

TSDZ2 Central Motor Drive System Installation Manual



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1. General Information

This manual elaborates the installation process of a TSDZ2 central motor drive system from Tongsheng, imported and distributed by ENERdan GmbH under the brand ENERpower. This manual will guide you step by step throughout the installation process.

Before starting, please make sure you have all the supplied parts (see list in paragraph 4 of this document).

2. Motor System Highlights

- Easy to install, suitable for most regular bikes
- Maximum torque of about 80N.m, strong climbing ability
- Internal control axial torque sensor actual double-sided torque
- Compact, fine design, Lightweight (about 3.3 kg)
- Comfortable ride, high efficiency, low battery consumption and longer battery life
- Safe, reliable and excellent performance PCT/CN2014/091373

3. Technical Details

Motor

- Manufacturer: Tongsheng (China)
- Model: TSDZ2
- Motor type: mid-motor
- Wheel diameter: 16" - 28"
- Energy: 250W - 350W
- Voltage: 36V / 48V
- Torque: 50N.m - 80N.m
- Level of support: 36% ~ 300%
- Maximal speed: 25Km/h
- Weight: 3.3 Kg.

Display

- Type: VLCD5
- Bus communication: U-ART or CAN
- Time display: single-way / total
- Distance display: single-way / total
- Power assist: adjustable, 5 levels
- Background light: 3 levels brightness
- Fault diagnosis function: intelligently identifies and shows the problem
- Measuring units: selectable, metric / anglo-american

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4. Parts List

1. Center motor (1)
2. VLCD5 display (1)
3. VLCD5 display bracket (ϕ 32) (1)
4. Left hand operator (1)
5. Brake-lever (1) (optional)
6. Detective sensor (1)
7. Securing plate (1)
8. M33.5mm bolt (1)
9. Hanging plate (1)
10. Securing block (1)
11. M8 X 45 roundhead bolt (1)
12. M5X 16 Hexagon socket head bolt (2)
13. Φ 5X5 Aluminum washer (2)
14. Wrench (1)
15. 170MM crank-arm (1) (1 set)
16. 1 VLCD display manual (Chinese & English) (1)
17. TSDZ2 center motor install manual (1)



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5. Motor Installation

Step 1: Placing the motor

The bushing of the motor is pushed into the bicycle five-way pipe in the direction of the arrow, and the length of the five-way pipe of 68mm, the exposed length of the middle bushing is 11mm, as shown in image 1.

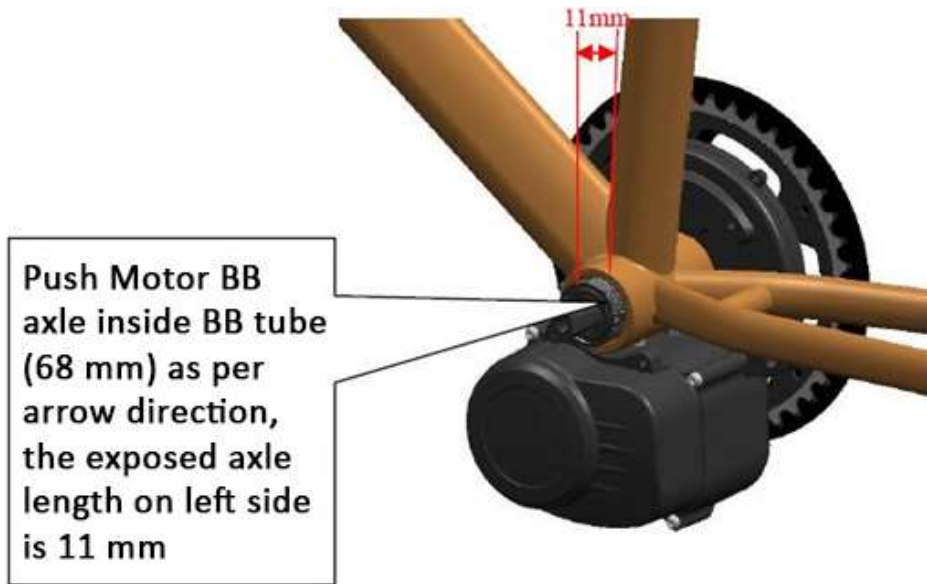


Image 1

Step 2: Installing the securing plate

1. Place the securing plate on the middle shaft five-way.
2. Place two aluminum washers between the securing plate and the center motor.
3. Tighten the securing plate and the motor with two M5×16 screws.

