

CMT03E Product Technical Instruction

(English)



Product Name: Center-MotorAA

Product Model:CMT03E(stand configuration)

Important Notice

- Please read the user manual and attached assembly manual. If you are not clear about any information in the manual, do not assembly and get help from Shengyi motor.
- Any questions you can't find the answer in the manual, please get contact with your dealer.
- Do not disassemble or modify the production in unmentioned way by the manual.
- Dealers must comply with their national, regional relevant laws and regulations. The assembling procedure should fully follow the instruction given by the manual and it should be used in right ways.
- The consumer might get hurt from the unexpected falling due to the losing bolts/nuts, incorrect assembly method or improper adjustment.
- Make sure the consumers know and understand the following notes.
- Before cycling, please check if the wheel is fixed tightly and rotated smoothly, please focus on riding instead of the display to avoid of the distraction fall.
- Please be familiar with the how the bike works out during starting before riding the motor-assisted bicycle. Accidentally start electric bike may cause an accident. Make sure you turn on the headlights if cycling at night time.
- Unplug the battery (cutoff the electricity) before connect any cables or assembly any parts.
- Please follow the instructions for use of this product. Do not use this product for people, children with no operational experience, physical, sensory or mental illness, and do not allow children to play near this product.
- Regarding assembly, adjustment and software updates please never attempt to modify the software system by yourself, it's easily lead to system failure), please consult your dealer. If any fault or problem occurs, please also consult your nearest dealer.
- This product is waterproof designed which can driving in rainy weather, but do not be soaked in water. Do not use high-pressure water for cleaning. Water immersion will

result in failure or rusted.

- Using this product carefully, do not apply strong impact.
- If you have any questions about the maintenance or how to use the product which unmentioned by the manual, please contact the retailer or dealer.
- Appropriate consuming of the production will only causing the product aging.

Content

- 1.Center motor
- 2.Accessory
- 3.Assemble way
4. Notes and failure analysis
5. Packing list
6. Package

1.Center motor



- ★ It can meet the installation of bicycles and is easy to install;
- ★ It has a highly modular design for easy motor maintenance;
- ★ Integration design makes it easy for customers to customize;
- ★ With dual clutch;
- ★ Controlled by torque, inside controller, speed limit 25KM/h;
- ★ The starting torque is large, the maximum torque of the motor is $\geq 80\text{N.m}$, which is more conducive to climbing;
- ★ High efficiency, low power consumption and long cruising range

1.1 Material and waterproofing grade

Housing material and surface treatment

Internal aluminum casing: The surface of the die-cast aluminum is electrophoretic coated with a matt black or silver paint;

External plastic case: the surface of the plastic case is painted with matt black or silver paint

Protection Grade: IP54;

Environmental : Temp: $-20^{\circ}\text{C} \sim 55^{\circ}\text{C}$ Barometric pressure: altitude $\leq 1000\text{m}$

Relative humidity : $25^{\circ}\text{C} \leq 90\%$

1.2 Main technical parameters

Rated Voltage: 36V

| | No load | Rated Point | Max Output |
|----------------|-------------------|-------------------|------------|
| Speed RPM | 88±10 | 83±10 | 68±10 |
| Current A | ≤ 1.5 | ≤ 8 | 15 |
| Torque Nm | | ≥ 30 | ≥ 65 |
| Output power W | | 250 | 460 |
| Efficiency % | | ≥ 78 | |
| Working state | S1 working system | S1 working system | |

