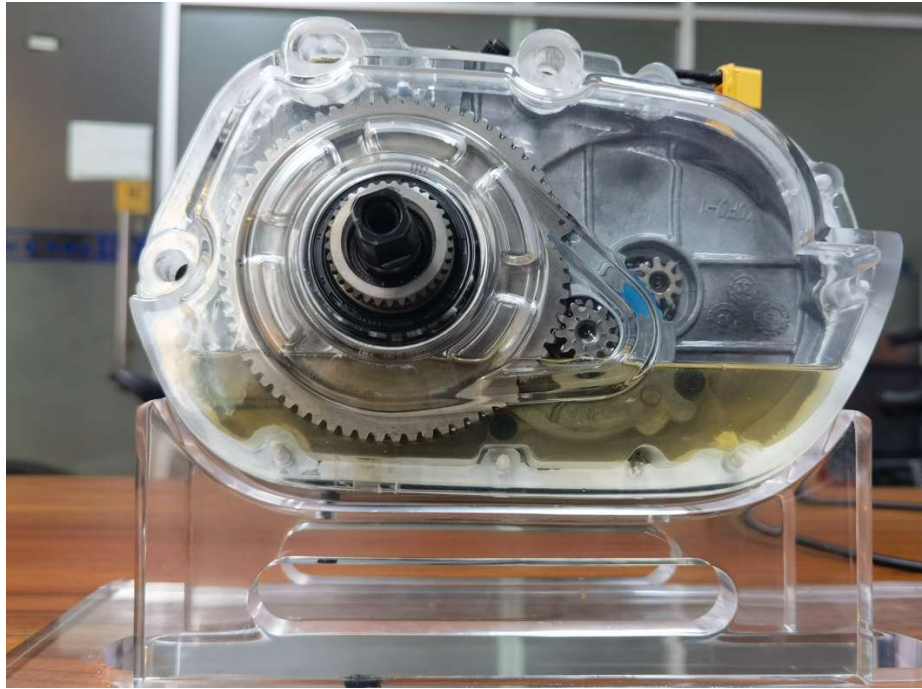


Mid-mounted motor user manual



Catalogue

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About User' s Manual

When installing this product, be sure to follow the instructions given in the user's manual.

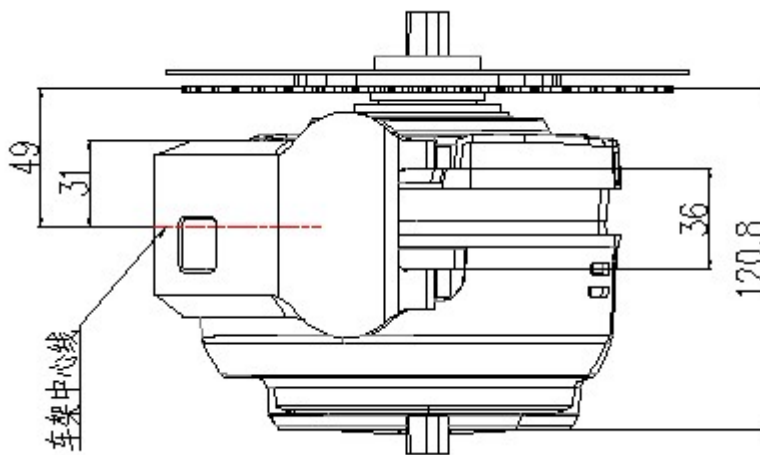
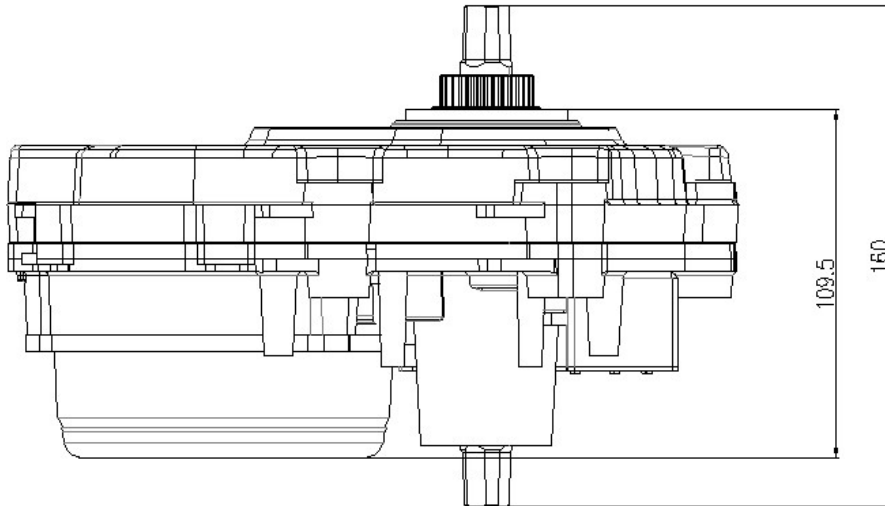
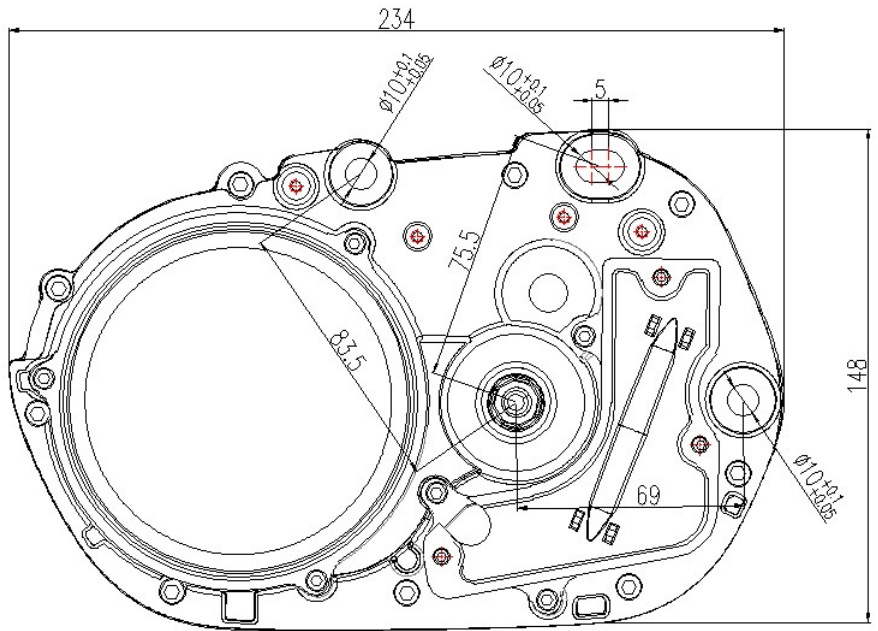
Dear users, in order to better assemble the MMT01 mid-mounted motor, please read the MMT01 mid-mounted motor operation manual carefully before assembling. We will tell you every aspect of motor installation in the most concise language to facilitate your normal use. At the same time, it helps you to solve the confusion and obstacles that may arise.

