

Product Manual— —Mid-Drive Conversion Motor

## TSDZ2B



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Doc No.: TSE-PM-MM-TSDZB-A-00 (EN)

Thank you for choosing Tongsheng products.

When using or modifying parameters, please make sure to comply with the local laws and regulations.

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## 1 General Introduction

### 1.1 Safety

Read and understand all safety warnings and instructions. Failure to comply with the following warnings may result in death or serious injury:



**Do not** attempt to change, especially increase, the power or maximum power of the motor, as well as the speed it supports. Doing so may put yourself and others in danger, and you may also violate legal regulations.



**Do not open the motor body by yourself. The motor can only be repaired by professional technicians using original spare parts to ensure the safety of the motor.** Unauthorized opening of the motor will render the warranty or claim invalid.

### 1.2 Application



### 1.3 Scope of Application

TSDZ2B mid-drive conversion motor can convert your regular bike into an electric power assisted bike——ebike. TSDZ2B is suitable for bikes with bottom bracket (BB) length of 68mm or 73mm.



**Note:** Before buying the motor, the measuring tool can determine if your bicycle size is available to install the TSDZ8 motor. Please visit the following page(link) to find the "Download" button in the "Conversion Kit" section and print it out with A4 paper. Then follow the steps in the document or the video to make sure your bicycle is available to install the motor.

Measuring tools Download Link: <https://cn.tongsheng-e.com/companyfile/7.html>

Video of Measuring: You can scan or click the QR code to watch the video of measuring:



←Wechat



←Youtube

## 1.4 Product Features

- Easy to install and suitable for most bicycles.
- The maximum torque is around 140N.m, with strong climbing ability.
- Integrated controller and torque sensor of both sides.
- Compact appearance and weighing approximately 4.8Kg.
- Smooth riding, high efficiency to extending the riding range.
- Modular component design for easy maintenance.

## 2 Parameter

### 2.1 Appearance



### 2.2 Specification

Model Name	TSDZ2B Standard
Rated Power	250W
Rated Voltage	36V/48V
Max Torque	80N.m
Weight	3.6Kg
Shaft Standard	JIS
Power Assist Ratio	36%-300%
Reduction Ratio	41
Sensor	Torque+Speed
Length of BB	68/73mm
CL	49.5/55mm
Certification	CE/EN15194/ROHS
Light Drive Capacity	6V/3W

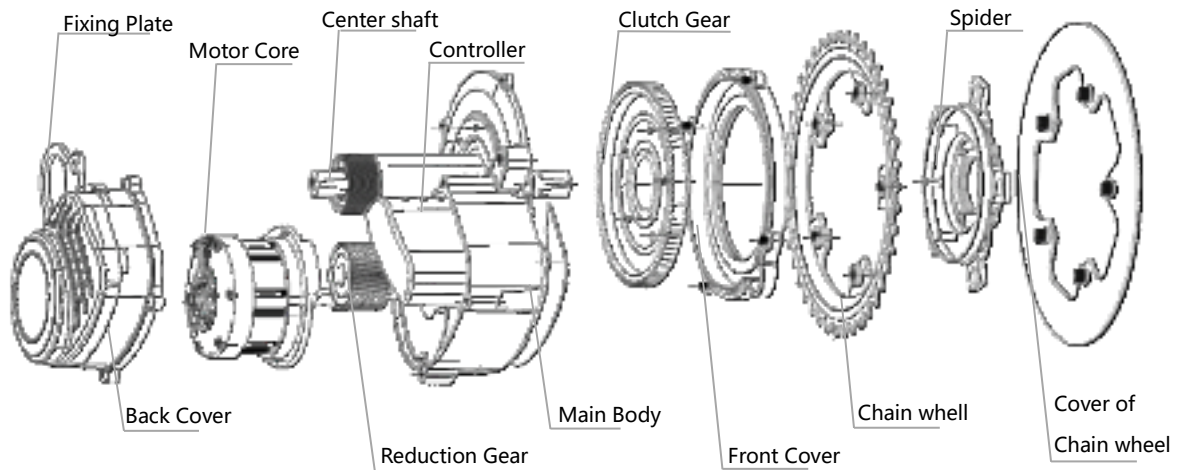
Except for the TSDZ2B standard, there're some options as below:

