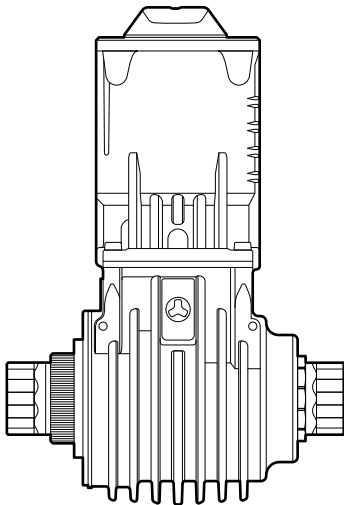
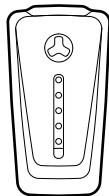
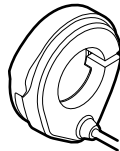
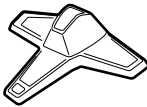
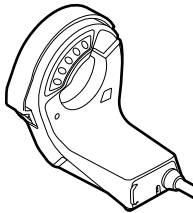
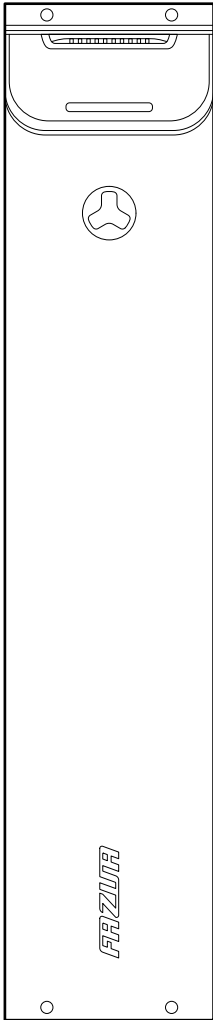




FAZUA *RIDE 60 DRIVE SYSTEM*



GENERAL INFORMATION

1	ABOUT THIS SYSTEM OPERATIONS MANUAL.....	6
1.1	Read and keep the system operations manual.....	6
1.2	Explanation of characters and symbols used	7
2	SAFETY	7
2.1	Functionality & intended use	7
2.2	Limitation of liability	8
2.3	Symbols & pictograms of the drive system.....	9
2.4	General safety instructions for the drive system.....	11
3	INSTRUCTIONS FOR RIDING AN E-BIKE WITH THE FAZUA DRIVE SYSTEM	13
4	STORING AND TRANSPORTING E-BIKES WITH THE FAZUA DRIVE SYSTEM	14
5	RIDING AND SYSTEM DATA.....	16
5.1	Connectivity (connections to devices from third-party providers).....	17
5.1.1	Bluetooth® connection	17
5.1.2	ANT+ connection	17
5.2	FAZUA app.....	18
5.3	FAZUA Toolbox	18
5.3.1	Download.....	18
5.3.2	Overview of functions	19
6	TROUBLESHOOTING.....	21
7	DISPOSAL INFORMATION	23
7.1	Disposing of your E-Bike	23
7.2	Disposing of batteries.....	23
8	CONSUMER WARRANTY IN THE UNITED STATES	24
9	SERVICE	26
10	CONFORMITY	27

DRIVE UNIT

11	DETAIL VIEW AND PART DESIGNATIONS/ POSITIONS ON THE E-BIKE.....	28
12	CORRECT POSITION OF SPEED SENSOR AND MAGNET	29
13	CLEANING AND MAINTAINING THE DRIVE UNIT	29

CONTROL ELEMENT AND DISPLAY

14	MODEL VARIANTS OF THE CONTROL ELEMENT AND DISPLAY	31
15	DETAILED VIEW AND PART DESIGNATIONS.....	31
15.1	Control Hub	31
15.2	Ring Control.....	32
15.3	Mode Control.....	32
15.4	Road Control.....	33
15.5	LED Hub.....	33
16	DRIVING AND STATUS INFORMATION ON THE DISPLAY	34
16.1	Current charge level and set support level	34
16.2	E-Bike status.....	34
17	USING THE CONTROL ELEMENT.....	35
17.1	Switching the drive system on and off	36
17.2	Pedal Assist/support levels	36
17.3	Boost function	37
17.4	Push Assist mode	38
17.5	Switching the bicycle lighting on and off	39
18	CLEANING AND MAINTAINING THE CONTROL ELEMENT AND DISPLAY	40

BATTERY AND CHARGER

19	MODEL VARIANTS OF THE BATTERY	41
20	DETAILED VIEW AND PART DESIGNATIONS.....	42
21	SPECIFIC SAFETY INSTRUCTIONS FOR THE BATTERY AND CHARGER	44
22	USING THE BATTERY	48
22.1	Inserting/removing the battery	48
22.1.1	Inserting the battery	49
22.1.2	Removing the battery.....	50
22.2	Checking the battery status (on the battery)	50
22.2.1	Checking the battery's current charge level.....	51
22.2.2	Checking the battery's state of health (SoH)	51

23 CHARGING THE BATTERY	52
23.1 Prepare charger.....	53
23.2 Connecting/disconnecting the charger.....	53
23.2.1 Using the charging connection on the E-Bike.....	54
23.2.3 Using the charging connection on the battery	55
23.3 Charging process.....	56
24 CLEANING THE BATTERY AND CHARGER.....	56
24.1 Cleaning the battery	57
24.2 Cleaning the charger.....	57

ANNEX

25 OVERVIEW OF DISPLAYS	58
25.1 Overview of LED Hub display	58
25.2 Overview of Control Hub display	61
26 OVERVIEW OF CONTROL ELEMENTS	64
26.1 Overview of Control Hub	64
26.2 Overview of Ring Control	66
26.3 Overview of Mode Control	68
26.4 Overview of Road Control -V1	71
26.4 Overview of Road Control-V2	73
27 DATA SHEETS (TECHNICAL DATA)	75
27.1 Drive unit.....	75
27.2 Control element and display	75
27.2.1 Control Hub	75
27.2.2 Ring Control	75
27.2.3 Mode Control.....	76
27.2.4 Road Control	76
27.2.5 LED Hub	76

27.3 Battery and charger 76

27.3.1 ENERGY 430 / ENERGY 430 fix 76

27.3.2 ENERGY 480 / ENERGY 480 fix 77

27.3.3 Charger 3A/3A90 77

1 ABOUT THIS SYSTEM OPERATIONS MANUAL

1.1 Read and keep the system operations manual

This system operations manual* (hereinafter referred to in brief as “operations manual”) belongs to the drive system FAZUA RIDE 60. It contains all safety-related information as well as extensive information and detailed descriptions on how to handle and use the drive system.

You can:

- view and download the operations manual online at <https://fazua.com/support/help-center/downloads/>
- request a printed version via the FAZUA service platform <https://fazua.com/support/contact/>.

This operations manual is based on the laws applicable in the United States, as well as on national regulations such as UL[®] and ANSI testing standards.

Be sure to read the operations manual before using the components of the FAZUA RIDE 60 drive system or the E-Bike with the FAZUA RIDE 60 drive system for the first time. If you do not observe the operations manual, you or other persons may suffer serious injuries and/or the drive system or individual components may be damaged.

Keep this operations manual and all documents belonging to the drive system to hand at all times so that you can access them when necessary. If you pass on components of the FAZUA RIDE 60 drive system or the E-Bike equipped with the FAZUA RIDE 60 drive system to others, make sure that you also hand over the operations manual and all associated documents too.

In addition to this operations manual for the FAZUA RIDE 60 drive system, always also observe the manufacturer's instructions for the E-Bike in which the drive system is installed.

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1.2 *Explanation of characters and symbols used*

Depending on the degree of risk, safety and warning information and important additional information is marked in this document as follows:

DANGER

High risk level! Risks that result in death or serious injury are indicated by the signal word „Danger“.

WARNING

Risks that could result in death or serious injuries are marked with the signal word "Warning".

CAUTION

Risks that could result in moderate or minor injuries are indicated by the signal word "Caution".

NOTE

Risks relating to damage to the product itself or to property damage to other objects are indicated by the signal word "Notice".



Important additional information is marked with this information symbol.

2 **SAFETY**

2.1 *Functionality & intended use*

FAZUA Drive systems are designed as electric drive systems for E-Bikes. The battery system of the FAZUA RIDE 60 (battery) is approved for use in altitudes of up to 3 000 m (9842.4 ft).

The electric Pedal Assist function switches off, as intended, as soon as you reach or exceed a certain (country and product specific) speed*. When you ride at a speed that exceeds the switch-off point, you pedal without assistance from the drive system, using only your own muscle power.

* In the United States, the speed at which the electric Pedal Assist function automatically switches off is 32 km/h (20 mph).

The drive system as a whole consists of several components:

- A** → **Drive unit**
→ You can find detailed information here in [Section “Drive unit”](#).
- B** → **Control element + display**
→ You can find detailed information here in [Section “Control element and display”](#).
- C** → **Battery and charger**
→ You can find detailed information here in [Section “Battery and charger”](#).

The individual components are available in different model versions, which differ from each other to a certain extent due to their design and handling. Detailed information about the function of the individual components forming part of the drive system as well as about special features and handling the specific models can be found in the individual sections of this operations manual that describe the components.

The version of the drive system installed in your E-Bike, i.e. the specific combination of component models, is specially adapted to your E-Bike and must therefore not be changed.

Categorically, the drive system may only be installed and certain work may only be carried out on it in the ways planned by the manufacturer or by an authorized specialist.

Authorized specialists for repair and maintenance work can be found with the official FAZUA Servicepartners (see [Chapter 9 “Service”](#)).