Motor Parameters

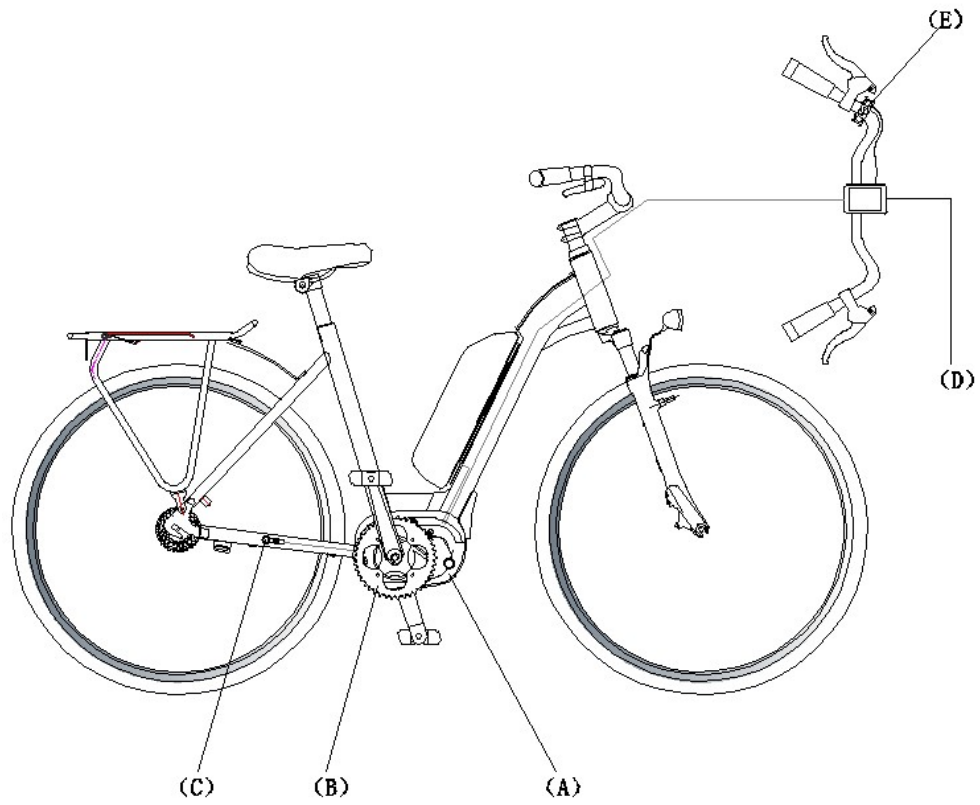
Voltage (DCV)	36V		48V	
Rated Power (W)	250W	350W	350W	500W
Rated Voltage (%)	$\geq 80\%$			
Wheel Size (inch)	20-28			
Rated Rotating Speed (KM/H)	350W		500W	
	30 ± 1		35 ± 1	
Maximum Efficiency (Nm)	350W		500W	
	≥ 110		≥ 130	
Chain Wheel	38T(Optional) 42T(Optional) 44T (optional)			
Optional Chain Cover	Half-wrapped chain cover/Full chain cover			
Lubricating Oil	GL-4 75W/90Vehicle gear oil			
Weight(KG)	4.6KG			
Built-in Sensor	Speed assist, torque assist and wheel speed measurement			
Noisy (dB)	<50			
Working Environment	$-30^{\circ} \text{C} - 45^{\circ} \text{C}$			
Dust-proof/	IP66			

water-proof grade	
Other functions	DC6V/100mA Front and rear light modules, programming function, variable speed sensor module

Drive Unit Structure and Dimensions



Vehicle schematic diagram









A. Drive unit B. Front chain wheel

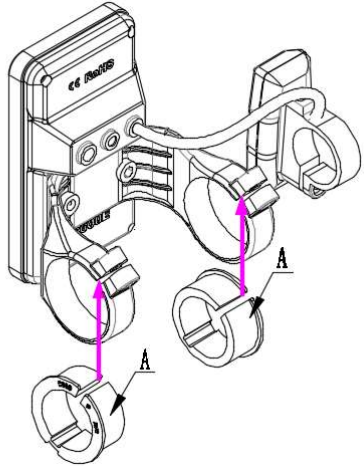
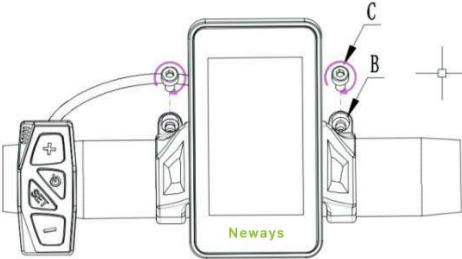
C. External RPM detecting sensor

