BAFANG

EN

BAFANG

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DEALER MANUAL

MAX Drive System

Original instruction manual
Read carefully before use. Keep for later
BF-DM-S-M01-EN-PRINT A/1,December 2016

CONTENT

IMPORTANT NOTICE

This operating manual contains various points and pointers, providing important information about your new pedelec and how to use it, referring to possible damage to property and the environment, and warning against potential falls and serious damage, including physical injury. It is also essential that you comply with the correct torque in order to prevent components from coming loose or breaking. Make sure to read all the documentation supplied.

- This symbol signifies a risk that the danger described may occur.
- Warning texts are always displayed against a gray background.

The warnings break down as follows:

Information: This symbol provides information about how to use the product or highlights specific parts of the operating manual that are particularly important.

Warning: This symbol is used to warn users against improper use that could result in damage to property or the environment.

Danger: This symbol indicates possible dangers to your health and/or even life that may arise if specific actions are not undertaken or corresponding regulations adhered to.

Important bolted connection! Please adhere to the exact recommended torque when tightening this connection. The correct mounting torque is either displayed on the component. A torque wrench must be used to achieve the precise torque prescribed. If you do not own a torque wrench, then you should leave this work up to a specialist retailer. Parts connected using an incorrect torque may fall off or break. This can result in serious accidents.

Operating Instructions. Make sure to read all the installation manuals delivered with the product. If you have doubts concerning any part of the manual, do not install the product yourself. Please consult the local sales office or a pedelec dealer for help.

SAFETY INSTRUCTIONS

General information

Please ensure you read the chapters “Before the first ride” and “Before each ride” before using the pedelec for the first time.

- If you lend your pedelec to a third party, please give them this operating manual along with the pedelec.
- Check that all quick releases are safe and secure every time you ride, and after your pedelec has been left unused, even for a short period of time. Regularly check that all bolts and components are secure.
- Never ride with your hands off the handlebars, except when signaling a change of direction.

When using this product, be sure to follow the instructions given in the user manual.

- It is recommended that you only use genuine BAFANG parts.
- The pedelec may suddenly fall over and serious injury may occur if nuts and bolts are left loosened, or the product is damaged or improperly adjusted.
- When performing maintenance operations (replacing parts, for example), be sure to wear goggles to protect your eyes.
- Please refer to the manuals provided along with the product for information uncovered by this manual.
- After reading the user manual carefully, keep it in a safe place for later reference.

For your safety

Always apply the Pedelec’s brakes before placing your foot on the pedal. The motor will drive forward as soon as you push down the pedal. This force may be unfamiliar and can lead to falls, danger or even traffic accidents, which could result in injury.

- Do not pay too much attention to the cycle display while riding, otherwise you may fall off the pedelec.
- Check that the wheels are securely attached to the pedelec before you start riding. If the wheels are not securely installed, the pedelec may fall over and serious injury may result.
- When riding a pedal-assisted electric pedelec, make sure that you are fully familiar with the starting characteristics of the pedelec before riding it. If the pedelec starts off suddenly, accidents may occur.
- Make sure the pedelec's lights are on before riding at night.
- It is vital that all bolted connections on the pedelec have the correct torque in order to ensure that they are secure. An incorrect torque can damage the screw, nut or component. Always use a torque spanner to tighten screw joints. You are not able to correctly tighten these bolted connections without this specialist tool!

Installation and Maintenance

It is vital that all bolted connections on the pedelec have the correct torque in order to ensure that they are secure. An incorrect torque can damage the screw, nut or component. Always use a torque spanner to tighten screw joints. You are not able to correctly tighten these bolted connections without this specialist tool!

Before performing any kind of work on your Pedelec, turn off the electric motor unit and remove the battery. Not doing so may result in serious injury and/or electric shock.

The frequency of maintenance will vary depending on riding conditions. Periodically clean the chain using an appropriate chain cleaner. Do not use alkaline or acidic cleaning agents to remove rust under any circumstances. If such cleaning agents are used, they may damage the chain and serious injury may result.

Safety Precautions

Please follow the instructions given in the user manuals for your riding safety.

Regularly examine the battery and the charger for damage, especially the cable, plug and casing. If the battery or charger is damaged, it must not be used until it has been repaired.

Please follow the guidance given by the safety supervisor or the instructions indicated in the manual when using the product. This product is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lacking the required experience and knowledge, unless supervised or having received instructions concerning use of the product by a person responsible for their safety.

- Do not allow children to play near the product.
- Should you encounter any errors or problems, consult your nearest dealer.
- Do not modify the system yourself. Doing so may be considered illegal or cause the system to malfunction.
- For information on product installation and adjustments, please consult with your dealer.
- The product is designed to be fully waterproof so as to withstand wet weather riding conditions. However, do not deliberately immerse it in water.
- Do not clean the pedelec using a high-pressure cleaner. If water gets into any of the components, operating problems or rusting may result.
- When shipping the product on a high-speed vehicle exposed to rain, remove the battery and put it in a safe place to stop it from getting wet.
- Handle the product carefully, and avoid subjecting it to any strong impacts.
- Key important information may also be found on the product labels.
- When buying a spare key for the battery, be sure to provide the number on the battery key. Please keep the number in your mind or your notebook.
- Use a wrung-out damp cloth to clean the battery casing.
- For any questions regarding maintenance and use of the product, please contact the dealer where you bought the product.

- Natural wear and tear due to normal use and aging is not within our scope of our quality warranty.
- Please contact your dealer for software updates (if applicable).
- Please get to know the pedelec on a safe piece of land before setting off on your first ride!

Quick Start

In this section, you will find important information and instructions that will enable you to safely use your Pedelec as quickly as possible.

- Read all safety instructions.
- Fully charge the battery pack.
- If necessary: Insert the battery.
- Lock the battery.
- Activate the system using the LED button on the battery.
- Press the "⏻" button on the display: the system will turn ON.
- Select the support level via the control unit.

→ The Pedelec is now ready for operation.

Before the first ride

Practice operating and riding your Pedelec in a calm and safe place before you take to public roads.

Please also consult the additional operating manuals, issued by the individual component manufacturers and which were supplied with your pedelec or are available online. Your specialist pedelec retailer will be happy to answer any further questions you may have after reading this manual.

Please ensure that your pedelec is ready for use and is adjusted to your body:

- Set the position and fixture of the seat and handlebars.
- Check the assembly and settings of the brakes.
- Secure the wheels into the frame and fork.
- Charge the battery until it is fully charged.
- Ensure that the battery is sitting securely in its place.

Before each ride

If you are unsure as to whether your pedelec is in sound technical condition, take it to a specialist retailer to be checked instead of riding it.
If you are unsure as to whether your pedelec is in sound technical condition, take it to a specialist retailer to be checked instead of riding it.
The frame, fork, suspension components and other parts relevant to your safety such as brakes and wheels are subject to heavy wear, which can impact the operating safety of these parts.
If you use parts for longer than their intended lifetime, these can fail without warning, which can in turn lead to falls and serious injury.

Before every ride, please check that:

- The lights and bell are working and are safely secured.
- The brakes are working safely and are properly secured.
- The cables and fittings are not leaking if you have a model with hydraulic brakes.
- The tires are free of foreign objects and damage, and the rims are not damaged and run true, particularly after riding off-road.
- The tires have a sufficient tread depth.
- The suspension components are working properly and are safely secured.
- All bolts, nuts and quick releases are tightly fastened.
- There are no deformations or cracks in the frame and fork.
- The handlebars, stem, seat post and seat are all correctly and securely fastened and are set in the right position.
- The seat post and seat are secure Try turning the seat or pulling it upwards or downwards. They should not move.
- If you are using clipless/magnetic pedals, please check that they are working properly. The pedals should release easily and smoothly.
- Make sure that the battery is sitting securely in its place.
- Make sure that the battery is sufficiently charged for your trip.
- Check that the quick releases are fastened and secured each time your pedelec has been left unattended – even if it is for just a short time.

Legal Regulations

Please stay informed about the national regulations applicable in your specific country.

Before riding your Pedelec on public roads, read up on the national regulations applicable in your specific country. This section provides informa tion on how the pedelec must be equipped to be allowed on public roads.

It includes information on:

- Which light systems have to be installed or carried with you?
- Which brakes must the Pedelec be equipped with?
- There may also be age restrictions that apply to riding in specific areas.
- For example, the issue of children riding on public roads is addressed here.
- If there is an obligation to wear a helmet, it is stated here.

1 DRIVE UNIT (MM G330.250/350)

1.1 Advantages

- Use of torque measurement, pedal-assist speed measurement and wheel-speed measurement; the system has a dual feedback protection of the speed signals to ensure safety and reliability of the system
- High starting torque, maximum torque of more than 80 N.m, especially suitable for hill climbing
- High effciency, low power consumption, longer range
- Low noise, smooth operation

1.2 Scope of Application

The drive unit works properly in the following environ mental conditions:

- Ambient temperature: -20 to + 55°C ;
- Relative humidity: 15 −95 % RH;

The function of the product is impaired by the presence of any major caustic gas, any medium that affects the product' s electrical insulation properties or any high-intensity magnetic field.

1.3 Product Naming Protocol

There is a badge on the housing, showing information as follows:

A MM G330.250 Name of the drive unit

B MM G330.250.CB for coaster brake

C 1401 Date of production, January 2014 in this example; 0001 Production serial number, ran ging from 0000 to 9999; 0001 is the production serial number of the first motor

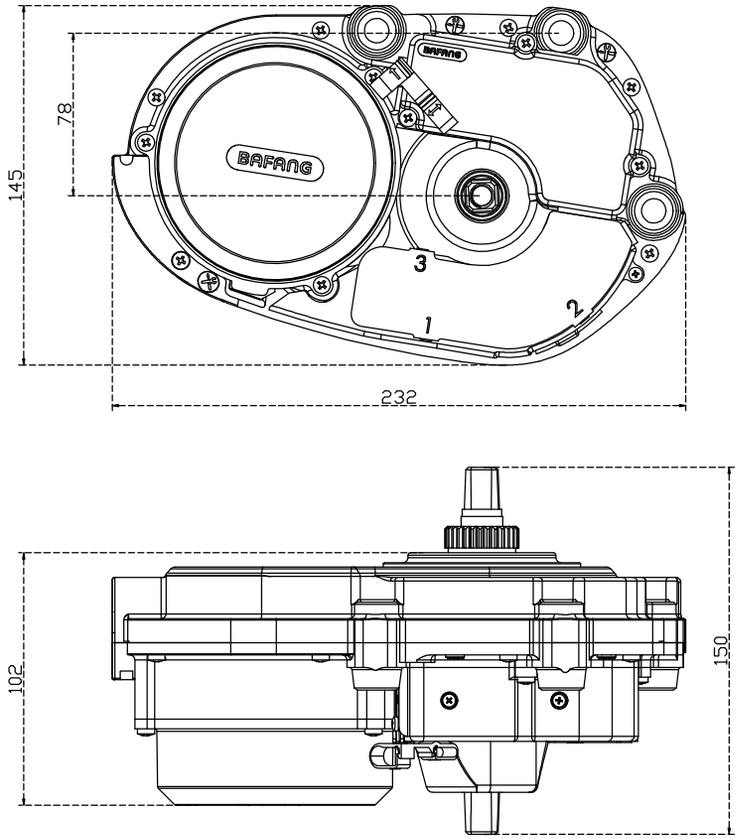
D 36V Rated voltage suitable for 36V drive systems

E 250 W Rated motor power

1.4 Main Technical Parameters

Rated voltage (DCV)	36 / 43 / 48
Rated power (W)	250 350 / 250 350 / 250 350
Rated effciency (%)	⩾80%
Rated rotating speed (rpm)	100±5
Maximum torque (Nm)	⩾80
Chain wheel	36T(optional), 38T(recommended),44T(optional)
Optional chain guard	full chain guard / P-shaped chain guard
Weight (Kg)	3.9
Sensors	pedal assist speed sensor, pedal assist torque sensor and bicycle wheel speed sensor and temperature sensor
Noise (dB)	<55
Working environment	-20°C~55°C
Dust-proof/ water-proof grade	IP 66
Certifcation	CE ROHS / EN14766 /EN14764 / REACH
Functions	Light function: DC 500mA/6V headlight & rearlight Optional functions: Bluetooth module, gear sensor, reprogramming function