2. Accessory

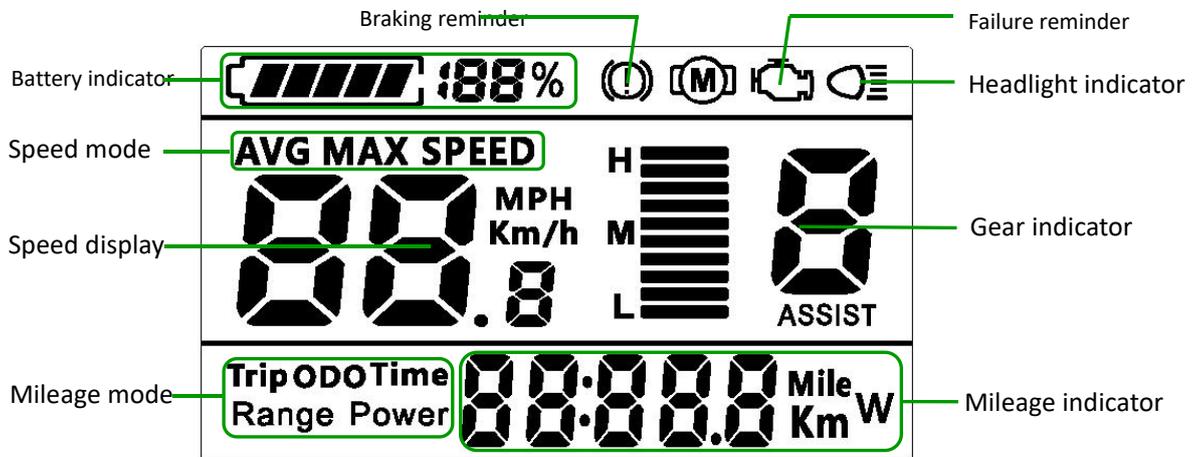
2.1 Display

2.1.1 Display Name

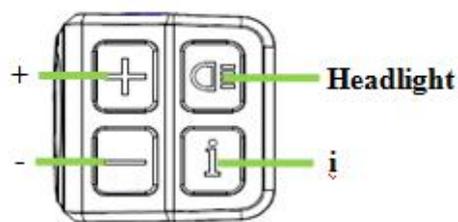
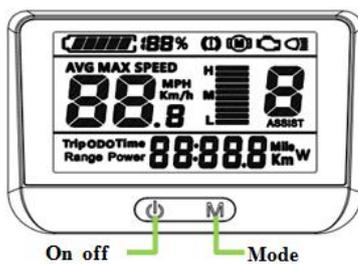
Center Intelligent LCD display, Model :APT12LCD760S。

- LCD display instructions and button function description

LCD whole drawing:



Button Function:



2.1.2 Parameter setting

Pls check "Display 760S-J Protocol-4 Button Product Specification"

2.2 Speed sensor

2.2.1 Product Model

Model : SPL-10

2.2.2 Apperance



(speed sensor)



(M5 PH screw)

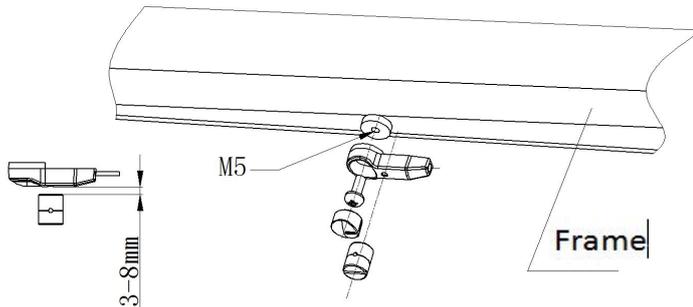


(cover)



(Induction magnet)

2.2.3 Product Installation Drawing



(Locking torque: <math><1\text{Nm}</math>)

2.2.4 Specification

| Parameter | value |
|------------------|----------|
| Rated Voltage | DC5V |
| Rated Current | 5mA |
| Pulse/circle | 1 |
| Install distance | 3-10mm |
| Working Temp | -30~70°C |
| Waterproof Grade | IPX7 |
| Certification | CE ROHS |

2.3 Chain Wheel

2.3.1 Chain Wheel appearance: (as picture)



2.3.2 Chain Wheel Model: 42T single chain cover

2.3.3 Chain wheel basic parameter

Teeth : 42 T

Shape: Concave with circular pattern

Color: black

2.4 Crank

2.4.1 Crank Appearance : (as picture)



2.4.2 Crank Model: TS1-170AA

2.4.3 Crank basic parameter :

Length : 170mm

Quality: 6061

Color: black

* Note: The direction of the left and right crank threads is different, and there is an "L" mark on the left crank, an "R" mark on the right crank