For information about which work you may carry out yourself and which work must be carried out by an authorized specialist, refer to the individual sections of this operations manual that describe the components.

2.2 Limitation of liability

Porsche eBike Performance GmbH accepts no liability for any damage caused by incorrect or improper installation, improper handling or use other than intended.

Only use the components of the drive system as described in this operations manual. Any other use is considered improper and may result in accidents, serious injuries and damage to the drive system.

2.3 Symbols & pictograms of the drive system

On individual components of the drive system you will find certain symbols and pictograms, which are listed below including their meaning.



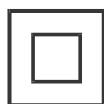
This symbol indicates that the user of the drive system or the individual components must have read and understood the operations manual before use.



A device marked with this symbol (here: the charger) may only be used in dry indoor areas.



When used in a damp environment and in contact with liquids, there is a risk of electric shock!



An electrical appliance marked with this symbol corresponds to protection class II: The device has double or reinforced insulation to protect against electric shock.



An electrical appliance marked with this symbol meets the safety requirements of protection class III.



This symbol warns of hot surfaces.



There is a risk of burns if touched, contact with combustible materials may cause a fire.



Li-ion

These symbols indicate that the component labeled with these symbols as a lithium-ion battery must be disposed of separately at the end of its service life and may not be disposed of with the household waste.



This symbol indicates that the component labeled with this symbol as electrical or electronic equipment must be disposed of at the end of its service life and may not be disposed of with household waste.



This symbol indicates products that meet all the requirements for obtaining the European CE marking.

Specific information can be found in [Chapter 10 "Conformity"](#).



This symbol identifies products that meet all the requirements for obtaining the British UKCA marking.

Specific information can be found in [Chapter 10 "Conformity"](#).



The test seal "Geprüfte Sicherheit" [GS mark] is awarded by independent certification bodies.

A device marked with the GS test seal complies with the safety-relevant requirements of the German Product Safety Act (ProdSG).



The "type tested" test seal shown is awarded by the TÜV certification body.

A device marked with the test seal shown corresponds to the safety-relevant requirements for Canada and the USA.



The "UL® Listed" seal of approval is awarded by the US UL® certification body.

A device labeled with the "UL® Listed" test seal shown corresponds to the safety-relevant requirements for Canada and the USA.



The "FCC" seal is awarded by the Federal Communications Commission, an independent U.S. government agency responsible for implementing and enforcing U.S. communications laws and regulations.

An electrical device marked with the FCC seal complies with American standards for electromagnetic compatibility.



The test seal shown is awarded by the SGS certification body.

A device marked with this test seal complies with the safety-relevant requirements for Canada and the USA in accordance with UL standards.

The drive system and the battery have been tested according to UL standards. The following UL standards were applied: UL 2271 - Standard for Batteries for Use in Light Electric Vehicle (LEV) Applications, UL 2849 - Outline of Investigation for Electric Bicycles, Electrically Power Assisted Cycles (EPAC Bicycles), Electric Scooters, and Electric Motorcycles.

2.4 General safety instructions for the drive system

READ AND KEEP ALL IMPORTANT SAFETY INSTRUCTIONS!

The general safety instructions listed below refer to the drive system as a whole and must always be taken into account when using the E-Bike equipped with it.



DANGER

Dangers for E-Bike users!

Specific dangers fundamentally exist for users of E-Bikes. Depending on the E-Bike model in which the drive system is installed, additional dangers may arise which are not mentioned here.

- ▶ Read and follow the manufacturer's instructions for your E-Bike.
- ▶ Find out about and observe any applicable national regulations regarding E-Bikes.



DANGER

Dangers due to unauthorized changes!

If you make unauthorized changes to the drive system or components, you may cause an explosion, electric shock, or serious injury to yourself or others.

- ▶ Under no circumstances should you modify or alter individual components of the drive system autonomously.
- ▶ Never replace any drive system components independently.
- ▶ Never open the drive system components without authorization. The drive system components do not require any maintenance.
- ▶ Only allow repairs to the drive system to be carried out by an authorized specialist.
- ▶ Only allow components of the drive system to be replaced by an authorized specialist with permissible original spare parts.

⚠ DANGER**Risk of electric shock and fire if handled incorrectly!**

If you handle the battery and/or charger improperly or use incompatible batteries and chargers together, they may cause a fire. The battery may explode if handled incorrectly.

- ▶ Only use the battery in e-bikes equipped with an original FAZUA RIDE 60 drive system. Never use the battery for other purposes or in other drive systems.
- ▶ Follow all charging instructions and do not charge the battery pack outside of the temperature range specified in the instructions. Charging improperly or at temperatures outside of the specified range may damage the battery and increase the risk of fire.
- ▶ Do not modify or attempt to repair the charger or the battery pack.

⚠ WARNING**Danger from accidental starting!**

Starting the drive system in unsuitable situations can result in accidents and serious injury.

- ▶ To prevent the drive system from starting up, switch off the drive system and, if necessary, prevent it from being switched back on unintentionally or unnoticed when the E-Bike is being transported or stored and when carrying out any work on the E-Bike.
- ▶ If possible, remove the battery*

NOTE**Risk of damage!**

Improper handling can damage the drive system or individual components.

- ▶ Only have individual components of the drive system replaced with components of identical design or other components expressly approved by the manufacturer of the drive system. This will protect the other components from possible damage.

* This only applies if your E-Bike is equipped with a removable battery (see [Chapter 19 "Model variants of the battery"](#)).

- Have individual components of the E-Bike replaced exclusively by identical components or other components expressly approved by the E-Bike manufacturer. This will protect your E-Bike (including the drive system) from possible damage.

3 INSTRUCTIONS FOR RIDING AN E-BIKE WITH THE FAZUA DRIVE SYSTEM

Observe the following instructions for riding your E-Bike equipped with a FAZUA RIDE 60 drive system.

Gear shift

The gear shift of your E-Bike is operated in exactly the same way as that of a conventional bicycle. Selecting a suitable gear increases the speed, power and range of your E-Bike while maintaining pedal frequency.

Range/trip planning

How long or how far you can ride your E-Bike before you need to recharge the battery depends on several factors.

These factors include, but are not limited to:

- the set support level;
- the (riding) speed with which you move;
- your gear changing;
- the type of tire and the tire pressure set;
- the selected route and the weather conditions;
- the weight of the rider and the E-Bike (total weight);
- the condition and age of the battery

Therefore, the following applies as a matter of principle:

- Familiarize yourself with your E-Bike step by step while away from roads and heavy traffic.
- Test the maximum range of your E-Bike under various external conditions before planning longer trips. It is not possible to make an accurate statement about the range of your system either before or during a trip.

Storage and operating temperatures

- Observe the operating and storage temperatures for the components of the drive system (especially for the battery), as they can get damaged by extreme temperatures.

For more detailed information about operating and storage temperatures, refer to the attached data sheets of the individual components in the annex (see [Chapter 27 “Data sheets \(technical data\)”](#)) and [Chapter 4 “Storing and transporting E-Bikes with the FAZUA drive system”](#).



DANGER

If you do not handle the battery properly, the battery may explode!

4 *STORING AND TRANSPORTING E-BIKES WITH THE FAZUA DRIVE SYSTEM*



WARNING

Danger from accidental starting!

Starting the drive system in unsuitable situations can result in accidents and serious injury.

- To prevent the drive system from starting up, switch off the drive system and, if necessary, prevent it from being switched back on unintentionally or unnoticed when the E-Bike is being transported or stored.
- If possible, remove the battery*

- Prior to transport and storage, always disconnect the charger from the battery and transport/store the charger separately from the battery.

* This only applies if your E-Bike is equipped with a removable battery (see [Chapter 19 “Model variants of the battery”](#)).

- Store the charger, battery :
 - in a cool, dry place,
 - protected from direct sunlight, sources of heat and frost,
 - out of the reach of children.
- When transporting and storing your E-Bike or the components of the drive system, observe the specified temperature ranges for the components.
 You can find information about the temperature ranges in the data sheets for the individual components (see [Chapter 27 "Data sheets \(technical data\)"](#) in [Section "Annex"](#)).
- If your E-Bike has a removable battery , always transport and store the battery separately from the E-Bike.

The following applies as a matter of principle: All batteries (and cells) containing lithium are subject to the regulations for transporting dangerous goods.

All removable batteries, all permanently installed batteries of the FAZUA RIDE 60 drive system are (rechargeable) batteries that contain lithium.

As long as the respective battery is not damaged, it may be transported by road by private individuals. Commercial transport requires compliance with the rules on the packaging, labeling and transport of dangerous goods. Open contacts must be covered and the respective battery must be securely packed. When sending, the parcel service must be informed of the presence of dangerous goods in the packaging.

- When transporting and sending the battery, observe the information in the document "Lithium-ion battery product safety data sheet". You can find and download this online at <https://fazua.com/support/help-center/downloads/>.
- During longer periods of inactivity, observe the following information about the charge level of the battery and the temperature range.
 If you do not intend to use the battery for an extended period of time, it should have a minimum charge level of 60% before you stop using it. The ambient temperature in the place of storage should be in the range of -15°C to +25°C (5°F to 77°F).
 Check the charge level of the battery after 6 months of non-use:
 If the check reveals that the charge level is 20% or less, recharge the battery to a charge level of 60% or more.
- If you have further questions, please contact a FAZUA Certified Partner or visit the FAZUA service platform (<https://fazua.com/support/contact/>).

5 RIDING AND SYSTEM DATA

The riding and system data of your FAZUA RIDE 60 drive system can be accessed in different ways. The way in which you access the different data depends on which data you wish to access.

