

INSTALLATION MANUAL



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1. Installation

- ★ Easy to install onto most bike frames.
- ★ High starting torque, Max torque \geq 80Nm, good performance on climbing.
- ★ Double clutch is used on drive unit, for additional safety.
- ★ High efficiency, low consumption, long travel mileage.

Countermark serial number on motor casing as following:

1.1 Scope of application and numbering rule

MD.M11---36V350W;48V350W

MD.M12---36V500W;48V500W;48V750W;48V1000W

1.MD.M11 and MD.M12 all with speed sensor

2.The Bottom Bracket 68mm and 100mm is optional

3.MD.M11 and MD.M12 can be added your brand as your requirements.

1.2 Material and waterproof grade

Die-cast aluminum electrophoresis black treatment, working

environment temperature:-25°C-55°C, waterproof grade: IP65.

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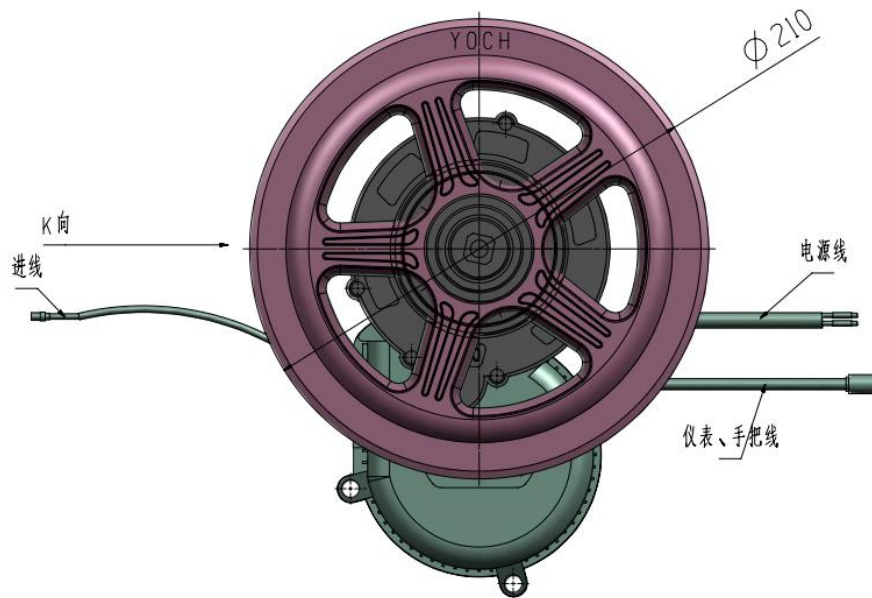
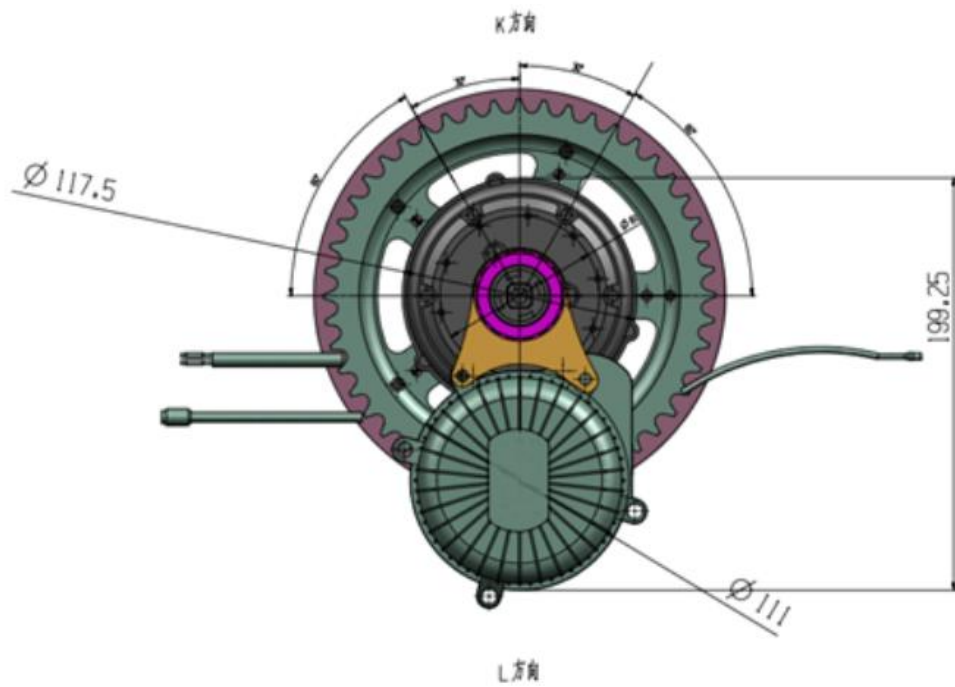
1.3 Main technical parameters

