



## **Power Assisted Bicycle Owner's Manual**

This manual contains important safety, performance and maintenance information. Read the manual before taking your first ride on your new power assisted bicycle, and keep the manual handy for future reference.

Imported by Raleigh Canada, Toronto, Canada M4S 2B8

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# Welcome Word

Congratulations on buying a power assisted bicycle! Whether it is to make your daily commute to work easier, extend your riding time, help you keep up with your friends or family or simply to enjoy all the comfort, efficiency and fun that this type of bicycle allows, we are confident that you will appreciate all the features and benefits your new bicycle has to offer.

## Safety Information

Although modern power assisted bicycles look a lot like their regular counterparts, there is quite a lot of technology behind it and some notable differences in their riding behavior, handling, and maintenance requirements.

This manual has been created to provide you with the instructions needed to safely handle and operate your power assisted bicycle, understand its function, perform maintenance, and adjust its parameters. It is important that you carefully read and understand this manual before you ride your power assisted bicycle. It should also be kept handy for future reference. This document is not a complete service manual. We recommend that you seek advice from a qualified bicycle technician if anything is unclear.

Note that some manufacturers may not honour their warranty if the handling and operation has not been done properly.

The following symbols will be used throughout the manual. They represent important Warnings and Cautions about the proper handling and operation of your power assisted bicycle. They should be carefully observed because failure to do so might result in serious injuries, damage or loss of performance of the system.

For other information not related to the power assist system but regarding your bicycle such as part assembly, adjustments, maintenance, or riding basics, please refer to your Owner Manual provided separately at the time of purchase.



**Indicates important information or a caution about the proper use of a component of the system.**



**Indicates a warning about important safety information.**

## Safety Recommendations



Always use your power assisted bicycle according to the local laws and regulations.



Don't attempt to alter or disassemble any component of the power assist system. Maintenance should only be performed by a qualified bicycle technician.



Only use the original equipment provided to operate and charge the system. For replacement parts, contact the bicycle dealer where the product was purchased.



A power assisted bicycle handles differently than a regular, human powered bicycle. The acceleration can be surprisingly effective and you should get familiar with its behavior progressively before riding on public roads or crowded bicycle-designated paths.



Power assisted bicycles are heavier than most other bicycles. Always keep in mind that the required distance needed for braking may be longer than what you are used to on a regular bicycle. This also calls for more attention to the maintenance of your brake system and tires.



Always look far in front of you while riding to make sure you have sufficient time to react if any situation occurs. Avoid looking at the LCD display unit for a long period. Instead, learn how to operate it with only a quick glance.



A power assisted bicycle is not suited for use by children or certain persons with reduced physical or mental capabilities. Make sure you know and understand local laws and regulations regarding this type of vehicle.



Laws and regulations regarding the limitations and use of a power assisted bicycle varies among countries and even sometimes among states and provinces. Make sure you know and understand local laws and regulations if you plan to travel with your power assisted bicycle.

### Important information about battery storage



Do not store the battery in a cold environment, even for a short period. If you must leave or store your power assisted bicycle outside or in a place that is not heated, you should remove the battery and store it inside, at room temperature. Cold temperatures can damage the battery.



Store the battery away from high heat sources such as direct sunlight or inside a vehicle during summer.

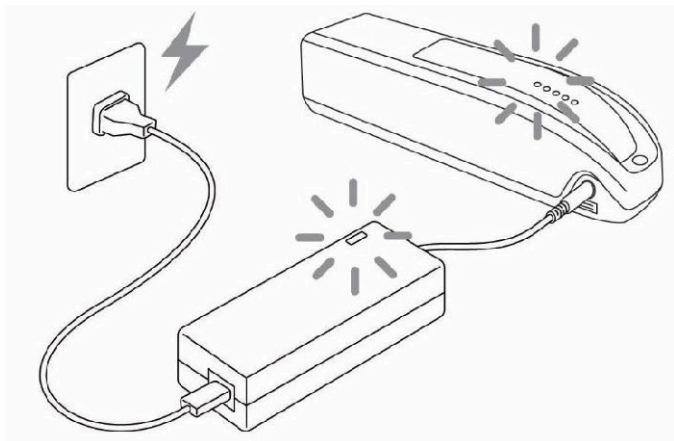


Make sure to follow all the instructions described in section **Storage** when storing the bicycle for a long period.


## Quick Start Instructions

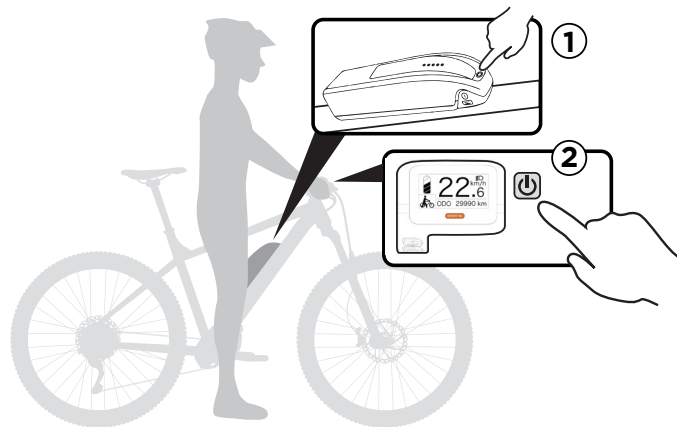
### STEP 1: Charge the battery

1. Connect the AC power plug into the charger.
2. Plug the AC power plug into an electrical outlet. The LED indicators on the charger will light up.
3. Connect the charging plug into the socket on the battery. The LED indicators on the battery will blink, confirming that charging is underway. Let the battery charge until it is fully charged.
4. The light on the charger will turn green when fully charged.
5. Pull the charging plug from the battery and replace the rubber protector cap.





### STEP 2: Turn the system on

1. Mount the bicycle and stand still over it or sit on the saddle with a foot resting steady on the ground.
2. Press the power button on the battery. LED indicators will light up and show battery charge level.
3. Press the power button  on the LCD display for 2 seconds. LCD display will light up.



