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# 1 IMPORTANT NOTICE

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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 or listed in the “Bolted connections” section (page 29). 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.

## 2 INTRODUCTION

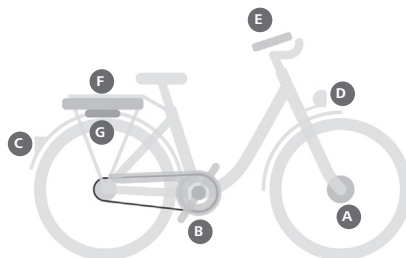
This part of the operating instructions gives you specific information on how to handle the electrical drive unit components and how to drive a Pedelec. For general information, e.g. for pedelec technology, please refer to the enclosed instructions.

Before getting started, carefully read these operating instructions and the general pedelec operating instructions. The manufacturer accepts no liability for damages resulting from non-compliance with these instructions. Your Pedelec must only be used in accordance with its intended use. This is described in the pedelec technology manual.



Any other use may lead to technical failures and accidents. Liability for defects and warranty will be void in case of improper use.

### 2.1 Overview



A. Hub motor

B. PAS sensor

C. Rear lamp

D. Front lamp

E. Display HMI

F. Battery

G. Controller



# 3 SAFETY INSTRUCTIONS

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## 3.1 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 handle-bars, 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.

## 3.2 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!

### 3.3 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.

### 3.4 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 water-proof 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!

## 3.5 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.**

## 3.6 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.

## 3.7 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.

## 3.8 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 information 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.

# 4 ELECTRONIC COMPONENTS

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In order to prevent a malfunction, the following instructions should be observed:

- Operating Temperature: -15 – 60 °C
- Storage Temperature: -20 – 35 °C
- Storage Humidity: 30 % – 70 %

## 4.1 Important Instructions



The electrical system of your Pedelec is very powerful. If you notice any damage to the electrical system, remove the battery immediately. After a fall or accident, live components may be exposed. If you have a question or problem, please contact your dealer. A lack of expertise can lead to serious accidents.



Before performing any work on your Pedelec, disconnect the electrical system and remove the battery.



Do not clean the Pedelec with a steam jet, high-pressure cleaner or water hose. Water may seep into the electrics or drive and destroy the equipment.



The operating temperature should be between -15°C and +60 °C. The recommended storage temperature is between -20 °C and +35 °C



Only perform operations described in this manual. Do not interfere with or modify the system. No modules may be disassembled or opened. If in doubt, always contact a specialist dealer.

Replace parts that are defective or worn, such as the battery, charger, cable, with original spare parts produced by the manufacturer or parts recommended by the manufacturer. Otherwise, the warranty and/or manufacturer's warranty will

be voided. If non-original or incorrect spare parts are used, the pedelec may not function correctly. In the event of a defect, contact an authorized dealer who carries out repairs with original spare parts only.

Improper operation of the drive system and changes made to the battery, charger or drive may result in injury or costly damage. In this case, the manufacturer declines any liability for the damage incurred. Changes to the electrical system may result in criminal prosecution. This may be the case if the maximum supported speed is modified.



## 4.2 Batteries

**i** Your Pedelec can be supplied with three different types of batteries. Detailed specifications can be found in the table below.

Model numbers: BT C01.340.UART, BT C01.450.UART, BT C01.600.UART, BT C01.750.UART



### 4.2.1 User Instructions

**!** Please read the battery instructions and the battery label before use.

BAFANG

CAUTION:

- 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.

Battery : 12C1 R 1865 3 7.8

Model : HT1203AA

Voltage : 43V

Capacity: 7.8Ah

Power: 340Wh

Manufacturer: HiTech

BT C01.340.U A2Q9210272

**!** 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.

- The battery is not shipped fully charged. Recharge the battery completely before the first use and before storing.
- After the first three charging cycles, fully charge the battery. This will give you the full capacity of your battery. If the battery is continuously discharged during later use, its service life will be considerably reduced.
- In normal operating conditions, partial charges will increase the battery life. Never leave your battery completely empty, and recharge it even after a short period of use.



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

- Do not charge the battery for longer than the charging time listed in the Specification 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.

#### 4.2.2 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 technical environment, 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. Leaving the battery uncharged for long periods of time will damage its capacity.

### 4.2.3 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.



#### **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.

#### 4.2.4 Specifications

| Basic settings                        | BT C01.340.UART         | BT C01.450.UART         | BT C01.600.UART         | BT C01.750.UART         |
|---------------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| Power                                 | 340 Wh                  | 450 Wh                  | 600 Wh                  | 750 Wh                  |
| Charging time                         | 4.5 h with a 2A Charger | 6.5 h with a 2A Charger | 5.5 h with a 3A Charger | 6.5 h with a 3A Charger |
| Operating Temperature during Charging | 0°~45 °C                | 0°~45 °C                | 0°~45 °C                | 0°~45 °C                |
| Discharge                             | -20°~60 °C              | -20°~60 °C              | -20°~60 °C              | -20°~60 °C              |
| Storage (At 35% SOC , -10°~35 °C)     | 6 Months                | 6 Months                | 6 Months                | 12 Months               |
| Riding Distance**                     | Min. 35 km              | Min. 50 km              | Min. 65km               | Min. 85 km              |
| Position                              | Carrier                 | Carrier                 | Carrier                 | Carrier                 |
| Dimensions (L *W *H)                  | 408*123*70 mm           |                         |                         |                         |
| Weight                                | 3 KG                    | 3.5 KG                  | 3.5 KG                  | 4KG                     |
| Charger                               | Special 5P charger      | Special 5P charger      | Special 5P charger      | Special 5P charger      |
| Certification                         | CE/UN38.3               | CE/UN38.3               | CE/UN38.3               | CE/UN38.3               |
| Warranty                              | 24 months *             | 24 months *             | 24 months *             | 24 months *             |

\* from the date of sale, check your bicycle brand warranty papers for the specific details.

\*\*Ideal conditions: Flat terrain, approx. 15km/h average speed, no headwind, approx. 20 °C ambient temperature, high-quality bike components, tire tread and pressure with minimal rolling resistance, experienced eBike rider(always shifts gears correctly), additional weight(excluding bike weight)<70kg.

### 4.3 Charger



Please read the charger instructions and the charger label before use.





Charger

The charger is specially designed for charging lithium-ion batteries. It is equipped with an integrated fuse and protection against overcharging.



Keep the charger away from children and animals. Small children and animals may damage the cable while playing. This can lead to an electric shock, a malfunction or a fire.

- The charger must not be used by children, or by persons with limited physical, sensory or mental capabilities, unless under the supervision of a responsible adult.
- Make sure the charger is clean. There is a risk of electric shock.
- Do not use your charger in humid or dusty places.
- Avoid direct sunlight.
- Disconnect the charger from the power supply when not in use.
- 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.

## 4.4 Hub motor



Your Pedelec is equipped with a 250 Watt front-wheel electric motor, which also forms the hub of the front wheel.



Motor/Product Model: FM G320.250.R



Keep in mind that the motor of your Pedelec can heat up during long uphill runs. Do not touch the motor, as you may get burnt.



The drive is activated as soon as you push down on the pedal. The degree of support depends on the settings on the control unit. As soon as you stop pedaling while driving, or when you have reached the maximum speed, the drive will be disabled. The support is automatically reactivated as soon as the speed is below the maximum support speed and you reapply pressure to the pedal.



