.
- **Traffic Laws:** Obey all local traffic laws and regulations pertaining to electric bicycles.
- **Battery Handling:** If using an optional battery, follow the battery manufacturer's safety instructions for charging, storage, and handling.

## 3. PACKAGE CONTENTS

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

- Pre-laced Rear Wheel with Hub Motor
- Intelligent Controller
- LCD Display (Optional: VD03, VD04, or EKD01)
- Brake Levers (or Brake Sensors)
- Thumb Throttle
- PAS Sensor (Pedal Assist Sensor)
- All necessary Wiring Cables
- Headlight
- User Manual

*Note: Battery is sold separately and is not included in the standard kit.*



• How to Choose?				
• Rim Size	28"/29"/700C	27.5"	26"	20"
• Rim Diameter	630mm(24.8")	600mm(23.6")	570mm(22.4")	420mm(16.5")
• Compatible Tire	700C:32C-50C Width		20"/26"/27.5"/28"/29":1.5"-2.4"Width	

## HOW TO CHOOSE SUITABLE WHEEL SIZE ?



### Where the tire is marked

- 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.)

*Image: Varstrom Ebike Conversion Kit Component Diagram. This diagram illustrates the various components of the ebike conversion kit and their typical connections, including the hub motor, controller, display, brake levers, throttle, PAS sensor, and optional battery.*

## 4. SETUP AND INSTALLATION

Installation requires basic mechanical skills. If you are unsure about any step, consult a professional bicycle mechanic.

## 4.1 Wheel Compatibility

The kit is compatible with various wheel sizes and brake systems:

- **Wheel Sizes:** 20", 26", 27.5", and 700C (28"/29")
- **Rear Dropout Width:** 135-145mm
- **Brake Systems:** Supports both Disc and V-Brakes
- **Cassette Compatibility:** Compatible with cassette flywheels (not for screw-on freewheels), supporting up to 10-speed gear systems.



**Dual-Layer Gears:**  
Feel the difference in torque

 <b>Effortless Inclines:</b> Power up hills without strain.	 <b>Immediate Thrust:</b> Accelerate instantly in traffic.
 <b>Unwavering Power:</b> Carry heavy loads with consistent performance.	 <b>Refined Durability:</b> A smoother, quieter, and longer-lasting ride.

*Image: How to Choose Suitable Wheel Size for Ebike Conversion Kit. This image provides a guide on how to determine the correct wheel size for your bicycle, showing different rim sizes and compatible tire widths.*

## 4.2 Component Installation Overview

1. **Install Rear Wheel:** Replace your bicycle's rear wheel with the pre-laced hub motor wheel. Ensure the dropout width

is within the specified range (135-145mm).

2. **Mount Controller:** Secure the intelligent controller in a suitable location on your bike frame, typically near the seat post or in a dedicated controller box.
3. **Install Display:** Mount the chosen display (VD03, VD04, or EKD01) on your handlebars.
4. **Attach Brake Levers/Sensors:** Replace your existing brake levers with the provided ones, or install brake sensors if your kit includes them.
5. **Install Thumb Throttle:** Mount the thumb throttle on your handlebars.
6. **Install PAS Sensor:** Attach the Pedal Assist Sensor to your bottom bracket. *Note: If using a hollow crankset, a right-side PAS sensor may be required.*
7. **Connect Wiring:** Carefully connect all wiring cables according to the provided diagram, ensuring secure and waterproof connections.
8. **Install Headlight:** Mount and connect the headlight.
9. **Connect Battery (Optional):** If using an optional battery, connect it to the controller. Ensure the battery system is compatible (48V/52V).

## 5. OPERATING INSTRUCTIONS

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Once installed, familiarize yourself with the operation of your ebike kit.

### 5.1 Display Options

Your kit includes an optional display for controlling and monitoring your ebike. Three display choices are available:

- **VD03 Display:** A compact 1.5" LED screen, ideal for limited handlebar space or budget-conscious users. Covers essential functions.
- **VD04 Display:** A larger 3.5" IPS screen offering enhanced visuals and data clarity.
- **EKD01 Display:** A wide 2.4" horizontal display, also providing enhanced visuals and data.