*Do not turn the power assist system on unless you are on the bicycle and seated properly with at least one foot on the ground. An unexpected ignition of the power assistance while mounting the bicycle can result in serious injuries.*

### STEP 3: Select your assistance level

1. Press the button  on the LCD display to switch to a higher power assistance mode. LCD display will show the mode you selected.
2. Press the  button on the LCD display to switch to a lower power assistance mode.

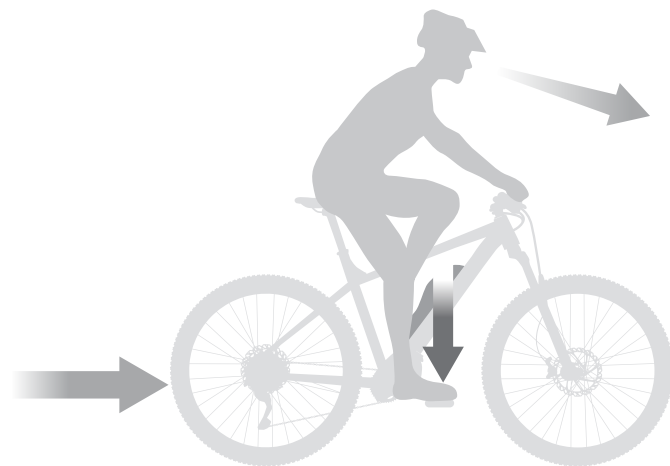
**Note:** *Level 1 provides the least power assistance, while level 5 provides the most. Level 0 provides no assistance.*



### STEP 4: Start off

1. Make sure the path in front of you is clear.
2. Hold on to the handlebar with both hands and push on the pedals. The power assist will kick in almost instantly.

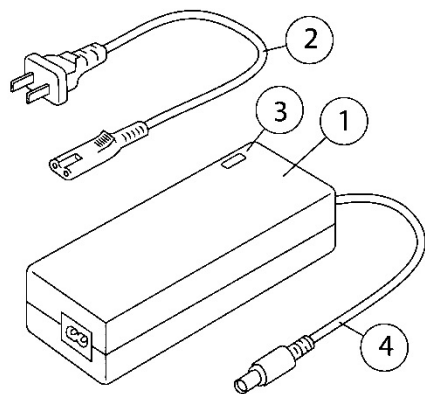
**Note:** *The power assist will only stay engaged when the rider is pedalling.*



*Be careful if you decide to start off with a high power assistance mode as the first pedal stroke may result in an unexpectedly quick acceleration!*

**RIDE SAFELY!**

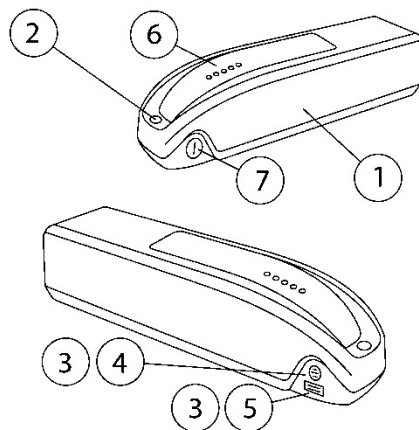
## Parts List



### Charger unit

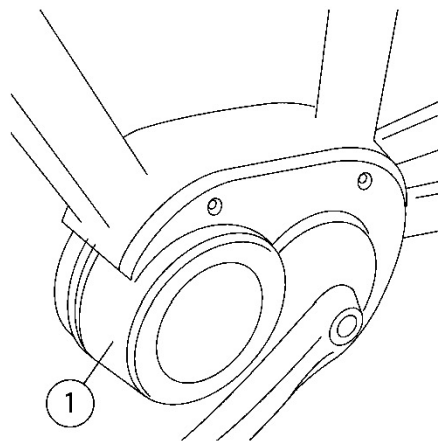
1. Charger
2. AC Power cord
3. LED Indicator
4. Charging plug

*\*Charger may not be exactly as shown*



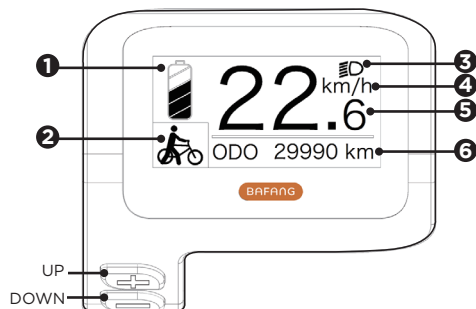
### Battery unit

1. Battery
2. Power button
3. Rubber protector caps
4. Charging socket
5. USB port
6. LED battery level indicator
7. Key lock




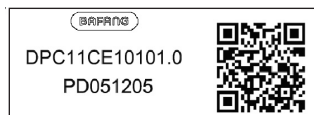
### Motor unit

1. Motor shell

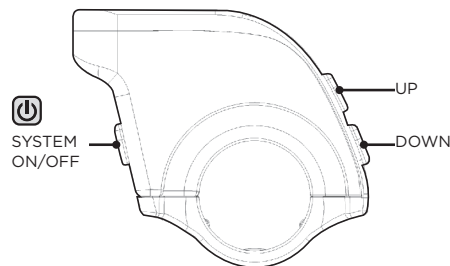


### LCD display unit

1. Display of battery capacity in real time
2. Support level
3. The display shows this symbol , when the backlight is turned on.
4. Unit of speed
5. Digital speed display
6. Selection/Trip mode—see section **Using the LCD display** for full details.



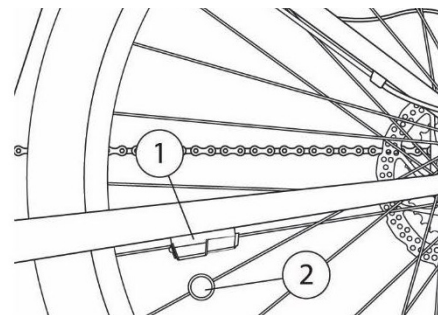
**Note:** There is a QR code label attached to the LCD display cable on your bike. The information from this label is used for a later, possible software update. Please keep this label on your bike or store in this manual for future reference.



