

# *impel*

*E-bike manual*

**cantero**

DESIGNED FOR MORE





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# 1. Introduction

Thank you for choosing your new Carrera Impel e-bike.

We sincerely hope that you will enjoy your ride.

Please read all the safety warnings and instructions carefully, failure to follow the warnings and instructions may result in death or severe injuries.

- This user's manual is primarily intended for the owner to operate the product.
- Save this manual for future reference. A Carrera bike manual is also included.

## 1.1. Important notices

- Read and observe the safety warnings and directions contained in all the Carrera e-bike operating instructions.
- Users who are not professionally trained for bicycle assembly should not attempt to install, disassemble, or modify components themselves.
- If you have any concerns about the operation of the e-bike system or its components, or if you suspect damage to the battery, visit your nearest Halfords storer immediately for an inspection.
- The term "battery" is used in these instructions to mean all original batteries.
- Do not throw away this user's manual or remove any safety warning labels or instructions from any e-bike system components.

### ► About Safety Symbols

- This manual includes many "**WARNING**", "**CAUTION**" and "**NOTE**" labels; these labels refer to the safe methods to use, maintain, store, and check your e-bike.
- When a safety warning symbol is marked with "**WARNING**" text, it means failure to comply with the instructions may result in dangerous situations of death or severe injuries.
- When a safety warning symbol is marked with "**CAUTION**" text, it means failure to comply with the instructions may result in minor, moderate injury, damage to the bicycle, or the voiding of your warranty.

### ► About Images

- The e-bike shown in this manual may differ visually from your Carrera e-bike. All information provided in this manual is still applicable to your e-bike.

## 1.2. Safety instructions

### **Instructions Pertaining To A Risk Of Fire, Electric Shock, Or Personal Injury**

#### **⚠ WARNINGS**

*When using Carrera e-bikes, basic precautions should always be followed, including the following:*

- *Read all the instructions before operating the e-bike system.*
- *To reduce the risk of injury, close supervision is necessary when the e-bike is used near children.*
- *Do not put fingers or hands into any e-bike component or touch the cable terminal with bare hands.*

**⚠ WARNINGS, CONTINUED.**

- *Do not use the e-bike if any flexible power cord or output cable is frayed, has worn insulation, or shows any other signs of damage.*
- *Always check the charger, cables, and power cord for any damage before charging the battery.*
- *Only charge the battery using an original charger supplied by Halfords.*
- *Do not immerse the e-bike or any e-bike component in water.*
- *Do not place the e-bike or any e-bike system component (like the charger) near hot, flammable objects or materials.*
- *The e-bike system parts are not intended to be used at ambient temperatures below -10°C (14°F) or above temperatures of 45°C (113°F).*
- *Defective e-bike system parts may only be replaced with identical, original parts supplied by Halfords.*
- *Do not modify your e-bike system or fit any other equipment to increase the power or maximum speed of your e-bike system.*

**1.3. Riding safety**

- The e-bike system provides electrical riding support. It will help you to cycle easily. Based on your riding speed and the amount of pedaling force the e-bike system will provide proper support in your efforts throughout your journey.
- When riding an e-bike, make sure that you are fully familiar with the starting-off characteristics of the e-bike before riding it on roads with several vehicle lanes and pedestrian footpaths.
- When you start riding, be aware of the riding support that will instantly be provided by the assist system. We advise to drive off in a straight line, using the lowest assist level.
- Do not allow yourself to be distracted by the console while riding, this increases the risk of being involved in an accident.
- When you switch off the riding support, selected level 0 (with the system switched on), or when the battery is empty, the e-bike will ride like a regular, non-electric powered bicycle.
- The e-bike system is designed to provide riding support up to 25 km/h (15.5 mph). Do not modify your e-bike or fit any other equipment to increase the power or maximum speed.

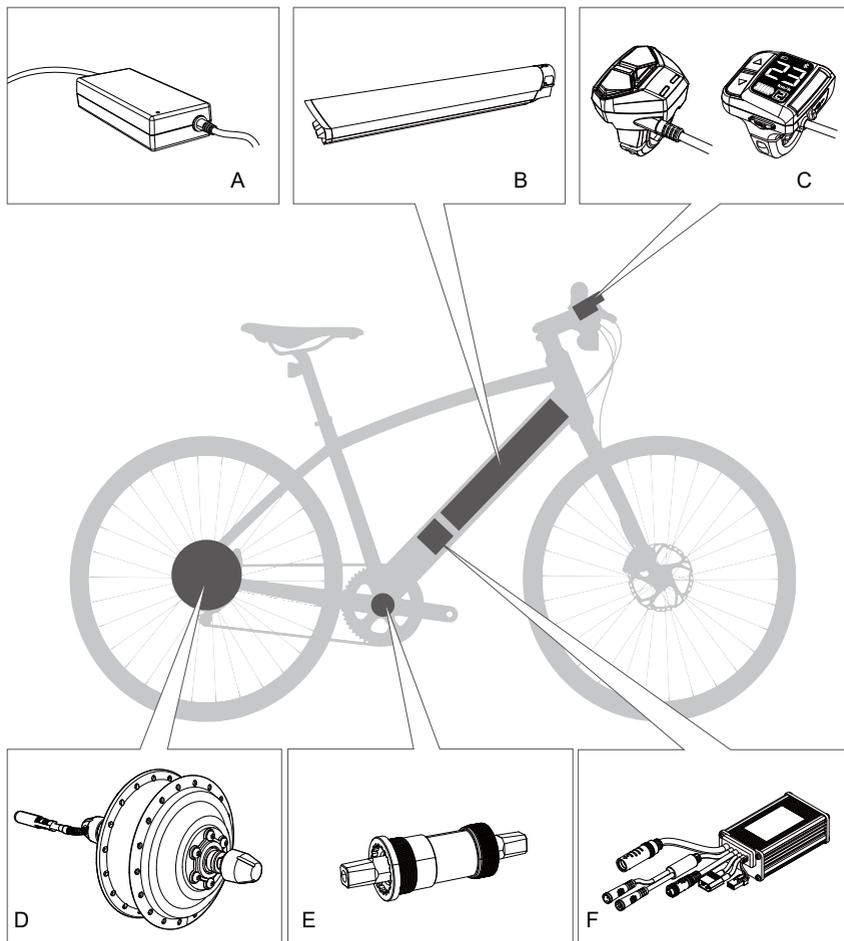
**⚠ WARNINGS**

- *When the assist system is switched on and an assist level is selected, the riding support is activated as soon as you step onto the pedals. You should be seated on the e-bike and engage at least one brake before starting to pedal.*
- *With the e-bike system switched on, do not put one foot on a pedal and throw another leg over the bicycle, as it could accelerate unexpectedly. Failure to follow this warning may result in serious personal injury or even death.*

## 2. E-bike overview

The Carrera Impel e-bike includes an electric drive and control unit; it features:

- Silent and powerful electric motor performance.
- Multi-sensor technology providing excellent, precise and natural feeling riding support.
- Easy to operate and ergonomic console providing a visual clarity of the e-bike status.