The following options exist for displaying/handling the riding and system data:

- **While riding, the current riding data** (e.g. riding performance, speed, pedal frequency) **and system data** (e.g. battery temperature) **can be displayed on a mobile device.**
 - To do this, use the FAZUA app (see [Chapter 5.2 “FAZUA app”](#)) or a suitable device with compatible software from a third-party provider (see [Chapter 5.1 “Connectivity \(connections to devices from third-party providers\)”](#)).
The drive system and the mobile device are connected wirelessly (see [Chapter 5.1 “Connectivity \(connections to devices from third-party providers\)”](#)).
- **You can set the different modes and adapt the drive system’s ride performance to your personal preferences.**
 - To do this, use the FAZUA app (see [Chapter 5.2 “FAZUA app”](#)) or the FAZUA Toolbox (see [Chapter 5.3 “FAZUA Toolbox”](#)).
- **You can access a whole range of system information and carry out your own firmware updates, etc.**
 - Use the FAZUA Toolbox (see [Chapter 5.3 “FAZUA Toolbox”](#)) to do so.
The drive system and external device are connected via a USB cable (USB-C).*

* The USB cable required for this is not supplied.

5.1 *Connectivity (connections to devices from third-party providers)*

You can wirelessly connect your FAZUA RIDE 60 drive system to a compatible bicycle computer or to other suitable devices from third-party providers using the integrated connectivity software.

With the FAZUA RIDE 60 drive system, the third-party provider's device can be connected either via Bluetooth Low Energy (BLE) or via ANT+.

5.1.1 *Bluetooth® connection*



The third-party provider's Bluetooth® compatible device must be equipped with a BLE interface version of 4.0 or higher.

If the Bluetooth® connection is successful, the LED display **[B.2]** on your drive system displays the associated animation (see "Establishing a BLE connection" in [Chapter 25.1 "Overview of LED Hub display"](#) or in [Chapter 25.2 "Overview of Control Hub display"](#)).

Detailed information about establishing the Bluetooth® connection, etc. can be found on the FAZUA website. You can access the corresponding website directly by scanning (or clicking on) the following QR code:

<https://fazua.com/support/help-center/knowledge-base/bluetooth-low-energy-ble/>

5.1.2 *ANT+ connection*

ANT+ (= *advanced and adaptive network technology*) is a wireless protocol for recording and transmitting sensor data via the LEV or PWR profile.

ANT+ enabled devices that are compatible with the FAZUA RIDE 60 drive system can be connected to the drive system via ANT+.

5.2 FAZUA app

You can download the FAZUA app to a suitable device (e.g. a Smartphone or tablet) from the FAZUA website.

You can also find extensive information about the FAZUA app and its functions on the FAZUA website. You can access the corresponding website directly by scanning (or clicking on) the following QR code:

<https://fazua.com/support/help-center/knowledge-base/fazua-app/>

5.3 FAZUA Toolbox

The FAZUA Toolbox is the software designed for FAZUA drive systems. The Basic version of the FAZUA Toolbox enables you to access a range of information and carry out a firmware update yourself.

The (E-Bike) drive system and the device on which the FAZUA Toolbox is installed (e.g. computer, tablet) are connected via a USB cable (USB-C).*

5.3.1 Download

You can download the latest version of the FAZUA Toolbox (for Windows, Mac or Linux) to a suitable device (e.g. computer, tablet) from the FAZUA website. You can access the corresponding website directly by scanning (or clicking on) the following QR code:

<https://fazua.com/support/help-center/fazua-toolbox-software/>

* The USB cable required for this is not supplied.

Install the file after downloading it.

As soon as the FAZUA Toolbox Basic version of the Toolbox has been installed on the device, you can connect your FAZUA drive system (via USB cable) to the device, and discover the many functions of the FAZUA Toolbox Basic version.

5.3.2 Overview of functions

In the **Product Information** area, you can see whether you have the latest version of the Toolbox and you can check the serial numbers and hardware versions of your system components such as the battery, motor and display. You can also create a system report with all relevant information about your FAZUA drive system.

In the **Live Data** area, you can find all the latest (system)information (e.g. error data, electric values, battery SOC). The Live Data is particularly important when interacting with the FAZUA service team.

In the **Configuration** area, you can carry out settings that best suit your riding feeling. For example, you can set the power for Breeze mode, River mode or Rocket mode.

In the **Firmware Update** area, you can update the firmware of your FAZUA drive system.

To perform a firmware update, proceed as follows:

1. Connect your E-Bike (together with battery) via a USB cable (USB-C) to the device on which the FAZUA Toolbox is installed (e.g. computer, tablet).

The drive system's USB socket **[B.3]** is located on the display (LED Hub or Control Hub) (see [Chapter 15 "Detailed view and part designations"](#)).



You can carry out the firmware update locally (if you have saved a firmware version on your device) or online.

Porsche eBike Performance GmbH recommends the online update as then you will be automatically provided with the latest firmware.

2. Switch your drive system on (see [Chapter 17.1 "Switching the drive system on and off"](#)).
3. Click on "RIDE 60 BUNDLE UPDATE".

You can now choose between the online update and a local update.

If you select the "Online" update, the latest firmware bundle will be downloaded automatically (Internet connection required!). Components for which a later version is available will be selected automatically for the update.

4. Click on "Start": All selected components will now be updated.

Do not disconnect the USB cable or the battery under any circumstances during the update.

5. After all updates have been successfully installed, remove the USB cable from the USB socket **[B.3]** and close the USB socket carefully so that water or dirt cannot enter it.

Calibration (calibrating the torque sensor)

This function enables you to calibrate the power of your E-Bike by setting the torque sensor.

IMPORTANT: This type of calibration is **ONLY** required if you notice a change in the motor support mode.

To calibrate the torque sensor, proceed as follows:

1. Stand your E-Bike upright and lift up the rear wheel.
Use the bike stand for this if one exists. **IMPORTANT:** Do not turn your E-Bike upside down.
2. Connect your E-Bike (together with battery) via a USB cable (USB-C) to the device on which the FAZUA Toolbox is installed (e.g. computer, tablet).
The inserted battery should display a charge level of at least 20%.
The drive system's USB socket **[B.3]** is located on the display (LED Hub or Control Hub) (see [Chapter 15 "Detailed view and part designations"](#)).
3. Switch your drive system on (see [Chapter 17.1 "Switching the drive system on and off"](#)).
4. Start the torque sensor calibration process.
You will now be guided through the process step by step.

6 TROUBLESHOOTING

1. If your E-Bike or the drive system does not function as desired, first check whether the fault can be rectified using the "Troubleshooting" overview table below.
2. If necessary, contact a FAZUA Certified Partner or visit the FAZUA service platform (<https://fazua.com/support>), if:
 - the error is not listed in the overview table,
 - the error is listed in the overview table, but it cannot be corrected in the way described here or you are unsure.

"TROUBLESHOOTING" OVERVIEW TABLE	
Problem	possible Reason / Solution
The engine feels weaker than usual.	It is very hot and the heat management of the battery and/or drive unit is limiting the power.
	It is very cold and the battery (=lithium-ion battery) is not delivering the usual power.
All LEDS are flashing red three times every two seconds.	There is a connection error between the drive unit and battery. Dirt or jammed cables may be preventing the connection.
	→ Clean the interfaces and contacts on the battery so that you can insert the battery properly.*
All LEDS are flashing yellow twice every ten seconds.	There may be a poor connection between the speed sensor and the drive unit.
	→ Check that the speed sensor and magnet are correctly located in their receptacle on the rear wheel. If you cannot find any faults, contact a FAZUA Certified Partner.

* This only applies if your E-Bike is equipped with a removable battery (see [Chapter 19 "Model variants of the battery"](#)).

"TROUBLESHOOTING" OVERVIEW TABLE	
Problem	possible Reason / Solution
The LEDs are flash white.	<p>A firmware update is being carried out.</p> <p>→ In this case, wait and do not switch off the drive system until the LEDs stop flashing.</p>
The drive system cannot be switched on.	<p>The interfaces (between the battery and the drive unit) may be dirty.</p> <p>→ Clean the interfaces and contacts on the battery.*</p>
The battery cannot be inserted or does not engage correctly.	<p>The interfaces (between the battery and the drive unit) may be dirty.</p> <p>It is possible that the engagement of the battery is obstructed by a cable, hydraulic line or Bowden cable.</p> <p>→ Clean the interfaces and contacts on the battery.***</p> <p>→ Make sure that no cables are preventing the battery from engaging.</p>

* This only applies if your E-Bike is equipped with a removable battery (see [Chapter 19 "Model variants of the battery"](#)).

*** This only applies if your E-Bike is equipped with a removable battery (see [Chapter 19 "Model variants of the battery"](#)).

7 DISPOSAL INFORMATION

According to the EU Directives for waste electrical and electronic equipment (Directive 2012/19/EU) and spent batteries (Directive 2006/66/EC), the relevant components must be collected separately and disposed of in an environmentally sound manner.

- Before disposing of your E-Bike, remove the battery and any other batteries installed on the E-Bike as well as all components and controls that contain batteries.

7.1 Disposing of your E-Bike

After you have removed all batteries, the e-bike is considered an old electrical appliance and must be recycled.

- Find out from your city or municipal administration (municipality, district) about free collection points for old electrical appliances and/or collection points, via which the components or the e-bike can be recycled.
- When disposing of the product, observe the requirements of the United States Environmental Protection Agency (www.epa.gov).
- If necessary, make sure to delete any personal data stored on the device before you return the electrical or electronic equipment to the collection point. This task is your responsibility.