1.5 Drive Unit Structure and Dimensions

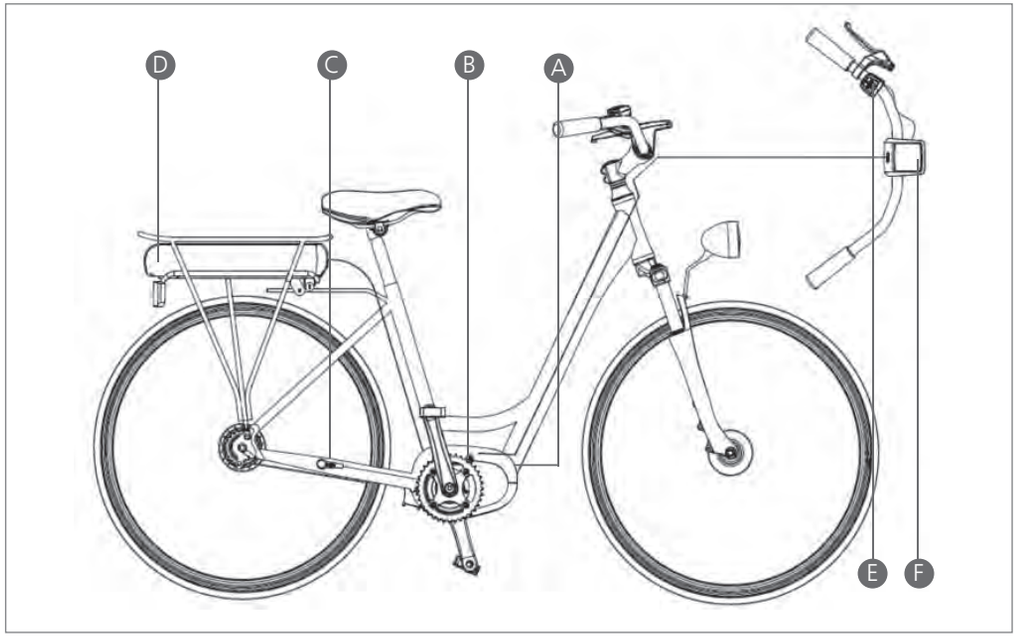


2 SYSTEM INSTALLATION

2.1 List of Tools to be used

Components	Use of the Tools	Tools
Display	To tighten M3 & M4 screws	2.5mm, 3mm Internal hex wrench
Drive Unit	To fix and remove the chain wheel lock nut	TL-UN65 SHIMANO TL-UN65
	To tighten M4 screws on the chain cover	PH2 Cross screwdriver
	To fasten M6 bolts and nuts onto the frame adapter and the drive unit	5 mm Internal hexagonal wrench
	To fasten M8 screws on the crank mounting	8 mm Internal hexagonal wrench
Speed Sensor	To install the iron magnet	6mm Straight slot screwdriver
	To tighten M5 screws of the speed sensor	PH2 Phillips screwdriver
Battery	To fasten the battery plate onto the carrier using M5 screws	3 mm Internal hex wrench

2.2 Component Names



A Drive unit

B Front chain wheel

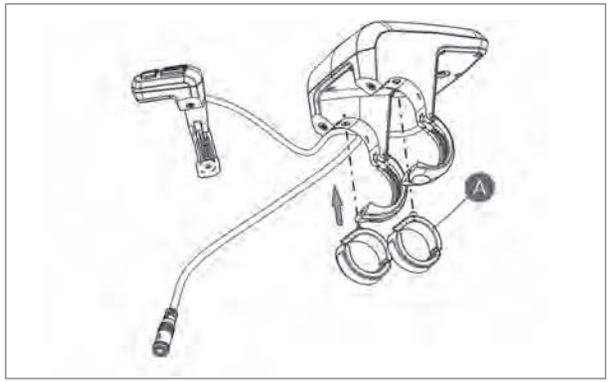
C External speed sensor

D Battery

E Auxiliary keypad

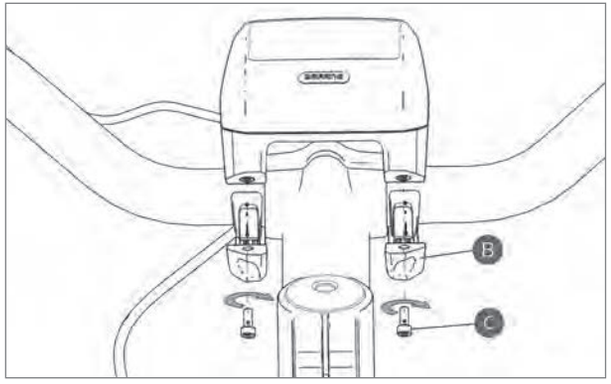
F Display

2.3 Display Installation (DP C07.UART)



A Rubber clamping ring (whose inner diameter is ϕ 22.2 or ϕ 25.4)
2316020400007
2316020400008
Left and right display clamps for the Ø22.2 handlebar:
Left clamp -2316020400017
Right clamp -2316020400018
Left and right display clamps for the Ø 25.4 handlebar:
Left clamp -2316020400007
Right clamp -2316020400008

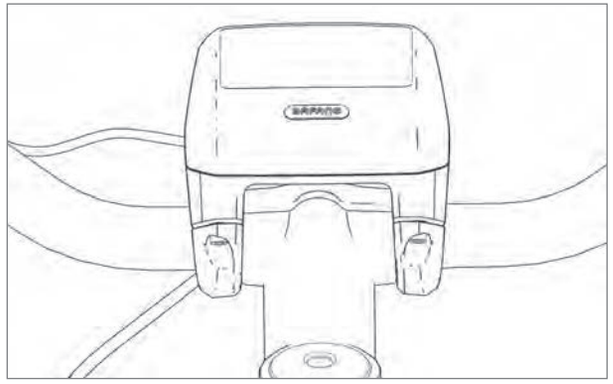
One or two rubber clamping rings may be needed depending on the diameter of the handlebar (the applicable handlebar specifications are ϕ 22.2, ϕ 25.4 and 31.8). Open the left or right display clamp, and insert one or two clamping rings into the right position of the display clamp as shown in the picture above.



B display clamp

C hex socket head cap screws M4×8

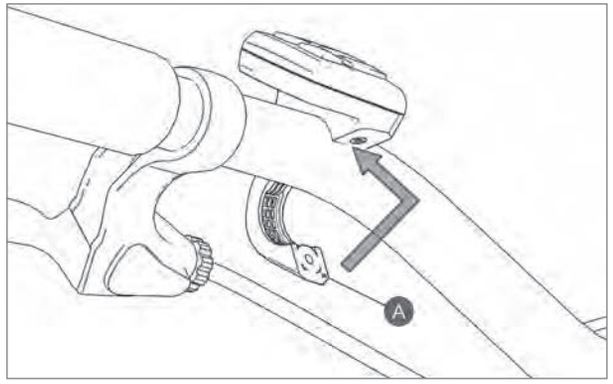
Insert the clamping ring(s) to each of the two display clamps and mount them onto the handlebar. Use an internal hex wrench to fasten the left and right clamps onto the handlebar.



Adjust the angle of the display so that you can easily see the display screen when riding. After the angle has been adjusted, tighten the screws to the specified torque.

Tightening torque: 1Nm

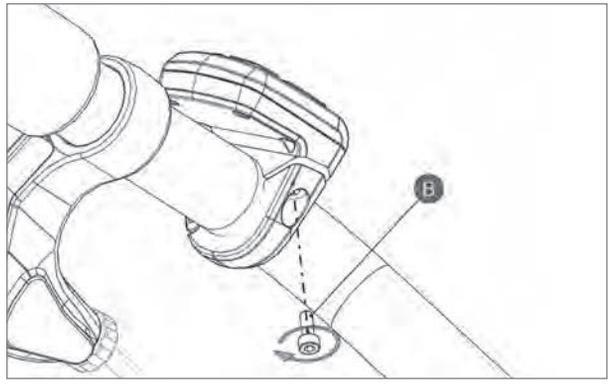
2.4 Auxiliary Keypad Installation



A keypad clamp

Open the auxiliary keypad and assemble it onto a position that is easy for operation. Adjust the angle of the auxiliary keypad to ensure that the keypad is easy to see seen during riding.

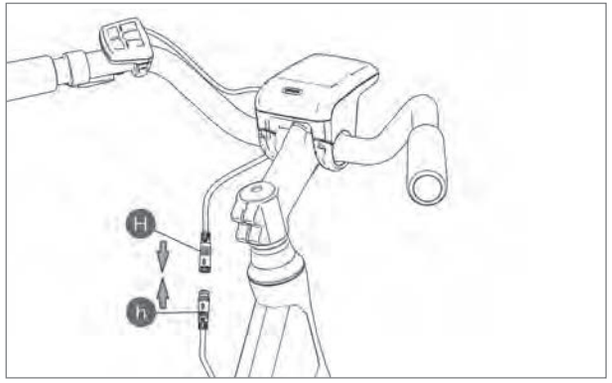
(Applicable to the handlebar whose external diameter is ⌀ 22.2mm)



B hex socket head cap screw M3×8

Fix the keypad onto the handlebar with a screw. Then tighten the fixing screw with an internal hex wrench.

Tightening torque: 1Nm

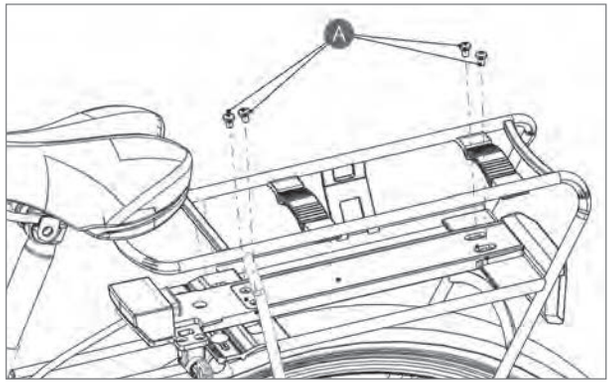


H female connector at the display

h male connector at the EB-BUS

Match the female connector at the display with the male connector at the EB-BUS as shown in the picture above.

2.5 Battery Rail Installation

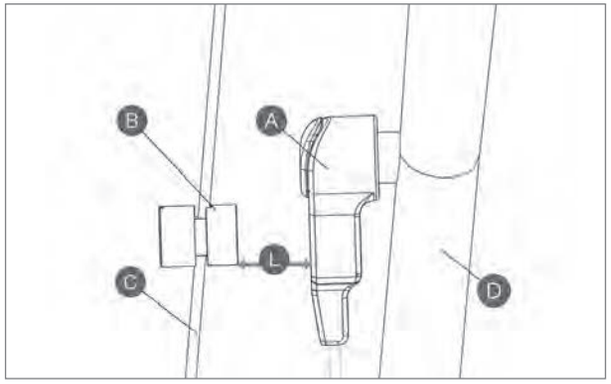


A hex socket head cap screw (M5)

Align the mounting holes of the carrier with the mounting holes of the battery rail. Fasten the battery rail onto the battery carrier with hex socket head screws (M5).

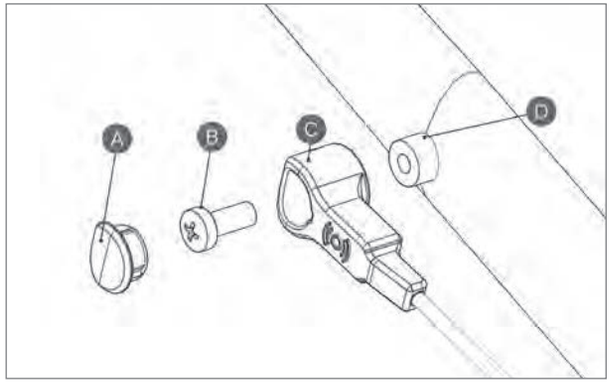
Tightening torque: 2 Nm

2.6 External Speed Sensor Installation SR SD02.01



- A external speed sensor
- B magnet unit
- C spoke
- D chain stay

Before installing the speed sensor, please make sure the gap L between the speed sensor and the magnetic unit is between 5 and 25mm.



