

## Varstrom TS TSDZ8 48V 750W DZ40

# Tong-Sheng TSDZ8 Mid Motor User Instruction Manual

Model: TS TSDZ8 48V 750W DZ40 | Brand: Varstrom

## 1. INTRODUCTION

This manual provides essential information for the safe and efficient installation, operation, and maintenance of your Varstrom Tong-Sheng TSDZ8 48V 750W Mid Drive Kit with Dz40 Display. Please read this manual thoroughly before attempting any installation or operation to ensure proper function and to prevent damage or injury.

## 2. SAFETY GUIDELINES

- Always wear appropriate safety gear, including a helmet, when riding an electric bicycle.
- Ensure all connections are secure and waterproof before riding, especially after installation.
- Do not attempt to modify the motor or display system, as this may void the warranty and create safety hazards.
- Regularly inspect your bicycle and the mid-drive kit for any signs of wear, damage, or loose components.
- Be aware of local regulations regarding electric bicycle speed and power limits.

## 3. PACKAGE CONTENTS

Upon opening your Varstrom TSDZ8 Mid Drive Kit, verify that all components listed below and shown in the accompanying image are present and undamaged.

# WHAT'S IN THE BOX?



**Display**



**Motor**



**Brake Levers**



**Thumb Throttle**



**1T4 Cable**



**Speed Sensor**



**Installation Screws**



**Wrench**



**Cable Ties**

*Image: A visual representation of the TSDZ8 48V 750W mid-drive motor kit components, including the motor, Dz40 display, brake levers, thumb throttle, 1T4 cable, speed sensor, installation screws, wrench, and cable ties.*

- TSDZ8 48V 750W Mid Mount Motor
- Dz40 Display
- Thumb Throttle
- Speed Sensor
- 1T4 Cable
- Screws & Washers (for installation)
- Wrench
- Motor Extension Cable
- Brake Levers
- Instruction Manual (this document)





## 4. PRODUCT FEATURES AND COMPONENTS

The TSDZ8 mid-drive motor kit offers advanced features for an enhanced electric cycling experience.

## 4.1 TSDZ8 Mid Motor

# TSDZ8 MID MOTOR

## 48V 750W

-  Max Torque  
**> 120N.m**
-  Angle  
**35°**
-  Waterproof  
**IP65**
-  Weight  
**5.8KG**

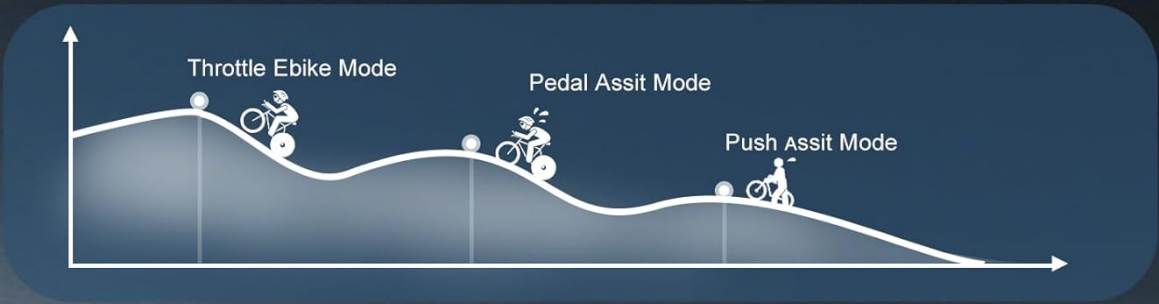



Image: Close-up view of the TSDZ8 mid-drive motor highlighting its key specifications: 48V 750W, Max Torque >120N.m, Angle 35°, Waterproof IP65, and Weight 5.8KG. It also illustrates the three operational modes: Throttle Ebike Mode, Pedal Assist Mode, and Push Assist Mode.

The TSDZ8 motor is a 48V 750W unit designed for robust performance. It features a torque sensor for a natural pedaling feel, a maximum torque output of 140N.m, and an efficiency rate exceeding 80%. The motor is rated IP65 for water and dust resistance.