D. Display E. Auxiliary keypad

List of installation tools

Component	utilized location	tool	
Instrument	Fixing screwM4	 3mm	Allen wrench
Drive components	Install crankset fixing		Bicycle bottom bracket
	Chain cover fixing screw		Phillips screwdriver
	Connecting the frame and the drive assembly fixing	 5mm	Allen wrench
	Crank mounting screwM8	 8mm	Allen wrench
Speed sensor	Magnet installation		Slotted screwdriver
	Screw to fix the sensorM5	 5mm	Allen wrench

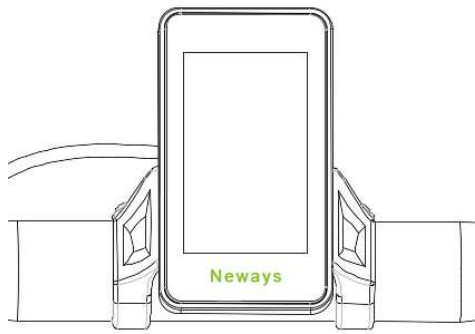
Install the meter

<p>According to the diameter of the tube, the choice is whether you need a rubber clamp ring and model (Applicable to handle specifications: ϕ 22.2, ϕ 23.4, ϕ 25.4, ϕ 31.5), after the bracket and the instrument are installed, the rubber clamp ring is inserted into the bracket as shown in the figure position of the wrist so that the bracket aligns the notch of the wrist with the notch of the rubber clamp ring.</p>		<p>A Rubber clamp ring model (225,254) Outer diameter ϕ 22.2Choose the rubber clamp ring model of the tube: Left clamp ring-225 Right clamp-225 Outer diameter ϕ 25.4Choose the rubber clamp ring model of the tube: Left clamp ring-254 Right clamp-254.</p>
<p>Turn the auxiliary switch on the wrist and put it on the handlebar for proper operation. Adjust the angle of the auxiliary switch to make the switch easier to see and operate when riding. (Suitable for handlebars with an outer diameter of ϕ22.2mm. Use an Allen wrench to fix and tighten the handlebar fixing screws in the direction shown in the figure.</p> <p>Locking torque: 1N.m</p>		<p>B:Bracket wrist C:Hexagon socket head screwM4*6</p>

Turn the auxiliary switch on the wrist and put it on the handlebar for proper operation. Adjust the angle of the auxiliary switch to make the switch easier to see and operate when riding. (Suitable for handlebars with an outer diameter of $\Phi 22.2\text{mm}$.)

Use an Allen wrench to fix and tighten the handlebar fixing screws in the direction shown in the figure.

Locking torque: 1N.m



tool

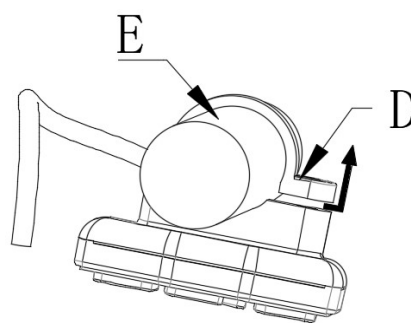


3mm

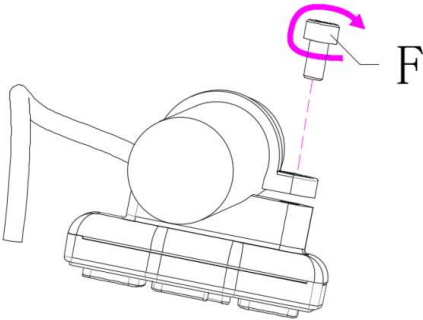

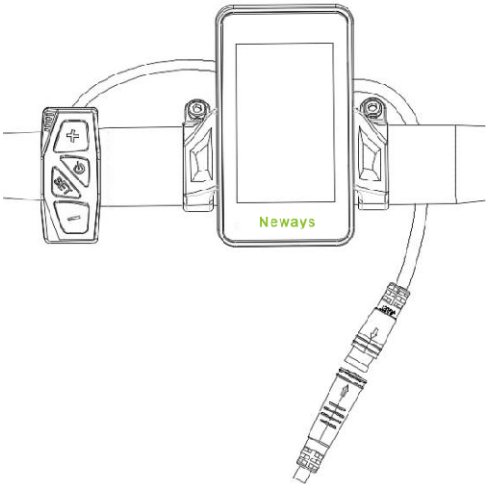
Install auxiliary switch

Turn the auxiliary switch on the wrist and put it on the handlebar for proper operation. Adjust the angle of the auxiliary switch to make the switch easier to see and operate when riding.

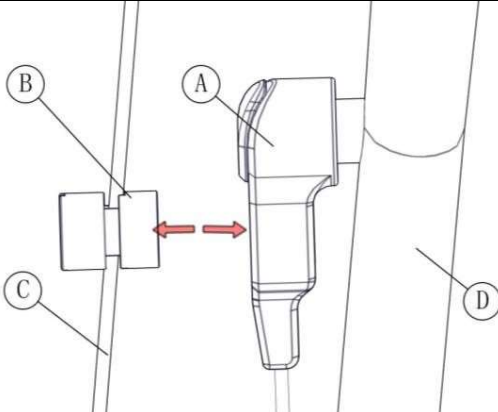
(Suitable for outer diameter $\Phi 22.2\text{mm}$ The handle)

