
OWNER'S MANUAL

RIDE+

Electric Bicycle

powered by

BionX[®]

Diamant



TREK

VILLIGER



IT IS IMPORTANT TO READ THE WARNINGS AND INSTRUCTIONS IN THIS MANUAL BEFORE RIDING YOUR NEW BICYCLE.

ENGLISH

This Electric bicycle manual is additional to the manual provided with your bicycle. It treats those aspects in which the Electric bicycle differs from the non-electric bikes.

© 2013 Trek Bicycle Corporation. All rights reserved.

No texts, details, or illustrations from this Manual may be reproduced or distributed, or become the subject of unauthorized use for commercial purposes. Additional manuals for using the Electric bicycle may be ordered as separate items from Trek Bicycle.

Should you discover any errors, we would be grateful if you would bring them to our attention.

The most important points for you to do

1. Even if you have ridden a bicycle for years, it is important for every person to read the "Bike Owner's manual" and the specific "RIDE+ Owner's manual" carefully before you ride on the new RIDE+ bicycle.

- *Both manuals contains detailed information and useful suggestions about your new bicycle.*
- *Make sure that you understand the proper use, maintenance, and disposal of the components of the electrical system of your new RIDE+ bicycle.*

2. Think about safety. Your safety and that of other road users is very important.

- *Do not ride the electric bike without the battery pack. The battery pack must be on the bike while riding, else the bike has no lights when needed.*
- *Do not misuse the electric bike by riding it without a saddle. Some bikes have a quick release on the seat post. If the saddle gets stolen, it may lead to hazardous situations when still riding on the electric bike without a saddle.*
- *Check your bike for normal operation, loose parts and defects before riding. If you find any problem, visit your bike dealer for repairs before riding.*
- *Be aware that other road users do not expect that an electric bike can ride faster than a normal bike. Riding faster also increases the risk of accidents.*
- *Do not ride abusively. Only ride in the Use Conditions specified for your bike. Please refer to Trek's Bicycle Owner's manual for more detailed information.*
- *Do not over load the rear rack. The maximum allowable weight for the rear rack on RIDE+ bikes is 20 kg for bikes with a rear rack battery pack and 25 kg for bikes with a down tube battery.*

3. The electric system of your new bicycle needs special attention.

- *Do not clean your electric bicycle with a high pressure washer. Any electric system is sensitive for moisture. High pressure water might ingress in connectors or other parts of the electric system.*
- *Protect the battery docking connector. With removed battery pack, apply the protective cover to prevent corrosion and damage to the connector.*
- *Handle your battery pack with care. Do not drop or impact the battery pack. Mishandling of the battery pack could lead to severe damage or over-heating. In an extremely rare case, a battery pack that has been severely impacted or otherwise mishandled could potentially catch fire. If you suspect damage to your battery pack, visit your dealer immediately for inspection.*

4. Maintain the battery pack as instructed in the RIDE+ Owner's manual.

Failure to follow these instructions may result in damage to your battery pack and may require battery pack replacement:

- *Charge the battery pack at least once every six months or when the battery pack shows a low charge on the controller, a low-level red LED indicator or beeps every 30 minutes.*
- *Only charge the battery pack with the included BionX charger.*
- *When the battery pack is not in use, store it with a 100% charge in a dry, cool place, between 5°C and 25°C, preferably 5-10°C. Do not store it in places where temperatures get higher than +25°C or lower than 5°C. Avoid extreme temperature changes.*

5. Be careful when transporting a RIDE+ bike.

- *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. Refer to the manual of the vehicle and bike carrier for details.*
- *Remove the controller, battery pack and, if present, panniers from the bicycle and store them elsewhere in the vehicle during the drive.*
- *Always respect local laws about transportation of a(n electric) bicycle.*
- *Because Li-Ion battery packs of this size and power are considered 'Dangerous goods, class 9' when transporting, regulations may restrict the transport of separate Li-Ion batteries in some places. The restrictions apply to most airlines and some trucking companies. But, if you intend to ship or travel with your complete RIDE+ bike (with installed battery pack), the regulations are less strict. Make sure to check ahead with your airline or carrier, before booking your trip, if it is allowed to travel with your complete RIDE+ bike.*

6. Visit your dealer on a regular basis for maintenance of your new bike.

- *Your dealer has the right knowledge and equipment to maintain your RIDE+ bike.*
- *If you have questions about your new RIDE+ bicycle, ask your dealer!*

Getting the most from your RIDE+ Bicycle

CONTENTS

Contents	Page
Important to read before the first ride	1
Congratulations on your new electric bicycle!	4
1. Quick start	5
1.1 BionX G2 controller	5
1.2 RIDE+ Pro controller	6
1.3 Charging	7
1.4 Rear rack battery packs	8
1.5 Downtube battery pack	9
2. Description	10
2.1 Specific parts for the electric bicycle	10
2.2 Assistance/Regeneration	12
2.3 Bontrager Satellite Elite ForkLight	13
3. 40 km/h 'Fast Electric Bike'	14
3.1 Legal rules	14
3.2 Differences in equipment	14
3.3 Instructions for use	14
4. Instructions for Use	15
4.1 BionX G2 controller	15
4.2 RIDE+ Pro controller	18
4.3 Rear rack battery packs	21
4.4 Downtube battery pack	22
4.5 Lighting	24
4.6 Charging the battery pack	24
4.7 Battery pack care	25
4.8 Warnings and Suggestions for use	26
4.9 Programming	28
5. Maintenance	29
5.1 Cleaning	29
5.2 Removal and refitting of wheels for bikes with a rear wheel motor	29
5.3 Removal and refitting of wheels for bikes with a front wheel motor	30
6. Technical description	32
6.1 Bike specifics	32
6.2 Battery packs	32
6.3 Minimum and maximum temperatures for battery pack	32
6.4 Power supply	32
6.5 Compliance	32
7. Problem solving	33
7.1 Drive problems	33
7.2 Charging problems	33
7.3 Display problems	34
8. Limited warranty	35
9. Contact	36

Congratulations on your new electric bicycle!

Your electric bicycle is a bike with electric pedal assistance.

This means that you can pedal it as a normal bike, or that the bike can assist you in your pedaling.

The electric bicycle will assist you when you are pedaling. The amount of assistance depends on the force you exert on the pedals.

RIDE+ bicycles come in two classes: Pedelects and Fast Electric Bikes.

- Pedelects assist up to a speed of 25 km/h. This class is legally considered a bicycle,
- Fast Electric Bikes assist at higher speeds. This class is legally considered a lightweight moped.

This manual covers the following bikes, both pdelects and fast class

- Deraillieur/Roller Brakes,
- Deraillieur/Rim (Magura, V-brakes) or disc brakes,
- Internal gear hub/Roller Brakes,
- Internal gear hub/Rim (Magura, V-brakes) or disc brakes.

The electric bicycle differs only slightly from a non-electric bike.

The following parts are specific to an electric bicycle

- The battery pack in the rear rack or on the down tube,
- The motor in the rear- or front wheel hub,
- The controller on the handlebars or on the clamp in front of the handlebars.

QUICK START - BIONX G2 CONTROLLER



1. Quick start

This manual has all the information that you'll need to get the best from your electric bicycle. We strongly recommend that you read it through. However, for quick use of the bike, please read the Quick Start guide for the type of controller and battery pack on your bicycle.

1.1 BionX G2 controller

▪ Switching system On/Off

Push any of the two upper buttons briefly to switch the system 'On'. Push the  button to switch the system Off. When switched On, the bike is in cycle mode (zero assist).



▪ Assistance/Regeneration Level

Push the '+' button once for assistance level 1, again for higher levels. Push the '-' button to go to a lower level. Regeneration levels can be controlled in a similar way. Push the '-' button once for regeneration level 1, again for a higher level. Push the '+' button to reduce regeneration.



⚠ WARNING. It is strongly advised to ride away in a straight line when an assistance level is selected. Never select assistance level 3 or 4 during maneuvering or riding away in a tight corner. The powerful reaction of motor might take you unawares.

▪ Switching lights On/Off

Press the  button for 2 seconds to switch On/Off the display light, and, if present, the front and rear lights.



▪ See time, average speed, odometer, trip distance

Use the  button to change computer functions (Order of appearance: trip distance, odometer, average speed, time of day). To prevent loss of riding information, please make sure that the system is switched Off before the controller is removed from the bike.