7.2 Disposing of batteries

The drive system battery are lithium-ion batteries which must be disposed of as hazardous waste.

- Dispose of the battery of the drive system, and any other batteries installed in the e-bike at a recycling center or a collection point in your town or municipality.

8 CONSUMER WARRANTY IN THE UNITED STATES

Porsche eBike Performance GmbH warrants to the end customer (hereinafter referred to as “customer”), in accordance with the provisions set forth below, that the drive system integrated in the bicycle purchased by the customer, including the components of the drive system, (hereinafter collectively referred to as “product”) will remain free of construction, material and manufacturing defects and be fully functional for a period of two years following delivery to you (warranty period).

However, in the event that a defect should occur, or if the drive system does not remain fully functional, the Porsche eBike Performance GmbH shall, at its own discretion, remedy the defect(s) at its own expense by either performing repairs or providing new or refurbished parts.

However, claims under this warranty shall only be deemed valid if:

- The product does not exhibit any damage or signs of wear caused by a form of use deviating from normal intended use or the specifications provided by Porsche eBike Performance GmbH in the user manual.
- The product does not exhibit any signs indicating that repairs or other procedures were performed by anyone not authorized by Porsche eBike Performance GmbH.
- The damage is not due to improper assembly or follow-up maintenance or lack of skill, competence or experience of the user or assembler.
- The product was assembled or serviced by an authorized FAZUA dealer.
- The product has not been modified, neglected, used in competition, or for commercial purposes such as rental, courier, police, security, etc., misused or abused, involved in accidents or anything other than normal use.
- There was no installation of components, parts, or accessories not originally intended for use with or compatible with FAZUA Products.
- The serial number has not been removed or rendered illegible.
- Notice of the defect has been given within fourteen (14) days of the discovery of the defect.

Claims under this warranty require that,

- prior to returning the product, the customer contact either the dealer from whom the customer purchased the bicycle or Porsche eBike Performance GmbH, and that the customer gives the dealer or Porsche eBike Performance GmbH an opportunity to perform a fault analysis over the telephone within a period of eight days.
- the product is delivered or returned to Porsche eBike Performance GmbH.

- the original invoice containing the date of purchase is presented.
- the shipping is carried out by a carrier designated by Porsche eBike Performance GmbH. The customer may use a different carrier at his or her own expense.

In the event of resale, this warranty shall also apply within the aforementioned scope, and under the conditions stated above (including the requirement to provide proof of purchase) to any subsequent future owner of the Product. Each new owner assumes the warranty based on the time remaining from the original date of purchase.

- In consideration of the above warranties by Porsche eBike Performance GmbH, the buyer agrees to and accepts the following conditions:
- This warranty is subject to the law of the US, provided that mandatory consumer protection regulations in the country of the respective Customer are not in conflict therewith.
- That this warranty is in lieu of all other warranties, expressed or implied.
- That ALL WARRANTIES OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE ARE HEREBY EXCLUDED AND/OR WAIVED.
- That this remedy is in lieu of all other remedies or claims for damages, consequential or otherwise, which the buyer may have against Porsche eBike Performance GmbH.
- Porsche eBike Performance GmbH shall have no liability for any loss or injury caused, in whole or in part, by its actions, omissions, or negligence, or for contingencies beyond its control.

9 SERVICE



Authorized specialists for repair and maintenance work can be found with the official FAZUA Servicepartners.

Contact the FAZUA service team or visit the FAZUA service platform to find FAZUA Servicepartners for your region.



If possible, prepare a description of the fault and all information about the relevant component before contacting a FAZUA Certified Partner or the FAZUA service team.

→ If you require service, contact a FAZUA Certified Partner or the FAZUA service team.

→ Also visit the FAZUA service platform, if necessary:

<https://fazua.com/support/contact/>

It provides extensive content on the subject of "Service" as well as a search function for locating FAZUA Certified Partners in your area.

10 CONFORMITY

Porsche eBike Performance GmbH confirms the conformity according to 47 CFR Section 15.19 - Information to the user.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

Porsche eBike Performance GmbH confirms the conformity according to 47 CFR Section 15.21 - Information to the user.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

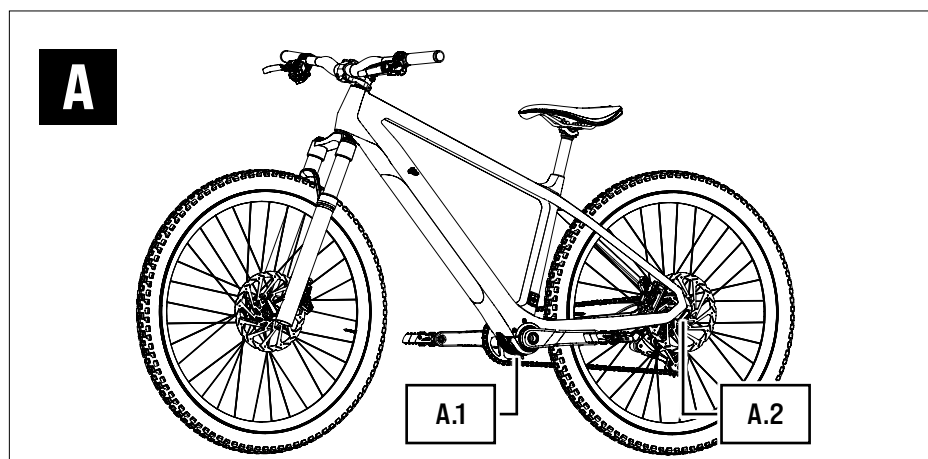
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

DRIVE UNIT

The drive unit converts the energy of the battery and supports you while pedaling. The speed sensor on the rear wheel determines the driving speed (with the help of a magnet). If the determined cycling speed exceeds the switch-off point*, the drive unit automatically switches off the electric pedal assist. As soon as the cycling speed drops below the switch-off point, the electric Pedal Assist function starts again.

IMPORTANT: The drive unit and speed sensor are permanently installed on your E-Bike and may not be modified. If you make any changes to the drive unit or to the speed sensor yourself, this may impair the safety and function of the drive system.

11 DETAIL VIEW AND PART DESIGNATIONS/ POSITIONS ON THE E-BIKE



Part designations

- A.1 → Drive unit (permanently installed component)
- A.2 → Speed sensor + magnet

* The electric pedal assist switches off as soon as you reach or exceed a certain (country and product specific) speed

12 CORRECT POSITION OF SPEED SENSOR AND MAGNET



For the drive system to function correctly, the speed sensor and magnet [A.2] must be mounted in the correct position on the rear wheel. If this is not the case or if the speed sensor is not connected correctly, the drive system will operate in "Soft Fault" mode.

→ You can find detailed information here in [Chapter 16.2 "E-Bike status"](#).

The correct positions of the speed sensor and magnet depend on the manufacturer.

- If you notice that the drive system is in "Soft Fault" mode, make sure, if possible, that the speed sensor and magnet are correctly located in their holder on the rear wheel.
- If the problem cannot be resolved, do not use the E-Bike but contact an authorized specialist.

13 CLEANING AND MAINTAINING THE DRIVE UNIT

 **CAUTION**
Risk of injury!

If the drive system is set in motion while you are handling it, you may injure yourself.

- ▶ To prevent the drive system from being set in motion, switch off the drive system and, if necessary, prevent it from being switched back on unintentionally or unnoticed when cleaning the E-Bike or the components of the drive system.
- ▶ Before cleaning, if possible, remove the battery *

NOTE
Risk of damage!

Improper cleaning can damage the drive unit.

- ▶ Never clean the drive unit with a hard water jet or a high-pressure cleaner.

* This only applies if your E-Bike is equipped with a removable battery (see [Chapter 19 "Model variants of the battery"](#)).

- ▶ Do not use aggressive cleaning agents for cleaning.
 - ▶ Do not use sharp, angular or metallic cleaning objects when cleaning.
-
- Always keep all components of the E-Bike and the drive system in a clean condition.
 - Clean the exterior of the drive unit gently with a cloth or soft brush.
 - If necessary, use a mild soap solution for the external removal of coarser soiling.
 - Wipe all surfaces dry after cleaning.
 - Clean the cooling unit of the drive unit regularly.
Do not wait until the cooling unit is visibly or heavily soiled before cleaning it!
 - For more information about cleaning and maintaining your drive system, contact a FAZUA service partner or visit the FAZUA service platform (<https://fazua.com/support/contact/>).

CONTROL ELEMENT AND DISPLAY

Use the control element to carry out all the settings for the drive system; the display provides information about the current settings and the battery charge level.

14 MODEL VARIANTS OF THE CONTROL ELEMENT AND DISPLAY



Depending on the model, the control element and display will be either one combined component or two separate components.

The table below shows which models are currently available.

Control element with display [Combined component]	Control element [separate component]	Display [separate component]
<ul style="list-style-type: none"> Control Hub 	<ul style="list-style-type: none"> Ring Control 	<ul style="list-style-type: none"> LED Hub
	<ul style="list-style-type: none"> Mode Control 	
	<ul style="list-style-type: none"> Road Control 	

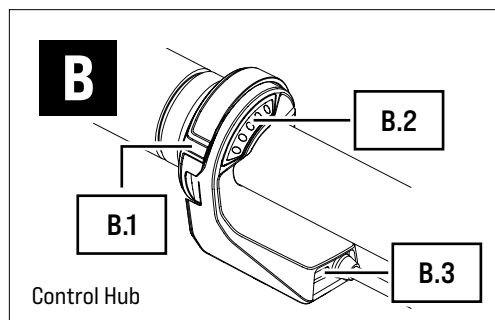
15 DETAILED VIEW AND PART DESIGNATIONS

15.1 Control Hub



The Control Hub is attached to the handlebars, as standard.