- A. Battery Charger - 2A / 4A  
B. Battery - BS-A370 / BS-A500  
C. Console - LED Multi / LCD Compact EX

- D. Motor - MRT-A250 / MRC-A250  
E. Sensor - ST-SQ-1  
F. Controller - DU-B250+

### 3. Drive unit instructions

Your e-bike is equipped with a 250 Watt rear-wheel electric motor, which forms the hub of the rear wheel and also provides the electric riding assistance.

#### **⚠ CAUTION**

*Do not dismantle the hub motor, the hub motor should only be repaired or maintained by a certified mechanic, using genuine spare parts from Halfords.*

#### 3.1. Motor safety instructions

- Do not allow the motor to suffer any mechanical or physical impacts or make any internal modifications.
- The motor is built with components that are sealed against dust and splashed water and can safely operate in rain and other adverse weather conditions.  
However, do not deliberately immerse the rear wheel in water or clean it with pressured water, also make sure your e-bike will get fully dry after riding in wet weather.

#### **⚠ WARNINGS**

- *Do not modify any components that are part of the bicycle drivetrain. Changing components could cause damage or overloading of the hub motor, and may lead to serious injury or death.*
- *Do not obstruct pedals, cranks, or wheels when the e-bike system is on.  
Wrong operations could cause damage or overloading of the hub motor, and may lead to serious injury or death.*
- *The motor can heat up during long uphill runs. After riding, do not touch the metal housing of the hub motor with your bare hands or legs.*

#### 3.2. Technical data of the hub motor

Item	Specification	
Product model	MRT-A250	MRC-A250
Rated voltage	36 V	
Rated power	250 W	
Max. torque at drive	40 Nm	
Operating temperature	-10°C (14°F) to 45°C (113°F)	
Storage temperature	-20°C (-4°F) to 70°C (158°F)	
Protection rating	IP54	
Weight, approx.	2.7 kg (6 lbs)	2.9 kg (6.4 lbs)

## 4. Battery handling instructions

### **⚠ CAUTION**

*This Carrera e-bike is powered by a Lithium-Ion (Li-Ion) battery. Always read and adhere to the instruction manual before handling or charging the battery or when using the e-bike.*

### **⚠ WARNINGS**

- *If your battery or charger exhibits any signs of damage, do not use the bicycle and immediately bring it to your nearest Halfords store for inspection.*
- *Always turn off the e-bike system when not in use and/or when working on it.*
- *Always remove the battery during maintenance.*

### 4.1. Battery safety instructions

- Do not allow the battery to suffer any mechanical or physical impacts or make any internal modifications.
- If the area where the battery is installed (downtube) has any visible damage, do not continue using the e-bike; otherwise, there will be a risk of explosion or fire and may result in severe injuries or death.
- If the battery fluid leaked out due to damage or improper usage, avoid touching the leaked battery fluid. If you accidentally touched the battery fluid, please clean with large amounts of water immediately. If the battery fluid came in contact with your eyes, please seek further help from physicians. Leaking battery fluids may cause burns or irritations to the skin.
- Store the e-bike in a dry and well-ventilated environment; keep the e-bike away from humid environments and water sources for battery safety.
- Keep the battery charging socket away from the contact of paper clips, coins, keys, nail clippers, screws, or other objects that can generate metallic attraction, to avoid a short circuit between the poles.

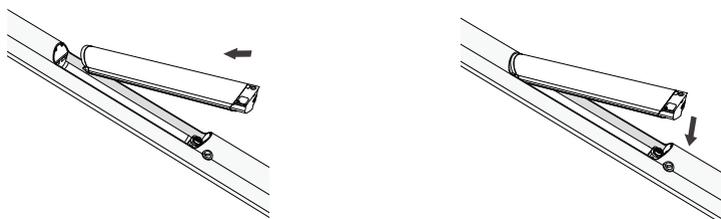
### 4.2. Technical data of the battery

Item	Specification	
Product model	BS-A370	BS-A500
Nominal capacity	10.2 Ah	13.8 Ah
Energy	367.2 Wh	496.8 Wh
Rated voltage	36V	
Operating temperature	-10°C (14°F) to 60°C (140°F)	
Storage temperature	1 month -20°C (-4°F) to 50°C (122°F)	
	3 months -20°C (-4°F) to 40°C (104°F)	
	1 year -20°C (-4°F) to 20°C (68°F)	
Permitted charging temperature range	0°C (32°F) to 45°C (113°F)	
Protection rating	IPX4	
Weight, approx.	2.6 kg (5.7 lbs)	2.5 kg (5.4 lbs)

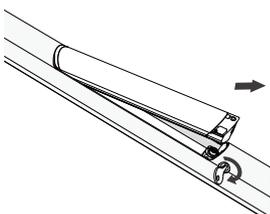
### 4.3. Battery removal and installation instructions

#### ⚠ CAUTIONS

- *Installing the battery carefully is necessary, do not strike it with any tool such as a hammer or wrenches.*
- *When storing the battery, please make sure to comply with the storage rules. Find further information in chapter 7 "Storage and transportation instruction."*
- Installation: Insert the battery from the non-discharge end first, then put the other end in. Complete the installation by pushing the battery to the end until you hear the click.

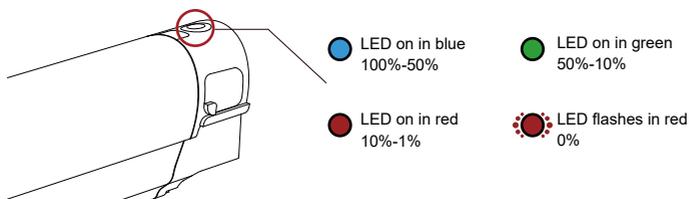


- Removal: Insert the key and turn it clockwise to lift the battery from the lock end.



### 4.4. Battery indicator

Hold the indication button for 5 seconds to show the LED indicator light. Each light color of the LED indicator corresponds to a different battery charge level.