**Option-1:** Rated Power: 350W

**Option-2:** Rated Voltage: 24V

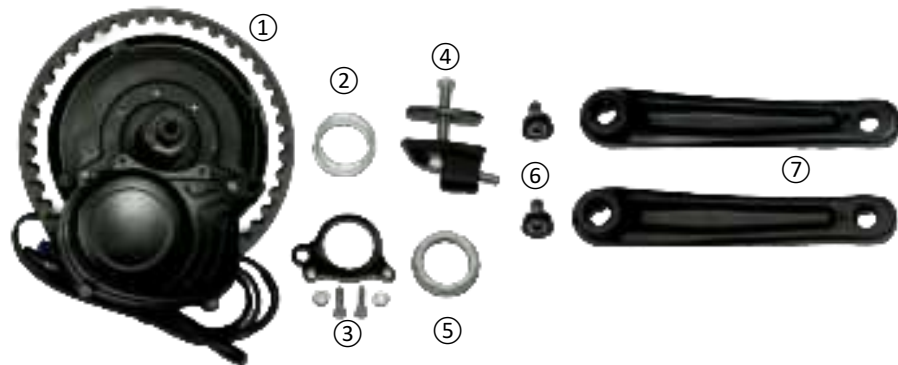
(Please consult the sales staff for more details of the options)

## 2.3 Mechanical composition



## 3 Motor Parts and Installation Tools

### 3.1 Motor Parts List



Item	Description	Q.Ty	Item	Description	Q.Ty
①	TSDZ2B Motor Body	×1	②	Washer	×2
③	Fixing Plate and Screws	×1	④	Fixing Block	×1
⑤	Locking Nut	×1	⑥	Crank Screw	×2
⑦	Crank Arm	×2			

### 3.2 Installation Tools List



Item	Description	Q.ty	Remark	Item	Description	Q.ty	Remark
①	Locking Wrench	×1	Standard	②	Hexagonal Wrench Kit	×1	Self-Provide
③	Cross Screwdriver	×1	Self-Provide	④	Combination Pliers	×1	Self-Provide
⑤	Ribbons	×1	Self-Provide				

## 4 Installation

### 4.1 Motor Installation

- 1) Push the center shaft of TSDZ2B motor through the bottom bracket of your bike and make sure the exposed shaft length should be no less than 10mm.



- 2) Make sure the motor flange didn't touch the bike frame. If the motor flange touched the bike frame, 1-3pcs of washers will be needed to ensure necessary space between the motor flange and the bike frame.



1-3pcs of washers may be needed to ensure necessary space between the motor flange and the bike frame

- 3) Use the "fixing plate washers" and "fixing plate screws" to fix the "fixing plate" at the bottom bracket, and tighten them with the hexagonal wrench. Meanwhile, **do not fully tighten the screws but leave some gap.**



Do not fully tighten the screws but keep some gap

- 4) Put the "locking nut" onto the bottom bracket then tighten the locking nut with locking wrench by hand but **do not tighten it completely. The motor could be twisted a little by hands.**



- 5) Install the fixing block on the bike frame but **do not fully tighten the screws. The motor could be twisted a little by hands.**





- 6) Drag the motor towards the front wheel with your hand then tighten the locking nut with locking wrench (Locking torque: 50~60N.m). **The motor can't be twisted by hands.**



- 7) Tighten the fixing plate screws completely with the hexagonal wrench.



- 8) Tighten the fixing block screws completely with the hexagonal wrench.



- 9) Assemble the cranks: Tighten the crank screws with the M8 hexagonal wrench (locking torque: 35-40N.m).



**Note:** Pay attention to the left and right markings on the crank arm. Do not assemble the left or right crank at the wrong position. Otherwise, it may cause personal injury.



## 4.2 Kits Installation and Connection



#### 4.2.1 Speed Sensor Installation

Fix the speed sensor at the chain stay with ribbon. Then assemble the magnetic button on the spoke of back wheel and align it with the triangle “△” on the sensor. Finally, adjust the distance between the sensor and magnetic button to 10~15mm.