Voltage		DC36V						
Limit current		15A						
Limit speed		25KM/H						
Motor weight		3.7KG						
no-load value		Rated value					Max value	
current (A)	speed (RPM)	Output power (W)	speed (RPM)	efficiency (%)	torque (N m)	current (A)	MAX torque	MAX efficiency (%)
≤1.0	83±5	250	78±5	≥80%	≥30	≤9	≥80N.m	≥80%

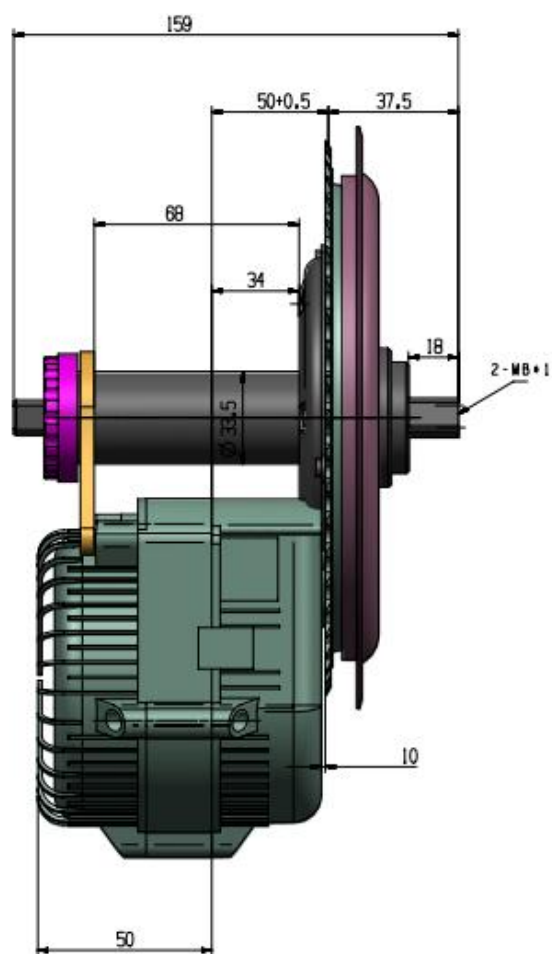
Above parameters as the default parameters, can be customized according to customer requirements.