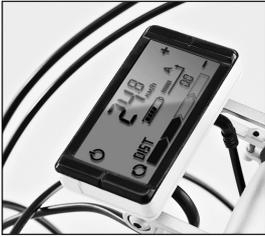


▪ Using the remote

Some bikes have the controller positioned on a middle clamp, which means that the controller can more easily be operated with a remote. This device can be used to select a higher or lower assist or regeneration level without removing your hands off the handlebars. The red throttle button on the BionX remote is a convenient help to move the bike without pedaling (up to 4 km/h) walking next to the E-bike.



⚠ WARNING. Beware of unintended use of the throttle button when the system is switched On.



1.2 RIDE+ Pro controller

▪ Switching system On/Off

Push any of the two upper buttons briefly to switch the system 'On'. Push the  button to switch the system Off. When switched On, the bike is in cycle mode (zero assist).

▪ Assistance/Regeneration Level

Push the '+' button once for assistance level 1, again for higher levels. Push the '-' button to go to a lower level. Regeneration levels can be controlled in a similar way. Push the '-' button once for regeneration level 1, again for a higher level. Push the '+' button to reduce regeneration.

⚠ WARNING. It is strongly advised to ride away in a straight line when an assistance level is selected. Never select assistance level 3 or 4 during maneuvering or riding away in a tight corner. The powerful reaction of motor might take you unawares.

▪ Switching lights On/Off

Press the  button for 2 seconds to switch On/Off the controller display light, and, if present, the front and rear lights. Once activated, the text 'Light On' or 'Light Off' will appear in the lower field of the display.

▪ See time, average speed, odometer, trip distance

Use  button to change bike computer functions (Order of appearance: trip distance, odometer, average speed, time). To prevent loss of riding information, please make sure that the system is switched Off before the controller is removed from the bike.

▪ Using the RIDE+ Link

Most bikes with the 'RIDE+ Pro' controller positioned on the middle clamp are equipped (or can be equipped) with the RIDE+ Link. This device can be used to select a higher or lower assist or regeneration level and to turn the lights On/Off without removing your hands off the handlebars. The red throttle button on the RIDE+ Link is a convenient help to move the bike without pedaling (up to 4 km/h) walking next to the E-bike.



⚠ WARNING. Beware of unintended use of the throttle button when the system is switched On.



QUICK START - CHARGING

1.3 Charging

▪ Power supply

The charging process is the same for both battery pack types. They can be charged using the power supply, on the bike or removed from the bike.



RIDE+ R250-2, R320 & R420



RIDE+ C420

NOTICE. When not in use, charge a battery pack at least once every six months (refer to paragraph 4.7 for detailed instructions).

▪ Charging the battery pack

1. Turn the system Off.
2. Connect the connector of the power supply to the charging port of the battery pack and connect the power supply to the power outlet.



⚠ WARNING. Replace a damaged power cable immediately to prevent an electric shock.

3. The battery pack will emit beeps and then the charging port will turn orange. When the battery pack is full, the charging port will turn green. To stop charging, just disconnect both connectors. The battery packs with the round charging connector can be left connected to the power indefinitely. The power supply electronics will take care of the correct charging procedure. However, you will save energy by disconnecting the power supply when the light in the charging port has turned green.



1.4 Rear rack battery packs

▪ Removing the battery pack

Insert the key in the lock, twist the key clockwise (1,2). Now slide the battery pack rearwards out of the rear rack (3,4). After you remove the battery pack, don't forget to take the keys out of the lock.



▪ Placing the battery pack

Slide the battery pack into the rack, electrical-contact side first (1). Carefully push all the way forward, also through a slightly higher resistance at the end (2,3). Now turn the key of the lock counter clockwise until the battery pack is locked and take the key out of the lock (4). Do not ride the bike with the lock open.

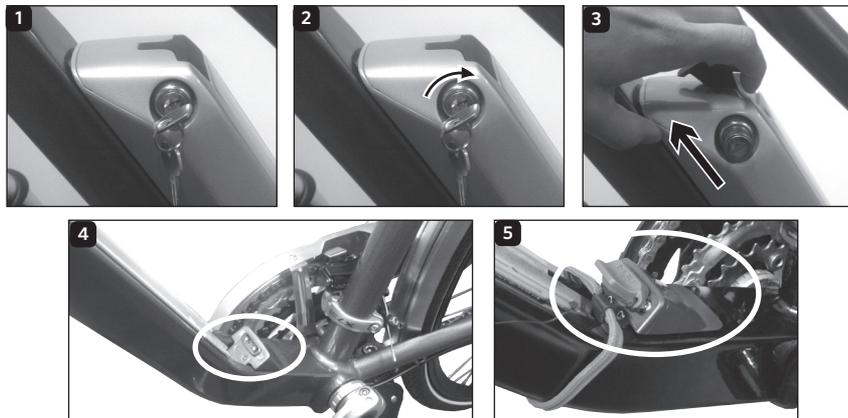


QUICK START - DOWNTUBE BATTERY PACK

1.5 Downtube battery pack

• Removing the battery pack

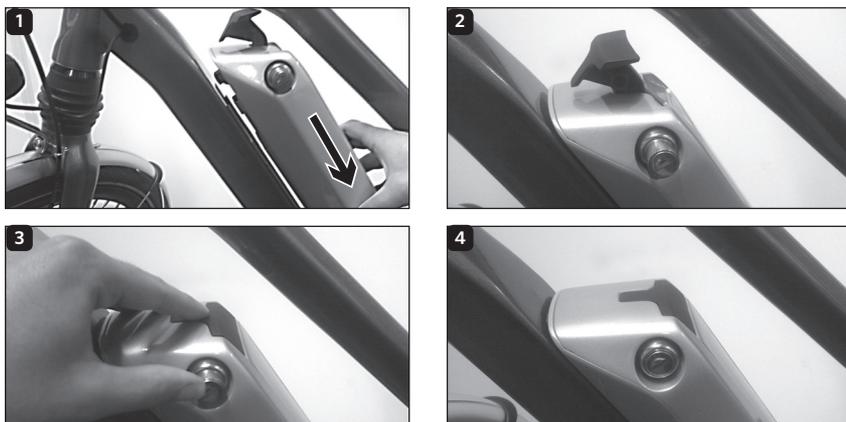
Insert the key in the lock, twist the key clockwise until the lock springs out (1,2). When the lock springs out, the lever of the battery pack will be released. Now take the key from the lock and pull the lever of the battery pack so that it slides upwards - parallel to the down tube - until it releases from the rail (3). When the battery pack is not on the bike, always use the protective cover on the contacts on the frame to protect the electrical system from water (5).



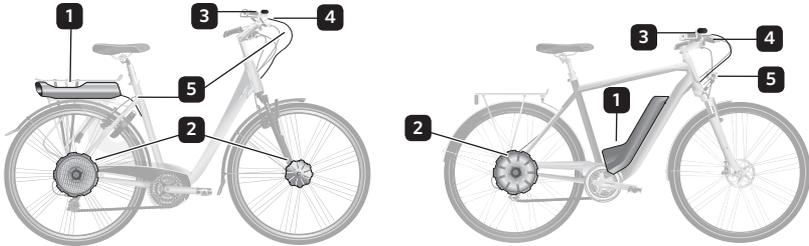
Contacts at the bottom side of the down tube.

• Placing the battery pack

Position the battery over the downtube (with some space between the seat tube and the lower end of the battery pack, 1). Now, slide the battery pack down onto the rail (2). Use the lever to lower the battery pack carefully during the last phase of sliding, so that the connectors engage (3). Be sure that the connector at the bottom of the battery pack and the connector on the docking engage properly. When the battery pack is fully in place, push the lock in until it clicks (4). Do not ride the bike with the lock open.



2. Description



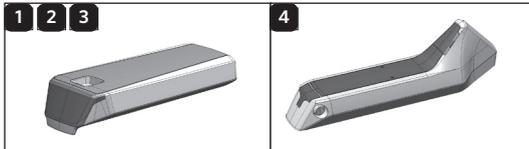
2.1 Specific parts for the electric bicycle

There are several models of electric bicycles, with different equipment options. Find the options that are on your electric bicycle. In the pictures of the bikes you will find the battery pack (1), the motor 'front or rear' (2), the controller (3), the brake switch (4), and the wiring harness (5).