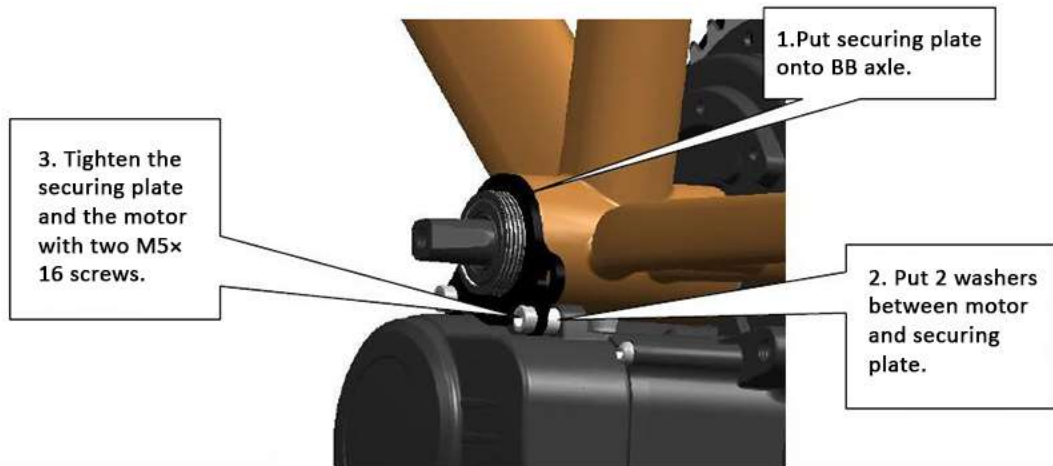


Image 2

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Step 3: Screwing the M33.5 nut onto the BB axle

Screw the M33.5 nut onto the BB axle, using an affiliated wrench by 40N·m torque. Please refer to Image 3.

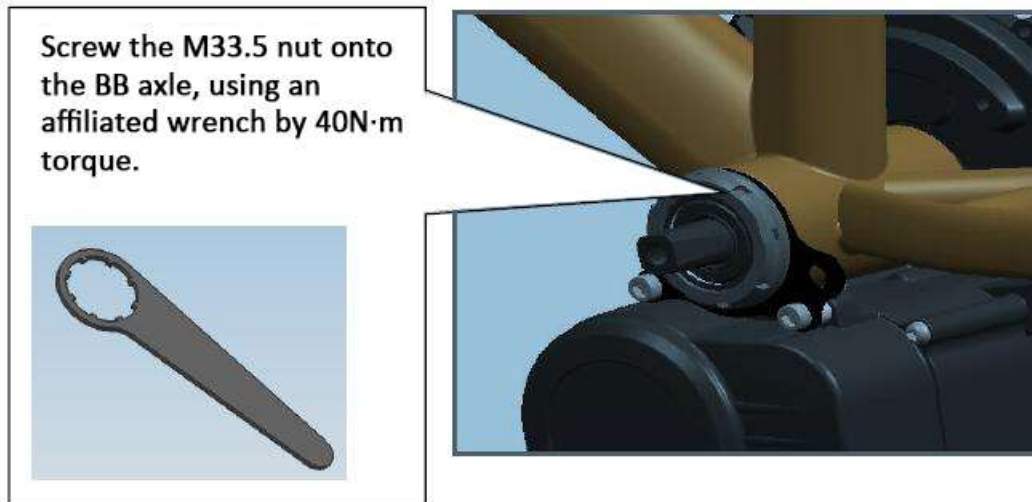


Image 3

Step 4: Fixing the main body of the motor

Fix the main body of the Motor onto bike-Frame. Please refer to Image 4.