2.5 Other accessory



Connection Plate



Hex Torx sunk socket
M6X65



Hex Torx sunk screw
M6X18



Left plastic housing



Right plastic housing



Hex Torx pan screw
M4X8



Chain Wheel nut M26 (reverse tooth)



Crank screw M8X20



External speed sensor connection cable



Front light connection cable



Display connection cable



Rear light connection cable

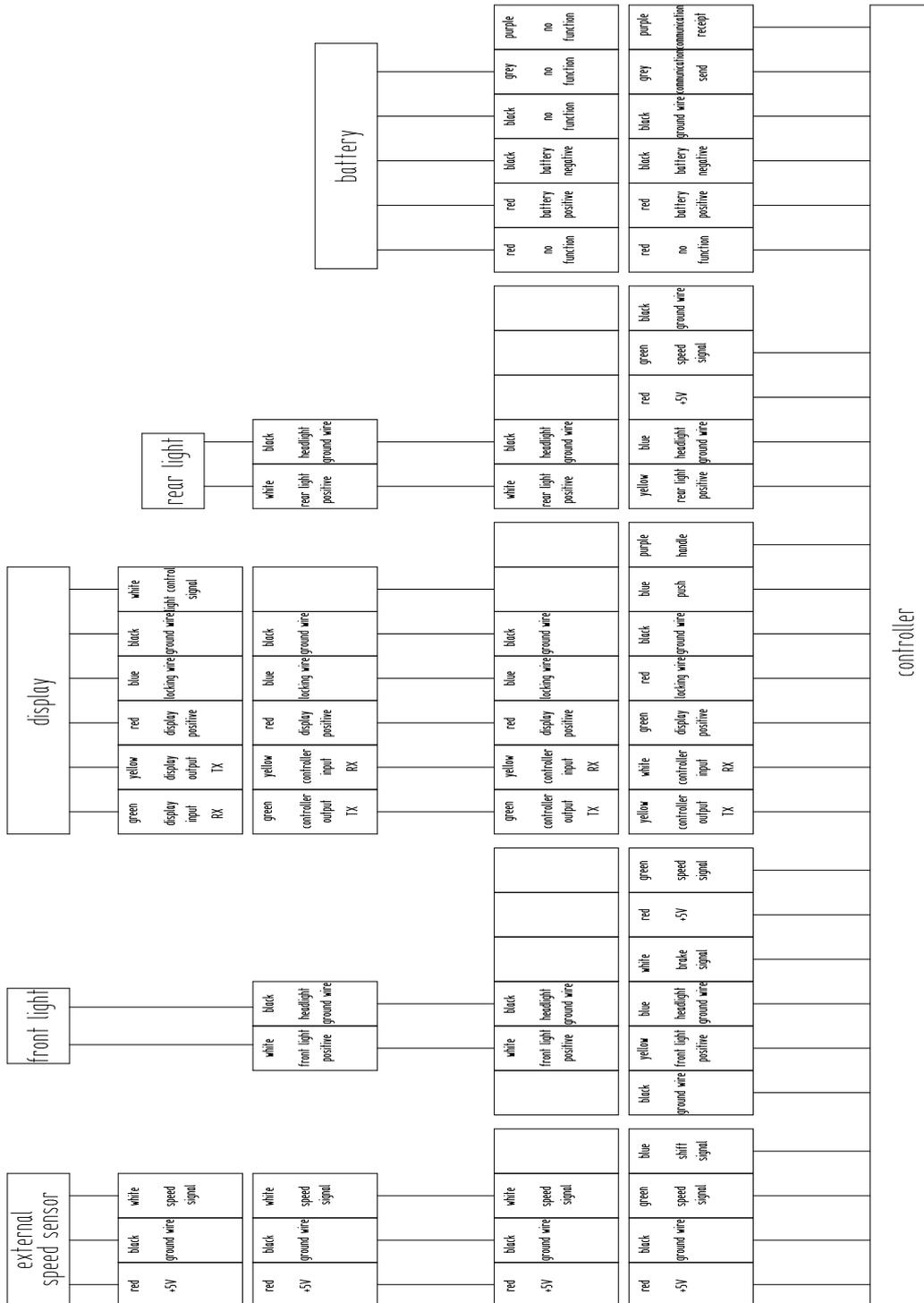


Power connection cable