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1.4 Engineering Drawing

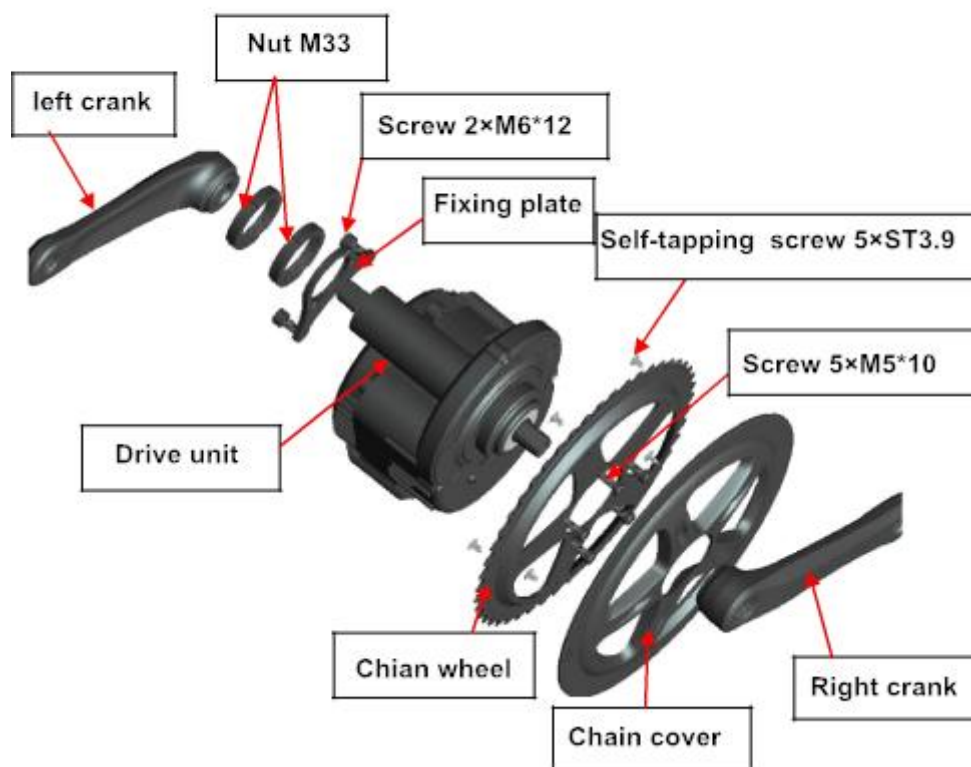


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1.5 Installation diagram



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1.6 Installation Procedure

Step 1:

Remove pedal arms.

a) Loosen pedal arm and remove pedal arm nut. Then, loosen the pedal crank nut using a socket tool.






b) Remove the pedal arm with the pedal arm remover tool.



c) Repeat steps 1a and 1b on the right hand side.



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<p>Step 2:</p> <p>Remove bottom bracket</p> <p>a) Use a bottom bracket remover tool to loosen the bracket</p>	
<p>b) Remove the bottom bracket</p>	
<p>c) Use a spanner to remove the other side of the bottom bracket (if relevant)</p> <p>Ensure all parts of the standard bottom bracket are removed</p>	

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Step 3:

Screw on chain-ring and plastic cover.

a) Fit the chainring and plastic cover onto the unit. Screw them in place with screws provided.



Step 4:

Fit unit into bottom bracket

a) Grease the unit and slide into the bottom bracket.

Ensure that the thread of the axle extends out the other side.






Step 4:

Fix unit in place

a) Place the fixing plate over the shaft with the toothed surface on the inside. Screw in place with the M6 screws provided.



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	 <p>Note - this toothed surface goes on the inside</p>
<p>b) Screw on the first M33 nut. Hold the drive unit near to bicycle fork, when tightening and tighten to 30-40Nm.</p>	
<p>c) Add the second M33 nut.</p>	

Step 5:

Replace pedal arms

- a) Screw on pedal arms and replace pedals on both sides..



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Step 6:

Fit Handlebar Accessories

a) Remove previous handlebar accessories.



b) Slide on the cut-off brakes and throttle (optional)



c) Fit the screen



Step 7:

Fit speed sensor

a) Fit the magnetic sensor to the chain stays next to the rear wheel.



Cable Ties

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b) Fit the magnet to the wheel spokes - leaving an approx. 5mm gap.