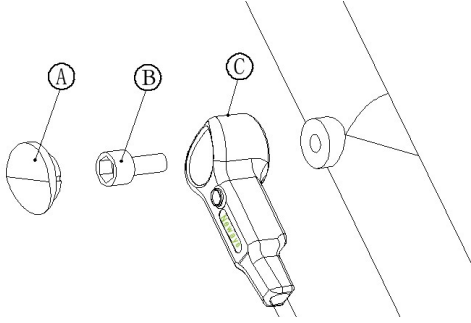

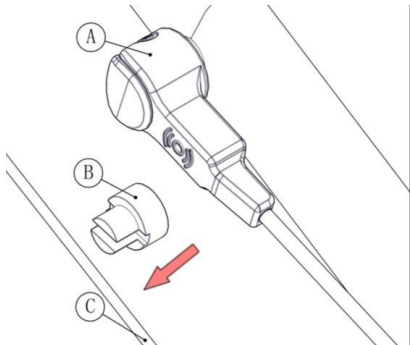
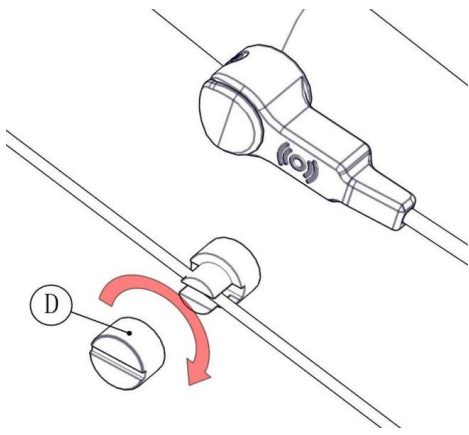



D Switch wrist
E Handlebar
diameter $\Phi 22.2$


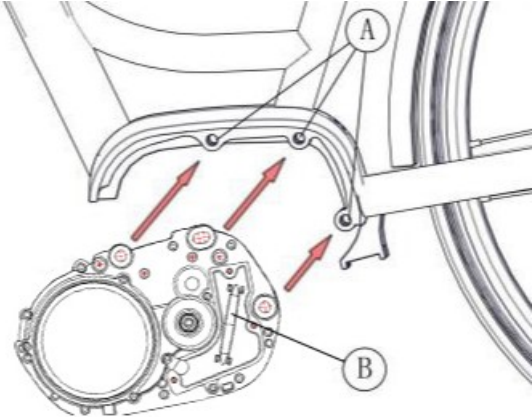
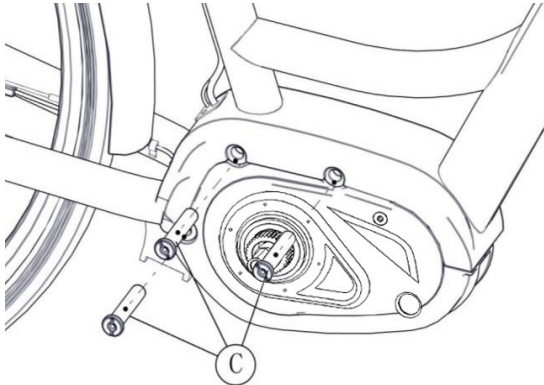
<p>Use an Allen wrench to fix and tighten the handlebar fixing screws in the direction shown in the figure.</p>		<p>F: Hexagon socket head screw M4*10</p> <p>tool</p>  <p>3mm</p>
<p>Locking torque: 1N.m</p> <p>Connect the instrument connector and the client connector according to the markings.</p>		<p>Connectors in accordance with customer requirements</p>

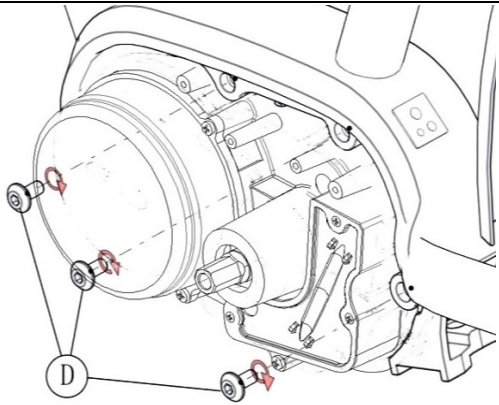

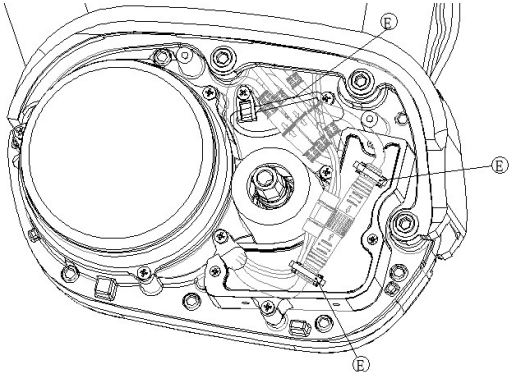
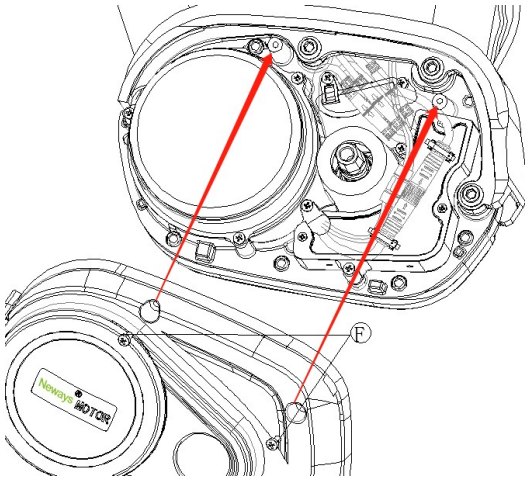