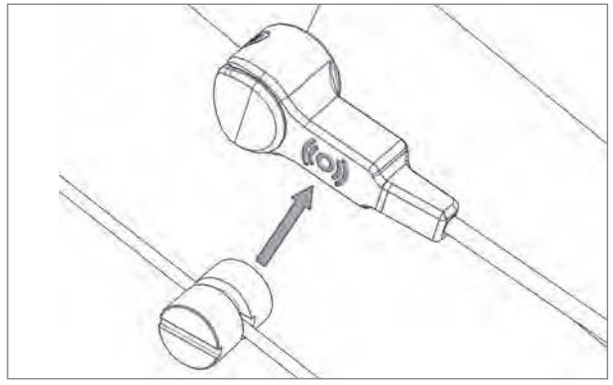
PH2

- A Dust cap 2301030000003
- B mounting bolt M5×12
- C external speed sensor
- D sensor bracket (chain stay boss)

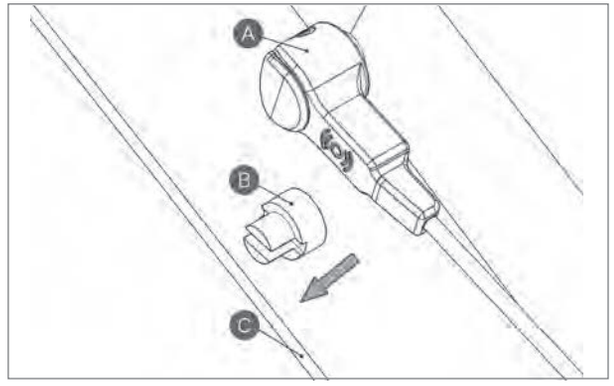
If the gap is within the specified range, use the mounting bolt to fix the speed sensor.

If the gap is more than 25mm, please put spacers between the sensor and the chain stay boss to reduce this gap.

Tightening torque: 1.5-2Nm

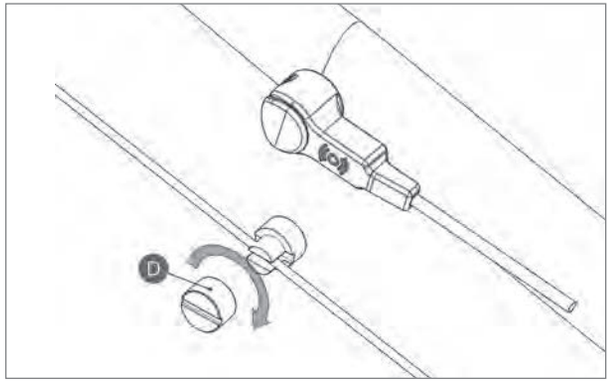


Arrange the speed sensor and the magnet unit as shown in the picture above. When installing the magnet unit, make sure its center is aligned with the center of the speed sensor's induction zone.



- A external speed sensor
- B magnet unit PS01010702/ 2308040000001
- C spoke

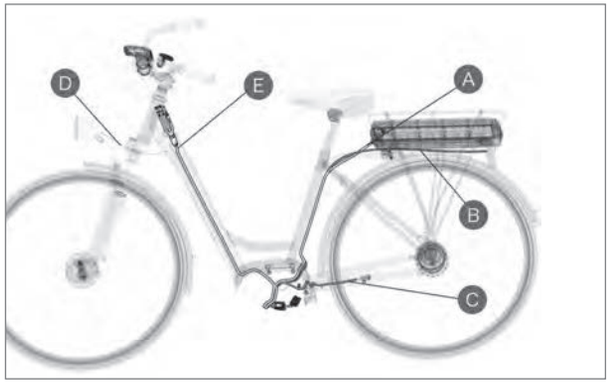
Arrange the speed sensor and the magnet unit as shown by the picture above. Mount the magnet unit onto the spoke.



D Mounting nut of the magnet
PS01010701/
2327000000003

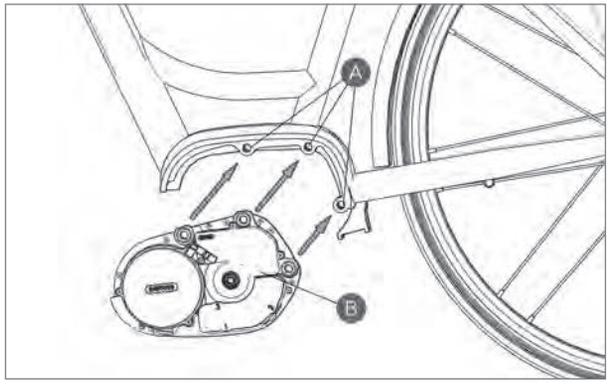
Tighten up the mounting nut with a straight slot screwdriver. Tightening torque: 1.5-2 Nm.

2.7 Drive Unit Installation



A battery cable
B taillight cable
C external speed sensor cable
D headlight cable
E EB-BUS

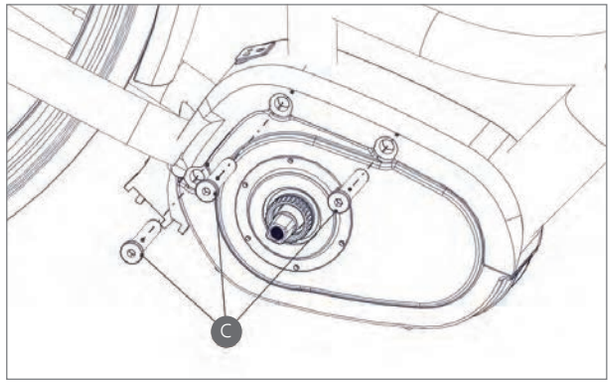
Cables should be arranged in advance according to the e-bike type and the cabling system before installing the drive unit.



A mounting holes
B drive unit
MM G330.350

Align the three mounting holes of the drive unit with the mounting holes in the bike frame.

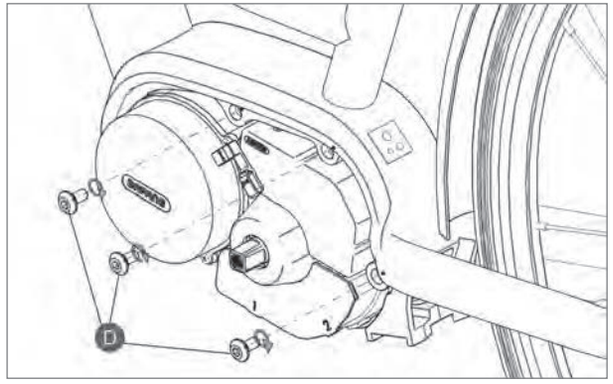
Pay attention to the outgoing directions of the cables. Please note that the cables should not be squeezed by the drive unit.



5 mm

C M6 nuts
1401080000101

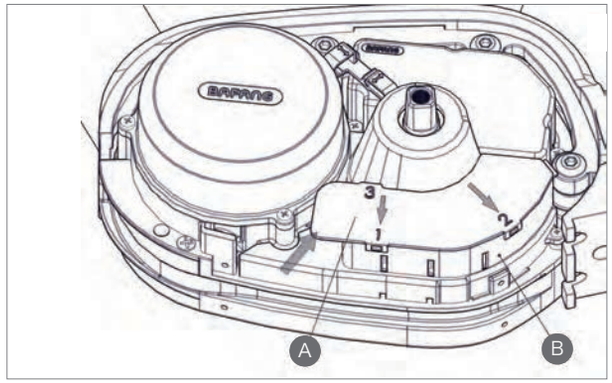
Insert, from the right, special M6 nuts into the mounting holes in the bike frame and the drive unit.



5 mm

D M6 bolts
1401080000099

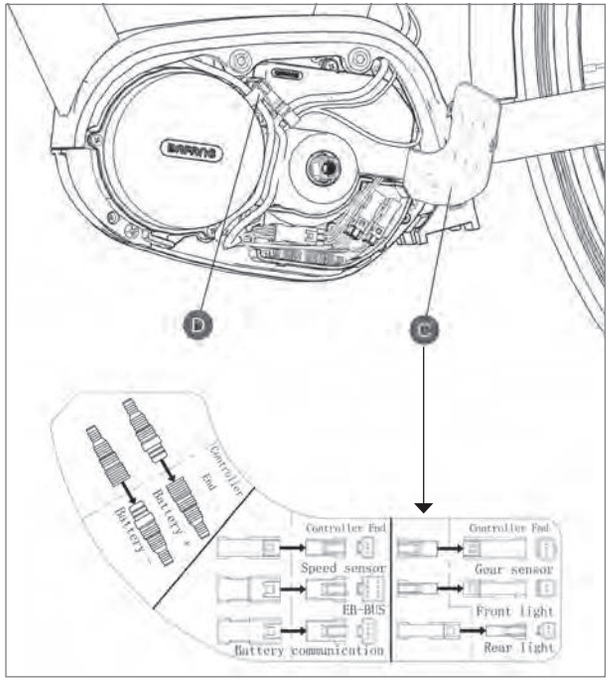
Insert, from the left, the M6 bolts into the bike frame so that they will come to contact with the nuts.
Tighten bolts onto nuts to the specified torque.
Tightening torque: 18 Nm



A upper cover of the connector box

B connector box body

Open the connector box and get ready to link female connectors with male connectors.
As shown in the illustration,press the lower left corner of the cover on the surface with your left thumb,at the same time,push the cover in the direction pointing to the buckle "3",and then drag the cover back in the direction pointing to the buckle "1"&"2".

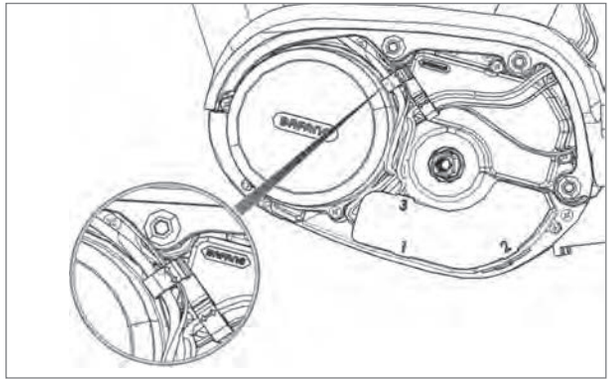


C cabling layout
2307070000001

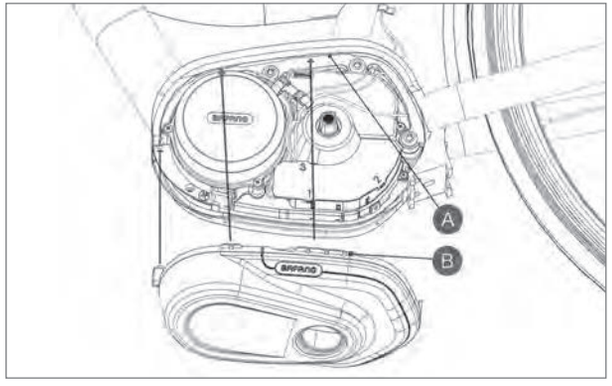
D cable clips
1401300000001

Open the connector box, link all cables to the drive unit and fix all connectors in the connector box according to the cabling diagram printed on the upper cover of the connector box (see C in the picture above).

After matching all male connectors with female connectors, cover the connector box with the upper cover and thread the cables through cable clips (D in the picture above) following the principle of "thin cables on top and thick cables below" to ensure that the cables are neatly arranged.



he picture above shows how the drive unit looks after cabling.
Please note that all cables must thread through the cable clips after going out of the connector box.



A frame adapter

B drive unit cover
1333000000001

Push the buckle on the drive unit cover into the slot on the frame adapter.