ATTENTION: Do not leave any 5V devices connected to the USB port when the drive system is switched off with Energy 430.



Part designations

B.1 → Control switch

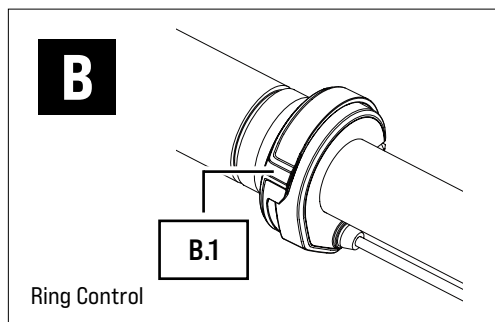
B.2 → LED display

B.3 → USB port

15.2 Ring Control



The Ring Control is attached to the handlebars, as standard.



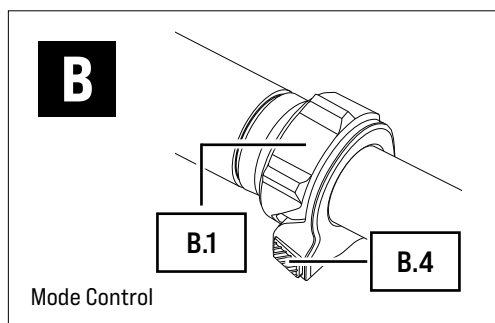
Part designations

B.1 → Control switch

15.3 Mode Control



The Mode Control is attached to the handlebars, as standard.



Part designations

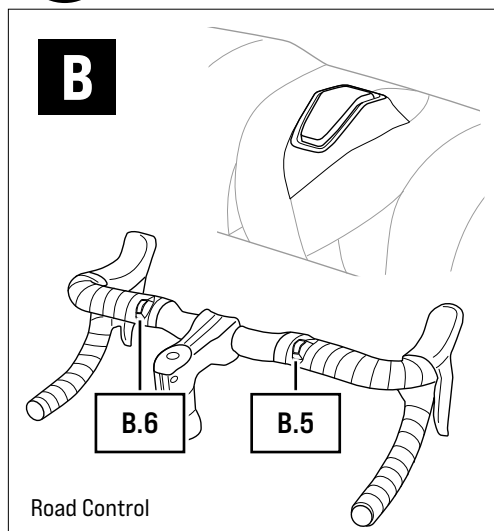
B.1 → Control switch

B.4 → Button

15.4 Road Control



The Road Control is attached to the handlebars, as standard.



Part designations

B.5 → right-hand switch (RoC R)

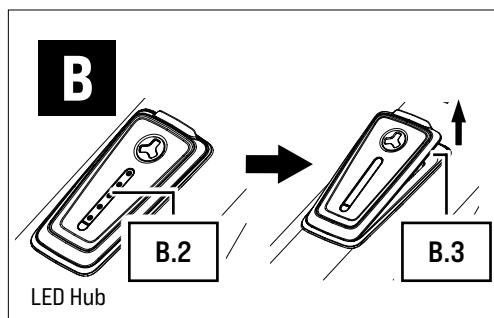
B.6 → left-hand switch (RoC L)

15.5 LED Hub



The LED Hub is attached to the top tube as standard.

ATTENTION: Do not leave any 5V devices connected to the USB port when the drive system is switched off with Energy 430.



Part designations

B.2 → LED display

B.3 → USB port

16 DRIVING AND STATUS INFORMATION ON THE DISPLAY

The LED display [B.2] shows the charge level and the set support level for the Pedal Assist function. The LED display also displays information about the current status of your E-Bike.



You can find a complete overview of the possible displays in [Chapter 25 "Overview of displays"](#).

- LED Hub: see [Chapter 25.1 "Overview of LED Hub display"](#).
- Control Hub: see [Chapter 25.2 "Overview of Control Hub display"](#).

16.1 Current charge level and set support level

Battery charge level*:

The charge level is indicated by the number of illuminated LEDs. Each of the 5 LEDs represents 20% of the total charging capacity.

When the battery is fully charged, all 5 LEDs light up.

Pedal Assist support level:

Each support level is assigned a color; i.e. the color of the LEDs on the indicator indicates the support level currently set.

→ You can find detailed information here in [Chapter 17.2 "Pedal Assist/support levels"](#).

16.2 E-Bike status

Possible status indicators

- **The blue LED at the top is flashing = "Ready for operation"**

After successfully installing the battery in the E-Bike, the blue status indicator briefly flashes to indicate that you can now switch on the drive system using the control element.

- **All LEDs are flashing yellow twice every ten seconds = "Soft Fault"**

If there is a "Soft Fault", the yellow status indicator flashes. The drive system signals that a temporary or non-critical fault is present, which in most cases leads to a loss of power.

* The charge level of the component (battery) that is (currently) supplying energy to the drive system is always displayed: When energy is being supplied by the regular (main) battery, the charge level of the regular (main) battery is displayed .

If there is a "Soft Fault", you can continue riding your E-Bike but Porsche eBike Performance GmbH strongly advises against doing so in order to avoid causing further damage to the drive system or E-Bike.

- **All LEDS are flashing red three times every two seconds = "Hard Fault".**

If a "Hard Fault" occurs, the status indicator flashes red. If a "Hard Fault" occurs on your E-Bike, the E-Bike may no longer be used and must be serviced.

17 USING THE CONTROL ELEMENT

WARNING

Danger due to distraction during operation!

If you get distracted by the gear shift on the control element or by looking at the display while cycling, accidents and serious injuries can result.

- ▶ Before using your E-Bike for the first time, familiarize yourself, away from road traffic, with the functions and how to handle your control element.
- ▶ Do not use the control element and do not look at the display while riding if it distracts you.



All operating functions are explained below.

You can find a complete overview for using your control element in the annex in [Chapter 26 "Overview of control elements"](#).

- Control Hub: see [Chapter 26.1 "Overview of Control Hub"](#),
- Ring Control: see [Chapter 26.2 "Overview of Ring Control"](#),
- Mode Control: see [Chapter 26.3 "Overview of Mode Control"](#),
- Road Control: see [Chapter 26.4 "Overview of Road Control"](#).

17.1 Switching the drive system on and off

The way in which your E-Bike reacts to being switched on and off depends on the state in which the E-Bike is found when it is switched on or off:

- If the E-Bike was **switched off**, it **will switch** itself **on**.
- If the E-Bike was **switched on** (and **active**), it **will switch** itself **off**.



After 15 minutes of inactivity, the drive system's battery switches itself off automatically. To use the drive system again after it has switched itself off automatically, simply switch it back on as usual.



For instructions on how to use your control element to switch the drive system on or off, see the respective overview in the annex in [Chapter 26 "Overview of control elements"](#).

17.2 Pedal Assist/support levels

You can control the strength of the Pedal Assist function using the support level, i.e. how much/with how much power you wish the drive unit to support you when pedaling.



You can set or change the support level both while cycling and while stationary.

No support (white) The LED display [B.2] lights up white.

- You ride without electric pedal support (as with a conventional bicycle).

Support level "Breeze" The LED display [B.2] lights up green.

- You ride with low but effective support for a maximum range.

Support level "River" The LED display [B.2] lights up blue.

- You ride with reliable support for most applications.

Support level "Rocket" The LED display [B.2] lights up pink.

- You ride with maximum support for very demanding trips.



You can check and individually adjust the maximum motor power using the FAZUA Toolbox or the FAZUA app. You can also assign other colors for the three support levels there.

→ You can find more information about using the FAZUA app and the FAZUA Toolbox in [Chapter 5 "Riding and system data"](#).



For instructions on how to use your control element to change support levels, see the respective overview in the annex in [Chapter 26 "Overview of control elements"](#).

17.3 Boost function

 **CAUTION**
Risk of injury!

► Boost mode may only be activated while riding or when stationary, provide that the rider is fully ready to ride. Activating Boost mode while pushing or standing next to the bike can lead to dangerous situations.

The following applies to the Boost function:

In addition to the "regular" support levels, which you can use at any time*, the drive system has an additional function: The Boost function allows you to ride with a (higher) maximum motor power of 450 watts for a short time to momentarily give you an extra push.

The duration of the extra push due to the Boost function depends on the situation in which you activate the Boost function:

- If you activate the Boost function **from a standstill**, you receive an extra push for **4 seconds**.
- If you activate the Boost function **while already riding**, you receive an extra push for **12 seconds**.

The Boost function is deactivated automatically after 4 or 12 seconds or when you stop pedaling (e.g. to brake).



The Boost function cannot be activated if:

- you are riding at a speed of more than 32 km/h [20 mph].
- you have not selected a support level (the white LEDs on the indicator light up).
- the battery charge level is less than 10%.



For instructions on how to use your control element to activate the Boost function, see the respective overview in the annex in [Chapter 26 "Overview of control elements"](#).

* depending on the charge level of the battery.

17.4 Push Assist mode



You can injure yourself and damage the drive system or individual components through improper use of the Push Assist function.

- ▶ Only use the Push Assist function when pushing the E-Bike.
- ▶ When the Push Assist function is activated, hold the E-Bike securely with both hands and make sure that the wheels are in contact with the ground.
- ▶ Be careful not to injure yourself on the rotating pedals when using the Push Assist function.



Push Assist makes it easier to push the E-Bike. In Push Assist mode, your E-Bike can reach a speed of up to 6 km/h (3.7 mph) depending on the gear selected.