▪ Battery packs

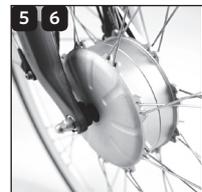
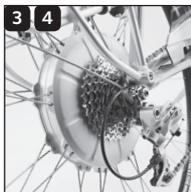
There are four types of battery packs for RIDE+ bicycles:

1. "RIDE+ R250-2" battery pack, rack type, containing 30 Li-Mn (Li-Ion) cells, 37 V, 6.6 Ah, max. 244 Wh.
2. "RIDE+ R320" battery pack, rack type, containing 39 Li-Mn (Li-Ion) cells, 48 V, 6.6 Ah, max. 303 Wh.
3. "RIDE+ R420" battery pack, rack type, containing 39 Li-Mn (Li-Ion) cells, 48 V, 8.5 Ah, max. 408 Wh.
4. "RIDE+ C420" battery pack, down tube type, containing 52 Li-Mn (Li-Ion) cells, 48 V, 8.8 Ah, max. 423 Wh.



▪ Motor configurations

1. 250 W RIDE+ Rear motor, derailleur and Roller Brakes.
2. 250 W RIDE+ Rear motor, derailleur and disc brakes (Magura or V-brakes).
2. 250 W RIDE+ Rear SL motor (lightweight), derailleur and Roller Brakes.
4. 250 W RIDE+ Rear SL motor (lightweight), derailleur and disc brakes or rim brakes (Magura or V-brakes).
5. 250 W RIDE+ Front motor, Internal gear hub and Roller Brakes.
6. 250 W RIDE+ Front motor, Internal gear hub and rim brakes (Magura or V-brakes).



▪ Controllers**1. BionX G2 controller.**

Controls all functions: On/Off, the four assist levels, the four regenerative levels and lights On/Off. It also functions as a bicycle computer, measuring speed and distance, and shows the battery charge level.

**2. RIDE+ Pro controller.**

Controls all functions: On/Off, the four assist levels, the four regenerative levels and lights On/Off. It also functions as a bicycle computer, measuring speed and distance, and shows the battery charge level. All the information can be provided in different languages (see 'programming').

**▪ Brake Switch**

The right-hand brake lever of cable-activated brakes contains a switch that cuts off the power to the motor, and switches the motor to generation mode as soon as the right-hand brake lever is pulled.

**▪ Wiring Harness**

The wiring harness links controller, brake switch, battery pack and motor. It runs through the frame and is linked to the battery pack via the docking station in the rear rack or via the docking station on the down tube.

2.2 Assistance/Regeneration

The system has four levels of assistance. When the system is set to assistance, the electric motor drives the rear or front wheel and assists you in your pedaling.

Additionally, the system has four levels of regeneration. When the system is set to regeneration, the electric motor is used as a dynamo and generates electricity for charging the battery pack. Going downhill, you can reduce your speed by regulating the amount level of regeneration as the created resistance acts as a motor brake.

⚠ CAUTION. *Though, that generation mode is not a substitute for using brakes to control speed or stop.*

The tables below give an indication of the effort that is compensated in the different assistance and regeneration levels. The real percentages of compensated effort depend on the software settings of the bike.

Assistance	Effort Compensation with Batt. R250-2	Effort Compensation with Batt. R320, R420 and C420	Recharge	Situation
1	25%	25%	No	Flat ground
2	50%	50%	No	Uphill slopes, headwind
3	80%	100%	No	Hill, strong headwind
4	150%	200%	No	Very steep hill
Regenerative braking	-	-	Yes	Very steep descent, braking
Regeneration	Effort Compensation with Batt. R250-2	Effort Compensation with Batt. R320, R420 and C420	Recharge	Situation
-1	-25%	-25%	Yes	Mild downhill, tailwind
-2	-50%	-50%	Yes	Downhill, tailwind
-3	-100%	-100%	Yes	Descent
-4	-200%	-200%	Yes	Steep descent

BONTRAGER SATELLITE ELITE FORKLIGHT*



2.3 Bontrager Satellite Elite ForkLight*

The Bontrager Satellite Elite ForkLight comes in a RIDE+ and non-RIDE+ version. The RIDE+ version can be operated via the controller on the handlebar. The energy that is needed to power the RIDE+ lights comes from the battery pack. Both lights always work simultaneously.

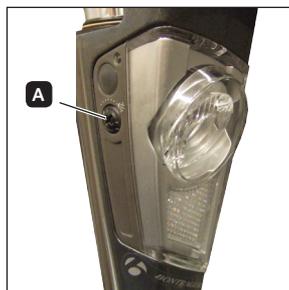
**Depending on model.*

▪ **Adjusting the beams**

The height of the beams can be adjusted by turning knobs 'A' (on both sides of the fork).

Both beams can be adjusted independently by turning knob 'A' with a cross-headed screwdriver.

Both beams at the same angle gives the best performance.



3. 40 km/h 'Fast Electric Bike'*

The '40 km/h fast electric bike' is an electric bicycle of which the assistance does not stop at 25 km/h but at 40 km/h. This higher assist speed makes it the perfect electric bicycle for people who like riding faster than 25 km/h. Note, though, that the actual maximum speed that you can reach depends first and foremost on how strongly you pedal.

***NOTICE.** *'Fast' E-bicycles are only available in Germany, Austria and Switzerland.*

3.1 Legal rules

Legally, the 40 km/h fast electric bike is no longer considered being a 'bicycle' but a 'lightweight moped'. It has type approval as such.

NOTICE. *For these bicycles third party insurance is mandatory.*

In most countries, wearing a helmet is not mandatory. However, we strongly recommend to always wear a helmet for your own safety.

Since 40 km/h electric bicycles are legally considered to be lightweight mopeds, they do have a throttle, which allows riding them up to 20 km/h using motor power only. This means, that up to 20 km/h your bike can be used as an E-Bike, rather than as a Pedelec. Above that speed, the motor will assist pedaling up to a speed of 40 km/h.

NOTICE. *The maximum power of the motor on your bicycle is limited to 250 W.*

Your 40 km/h electric bicycle is still a bicycle. It is therefore not recommended that you use it as a moped or an E-bike without pedaling. Using battery power only will strongly limit your range.

3.2 Differences in equipment

The technical equipment of these 40 km/h bikes is almost identical to that on Pedelecs.

The following parts are additional and/or different:

- Rear view mirror,
- Insurance plate holder,
- Throttle on the controller,
- Extra reflectors,
- Slightly different brake levers,
- Type-approval plate on the frame.

NOTICE. *These are all part of the type approval. It is not allowed to remove or exchange them for other (non-certified) equipment. This also applies to the handlebars, tires, seat post, headlight, rear light, brakes, kickstand and controller.*

3.3 Instructions for use

Riding is the same as the Pedelec bikes, except that the assistance does not stop at 25 km/h but at 40 km/h.

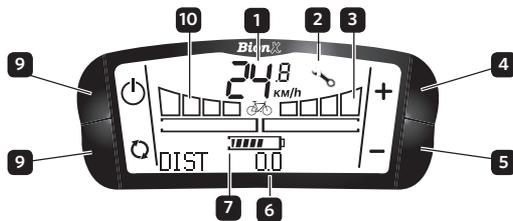
⚠ WARNING. *Other road users may not expect a bicycle to go this fast.*

NOTICE. *Maximum range on one battery charge depends very much on your style of use. Due to the higher speed that can be reached, be prepared to find the range slightly shorter than on regular Pedelec bikes that have a maximum assistance speed of 25 km/h.*

INSTRUCTIONS FOR USE

4. Instructions for Use

There are two types of controllers: BionX 'G2' and 'RIDE+ Pro'.



4.1 BionX 'G2' controller

1• Speed indication 2• Service Indication* 3• Current assistance level 4• On/'+' button 5• '-' Button 6• Distance, Odometer, Chronometer, Average speed 7• Battery charge level 8• Mode-switch  9• On/Off  button 10• Current generation level.

⚠ *WARNING. If the Service Indication (a steady or blinking wrench symbol) is visible on the display, refer immediately to paragraph 7.1 for instructions.