## 5. E-bike operation - LED Multi

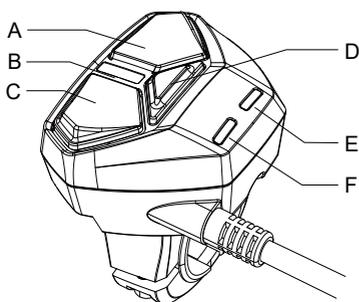
### ⚠ CAUTIONS

Before you ride:

- Regardless of your experience level, you should read the "Introduction" chapter of this Owner's Manual and carry out all important safety checks.
- The e-bike system can only be activated when the battery is sufficiently charged.

### 5.1. Console overview

Control the e-bike with the LED Multi console, including switching on/off, selecting the level of riding support, turn the lights on/off, and using the walk assistance function.



- A. Up button (Increase support level and switching on/off lights)
- B. Riding support/walk assist level indicator
- C. Down button (Decrease support level and walk assist)
- D. Power on/off button
- E. Battery charge status indicator
- F. Bluetooth/Error alert indicator

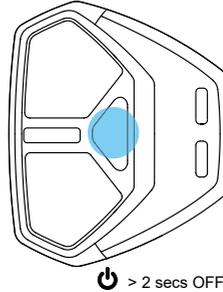
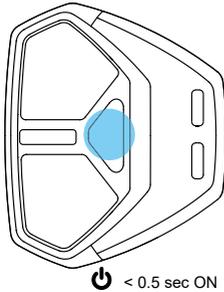
### 5.2. Technical data of the console

Item	Specification
Product model	LED Multi
Operating temperature	-10°C (14°F) to 60°C (140°F)
Storage temperature	-20°C (-4°F) to 70°C (158°F)
Protection rating	IPX5
Weight, approx.	< 0.05 kg (< 0.11 lbs)

### 5.3. Turning the e-bike on/off

- Single press the power button to switch on.
- Long press the power button to switch off.

Riding with the assist system turned off is like riding a normal, non-electric powered bicycle.



#### NOTES

- Always turn off the e-bike system after riding or when parking the e-bike.
- If the e-bike is not used and no buttons are pressed, the e-bike system will automatically turn off after six minutes to save power.

### 5.4. Select an assist level

Single press the up/down button to select the desired support level:

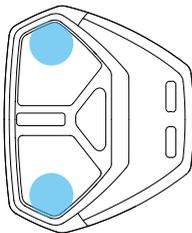
level 0 (no assistance), level 1 (approx. 140% assistance), level 2 (approx. 250% assistance), or maximum Level 3 (approx. 390% assistance).

#### ⚠ CAUTION

For safety reasons, always start riding at level 0 or level 1.

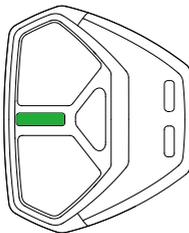
#### ⚠ WARNING

When learning to ride an e-bike, start at the lowest assist level and gradually increase levels.

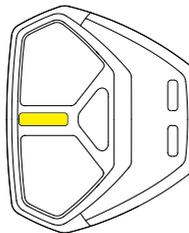


Support off (Level 0)

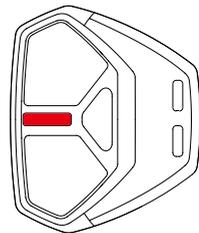
Short press (<0.5 secs)



Level 1 (140%)



Level 2 (250%)



Level 3 (390%)

### **⚠ WARNING**

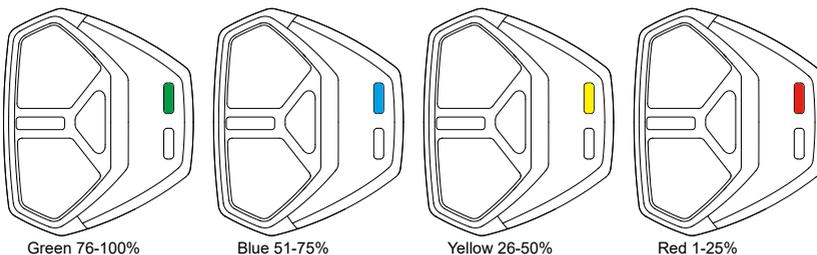
*It is strongly advised to ride away in a straight line with a low support level selected. Never select assistance level 2 or 3 while maneuvering or riding away in a sharp corner. The powerful reaction of the motor might cause the e-bike to surge forward into a sharp turn resulting in loss of balance.*

### **NOTES**

- *When the e-bike system is switched on and a support level is selected, the e-bike system is activated as soon as you start pedaling.*
- *The assist support modes affect how much support the assist system delivers based on your pedaling input.*
- *Generally, more support provides faster acceleration and easier climbing at the expense of shorter range. Lower assist levels that provide less support result in longer battery run times, longer range, and more control in situations where traction is limited.*
- *If your e-bike is equipped with gears, change gears appropriately to get, in addition to adjusting assist modes, the most use out of your battery.*
- *The e-bike drive output only supports to a maximum speed of 25 km/h (15.5 mph); as soon as you have reached this speed limit, the e-bike suspends the riding support, then automatically reactivates when your speed comes below this.*

## **5.5. Charge level indicator**

Each color of the LED on the console represents approximately 25% capacity.



- When the battery is almost empty, the LED indicator will turn into red; please charge the battery as soon as possible.
- When the battery is under 9%, the LED indicator will flash in red, please charge the battery immediately.

### **NOTE**

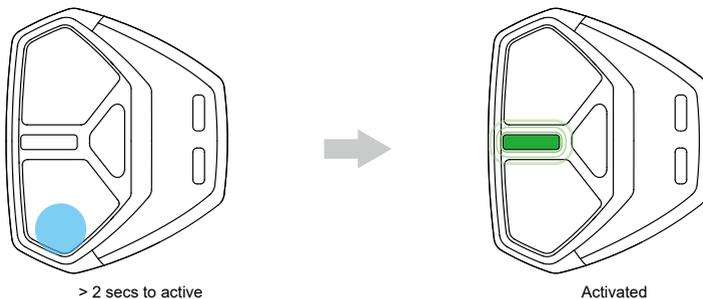
*At 4% charged, the riding support will stop.  
The remaining charge capacity is reserved to power the lights for up to two hours.*

## 5.6. Walk assistance

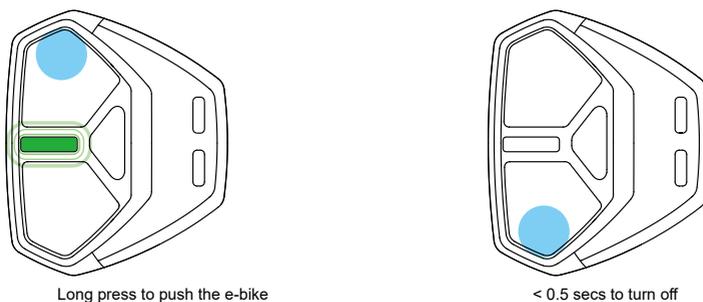
The walk assist mode can help you push your e-bike more easily, e.g. against a slope, with a maximum speed of up to 6 km/h (4 mph).