All three displays connect to the BIKEGO+ app and include a one-key speed limit adjustment function. The VD04 and EKD01 models also feature navigation functionality.



## EKD01 Display



2.4" TFT  
Screen



φ22.2/25.4mm  
Holder



Navigation  
Function



9  
PAS Level



IP67  
Waterproof



Support : English, Français, Español, Italiano, Deutsch, Polski, Nederlands, Čeština, 中文



Support Remote Locking & Unlocking (On "BIKEGO+" APP)



Quick-Switch to 25 km/h Street-legal Mode  
(Holding "+" and "-" Button Together)

## VD03 Display



1.5" LED  
Screen



φ22.2mm  
Holder



English  
Version



9  
PAS Level



IP67  
Waterproof



"BIKEGO+" APP Support Remote Locking & Unlocking



Quick-Switch to 25 km/h Street-legal Mode  
(Holding "Power" and "-" Button Together)



## VD04 Display



3.5" IPS  
Screen



φ22.2/25.4/31.8mm  
Holder



Navigation  
Function



9  
PAS Level



IP67  
Waterproof



Support : English, Français, Español, Italiano, Deutsch, Polski, Nederlands, Čeština, 中文



Support Remote Locking & Unlocking (On "BIKEGO+" APP)



Quick-Switch to 25 km/h Street-legal Mode  
(Holding "+" and "-" Button Together)

Image: Varstrom Ebike Display Options: VD03, VD04, EKD01. This image showcases the three available display units, detailing their screen sizes, features like IP67 waterproof rating, PAS levels, and app connectivity.

## 5.2 Basic Operation

- Power On/Off:** Press and hold the power button on your display to turn the system on or off.
- Pedal Assist System (PAS):** The PAS sensor detects your pedaling motion and provides motor assistance. Adjust the assist level using the display controls.
- Throttle:** Use the thumb throttle for on-demand power without pedaling. Apply gently to avoid sudden acceleration.
- Speed Limit:** The display allows for one-key speed limit adjustment, typically to comply with local regulations (e.g., 25 km/h street-legal mode).

## 6. MAINTENANCE

Regular maintenance ensures the longevity and optimal performance of your ebike conversion kit.

- Cleaning:** Clean the motor, controller, and display with a damp cloth. Avoid high-pressure washing directly on electrical components. The kit has an IPX5 waterproof rating, meaning it is protected against low-pressure water jets from any direction, but it is not submersible.

- **Connections:** Periodically check all electrical connections for tightness and corrosion.
- **Motor Gears:** The motor features durable nylon helical gears with oblique teeth, designed for reduced wear and extended lifespan. No specific user maintenance is typically required for internal motor gears.
- **General Bicycle Maintenance:** Continue to perform regular maintenance on your bicycle's mechanical components, including brakes, chain, tires, and frame.

## 7. TROUBLESHOOTING

If you encounter issues, refer to the following common troubleshooting steps. For persistent problems, contact Varstrom customer support.

Problem	Possible Cause	Solution
Motor not assisting	Low battery, loose connection, PAS sensor issue, display error code	Check battery charge, inspect all wiring, ensure PAS sensor is correctly installed and aligned, check display for error messages.
Display not turning on	No power from battery, loose display cable, damaged display	Verify battery connection and charge, check display cable connection, contact support if display is unresponsive.
Throttle not working	Loose throttle connection, damaged throttle, display settings	Check throttle wiring, ensure throttle is enabled in display settings.
Unusual noise from motor	Loose spokes, foreign object, internal motor issue	Inspect wheel for loose spokes or obstructions. If noise persists, contact support.