### Functional Overview

- Speed display (including top speed and average speed; can switch between km and miles)
- Battery capacity indicator
- Brightness setting for backlight
- Walk mode
- Indication of performance support
- Motor output power indicator
- Time display for single journeys
- Kilometre display (including single-trip distance, total distance and remaining distance)
- Display for the remaining distance (depends on your riding style)
- Information view (battery, controller, HMI and sensor)
- Error messages view

See section **LCD display parameters and settings** for full details.



### Speed sensor unit

1. Sensor
2. Magnet



## Features

### Charger unit

- Converts input electrical current from wall outlet to charge the battery.
- Red LED light while charging battery.
- Green LED light once battery is charged.

### Battery unit

- Stores energy to power the motor unit.
- Lithium-ion type
- Charging plug
- USB port to charge devices
- Key lock to secure on the bicycle's frame

### Motor unit

- Provides power assistance to the bicycle's drivetrain
- Brushless electric motor
- Integrated torque sensor
- Mid-drive

### LCD display unit

Displays information such as:

- Current speed
- Average speed
- Maximum speed
- Current power assist mode
- Battery level
- Riding time
- Trip distance
- Malfunction error code
- Auto Off function
- Adjustable backlight brightness

### LCD specifications

- Operating temperature: -20 to 45°C (-4 to 113°F)
- Storage temperature: -20 to 50°C (-4 to 122°F)
- Waterproof: IP65
- Storage room Humidity: 30-70% RH

### Speed sensor unit

- Connects to the motor unit and LCD
- Display unit to measure current speed

## Technical details

### Battery

- Voltage: 36 V
- Capacity: 13.6 Ah
- Energy content: 490 Wh
- Operating temperature
  - Discharge: -10 to 50°C (14 to 122°F)
  - Charging: 0 to 40°C (32 to 104°F)
- Storage temperature: 5 to 40°C (41 to 104°F)



### Motor unit

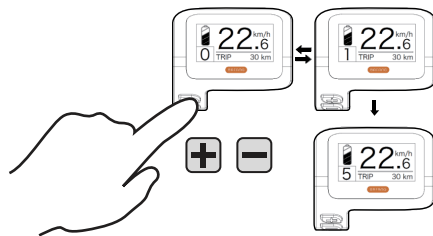
- Power: 250 W
- Max. drive torque: 65 Nm
- Assistance cut-off speed: 32 km/h\*

*\*Power assistance cut-off speed required by Canadian regulations. May be different in a different country.*

# Power Assist Modes

## How to shift through power assist modes

Switch through power assist modes using the LCD display  and  buttons.



The LCD display unit will show which mode you're in. Use a power assistance level according to the current riding conditions. Use a high assistance level when going uphill or against a head wind and switch to a lower assistance level if you are riding on a flat road or with a tail wind.



*The operating range (battery autonomy) of your bicycle is greatly influenced by the power assistance level you chose and how you manage it during your ride. For more details on how to optimize your operating range, see the following section on **Operating range**.*



### Mode 1 - Minimum assistance

Compensates for the power assist system's own weight without reaching high speed. Use on flat surface with low wind resistance. Operating range is at its highest.



### Mode 2 - Low assistance

Helps to reach a steady, slightly higher speed than normal. Use on flat surface with low to medium wind resistance. High operating range.



### Mode 3 - Intermediate assistance

Maintains a steady speed on variable incline surfaces with medium wind resistance. Optimal balance between power assistance and operating range.



### Mode 4 - High assistance

Reach greater speeds. Use on long inclines and against strong wind resistance. Expect a reduced operating range if riding with this assistance level for a long period.



### Mode 5 - Maximum assistance

Reach the highest speeds or get maximum help to climb steeper inclines. Keep a close watch at your battery capacity if using this mode for a long trip.

## Walk mode

Use walk mode when walking beside your bicycle and you're in need of power assistance. For example, when walking up a hill.

### To enter walk mode:

See section **Selecting a power assistance mode** for full details.



*Switching to Walk mode will instantly ignite the motor and propel the bicycle to a speed of 5 km/h even with no pressure on the pedals. Make sure you are holding your bicycle steadily and that the path in front of your bicycle is clear. Walk mode will automatically shut down once you release the button.*

## Operating range

The distance you will be able to ride with a single battery charge depends on many factors. Some are under your control and some are not. The factors you have no control on are weather conditions such as wind direction, wind strength, and temperature. Difficult road surfaces also influence the range you can achieve. Loose and irregular ground surfaces will increase your tires rolling resistance and therefore require more power and decrease the range you can cover. Hills will

also affect battery range. The more hills you climb, and the steeper the grade, the more battery power that is required.

The factors you have control over are the following:

- The power assistance level you choose
- How often you shift gears
- Tires pressure and condition
- The weight of cargo you are carrying
- Condition of the battery

### Here are some tips to help you reach maximum range of a battery charge:

- Only use the power assistance you need for each condition during your ride. You may not need maximum assistance while riding on flat ground or with a tail wind.
- After a stop, start off again on an easy gear combination and shift up progressively as you gain speed. Think of it as driving a car with a manual transmission where you would not start accelerating in a high gear.

- Keep your tires inflated at the recommended pressure. This will significantly reduce the rolling resistance of your tires and require less power to propel the bicycle.

- Only bring the necessary equipment to keep your overall weight as low as possible.

- Always charge your battery according to the instructions described in section **Charging the battery** of this manual to extend its life and performance.



*It is recommended that you plan your ride to make sure you can make it back home on a single charge or have a charging stop planned in advance.*

# Using Your Power Assisted Bicycle

## General handling instructions

### Handling a power assisted bicycle

Remove the battery from the bicycle before doing the following:

- Transporting your bicycle inside of your vehicle or on a bicycle rack.
- Performing mechanical adjustments or maintenance on your bicycle.
- Shipping your bicycle overseas or even nationally with a transport company.