5mm gap

Tighten nut

Step 8:
Fit and Connect Battery (sold separately)

a) If using a downtube battery, first fit the rack to the downtube. Connect the battery wires to the system.



b) Slide in the battery



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2.Display D961

2.1 Material and waterproof grade

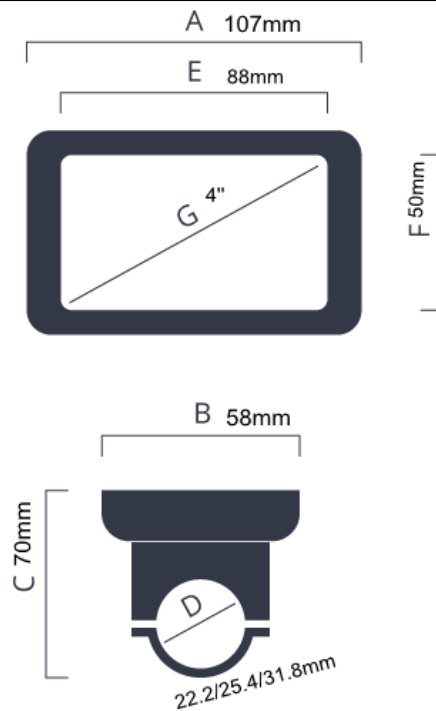
Display's casing use black/silver ABS materials, display window use acrylic white transparent material.

Working temperature of display: - 20℃- 80℃.

Waterproof grade: IP65.

Ultrasonic is used for welding casing and display window.

2.2 Dimension(unit: mm)



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2.3 Function

D961 gets many functions for your enjoying riding. Show context:

- 1.Capacity
- 2.Speed (Speed/ MAX/AVG)
- 3.Distance (TRIP/ TOLTAL)
- 4.Time
- 5.Assist walking
- 6.Backlight
- 7.Error code
- 8.Levels setting

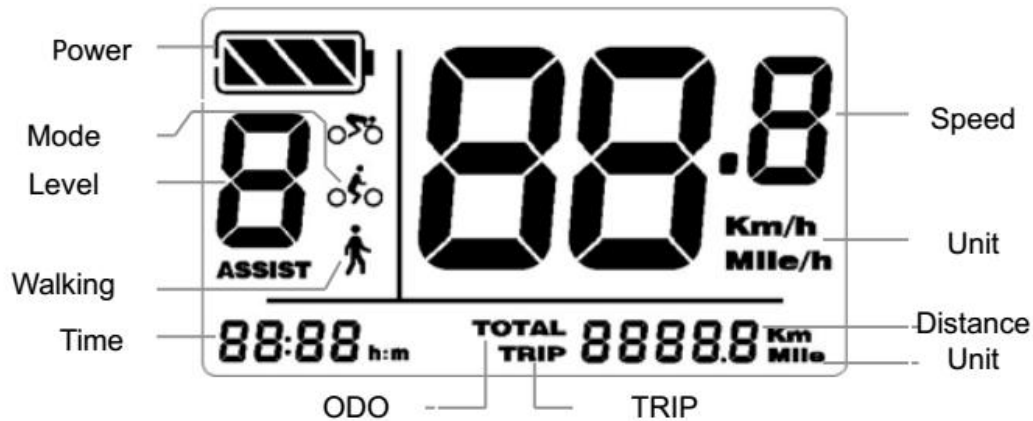
2.4 Button definition

The D961 display is equipped with integrated buttons. The three buttons are installed on the left side. The shape and location is as below:



Display area includes battery capacity, riding mode, riding speed, single riding distance, total riding distance, and malfunction code of the electronic control system. Display area is as below:

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2.6 Power on/off

Firstly, Long press Mode to start display. Long press **M** again to switch off.

Then press to ope system power (display below black font when power on)

2.7 Walking assist

Long press (-), to start assist walking. highlights on screen. Vehicle goes at 6km/h.

Only in case of pushing, can this function be used. Please don't abuse when riding.



Secondly, press "+" add up speed level, press "-" cut down speed level.

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2.8 Backlight and Capacity

Long press (+) to switch on backlight on screen, and front light on as well if front light

Note: Automatical backlight is available if controller gets this function.

Backlight & front light on automatically according to the lightness outside if controller gets light sensor inside. Automatical function off when manual operation on.