The following applies to the Push Assist function:

- Push Assist can only be used if no support has been set.
 - Set the support level to "none" for using the Push Assist function.
- Push Assist is activated after 2 seconds and sets the E-Bike in motion for as long as you keep the control switch* [B.1] / the button** [B.4] / the right-hand switch*** [B.5] held down.
 - Switch Push Assist off by releasing the control switch [B.1] / the button [B.4] / the right-hand switch [B.5].
- You must hold the E-Bike with both hands when pushing it with Push Assist activated. You can slow down the speed of the E-Bike to your walking speed by holding or restraining the E-Bike.
- Push Assist is automatically disabled if:
 - you release the control switch [B.1] / the button [B.4] / the right-hand switch [B.5],
 - the wheels on the E-Bike are locked,
 - the E-Bike reaches a speed of more than 6 km/h (3.7 mph).



For information on how to use your control element to activate the Push Assist function, refer to the respective overview in the annex in [Chapter 26 "Overview of control elements"](#).

* Applies to Control Hub and Ring Control.

** Applies to Mode Control.

*** Applies to Road Control.

17.5 *Switching the bicycle lighting on and off*



Depending on the model, bicycle lighting can be connected to the drive system. In this case, you can switch the bicycle lighting on and off with the control element.



For instructions on how to use your control element to switch the drive system on or off, see the respective overview in the annex in [Chapter 26 “Overview of control elements”](#).

18 **CLEANING AND MAINTAINING THE CONTROL ELEMENT AND DISPLAY**

CAUTION Risk of injury!

If the drive system is set in motion while you are handling it, you may injure yourself.

- ▶ Be careful not to start the drive system unintentionally when cleaning the control element.
- ▶ Before cleaning, if possible, remove the battery *

NOTE Risk of damage!

Improper cleaning may damage the control element or display.

- ▶ Never immerse the control element and display in water or other liquids for cleaning.
 - ▶ Do not use aggressive cleaning agents for cleaning.
 - ▶ Do not use sharp, angular or metallic cleaning objects when cleaning.
- Always keep all components of the E-Bike and the drive system in a clean condition.
- Clean the exterior of the control element and display gently with a cloth or soft brush.
- If necessary, use a mild soap solution for the external removal of coarser soiling.

IMPORTANT: Dampen the cloth only slightly or wring it out well to prevent liquid from penetrating the inside of the housing and the connections. If liquid enters the inside of the housing or the connections, the control element and the display may be damaged.

- Wipe all surfaces dry after cleaning.

* This only applies if your E-Bike is equipped with a removable battery (see [Chapter 19 "Model variants of the battery"](#)).

BATTERY AND CHARGER



IMPORTANT: For reasons of clarity and to avoid confusion, the term "battery" is used in this operations manual exclusively to refer to the regular (main) battery (ENERGY 430 fix / ENERGY 480 fix / ENERGY 430 / ENERGY 480) which is dealt with in this section and for (rechargeable) batteries in general.

The battery supplies energy to all electrical functions/components of the drive system (electric Pedal Assist, control element, display) and, if applicable, to additional electrical components of the E-bike (e.g. bicycle lighting). Use the charger to charge the battery.

19 MODEL VARIANTS OF THE BATTERY



Depending on the model, the battery is either:

- permanently installed in the E-Bike and cannot be removed (models: ENERGY 430 fix, ENERGY 480 fix).

or

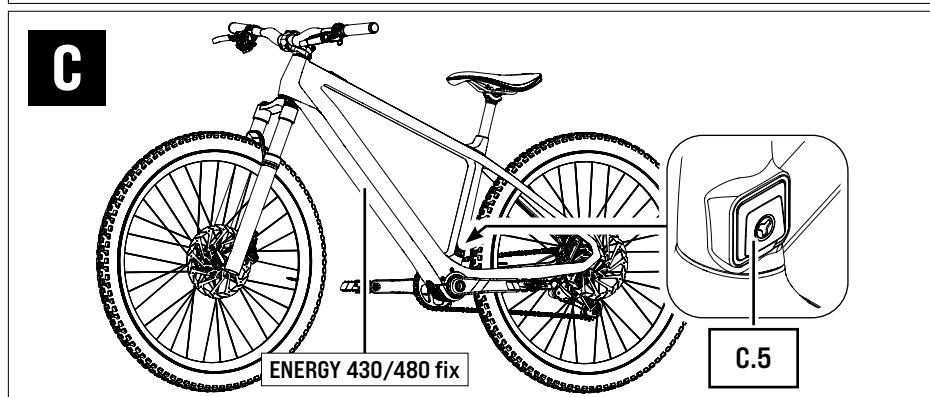
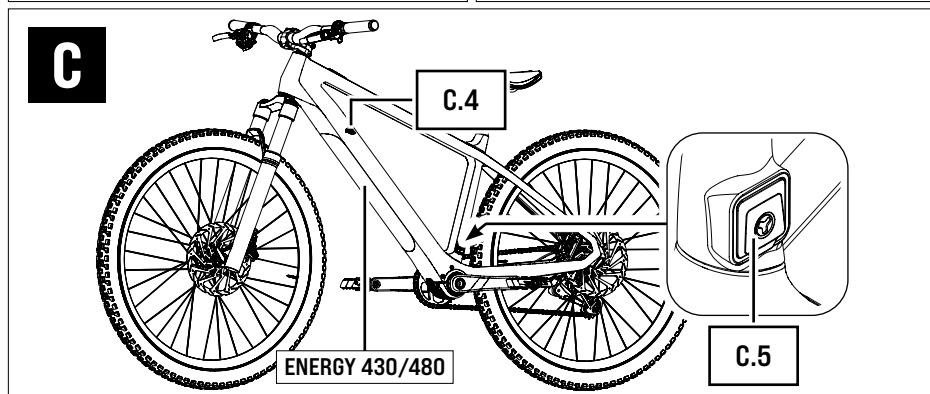
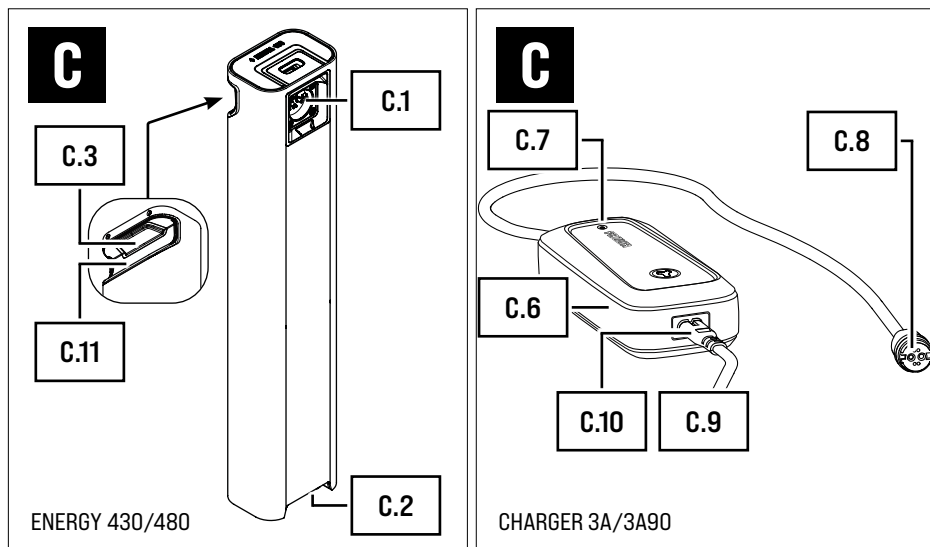
- a separate component that can be removed from the E-Bike (models: ENERGY 430, ENERGY 480).



The appearance and assembly/handling of the model variants of the removable battery (ENERGY 430 / ENERGY 480) are identical as are those of the model variants of the permanently installed battery (ENERGY 430 fix / ENERGY 480 fix).

For this reason, the respective model variants are described together in this operations manual.

20 DETAILED VIEW AND PART DESIGNATIONS



Part designations

- C.1 → Charging socket* (battery)
- C.2 → Interface* (battery)
- C.3 → Push button* (battery lock)
- C.4 → Cylinder lock and key*
- C.5 → Charging socket with cover flap** (E-Bike)
- C.6 → Mains adapter
- C.7 → LED display
- C.8 → Charging plug
- C.9 → Mains cable with mains plug*** (power connection)
- C.10 → Plug
- C.11 → Charge level indicator

* Only applies to removable batteries, not to permanently installed batteries.

** Applies to removable and permanently installed batteries. The charging connection is optional; the position can vary depending on the individual manufacturer.

*** Different from country to country, therefore without illustration.

21 ***SPECIFIC SAFETY INSTRUCTIONS FOR THE BATTERY AND CHARGER***



DANGER

Batteries may explode!

If you use inappropriate batteries or do not handle the battery properly, the battery may explode.

- ▶ Only use the original charger from FAZUA to charge the battery.
- ▶ Never use a damaged battery! Products with broken seals must not be used and must be immediately taken to a suitable recycling facility (see [Chapter 7 “Disposal information”](#)).
- ▶ Never attempt to charge a damaged battery!
- ▶ Do not continue using the battery, but have the battery checked by an authorized specialist and if necessary, replace it if:
 - you notice damage to the battery,
 - liquid is leaking out of the battery,
 - you notice a strange odor or a strange noise coming from the battery.
- ▶ Never open the battery! Attempting to open a battery increases the risk of explosion!
- ▶ Keep the battery away from heat (e.g. strong sunlight), open fire or water or other liquids.
- ▶ Only use the battery in E-Bikes equipped with an original FAZUA RIDE 60 drive system. Never use the battery for other purposes or in other drive systems.