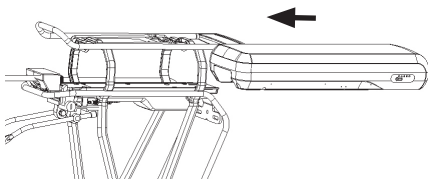
Note that if the road surface is slippery (e.g. due to rain, snow, sand), there is a risk that the front wheel of your Pedelec may spin and slide.

# 5 OPERATION

## 5.1 Installing the battery

**i** For correct insertion, the battery must be inserted and locked from the rear of the casing as far as it will go. Without contact with the battery, the electric drive of your pedelec will not work.

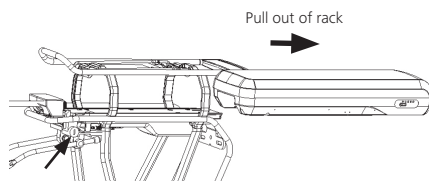
1. If your battery has an on/off switch, always turn off the battery before inserting it into the holder.
2. For the battery to be inserted, the lock must be unlocked. You can lock and unlock the battery by turning the key provided.
3. Slide the battery along the rail track into the connector on the rail as far as it will go, then turn the key to lock the battery.
4. Remove the key to avoid losing or breaking it.



## 5.2 Removing the battery

When removing the battery, proceed as follows:

1. Switch off the electric drive system and, if possible, the battery.
2. Unlock the battery.





3. Remove the battery from the casing/battery holder.










Hold the battery tightly as it is heavy.



## 5.3 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


Then check the current charge level of your battery by pressing the on/off button of the battery. The charge status is indicated by LEDs, which are illuminated for different charging states as listed in the following table.

| LED   | LED state          | State of charge    | Notes   |
|---|--------------------|--------------------|---|
|  | First LED flickers | $\leq 5\%$         | 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   | $10 \leq C < 30\%$ |   |
|  | Three green lights | $30 \leq C < 50\%$ |   |
|  | Four green lights  | $50 \leq C < 75\%$ |   |
|  | Five green lights  | $\geq 75\%$        |   |

## 5.4 Charging the battery

-  You can charge your battery both while mounted on the Pedelec and removed.
-  Lithium-ion batteries are not subject to a memory effect. You can recharge your battery at any time, even after short trips.

Charge your battery at temperatures between 0°C and 45°C (ideally at room temperature or 20°C). Give the battery sufficient time before charging to reach this temperature.

-  Read the instructions on the charger before charging.
- First insert the plug of the charging cable into the charging socket on the battery, then the plug the charger into a socket.
  - As soon as the charger is connected to the power supply, a red LED will light up.



Charger with arrow and text "red LED"

When charging is complete, the LED changes from red to green.



Charger with arrow and text "green LED"

Charging time depends on various factors. It can vary greatly according to the temperature, age, usage and capacity of the battery. You can find indications of possible charging times, if necessary, in the technical data of the battery.

When the battery is fully charged, the charging process is automatically terminated. Unplug the plug from the battery and the power outlet.

## Errors – Causes and Solutions

| Error description                                       | Cause   | Solution  |
|---|---|---|
| The operating display does not light up                 | Mains plug not properly connected to the power supply | Check all connections and whether the charger is properly connected to the power supply |
| The charging indicator is not lighting up               | The battery may have a malfunction                    | Contact the manufacturer or your specialist dealer                                      |
| The charging indicator is not lighting up permanent red | The battery may have a malfunction                    | Contact the manufacturer or your specialist dealer                                      |



Only use the charger designed for the battery.

Make sure you use the correct mains voltage. The required mains voltage is indicated on the charger. It must comply with the voltage of the current source. Chargers marked 230V can also be operated at 220V.

- Do not touch the power plug with wet hands. There is a risk of electric shock.
- Before use, check that the charger, cable and plug are not damaged. If damage occurs, do not use the charger. There is a risk of electric shock.
- Charge the battery in well-ventilated rooms only.
- Do not cover the charger and/or battery during charging. There is a risk of over-heating, fire, or explosion.
- Only charge on a dry, non-flammable surface.



The battery has to be recharged completely at least every 3 months, in order to avoid damaging or destroying the cells.



If the charging time exceeds the usual charging times (see table), the battery may be damaged. In this case, immediately stop charging. Have a dealer check the battery and charger to avoid damage.



## 5.5 Switching the electrical system on and off



Make sure that the pedals of your Pedelec are not weighed down when the system is turned on. Any load on the pedals as it is switched on may lead to power restrictions and error messages. When this happens, switch off the system and turn it on again.

### Conditions

In order to activate and use your Pedelec, the following prerequisites must be fulfilled:

- A sufficiently charged battery must be used.
- The battery must be inserted correctly into the battery holder.
- The motor, control unit, control unit/battery, etc. must all be connected correctly.

You can switch the electrical system of your Pedelec on and off according to the description on the control unit, see section "Control element".

If the battery of your Pedelec is equipped with an on/off switch, you can also press the switch on the battery.



Battery switch On-Off

If you press the switch again, the system will be turned off.

# 6 DP E08.UART

## 6.1 Items to be shown on the Display





1. "Up" button: increases the level of power assistance and activates the front light
2. "On/Off" button: switches the display on/off
3. "Down" button: reduces the level of power assistance and activates the push assistance
4. PAS level : indicates the level of power assistance selected.
5. State of charge : Indicates the level of remaining energy in the battery

## 6.2 Functional overview

- The bidirectional serial communication protocol and the keypad with three keys enables users to operate the display with ease.
- Intelligent battery level indication: thanks to an optimization algorithm, a stable display of the battery level is ensured, and the problem of fluctuating battery level indications common to most displays is avoided.
- Automatic light control: automatically turns ON/OFF front and rear lights when surrounding light changes.
- Automatic LED brightness adjustment: The LED display adjusts the brightness automatically in response to surrounding light changes light. This solves the problems common to most LED displays on the market of being dazzled when looking at the display in the dark and the inability to read the display in bright light.
- PAS (Pedal Assist System) level control: 0/1/2/3/4/5
- Error code prompt
- Push assistance
- If on standby for 5 minutes, system will turn off automatically.







## 6.3 Usual operation

### 6.3.1 Power ON/OFF


Press  for 2 seconds, the display will turn ON; press  for 2 seconds, the display will turn OFF. It will turn off automatically after five minutes of standby.


### 6.3.2 State of charge indication

5 LEDs indicate the state of charge, if the lowest LED flickers, it means it is time to charge the battery.

| LED indication definition<br>(from bottom to top) |   | State of Charge |
|---|---|-----------------|
| 5   |    | > 75 %          |
| 4   |    | 50 % – 75 %     |
| 3   |    | 30 % – 50 %     |
| 2   |    | 10 % – 30 %     |
| 1   |  | < 10 %          |
| 1 flickers  |  | ≤ 5 %           |

### 6.3.3 Light ON/OFF


Press  for 2 seconds, LED display dims, then the front and rear light will be turned on at the same time.

Press  a second time for 2 seconds, LED display lights up, then front light and rear light will be turned off. (if the lights cannot be operated manually, restart the display and then the lights will revert to automatic operation).