• Switching system On/Off

Press any of the two top buttons briefly to switch the system On. The battery pack will beep four times, the system will perform a short self-check (shown on the display as a countdown in the 'speed'-field), and the system will activate (switch to 'On'). As soon as the system is 'On', the screen will display and each function will be shown next to its corresponding button.



To switch the system Off, press the  button. The battery pack will beep five times. Riding with the system 'On' in level 0 is the same as riding with the system 'Off'. If the bike is left with the system On, it will automatically switch Off after about 10 minutes.



• Changing the position of the buttons

Normally, the On/Off button  and the mode-switch  button are on the right, and the '+' and '-' buttons on the left. The functionality of the buttons can be swapped right-to-left. The code to access this is 2009. More information about programming via the controller can be found later in this manual.



• Assistance

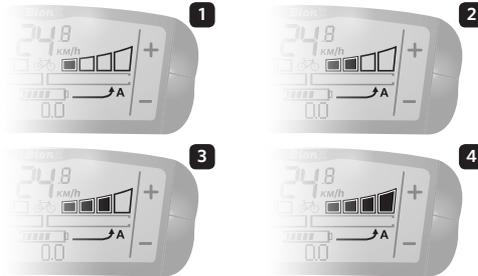
When the motor provides power, the bicycle is in assistance mode. There are four levels of assistance. The level of assistance is shown by the bar graph on the right, below the digits for speed. The narrow graph on the display shows the amount of energy delivered to the motor.

To increase assistance, press button '+'. For assistance level 1, press once. Press again for more



assistance. For less assistance press button '-'. When there is no assistance level shown and the bicycle icon is visible on the screen, there is no assistance. Pedaling is then the same as on a normal bicycle. To switch from any level of regeneration to the first assist level, press and hold the '+' button.

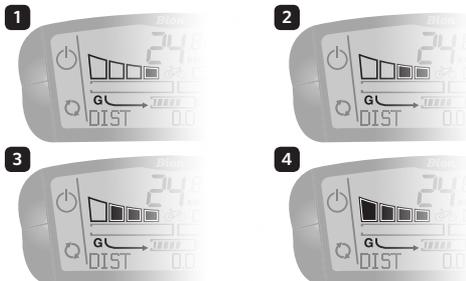
⚠ WARNING. *It is strongly advised to ride away in a straight line when an assistance level is selected. Never select assistance level 3 or 4 during maneuvering or riding away in a tight corner. The powerful reaction of motor might take you unawares.*



▪ Regeneration

When the bicycle generates electricity for the battery, the system is in generation mode. The motor then works as a dynamo. There are four levels of regeneration. The level of assistance is shown by the bar graph on the left, below the digits for speed. The narrow graph on the display shows the amount of energy delivered to the battery.

To increase the regeneration level, press button '-'. For regenerative level 1 press once. Press again to increase the regeneration level to a higher level. For a lower regeneration level press button '+'. To switch from any level of assistance to the first regenerative level, press and hold the '-' button. When the rear brake lever is pulled, the system always switches to generating. The arrow and 'G' will show in the display.



▪ Distance, Odometer, Chronometer, Average speed

The bottom of the display shows distance, odometer, chronometer, and average speed. Press the  button to switch modes. To reset distance, chronometer, or average speed, keep this button pressed for 2 seconds.

INSTRUCTIONS FOR USE

▪ **Switching lights On/Off**

Press the  button for 2 seconds to switch On/Off the controller display light, and, if present, the front and rear lights. This switches on the front light, the rear light, and the backlight in the display.

The lights will stay On even when you stop. Even when the battery gauge shows 'empty', there is enough energy to run the lights for about two hours. If the battery pack is fully drained, the lights will be powered by the system as it switches to generative mode automatically. To switch the lights Off, hold the button for 2 seconds.

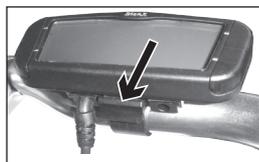


▪ **Mountain mode**

The "Mountain Mode" allows for longer uphill riding before the motor shows power reduction due to so-called "temperature-derating". As "Mountain Mode" limits the maximum motor torque the motor will stay cooler for a longer period of time. Select this option by going to assistance level 4 and then press-and-hold the '+' button for 2 seconds. To return to assistance level 4, press the '-' button once.

▪ **Removing and installing the BionX G2 controller**

To remove the BionX G2 controller from the bike, press the catch at the back of the holder and slide the controller off towards the rear. To install the BionX G2 controller onto the handlebar, align the controller with its clamp and slide the controller forward until it clicks.



NOTICE. To prevent loss of riding information, please make sure that the system is switched Off before the controller is removed from the bike.

▪ **Unintended removal of controller out of its dock**

If the controller is moved off its clamp while the system is active ('On'), the system will no longer assist, even when the controller is replaced into its clamp. Please select the correct level of assistance again to reactivate the system.

▪ **Using the BionX remote**

Most bikes with the BionX G2 controller positioned on the middle clamp are equipped (or can be equipped) with the BionX remote. This device is mounted either the right or left side of the handlebar and can be used to regulate the following functions without moving your hands off the handlebar:

1. **'+' button** Increase assist level (or decrease regeneration level)
2. **'-' button** Decrease assist level (or increase regeneration level)
3. **Throttle button** For *Pedelecs*: walk assist up to 3 or 6 km/h (pedaling not needed)

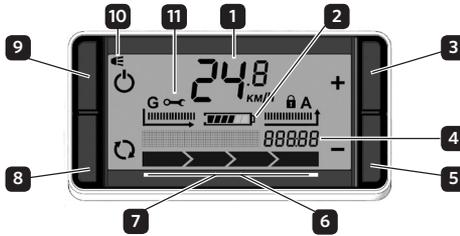


For *fast E-bikes*: assist up to 25 km/h (pedaling not needed)

▪ **Installation of the BionX remote for non-equipped bikes**

To connect the BionX remote to the system, the remote connector can be plugged into the receiver connector of the controller docking. After that, the brake generator connector can be plugged into the remote connector. The red throttle button on the BionX remote is a convenient help to move the bike without pedaling (up to 4 km/h) walking next to the E-bike.

 **WARNING.** Beware of unintended use of the throttle button when the system is switched On.



4.2 RIDE+ Pro controller

1• Speed indication 2• Battery charge level 3• '+' button 4• Distance, Odometer, Chronometer, Average speed, Clock 5• '-' button 6• Current assistance level 7• Current generation level 8• Mode-switch  button 9• On/Off  button 10• Light indicator, On or Off 11• Service Indication*.

⚠️ *WARNING. If the Service Indication (a steady or blinking wrench symbol) is visible on the display, refer immediately to paragraph 7.1 for instructions.

▪ Switching system On/Off

Press any of the two top buttons briefly to switch the system On. The battery pack will beep four times, the system will perform a short self-check (shown on the display as a countdown in the 'speed'-field), and the system will activate (switch to 'On'). As soon as the system is 'On', the screen will display and each function will be shown next to its corresponding button. To switch the system Off, press the  button. The battery pack will beep five times. Riding with the system 'On' in level 0 is the same as riding with the system 'Off'. If the bike is left with the system on, it will automatically switch Off after about 10 minutes.



▪ Changing the position of the buttons

Normally, the On/Off  and the mode-switch  button are on the right, and the '+' and '-' buttons on the left. The functionality of the buttons can be swapped right-to-left. The code to access this is 2009. More information about programming via the controller can be found later in this manual.



▪ Assistance

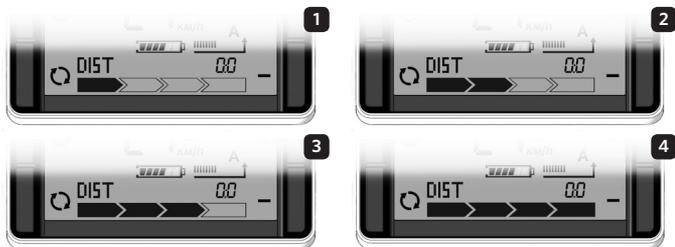
When the motor provides power, the bicycle is in assistance mode. There are four levels of assistance. The level of assistance is shown by the arrows at the bottom of the display.

⚠️ WARNING. It is strongly advised to ride away in a straight line when an assistance level is selected. Never select assistance level 3 or 4 during maneuvering or riding away in a tight corner. The powerful reaction of motor might take you unawares.