DANGER

Fire hazard due to incorrect handling!

Improper handling of the battery and/or charger or attempting to charge batteries with an incompatible charger could cause a fire.

- ▶ Only use original and compatible components from FAZUA with each other. Do not attempt to charge a third-party battery with the FAZUA charger and do not attempt to charge the FAZUA battery with a third-party charger.

- ▶ The charger and battery heat up during charging, so keep away from combustible materials and do not leave the two components unattended during charging. During charging place the charger and battery on a well ventilated surface.
- ▶ Never attempt to charge non-rechargeable batteries!
- ▶ Take care not to handle metal objects such as coins, paper clips, screws, etc. in the immediate vicinity of the battery and to store the battery separately from metal objects. Metal objects can close a circuit between the terminals of the battery (i.e. "short-circuit" the battery) and cause a fire as a result.
- ▶ Do not short-circuit the battery.
- ▶ If a battery fire breaks out:
 - If possible, carefully remove the other batteries from the danger zone.
 - Evacuate all persons from the danger zone.
 - Use plenty of cold water (at least ten times the weight of the battery) to extinguish the fire.

**DANGER****Risk of electric shock!**

Improper handling of the charger or incorrect mains connection may expose you and others to the risk of electric shock.

- ▶ Only connect the charger to an easily accessible and properly installed power outlet.
- ▶ Make sure that the mains voltage at the mains connection corresponds to the information on the charger.
- ▶ Only use the charger in dry indoor areas.
- ▶ Keep the charger away from any liquid or moisture.
- ▶ Do not pull on the cables, but always grasp the corresponding plug when disconnecting the connectors.
- ▶ Do not handle the plugs of the charger with wet or damp hands.
- ▶ Take care not to bend the charger cable or lay them over sharp edges.

- ▶ Do not open the charger without authorization. The charger may only be opened by an authorized specialist and repaired using original spare parts.
- ▶ Before each use of the charger, check all individual parts (mains adapter, mains cable, charger cable and all plugs) for damage. If the charger's power cord is damaged, it must be replaced by the manufacturer, their customer service or a similarly qualified person, to avoid hazards.
- ▶ Never use a damaged charger. Otherwise there is a high risk of electric shock!
- ▶ Keep the charger in a clean condition. There is an increased risk of electric shock if the charger is dirty or contaminated.

**DANGER****Dangers during unattended use!**

If children or people with physical or mental impairments handle the battery or charger, there is an increased risk potential as these user groups may not be able to correctly assess certain risks, for example.

- ▶ This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
- ▶ Children shall not play with the appliance.
- ▶ Do not attempt to disassemble the charger by yourself.
- ▶ Do not use the charger in high temperature, moist, inflammable or explosive outdoor environments.
- ▶ Disconnect the power supply before marking or breaking the connections to the battery.

 DANGER**Danger of impairment of medical devices!**

The magnetic connections in the battery and charger can interfere with the function of pacemakers.

- Keep the battery and charger away from pacemakers or persons wearing a pacemaker and draw the attention of persons with pacemakers to the danger.

 WARNING**Risk of caustic burns due to battery acid!**

The battery contains battery acid. If you come into contact with this fluid, the affected skin area and/or mucous membrane may be burnt. Eye contact can cause loss of vision.

- Protect the battery from mechanical influences and any other load.
- Do not touch any liquid leaking from the battery.
- If you have come into contact with liquid leaking from the battery, immediately rinse the affected part of your body thoroughly under plenty of running water.
- Consult a doctor immediately after rinsing, especially in case of eye contact and/or if mucous membranes (e.g. nasal mucosa) are affected.

 WARNING**Health hazard due to irritation of the respiratory tract!**

If the battery is damaged, gases may escape which may irritate the respiratory tract.

- Protect the battery from mechanical influences and any other load.
- If you notice or suspect that gas is leaking from the battery, immediately ensure a supply of fresh air and seek medical attention as soon as possible.

⚠ CAUTION

Risk of burns!

The cooling unit on the drive unit can become very hot during operation and you may burn yourself when touching it.

- ▶ Be careful when handling the battery.* If necessary, allow the drive unit to cool down completely first.

NOTE

Risk of damage!

Improper handling can damage the drive system or individual components.

- ▶ Before inserting the battery, make sure that the contacts on the battery are dry.* If the contacts are damp or wet when inserted, the battery and drive system may get damaged.
- ▶ When charging, make sure that the charger's cables cannot present trip hazards in order to prevent components from being damaged, e.g. by a fall.
- ▶ Always make sure that the cover flap of the charging socket on the E-Bike is sealed correctly and completely to ensure that no dust or splash water can enter the charging socket.
- ▶ Keep solvents and chemicals that can damage surfaces (e.g. cleaning products) away from the battery. The battery must not come into contact with them.

22 USING THE BATTERY

22.1 Inserting/removing the battery



This only applies if your E-Bike is equipped with a removable battery (see [Chapter 19 "Model variants of the battery"](#)).

* Only applies to removable batteries, not to permanently installed batteries.

22.1.1 Inserting the battery



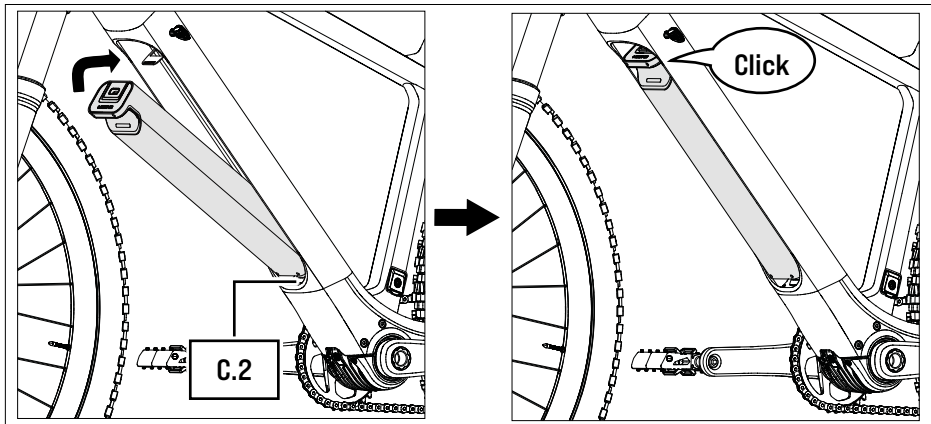
DANGER

Risk of explosion and fire!

A damaged or dirty battery may explode and/or cause a fire.

- ▶ Never insert a damaged battery into the e-bike.
- ▶ Check the battery for visible damage, such as cracks or burn marks, before each insertion.
- ▶ Make sure that the interfaces on the battery are free of dirt before using it.

1. Check the battery for visible damage before insertion (visual check).
2. Place the battery with the interface [C.2] first on the corresponding interface of the E-Bike.



3. Swing the top end of the battery into the down tube of the E-Bike.

The battery locks in place automatically when the two interfaces on the battery and the E-Bike are correctly interlocked and the battery is swiveled fully into the receptacle on the down tube. An audible engagement sound ("click") is heard when the device engages.

Contact an authorized specialist if the battery cannot be inserted or if the battery does not (audibly) click into place on the E-Bike.

22.1.2 Removing the battery



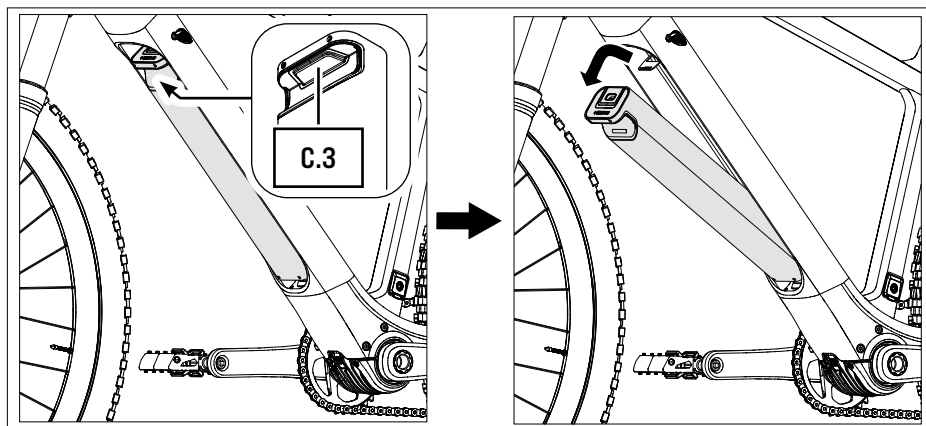
CAUTION

Risk of burns and injury!

The cooling unit on the drive unit can become very hot during operation and you may burn yourself when touching it. You may trap your fingers when removing the battery without due care.

- Be careful when handling the battery. If necessary, allow the drive unit to cool down completely first.
- When pressing the push button or removing the battery, be careful not to pinch your fingers.

1. Secure the battery with one hand.
2. Reach into the cutout on the battery and push the elastic pushbutton **[C.3]** in as far as it will go.



3. Press and hold the push button and gently pull the battery forwards out of the down tube on the E-Bike.
4. Remove the battery from the interface on the E-Bike.

22.2 Checking the battery status (on the battery)



This chapter only applies to E-Bikes that are equipped with a removable battery [see [Chapter 19 "Model variants of the battery"](#)].