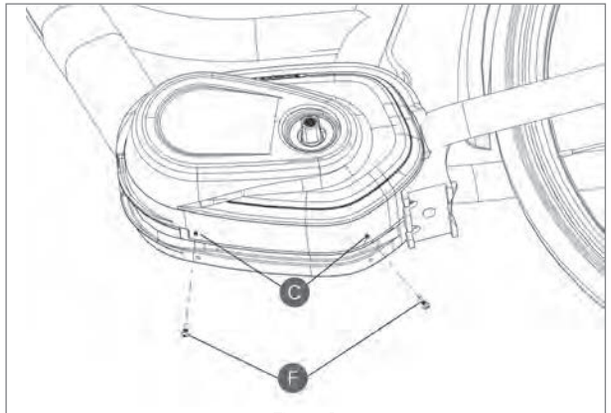


Figure 1

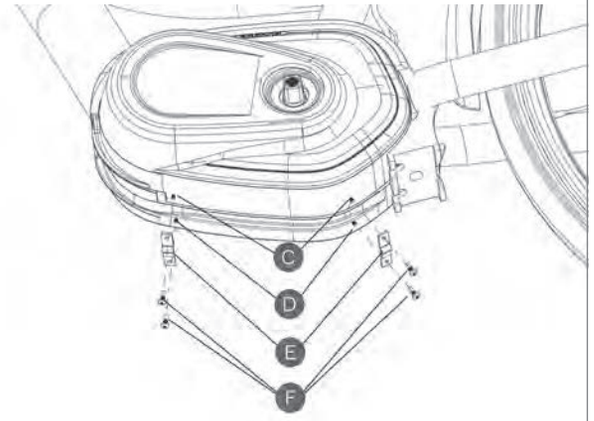


Figure 2

- C screw holes on the drive unit's cover
- D end cover on the right
- E cable gatherer 1401150100005
- F cross head screw assembly M4×10 1401020000199

Make sure that the cover is securely clicked into place. Screw the cover tightly onto the drive unit (see Figure 1). If brake cables and gear cables are to be routed under the drive unit, bind E together with a cable gatherer, see Figure 2).
Tightening torque: 2 Nm

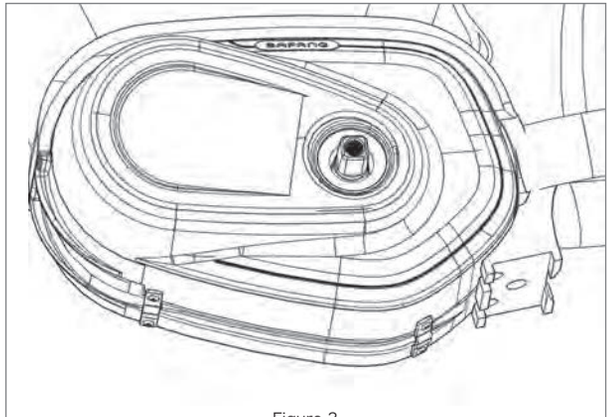


Figure 3

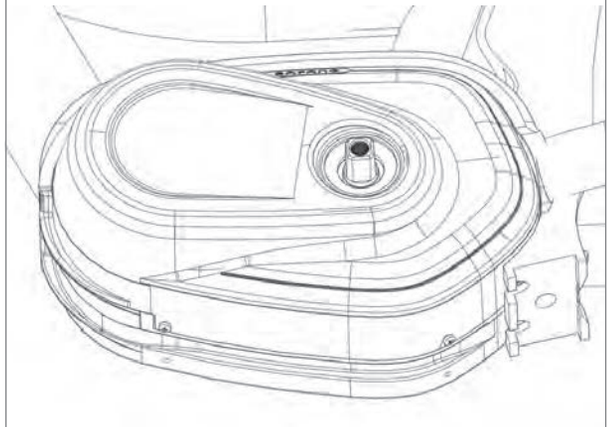


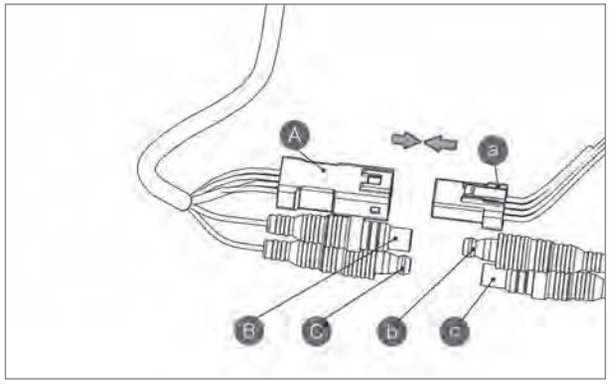
Figure 4

Figures above show how the drive unit looks like when the drive unit cover has been affixed.

Brake cables and gear cables can either be arranged in the channel at the bottom of the drive unit (see Figure 3 where cable gatherers are provided) or within the inner space of the frame adapter (see Figure 4 where no cable gatherers are provided).

3 SYSTEM CABLING

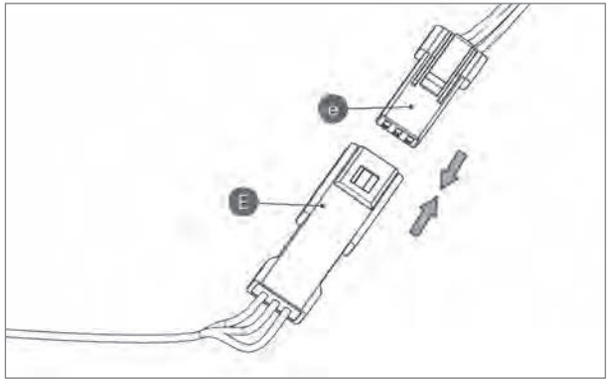
3.1 Connection of the Battery Cable to the Drive Unit



- A female connector for the communication cables at the battery
- a male connector for the communication cables at the drive unit
- B female connector for the positive cable at the battery
- b male connector for the negative cable at the drive unit
- C male connector for the negative cable at the battery
- c female connector for the negative cable at the drive unit

The power bus, which is made up of a positive battery cable, a negative battery cable and battery communication cables, is connected to the battery cables at the drive unit.

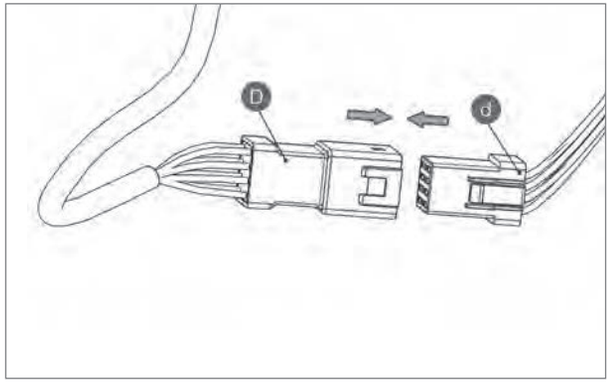
3.2 Connection of the Speed Sensor to the Drive Unit



- E male connector at the speed sensor
- e female connector at the drive unit for connection to the speed sensor

Link the male connector at the external speed-detecting sensor to the female connector for the external speed-detecting sensor cable at the drive unit.

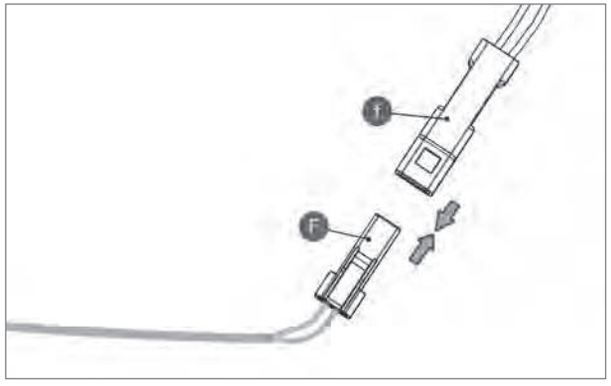
3.3 Connection of the EB-BUS to the Drive Unit



- D male connector at the EB-BUS 2105020000099
- d female connector at the drive unit for connection to the EB-BUS

Link the EB-BUS cable to the EB-BUS connector at the drive unit.

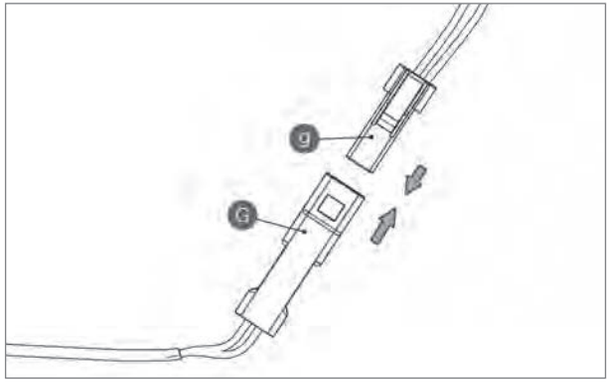
3.4 Connection of the Headlight Cable to the Drive Unit



- F female connector at the headlight cable
- f male connector for the headlight at the drive unit

Link the headlight cable to the connector for the headlight at the drive unit.

3.5 Connection of the Headlight to the Drive Unit



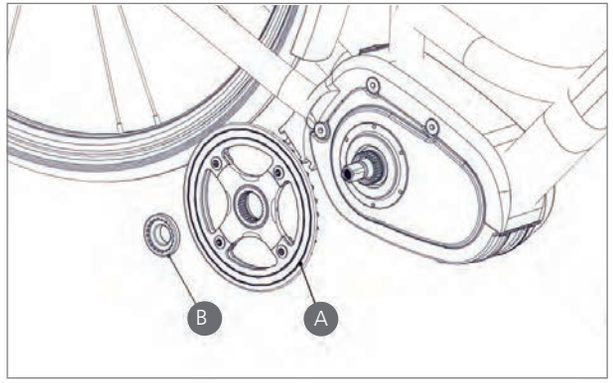
g female connector at the headlight cable

G male connector for the headlight at the drive unit

Link the headlight cable to the connector at the drive unit.

4 CHAIN COVER INSTALLATION

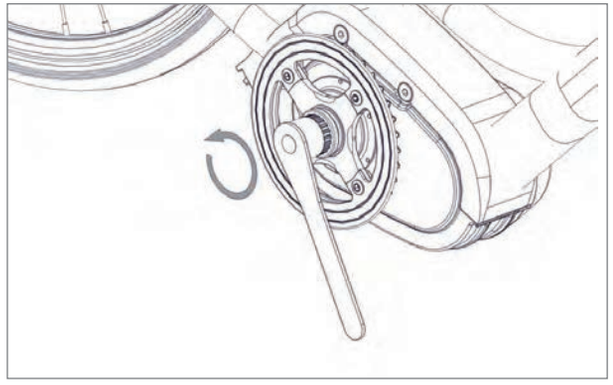
4.1 Installation of the Front Chainwheel (without a chain guard)



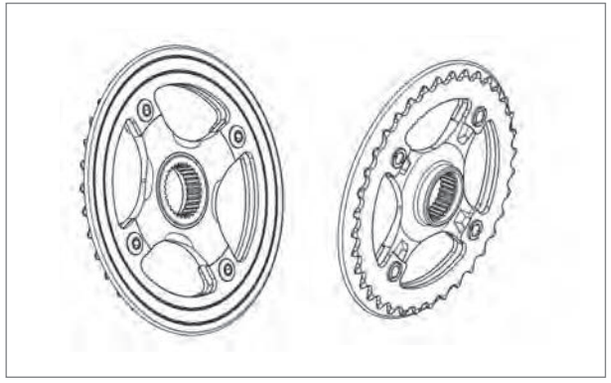
A chain wheel

B lock nut 1334000000001

Put the front chain wheel onto the spline shaft of the drive unit.

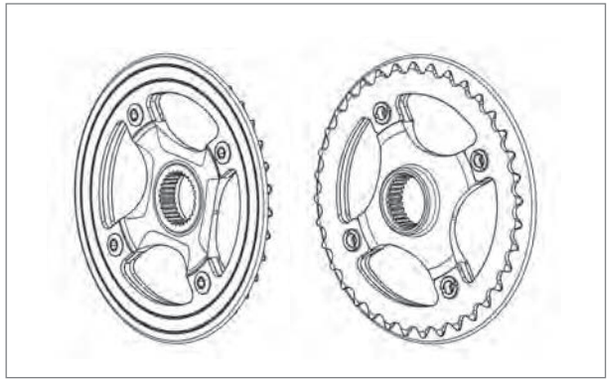


Use a standard tool to fix the lock nut onto the spline shaft.



System integratable chain wheel guard
1325020000002

Chain Line: 48 mm, Preferably 36 / 38 T
Applicable to a city bike, which is equipped with an internal gearshift system (not a full chain guard).