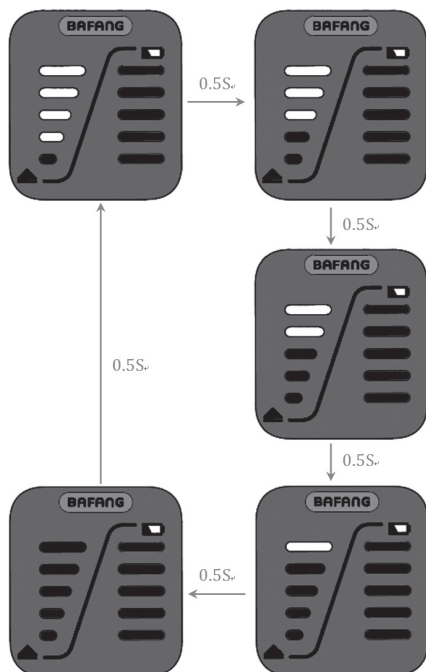
### 6.3.4 Push-assistance



Push-assistance function may only be used when pushing the e-bike. Risk of injury when the wheels of the e-bike do not have ground contact while using the push-assistance function.

Press  for 2 seconds, the push assistance will be turned ON, and the LED level will flicker. If you remove your finger from this button, the push-assistance will be turned OFF.



In the Push Assistance mode, the LED bars light up one by one from bottom to top with 0.5 second time intervals, as shown in the figure below.



### 6.3.5 PAS (Pedal Assist System) level selection



Assistance level indicator shows the power output of the motor.

Press  or  to switch between the different assistance levels (0/1/2/3/4/5); lowest level and the default level is 1; Highest level is 5; when there is no LED light, it is level 0 (meaning no assistance).

1–5 refers to the PAS level.



PAS Level 5



PAS Level 4



PAS Level 3



PAS Level 2




PAS Level 1



PAS Level 0 (no assistance)

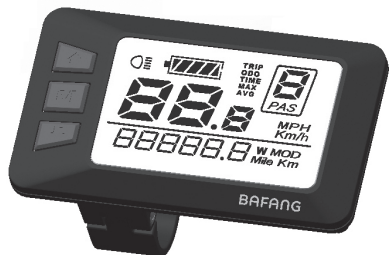
## 6.4 Error code definition

 This system can indicate all errors occurring on the Pedelec. In certain modes, the LEDs will flicker when an error code occurs.

| Error code   | Error definition  | Solution   |
|--|---|--|
| The second LED flickers 7 times in rapid succession              | High voltage protection                                   | Check the battery voltage  |
| The second LED flickers 8 times in rapid succession              | Fault with motor hall sensor inside                       | Have your dealer check the motor stator  |
| The first LED flickers once                                      | The motor temperature reaches to the max protection value | Stop riding and wait until the LED stop flickering   |
| The first LED flickers once then the second LED flickers twice   | Fault with current sensor inside controller               | Have your dealer check the controller  |
| The first LED flickers once then the second LED flickers 3 times | Fault with temperature sensor inside battery              | Check the battery  |
| The first LED flickers twice then the second LED flickers once   | Fault with wheel speed detecting sensor                   | Check the motor stator   |
| The first LED flickers twice then the second LED flickers twice  | BMS communication fault                                   | Replace the battery  |
| The first LED flickers 3 times in rapid succession               | Communication fault                                       | 1. Check the connectors between the EB-BUS and the controller<br>2. Replace the controller |

# 7 DP C13.UART

## 7.1 Appearance



## 7.2 Specifications and Parameters

- 43V Power Supply
- Maximum Operating Current: 30mA
- Power-off Leakage Current: < 1 uA
- Operating Current Supplied to the Controller: 50mA
- Operation Temperature: -20–60 °C
- Storage Temperature: -30–70 %
- Waterproof Grade: IP65
- Storage Humidity: 30%–70 %

## 7.3 Functional Overview

- The display adopts a two-way serial communication protocol.
- The external three-key keypad enables users to operate the display with ease.
- Intelligent battery charging level indication: thanks to an optimization algorithm, a stable display of the battery charging level is ensured, and the problem of fluctuating

battery level indications common to most displays is avoided.

- Level indication: this displays the current assistance level (level 0 to level 5).
- Fault code prompt.
- Push-assistance.
- Light control.





## 7.4 Items to be shown on the Display



- State of charge indication: Indicates the charging status level.
- PAS level indication: Indicates the level selected.
- Light ON/OFF indication: Indicates the status of the light.
- Power unit indication: Indicates the current power.
- Speed indication: Indicates the current speed, max. speed and average speed.
- Riding Records: Indicates trip and odometer.
- Error code indication: Indicates error code.
- Setting indication: (such as: modes, auto shut-off time, backlight grade, etc.).

- 1 Lamp status indication
- 2 State of charge indication
- 3 Riding record
- 4 Assistance level indication
- 5 Speed unit indication
- 6 Unit indication
- 7 Setting indication
- 8 Speed indication
- 9 "Down" button
- 10 Power on/off button
- 11 "Up" button

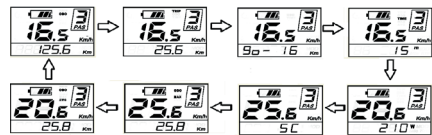
## 7.5 Usual operation

-  There are three buttons (, , ) on the DP C13.UART display that represent the following functions respectively: MODE, UP, DOWN.

### 7.5.1 Power ON/OFF

- To switch ON the Pedelec system, hold the MODE button for 2 seconds.
- To switch OFF the Pedelec system, repeat the process and hold the MODE button for 2 seconds.
- When switching off the Pedelec system, the leakage current is less than 1uA.
- When the Pedelec remains parked for more than 5 minutes, the Pedelec system switches off automatically.
- After switching on the Pedelec system, the display shows Running Speed and Total Distance as well as the battery indicator and assistance level.

To change the indicated information, press the MODE button to opt for the following:  
 Total range"ODO"(Km) → Trip Distance (Km)  
 → Remaining Distance (Km) → Trip Time (Min.) → Motor Power(W)→ Calory(C) → Max Speed(Km/h) → Average Speed(Km/h).



### 7.5.2 Push-assistance



The push-assistance function may only be used when pushing the Pedelec. There is a danger of injury when the wheels of the Pedelec are not in contact with the ground while using the push-assistance function.

- To access the push-assistance mode, hold the DOWN button; the Pedelec will travel at a uniform speed of 6kmph.
- The screen will display "P" while the push-assistance is operational.
- The push-assistance function switches off as soon as you release the DOWN button.



Push-assistance Mode

### 7.5.3 Light ON/OFF button

- To switch on the display's backlight and the headlight of the Pedelec, hold the UP button for 2 seconds.
- Repeat the process of holding the UP button for 2 seconds, and the backlight and headlight will be switched off.

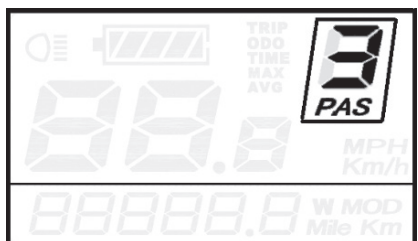


Light/backlight interface

### 7.5.4 PAS level selection

**i** The assistance level indicates the motor's output power.

- The default value is level "1".
- The default power ranges from level "0" to level "5".
- The output power is zero on level "0".
- Level "1" is the minimum power.
- Level "5" is the maximum power.
- To change the assistance level, press the UP or DOWN to increase or decrease until the desired assistance level is displayed.