You can only enable the walk assistance when the system is switched on and you are pushing the e-bike.

- Long press and hold the “-” button on the console for two seconds to activate the walk assist mode.
- When walk assist mode activated, the assist level indicators on the console begin blinking in a waterfall pattern toward the front of the bike.



- Press and hold the “+” button to start the walk assist. As long as you are holding the “+” button, your e-bike will be propelled forward at a slow speed.
- Release the “+” button to stop pushing your e-bike.



- At the walk assist mode, if no buttons are pressed in 5 seconds, the walk assist mode will automatically turn off for safety.

### **⚠ WARNINGS**

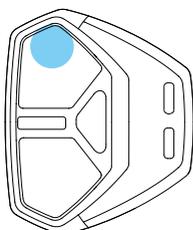
- *The walk assistance function may only be used when pushing the e-bike; make sure you are ready and stand steady before activating the walk assistance.*
- *Do not activate the walk assistance when you ride on the e-bike or if the wheels are not in contact with the ground.*

## 5.7. Turning the lights on/off

With the system switched on, long press the up button to turn on or off the lights (if the front and rear lights are powered by the assist system).

- If the charge indicator is flashing (at < 9% charge), the battery is almost empty. Charge the battery.
- At 4% charge, the riding support will stop.

The remaining charge is reserved to power the lights (if equipped; and powered by the assist system) for up to two hours.



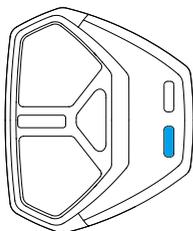
> 2 Secs

### NOTES

- *Be aware the lighting might not work due to an empty battery.*
- *An empty battery has a reserve of maximum two hours for lighting.*

## 5.8. Bluetooth connection

With the system switched on, bluetooth can be connected. When bluetooth is connected with the app, the bluetooth indicator turns to blue. The bluetooth indicator will turn white while disconnected.

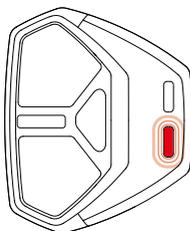


### NOTES

- *The bluetooth indicator light will turn back into white while bluetooth disconnected.*
- *To download the phone app, visit: [www.halfords.com/carreraimpelbikes](http://www.halfords.com/carreraimpelbikes)*

## 5.9. Error alert signal

If the error alert indicator is flashing red, please stop operating the system immediately and check chapter 8 "Troubleshooting" for further information and handling instructions. If the problem cannot be identified or solved, please contact your nearest Halfords store.



## 6. E-bike operation - LCD Compact EX

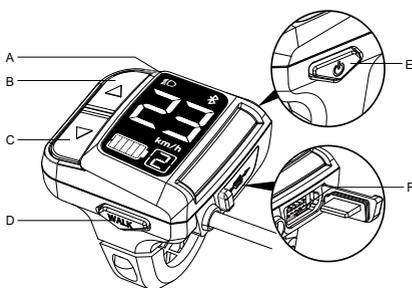
### ⚠ CAUTIONS

Before you ride:

- Regardless of your experience level, you should read the “Introduction” chapter of this Owner’s Manual and carry out all important safety checks.
- The e-bike system can only be activated when the battery is sufficiently charged.

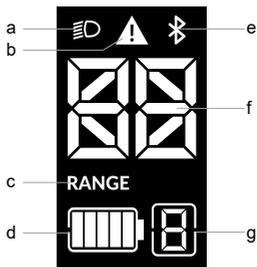
### 6.2. Console overview and display element

Control the e-bike with the LCD Compact EX console, including switching on/off, selecting the level of riding support, turn the lights on/off, and using the walk assistance function.



- A. Display screen
- B. Up & Increase support level button
- C. Down & Decrease support level button
- D. Walk-assist button
- E. Power on/off button
- F. USB connection/charging port

- a. Light
- b. Error indicator
- c. Display information type
- d. Battery Level
- e. Bluetooth status
- f. Speed/range
- g. Support level



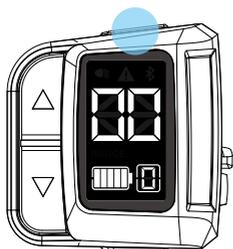
### 6.1. Technical data of the console

Item	Specification
Product model	LCD Compact EX
Operating temperature	-10°C (14°F) to 60°C (140°F)
Storage temperature	-20°C (-4°F) to 70°C (158°F)
Protection rating	IPX5
Weight, approx.	< 0.05 kg (< 0.11 lbs)

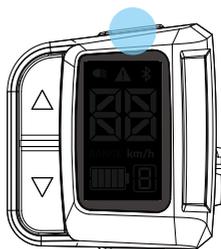
### 6.3. Turning the e-bike on/off

- Long press the power button to turn on/off.

Riding with the assist system turned off is like riding a normal, non-electric powered bicycle.



⏻ > 2 secs ON



⏻ > 2 secs OFF

#### NOTES

- Always turn off the e-bike system after riding or when parking the e-bike.
- If the e-bike is not used and no buttons are pressed, the e-bike system will automatically turn off after six minutes to save power.

### 6.4. Switch to speed display/range display

Short press the power button to switch information.



0 mph



15 mph



25 mph

Speed Display



Short press  
(< 0.5 secs)



Range Display



90 miles



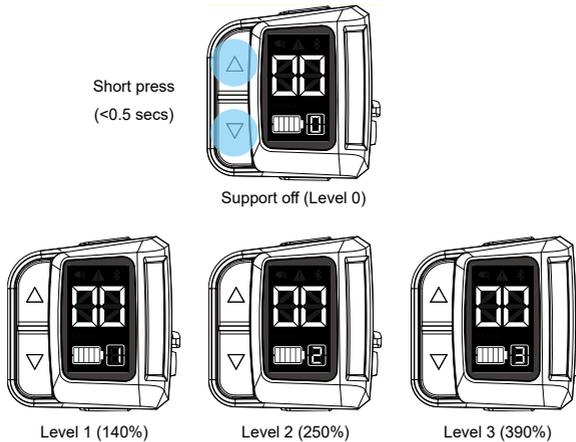
25 miles



When riding support Off  
range shows " - - "

## 6.5. Select an assist level

Single press the up/down button to select the desired support level: level 0 (no assistance), level 1 (approx. 140% assistance), level 2 (approx. 250% assistance), or maximum Level 3 (approx. 390% assistance).