## 8. SPECIFICATIONS

Key technical specifications for the Varstrom Ebike Conversion Kit:

Feature	Specification
Motor Type	Geared Brushless Rear Hub Motor
Rated Power (500W version)	500W (Max Power: 864W)
Max Torque (500W version)	65 N·m
Max Speed (500W version)	45-50 KM/H
Rated Power (750W version)	750W (Max Power: 1056W)
Max Torque (750W version)	80 N·m
Max Speed (750W version)	55-60 KM/H
Efficiency	>80%
Noise Level	<60dB
Waterproof Rating	IPX5
Compatible Wheel Sizes	20", 26", 27.5", 700C (28"/29")
Rear Dropout Width	135-145mm

Feature	Specification
Brake Compatibility	Disc and V-Brakes
Cassette Compatibility	Cassette flywheels (up to 10-speed)
Battery Compatibility	Standard 48V/52V systems (battery sold separately)
Controller DC Rated Voltage	48V
Controller Limit Current (500W)	18±1A
Controller Limit Current (750W)	22±1A
Controller Rated Current (500W)	9±1A
Controller Rated Current (750W)	11±1A
Controller Under-Voltage Protection	39±1V
Controller Over-Voltage Protection	62.4V

# VARSTROM 125XVH Rear Hub Motor Performance Version

## Powerful Gear Drive Brushless Motor

<b>W 500W</b> Rated Power	<b>864W</b> Peak Power	<b>45-50KM/h</b> Max Speed	<b>65N.m</b> Max Torque	<b>135-145mm</b> Rear Dropout Size
<b>W 750W</b> Rated Power	<b>1056W</b> Peak Power	<b>55-60KM/h</b> Max Speed	<b>80N.m</b> Max Torque	<b>135-145mm</b> Rear Dropout Size

Image: Varstrom 125XVH Rear Hub Motor Performance Version Specifications. This graphic details the key performance metrics for the 500W and 750W motor options, including rated power, peak power, max speed, max torque, and rear dropout size.

## 8.1 Battery Parameters (Optional)

While batteries are sold separately, here are typical parameters for compatible Varstrom battery options:

# BATTERY PARAMETERS

**• 48V 13Ah Shark Battery**  
**• 48V 16Ah**

**• 48V 19.2Ah Shark Battery**  
**• 48V 20Ah**

Type	48V 13Ah	48V 16Ah	48V 19.2Ah	48V 20Ah
Watt Hour	624Wh	768Wh	921.6Wh	960Wh
Battery Cell	18650 2600mAh	18650 3200mAh	L*/G 21700 4800mAh	Sam*/sung 21700 5000mAh
BMS	30A	30A	30A	30A
Charge voltage	54.6V	54.6V	54.6V	54.6V
Size (L*W*H)	368*90*111mm	368*90*111mm	367*90*127mm	367*90*127mm
Weight	4.25kg	4.23kg	4.95kg	4.7kg
USB Port	✓	✓	✓	✓
Cycle Life	1000 times			
Protection Function	Over charge, Over discharge, Over current, Short circuit, Balance			

**• 52V 20Ah YingWu Battery**

**• 48V 20Ah Voltz X 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	30A	30A
Charge voltage	58.8V	54.6V	54.6V
Size (L*W*H)	368*95*125mm	365*109*140mm	476*165*89mm
Weight	5kg	5.2kg	6kg
USB Port	✗	✓ USB & Type-C Fast Charge	✓
Cycle Life	1000 times		
Protection Function	Over charge, Over discharge, Over current, Short circuit, Balance		

Image: Varstrom Ebike Battery Parameters. This image displays a table comparing various Varstrom battery options, including their type, watt-hour, battery cell details, BMS, charge voltage, size, weight, and protection functions.

## 9. WARRANTY AND SUPPORT

Your Varstrom Ebike Conversion Kit is covered by a limited warranty.

- **Return Policy:** 30 days return period.
- **Repair/Replacement:** 365 days repair or replacement warranty.

For technical assistance, warranty claims, or to purchase additional components, please contact Varstrom customer support. You can also visit the official Varstrom store for more information: [Varstrom Store on Amazon](#).

**Manufacturer:** Shenzhen Yihang Cross-border E-commerce Co., Ltd