Remove the LCD display unit if packing the bicycle for travelling in a train or airplane to prevent damage to these components.



*Power assisted bicycles are considerably heavier than regular bicycles, therefore you should take extra caution before lifting your bicycle and use a proper lifting technique in order to not hurt your back.*



*If you are using a bicycle rack to transport your power assisted bicycle on your vehicle, make sure it can support the bicycle's weight.*



*Do not move your bicycle while the battery is connected and charging to prevent damage to the power cord and connections.*



*Your bicycle's "Walk" mode is designed to help you push your bicycle uphill. See section **Walk mode**, to learn how to use this function.*



*Always advise shipping companies that you are shipping dangerous goods and follow their requirements for packaging, or ask your bicycle dealer on recommendations regarding the packaging of your battery for transport.*

## Specific riding manoeuvres

There are some manoeuvres that should be avoided when riding a power assisted bicycle. A sudden ignition of the power assist system in an unexpected situation can cause the bicycle to accelerate when it is not required and handle erratically. In the following riding situations, it is recommended not to put pressure on the pedals to avoid a sudden acceleration from the power assist system:

- While walking beside the bicycle.
- While taking a curve at high speed.
- While riding on a patch of water, mud, snow, ice, or any slippery surface.
- While lifting the front wheel up to clear an obstacle.

## Handling the battery



Never submerge the battery in water and avoid washing it with a high-pressure washer. Although it has been designed to be water resistant, the battery's shell is not fully sealed.



Never attempt to modify or disassemble the battery. This could lead to serious injuries, cause serious damage and will void the manufacturer's warranty. Only a qualified bicycle technician should perform repair or maintenance on any parts of the power assist system.



Only use genuine parts provided by the manufacturer to charge the battery and always follow the charging instructions and warnings.



Do not place the battery near heat sources or throw in fire.



To prevent battery leakage, do not leave your power assisted bicycle or battery under direct sunlight for prolonged periods or inside a vehicle on a hot day.



If a battery has suffered a strong impact it may be damaged. You should have it checked by a qualified dealer to make sure it is safe to use before riding your power assisted bicycle again.



Always respect the battery's operating temperature limits described in section **Technical details.**



If the battery starts leaking, stop using it immediately and contact a qualified dealer for instructions.



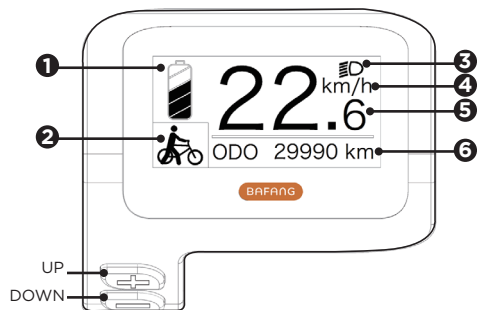
If leakage from the battery occurs, avoid touching it as it is corrosive. If the liquid comes in contact with your clothes, wash them with clean water. If the liquid gets on your skin, wash thoroughly with water. Additionally, if it comes in contact with your eyes, do not rub but wash thoroughly under clean water and contact a physician.




When charging your battery, make sure the connectors are clean and free of water or dirt before connecting the charger.



The warning labels on the battery and charger present important information for your safety. Make sure to follow the instructions carefully.



### LCD display unit

1. Display of battery capacity in real time
2. Support level
3. The display shows this symbol , when the backlight is turned on
4. Unit of speed
5. Digital speed display
6. Trip: Daily kilometres (TRIP)  
Total kilometres (ODO)  
Top speed (MAX)  
Average speed (AVG)  
Remaining distance (RANGE)  
Energy consumption (CALORIES)  
Output power (POWER)  
Travel time (TIME)

### Turning the power assist system on



Do not turn the power assist system on until you have mounted the bicycle and are seated properly with at least one foot on the ground. An unexpected ignition of the power assistance while mounting the bicycle can result in serious injuries.




This power assist system has an auto shut off function. If there is no operation or input from the buttons on the LCD display for some time, the LCD display unit will shut down automatically.

#### 1. First turn the battery power on

- Press the power button on top of the battery. LED indicators will light up and show battery charge level.

#### 2. Then turn the LCD display on

- Press and hold the LCD's power button  for 2 seconds. LCD display will power up.



Always turn the battery on before turning the LCD display on. LCD display will not power up if the battery power is not on.





If the error logo shows up when the LCD display lights up, do not ride your bicycle. Contact a qualified dealer to have your power assist system checked.

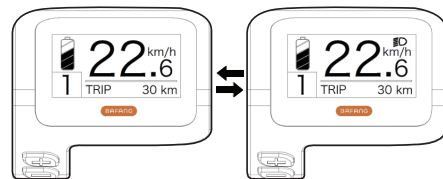
### Using the LCD display unit

Position the LCD display facing up, next to your grip so you can reach it with your thumb.


- Press and hold power button  for 2 seconds to turn the LCD display on or off.