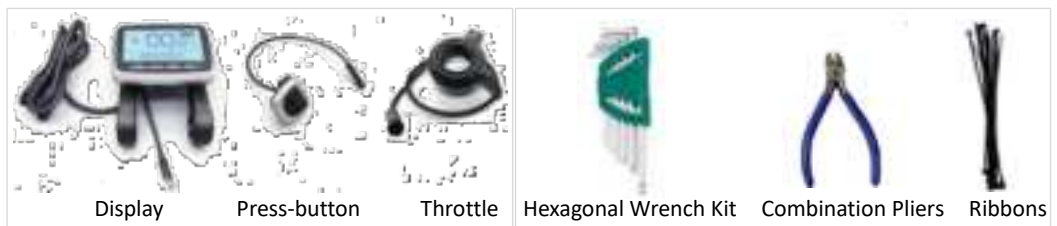


#### 4.2.2 Display Press-button and Throttle Installation

##### 1) Parts and Tools list

Standard Package of Parts And Tools

Self-provided



- 2) Display Installation: Remove the two screws of the displays with M3 hexagonal wrench, then fix the display on the middle of the handle and tighten the screws.



- 3) Press-button Installation: Remove the screw of the button and tie the button on the left handle. Then tighten the screw completely. Finally, connect the button plug wire to the display plug wire.



- 4) Throttle Installation: Loosen the screw on the throttle then fix the throttle on the right handle by tightening the screw completely. Finally, connect the throttle wire to the middle socket at the back of display.





### 4.2.3 Connection

#### 1) Wiring of the motor and display



#### 2) Wiring of the motor and speed sensor



#### 3) Wiring of the motor and battery



## 5 Maintenance Video of The Motor Parts

### 5.1 Clutch Gear Replacement



Video of Clutch Gear Replacing




Scan or click the QR code to watch the video

### 5.2 Reduction Gear Replacement




Video of Reduction Gear Replacing


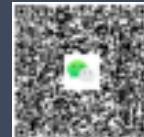



Scan or click the QR code to watch the video

### 5.3 Torque Sensor Replacement



Video of Torque Sensor Replacing

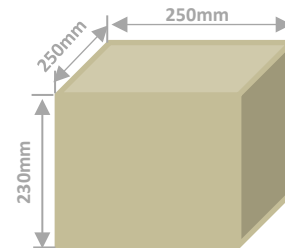



Scan or click the QR code to watch the video

## 6 Packing

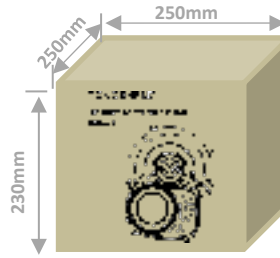
### 6.1 Standard Packing -Without Logo(Default)

This standard packing without logo will be used as default if there's no indication for the packing in the order.



### 6.2 Standard Packing -With Logo

Please indicate "Standard Packing with Logo" in the order if you choose this packing.



### 6.3 Customized Packaging

The first layer of packaging for this motor can be customized. But the cost of customized packaging is not included in the quotation of standard products and needs to be calculated separately upon actual customized requirements. The scope of customized packaging includes the following two situations:

- 1) Printing other content on the default packing.
- 2) Packaging of other sizes or appearances.

### 6.4 Packing Materials and Norm

- 1) Packing Materials: Carton packaging with environmentally friendly, energy-saving, and recyclable materials.
- 2) Packing Norm: Motor of 1pc/carton (Only referring to the first layer packaging of the motor).

## 7 Usage and Storage Conditions

### 7.1 Normal Using Condition

Environmental temperature: -15 ° C to 40 ° C

Relative humidity: ≤ 95%

Atmospheric pressure: 86Kpa-106KPa

### 7.2 Storage Condition

The motor should be stored in a clean and well-ventilated warehouse with no corrosive gases in the air.

Environmental temperature: 0 °C~35 °C

Relative humidity: ≤ 85%