Assistance Level "3"

### 7.5.5 Clearing your Trip Distance

- To clear your trip distance, hold both the MODE and the DOWN button for 2 seconds: The Trip Distance will be reset.M

### 7.5.6 Clearing the Max speed,Average Speed and trip time

- To clear the Max speed,Average Speed and trip time,hold both the MODE and UP button for 2 seconds

### 7.5.7 Battery Indicator

**i** The 5 battery bars represent the state of charge of the battery. When the battery is low, the battery will flash to inform you that the battery needs to be recharged immediately

| Bars           | State of charge – Range | Example |
|----------------|-------------------------|---------|
| 5 bars         | $\geq 75\%$             |         |
| 4 bars         | $50 \leq C < 75\%$      |         |
| 3 bars         | $30 \leq C < 50\%$      |         |
| 2 bars         | $10 \leq C < 30\%$      |         |
| 1 bar          | $5 < C < 10\%$          |         |
| Frame flickers | $\leq 5 \%$             |         |

Battery Indicator



## 7.6 Functions Settings

- Once the Pedelec system is switched ON, to access the Primary Settings menu, hold both the UP and DOWN buttons for 2 seconds.

**i** Never change settings while the Pedelec is in motion.

### 7.6.1 Unit Conversion "km/mile"

**i** U represents unit settings

- "1" is for miles, "2" is for kilometers.
- The default value is "2".
- To convert the units, press the UP or DOWN button to increase or decrease until the desired setting is displayed.
- To save a changed setting, hold the MODE button for 2 seconds and then exit settings.

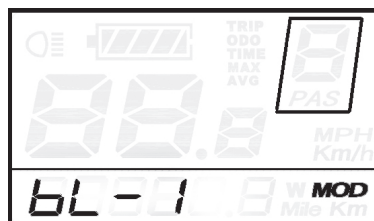


Mile and Kilometer Conversion Settings Interface

### 7.6.2 Backlight Contrast Settings

**i** bL represents backlight contrast settings.

- These range from 1 to 8; Level.
- "1" is the lowest brightness.
- Level "8" is the highest brightness.
- The default value is "1".
- To modify the backlight brightness, press the UP or DOWN button to increase or decrease until the desired setting is displayed.
- To save a changed setting, press the MODE button and then access Wheel Diameter Settings.



Backlight Brightness Settings Interface

### 7.6.3 Automatic Power-Off settings

**i** oFt represents the Automatic Power-Off Settings.

- The default value is 5 minutes or as specified by the owner.
- To change the basic settings, press the UP or DOWN button to increase or decrease until the desired value is displayed.
- These values range from 0 to 60 minutes. 0 means the display won't switch off automatically, while 60 means the display will switch off automatically after the Pedelec has been parked for more than 60 minutes.
- To save a changed setting and access the Assistance Level Selection interface, press the MODE button.



Automatic Power-Off Interface

#### 7.6.4 Error Code Indication



If there are errors pertaining to the electronic control system, the error code will appear automatically.



Error Code Indication



If an error code appears, take the Pedelec to a Service Center. Do not ride it until the Pedelec has been serviced.

#### 7.6.5 Error Code Review

- The system can store a maximum of 10 error codes out of 20 available error codes
- To check the information, press the UP or DOWN button to review all the Error Codes.
- To exit the Advanced Settings, press the MODE button to return to the Unit Conversion between miles and kilometers.

- To clear the Error Code, hold the UP, DOWN and MODE buttons simultaneously for 2 seconds.



Error Code Memory Interface

#### 7.6.6 Exit settings

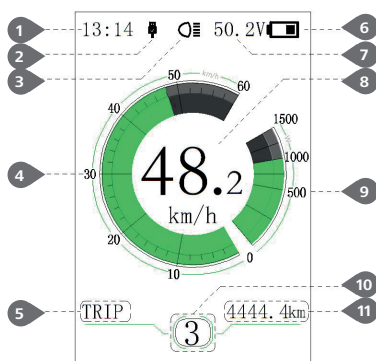
- When in Settings, press the MODE button to confirm input.
- Hold the MODE button to save your settings, then exit the current settings.
- Hold the DOWN button to cancel the operation and discard your settings, then return to the previous menu.
- After 1 minute without use, the display will exit the settings automatically.

# 8 DP C18.UART

## 8.1 Appearance



## 8.2 Items to be shown on the Display



### 1 Time indication:

The time is represented in the 24-hour system and show the current time, time can be set in the "Set clock".

### 2 USB charge indication:

When external connect into the display, it display the symbol.

### 3 Headlight indication:

Only shows when headlight is on.

### 4 Speed scale display:

the scale value is in accordance with the digital value.

### 5 Mode selection:

single-trip distance (TRIP) → total distance ODO → maximum speed (MAX) → average speed (AVG) → remaining distance (RANGE) → energy consumption (CALORIES) → time (TIME).

### 6 Battery indication:

Indicate current battery level value.

### 7 Voltage indication/percentage indication:

Indicate actual battery level value, display mode can be set in the "Soc View".

### 8 Speed digital indication:

Display current speed value, speed unit can be set in "Unit".

### 9 Power scale indication/current scale indication:

Display current output value, output unit can be set in "Power View".

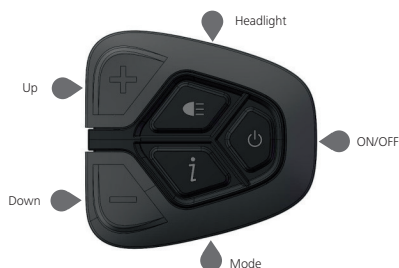
### 10 Power assistance level indication/push assistance:

Briefly press (0.5S) or to switch the level. Touch and hold (2S) to start the mode "push assistance", display symbol.

### 11 Mode data indication:



Display current data corresponding to the mode.

## 8.3 Button definition





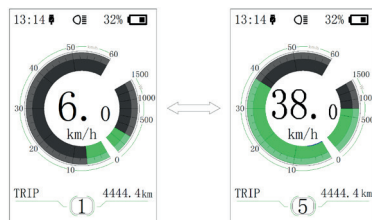
## 8.4 Usual operation

### 8.4.1 ON/OFF switch


Turn on the power, press and hold (>2S)  to power on the display, the display begin to operate. Press and hold (>2S)  again to power off the display. If the bike is not used, after 5 minutes (time can be set in "Auto Off") the display will be automatically turned off. If the password function of the display is activated, need to input the correct password to enter into the normal display interface.

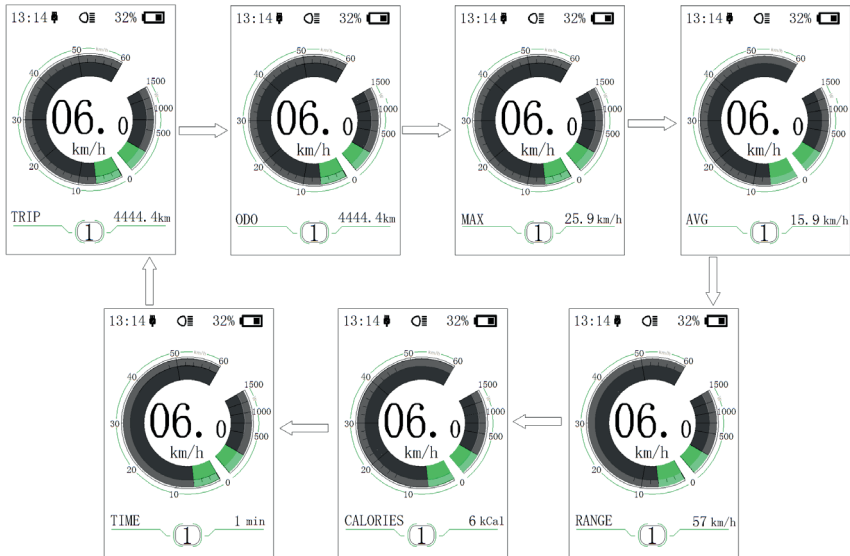
### 8.4.2 Power assistance level selection

In the manual gearshift mode, briefly press (<0.5S)  or  to switch the level to change the assistance power, The lowest level is Level 0, the highest Level 5. When the display is on, the default mode is Level 1. "0" means no power assistance.