### Backlighting

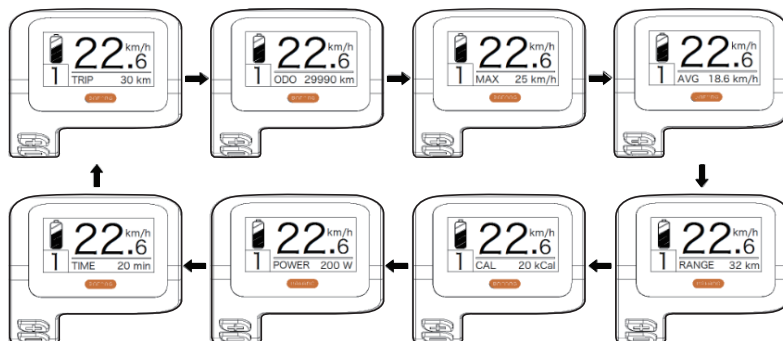
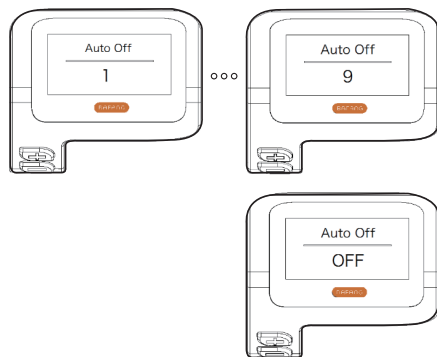
Hold the  button (>2 s) to activate the backlighting of the LCD display. Hold the  button (>2 s) again to turn off the light. The brightness of the backlight can be set in the display settings "brightness". See section **Brightness display** for full details.




## Turning the system ON/OFF

Press and hold  (>2 s) on the display to turn on the system. Press and hold (>2 s) again to turn off the system.

If the automatic shutdown time is set to the default time of five minutes (see **Auto off** for details on how to set for a different length of time or to turn off this function), the display will automatically turn off when it has not been in use for five minutes.









## Display mode selection

Briefly press the  (<0.5 s) to see the different trip modes.

- Trip daily kilometres (TRIP)
- Total kilometres (ODO)
- Maximum speed (MAX)
- Average speed (AVG)
- Remaining distance (RANGE)
- Energy consumption (CALORIES)
- Output power (POWER)
- Travel time (TIME)

## Battery capacity indicator

The battery capacity is shown in the top left of the display. The number of bars represents the remaining capacity of the battery as a percentage (as shown below).



Capacity Range	Indicator
80 – 100%	
60 – 80%	
40 – 80%	
20 – 40%	
5 – 20%	
<5%	 blinking

## Selecting a power assistance mode

Once the system is powered up, you may want to select a higher or lower power assistance mode. This will change the assistance level that the system gives you based on the pressure you put on the pedals while riding.





It is recommended to start off with the lowest level of assistance and increase it gradually if needed. Doing so will offer a much smoother acceleration, helping you keep control over your speed as well as saving the battery's life.

Keep the assistance level lower while riding casually on flat surfaces. Increase the assistance level when approaching an incline to help you climb with less effort. If you wish to walk beside the bicycle on an incline, or if the bicycle is heavy to push because of the load it is carrying, you may want to use the Walk mode that will make the bicycle self-propel at a speed of 5 km/h (3 mph).

When the display is turned on, press the  or  button (<0.5 s) to switch the support level: the lowest level is 0; the highest level is 5. When the system is switched on, the support level starts at level 1. There is no power assist at level 0. See **Power assist modes** for information on each mode.



### Walk mode

Walk mode can only be activated while standing beside your power assisted bicycle. To activate: press the  button until this  symbol appears. Press and hold down the  button while the symbol is displayed to activate walk mode. The symbol  will blink and the power assisted bicycle moves approximately 5 km/h (3 mph). When the button is released, the motor stops automatically and switches back to level 0.



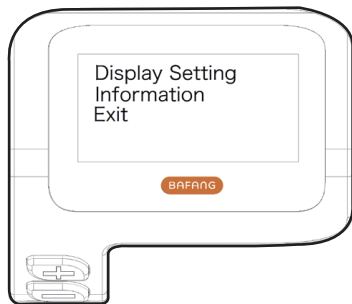
*Switching to walk mode will instantly ignite the motor and propel the bicycle to a speed of 5 km/h (3 mph) even with no pressure on the pedals. Make sure you are holding your bicycle steadily and that the path in front of your bicycle is clear. Walk mode will automatically shut down once you release the button.*



# Settings Menu

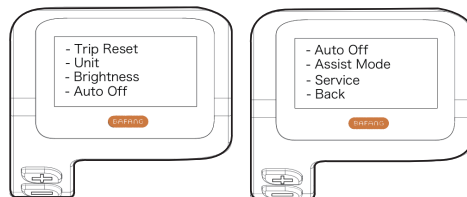
After the display is turned on, press and hold the **+** and **-** buttons at the same time to enter into the settings menu. By pressing the **+** or **-** button (<0.5 s), you can highlight and select Display Setting, Information, or Exit. Then press the **U** button (<0.5 s) to confirm your selected option.

Highlight Exit and press the **U** button (<0.5 s) to return to the main menu, or if you are in the Display Setting menu, highlight Back and press (<0.5 s) the **U** button (<0.5 s) to return to the main menu from the settings interface.



## Display setting

Press the **+** or **-** button (<0.5 s) and highlight Display Setting, and then briefly press the **U** button (<0.5 s) to access the following selections.



## Trip reset/reset mileage

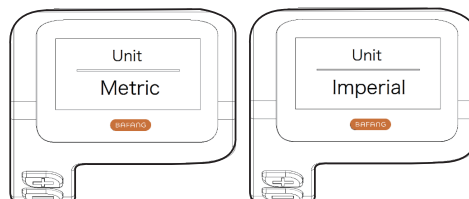
Press the **+** or **-** button (<0.5 s) to highlight Trip Reset in the display setting menu, and then press **U** button (<0.5 s) to select. Then with the **+** or **-** button choose between "YES" or "NO".

Once you have chosen your desired selection, press the **U** button (<0.5 s) to save and exit to the display setting menu.



## Unit selections in km/miles

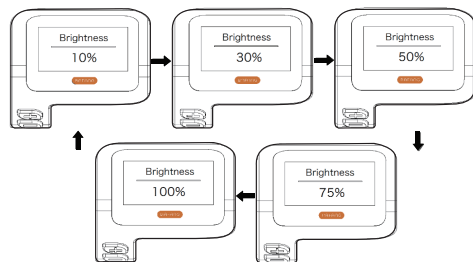
Press the **+** or **-** button (<0.5 s) to highlight Unit in the display setting menu, and then press **U** button (<0.5 s) to select. Then with the **+** or **-** button choose between "Metric" (kilometre) or "Imperial" (miles). Once you have chosen your desired unit, press the button (<0.5 s) to save and exit to the display setting menu.