To increase assistance, press button '+'. For assistance level 1, press once. Press again for more assistance. For less assistance press button '-'. When there is no assistance level shown, there is no assistance so riding is the same as pedaling a normal bicycle.



INSTRUCTIONS FOR USE

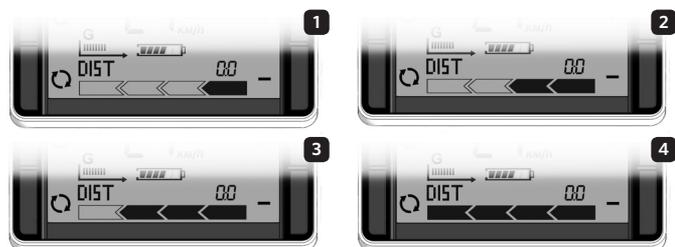


• **Regeneration**

When the bicycle regenerates electricity for the battery, the system is in generation mode.

There are four levels of regeneration. The level of regeneration is shown by the arrows at the bottom of the screen. To increase the regeneration level, press button '-'. For regenerative level 1 press once. Press again to increase the regeneration level to a higher level. For a lower regeneration level press button '+'.
To switch from any level of Assistance to the first regenerative level, press and hold the '-' button. To switch from any level of regeneration to the first assist level, press and hold the '+' button.

The 'G' and the arrow will appear on the display during generation of energy.



• **Distance, Odometer, Chronometer, Average speed, Clock**

The right bottom corner of the screen shows the distance, odometer, chronometer, and average speed (Order of appearance: trip distance, odometer, average speed, time of day). Press the  button to switch modes. To reset distance, chronometer, or average speed, keep this button pressed for 2 seconds.



• **Switching lights On/Off**

Press the  button for 2 seconds to switch On/Off the Controller display light, and, if present, the front and rear lights. The lights will stay On even when you stop. Once activated, the text "light On" appears on the screen. Even when the battery gauge shows 'empty', there is enough energy to run the lights for about two hours. If the battery pack is fully drained, the lights will be powered by the system as it switches to generative mode automatically. To switch the lights Off, hold the  button for 2 seconds. After switching Off, the text "light Off" will appear on the screen.



▪ Mountain mode

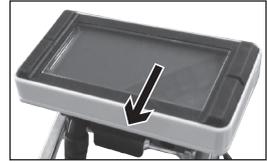
The "Mountain Mode" allows for longer uphill riding before the motor shows power reduction due to so-called "temperature-derating". As "Mountain Mode" limits the maximum motor torque the motor will stay cooler for a longer period of time. Select this option by going to assistance level 4 and then press-and-hold the '+' button for 2 seconds. To return to assistance level 4, press the '-' button once.

▪ Changing the language option of the controller

The RIDE+ Pro controller allows you to change the language that is displayed on the screen. See the part 'programming' later in this manual to set the correct language.

▪ Removing and installing the RIDE+ Pro controller

To remove the RIDE+ Pro controller from the bike, press the catch of the holder and slide the controller off towards the rear. To install the RIDE+ Pro controller onto the handlebar, align the controller with its clamp and slide the controller forward until it clicks.



NOTICE. To prevent loss of riding information, please make sure that the controller is switched Off before it is removed from the bike.

▪ Unintended removal of controller out of its dock

If the controller is moved off its clamp while the system is active ('On'), the system will no longer assist, even when the controller is replaced into its clamp. Please select the correct level of assistance again to reactivate the system.

▪ Using the RIDE+ Link

Most bikes with the RIDE+ Pro controller are equipped (or can be equipped) with the RIDE+ Link.

This device is mounted either the right or left side of the handlebar and can be used to regulate the following functions without moving your hands off the handlebar:

1.  button Switch light On/Off
2. '+' button Increase assist level (or decrease regeneration level)
3. '-' button Decrease assist level (or increase regeneration level)
4. Throttle button For *Pedelecs*: walk assist up to 3 or 6 km/h (pedaling not needed)
For *fast E-bikes*: assist up to 25 km/h (pedaling not needed)



The red throttle button on the RIDE+ Link remote is a convenient help to move the bike without pedaling (up to 4 km/h) walking next to the E-bike.

⚠ WARNING. Beware of unintended use of the throttle button when the system is switched On.

INSTRUCTIONS FOR USE

4.3 Rear rack battery packs

▪ Battery pack size

Depending on the model, your bike will be equipped with either a "RIDE+ R250-2", "RIDE+ R320" or a "RIDE+ R420" battery pack. Removal, charging and putting back are the same for all battery packs.

- 'RIDE+ R250-2' battery pack, containing 30 Li-Mn (Lithium-Ion) cells, 37 V, 6.6 Ah, max. 244 Wh.
- 'RIDE+ R320' battery pack, containing 39 Li-Mn (Lithium-Ion) cells, 48 V, 6.6 Ah, max. 317 Wh.
- 'RIDE+ R420' battery pack, containing 39 Li-Mn (Lithium-Ion) cells, 48 V, 8.5 Ah, max. 408 Wh.

▪ Bontrager Interchange System compatibility

The 'RIDE+ R250-2', 'R320' and 'R420' battery packs are compatible with the Bontrager Interchange System. This means you can mount a(n optional) Bontrager Interchange basket or pannier on the rear rack of the bike by removing the plug from the battery pack.



▪ Removing the battery pack from the bike

Insert the key into the lock on the battery docking and turn it clockwise (1,2). The battery pack can now be taken off the bike. Slide the battery pack out by pulling it to the rear (3,4). Don't forget to take the keys out of the lock after removal.



▪ Putting the battery pack onto the bike

Slide the battery pack into the rear rack, connector side first (1). Make sure the pack engages the rail (2). Slide all the way forward, pushing through a slightly higher resistance at the end as the connector engages (3). Now turn the key of the lock until the battery pack is locked and take the key out (4). Do not ride the bike with the lock open.



4.4 Downtube battery pack

▪ Battery pack size

'RIDE+ C420' down tube battery pack, containing 52 Li-Mn (Lithium-Ion) cells, 48 V, 8,8 Ah, max. 423 Wh.

▪ Bottle cage holder

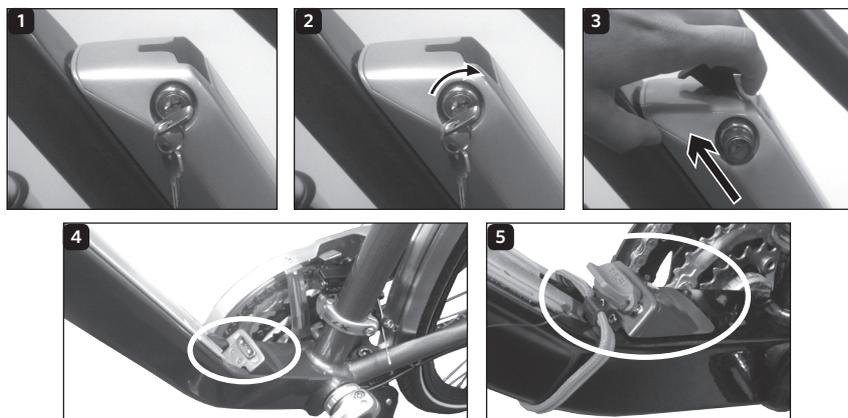
A bottle cage can be mounted on the C420 battery pack by installing the 'bottle cage holder'. This adapter can be mounted by 2 bolts. Subsequently, the bottle cage can be mounted on the adapter. Only use the 4 bolts that are delivered with the holder to prevent damage to the battery cells inside.



▪ Removing the battery pack

Put the key in the lock, twist the key clockwise until the lock springs out (step 1,2, see next page). When the lock springs out, the lever of the battery pack will be released. Now take the key from the lock and pull the lever of the battery pack so that it slides upwards -parallel to the down tube- until it releases from the rail (step 3). When the battery pack is not on the bike, always use the protective cover on the contacts on the frame to protect the electrical system from water (step 5). Be sure to fasten the cord of the protective cover in a safe way to the frame.