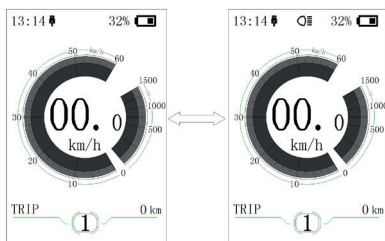
### 8.4.3 Multiple function interfaces switch

Briefly press (0.5s)  to switch to different data interface, circularly show signal-trip distance (TRIP) → total distance (ODO) → maximum speed (MAX) → average speed (AVG) → remaining distance (RANGE) → energy consumption (CALORIES) → time (TIME). Energy consumption unit CALORIES means kCal.






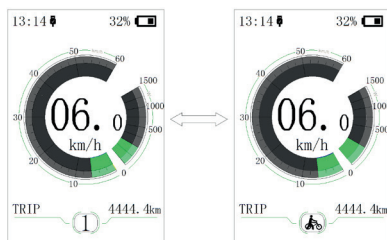
#### 8.4.4 Headlight/Display Backlight Switch

Press and hold (>2S)  to turn on the display backlight as well as headlight. Press and hold (>2S)  again to turn off the display backlight and the headlight. There are 5 levels of backlight brightness that can be selected by the user (can be set in the "Brightness"). (If the display is turned on in a dark environment, the display backlight/headlight will be turned on automatically. If the display backlight/headlight are turned off manually, they also need to be turned on manually afterwards)



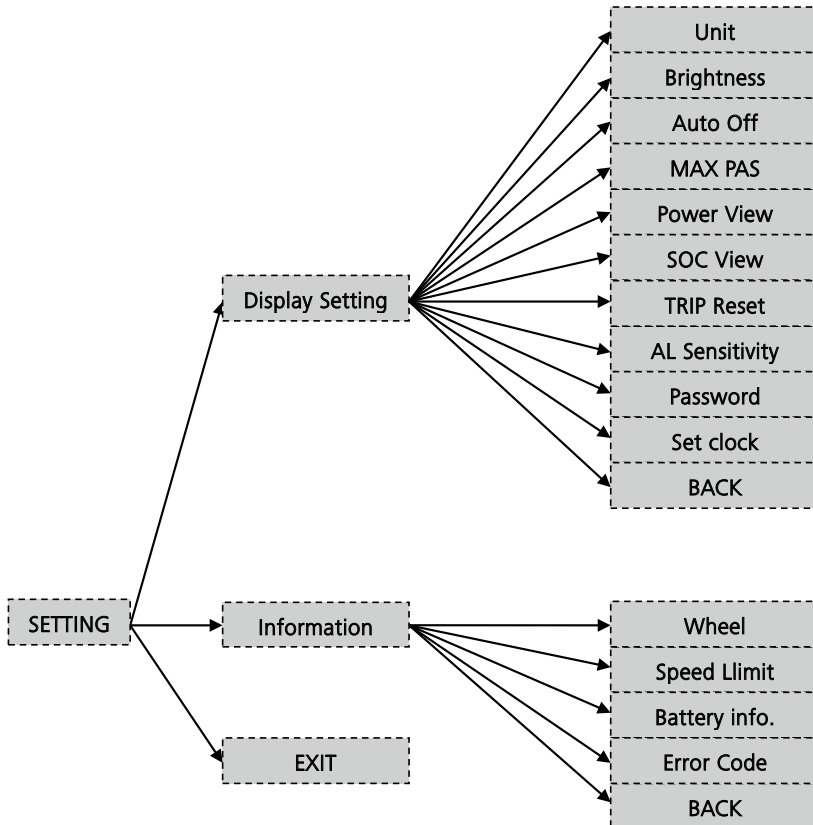
#### 8.4.5 Push assistance mode

Press and hold (>2S)  to enter into push assistance mode, the symbol  is displayed, when release key , will exit the push assistance mode.



## 8.5 Functions setting

- Operating process in the setting interface



### 8.5.1 Enter into "SETTING" interface

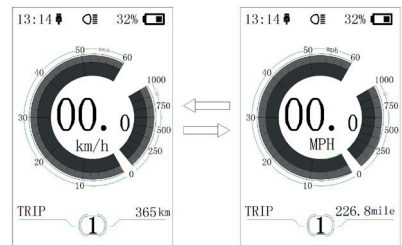
After switching on the display, briefly press ( $<0.5s$ ) **i** for two times to enter into the "SETTING" interface. The interface includes the three options as "Display setting", "Information" and "EXIT". Briefly press ( $<0.5s$ ) **+** or **-** to switch the options and then briefly press ( $<0.5s$ ) **i** to confirm and enter into the option. Select "EXIT" and briefly press ( $<0.5s$ ) **i** to exit the interface or briefly press ( $<0.5s$ ) **i** for two times in any interface to exit the set interface. The set dates are saved for the two exit mode. If there is no any operation within 20s and then exit the set interface, no any dates are saved.

### 8.5.2 Enter into "Display setting" interface

In "SETTING" interface, briefly press ( $<0.5s$ ) **+** or **-** to select "Display setting" and then briefly press ( $<0.5s$ ) **i** to confirm and enter into "Display setting". There are thirteen set options in the interface.

(1) "Unit" --- unit switch between the km and mile

Briefly press ( $<0.5s$ ) **+** or **-** to select "Unit", and then briefly press ( $<0.5s$ ) **i** to enter into the set interface. Briefly press ( $<0.5s$ ) **+** or **-** to select "Metric"/"Imperial", and then briefly press ( $<0.5s$ ) **i** to save the set and exit back to "Unit" interface. Briefly press **i** for two times (interval time is less than 0.5s) to exit back to main interface, or select "BACK" → "EXIT" to exit back to the main interface.



(2) "Brightness" --- set display brightness

Briefly press ( $<0.5s$ ) **+** or **-** to select "Brightness" and then briefly press ( $<0.5s$ ) **i**. This moment, briefly press ( $<0.5s$ ) **+** or **-** to switch the percentage as "100%" / "75%" / "50%" / "30%" / "10%". 100% is the highest brightness, 10% is lowest brightness. After select the brightness percentage, briefly press ( $<0.5s$ ) **i** again to save the set and exit back to "Brightness". Briefly press **i** for two times (interval time is less than 0.5s) to exit back to main interface, or select "BACK" → "EXIT" to back the main interface.



## (3) "Auto Off"--- set automatic Off time

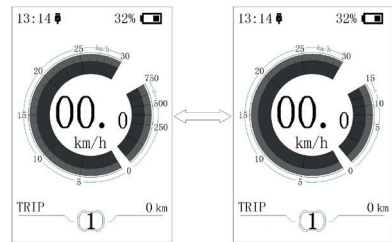
Briefly press (<0.5S) **+** or **-** to select "Auto Off", and then briefly press (<0.5S) **i**. This moment, briefly press (<0.5S) **+** or **-** to switch automatic Off time as "OFF"/"9"/"8"/"7"/"6"/"5"/"4"/"3"/"2"/"1". The unit is minute. After selection, briefly press (<0.5S) **i** to save the set and exit back to "Auto Off". Briefly press **i** for two times (interval time is less than 0.5S) to exit back to main interface or select "BACK" → "EXIT" to exit back to main interface.