### Brightness display

Press the  $\oplus$  or  $\ominus$  button (<0.5 s) to highlight Brightness in the display setting menu, and then press  $\odot$  button (<0.5 s) to select.

Then with the  $\oplus$  or  $\ominus$  button choose between 10%–30%–50%–75%–100%. Once you have chosen your desired selection, press the  $\odot$  button (<0.5 s) to save and exit to the display setting menu.



### Auto off

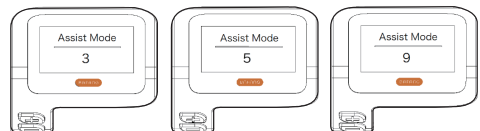
Press the  $\oplus$  or  $\ominus$  button (<0.5 s) to highlight Auto Off in the display setting menu, and then press  $\odot$  button (<0.5 s) to select.

Then with the  $\oplus$  or  $\ominus$  button choose between 1/2/3/4/5/6/7/8/9/OFF. (The numbers are measured in minutes.) Once you have chosen your desired selection, press the  $\odot$  button (<0.5 s) to save and exit to the display setting menu.



### Assist mode: set number of support levels

Press the  $\oplus$  or  $\ominus$  button (<0.5 s) to highlight Assist Mode in the display setting menu, and then press  $\odot$  button (<0.5 s) to select either "3", "5" or "9" (the number of support levels). Once you have chosen your desired number of support levels, press the  $\odot$  button (<0.5 s) to save and exit to the display setting menu.



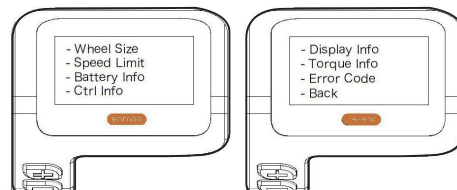
**Please note:** The total amount of power available from the motor will be the same whether you choose 3, 5 or 9. This setting will change how the power will be distributed between the different levels of support.

### Service

The service section is to be used by a servicing dealer.

### Information

Once the display is turned on, press and hold the  $\oplus$  and  $\ominus$  buttons (at the same time) to enter into the settings menu. Press the  $\oplus$  or  $\ominus$  button (<0.5 s) to select Information, then press the  $\odot$  button (<0.5 s) to confirm and access the following selections.



### Wheel size

Press the **+** or **-** button (<0.5 s) to highlight Wheel Size, then press the **U** button (<0.5 s) to confirm and view the wheel size.

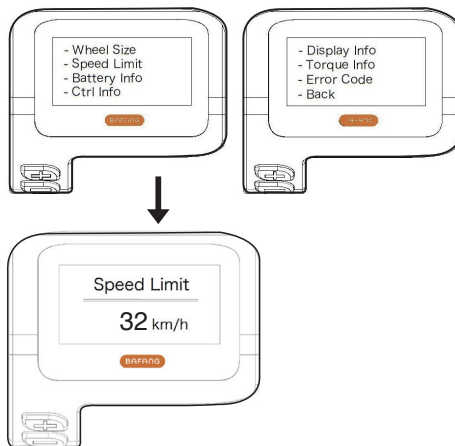
To return, press the **U** button (<0.5 s) to exit back to the information menu. This information cannot be changed; this is only for information, about the power assisted bicycle.



### Speed limit, battery info, ctrl info, display info, torque info

Press the **+** or **-** button (<0.5 s) to highlight Speed Limit, Battery Info, Ctrl Info, Display Info or Torque Info, then press the **U** button (<0.5 s) to confirm and view the required information.

To return, press the **U** button (<0.5 s) to exit back to the Information menu. This information cannot be changed; this is only for information about the power assisted bicycle.



### Error code

Press the **+** or **-** button (<0.5 s) to highlight Error Code then press the **U** button (<0.5 s) to confirm.

Now press the **+** or **-** button (<0.5 s) to view a list of error codes for the power assisted bicycle. It can show information for the last ten errors experienced by the power assisted bicycle. The error code "00" means that there is no error.

To return, press the **U** button (<0.5 s) to exit back to the Information menu.



# Battery

## Removing or inserting the battery

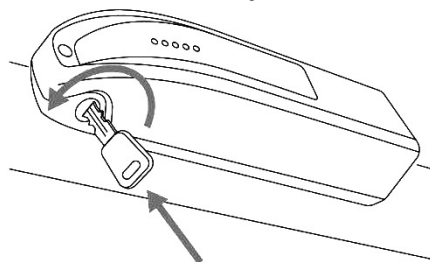


*Your key is needed to lock the battery to prevent it from unintentional detachment or from theft.*

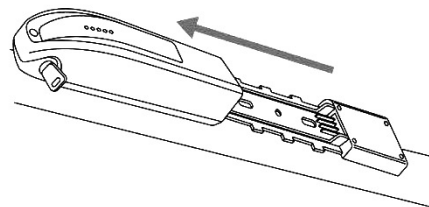


*Put the provided spare key in a safe place in the event that you lose the first key. Take note of the key number that was provided to you along with your key set to make a new spare if needed.*

### To remove the battery:

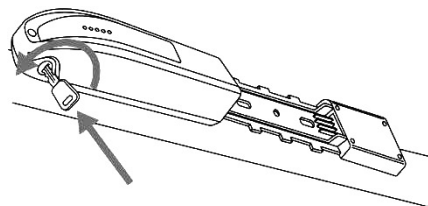


- Insert the key into the key lock of the battery.
- Turn the key half a turn, counter-clockwise (to the left) to unlock the battery.

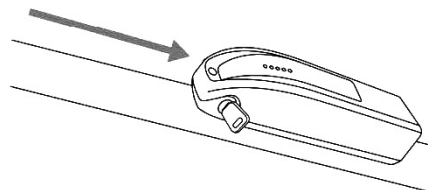


- Firmly push the battery along the battery holder bracket towards the front, being careful not to hit the bike frame.