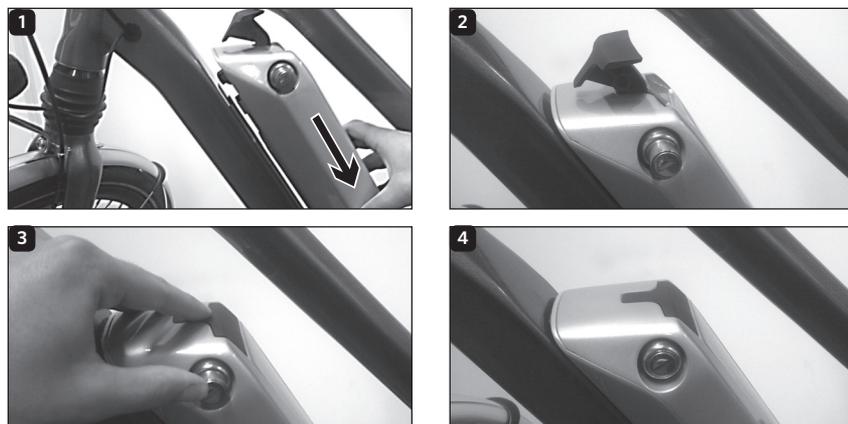
INSTRUCTIONS FOR USE



Contacts at the bottom side of the down tube.

▪ Replacing battery pack

Position the battery pack over the down tube (with some space between the seat tube and the lower end of the battery pack, step 1 below). Now, slide the battery pack down onto the rail (2). Use the lever to lower the battery pack carefully during the last phase of sliding, so that the connectors engage (3). Be sure that the connector at the bottom of the battery pack and the connector on the docking engage properly. When the battery pack is fully in place, push the lock in until it clicks (4). Do not ride the bike with the lock open.



4.5 Lighting

The front and rear lights, as well as the display light, are switched 'On' and 'Off' on the RIDE+ controller. When the battery pack shows 'empty', there is still enough capacity left to run the lights for about two hours. The onboard software ensures that - as long as the bike is moving - the lights can operate for an indefinite period of time using the dynamo function of the motor as the power source.

⚠ WARNING. Do not ride the electric bike without the battery pack. The battery pack must be on the bike while riding, else the bike has no lights when needed.

4.6 Charging the battery pack

⚠ WARNING. Before charging, make sure that the system is switched Off and never turn the system On or Off during charging. This prevents unintended activation of the system. Only use the power supply approved for use with this bike. Charging with a non-original power supply may cause the battery pack to overheat, catch fire, or even explode. When charging, do not let the battery pack or power supply get wet - because of risk of electrical shock.

The battery pack can both be charged in the bike or it can be removed from the bike for charging. Li-Ion batteries such as are used in the electric bicycle, have no 'memory-effect'. This means that the battery capacity is not influenced if the battery pack is recharged before it is completely empty. You can recharge after every ride. However, you will get the most from your battery pack if, for the first three charges, you use it until only one unit is showing in the 'fuel gauge' on your display.

NOTICE. When it is necessary to recharge, the battery pack will emit a 'beep'. Charge the battery pack immediately.

Battery packs are best charged at temperatures around 20°C, so avoid warm locations. When coming in out of the cold, allow the battery pack to get up to room temperature (about 20°C) before charging.

▪ Charge status indication

On battery packs with a round charging port with translucent ring, it is possible to check the charge status manually by touching the charge connector ring to activate the charge LED. It will light up in the color corresponding to the charge level: Green for 100-85%, Orange for 85-25% and Red when below 25%.

▪ Power supply 100-240V

The power supply will adjust automatically to the local voltage.

▪ Charging

Connect the connector of the power supply to the battery pack.
Connect the power supply to an appropriate power source.



⚠ WARNING. Replace a damaged power cable immediately to prevent an electric shock.

INSTRUCTIONS FOR USE

The light at the charging port of the battery pack will turn red. It will turn yellow as soon as charging starts. As soon as the yellow light on the battery charging port turns green, the battery pack is fully charged. Disconnect both the connector from the battery pack and the power source.

Charging a fully discharged battery pack usually takes about three to five hours (depending of its maximum capacity). After one hour of charging, the battery pack will already be charged up to 80% of its capacity.

The battery packs with the round charging connector can be left connected to the power indefinitely. The power supply electronics will take care of the correct charging procedure. However, you will save energy by disconnecting the power supply when the light in the charging port has turned green.

NOTICE. *Since the computer inside the battery pack saves the system mileage and settings, we discourage the use of a second battery pack. A second power supply would be a better solution. The battery pack is very durable. The capacity is guaranteed for 600 charge cycles or 2 years (whichever situation comes first).*

4.7 Battery pack care

▪ **Cleaning of the battery pack**

Clean the battery pack with a damp cloth. The battery pack is splash proof, but not waterproof. Do not immerse the battery pack in water and do not clean the battery pack with a high-pressure washer.

▪ **Handling of the battery pack**

Handle the battery pack with care to avoid damage. Do not drop or impact the battery pack, immerse it in water, or clean it with a high-pressure washer. Do not open the battery pack (there are no user-serviceable parts inside). Do not short-circuit the terminals.

⚠ WARNING. *Mishandling of the battery pack could lead to severe damage or over-heating.*

In an extremely rare case, a battery pack that has been severely impacted or otherwise mis-handled could potentially catch fire. In an emergency situation, fully immerse the battery pack in a large container of water.

▪ **Storage of the battery pack**

When the battery pack is not in use, store it in a dry, cool place. Li-Ion batteries are best stored at a 100% charge. The temperature should be between 5°C and 25°C, preferably 5-10°C. Do not store it in places where temperatures get higher than +25°C or lower than 5°C. Keep away from extreme temperature changes. Keep the battery pack from condensation to prevent corrosion forming on the terminals. Failure to follow these instructions result in damage to your battery and may require battery replacement.

The battery pack can be stored for up to one year before a recharge is necessary, provided it was 100% charged first. We however recommend to charge it once every six months (when not in use).

NOTICE. *It will need 'waking up' out of 'deep sleep' if it has not been used for a longer period of time. To 'wake it up', it suffices to connect the power supply to the battery pack and a wall socket. This will directly activate the battery pack again for normal use.*

When the battery pack is not in use, we recommend to charge it at least once every six months.

Tip: The battery packs with the round charging connector can be left connected to the power indefinitely. The power supply electronics will take care of the correct charging procedure. However, you will save energy by disconnecting the power supply when the light in the charging port has turned green.

The warranty does not cover improper follow-up of battery care instructions.

▪ **Battery pack recycling**

Because a battery pack contains certain harmful substances, it must be treated as chemical waste and may not be disposed as normal waste.

NOTICE. A battery pack may not be disposed as normal waste to prevent environmental pollution, a defective or end-of-life battery pack can be handed over to your dealer or to another waste disposal according to local rules.



4.8 Warnings and Suggestions for use

▪ **Think about Safety**

- Do not ride the electric bike without the battery pack. The battery pack must be on the bike while riding, else the bike has no lights when needed.
- Do not misuse the electric bike by riding it without a saddle.
Some bikes have a quick release on the seat post. If the saddle gets stolen, it may lead to hazardous situations when still riding on the electric bike without a saddle.
- Check your bike for normal operation, loose parts and defects before riding.
- Be aware that other road users do not expect that an electric bike can ride faster than a normal bike. Riding faster also increases the risk of accidents.
- Do not ride abusively. Only ride in the use conditions specified for an electric bike.
An electric bike is meant to be used on paved roads or bicycle paths.

▪ **Maximum load rear rack**

The maximum load for the rear rack on the RIDE+ bike can be found on the rack stay and/or the rear rack. The maximum allowable load on the rear rack is 20 kg for bikes with a rear rack battery pack and 25 kg for bikes with a downtube battery pack.

▪ **Getting the most from your electric bicycle**

Riding with the system 'on' in level 0 is the same as riding with the system 'Off'. With the system switched 'on', your speed and distance will be measured and you will be able to use the lights. This will not be possible when the system is 'Off'. The system will be most efficient when you pedal with a cadence of around 60 rpm. Use the assistance levels according to your needs. Always remember that your electric bicycle is still a bicycle and should be used as such. The tables below provide approximate distances you can expect to travel on one battery charge, based on ideal conditions. Actual distances will vary depending on wind, tire pressure, rider weight, riding style, road conditions, software settings, topography, age of battery pack and other parameters.