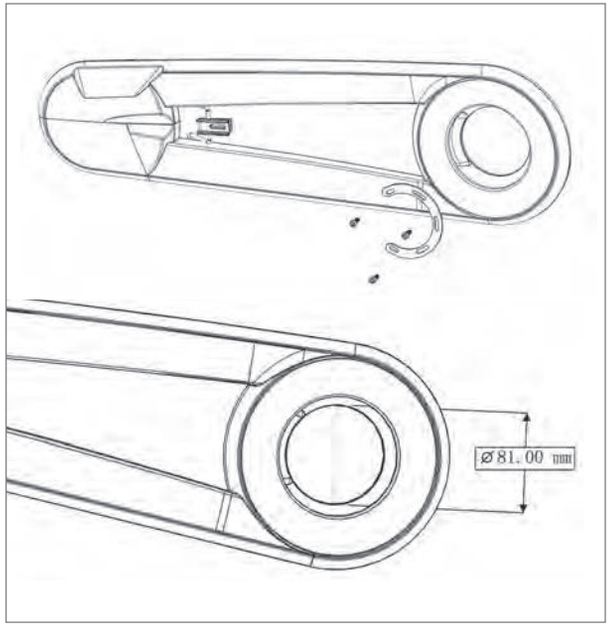


integratable chain wheel guard
1325020000002

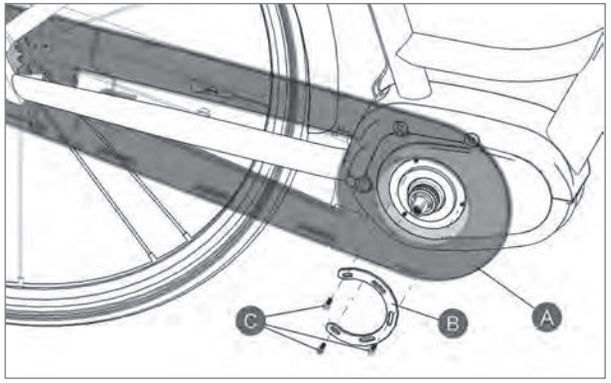
Chain Line: 48 mm, Preferably 36 / 38 T
Applicable to a city or mountain bike with an external gearshift system.

4.2 Chain Cover Installation (optional)

Installation of a full chain cover



A chain cover binder plate and screws are necessary for installing a full chain cover.



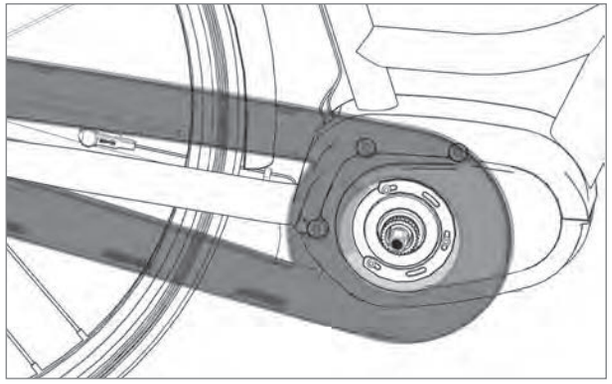
A full chain cover

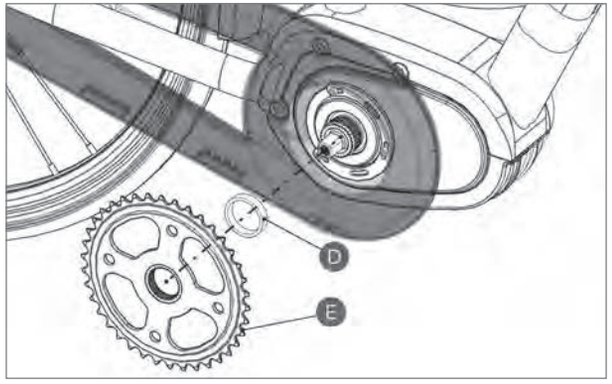
B binder plate
1401150100004

C screws M4
1401020000111

Open the full chain cover and adjust it by following the instruction book. Make sure the outer wall of the full chain guard is aligned with the boss on the outer side of the drive unit.Then press the inner wall of the full chain cover onto the binder plate and fasten them with screws.

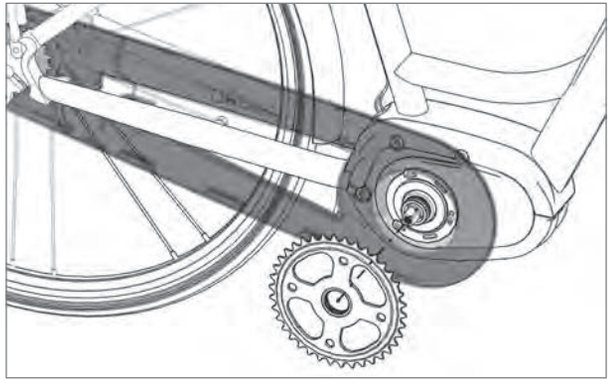
Tightening torque: 2 Nm





D bushing

E chain wheel
1325020000001

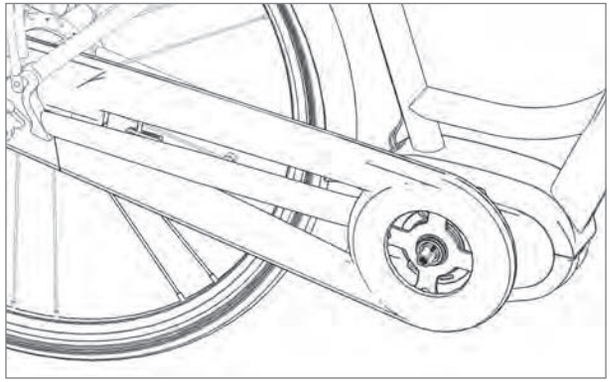


Install the chain wheel.

Chain Line: 48mm

Preferably 36/38 T

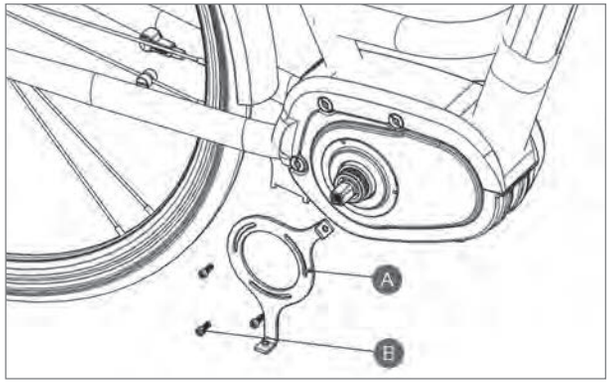
Applicable to a city bike, which is equipped with an internal gearshift system and a full chain cover.



Refer to the chain cover instruction book and install the chain cover after the chain wheel has been installed.

Not all full chain covers are compatible with the MAX drive unit.
If you need much more information,please contact with BAFANG.

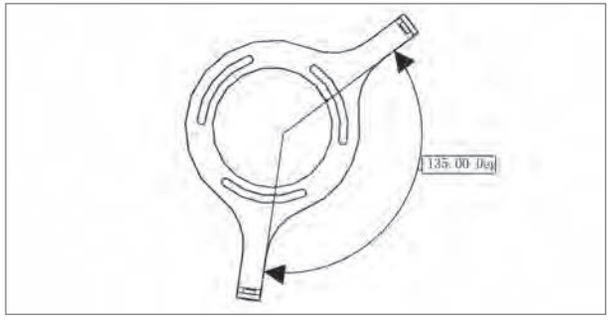
Installation of the P-shaped (semi) chain cover



PH2

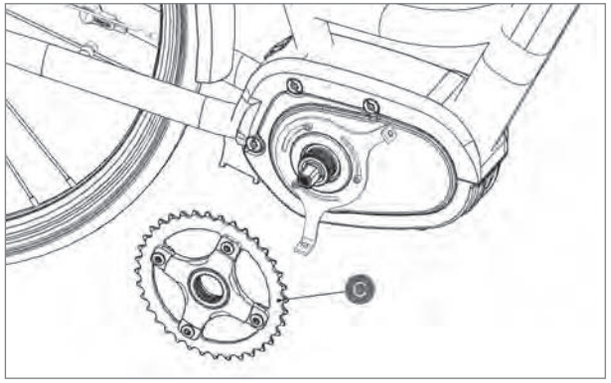
A P-shaped chain cover bracket 1401220200003

B screws M4 1401020000111



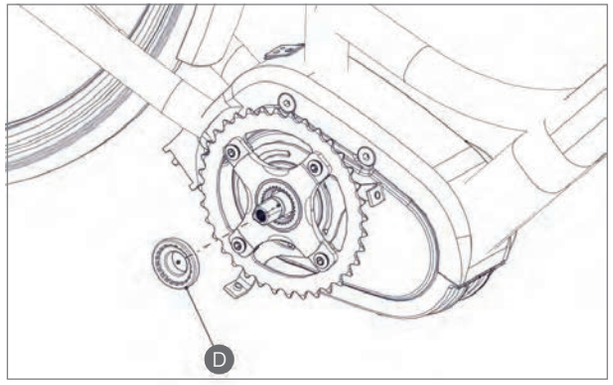
Position the P-shaped chain cover bracket and fasten it onto the drive unit with screws.

Tightening torque: 2 Nm



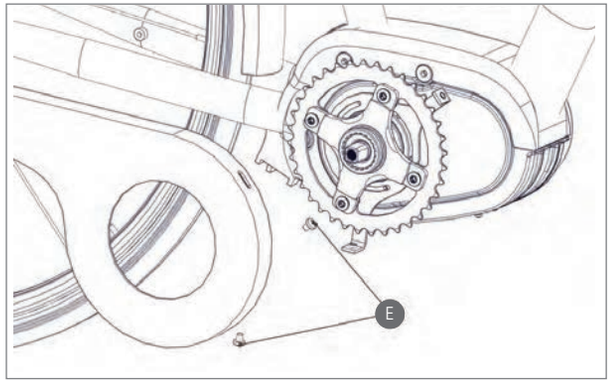
C CL-45mm chain wheel
module 132502000000

Install the chain wheel in the appropriate position.
Chain Line: 45mm
Preferably 36/38 T
Applicable to a city bike with an internal gearshift system and a semi chain guard.



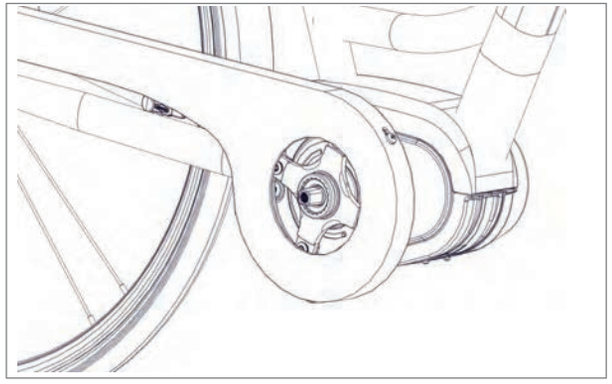
D Lock nut
1334000000001

Fix the chain wheel onto the drive unit.



E screw M5

Install the p-shaped chain guard as shown in the drawing.

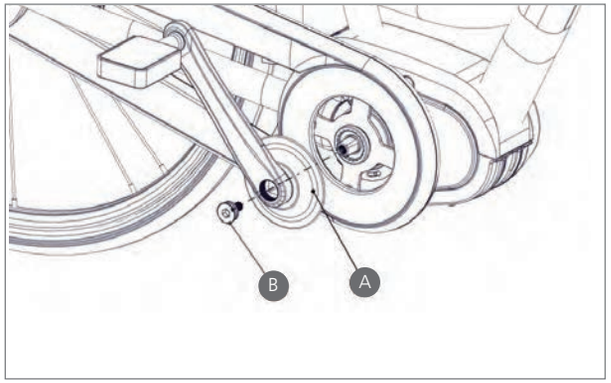


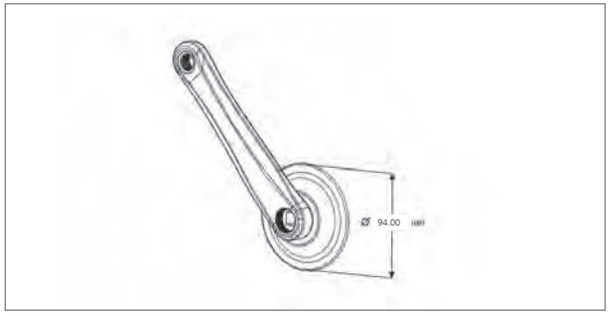
The drawing above shows the mounted p-shaped chain guard.