### ⚠ CAUTION

For safety reasons, always start riding at level 0 or level 1 and gradually increasing the levels.

### ⚠ WARNING

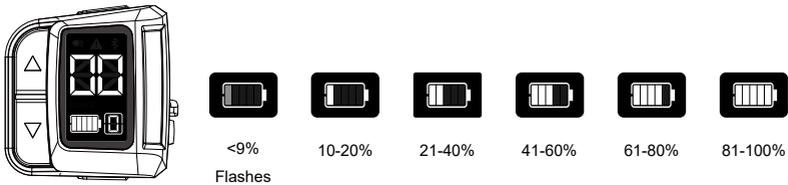
It is strongly advised to ride away in a straight line with a low support level selected. Never select assistance over level 2 while maneuvering or riding away in a sharp corner. The powerful reaction of the motor might cause the e-bike to surge forward into a sharp turn resulting in loss of balance.

### NOTES

- When the e-bike system is switched on and an support level is selected, the e-bike system is activated as soon as you start pedaling.
- The assist support modes affect how much support the assist system delivers based on your pedaling input.
- Generally, more support provides faster acceleration and easier climbing at the expense of shorter range. Lower assist levels that provide less support result in longer battery run times, longer range, and more control in situations where traction is limited.
- If your e-bike is equipped with gears, change gears appropriately, in addition to adjusting assist modes, to get the most use out of your battery.
- The e-bike drive output only supports to a maximum speed of 25 km/h (15.5 mph); as soon as you have reached this speed limit, the e-bike suspends the riding support, then automatically reactivates when your speed comes below this.

## 6.6. Charge level indicator

The battery status light keeps flashing while charging. Once the battery is fully charged, the battery status light will stop flashing.



- When the battery is empty, the console will turn off automatically; please charge the battery as soon as possible.
- When the battery is under 9%, the battery status light will keep flashing, please charge the battery immediately.

### NOTE

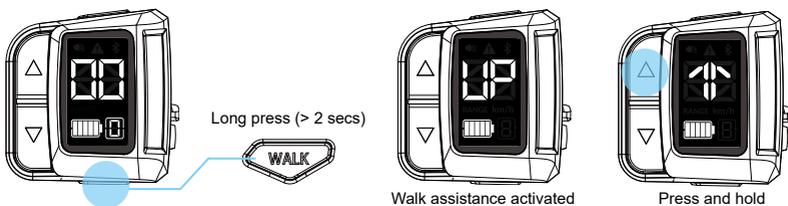
*At 4% charged, the riding support will stop. The remaining charge capacity is reserved to power the lights for up to two hours.*

## 6.7. Walk assistance

The walk assist mode can help you push your e-bike easily, e.g. against a slope, with a maximum speed of up to 6 km/h (4 mph).

You can only enable the walk assistance when the system is switched on and you are pushing the e-bike.

- Long press the “WALK” button on the console for two seconds to activate the walk assist mode.
- When walk assist mode activated, 'UP' word will be shown on the display.



- Press and hold the up button to start the walk assist. As long as you are holding the up button, your e-bike will be propelled forward at a slow speed.
- Release the up button to stop pushing your e-bike.
- If no buttons are pressed within 5 seconds in the walk assist mode, the system will return to general mode automatically for safety. Or if the 'down/walk' button is pressed in the walk assist mode, the system will also return to the general mode.

### **⚠ WARNINGS**

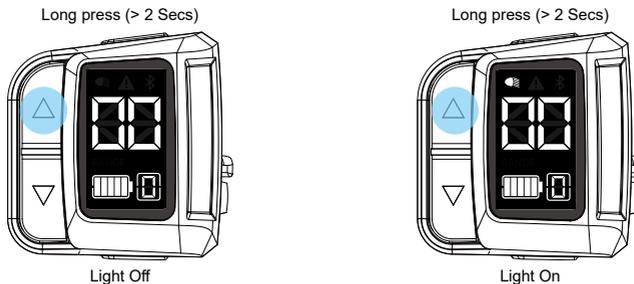
- *The walk assistance function may only be used when pushing the e-bike; make sure you are ready and stand steady before activating the walk assistance.*
- *Do not activate the walk assistance when you ride on the e-bike or if the wheels are not in contact with the ground.*

### **6.8. Turning the lights on/off**

With the system switched on, long press the up button to turn the lights on/off. The light indicator on the upper-left corner of the display will light up.

- If the charge indicator is flashing (at < 9% charge), the battery is almost empty. Charge the battery.
- At 4% charge, the riding support will stop.

The remaining charge is reserved to power the lights (if equipped; and powered by the assist system) for up to two hours.

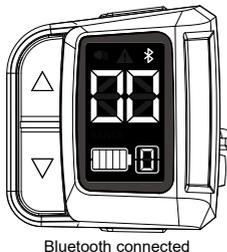


### **NOTES**

- *Be aware that lighting might not work due to an empty battery.*
- *An empty battery has a reserve of maximum two hours for lighting.*

### **6.9. Bluetooth connection**

With the system switched on, bluetooth can be connected. When bluetooth is connected with the app, the bluetooth indicator on the upper-right corner of display will light up.



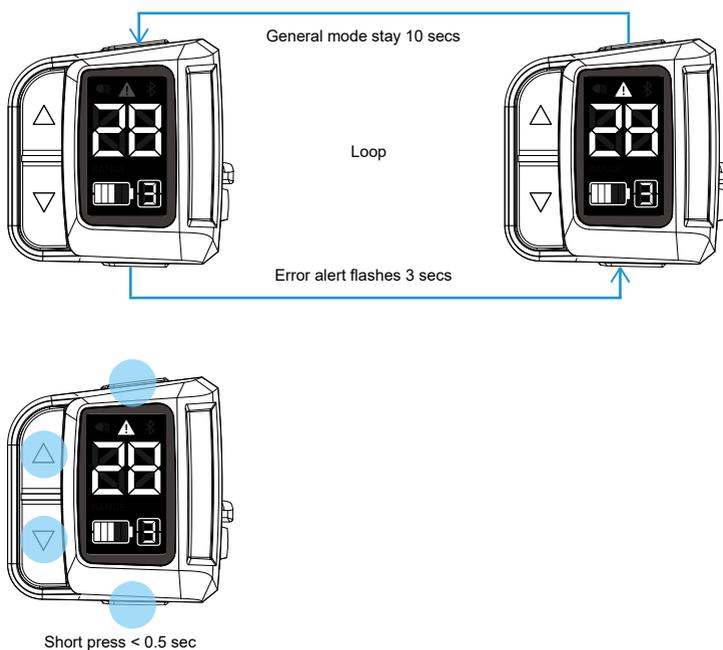
### **NOTE**

*To download the phone app, visit:  
[www.halfords.com/carreraimpelbikes](http://www.halfords.com/carreraimpelbikes)*

## 6.10. Error alert signal

If the error alert indicator is flashing red, please stop operating the system immediately and check chapter 8 "Troubleshooting" for further information and handling instructions. If the problem cannot be identified or solved, please contact your nearest Halfords store.