Range for a fully charged 'RIDE+ R250-2' battery pack

Terrain/Assistance level	1 (25%)	2 (50%)	3 (100%)	4 (200%)
<i>Flat terrain</i>	50-80 km	40-65 km	30-50 km	25 - 35 km
<i>Hilly terrain</i>	40-70 km	30-55 km	20-40 km	15 - 25 km
<i>Mountainous terrain</i>	25-40 km	20-35 km	15-25 km	10 - 20 km

Range for a fully charged 'RIDE+ R320' battery pack

Terrain/Assistance level	1 (25%)	2 (50%)	3 (100%)	4 (200%)
<i>Flat terrain</i>	55-90 km	50-70 km	45-55 km	30-40 km
<i>Hilly terrain</i>	45-75 km	35-60 km	30-45 km	20-30 km
<i>Mountainous terrain</i>	30-45 km	30-45 km	20-30 km	15-25 km

Range for a fully charged 'RIDE+ R420' or 'RIDE+ C420' battery pack

Terrain/Assistance level	1 (25%)	2 (50%)	3 (100%)	4 (200%)
<i>Flat terrain</i>	80-125 km	60-100 km	55-80 km	40-55 km
<i>Hilly terrain</i>	65-100 km	45-85 km	35-65 km	25-40 km
<i>Mountainous terrain</i>	45-65 km	35-60 km	25-40 km	20-35 km

▪ Transporting an electric bike

Because a RIDE+ bike is heavier than a normal bicycle due to the additional drive components, and because of the presence of a Li-ion battery pack, please take care of the following when transporting the electric bike:

- Take care about the maximum load capacity on the towbar of the vehicle when placing a bike carrier on it with multiple bicycles, including an E-bike. Please refer to the manual of the towbar and/or the vehicle for additional information.
- Take care about the maximum load capacity of the car's roof when placing a bike carrier on it with multiple bicycles, including an E-bike. Please refer to the manual of the vehicle and/or bike carrier for additional information.
- A bike carrier has a limited load capacity. Sometimes that is not enough to carry an (heavier) electrical bicycle in combination with other (e.g. electrical) bicycles. Please refer to the manual of the bicycle carrier for more detailed information.
- Remove the battery pack and, if present, panniers of the electrical bicycle and store it elsewhere in the vehicle during the drive.
- Always respect local laws about transportation of a(n) electric) bicycle.

⚠ WARNING. The drivability of the vehicle may change with extra weight on (the back of) the vehicle.

f. Because Li-Ion battery packs of this size and power are considered 'Dangerous goods, class 9' when transporting, regulations may restrict the transport of separate Li-Ion batteries in some places. The restrictions apply to most airlines and some trucking companies. But, if you intend to ship or travel with your complete RIDE+ bike (with installed battery pack), the regulations are less strict. Make sure to check ahead with your airline or carrier, before booking your trip, if it is allowed to travel with your complete RIDE+ bike.

4.9 Programming

This section explains how you set the odometer units (miles or kilometers), the clock, the wheel diameter and how you can swap the functionality of the buttons and select the correct language.



To enter programming mode, press buttons 'On/Off' and 'Mode-switch' for two seconds. Four zeros will appear, with the first zero blinking.

Enter the appropriate code by pressing button '+' for a higher value, '-' for a lower value. Press button 'On/Off' to select a value and move to the next digit. After entering the correct value for the fourth digit, press button 'On/Off' to move into the chosen menu. In the programming menu, buttons '+' and '-' will move to a higher or lower value. Pressing button 'On/Off' will save the entry and move you to the next step, or back to the regular display.

Codes:

2001 to switch between miles and kilometers.

2004 to set the time.

2009 to swap the function of the buttons from left to right and vice versa.

2011 to change the display language (on 'Pro' controller only). Use button to scroll through the languages.

3771 to set the correct wheel diameter.

5. Maintenance

After the first two to three weeks of use, or 300 km, have your dealer check the spokes in the rear wheel. The motor is of the 'brushless' type and requires no maintenance.

Check the connections of the system every two to three months. Make sure that no dirt or moisture can get into the 'docking station' (connector) when the battery pack is not on the bike. If you notice anything like this, clean with a smooth, dry brush.

5.1 Cleaning

When cleaning the bike, use a sponge and/or a soft brush. For the battery pack case, a damp cloth suffices. Use little water. Keep water away from the electrical connections.

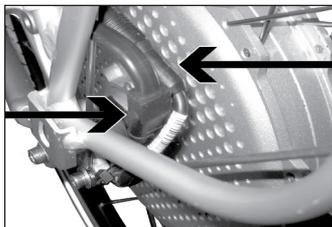
NOTICE. Do not use a jet-wash. The powerful water-jet may damage the electronics.

5.2 Removal and refitting of wheels for bikes with a rear wheel motor

Removal and refitting of the rear wheel is best left to your dealer. If you are forced to do it yourself, follow the instructions.

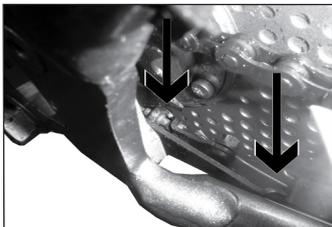
▪ Removal of the rear wheel

1. Make sure that the system is switched 'Off'.
2. Change to the highest gear.
3. Remove the battery pack from its docking station.
4. Unplug the connectors of the motor at the left-hand side of the hub. Make sure that both cables are unplugged (see photo).
5. Disconnect the rear brake:
 - V-brakes, Magura brakes: release the rear brake.
 - Roller Brakes: unhook the cable and housing stop from the brake. Undo the reaction arm bolt.
6. Loosen and remove the axle nuts.
7. Slide the wheel forward in the dropouts until the wheel can be removed.
8. Remove the chain from the sprocket and remove the wheel.

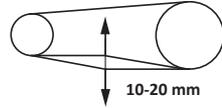


▪ Refitting the rear wheel

1. Make sure that the system is switched 'Off'.
2. Rollerbrake bikes: make sure that the distance piece that centers the roller brake onto the hub is correctly in place.
3. Make sure that the flat portion on the left-hand side of the axle aligns with the left-hand side dropout.
4. Make sure the groove in the rear axle is facing up (12 o'clock position). Put the chain on the smallest rear sprocket and slide the rear wheel into the dropouts. Make sure that the axle moves all the way back into the dropouts.
5. Tighten the rear wheel nuts equally and evenly to a torque of 40 Nm. Otherwise the system might not work properly. If you do not have access to a torque wrench, you can use a normal wrench, but have your dealer checked the tightening torque of the nuts at the earliest opportunity.



NOTICE. On bikes without a derailleur, the chain may not be adjusted too tight (measured at the most tight point in the chain), else the RIDE+ system does not work properly and can the rider lose control of the bike while riding. Adjust the chain so that there is 10-20 mm of slackness in the chain at its tightest spot when a force of about 100 g is applied.



6. Reconnect the rear brake.
Rollerbrake bikes: make sure that the bolt for the brake arm is securely tightened.
7. Reconnect the motor connectors.
8. Activate the system.
9. Test ride to make sure that the system works.
10. Check if the rear brake works.

⚠ WARNING. Switch the system Off before you disconnect or connect the connectors of the motor. You may experience strong sparking and possibly electric shock if you fail to do so.

▪ **Removal/refit of the front wheel**

No specific instructions are needed to remove or refit the front wheel.

5.3 Removal and refitting of wheels for bikes with a front wheel motor

Removal and refitting of the front- and rear wheel is best left to your dealer. If you are forced to do it yourself, follow the following instructions.

▪ **Removal of the front wheel**

1. Make sure that the system is switched 'Off'.
2. Remove the battery pack from its docking station.
3. Unplug the connectors of the motor at the right-hand side of the hub. Make sure that both cables are unplugged.
4. Disconnect the front brake:
 - V-brakes, Magura brakes: release the front brake.
 - Roller Brakes, unhook the cable and housing stop from the brake.
5. Loosen and remove the axle nuts and washers.
6. Lift the bike so that the wheel can be removed. **Take care not to lose the two torque blockers.**



▪ **Refitting of the front wheel**

1. Make sure that the system is switched 'Off'.
2. Make sure that the torque blockers are on both sides of the axle, with their arms pointing outwards (see photo).
3. Rollerbrake bikes: make sure that the roller brake and the distance piece that centers the roller brake onto the hub are correctly in place.
4. While sliding the wheel into the dropouts, make sure that the arms of the torque blockers are below the axle in the open ends of the fork legs.
Rollerbrake bikes: make sure the brake arm enters its retention bracket.
5. Turn the wheel slightly backwards so that the torque blocker arms seat themselves against the corresponding lips on the fork legs.