1. Install the fixing block onto the motor with M8*40 bolt, do not tighten.
2. Using a M8 * 45 bolt and the hang-plate to tighten the fixing block and motor.

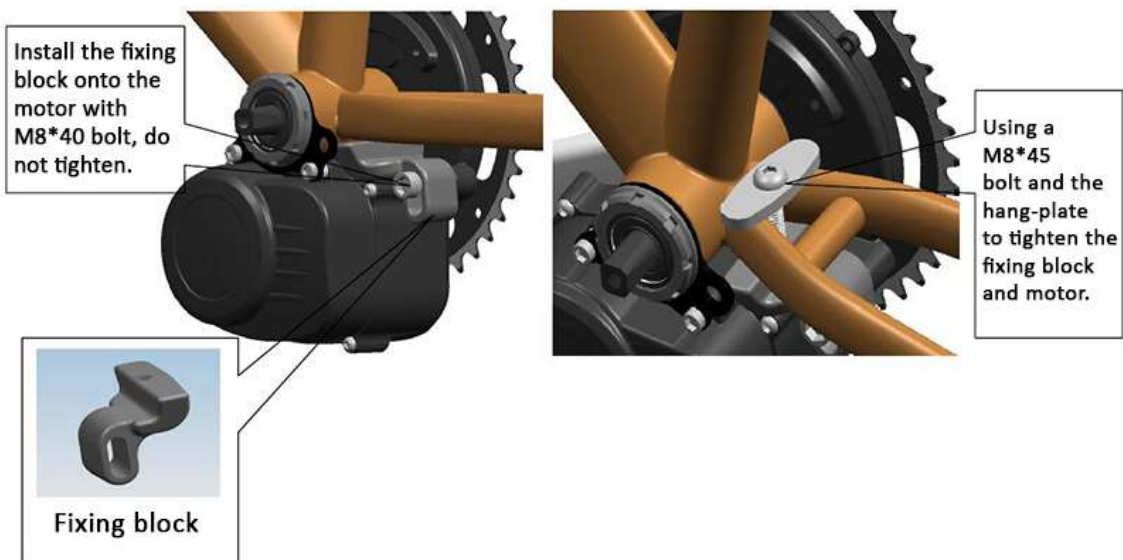


Image 4

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Step 5: Tightening the bolt

Tighten the bolt with 40N.m torque force. Please refer to Image 5.