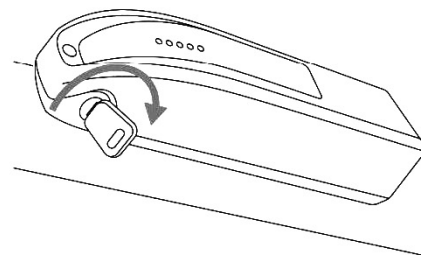
### To insert the battery:



- Insert the key into the key lock of the battery.
- Turn the key half a turn, counter-clockwise (to the left) to unlock the battery.



- Check the battery holder bracket to ensure there isn't any water accumulation. Then align and firmly push the battery along the battery holder bracket towards the rear.



- Turn the key half a turn, clockwise (to the right) to lock the battery in position.

## Charging the battery



*It is recommended to remove the battery from your bicycle before charging it, but it is also possible to charge the battery while the battery is still on the bicycle. In that situation, however, make sure it is resting in a stable position that won't allow the bicycle to move or fall during the charging process.*

### To charge the battery:

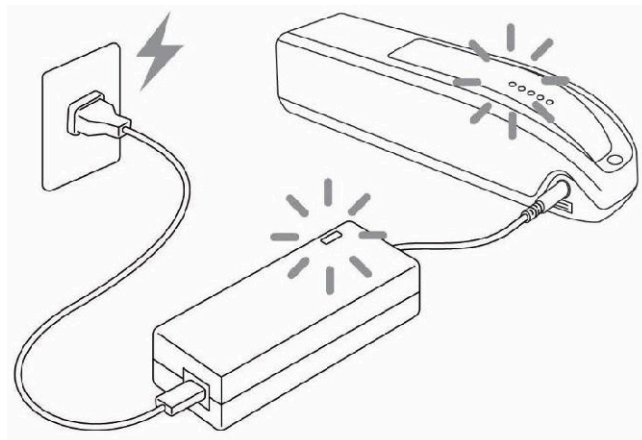
- Connect the AC power plug into the charger.
- Plug the AC power plug into an electrical outlet. Check that the LED indicator on the charger lights up to confirm that power is going through.
- Lift the rubber protector cap and connect the charging plug into the socket on the battery.
- Check that the LED indicators on the battery are flashing to confirm that charging is underway.
- Let battery charge until it is fully charged.
- Pull the charging plug from the battery and replace the rubber protector cap.



*If the battery is not fully charged after 7 hours, unplug the battery and contact a qualified dealer to have the battery checked.*



*A battery will wear out with age. Following the best charging and storing procedure will extend its life to a maximum. However, when an abnormally short battery capacity after a full charge is observed, it is likely that it needs to be replaced.*



# Maintenance and Storage

Besides your bicycle's regular mechanical maintenance, for which the requirements can be seen on the user manual that was provided with your bicycle, the rider does not need to provide any maintenance specifically for the power assist system. Do not attempt to open any of the power assist system components. All service or repair should only be carried out by a qualified bicycle technician.



*Always turn off the power assist system before proceeding to regular bicycle inspection, maintenance, or repair.*

## Cleaning



*The bicycle user manual that was provided to you separately contains a more detailed bicycle washing procedure and recommendations. It is suggested to refer to it.*



*Never submerge any of the components of the power assist system in water.*

Remove the battery and wash your bicycle with water and mild soap. Do not use a high-pressure water hose to prevent water from getting inside the components.

Make sure to keep the battery unit contact prongs and holders clean. Use a damp cloth to remove grit, dust, mud, etc.

## Storage

A discharged battery stored for a long period can be permanently damaged. To prevent such a situation, the following should be observed when storing your power assisted bicycle for a long period:

- Charge the battery to around 75% of full capacity.
- Remove the battery from the bicycle.
- Store the battery in a dry, temperature-controlled room away from humidity at room temperature (around 20°C/68°F).
- Check battery charge after 6 months of storage and charge to around 75% again.



*Do not store the battery in a cold environment, even for a short period. If you must leave or store your power assisted bicycle outside or in a place that is not heated, you should remove the battery and store it inside at room temperature. Cold temperature can damage the battery.*



*Store the battery away from high heat sources such as direct sunlight or inside a vehicle during summer.*



*Do not leave the battery unit connected to the charger for periods longer than the normal charging period.*

## Disposal

Check with your local waste management services for the proper way to dispose of the components of the power assist system. Do not dispose of these components with other household waste.

Check for a local battery recycling program to dispose of the battery.

# Troubleshooting



## DO NOT RETURN TO STORE!

For service, troubleshooting and questions, please contact  
**1-800-268-6407**



*Don't attempt to alter or disassemble any component of the power assist system. Maintenance should only be performed by a qualified bicycle technician.*

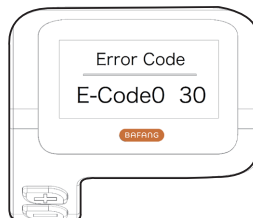
This section describes, only for reference purposes, some malfunctions that could happen related to the power assist system.

For other mechanical issues not related to the power assist system, such as a derailleurs or brakes malfunction, please refer to Troubleshooting section of your bicycle's owner's manual provided separately at the time of purchase.

## System malfunction sign

The LCD display unit can communicate a problem related to the power assist system through an error code.

If a malfunction is detected, the system malfunction sign will appear on the LCD display unit and an error code will be displayed instead of the current speed function as shown below:




If a system malfunction sign and an error code appear, please contact a qualified bicycle technician or get in touch with our customer service for instructions. Refer to the following most common error code list applicable to your power assisted bicycle on the following pages.

## Checking the speed sensor unit

- Check and make sure the speed sensor unit is present and that it is properly attached to the frame.
- Check and make sure the magnet is present and properly attached to the wheel.
- Check and make sure the magnet is properly positioned to be detected by the speed sensor unit when the wheel is turning. The magnet should be positioned in a way that it comes within 15 mm (5/8") of the speed sensor unit.