6. Tighten the wheel nuts equally and evenly to a torque of 40 Nm. Otherwise the system might not work properly. If you do not have access to a torque wrench, you can use a normal wrench, but ask your dealer to check the tightening torque of the nuts at the earliest opportunity.
7. Reconnect the front brake.
 - Rollerbrake bikes: make sure that the bolt for the brake arm is securely tightened.
8. Check if the front brake works.
9. Reconnect the motor connectors.
10. Put the battery pack back onto the bike.
11. Activate the system.
12. Perform a short test ride to make sure that the system works.

⚠ WARNING. *Switch the system Off before you disconnect or connect the connectors of the motor. You may experience strong sparking and possibly electric shock if you fail to do so.*

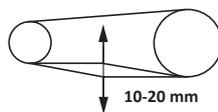
▪ **Removal/refitting of the rear wheel**

No specific instructions are valid to remove the rear wheel.

When refitting the rear wheel:

1. Ensure to align the axle with the frame.

NOTICE. *On bikes without a derailleur, the chain may not be adjusted too tight (measured at the most tight point in the chain), else the RIDE+ system does not work properly and can the rider lose control of the bike while riding. Adjust the chain so that there is 10-20 mm of slackness in the chain at its tightest spot when a force of about 100 g is applied.*



2. Tighten the wheel nuts equally and evenly to a torque of 40 Nm. Otherwise the system might not work properly. If you do not have access to a torque wrench, you can use a normal wrench, but have your dealer checked the tightening torque of the nuts at the earliest opportunity.
3. Afterwards, perform a short test ride to make sure that the system works.

6. Technical description

6.1 Bike specifics

Motor	Brushless motor
Maximum continuous power output	250 W
Maximum assisted speed	25 km/h
Wheel nut torque	40 Nm
Max. load bike (rider & luggage)	125 kg
Total weight bike (incl. battery pack)	23.4 -28.0 kg (depending on model)

6.2 Battery packs

	RIDE+ R250-2	RIDE+ R320	RIDE+ R420	RIDE+ C420
Voltage	37 V	48 V	48 V	48 V
Capacity	6.6 Ah	6.6 Ah	8.5 Ah	8.8 Ah
Power	244 Wh	317 Wh	408 Wh	423 Wh
Weight	2.4 kg	2.8 kg	3.8 kg	3.8 kg
Life	At least 600 full discharge-charge cycles			
Charging time fully discharged battery	3 to 4 hours	3 to 4 hours	4 to 5 hours	4 to 5 hours

6.3 Minimum and maximum temperatures for battery pack

Status	Min (°C)	Max (°C)
Charging	0	45
Use	-10	50
Storage	5	25

6.4 Power Supply

Input voltage	100 VAC to 240 VAC
Input current	1.6 A
Output voltage	26 VDC
Output current	3.45A

6.5 Compliance

A standard RIDE+ electric bike (Pedelec) is an EPAC (Electrically Power Assisted Cycle) in compliance with European Norm EN15194.

The RIDE+ 'Fast class' E-bikes (Category L1e, only allowed in Germany, Austria and Switzerland) have EC type-approval with regard to Directive 2002/24/EC in addition to compliance with EN15194.

7. Problem solving

7.1 Drive problems

- **The Service Indication is visible on the display of the controller.**

When it shows, this means that the electronic system recognizes a problem. First try solving the problem by switching the RIDE+ system Off and back On. If the error persists, visit your dealer immediately for repairs.

The Service Indication can mean the battery pack has been impacted or mis-handled, causing an electrical fault. In an extremely rare case, a battery pack that has been severely impacted or otherwise mis-handled could potentially catch fire. In an emergency situation, fully immerse the battery pack in a large container of water.

- **The system will not switch On (no beep from the battery pack), the LCD display remains blank**

First check the battery pack. It must be in place and the lock must be pushed in fully. Check all connectors and disconnect and reconnect if necessary. Make sure that the controller is slid into its docking all the way. If this does not help, contact your dealer.

- **The motor is always in generative mode**

There is probably something wrong with the switch for generative braking in the right-hand brake lever. If there is something wrong with the generative braking switch, try switching the system Off and On again. If this does not help, unplug the connector between brake lever and controller. This should solve the problem, but generative braking will be disabled. Contact your dealer.

- **After a repair or service, the motor is not as powerful as it was earlier**

On a bike with a rear motor, have the rear axle nuts tightened to the correct torque (40 Nm). On a bike with a front motor, have the front as well as the rear axle nuts tightened to the correct torque (40 Nm).

- **The system does assist, but irregularly**

On a bike with a rear motor, have the rear axle nuts tightened to the correct torque (40 Nm). On a bike with a front motor, have the front-as well as the rear axle nuts tightened to the correct torque (40 Nm). Check all connections of the system.

- **System switches On as battery pack is put into the docking station**

This happens sometimes due to static electricity. There is no problem with the system.

7.2 Charging problems

- **The display does not show 'full' after a complete recharge**

Please make sure you are following all charging instructions.

Let the battery pack cool down for several hours and try again. If the problem persists, fully discharge (by riding) and recharge the battery pack, if necessary have your dealer update it to the latest firmware.

- **The charging light does not turn red after connecting the power cable to the power source**

Check the power cable to the power supply. If defective, replace the cable immediately.

 **WARNING.** Replace a damaged power cable immediately to prevent an electric shock.

- ***The charging light turns green after only 10 minutes of charging***

Please make sure the system is turned Off before you connect the power supply to a power source or before you remove the battery pack to charge it.

7.3 Display problems

- ***Occasionally, the display active for 1 second.***

This is normal: this happens roughly every half hour as the system self-checks.

- ***Display active for 1 second, battery pack beeps***

This is normal: this happens roughly every half hour as the system self-checks and the battery pack should be charged.

- ***Display blank, only lock visible***

Disconnect the controller & reconnect or: push 'Mode' 5 times.

LIMITED WARRANTY

8. Limited warranty

Trek Bicycle Corporation warrants the motor, the battery pack and the controller against defects in workmanship and materials for a period of two (2) years for the original owner.

This warranty does not cover:

- Normal wear and tear,
- Improper assembly,
- Improper follow-up maintenance,
- Installation of parts or accessories not originally intended for, or compatible with, the bicycle as sold,
- Damage or failure due to accident, misuse, abuse, or neglect,
- Labor charges for part replacement or changeover,
- Underperformance of the battery pack if it has been fully discharged and charged more than, 600 times within the two year warranty period.

This warranty is void in its entirety by any modification of the frame, fork, or components.

This warranty is expressly limited to the repair or replacement of a defective item and is the sole remedy of the warranty. This warranty extends from the date of purchase, applies only to the original owner, and is not transferable.

Trek Bicycle Corporation is not responsible for incidental or consequential damages. Some states do not allow the exclusion of incidental or consequential damages, so the above exclusion may not apply to you. Claims under this warranty must be made through an authorized Trek dealer. Proof of purchase is required.

The subject item must be registered with Trek Bicycle Corporation, either through on-line registration or by the receipt of a warranty registration card by Trek Bicycle Corporation, before a warranty claim may be processed.

Warranty duration and detail may differ by frame type and/or by country.

This warranty gives the consumer specific legal rights, and those rights may vary from place to place. This warranty does not affect the statutory rights of the consumer.

9. Contact

Addresses and telephone numbers:

Trek Benelux/Bikeurope B.V

Basicweg 12a
NL 3821 BR Amersfoort
The Netherlands
Telephone: +31 (0)33 450 90 60
Internet: www.trekbikes.com

Diamant

Trek Fahrrad GmbH
Stettbachstrasse 2
CH-8600 Dübendorf
Switzerland
Telephone for Germany: 0180-350 70 10
Telephone for Austria: 0820 820 121
Internet: www.diamantrad.com

Villiger

Trek Fahrrad GmbH
Stettbachstrasse 2
CH-8600 Dübendorf
Switzerland
Telephone: +41 (0)44 824 85 00
Internet: www.villigerbikes.ch

For Service and Warranty, please contact your local dealer.