## (4) "MAX PAS"---set riding mode for starting up

Briefly press (<0.5S) **+** or **-** to select "MAX PAS", and then briefly press (<0.5S) **i**. This moment, briefly press (<0.5S) **+** or **-** to select support mode: 3/5/9. After confirmation, briefly press (<0.5S) **i** again to save the set and exit back to "MAX PAS". And then briefly press **i** for two times (interval time is less than 0.5S) to exit back to main interface, or select "BACK" → "EXIT" to exit the main menu.

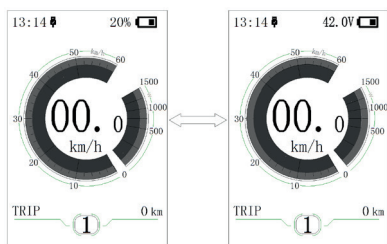
## (5) "Power View"--- set output display mode

Briefly press (<0.5S) **+** or **-** to select "Power View", and then briefly press (<0.5S) **i**. This moment, briefly press (<0.5S) **+** or **-** to switch the output display mode as "Power"/"Current". After confirmation, briefly press (<0.5S) **i** again to save the set and exit back to "Power View". Briefly press **i** for two times (interval time is less than 0.5S) to exit back to the main interface, or select "BACK" → "EXIT" to exit back the main interface.



(6) "SOC View" --- set indication mode for battery capacity

Briefly press (<0.5S) **+** or **-** to select "SOC View", and then briefly press (<0.5S) **i**. This moment, briefly press (<0.5S) **+** or **-** to switch display mode for output as "Percent"/"Voltage". After confirmation, briefly press (<0.5S) **i** to save the set and exit back to "SOC View". Briefly press **i** for two times (interval time is less than 0.5S) to exit back to the main interface, or select "BACK" → "EXIT" to exit back to the main menu.



(7) "TRIP Reset" --- set reset function for single-trip distance

Briefly press (<0.5S) **+** or **-** to select "TRIP Reset", and then briefly press (<0.5S) **i**. This moment, briefly press (<0.5S) **+** or **-** to switch between "NO" and "YES". TRIP Reset includes maximum speed (MAXS), average speed (AVG), single-trip distance (TRIP). After confirmation, briefly press (<0.5S) **i** again to save the set and exit back to the "TRIP Reset". Briefly press **i** for two times (interval time is less than 0.5S) to exit the main interface, or select "BACK" → "EXIT" to exit back to the main interface. The data is not reset automatically when turn off the display or turn off the power of the bicycle.

(8) "AL Sensitivity" --- set light sensitivity

Briefly press (<0.5S) **+** or **-** to select "AL Sensitivity", and then briefly press (<0.5S) **i**. This moment, briefly press (<0.5S) **+** or **-** to switch level of the light sensitivity between "0"/"1"/"2"/"3"/"4"/"5"/"OFF". "OFF" means close the function. Level 1 is the weakest light sensitivity and level 5 is the strongest light sensitivity. Select the level desired and briefly press (<0.5S) **i** again to save the setting and exit back to "AL Sensitivity". Briefly press **i** for two times (interval time is less than 0.5S) to exit back to main interface or select "BACK" → "EXIT" to exit back to main interface.

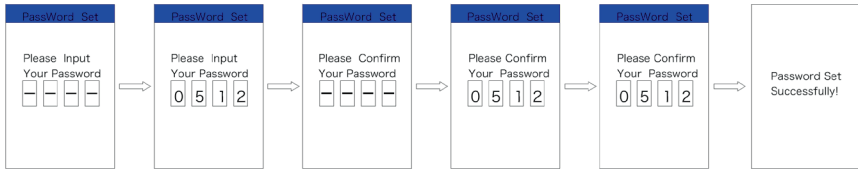
(9) "Password" --- access password setting

Briefly press (<0.5S) **+** or **-** to select "Password" and then briefly press (<0.5S) **i**. This moment, briefly press (<0.5S) **+** or **-** to select "Start PassWord" and then briefly press (<0.5S) **i** again. Briefly press (<0.5S) **i** or to switch between "OFF"/"ON", the below is the specific way of switching.

Starting password:

Enter into "Start PassWord" interface and select "ON". Briefly press (<0.5S) **i**, and then it show input password in the interface. This moment, briefly press (<0.5S) **+** or **-** to switch numbers "0-9", and then briefly press (<0.5S) **i** to confirm input number. After input, it show input password again in the interface. Repeat the above step to input password again. If the password is same with the previous time, the system will prompt it is successful to set password, otherwise it need to repeat the first step to input the new password and then re-confirm.

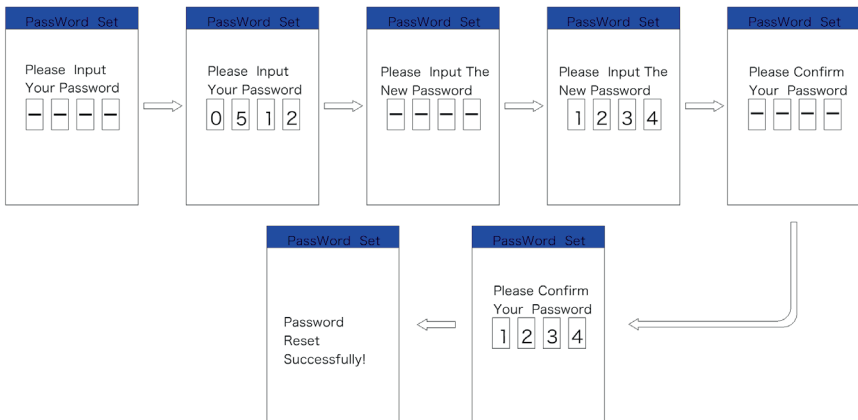
After setting the password, the interface exit back automatically to original interface within two seconds. Briefly press **i** for two times (interval time is less than 0.5S) to exit back to main interface or select "BACK" → "EXIT" to exit back to main interface.



Reset password:

After setting the password, the interface "Password" will add option "Reset Password". Briefly press (<0.5S) **+** or **-** to select "Reset Password", and then briefly press (<0.5S) **i**. This time it prompt input current password in the interface. If inputing wrong password for ten tiems, the display will turn off automatically. When inputing right password, it prompt input new password in the interface. The following step is same with starting password. After changing the password, it will exit automatically back to the original interface within two seconds.

Briefly press for **i** two times (interval time is less than 0.5S) to exit back to the main interface or select "BACK" → "EXIT" to exit back to main interface.



Cancel password access:

Enter into "Start PassWord" interface to select "OFF" and then briefly press ( $<0.5S$ ) **i**. This moment, it prompt input password in the interface. If inputting wrong password for ten times, the display will turn off automatically. After inputting right password, it prompt it is successful to close password in the interface. Two seconds later, it exit back automatically to the original interface. Briefly press **i** for two times (interval time is less than 0.5S) to exit back to the main interface or select "BACK" → "EXIT" to exit the main interface.