Install speed sensor

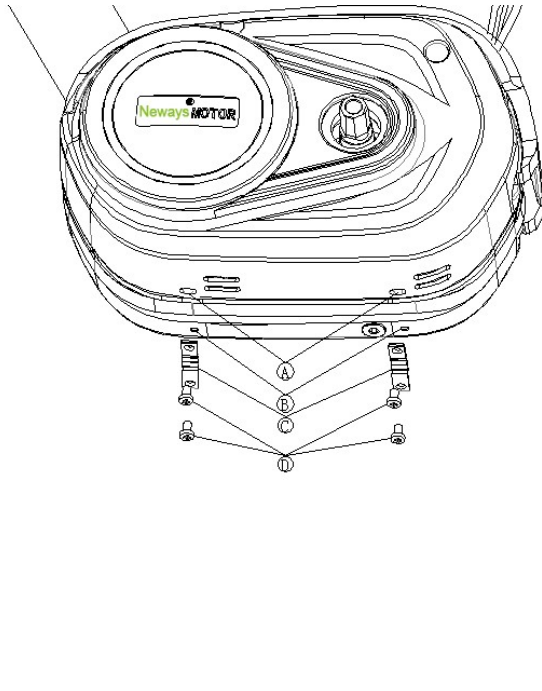

<p>Before installing the speed sensor, please check to make sure that the gap between the speed sensor and the magnet assembly is 5 To 25mm Inside.</p>		<p>A. speed sensor</p> <p>B. Magnet assembly</p> <p>C. Spokes</p> <p>D. Rear fork</p>
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<p>If the gap is within the specified range, fix the speed sensor with the speed sensor fixing bolt.</p> <p>If the gap will exceed 25mm, please use a spacer between the sensor and the rear fork boss to adjust.</p> <p>Locking torque:1.5-2 N.m</p>		<p>A. Dust cover</p> <p>B. Sensor fixing screw M5*12</p> <p>C. speed sensor</p> <p>tool</p> 
<p>Arrange the speed sensor and magnet as shown in the picture, and snap the magnet onto the spokes.</p>		<p>A. speed sensor</p> <p>B. Magnet bolt</p> <p>C. Spokes</p>
<p>Arrange the speed sensor and magnet as shown in the figure so that their centers are aligned with the center of the sensor's sensing area.</p> <p>Tightening torque 1.5Nm</p>		<p>D. Magnet nut</p> <p>tool</p> 

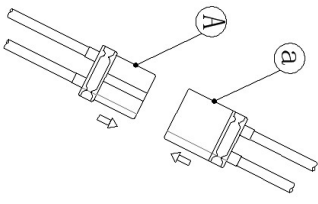
Install the drive unit

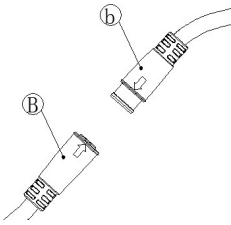
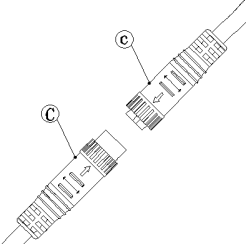
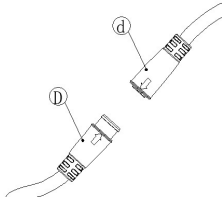
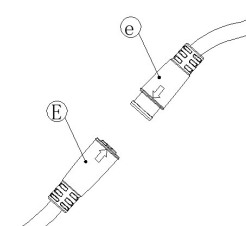
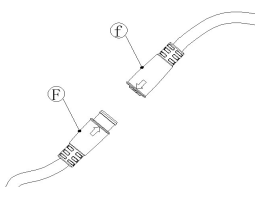
<p>Before installing the drive unit, it needs to be wired in advance according to different models and wiring structures.</p>		<p>A. Power cable B. Rear light cable C. Speed sensor cable D. Headlight cable E. Assembly cable</p>
<p>Align the three mounting holes in the drive unit with the mounting holes in the frame.</p> <p>Note: Pay attention to the corresponding position of the cable when aligning the holes, and note that the cable cannot be squeezed by the drive unit.</p>		<p>A. Mounting hole B. Drive unit</p>
<p>Will M6 Insert the special nut into the frame and drive unit hole from the right</p>		<p>C. M6Long nut</p>

<p>Make M6A special boltinsert into the frame from the left side and fixed with a nut and tightened to the specified The torque.</p> <p>Locking torque: 18- 20 N.m</p>		<p>D. M6Bolt</p> <p>tool  5mm</p>
<p>Connect the cable connectors of the drive unit to the connectors of other components respectively, and fix the cables at the designated positions with cable ties.</p>		<p>E. Tie</p>
<p>Install the housing of the drive assembly to the drive unit.</p> <p>Locking force 1.5Nm</p>		<p>F. M4*8Screw</p> <p>tool </p>

<p>Use screws to lock the bottom of the housing and the bottom of the drive unit body, as shown in the figure.</p> <p>If you consider arrange the brake cable or shift cable at the bottom of the unit body, lock the C pressure line plate together.</p> <p>Locking force 1.5Nm</p>		<p>A. Motor housing screw hole</p> <p>B. Screw hole for motor right cover</p> <p>C. Crimping board</p> <p>D. M4*8 Screw tool</p> 
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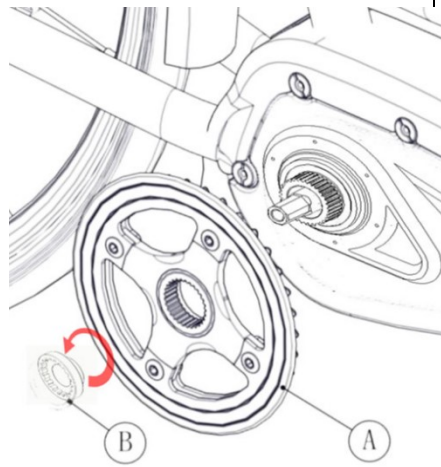
System wiring

power cable		
<p>Connect the positive and negative connectors of the power cord to the positive and negative connectors of the power supply on the controller end of the drive unit (2Core)</p>		<p>a. Power cord positive and negative terminals</p> <p>Connector</p> <p>A. Driver unit power cord female end connector</p>
Speed sensor line		