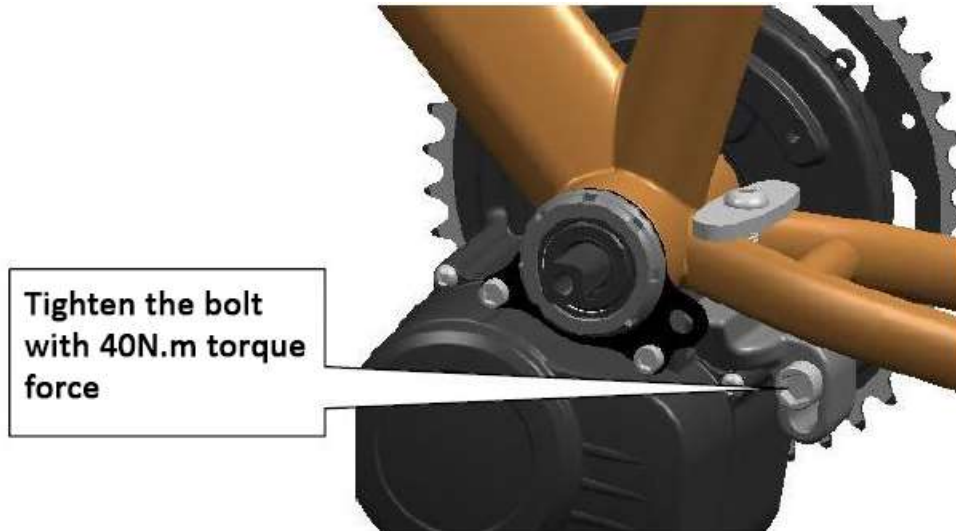


Image 5

Step 6: Installing the arm-cranks

Using M8×14 bolts to install the arm-cranks. The locking torque is 40N.m.



Image 6

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6. Display Installation

Step 1: Installing the VLCD5 display

Install the LCD display onto the handlebar using 2pcs of M4×14 bolts and 2pcs of M4 nuts. The bracket is ϕ 32 with adjust rings for different handlebar sizes. Please refer to Image 7.



Image 7

Step 2: Installing the left hand remote control buttons

Install the left hand remote control buttons. Please refer to Image 8.



Image 8

7. Detective Sensor Installation

1. Install the detective sensor onto the bike rear fork with two ribbons as shown below.

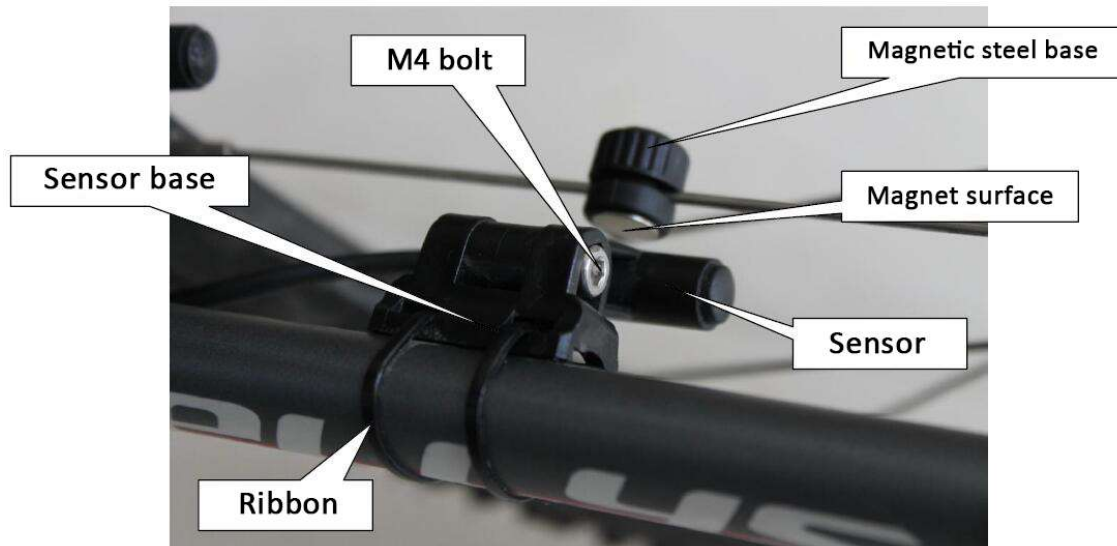


Image 9

2. Install the magnet steel onto the rear fork, facing the detective sensor.
3. Adjust the distance between sensor and magnet steel
4. The distance between the sensor and the magnet steel should be below 5mm. Tighten the M4 bolt.

8. System Connection

Step 1: Connecting the display and operation button

Connect the display and operation button. Please refer to Image 10.



Image 10

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Step 2: Inserting the brake-levers plugs

Insert the brake-levers plugs into the display. Please refer to Image 11.

Note that the brake-levers are optional.



Image 11

Step 3: Connecting the main motor and the display

Please refer to Image 12.



Image 12

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Step 4: Connecting the main motor and the detective sensor

Please refer to Image 13.



Image 13

Step 5: Connecting the motor and the battery

Please refer to Image 14.