Level

Press (+) or (-) to change the levels. Default range 0 - 3, 0 no output, 3 max output.



Default level 1 when switch on.

Capacity

Four sections highlights when battery is full.

Percentage of capacity for sections:



<20% 20%-40% 40%-60% 60%-80% 80%-100% Frame flashes at 1 Hz when low power.

2.9 Parameter setting

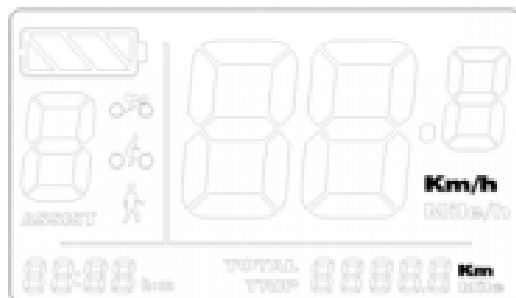
Makes sure good connection then power on.

Long press **M** to start display. Long pree press (+) and (-) to setting mode.

Unit

Press (+) to change unit Km or Mile.

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Press **M** to save and skip to speed setting.

Speed limit

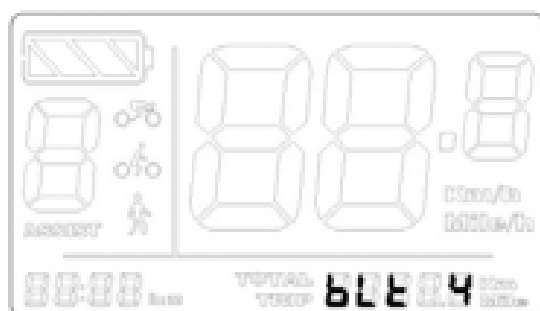
Limit range from 15Km/h to 40Km/h. Press press (+) or (-) to change the limit.



Press **M** to save and skip to backlight setting.

Backlight

Press press (+) or (-) to change the brightness, range from 1 to 8.

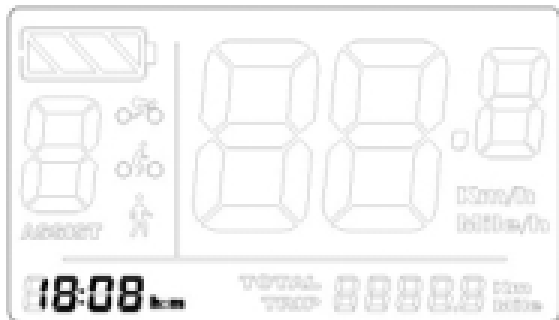


Press **M** to save and skip to time setting.

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Time

Press (+) or (-) to change the hour, then press **M** to minute setting, press (+) or (-) to change the minute.

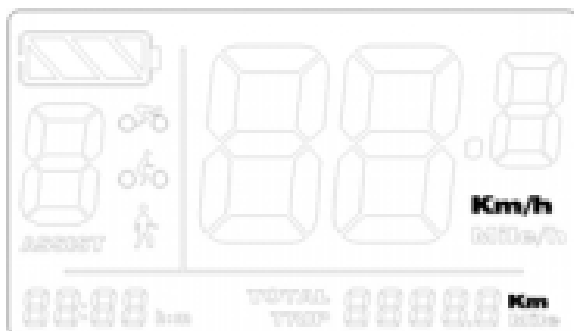


Press **M** to save and exit.

Setting effects after restart.

Advanced setting

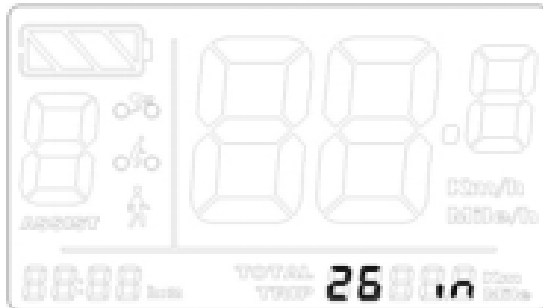
Long press **M** to start display. Long pree press (+) and (-) to setting mode,



Then press (+) and (-) and no release, meanwhile press **M** eight times, to advanced setting.