<p>Connect the connector of the speed sensor unit to the controller speed sensor connector of the drive unit (3Core)</p>		<p>b. Drive unit speed sensor male connector B.Speed sensor female connector</p>
<p>Assembly line</p>		
<p>Connect the assembly line connector to the connector at the end of the drive unit (10Core)</p>		<p>c.Drive component end assembly line female end connector C.Assembly line male end connector</p>
<p>Front light wire</p>		
<p>Connect the connector of the front light wire to the front light wire connector (2Core)</p>		<p>d.Drive unit female connector D.Headlight cable male end connector</p>
<p>Rear light wire</p>		
<p>Connect the connector of the rear light cord to the rear light cord connector of the drive unit (2Core)</p>		<p>e.Drive unit male connector E.Rear light wire female end connector</p>
<p>Variable speed sensor line</p>		
<p>Connect the connector of the variable speed sensor to the connector of the variable speed sensor port of the drive unit (3core)</p>		<p>f.Drive unit female connector F.Variable speed sensor male connector</p>

Install the front chain ring

Insert the front gear piece into the spline shaft in the drive assembly along the spline direction, and use a tool (bicycle bottom shaft spline sleeve) to lock the locking bolt counterclockwise.



A. Front sprocket

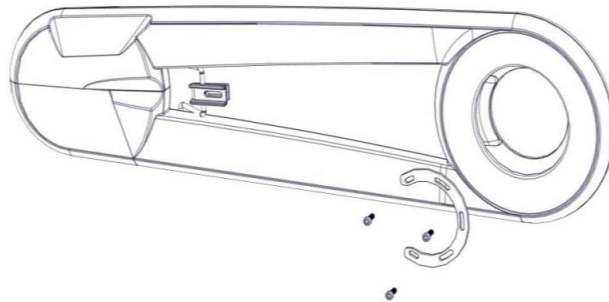
B. Locking bolt (M24*1)

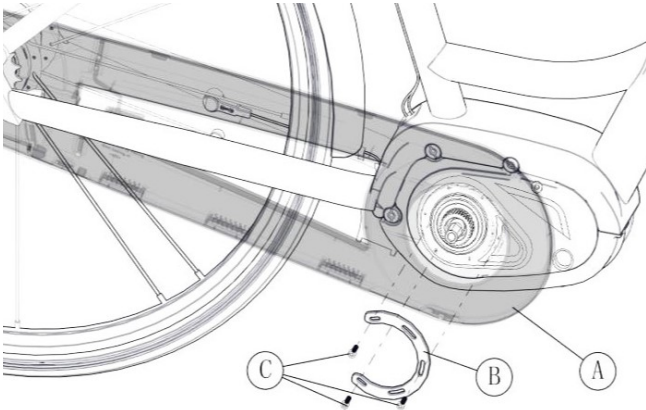

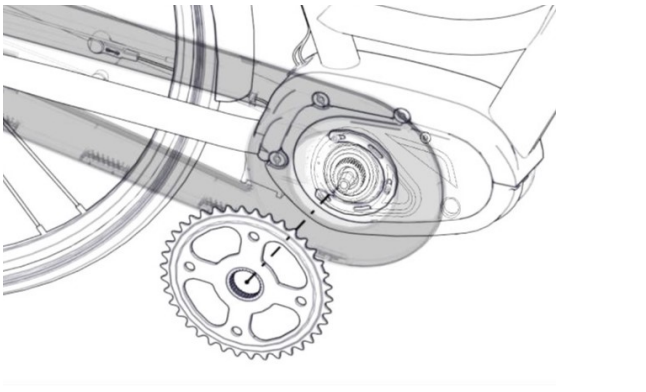
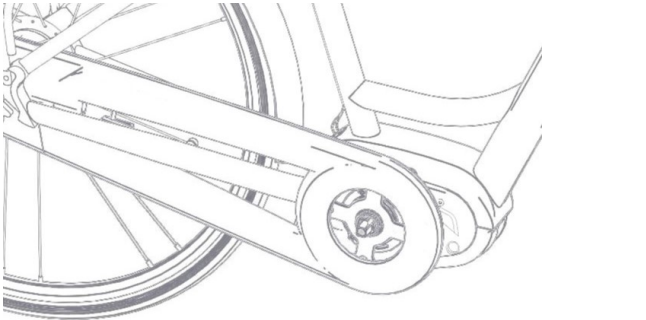
Locking force