Not all p-shaped chain guards are compatible with the MAX drive unit.

4.3 Crank Installation

Installation of the crank with a chain guard





8 mm

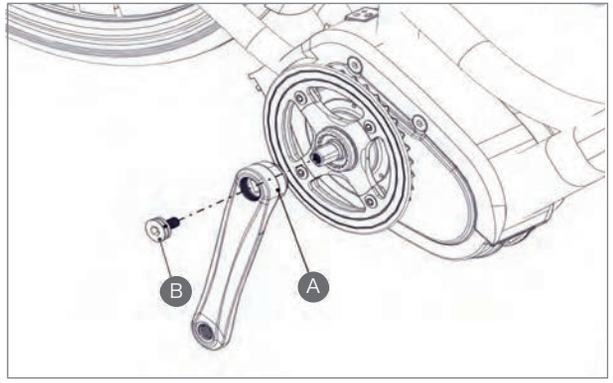
A right straight crank with a cap 1327040000001
left straight crank 1327020000001

B screws M8 for mounting the crank 1401020000109

Different right cranks are used depending on the chain guard.

Fasten the right crank onto the bottom bracket on the right with a screw M8. Install the left crank in the same way.
Torque: 35-40 Nm

Installation of the crank without a chain guard



8 mm

A right straight crank 1327010000001
left straight crank 1327020000001

B screws M8 for mounting the crank 1401020000109

Fasten the right crank onto the bottom bracket on the right with a screw M8. Install the left crank in the same way.
Torque: 35-40 Nm

5 BATTERY (BT CO1)

5.1 Batteries

Model numbers: BT C01.340.UART, BT C01.450.UART

A special charger provided by BAFANG must be used to charge these batteries.

5.1.1 Specifications

Basic settings	BT C01.340.UART	BT C01.450.UART
Nominal Voltage	43 DCV	43 DCV
Nominal Capacity	7.8 Ah	10.4 Ah
Rate Capacity	6.43 Ah (@1C Discharge)	8.5 Ah (@1C Discharge)
Power	340 Wh	450 Wh
Communication Protocol	UART	UART
Cell	SDI-2.6 Ah	SDI-2.6 Ah
BMS	Smart BMS	Smart BMS
Voltage Scope	36 V ~ 49.2 V	36 V ~ 49.2 V
Internal Resistance	< 240 mΩ	< 240 mΩ
Charge mode	CC-CV (Special 5P Charger)	CC-CV (Special 5P Charger)
Continuous Charge Current	2A ~ 4A	2A ~ 4A
Charging time	4.5 h with a 2A Charger	6.5 h with a 2A Charger

Basic settings	BT C01.340.UART	BT C01.450.UART
Max. Continuous Discharge Current	14 A	18 A
Consumption Rate during Operation	≤ 10 mA	≤ 10 mA
Consumption Rate during Sleep	≤ 400 uA	≤ 400 uA
Consumption Rate during Deep Sleep	50 uA	50 uA
Operating Temperature during Charging	0° ~ 45 °C	0° ~ 45 °C
Discharge	-20° ~ 60 °C	-20° ~ 60 °C
Storage (At 35 % SOC , -10 ~35 °C)	6 Months	6 Months
Cycle Life	500 (60 % SOC (@20 ± 5 °C, Charge @ 0.2 C and discharge @ 0.5 C))	500 (60 % SOC (@20 ± 5 °C, Charge @ 0.2 C and discharge @ 0.5 C))
Riding Distance	Min. 35km	Min. 50km
Position	Carrier	Carrier
Dimension (L * W * H)	408 * 123 * 70mm	408 * 123 * 70mm
Weight	3 KG	3.5 KG
Controller Box	Front/Rear Motor	Front/Rear Motor

Basic settings	BT C01.340.UART	BT C01.450.UART
Carrier	Optional	Optional
Charger	Special 5P charger	Special 5P charger
Testing		
IP-Code	IP65	IP65
Certification	CE/UN38.3	CE/UN38.3
Warranty	24 months *	24 months *

* from the date of sale and check your bicycle brand warranty papers for the specific details

5.1.2 Appearance and Dimensions

5.1.3 LED capacity and state of charge indication

- Press the ⏻ button to wake up from Sleep mode
- Hold down the ⏻ button for 5 seconds to wake up from Deep Sleep mode

LED	LED state	SOC	NOTES
	First LED flickers	≤ 5 %	When the system is triggered in operation mode: Press the ⏻ button for 1 second for the BMS to display the charge of the battery on the LEDs for 5 seconds. Hold down the button for 5 seconds for the BMS to display the capacity of the battery on the LEDs for 5 seconds. After this, the BMS will turn off the LED display to save battery power.
	One green light	5<C<10 %	
	Two green lights	10≤C<30 %	
	Three green lights	30≤C<50 %	
	Four green lights	50≤C<75 %	
	Five green lights	≥75 %	

5.1.4 Label definition

Risk of fire or explosion if battery is used with an incompatible system.
Do not open, disassemble or pierce battery due to risk of short circuit , fire or explosion.
In case of drop, shock or similar event, do not continue to use battery and return immediately for examination.
Only use the original charger as supplied with battery due to risk of fire or explosion.
Disposal of used batteries should follow locally enforced regulations.
Please carefully read manual before use.

5.1.5 Sleep Mode definition

Wake up Condition	
Sleep	Charge current over 1 mA, Or Discharge current over 1.5 mA (+/- 1 mA)
Deep Sleep	Charger: Plug into the recommended charger to charge

Sleep Condition	
No charge current	Charge current < 200mA
No discharge current	Discharge current < 200mA
No communication for 10 minutes	

Deep Sleep Condition (In shipping mode)	
SOC < 1%	The battery will be idle after 10 minutes.
SOC < 80 %	The battery will fall into sleep mode after more than 48 hours.
SOC >= 80 %	The shipping mode will be disabled, and put into normal storage mode.

Deep Sleep Condition (In storage mode)	
SOC < 1 %	The battery will be idle after 10 minutes.
SOC < 10 %	The battery will fall into sleep mode after more than 48 hours.
SOC < 40 %	The battery will fall into sleep mode after more than 14 days.
SOC < 80 %	The battery will fall into sleep mode after more than 30 days.

5.1.6 User Instructions

Please read the battery instructions and the battery label before use. Only charge the battery using the compatible charger provided by BAFANG.

- Do not charge the battery longer than the charging time displayed in the table.
- Do not bring electrical contacts together. Do not destroy or disassemble the battery yourself. Do not store or use the battery in humid places so as to avoid any danger.
- When disposing of battery, ensure you respect regulations. Do not immerse in fire or water.
- When in use, the battery should be kept away from heat sources, high voltage power supplies and children. Do not drop the battery.
- When storing the battery for a long period, make sure it is charged to at least half its capacity, and charge it again three months later. Do not wrap it with conductive material, as to do so will cause damage due to direct contact between the metal and the battery. Store the battery in a dry place.
- Keep the battery out of the reach of children, and especially ensure they do not bite or swallow the battery.
- If the battery appears to be in an unusual condition, seems dirty or presents a strange odor, do not use. Faulty batteries should be returned to the vendor.

5.1.7 Notification

- The battery should not be left in direct sunlight so as to avoid over-heating, distortion, smoking or weakening its performance and product life.
- The battery should always be kept away from children. Do not allow children to remove the battery from the pedelec or the charger, or to play with it.
- Do not allow the battery to leak on skin or clothes. If touched, rinse off with clean water to avoid skin discomfort.
- If the battery is used in any other equipment, please contact your manufacturer for details on how to get the best performance, as well as information on its maximum current and fast charge conditions and any special applications.
- Do not microwave or use in any other cooking appliance.
- Distance the battery from cell phones or chargers if it is hot to the touch, leaking or odorous, and dispose of it. Faulty batteries will cause over-heating, smoking or burning.
- Do not touch a leaking battery. Leaking electrolytes can cause skin discomfort. If this battery acid comes into contact with the eyes, do not rub and immediately rinse with clean water then go to hospital for treatment.
- Note: If the battery is completely discharged, charge it as soon as possible. If you do not charge the battery, it will be damaged.

5.1.8 Caution

Do not disassemble the battery.
The battery contains protective components and will internally short-circuit to avoid danger. Mishandling, such as improper disassembly, may destroy its protective functions and cause it to overheat, smoke, distort or burn.

Do not intentionally short-circuit the battery.
Do not touch or connect the plus and minus contact with metal. Do not allow the battery to come into contact with metal elements in storage or in use. If the battery is short-circuited, its current will be magnified, which will cause damage and make the battery over-heat, smoke, distort or burn.

Do not heat or burn the battery.
Heating or burning the battery will cause the isolated elements in the battery to dissolve, the protective function to stop or the electrode to burn or over-heat, which in turn may cause the battery itself to over-heat, smoke, distort or burn.

Fix the keypad onto the handlebar with a screw. Then tighten the fixing screw with an internal hex wrench.

Tightening torque: 1Nm

Avoid using the battery near a heat source.
Do not use the battery near a fire or stove, or at over 60 °C, as over-heating will cause the battery to internally short-circuit and make it over-heat, smoke, distort or burn.

Avoid charging near exposed flames or in direct sunlight.
Doing so may cause the internal protection function to short-circuit and lead to abnormal chemical reactions or functional faults, which will lead to over-heating, smoking, distortion or burning.

Do not damage the battery.
Do not allow the battery to be gouged, forged or dropped, as this may cause it to over-heat, distort, smoke or burn, and result in danger for the user.

Do not directly weld on the battery.
Any application of heat will cause the isolated elements to dissolve within the battery which will affect its protective function and life cycle, as it will over-heat, distort, smoke or burn.

Do not charge directly off the power socket or a car cigarette lighter.
High voltage and amplified current will damage the battery and reduce its life cycle, as it will over-heat, distort, smoke or burn.

5.2 Charger

To reduce the risk of electric shock, do not remove cover (or back). No userserviceable parts inside. Refer servicing to qualified service personnel. Before charging read the instructions! Disconnect the supply before marking or breaking the connections to the battery. Explosive gases. Prevevent flames and sparks. Provide adequate ventilation during charging.

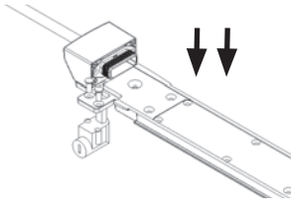
- Only use the charger that came with your pedelec or one from the same manufacturer.
- Don’t cover the charger while it is in use. It could otherwise short circuit or cause a fire.
- When you clean the charger, unplug it from the electrical socket first.
- When charging takes longer than shown in the specifications table, stop charging.
- After charging, remove the battery from the charger and unplug the charger.

5.2.1 Specifications

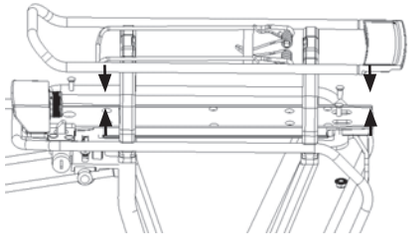
- Input voltage range: 100 ACV – 240 ACV;
- Input power frequency: 47 Hz – 63 Hz;
- Efficiency: ≥ 80 %;
- Rated output voltage: 49.2 V;
- Output current: 2 A ± 0.2 A;
- Minimum battery charge voltage: 24 ± 2 V;
- Timing Protection: 15 ± 1 h;
- Temperature protection: NTC < 0 ± 3 °C or NTC > 55 ± 3 °C;
- AC Connector: 2 PIN European Standard;
- DC Connector: 5PIN BAFANG Standard RED COLOR;
- Certificate: CE, GS;

5.2.2 Definition for LED indication

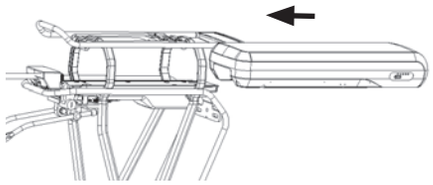
LED Charger Status	Meaning
Flashing green	Idle
Full red	Pre-charging
Full red	CC charging
Full green	CV charging
Full green	Full
Flashing red	Error



Correctly place the lock under the rail, then screw in 2 M5*10 screws to tighten. Torque: 3 Nm.