(10) "Set Clock"--- time setting

Briefly press ( $<0.5S$ ) **+** or **-** to select "Set Clock" and then briefly press ( $<0.5S$ ) **i**. The time is represented in the 24-hour system. Cursor stays at the first digit of the clock. Briefly press **+** or **-** to select "0-2" and then briefly press ( $<0.5S$ ) **i** to confirm the selection. This moment, the cursor switch to the second digit of the clock. Briefly press **+** or **-** to select "0-9", and then

briefly press ( $<0.5S$ ) **i** to confirm the selection. And the cursor will switch to the first digit of the minute. Briefly press **+** or **-** to select "0-5", and then briefly press ( $<0.5S$ ) **i** to confirm the selection. The cursor will switch the second digit of the minute, and then briefly press ( $<0.5S$ ) **+** or **-** to select "0-9". Briefly press ( $<0.5S$ ) **i** to save the selection and exit back to "Set Clock". Briefly press **i** for two times (interval time is less than 0.5S) to exit back to the main interface or select "BACK" → "EXIT" to exit back to the main interface.





### 8.5.3 Enter into "Information" interface

Enter into "SETTING" interface and briefly press ( $<0.5S$ ) **+** or **-** to select "Information" and briefly press ( $<0.5S$ ) **i** to confirm and enter into the interface. It can check all content in the interface "Information", but can't use the display to modify the content.


(1) "Wheel" and "Speed Limit" check

Enter into "Information" interface and it display the data of "Wheel" and "Speed Limit". User can use BAFANG's BESST tool to connect the display and PC to modify the data. Briefly press (interval time is less than 0.5S) **i** for two times to exit back to the main interface or select "BACK" → "EXIT" to exit back to the main interface.




## (2) "Battery Info." check

Briefly press (<0.5S)  or  to select "Battery Info." and briefly press (<0.5S)  to enter into information display interface. This moment, select "Next Page" and briefly press (<0.5S)  to switch the display interface. If detecting no data, it display "--". See the content and corresponding explanation shown in the table below:

| Display content | Explanation                      | Display content    | Explanation        |
|-----------------|----------------------------------|--------------------|--------------------|
| TEMP            | Current temperature              | Cycle Times        | Cycle Times        |
| TotalVolt       | Battery voltage                  | Max Uncharge Time  | Max Uncharge Time  |
| Current         | current                          | Last Uncharge Time | Last Uncharge Time |
| Res Cap         | remaining battery capacity       | Total Cell         | The number of cell |
| Full Cap        | Battery capacity of Full charged | Cell Voltage 1     | Voltage Cell 1     |
| RelChargeState  | Relative Charge in percentage    | Cell Voltage 2     | Voltage Cell 2     |
| AbsChargeState  | Absolute Charge in percentage    | Cell Voltage n     | Voltage Cell n     |

Briefly press  for two tiems (interval time is less than 0.5S) to exit back to main interface or select "BACK" → "BACK" → "EXIT" to exit back to the main interface.

## (3) "Error Code" history check

Briefly press (<0.5S)  or  to select "Error Code" and briefly press (<0.5S)  to enter into the interface. "E-CODE" indicate the error information for last ten times. "E-CODE 1" represents the error content for the last time. "E-CODE 10" represents the error content up to the tenth time. The maximum ten records can be kept. Error code "00" means no error. Please see the error code table to know about the definition of the other codes.

## 8.6 Error code definition



HMI DP C13.UART and DP C18.UART can indicate all errors occurring on the pedelec.

| Error | Explanation   | Troubleshooting   |
|-------|---|---|
| 03    | Brakes enabled  | Check whether a brake cable is stuck.   |
| 07    | High voltage protection                                   | Bring your Pedelec to your dealer or to a specialist to have the error fixed. |
| 08    | Fault with motor hall sensor inside                       | Bring your Pedelec to your dealer or to a specialist to have the error fixed. |
| 10    | The motor temperature reaches to the max protection value | Stop the e-bike for a rest.   |
| 12    | Fault with current sensor inside controller               | Bring your Pedelec to your dealer or to a specialist to have the error fixed. |
| 13    | Fault with temperature sensor inside battery              | Bring your Pedelec to your dealer or to a specialist to have the error fixed. |
| 21    | Fault with wheel speed detecting sensor                   | Bring your Pedelec to your dealer or to a specialist to have the error fixed. |
| 22    | BMS communication fault                                   | Bring your Pedelec to your dealer or to a specialist to have the error fixed. |
| 25    | Torque sensor torque signal fault                         | Bring your Pedelec to your dealer or to a specialist to have the error fixed. |
| 26    | Torque sensor speed signal fault                          | Bring your Pedelec to your dealer or to a specialist to have the error fixed. |
| 30    | Communication fault                                       | Bring your Pedelec to your dealer or to a specialist to have the error fixed. |

**Note: Error Code 10 will probably appear on the display when the e-bike is climbing 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.**

## 8.7 Range of your Pedelec

Range data is based on optimal conditions. This can be influenced by the following factors:

**Level of assistance:** The higher the assistance mode used, the higher the power consumption and the lower the range.

**Driving style:** With the optimal use of gear shifting, you can save energy. In lower gears, you need less power, less support, and the drive of your Pedelec consumes less energy.

**Ambient temperature:** Batteries discharge faster at cold outside temperatures and have a shorter range.



It is best to charge your battery while it is warm and set it just before you start driving.

**Terrain:** In hilly terrain, more energy is needed so the range goes down.


**Weather and vehicle weight:** In addition to the ambient temperature, wind conditions also influence the range. A strong headwind requires more power when driving. Baggage, etc. will increase the weight and therefore more force is required.

**Technical condition of your Pedelec:** Air pressure that is too low in the tires increases driving resistance, especially when riding over a smooth surface, such as asphalt. The range of your Pedelec can be reduced by a grinding brake or a poorly maintained chain.



**Charging status of the battery:** The charge state indicates the amount of electrical energy that is stored in the battery at any given time. More energy means more range.

# 9 MAINTENANCE AND REPAIRS


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-  Keep the all components of the electrical system clean. Clean gently with a damp, soft cloth. The components must not be immersed in water or cleaned with a water jet or steam jet. If the components are no longer functional, contact your dealer.

## 9.1 Storing the battery

-  If you do not use your Pedelec for an extended period of time, remove the battery, charge it (60-80%) and store it separately in a frost-free, dry room.
- Check the charge level every 3 months and recharge if necessary.
  - Store your battery at a temperature between -10 °C and 35 °C.
  - Avoid storing in direct sunlight.
  - To prevent deep discharge, the battery will go into sleep mode after a certain time.
  - Do not expose the battery to temperatures below the permissible storage temperature of -10 °C to 35 °C. Note that temperatures of around 45 °C are common near heaters, in direct sunlight or in over-heated vehicle interiors.
-  If you notice the battery becoming hot during use, charging or storage, developing a strong odor, changing appearance, or any other abnormality, do not continue to use the battery. Immediately stop using the battery and have a dealer check it before you use it again.

## 9.2 Battery wear

-  The battery can run for approx. 500 charging. During that time, the battery capacity and range of your Pedelec will decrease. You should then replace the battery. If the range is still sufficient, you can continue to use it.

As the service life increases, the capacity of the battery slowly decreases. This also reduces the range of your Pedelec with regard to engine support. This does not constitute a defect.

The battery life depends on various factors:

- The number of charging operations (about 500 charging cycles).
- The age of the battery.
- The storage conditions.

Of course, your battery will deteriorate and capacity will be lost even if you do not use the battery. The lifetime of your battery can be influenced by the following measures:

- Charging your Battery after every ride, even short trips. Lithium-ion batteries are not subject to a memory effect.
- Avoiding driving in high gears with high levels of push-assistance.