30—35N.m

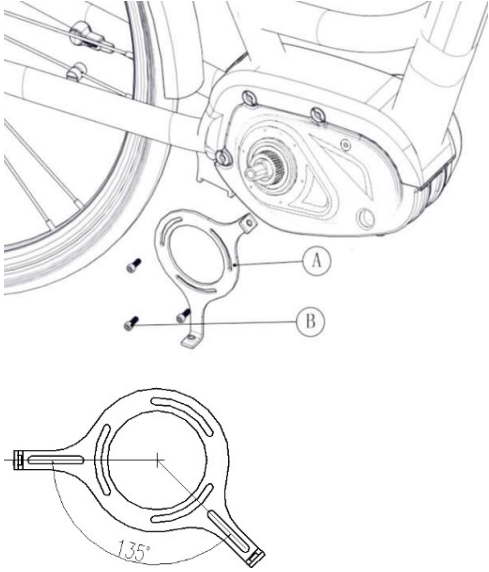

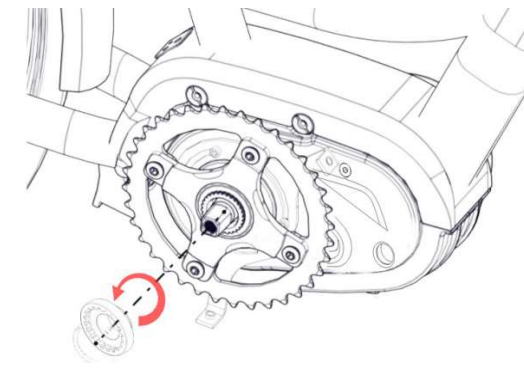
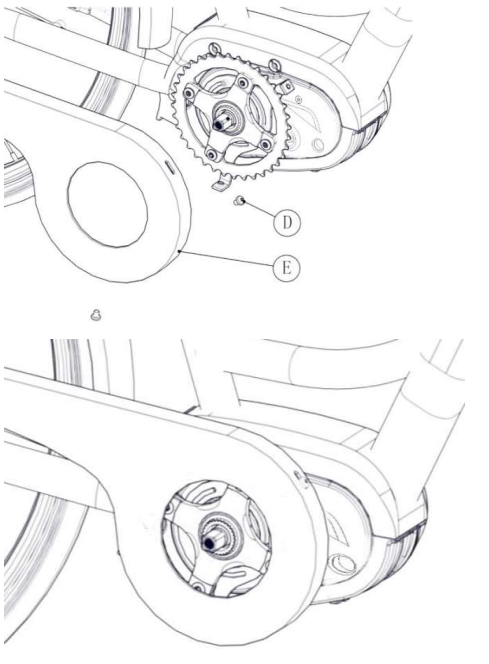

Install the full-inclusive chain guard

This kind of full-wrapped chain cover needs to be used with the chain cover pressure plate and screws as shown in the figure to be fixed with the drive assembly.




<p>Open this kind of all-inclusive chain cover according to the product manual and adjust it to the proper position so that the inner side of the chain cover is close to the convex surface of the outer side of the drive unit. Then use screws to press the pressure plate against the inner wall of the chain cover and lock the screws.</p> <p>Locking force:2N.m</p>		<p>A.Full chain cover</p> <p>B.Full-inclusive chain cover tablet</p> <p>C.M4Phillips screw tool</p> 
<p>Install the sprocket according to the installation method of the sprocket.</p>		
<p>After installing the gears, follow the chain cover product instructions to assemble the chain cover completely.</p>		


Install half-wrapped chain guard

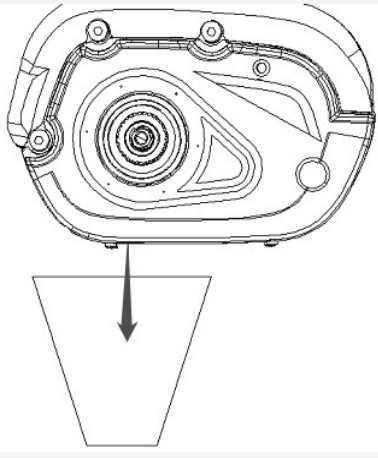
<p>Adjust the attachment angle of the half-pack chain cover, and lock the half-pack chain cover removal and attachment with the locking part of the drive unit with screws.</p> <p>Locking force:2N.m</p>		<p>A. Half-wrapped chain cover mounting bracket</p> <p>B. M4Phillips screw</p> <p>tool</p> 
<p>Install the sprocket in place according to the installation method of the sprocket.</p>		
<p>Fasten the half-pack chain cover with the half-pack chain cover bracket with screws.</p> <p>Locking force 2 N.m</p>		<p>D.M4Phillips screw</p> <p>E.Half-wrapped chain cover</p> <p>tool</p> 

Install the crank

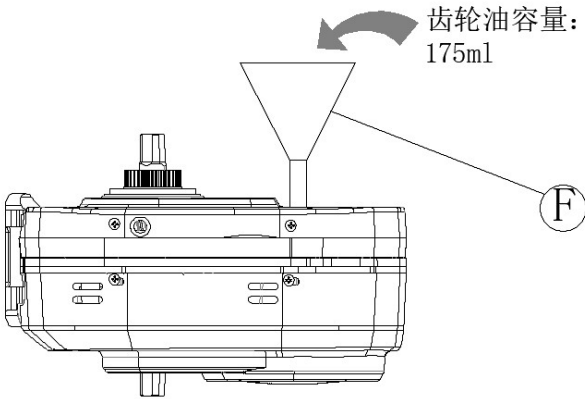
<p>Mount the right crank on the right bottom bracket, And use one M8 hexagon socket screws to lock, install the left crank in the same way.</p> <p>Locking force 35-40N.m</p>		<p>A.Right crank B.Crank mounting screwM8</p> <p>tool  8mm</p>
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Change gear oil operation

<p>Drain oil</p> <p>Place the right side of the drive unit up and horizontally, and open the oil filling hole bolt and the oil drain hole bolt respectively.</p>		<p>A. Filling hole B. Oil drain hole C. Grease hole bolt D. Oil drain bolt</p> <p>tool  4mm</p>
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<p>Place the oil drain hole of the drive unit downward, so that the residual gear oil in the drive unit flows into the prepared container</p>		
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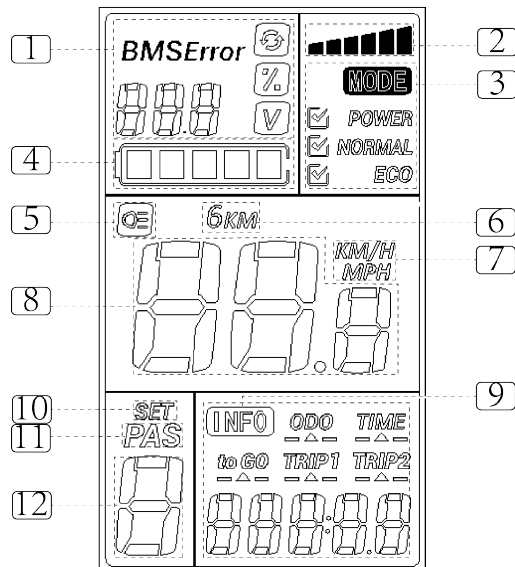
Oiling

<p>Keep the oil filling hole of the drive unit facing upwards and prevent it horizontally, and inject the gear oil into the drive unit through a funnel or other equipment. Install the oil filling hole bolt and the oil drain hole bolt. The recommended oil filling capacity is 175ml in order to achieve the best working condition of the motor.</p> <p>Locking force 1.5Nm</p>		<p>F. Funnel</p>
--	---	------------------

Note: Observe through the oil window and do not change the gear oil at will when the oil level can be seen. The maintenance period of the drive unit oil tank gear oil is 3 years or 60,000 kilometers.