## 4.2 Dz40 Display

# DISCOVER MORE ABOUT THE DZ40 DISPLAY



Screen :	High-Brightness White Digital Tube	Speed Limit Setting :	0 to 61km/h
Dimensions (L*W*H) :	48mm x 27mm x 15mm	Handlebar Mounting Diameter :	22.2mm
Unit of Speed :	KMH/MPH	Assist Levels :	5
Operating Voltages :	24V, 36V, 48V, 52V	Weight :	0.052kg

*Image: Detailed view of the Dz40 display, showing its physical dimensions (48mm x 27mm x 15mm), handlebar mounting diameter (22.2mm), and screen type (High-Brightness White Digital Tube). Key operational parameters like speed limit setting (0-61km/h), assist levels (5), and operating voltages (24V, 36V, 48V, 52V) are also presented.*

The Dz40 display provides essential ride information and control over the motor's functions. It features a high-brightness white digital tube for clear visibility and offers 5 levels of pedal assist. The display is compatible with various operating voltages.

## 4.3 Component Upgrades (2024 Version)

# UPGRADED VERSION



## 2024 Version



TSDZ8

48V 750W

120N.m

About 5.8KG

Rated Voltage Power

Max Torque

Weight

## 2022 Version



TSDZ2B

48V 500W

80N.m

About 3.5KG

Image: A comparison table illustrating the differences between the 2024 TSDZ8 and 2022 TSDZ2B versions. The TSDZ8 features 48V 750W power, 120N.m max torque, and weighs approximately 5.8KG, while the TSDZ2B has 48V 500W power, 80N.m max torque, and weighs about 3.5KG.



# COMPARISON PARAMETERS

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## UPGRADED VERSION

TSDZ2B



Bidirectional Free-wheeling Clutch



Integrated Reduction Gear Kit



New Chainring Bracket  
(Screw Hole Center Distance: 64mm)

## OLD VERSION

TSDZ2



CSK30P One-way Clutch



Detachable Reduction Gear Kit



Old Chainring Bracket  
(Screw Hole Center Distance: 73mm)

Image: A detailed comparison of upgraded components (TSDZ2B) versus older components (TSDZ2). The upgraded version includes a bidirectional free-wheeling clutch, an integrated reduction gear kit, and a new chainring bracket (screw hole center distance: 64mm). The old version featured a CSK30P one-way clutch, a detachable reduction gear kit, and an old chainring bracket (screw hole center distance: 73mm).

The 2024 TSDZ8 model incorporates significant upgrades, including a dual-clutch system for reduced resistance when pedaling without power, and a more robust integrated reduction shaft for increased longevity and reliability. The 1T4 cable simplifies the conversion process.

## 5. INSTALLATION GUIDE

This section outlines the general steps for installing the TSDZ8 mid-drive motor kit. Professional installation is recommended if you are unfamiliar with bicycle mechanics.

### 5.1 Compatibility Check

The TSDZ8 48V 750W mid-drive kit is designed for bicycles with a 68-73mm bottom bracket shell. Ensure your bicycle's bottom bracket falls within this range.

### 5.2 Required Tools

You will need standard bicycle tools, including a crank puller, bottom bracket tool, hex wrenches, and a torque wrench for precise tightening.

### 5.3 Installation Steps (General)

1. **Remove Existing Components:** Carefully remove your bicycle's existing crankset, bottom bracket, and chainring.
2. **Mount the Motor:** Insert the TSDZ8 motor into the bottom bracket shell. Ensure proper alignment and secure it using the provided mounting plate and nuts. Pay attention to chainring clearance to avoid contact with the frame.
3. **Install Crank Arms and Chainring:** Attach the new chainring to the motor and then install the crank arms. Tighten all bolts to the manufacturer's recommended torque specifications.
4. **Install Display and Controls:** Mount the Dz40 display, thumb throttle, and brake levers onto your handlebars. Position them for comfortable access.
5. **Connect Wiring:** Use the 1T4 cable to connect the display, throttle, and brake levers to the motor. Connect the speed sensor to the motor and mount the sensor and magnet on the rear wheel/chainstay. Ensure all connections are snug and routed safely away from moving parts.
6. **Secure Cables:** Use the provided cable ties to neatly secure all cables along the bicycle frame.
7. **Final Check:** Before riding, double-check all bolts, connections, and cable routing. Ensure the chain runs smoothly and the brakes function correctly.