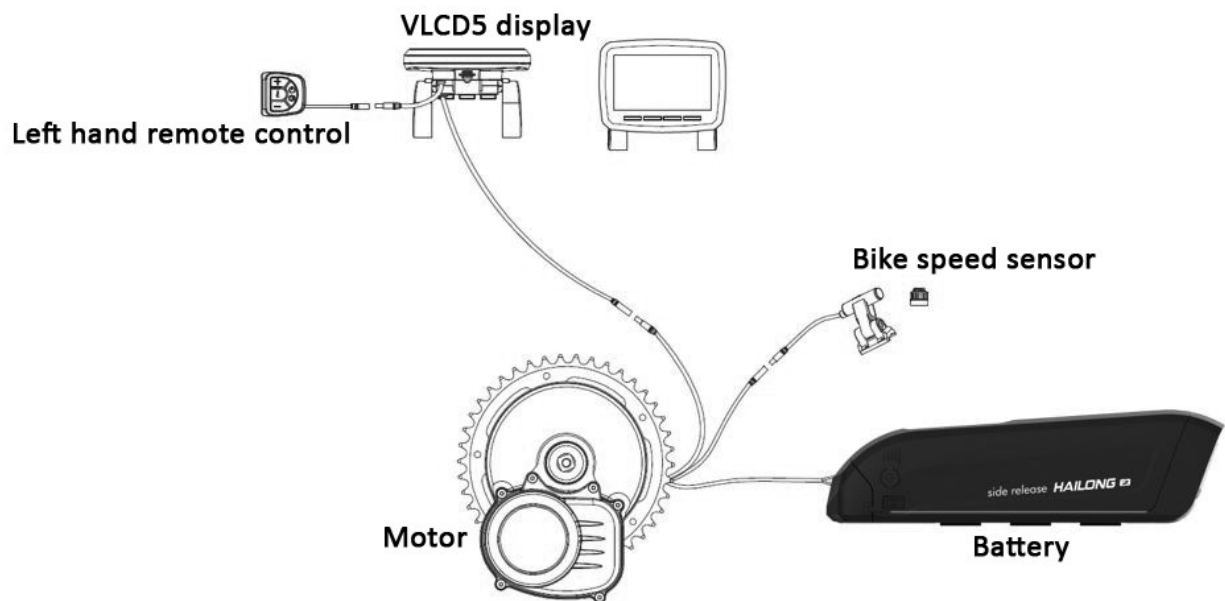
Connect the motor to the battery using the XT-60 connector.