# 10 CUSTOMER SERVICE

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If you have any questions concerning the electrical system, please contact the manufacturer or your specialist dealer.

# 11 TRANSPORTING THE PEDELEC

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Remove the battery before transportation and transport it separately. Cover the contacts with a transport cap to prevent the risk of a short circuit. In the case of a short circuit, there is a risk of injury and fire.

## 11.1 By car

You can transport your Pedelec by car as you would a normal pedelec. The weight of the Pedelec will call for a heavier-duty rack.

## 11.2 By public transport

The same regulations apply as when transporting a bicycle. For safety reasons, remove the battery before entering a train with the Pedelec, and do not put it back until you have dismounted.

## 11.3 By airplane

The battery must be considered as a hazardous material. It must be carried as such. Please consult your airline.

# 12 DISPOSAL CONSIDERATIONS

If parts of your Pedelec are replaced, please take note of the waste disposal instructions for your local waste disposal company. Used batteries and accumulators must not be disposed of with normal household waste.

Every consumer is obliged by law to dispose of used batteries at a collection point specifically for used batteries at a recycling center, battery trading company, specialist dealer or manufacturer.

Batteries containing harmful substances are marked with a symbol consisting of a crossed-out waste bin and the chemical symbol (Cd, Hg or Pb) of the heavy metal which is responsible for its classification as a pollutant.

For further information, please contact your local waste disposal service or your municipal administration.

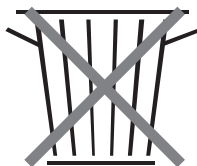


Waste batteries, accumulators with lead, NiMH (nickel metal hydride) or lithium-ion technology are considered dangerous goods.

Lithium-ion batteries should be isolated on each pole with insulating tape to prevent short-circuiting, and potentially dangerous follow-up reactions. When transporting or transferring the batteries to a waste disposal facility, the provisions of the ADR (regulations for the transport of dangerous goods) apply.



According to European Directive 2006/66/EC, defective or used batteries must not be used, and, in accordance with the European Directive 2002/96/EC, electrical equipment that is no longer usable must be collected separately and recycled in an environmentally sound manner.



The drive unit, battery, display, control element, accessories and packaging must be recycled in an environmentally sound manner. Do not throw components of the electric drive out with household waste.

Dispose of used batteries with an authorized pedelec dealer.

# 13 SPECIFICATIONS

### Motor

Position: Front Motor  
Construction: Gear Motor  
Nominal Voltage: 43 V  
Rated Power: 250 W  
RPM: 200 – 270  
Max Torque: 30 Nm  
Efficiency: 80 %

### Mounting characteristics

Brake: Roller-Brake  
Weight: 2.3 KG  
Installation Width: 100 mm  
Max. Housing Diameter: 138 mm  
Cabling Shaft Side: Right  
Spoke Specification: 13 G

### Display

43V Power Supply  
Maximum Operating Current: 30 mA

### Charger

Input voltage range: 100 ACV – 240 ACV  
Input power frequency: 47 Hz – 63 Hz  
Efficiency:  $\geq 80\%$   
Rated output voltage: 49.2 V  
Output current:  $2\text{ A} \pm 0.2\text{ A}$

### Battery

| Primary Settings                     | BT C01.340.UART             | BT C01.450.UART             | BT C01.600.UART             | BT C01.750.UART            |
|--------------------------------------|-----------------------------|-----------------------------|-----------------------------|----------------------------|
| Rated voltage                        | 43 DCV                      | 43 DCV                      | 43 DCV                      | 43 DCV                     |
| Nominal Capacity                     | 7.8Ah                       | 10.4Ah                      | 14Ah                        | 17.5Ah                     |
| Rate Capacity                        | 6.43 Ah<br>(1C Discharge)   | 8.5 Ah<br>(1C Discharge)    | 11.4 Ah<br>(1C Discharge)   | 14.3 Ah<br>(1C Discharge)  |
| Power                                | 340Wh                       | 450Wh                       | 600Wh                       | 750Wh                      |
| Charging time                        | 4.5 h with a 2 A<br>Charger | 6.5 h with a 2 A<br>Charger | 5.5 h with a 3 A<br>Charger | 6.5h with a 3 A<br>Charger |
| Max. continuous<br>discharge current | 14A                         | 18A                         | 23A                         | 23A                        |
| Consumption rate<br>during operation | $\leq 10\text{ mA}$         | $\leq 10\text{ mA}$         | $\leq 10\text{ mA}$         | $\leq 10\text{ mA}$        |

| Primary Settings                      | BT C01.340.UART  | BT C01.450.UART  | BT C01.600.UART  | BT C01.750.UART  |
|---------------------------------------|--|--|--|--|
| Consumption rate during sleep         | ≤ 400 uA   | ≤ 400 uA   | ≤ 400 uA   | ≤ 400 uA   |
| Consumption rate during sleep         | 50 uA  | 50 uA  | 50 uA  | 50 uA  |
| Operating temperature during charging | 0 – 45 °C  | 0 – 45 °C  | 0 – 45 °C  | 0 – 45 °C  |
| Discharge                             | -20 – 60 °C  | -20 – 60 °C  | -20 – 60 °C  | -20 – 60 °C  |
| Storage (At 35% SOC & -10° ~ 35 °C)   | 6 months   | 6 months   | 6 months   | 12 months  |
| Maximum charging cycle                | 500 (60% SOC (@20 ± 5 °C, Charge @ 0.2C and discharge @ 0.5C)) | 500 (60% SOC (@20 ± 5 °C, Charge @ 0.2C and discharge @ 0.5C)) | 500 (60% SOC (@20 ± 5 °C, Charge @ 0.2C and discharge @ 0.5C)) | 500 (60% SOC (@20 ± 5 °C, Charge @ 0.2C and discharge @ 0.5C)) |
| Riding Distance *                     | Minimum 35 km  | Minimum 50 km  | Minimum 65 km  | Minimum 85 km  |
| Dimensions (L * W * H)                | 408 * 123 * 70 mm  |  |  |  |
| Weight                                | 3 kg   | 3.5 kg   | 3.5 kg   | 4 kg   |
| Charger                               | Special 5P charger   | Special 5P charger   | Special 5P charger   | Special 5P charger   |

\*Ideal conditions: Flat terrain, approx. 15km/h average speed, no headwind, approx. 20 °C ambient temperature, high-quality bike components, tire tread and pressure with minimal rolling resistance, experienced eBike rider(always shifts gears correctly), additional weight(excluding bike weight)<70kg.

### Torque table

| Bolted connection    | Bolt  |
|----------------------|-------|
| Flange nuts/hub axle | 30 Nm |

# 14 AFTER-SALES AND WARRANTY POLICY

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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.

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.

Bafang Electric (Suzhou) 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, as long as the products are within the warranty period and the issues are indeed quality issues concerning material and workmanship.

## **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 BAFANG products, they can report the purchase order number and product's serial number to BAFANG's technology service department who will check whether the products are under warranty or not. For products under warranty, and for minor problems, BAFANG will provide customers (dealers or pedelec manufacturers) with free spare parts so that they can correct the problem themselves. For serious issues, BAFANG will provide customers with free spare parts, show them what to do by sending them

## Imprint

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.

For the latest information, please visit the company website: [www.bafang-e.com](http://www.bafang-e.com).

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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Legal inspection by a lawyer's office specialising in intellectual property.

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.

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# NOTES

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