Overview of instrument functions

The MMT01 instrument provides you with a variety of displays to meet your riding needs. The display contents of the MMT01 meter are:



1. BMS Error

1.1 Error displays the current error code.

1.2 BMS battery management displays the current battery status

1.3 Display of cycle times:

By default, this function is not available and needs to be customized by the customer.

1.4 Battery percentage display:

By default, this function is not available and needs to be customized by the customer.

1.4 Voltage display:

Default lighting and display information combined with current battery voltage

2. Current display:

Display the current controller discharge current, each grid is 2A.

3. Mode selection

Enter the setting interface SET0 to select one of the three modes of ECO, NORMAL, and POWER as the current mode.

4. Power information:

Displays the current battery power of the meter, and it will flash when the battery is low.

5. Backlight:

When the user presses the ON/OFF button in the power-on state, the meter can be turned on

When the user presses the "-" button for 2 seconds to turn on the 6KM boost, the word 6KM will be displayed here, and the electric vehicle will move forward at a constant speed of 6KM.

6. Mile selection

According to the customer's selection in the setting interface, the speed unit will be displayed here.

7. Speed display

Display the current hourly riding speed of the electric bike.

8. Riding information display

9.1.INFO:

The current information is illuminated by default.

9.2.IN FO TOGO:

Endurance mileage, this function needs to be customized by customers.

9.3.ODO:

The total mileage display shows the accumulated mileage from the start-up to the

current, which cannot be reset.

9.4.TIME:

Display the total time of a user's single ride greater than 5KM

9.5.TRIP:

Single mileage display shows the user's single riding mileage, which can be cleared in the setting interface, and it will be cleared automatically when it is greater than 500KM.

9. SET:

When the user enters the setting interface, it will flash at 1 Hz.

10. PAS:


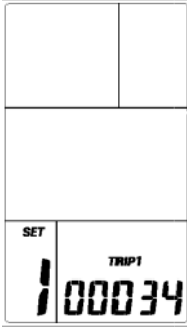
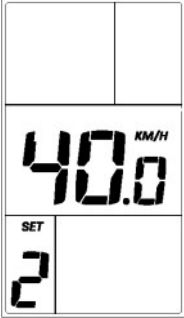
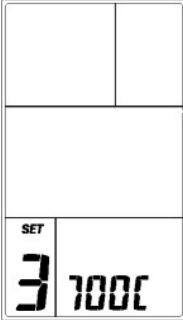
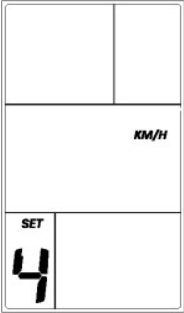
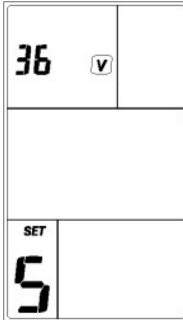
Boost display.

11. Gear display

The output power of the meter is displayed. The default output power range of the meter is 0-5 gears, and the default output power is 1 gear when it is turned on.

Overview of instrument settings

1. Long press the SET button for 2 seconds to enter the general setting interface.

<p>SET0:Mode selection</p> 	<p>SET1: Single mileage reset (press DOWN key)</p> 
<p>SET2: Maximum riding speed setting (range:10KM/H~40KM/H)</p> 	<p>SET3:The wheel diameter setting makes the mileage more accurate.</p> 
<p>4: mile setting</p> 	<p>SET5:Default voltage selection (36V/48V)</p> 

※The above settings are selected by the up and down keys. Long press SET for 1 second to save the settings and exit.

2. When the electric vehicle does not operate any more than 5 minutes, the system will automatically sleep.

The error code of the instrument corresponds to the fault definition

error code	Definition
0	No trouble
1	Abnormal current orMOSDamaged tube
2	Handle abnormality (power-on detection)
3	Motor phase loss
4	Motor Hall signal is abnormal
5	Abnormal braking (power-on detection)
6	Undervoltage
7	Motor stall protection
8	Controller communication receiving abnormal
9	The instrument communication reception is abnormal

Bill of materials

Unit	Name	Quantity	Specifications	
Instrument accessories	Φ 22. 2Rubber clamp ring (optional)	Left clamp ring	1	Φ 22. 2
		Right clamp	1	
	Φ 25. 4Rubber clamp ring (optional)	Left clamp ring	1	Φ 25. 4
		Right clamp	1	
		Hexagon socket head screw	2	M4*6
		Hexagon socket head screw	1	M4*8
Drive unit	M6 long nut	3	M6	
	M6 bolt	3	M6	
	Motor housing	1		
	Cross recessed pan head screws	6	M4*8	
	Crimping board	2		
	Sprocket assembly (38T optional)	1	CL-49mm	

	Sprocket assembly (42T optional)	1	CL-49mm
	Lock bolt	1	M24*1
	Left crank	1	170mm
	Right crank	1	170mm
	Crank mounting screw	1	M8