## Error codes

 The display can show the errors that may occur with a power assisted bicycle. If an error is detected, one of the following error codes will be displayed. **Note:** Please read the description of the error code carefully. If you see the error code, restart the system first. If the problem is not resolved, please contact your dealer.

Error	Definition	Solution
07	Over-voltage protection.	1. Remove the battery. 2. Re-insert the battery. 3. If the problem persists, please contact your retailer.
08	Error with the hall sensor signal inside the motor.	Please contact your retailer.
09	Error with the engine phases.	Please contact your retailer.
10	The temperature inside the engine has reached its maximum protection value.	1. Turn off the system and allow the power assisted bicycle to cool down. 2. If the problem persists, please contact your retailer.
11	The temperature sensor inside the motor has an error.	Please contact your retailer.
12	Error with the current sensor in the controller.	Please contact your retailer.
13	Error with the temperature sensor inside of the battery.	Please contact your retailer.



<b>Error</b>	<b>Definition</b>	<b>Solution</b>
14	The temperature inside the controller has reached its thermal cut-off value.	<ol style="list-style-type: none"> <li>1. Turn off the system and let the power assisted bicycle cool down.</li> <li>2. If the problem persists, please contact your retailer.</li> </ol>
15	Error with the temperature sensor inside the controller.	Please contact your retailer.
21	Speed sensor error	<ol style="list-style-type: none"> <li>1. Restart the system</li> <li>2. Check that the magnet attached to the spoke is aligned with the speed sensor and that the distance is around 15 mm (5/8").</li> <li>3. Check that the speed sensor connector is connected correctly.</li> <li>4. If the error persists, please contact your retailer.</li> </ol>
25	Torque signal error	<ol style="list-style-type: none"> <li>1. Check that all connections are connected correctly.</li> <li>2. If the error persists, please contact your retailer.</li> </ol>
26	Speed signal of the torque sensor has an error.	<ol style="list-style-type: none"> <li>1. Check the connector from the speed sensor to make sure it is connected correctly.</li> <li>2. Check the speed sensor for signs of damage.</li> <li>3. If the problem persists, please contact your retailer.</li> </ol>
27	Over-current from controller.	Please contact your retailer.
30	Communication problem.	<ol style="list-style-type: none"> <li>1. Check all connections are correctly connected.</li> <li>2. If the error persists, please contact your retailer.</li> </ol>

## Troubleshooting guide

Problem	Possible Causes	Solution
Pedalling feels stiff.	<ul style="list-style-type: none"> <li>• Improper tire pressure (may be too low).</li> <li>• Either the LCD display or battery or both turned off.</li> <li>• Battery is low.</li> </ul>	<ul style="list-style-type: none"> <li>• Add air.</li> <li>• Make sure the LCD display is illuminated and the lights are on the battery.</li> <li>• Charge battery.</li> </ul>
Pedal assist is not activated.	<ul style="list-style-type: none"> <li>• Battery is empty.</li> <li>• Are you overusing the battery? Is it above or below the operating temperature, and/or with excessive cargo weight?</li> <li>• You're pedalling over 32 km/h (20 mph).</li> <li>• You're not pedalling.</li> <li>• Internal connections may be loose.</li> <li>• Either the LCD display or battery or both are turned off.</li> <li>• Motor temperature exceeds 38°C (100°F).</li> </ul>	<ul style="list-style-type: none"> <li>• Check the battery and charge if needed.</li> <li>• Turn off the battery and bring indoors to cool off. Try again later.</li> <li>• Check the speedometer; assistance is only provided up to 32 km/h (20 mph).</li> <li>• You must pedal for the power-assist to activate.</li> <li>• Contact a qualified bicycle technician or place of purchase.</li> <li>• Make sure the LCD display is illuminated and the lights are on the battery.</li> <li>• Turn off the battery and bring indoors to cool off. Try again later.</li> </ul>
The battery loses its charge very fast.	<ul style="list-style-type: none"> <li>• The battery may be almost expired.</li> </ul>	<ul style="list-style-type: none"> <li>• Contact the place of purchase to order a new battery.</li> </ul>
The battery won't charge.	<ul style="list-style-type: none"> <li>• Are the charger cords connected properly to the battery and the wall?</li> </ul>	<ul style="list-style-type: none"> <li>• Make sure plugs are clean and fully connected. If the battery still won't charge, contact the place of purchase.</li> </ul>

<b>Problem</b>	<b>Possible Causes</b>	<b>Solution</b>
There is an odour, smoke or fluid coming from the battery.		<ul style="list-style-type: none"> <li>• Stop using the battery and contact the place of purchase.</li> </ul>
LCD display won't turn on after pressing power button.	<ul style="list-style-type: none"> <li>• Is the power on the battery turned on?</li> </ul>	<ul style="list-style-type: none"> <li>• Make sure the battery is charged and turned on.</li> </ul>
The travelling distance seems to be short per charge.	<ul style="list-style-type: none"> <li>• This can depend on the amount of cargo weight, road, wind, hills and temperature conditions.</li> <li>• The battery is towards the end of its life after many charges.</li> </ul>	<ul style="list-style-type: none"> <li>• This is normal. If the battery is empty, recharge it.</li> <li>• Replace the battery with a new one.</li> </ul>
While riding; the speed is not registering properly on the LCD display, or showing a speed of 0 km/h (0 mph).	<ul style="list-style-type: none"> <li>• The speed sensor is loose or disconnected.</li> <li>• The magnet is not lined up with the + sign on the speed sensor or more than 15 mm (5/8") away from the speed sensor.</li> </ul>	<ul style="list-style-type: none"> <li>• Connect speed sensor securely.</li> <li>• Secure magnet to spoke within 15 mm (5/8") of speed sensor. If magnet is lost or broken, contact the place of purchase to order a replacement.</li> </ul>