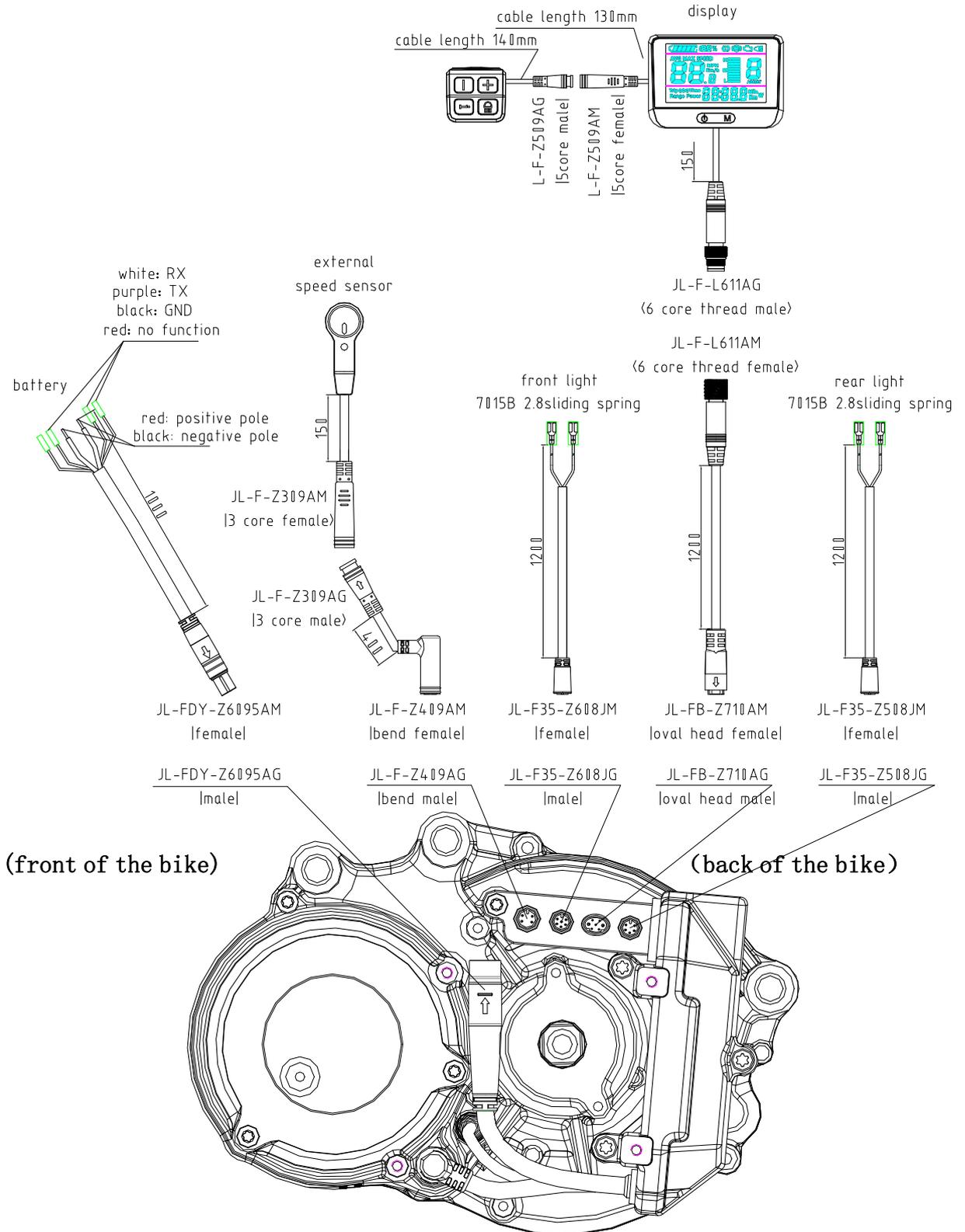
3.Assemble way

3.1System schematic diagram and connection diagram

3.1.1System schematic diagram



3.1.2 System Connection Diagram



3.2 Assemble Diagram

3.2.1 Threading

Insert the external speed sensor connection cable , front light connection cable , display connection cable , rear light connection cable , power connection cable into the bike according to the requirements ;