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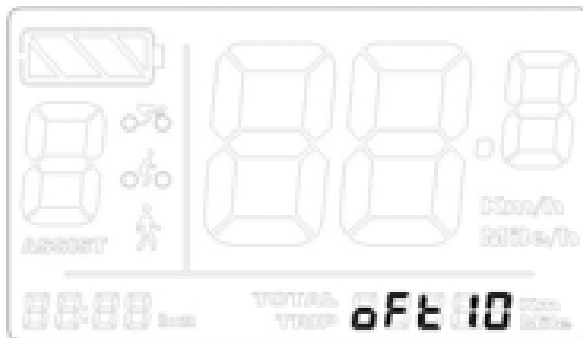
Wheel size setting



Press (+) or (-) to change the wheel size. Range from 8 to 32 inch. Press **M** to save and skip to sleep time interval setting.

Sleep time interval setting

Press (+) or (-) to change the time, range from 0 to 60 minutes.

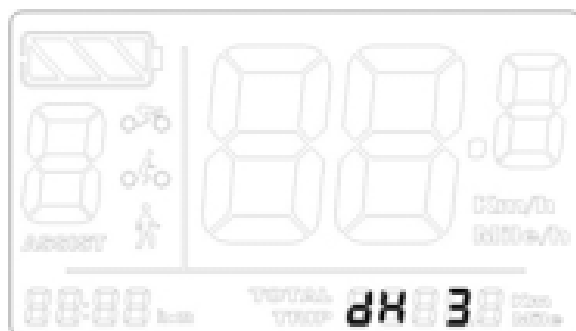


Display will sleep and cut off power after no operation on system for the setted time. Press **M** to save and skip to level amount setting.

Level amount setting

Press (+) or (-) to change the amount, range from 2 to 9 levels (excluding level 0).

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Press **M** to save and exit.

2.10 Malfunction Codes

Error code	Definition
04	Throttle no homing
05	Throttle abnormality
06	Low voltage protection
07	Over voltage protection
08	Hall sensor abnormality
09	Phase line abnormality
10	Controller overheat
11	Temperature sensor in controller abnormality
12	Current sensor abnormality
21	Speed sensor abnormality
22	Communication abnormality in BMS

3 System connection diagram



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5 After service & warranty

Timing and scope of warranty: 1 Year warranty from date of purchase

Limited warranty does not cover or apply to the following:

- 1) Damage, failure and/or loss caused by refitting, neglect, improper maintenance, competition or commercial purpose, misuse, abuse or accident;
- 2) Damage, failure and/or loss caused by shipping;
- 3) Damage, failure and/or loss caused by improper installation, adjusting or repairing.
- 4) Damage, failure and/or loss irrelevant to material and workmanship, e.g., failure to follow instructions by consumers;
- 5) Damage, failure and/or loss caused by product's appearance and surface change which doesn't affect its function.
- 6) Damage, failure and/or loss caused by unauthorized service or installation;
- 7) Damage, failure or loss caused by normal wear and tear. Panda Bikes Ltd reserves the right to repair the components or replace the

components, and is only responsible for repairing or replacing of the products.

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6.Packing list

One set system per carton with packing list:

1.Mid motor	1 set
2.Didsplay	1 pcs
3.Brake	2 pcs
4.EB-BUS	1 pcs
5.Fixing plate	1 pcs
6.Chainwheel and chain cover	1 set
7.Crank	1 set
8.M5*10 nut	5 pcs
9.M6*16 nut	2 pcs
10.M33 nut	2 pcs
11.ST3.9 nut	5 cps
12.Speed sensor	1 pcs
13.Magnet	1 pcs
14.Specification	1 pcs

Above components list is for reference only, it can be changed with different requirement.