- In alert mode, the alert indicator will flash and an error code will be displayed.
- After 10 seconds, the display will return to the last mode (range/speed display), and the error code will be displayed in a loop.
- Short press (< 0.5 sec) any button to suspend error code display circulation. The alert indicator will keep showing on the display until the error has been solved.
- The error code will be displayed again only when switching the system back on.



## 7. Charging instructions

### 7.1. Charging safety instructions

#### **⚠ CAUTION**

*The e-bike battery was partially charged before it was shipped; in order to ensure that the battery has full and sufficient power, please charge your battery fully before using it for the first time.*

#### **⚠ WARNING**

*Only charge the battery by following all safety instructions in this manual and on the battery and charger labels.*

*Please read and follow the instructions for using the battery charger.*

#### **► About charging**

- Charge the battery indoors at room temperature, to avoid exposure to heavy rain or strong wind. Do not use the charger outdoors or in environments with high humidity.
- The battery can be charged directly on the bike, or it can be removed to be charged separately.
- When charging, make sure the e-bike and the charger are on a fireproof surface.
- When possible, you should charge the battery in an area with a smoke detector or make sure someone is paying attention during the charging process.
- Do not try to use the e-bike or charge the battery if the location where the battery is mounted (downtube) has any signs of damage.
- Avoid moving the battery while it is charging.  
The battery charger's power plug may come loose and not be fully inserted into the electrical outlet, resulting in a risk of fire.
- Do not leave the charger plugged in the e-bike for more than 24 hours.  
If the charging is not complete in 24 hours, contact your nearest Halfords store for assistance.

#### **► About the chargers**

- Only use chargers provided by Halfords. Use of uncertified battery charger may result in severe injuries or even death.
- Do not place the battery charger at locations that are easily accessible to children.
- Do not place the battery charger on the floor or other dusty places when using it.
- Place the battery charger on a stable, fireproof surface such as a table when using it.
- Do not place any objects on top of the battery charger or its cable.  
Do not place a cover on it either.
- Do not use the battery charger with commercially-available electrical transformers designed for overseas use (travel converters). They may damage the battery charger.
- Be sure to hold the power plug steady instead of holding the cord when connecting or disconnecting from the electrical outlet.  
Failure to do so may damage the cord and/or plug and cause an electric shock or a fire.

### ► About the chargers, continued

- When charging the e-bike, be careful not to trip over the charger cord. This may lead to injury or cause the bicycle to fall over, damaging the components.
- Do not touch the metallic parts of the device, the power plug on the AC adapter or other parts when the charger is wet, electric shocks may occur.

### ► About the wall socket, and cord

- Do not apply excessive tension to the cables and charging plugs.
- Use only a 100V to 240 V AC electrical outlet, do not overload the electrical outlet with appliances beyond its rated capacity.
- If the electrical outlet is overloaded by connecting too many appliances using adapters, overheating resulting in fire may occur.
- Do not damage the power cord or power plug. Do not damage, process, forcibly bend, twist or pull them, bring them near hot objects, place heavy objects on them or bundle them tightly together. If they are used while damaged, fire, electric shocks, or short-circuits may occur.
- The charger is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an outlet with a circuit breaker that is properly installed and grounded in accordance with all local codes ordinances.
- In the event of a charging malfunction, grounding provides a path of least resistance for electric current to reduce the risk of an electric shock.

#### **⚠ WARNING**

*Improper connection of the equipment grounding conductor is able to result in a risk of an electric shock. Check with a qualified electrician if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product - if it will not fit the outlet, have a proper outlet installed by a qualified electrician.*

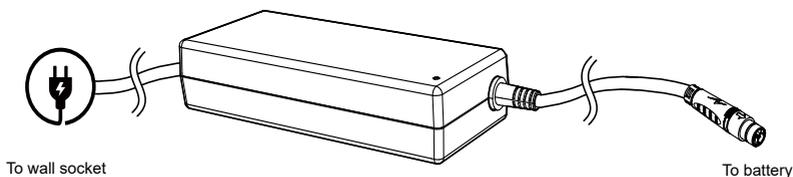
### ► About defects

If the following symptoms are observed, stop using the device and contact your nearest Halfords store.

- If heat or acid-smelling smoke is coming from the power plug.
- There may be a bad connection inside the power plug.
- If you suspect any other defect.

## 7.2. Technical data of the charger

Item	Specification	
Product model	Charger 2A	Charger 4A
Charging current (max.)	2A	4A
Rated Input voltage	110/220 V	
Input frequency range	50-60 Hz	
Rated output voltage	42±0.2 V	
Charging time, approx.	BS-A370 - 5 hours	BS-A370 - 2.5 hours
	BS-A500 - 7 hours	BS-A500 - 3.5 hours
Permitted charging temperature range	0°C (32°F) to 40°C (104°F)	
Storage temperature	-20°C (-4°F) to 55°C (131°F)	



## 7.3. Charging the battery

Read and observe all charging instructions and safety warnings carefully. Failure to comply with the following warnings may result in death or severe injuries.

### ► Before charging

- Regularly inspect the charging socket and charger for damage. Never charge the battery, or use the e-bike, when you suspect it to be damaged or broken.
- Only use the original e-bike charger. Make sure the power socket and plug are undamaged and dry before connecting and charging the battery.