Align the 3 screw holes on the rail with the holes on the casing plate, insert 3 M5*25 screws through the holes and screw the nuts on the other side to tighten. Torque: 3 Nm.



Insert the battery along the rail track into the discharge connector on the rail, then turn the key in the lock to lock it.

Remove the key to avoid losing or breaking it.

Battery unit

Model	Unit	Material No.	Qty	Specifications
BT C01.340.UART	Battery	2111020000010	1	
BT C01.340.UART	Battery	2111020000008	1	
CR S10F.350.SN-0109	Assisted Slider	2111030000005	1	
CHG C01.2A.EN	Charger	2113000000006	1	

6 DISPLAY (DP C07.UART)

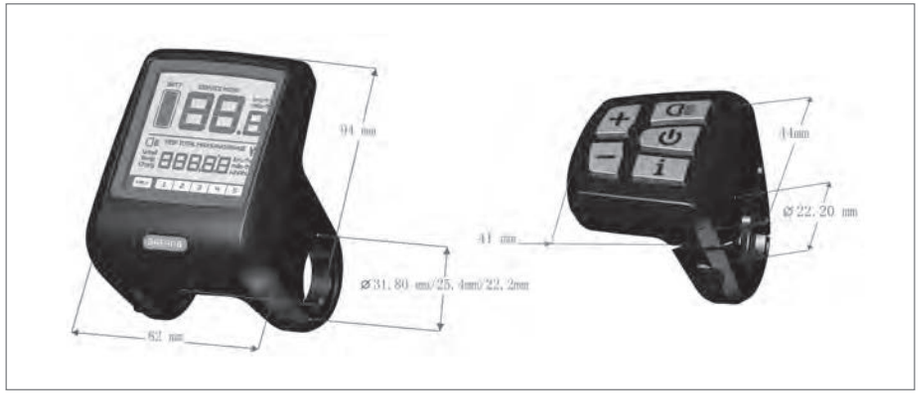
6.1 Specifications and Parameters of the Display

- 36V / 43V / 48V Power Supply;
- Rated Current: 10 mA
- Maximum Operating Current: 30 mA
- Power-off Leakage Current: <1uA
- Operating Current Supplied to the Controller: 50 mA
- Operation Temperature: -18 ~ 60 %
- Storage Temperature: -30~70 %
- Waterproof Grade: IP65
- Storage Humidity: 30 % – 70 %

6.2 Appearance and Dimensions

6.2.1 Materials and Dimensions

- The shell is made of PC. The liquid crystal display is made of hardened PMMA.

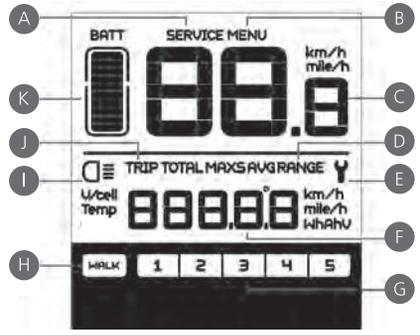


6.3 Function Overview and Key Definitions

6.3.1 Function Overview

- Use of a two-way serial communication protocol, simple operation of the display via the external 5-key keypad.
- Speed display: displaying the real-time speed as SPEED, the maximum speed as MAXS and the average speed as AVG.
- km or mile: The user can choose between km and mile.
- Intelligent battery level indication: With an optimization algorithm, a stable display of the battery level is ensured, and the problem of fluctuant battery level indication common with other displays is avoided.
- Automatic light-sensitive lights: The headlight, taillight and display light will be automatically turned on/ off depending on lighting conditions.
- 5 levels off display backlighting: Different levels
- 5-Level-Support: setting power Levels 1 to 5
- Trip distance indication:The maximum distance displayed is 99999. Single-trip distances TRIP or the total distance TOTAL can be displayed.
- Display of error messages
- Walk assistance
- Settings: Various parameters, e.g. mode, wheel diameter, speed limit etc., can be set on the com puter via a communication cable. See the setting
- Maintenance warning (this function can be deac tived): Maintenance warning information is dis played based on battery charge cycles and riding distance. The display automatically estimates the battery life and gives warnings when the number of charge cycles exceeds the set value. A warning will also be displayed when the accumulated total riding distance exceeds the set value.

6.3.2 Information on the Display



A Maintenance warning: When there is a need for maintenance the symbol SERVICE will be displayed (riding distance or the number of battery charge cycles exceed the set value, function can be deactivated)

B Menu

C Speed display: display of the speed, km/h or mph

D Speed mode: average speed (AVG km/h), maximum speed (MAXS km/h)

E Error display: When a fault is detected the symbol will be displayed.

F Distance indication: display of the distance depending on the setting.

G Level indication: The chosen level 1–5 will be displayed; if there is no numeric display, it means that there is no assistance (by the motor). If the rider is walking and pushing the e-bike, WALK will be displayed.

H Walk assistance

I Headlight indication: only shows when headlight or backlight are on

J Distance mode: display of the single-trip distance TRIP and the total distance TOTAL

K Battery level: 10-segment battery indication; the voltage that each segment represents can be customized

6.3.3 Key Definitions

A up

B down

C headlight

D on/off

E mode

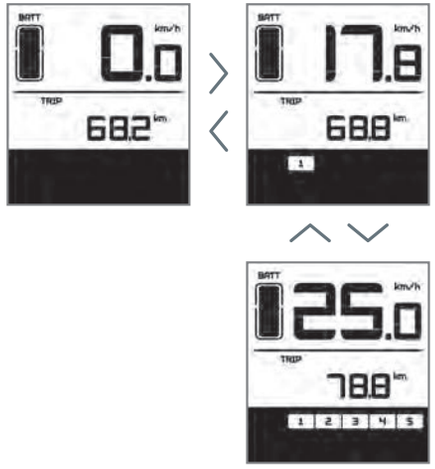
6.4 Normal Operation

6.4.1 On/Off Switch

Turn on the device. Press and hold ⏻ for 2 seconds to power on the display. Press and hold ⏻ again for 2 seconds to power off the display. If the bike is not used, after 5 minutes (time can be set) the display will be automatically turned off.

6.4.2 Assist Mode Selection

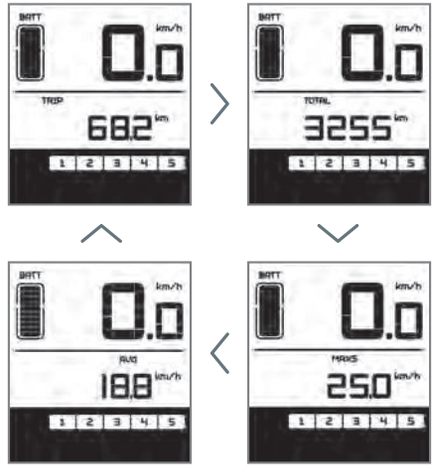
In the manual gearshift mode, press the + or − to choose the desired level of support by the motor. The lowest level is Level 1, the highest Level 5. When the display is on, the default mode is Level 1. When there is no numeric mode display, there is no power assistance.



Selecting the level for motor assistance

6.4.3 Switch between Distance Mode and Speed Mode

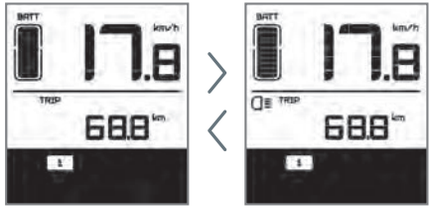
Briefly press i to switch between distance and speed. Single-trip distance ((TRIP km) → total distance (TOTAL km) → maximum speed (MAXS km/h) → average riding speed (AVG km/h) are displayed in successive order.



Switching between displays

6.4.4 Headlight/ Display Backlight Switch

Press for 2 seconds. The backlight of the display as well as the headlight and taillight will be turned on. Press again for 2 seconds to power off the display backlight/headlight/taillight. (If the display is turned on in a dark environment, the display backlight/ headlight/taillight will be turned on automatically. If the display backlight/headlight/taillight are turned off manually, they also need to be turned on manually afterwards).

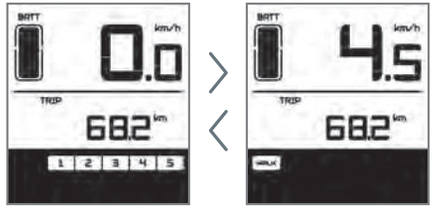


Display backlight, headlight and taillight

There are 5 levels of backlight brightness that can be selected by the user.

6.4.5 Walk Assistance

Press for 2 seconds. The e-bike enters the walk assistance mode, and the symbol WALK is displayed. Once the key is released, the e-bike will exit the walk assistance mode.



Switch between power assistance and walk assistance mode

6.4.6 Battery Status Indication

When the battery status is normal, a certain number of the battery LCD segments as well as the border light up according to the actual quantity of charge. If all of the 10 segments will black out with the border blinking, the battery needs to be charged immediately.

Battery status indication

Number of Segments	Charge in Percentage	Number of Segments	Charge in Percentage	Number of Segments	Charge in Percentage
10	⩾ 90 %	6	40 % ⩽ C < 50 %	2	8% ⩽ C < 10 %
9	75 % ⩽ C < 90 %	5	30 % ⩽ C < 40 %	1	5 % < C < 8%
8	60 % ⩽ C < 75 %	4	20 % ⩽ C < 30 %	border blinking	C ⩽5 %
7	50 % ⩽ C < 60 %	3	10 % ⩽ C < 20%		

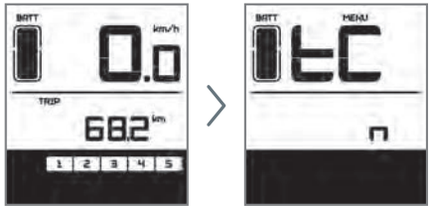
6.5 Parameter Setting

6.5.1 Items to be Set:

1. Data reset
2. km/mile
3. Light sensitivity
4. Display backlight brightness
5. Automatic off time
6. Maintenance warning settings
7. Input of the password
8. Wheel diameter selection
9. Setting speed limit

6.5.2 Setting Preparation

When the display is active, press i twice (interval < 0.3 seconds). The system will enter the MEMU - prameter setting state, in which the display parameters can be set. Press i twice again (interval < 0.3 seconds) to return to the main menu.



Menu for entering the parameter settings

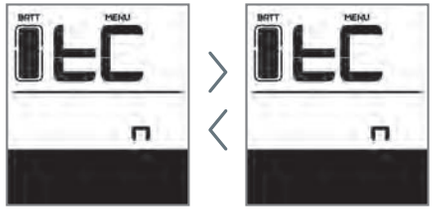
In the parameter setting state, when the parameter you want to set begins to flash, press +/− to adjust the parameter value. Briefly press i to switch between the parameters to be set. Press i twice (interval < 0.3 seconds) to exit the submenu.

If no operation is performed for 10 seconds, the display will return to the normal riding display.

6.5.3 Data Reset

Press i twice (interval < 0.3 seconds) – the display enters the MENU state. In the speed field tC is dis - played. If you press +, a y is also displayed. temporary data, e.g. maximum speed (MAXS), average speed (AVG) and single-trip distance (TRIP) can be cleared. Briefly press i (< 0.3 seconds) to enter the km/mile setting interface.

If the user does not reset the data, the single trip distance and the accumulated total riding time will be automatically cleared when the accumulated total riding time exceeds 99 hours and 59 minutes.

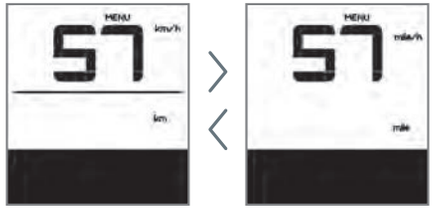


The data will not be cleared when the display's light-sensing function is set to 0 or when it is switched off.

6.5.4 km/mile

When the speed field displays S7, press +/− to switch between km/h and mph, or to set km or mile.