## 6. OPERATING INSTRUCTIONS

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Familiarize yourself with the Dz40 display and the various operating modes to maximize your riding experience.

### 6.1 Powering On/Off

Press and hold the power button on the Dz40 display to turn the system on or off.

### 6.2 Pedal Assist System (PAS)

The TSDZ8 motor utilizes a torque sensor, providing assistance proportional to your pedaling effort. The Dz40 display offers 5 levels of pedal assist. Use the '+' and '-' buttons on the display to cycle through these levels. Higher levels provide more motor assistance.

### 6.3 Throttle Operation

The thumb throttle provides on-demand power, allowing you to propel the bicycle without pedaling. Use it cautiously, especially at lower speeds or in crowded areas.

### 6.4 Display Information

The Dz40 display shows real-time information such as current speed, battery level, assist level, and potentially trip distance or odometer readings. Refer to the display's specific manual for detailed navigation of its functions.

## 7. MAINTENANCE AND CARE

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Proper maintenance ensures the longevity and optimal performance of your TSDZ8 mid-drive kit.

- **Cleaning:** Clean the motor and display with a damp cloth. Avoid high-pressure washing directly on electrical components.

- **Lubrication:** Keep your bicycle chain and other moving parts properly lubricated.
- **Component Inspection:** Regularly check all bolts and connections for tightness. Inspect cables for fraying or damage.
- **Battery Care:** Follow the battery manufacturer's instructions for charging and storage. (Note: Battery is sold separately).
- **Professional Service:** For complex issues or internal motor maintenance, consult a qualified e-bike technician.

## 8. TROUBLESHOOTING

This section addresses common issues you might encounter with your TSDZ8 mid-drive kit.

Problem	Possible Cause	Solution
Motor not providing assist	Battery low/disconnected, display off, assist level 0, loose connections, brake lever sensor engaged.	Check battery charge and connection. Ensure display is on and assist level is above 0. Inspect all cable connections. Verify brake levers are not stuck.
Display not turning on	Battery low/disconnected, loose display cable.	Check battery charge and connection. Ensure display cable is securely plugged into the 1T4 cable.
Motor lag or inconsistent power	Torque sensor calibration, firmware behavior.	Ensure proper installation and calibration of the torque sensor. While some lag is inherent to the system, if excessive, contact customer support.
Chain problems / rubbing	Improper chainline, motor output contacting frame.	Adjust chainline if possible. Ensure sufficient clearance between the motor output and the bicycle frame using spacers if necessary.

If you encounter issues not listed here or if the suggested solutions do not resolve the problem, please contact Varstrom customer support for assistance.

## 9. TECHNICAL SPECIFICATIONS

Component	Specification
Motor Model	Tong-Sheng TSDZ8
Rated Voltage	48V
Rated Power	750W
Max Torque	140N.m
Efficiency	>80%
Max Speed (Assisted)	Up to 50km/h



Component	Specification
Waterproof Rating	IP65
Motor Weight	Approx. 5.8KG
Bottom Bracket Compatibility	68-73mm
Display Model	Dz40
Display Type	High-Brightness White Digital Tube
Display Dimensions (L*W*H)	48mm x 27mm x 15mm
Display Handlebar Mount Diameter	22.2mm
Assist Levels	5
Operating Voltages (Display)	24V, 36V, 48V, 52V

## 10. WARRANTY AND CUSTOMER SUPPORT

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For warranty information, specific technical inquiries, or assistance with your Varstrom TSDZ8 Mid Drive Kit, please contact Varstrom customer support directly. Keep your purchase receipt as proof of purchase.

Manufacturer: Suzhou Tongsheng Electric Co., Ltd.

Brand: Varstrom