### **⚠ WARNINGS**

- *The charger can only be used to charge the batteries specifically designed for this e-bike range; using it to charge other batteries may result in physical injuries or even death.*
- *Be sure to hold the power plug steady instead of holding the cord when connecting or disconnecting from the electrical outlet. Failure to do so may damage the cord and/or plug and cause an electric shock or a fire.*

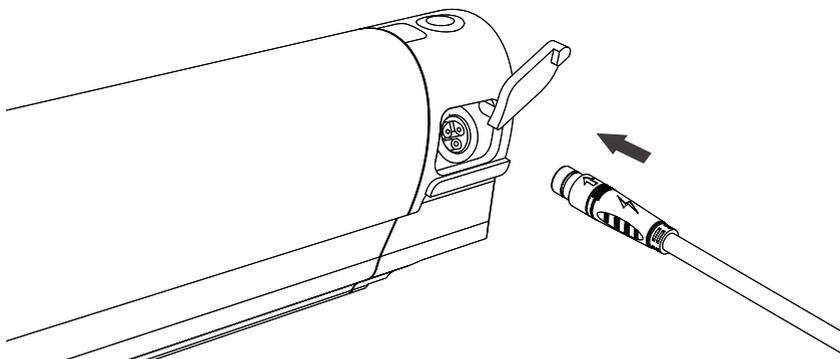
### ► Charging procedure

- The battery can be charged under every charge level; interrupting the charging process will not damage the battery.
  - Please perform charging in environments between 0°C to 40°C (32°F to 104°F).
1. Plug the charger's plug into an outlet (100V to 240V), using the appropriate plug for the local standards.

#### ⚠ CAUTIONS

- *Always turn off the e-bike system while charging.*

2. Open the cover of the charging socket on the e-bike, then connect the charging plug with the charging socket on the battery.



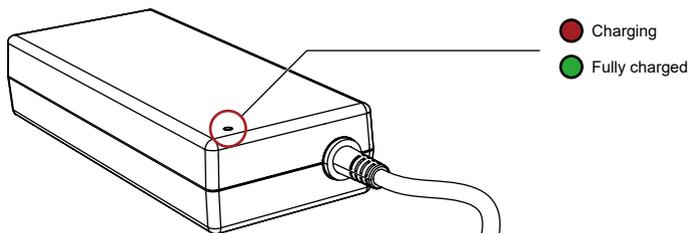
3. The charge indicator shows the charge level; when charging is complete, disconnect the charging plug from the battery socket and unplug the charger from the wall socket.

#### NOTES

- *The charging can be interrupted at any moment.*
- *Be sure to disconnect the charger when the battery is fully charged.*

► **Indicator on charger**

- During the charging process, the indicator on the charger will glow red.
- When the battery is fully charged, the indicator on the charger will turn green.



**⚠ CAUTION**

*If the red LED flashes during the charging process, a charging error has occurred. In that case, immediately remove the charger from the socket, discontinue the use of the e-bike system and contact your nearest Halfords store.*

**NOTES**

- *The battery is equipped with Battery Management System (BMS), it is designed to protect a fully discharged battery from damage for a period of time. However, in order to maintain the best possible battery performance and lifespan, Halfords recommends regularly recharging your battery to at least 80% of the full capacity.*
- *The Li-ion batteries gradually lose capacity depending on age and use. A strongly reduced operating time after charging can be a sign that the battery is reaching the end of its useful life and has to be replaced.*

## 8. Storage and transportation instructions

### 8.1. Storage

- During storage, it is not recommended to have the battery permanently connected to the charger.
- Store the e-bike and the battery in the following locations: in a dry, well-ventilated room with a smoke alarm, away from combustible or easily flammable objects and away from heat sources.
- Store the e-bike and battery on a fireproof surface and without contact to water, heat sources, or sand. Protect the battery against moisture and water.
- Do not store the e-bike and battery at ambient temperatures less than  $-20^{\circ}\text{C}$  ( $-4^{\circ}\text{F}$ ) or above ambient temperatures of  $50^{\circ}\text{C}$  ( $122^{\circ}\text{F}$ ).
- For a long battery life, however, storing the battery at room temperature of approx.  $20^{\circ}\text{C}$  is of advantage.
- Protect the e-bike for damage by sunlight if you store it at any place for more than a week.
- Do not place any heavy item on the e-bike or any e-bike component.

#### **⚠ CAUTION**

*If the battery is stored lacking charge, the battery may be damaged due to deep-discharge, also the charge capacity itself may be affected significantly.*

### 8.2. Charging the battery before and during storage

- If you will not be using the e-bike for an extended period of time, charge the battery to 80% to meet the optimum storage condition.
- Check the charge status again after six months; if the remaining charge of the battery is less than 30%, charge it to 80%.

### 8.3. E-bike transportation

- Do not place the e-bike in the car boot for more than one day. Protect the e-bike from damage by sunlight.
- An e-bike is heavier than a normal bike. If transporting on a vehicle, be aware of the maximum load capacity of the vehicle's roof, towing hook and/or of the applied bike carrier.
- Always respect local laws about transportation of an electric bicycle.
- As the size and power of this Li-Ion batteries are considered as 'Dangerous goods, class 9,' you may be restricted in the transport of separate Li-Ion batteries in some places when transporting. The restrictions apply to most airlines and some courier companies. But, if you intend to ship or travel with your complete e-bike (with installed battery), the regulations are less strict. Make sure to check ahead with your airline or carrier, before booking your trip to ensure you are allowed to travel with your complete e-bike.
- The e-bike, including batteries, is subject to legislation on the transport of dangerous goods. Private users can only transport undamaged batteries by road without complying with additional requirements.

#### **⚠ CAUTION**

*Shipping of all types of (loose) batteries, including lithium-ion and lithium metal types, may require the use of specialized packaging, specific hazard labeling, and specific documents certifying in compliance with the applicable local regulations.*

## 9. Troubleshooting

When your e-bike has issues, you can check the following instructions for basic troubleshooting. If the problem cannot be identified or solved, please contact your nearest Halfords store.

### 9.1. System issues

- **System cannot be turned on**
  - Check the battery charge status: If the battery charge is low or if the battery is even empty, please recharge the battery with a certified charger.
  - Check the cable connection: Check that external cable connections are properly connected. If external connections are all properly connected, please contact your nearest Halfords store for further inspection.
- **No assistance power**
  - Charge level: check the charge level; at 4% battery charge and below, the riding support will stop. The remaining charge is reserved to power the lights (if equipped and powered by the assist system) for up to two hours.
  - Check your riding assist level on the console: You will only feel the riding support from level 1 to level 3.
  - Pedal the e-bike: The e-bike only provides riding support power when you keep pedaling. Riding support will be shut down immediately when you stop pedaling.
  - System overheat: Are you riding on long slopes in the heat or put an overload weight on your e-bike for a long time? The e-bike assist system may overheat.
  - Please turn off the system, then take your e-bike to a well-ventilated area and let it cool down for at least 10 minutes.
  - Speed limitation: The e-bike drive output only supports to a maximum speed as demanded by local regulations; as soon as you have reached this speed limit, the e-bike system suspends the riding support, then automatically reactivates when your speed is below the speed limit.
- **The lights do not illuminate**
  - Check the charge level of the battery, charge if necessary.  
When the battery charge is below 4%, the remaining charge is reserved to power the lights for up to two hours. At 0% charge, the lights will not illuminate anymore.
  - Check if all the connectors of the electric cables are properly connected.  
If you are not sure, contact your nearest Halfords store.