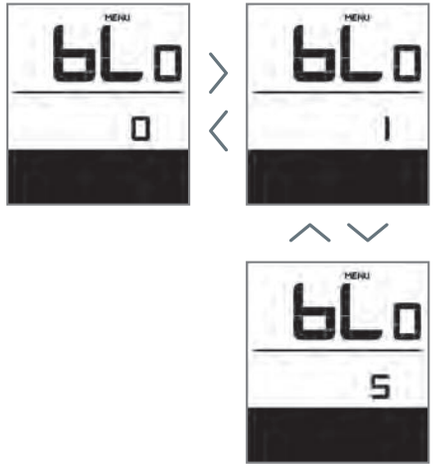
After this setting, briefly press i (< 0.3 seconds) to enter the setting interface of light sensitivity.



6.5.5 Light Sensitivity

When the speed field displays bL0, use +/− to choose a figure between 0 and 5. The higher the chosen figure, the higher the light sensitivity.

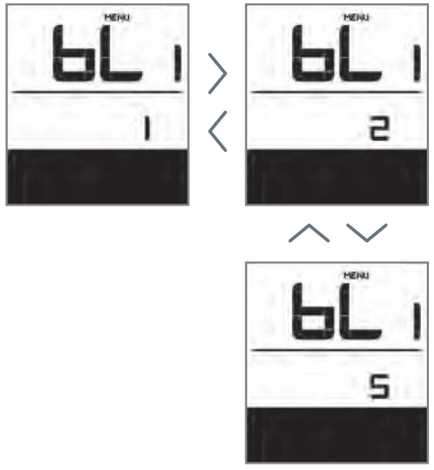
After this setting, briefly press i (< 0.3 seconds) to enter the setting interface of backlight brightness.



6.5.6 Display Backlight Brightness

When the speed field displays bL1, press +/− to choose a figure between 1 and 5. The figure 1 represents the lowest brightness while 5 indicates the highest display backlight brightness.

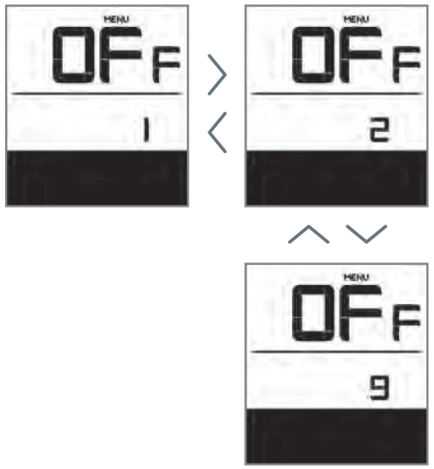
After this setting, briey press i (< 0.3 seconds) to enter the setting interface of automatic off time.



6.5.7 Automatic Off Time

When the speed field displays OFF, press +/− to choose a figure between 1 and 9. The gures indicate the minutes that it takes to automatically shut down the display.

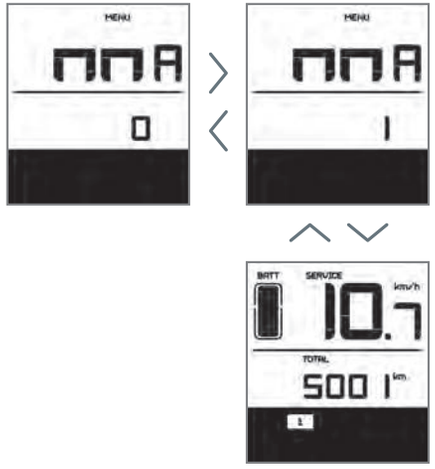
After this setting, briefly press i (< 0.3 seconds) to enter the setting interface of maintenance warning.



6.5.8 Maintenance Warning (can be deactivated)

When the speed field displays nnA, press +/− to choose either 0 or 1. 0 disables the function while 1 enables it.

After this setting, briefly press i (< 0.3 seconds) to enter the setting interface of password input.



Maintenance Warning Setting

The display will prompt maintenance necessity based on such information as the accumulated riding distance and the battery charge cycles.

- When the accumulated total riding distance exceeds 5,000 km (can be customized by the manufacturer), the display will show the symbol SERVICE. When the display is started up, the sign for accumulated riding distance will flash for 4 seconds, indicating that maintenance is necessary.
- When the number of battery charge cycles exceeds 100 (can be customized by the manufacturer), the display will the symbol SERVICE. When the display is started up, the sign for battery will flash for 4 seconds, indicating that maintenance is necessary.
- The maintenance alert function can be disabled: settings → maintenance alert (MA) → maintenance alert (MA) → 0. (Maintenance alert can also be set via a computer.This requires a USB connection. See also the parameter setting instructions).

6.5.9 Battery Communication

The speed field displays b01 and the distance field displays the speed limit. Press i (< 0.3 seconds) to see the other information in sequence. After this setting, press i twice (< 0.3 seconds) to exit the menu.

- Only when communication has been established between the battery and the controller the following information will be displayed, otherwise the display will only show "- - - -".

6.5.10 Information on the battery menu

Information Displayed in the Speed Field	Explanation
b01	current temperature
b02	maximum temperature
b03	lowest temperature
b04	total voltage
b05	current
b06	average current
b07	remaining capacity
b08	full capacity
b09	relative state of charge
b10	absolute state of charge
b11	charge/discharge cycle
b12	longest period without charge
b13	period since last charge
d01	voltage cell 1
d02	voltage cell 1
. . . . .	. . . . .
dn	voltage cell n

6.6 Error Code Definitions

The MAX-C966 display can show e-bike faults. When a fault is detected, the icon will be displayed. In the speed field one of the following error codes will be displayed:

Error Code	Error Description	Error-shooting Method
“03”	Brake enabled	Check whether a brake cable is stuck
“04”	The throttle has not returned home	Check if throttle has returned home
“05”	Throttle fault	Check the throttle
“07”	High voltage protection	Check the battery voltage
“08”	Fault with motor hall sensor inside	Have your dealer check the motor stator
“10”	The motor temperature reaches to the max protection value	Stop riding and wait until the LED stop flickering
“12”	Fault with current sensor inside controller	Have your dealer check the controller
“13”	Fault with temperature sensor inside battery	Check the battery
“21”	Fault with wheel speed detecting sensor	Check the motor stator
“22”	BMS communication fault	Replace the battery
“25”	Torque sensor torque signal fault	Relpace the sensor
“26”	Torque sensor speed signal fault	Relpace the sensor
“30”	Communication fault	1. Check the connectors between the EB-BUS and the controller 2. Replace the controller

Error display

Note: Error Code 10 will probably appear on the dispaly when the e-bike is climbling for a long time. This indicates that the motor temperature has reached the protection value, in which case the user needs to stop the e-bike for a rest. If the user continues to run the e-bike, the motor will automatically cut off the power.

7 LIST OF MATERIALS

7.1 Display Unit - DP C07.UART

7.1.1 Display Accessories

Name		Material No.	Quantity	Specification
φ22.2 rubber clamping ring (optional)	left display clamp	2316020400017	1	φ22.2
	right display clamp	2316020400018	1	
φ25.4 rubber clamping ring (optional)	left display clamp	2316020400007	1	φ25.4
	right display clamp	2316020400008	1	
hex socket head cap screw			1	M3×8
hex socket head cap screw			2	M4×8

7.2 Drive Unit - MM G330.250/350

7.2.1 Drive Unit Accessories

Name	Material No.	Quantity	Specification
M6 nut	1401080000101	3	M6
M6 bolt	1401080000099	3	M6

7.2.2 Motor Cover Accessories

Name	Material No.	Quantity	Specification
Motor cover	1333000000001	1	
Cable gatherer	1401150100005	2	
cross head screw assembly M4×10	1401020000199	4	M4×10

7.2.3 Chain Guard Assembly Module

Name	Material No.	Quantity	Specification
Full chain guard binder plate	1401150100004	1	
P-shaped chain guard holder	1401220200003	1	
M4 cross recessed pan head screw	1401020000111	3	M4×8

7.2.4 Chain Wheel Module

Name	Material No.	Quantity	Specification
Chain wheel Module A	1325020000001		CL-49 mm/38T
Chain wheel Module B (optional)	1325020000002		CL-45mm/38T
Chain wheel Module C (optional)	1325020000003		CL-48mm/38T
LOCK NUT	1334000000001	1	

7.2.5 Crank Components

Name	Material No.	Quantity	Specification
Right straight crank with a cover	1327040000001	1	170 mm
Right straight crank (optional)	1327010000001	1	170 mm
Left straight crank	1327020000001	1	170 mm
Crank mounting screws	1401020000109	2	M8

7.3 Cables

Name	Material No.	Quantity	Specification
Integrated cables		1	according to order
Speed sensor components		1	according to order
Battery cable		1	according to order
Headlight cable		1	according to order
Taillight cable		1	according to order

8 AFTER-SALES AND WARRANTY POLICY

In all nations which apply EU law, the common conditions for warranty/liability for material defects apply. Please inform yourself about the applicable national regulations in your specific country.

Under EU law, the seller accepts liability for material defects for at least two years after the date of sale. This also covers defects which already existed at the time of sale/change of ownership. In fact, if material defects occur within the first six months, the assumption is made that these already existed at the time of sale.

One precondition for the seller assuming this liability is that the product's use and maintenance was in line with all conditions stipulated. These are outlined in the pages of this operating manual and in the supplied instructions from the component manufacturers.

In most cases, the customer can first request subsequent fulfilment. If repair fails conclusively, which is the assumption after two attempts, the customer is entitled to abatement or cancellation of the contract.

Liability for material defects does not cover normal wear occurring from the product's intended purpose. Components in the motor and deceleration system as well as tyres, light system and contact points of the rider with the pedelec are all subject to use-related wear.

Suzhou Bafang Motor Science-Technology Co., Ltd (hereinafter referred to as the "BAFANG Motor") guarantees that: During the warranty period, customers will enjoy warranty service from BAFANG for products purchased from BAFANG,

Warranty Period and Scope

The warranty period starts from the date of sale, and is 24 months for the motor, and 24 months for the controller, display, sensor and other components. Check your bicycle brand warranty papers for the specific details.

The BAFANG limited warranty does not cover or apply to the following situations:

1. Damage, failure and/or loss caused by refitting, neglect, improper maintenance, accident, misuse, abuse or use for competition or commercial purposes;
2. Damage, failure and/or loss due to shipping by customer;
3. Damage, failure and/or loss caused by improper installation, adjustment or repairs;
4. Damage, failure and/or loss irrelevant to material and workmanship, e.g., failure to follow instructions by users;
5. Damage, failure and/or loss caused by product's appearance or surface modifications which do not affect its function;
6. Damage, failure and/or loss due to maintenance or installation by repair stations or dealers unauthorized by BAFANG;
7. Damage, failure or loss caused by normal wear and tear.

BAFANG reserves the right to repair or replace the components, and is only responsible for repairing or replacing them.

Should pedelec manufacturers or dealers encounter quality issues when using or selling or not. For products under warranty, and for small problems, BAFANG will provide customers (dealers or pedelec manufacturers) with free spare parts so that they can correct the problem themselves. For bigger issues, BAFANG will provide customers with free spare parts, show them what to do by sending them videos or documents or, in some cases, repair the products for them. For products no longer covered by warranty, BAFANG can still provide spare parts or repair the products for customers, but the incurred material cost, labor cost, freight etc. shall be undertaken by the customers.

If an end user has a pedelec equipped with BAFANG components which need repairing, they should contact the pedelec manufacturer or dealer directly.

If this warranty statement goes against a current Chinese law, the Chinese law shall prevail. BAFANG reserves the right to modify the terms without prior notice.

For the latest information, please visit the company website: www.szbaf.com.

Imprint

For questions concerning your pedelec please always contact your dealer first, only then in case the manufacturer of the pedelec.

For contact details please refer to the warranty section, back cover or other included information of the brand/manufacturer.

BAFANG reserves the right of clarification with regard to the content and images:

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In the case of delivery or use of this product outside of the scope of the aforementioned areas, the manufacturer of the pedelec is required to supply the necessary operating instructions.

BF-DM-S-M01-EN-PRINT A/1,December 2016

NOTES