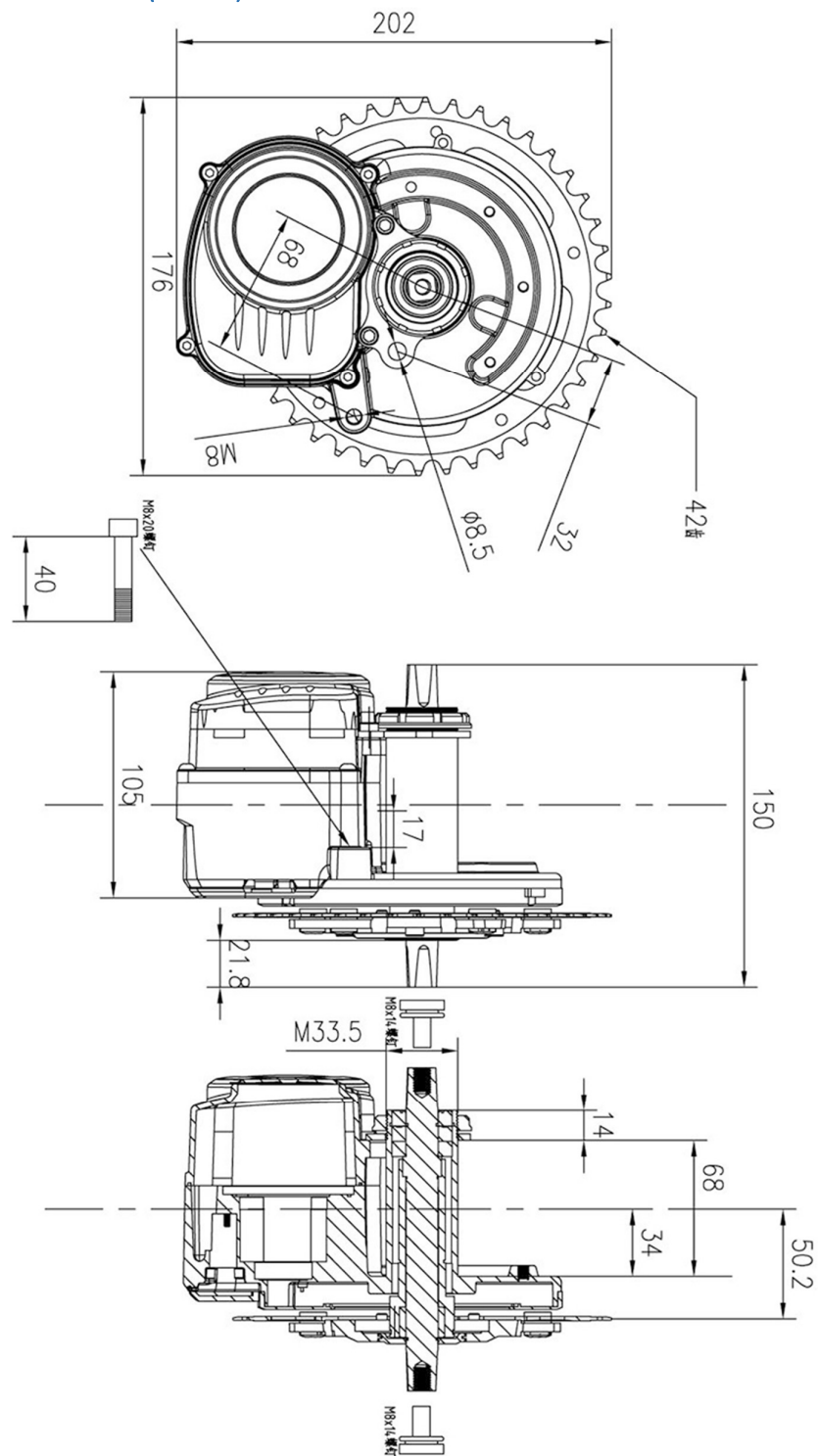
Image 14

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9. System Connection



10. Motor Dimensions (in mm)



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EC Declaration of Conformity

We hereby declare that the product described in its basic design and construction and in the form as delivered the ENERdan GmbH are marketed complies with the essential health and safety requirements of the EC directives.

Identification of products / product types

- Article 899500001 Tongsheng TSDZ2 36V 250 Watt Mid-Drive Engine + Battery + Charger
- Article 899500011 Tongsheng TSDZ2 48V 250 Watt Mid-Drive Engine + Battery + Charger

This product complies with the following EC directives

- 2006/66 / EC BATTERY DIRECTIVE
- 2001/95 / EC DIRECTIVE FOR GENERAL PRODUCT SAFETY
- 2004/108 / EC DIRECTIVE FOR ELECTROMAGNETIC COMPATIBILITY

Applicable standards

- DIN EN 61960: 2004: cells and batteries containing alkaline or other non-acid electrolytes - Secondary lithium cells and batteries for portable devices (IEC 61960: 2003)
- DIN EN 62133: 2003: cells and batteries containing alkaline or other non-acid electrolytes - Safety requirements for portable sealed secondary cells and batteries made from them for use in portable devices
- DIN EN 15194: 2009 / A1: 2011: Bicycles - Electrically powered bicycles - EPAC Bicycles

Responsibility

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