Insert all above cables into the motor according to " 3.1.2 system Connection diagram"

Finish the cable length and position;



3.2.2 Install the motor

Insert 3pcs Hex Torx sunk sockets M6X65 and 3pcs Hex Torx sunk screws M6*18 into 3 holes of the frame connecting plate as shown in the picture, and lock them(locking torque: 8-10Nm);



3.2.3 Install left and right plastic housing

Clamp the left and right plastic housings onto the motor; Lock 8pcs M4X8 Hex Torx pan screws as shown in the picture(locking torque: <1Nm);



3.2.4 Install chain wheel ,locking the chain wheel screws

Put the chain wheel on the motor in the direction of the spline slot; Screw the chain wheel nut (reverse-tooth) in the opposite direction(locking torque: 20-24Nm);



3.2.5 Install left and right cranks ,locking the cranks screws

Put the crank on the middle shaft (the angle between the left and right cranks is 180°); Lock the crank screw as shown in the picture(locking torque: 30-35Nm) ;



3.2.6 Install external speed sensor and magnets

Check the installation requirements"2.2.3 production installation diagram "



4. Notes and failure analysis

4.1 Notes

It should be store in a ventilated and dry warehouse, should not be stored in damp, acid and alkali, and should not put with magnetic goods;

Each connector is inserted into the corresponding position by the arrow;

The display LCD avoid colliding from sharp objects ;

It is recommend that the product should not be overload for long time and overloaded ;

Products should avoid wading or immersion.

4.2 General failure analysis

| No | Fault | Possible fault cases | Fault Resolution |
|----|---------------------------------|---|----------------------------------|
| 1 | Motor can not install on frame | Frame connecting plate welding deformation | Reduce the welding deformation |
| 2 | Not displayed | Plug-in is not connected | Check all plug-in and connect |
| | | Use non-standard display | Use standard one |
| | | Battery exhausted | Charge as requirements |
| 3 | Mileage not showed | The plug-in of external speed sensor is not connected | Check plug-in and connect |
| | | Magnet is not installed in place | Check the magnet place and set |
| 4 | Mileage showed abnormal | Magnet position distance unreasonable | Adjust the distance |
| | | Strong environment interference | Change the environment |
| 5 | front/back light not lit | Light control module not installed | Install the light control module |
| | | Plug-in not connected | Check plug-in and connect |
| | | Rated voltage of front/back light not match | Change the rated voltage |
| 6 | Brake power failure not respond | Plug-in not connected | Check plug-in and connect |
| 7 | Speed less than 25km/h | Chain speed ratio unreasonable | Adjust the chain speed ratio |
| | | Motor and battery voltage not match | Choose the reasonable voltage |

4.3 Other failure analysis and error codes

See fault analysis

5. Packing list

| | |
|--|-------|
| 1.Center motor | 1 PC |
| 2.Display | 1 PC |
| 3.Speed sensor (with magnet) | 1 PC |
| 4.Chain wheel | 1 SET |
| 5.Left crank | 1PCS |
| 6.Right crank | 1PCS |
| 7.Left plastic housing | 1PCS |
| 8.Right plastic housing | 1PCS |
| 9.Chain wheel nuts M26 (reverse tooth) | 1PCS |
| 10.Crank screw M8X20(use for installing crank) | 2PCS |
| 11.Hex Torx pan screw M4X8 (use for installing left and right plastic housing) | 8PCS |
| 12.Hex Torx sunk socket M6X65 (use for connecting motor and connection plate) | 3PCS |
| 10.Hex Torx sunk screw M6X18 (use for connecting motor and connection plate) | 3PCS |
| 11. External speed sensor connection cable | 1PC |
| 12. Front light connection cable | 1PC |
| 13. Display connection cable | 1PC |
| 14. Rear light connection cable | 1PC |
| 15. Power connection cable | 1PC |

6.Package

Put the motor in a plastic film bag and 3 sets into one carton;

The accessory should packaged separately from the motor; (check the quantity);

*Other: The connecting plate shipped in advance, which is convenient for welding the frame in advance, which is conducive to production arrangements.