### 9.2. Battery & charging issues

- **The battery quickly loses energy**
  - The battery may be near the end of its service life, contact your nearest Halfords store for further service.
  - The battery capacity may be affected by ambient temperature, especially in cold weather.

### 9.3. Error code table

If your e-bike is equipped with LCD Compact EX or you use your phone as an e-bike display, the error code shows on the screen when a system error is detected. You can check the recommend action below for basic troubleshooting. If the error still exists, contact your nearest Halfords store for service.

Code	Category	Error Details	Troubleshooting
16	Torque sensor	Torque sensor voltage too high	Check the sensor cable connection
17		Torque sensor voltage too low	Check the sensor cable connection
32	Motor	Motor voltage too high	Check the motor cable connection
33		Motor voltage too low	Check the motor cable connection
34		Motor hall U phase malfunction	Check the motor cable connection
35		Motor hall V phase malfunction	Check the motor cable connection
36		Motor hall W phase malfunction	Check the motor cable connection
37		Phase U malfunction	Check the motor cable connection
38		Phase V malfunction	Check the motor cable connection
39		Phase W malfunction	Check the motor cable connection
40		Motor temperature too high	Stop riding for 10 minutes
48		Speed sensor	No speed signal
49	No cadence signal		Check the sensor cable connection
64	Battery	Battery voltage too high	Remove and place the battery back
65		Battery voltage too low	Charge the battery
66		Low battery capacity	Charge the battery
67		Flat battery	Charge the battery
68		Charging temperature too high	Move to an area with proper temperature
69		Battery cell temperature too low	Move to an area with proper temperature
70		Battery cell over temperature	Contact your nearest Halfords store
71		Battery over discharged	Contact your nearest Halfords store
72		Battery over charged	Contact your nearest Halfords store
73		Battery over discharged error	Contact your nearest Halfords store
74	Battery over charged error	Contact your nearest Halfords store	
80	Controller	Controller temperature too high	Stop riding for 10 minutes
81		Battery communication fail	Contact your nearest Halfords store
82		Pedal rotation blocked	Reboot the e-bike system
83		Handle rotation blocked	Contact your nearest Halfords store
84		Controller communication fail	Contact your nearest Halfords store
85		High side FET of U phase malfunction	Contact your nearest Halfords store
86		Low side FET of U phase malfunction	Contact your nearest Halfords store
87		High side FET of V phase malfunction	Contact your nearest Halfords store
88		Low side FET of V phase malfunction	Contact your nearest Halfords store
89		High side FET of W phase malfunction	Contact your nearest Halfords store
90	Low side FET of W phase malfunction	Contact your nearest Halfords store	

Code	Category	Error Details	Troubleshooting
91	Controller	FET malfunction	Contact your nearest Halfords store
92		FET over current protection	Contact your nearest Halfords store
96	Others	Motion assist voltage too high	Check the cable connection
97		Motion assist voltage too low	Check the cable connection
98		Button blocked	Contact your nearest Halfords store
99		Button communication fail	Contact your nearest Halfords store
100		Display panel malfunction	Contact your nearest Halfords store
101		USB charge port malfunction	Contact your nearest Halfords store
112		Front light malfunction	Check the cable connection
113		System maintenance notify	Contact your nearest Halfords store
114		Bluetooth malfunction	Contact your nearest Halfords store
116		Rear light malfunction	Check the cable connection

- **The battery cannot be charged**

- Check if the connection terminals of the charger plug and charging socket at the charge port are clean; if not, wipe them clean with a dry cloth.
- Securely connect the charging adapter to the battery charging port and charge again. If the battery still does not charge, consult your nearest Halfords store.

- **The LED indicator on the charger does not illuminate.**

- Turn on the e-bike system; if the battery charges properly, the charge indicators on the console will flash and show the current charge status.
- Disconnect and then reconnect the power plug of the charger, and then repeat the charging operation. If the LED indicator on the charger still does not illuminate, contact your nearest Halfords store.

#### 9.4. Other issues

If your e-bike does not work properly due to mechanical problems, assist system issues, or any other problem that cannot be identified or solved, contact your nearest Halfords store.

## 10. Cleaning

- When cleaning, disconnect the power plug from the electrical outlet and the charging plug from the battery. If this is not observed an electric shock may occur.
- Do not immerse the e-bike system or any individual e-bike component in water.
- Do not clean any assist system component with pressured water.
- Only clean the product with a water-dampened soft cloth.
- Do not clean any assist system component with any detergent or organic solvent.
- The system is designed to operate in rain and other adverse weather conditions. Damage due to pressure washing or other heavy cleanings may void the warranty.

## 11. Disposal

- The e-bike assist system drive unit including the motor, controller, battery, speed sensor, console, wiring, accessories, and packaging should be disposed of in an environmentally correct manner according to local rules.
- Do not dispose of e-bikes and their components with household waste.



### **Information on Waste Disposal for Consumers of Electrical & Electronic Equipment**

This mark on a product and/or accompanying documents indicates that when it is to be disposed of, it must be treated as Waste Electrical & Electronic Equipment (WEEE).

Any WEEE marked waste products must not be mixed with general household waste, but kept separate for the treatment, recovery and recycling of the materials used.

For proper treatment, recovery and recycling; please take all WEEE marked waste to your Local Authority Civic waste site, where it will be accepted free of charge.

If all consumers dispose of Waste Electrical & Electronic Equipment correctly, they will be helping to save valuable resources and preventing any potential negative effects upon human health and the environment, of any hazardous materials that the waste may contain.



### **Please recycle your spent batteries**

Batteries should not be disposed of in unsorted municipal waste, but separately collected to facilitate the correct treatment and recycling of the substances they contain. The recycling of batteries ensures the recovery of these valuable materials and prevents any potentially harmful effects upon both the environment and human health.

Please contribute to battery recycling by segregating all spent batteries and actively participating in their collection and recycling. Various battery collection schemes will be in operation in different areas of the country. However, battery collection bins will be available at retail stores that sell batteries as well as at schools, libraries and other public buildings.

### **⚠ WARNING**

*Failure to follow the instructions in this section may result in damage to the components on your e-bike and will void your warranty, but, most importantly, may result in serious personal injury or death.*

**SAVE THESE INSTRUCTIONS**





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