22.2.1 Checking the battery's current charge level

With removable batteries, it is possible to check the battery's current charge level directly on the battery.

IMPORTANT: The system is not designed for checking the current charge level during the charging process to see whether the battery has already reached its maximum charge level or if it can still be charged. The LED display [C.7] on the charger is designed for this purpose.

→ You can find detailed information here in [Chapter 23.3 "Charging process"](#).

To check the current charge level directly on the battery:

→ Tip the battery backwards and forwards.

Depending on the charge level, different numbers of LEDs light up on the charge level indicator [C.11]. Each LED represents 20% of the (charging) capacity. If all five LEDs are illuminated, the battery is fully charged.

22.2.2 Checking the battery's state of health (SoH)

With the ENERGY 480, it is possible to check the battery's so-called "state of health" [SoH].



The state of health (SoH) is an indicator of the battery's capacity over its useful life. As a rule, the SoH depends on the number of charge cycles.

The battery's state of health affects the battery's performance/charging capacity.*

If the state of health is 80%, for example, this means that the battery still has 80% of its original capacity when fully charged.

You can check the battery's state of health digitally using the FAZUA Toolbox and the FAZUA app.

To check the battery's state of health using the FAZUA Toolbox and the FAZUA app:

→ Connect the E-Bike (with battery inserted) via the USB socket** to a device with access to the FAZUA Toolbox, or open the FAZUA app.

You can find more information about using the FAZUA app and the FAZUA Toolbox in [Chapter 5 "Riding and system data"](#).

* See the notes in the "Range/trip planning" section in [Chapter 3 "Instructions for riding an E-Bike with the FAZUA drive system"](#)

** The USB cable required for this is not supplied.

23 CHARGING THE BATTERY



DANGER

Risk of electric shock!

Improper handling of the charger or incorrect mains connection may expose you and others to the risk of electric shock. Improper handling of the battery and/or charger or attempting to charge batteries with an incompatible charger could cause a fire.

- Read and follow the safety instructions in [Chapter 21 “Specific safety instructions for the battery and charger”](#) before charging the battery.

The charging process can be interrupted at any time.

IMPORTANT: Only charge the battery **within the specified temperature range**.^{*} Charging outside the specified temperature range may damage the charger and/or battery.

- Fully charge the battery prior to initial operation so that you can use the full capacity of the battery.



Porsche eBike Performance GmbH recommends that you do not allow the battery to discharge completely.

- Recharge the battery when the charge level reaches 20%.

^{*} You can find information about the temperature ranges in the data sheets for the individual components [see [Chapter 27 “Data sheets \(technical data\)”](#) in [Section “Annex”](#)].

23.1 Prepare charger

1. Pick up the mains adapter **[C.6]** and the power cord **[C.9]**.
2. Plug the appliance plug **[C.10]** of the mains cable into the corresponding socket on the mains adapter.

23.2 Connecting/disconnecting the charger

IMPORTANT: The charging connection available to you for charging the battery depends on the battery model and your drive system's equipment with.

Charging connection for permanently installed batteries on E-Bikes :

- Charging socket **[C.5]** on the E-Bike.
 - See [Chapter 23.2.1 "Using the charging connection on the E-Bike"](#).

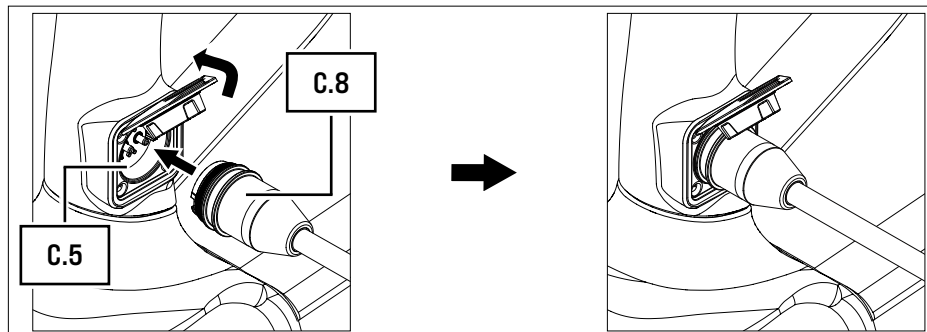
Charging connection for removable batteries on E-Bikes:

- Charging socket **[C.5]** on the E-Bike.
 - See [Chapter 23.2.1 "Using the charging connection on the E-Bike"](#).
- Charging socket **[C.1]** on the battery.
 - See [Chapter 23.2.3 "Using the charging connection on the battery"](#).

23.2.1 Using the charging connection on the E-Bike

Connecting the charger

1. Open the cover flap to access the charging socket [C.5] on the E-Bike.
2. Insert the charging plug [C.8] into the charging socket [C.5].



3. Plug the power plug [C.9] into a suitable wall socket to establish the power connection.

Charging process

4. For information about the charging process, see [Chapter 23.3 "Charging process"](#).

Disconnecting the charger

5. When charging is complete, unplug the mains plug [C.9] from the wall socket to disconnect the charger from the mains.
6. Pull out the charging plug [C.8] from the charging socket [C.5] on the E-Bike.
IMPORTANT: Then immediately seal the charging socket [C.5] on the E-Bike by closing the appropriate cover flap.
7. Disconnect the mains cable [C.9] from the mains adapter [C.6] and keep the two parts separate.

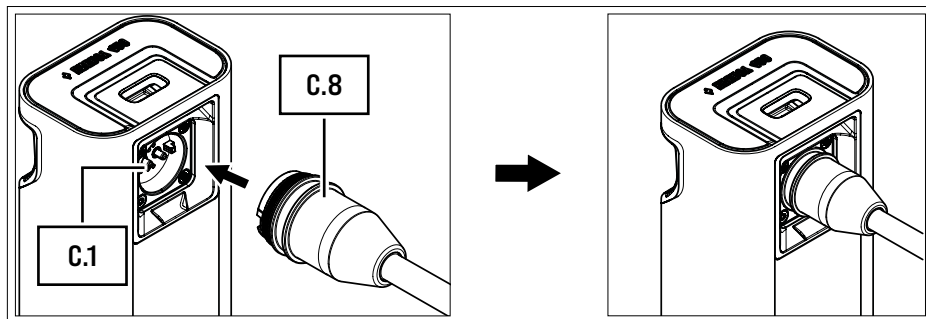
23.2.3 Using the charging connection on the battery



This chapter only applies to E-Bikes that are equipped with a removable battery (see [Chapter 19 “Model variants of the battery”](#)).

Connecting the charger

1. Remove the battery from the E-Bike (see [Chapter 22.1.2 “Removing the battery”](#)).
2. Insert the charging plug **[C.8]** into the charging socket **[C.1]** on the battery.



3. Plug the power plug **[C.9]** into a suitable wall socket to establish the power connection.

Charging process

4. For information about the charging process, see [Chapter 23.3 “Charging process”](#).

Disconnecting the charger

5. When charging is complete, unplug the mains plug **[C.9]** from the wall socket to disconnect the charger from the mains.
6. Insert the charging plug **[C.8]** into the charging socket **[C.1]** on the battery.
7. If necessary, reinsert the battery into the E-Bike.
8. Disconnect the mains cable **[C.9]** from the mains adapter **[C.6]** and keep the two parts separate.

23.3 Charging process

The charging process begins as soon as you have connected the charger to the E-Bike or battery on one side, and to the power supply on the other.

The flashing LEDs on the battery's charge level indicator **[C.11]** show that the battery is charging.*

During the charging process, the red **LED display [C.7]** on the charger lights up to indicate that the **battery is charging**.

When the color of the **LED display [C.7]** switches to **green**, this shows that the **battery is fully charged**.



The relevant indicator for determining whether the battery is fully charged is the LED display **[C.7]** on the charger.

It can occur that the LED display **[B.2]**, the charge level indicator **[C.11]** on the battery, the FAZUA app and the FAZUA Toolbox already display a charge level of 100%, however the red LED display **[C.7]** on the charger still lights up (for a while).

This can be caused, among other things, by unbalanced cells which will synchronize again during the automatic balancing process.

→ Do not disconnect the charger from the charging connection used until the charger's **LED display [C.7]** has changed from red to green.

24 CLEANING THE BATTERY AND CHARGER

NOTE

Risk of damage!

Improper cleaning can damage the battery or the charger.

- ▶ Never immerse the battery or the charger in water or other liquids. Keep liquids away from the battery and charger.
- ▶ Do not use aggressive cleaning agents for cleaning.
- ▶ Do not use sharp, angular or metallic cleaning objects when cleaning.
- ▶ Always keep all components of the E-Bike and the drive system in a clean condition.

* Only applies to removable batteries, not to permanently installed batteries.

24.1 Cleaning the battery



IMPORTANT: The cleaning instructions for the battery only apply to removable batteries (see [Chapter 19 “Model variants of the battery”](#)). If your E-Bike is equipped with a permanently installed battery, you do not need to clean it separately.

- Remove the battery from the E-Bike in order to clean it (see [Chapter 22.1.2 “Removing the battery”](#)).
- Clean the exterior of the battery gently with a cloth or soft brush.
- If necessary, use a mild soap solution for the external removal of coarser soiling.

IMPORTANT: Dampen the cloth only slightly or wring it out well to prevent liquid from penetrating inside the housing and the contacts/interfaces. If liquid gets inside the housing or into the contacts/interfaces, the battery may be damaged and the electrical safety may be impaired.

- Wipe all surfaces dry after cleaning.

IMPORTANT: Pay particular attention to the contacts and interfaces between the battery and drive unit: To avoid damage, the interfaces must not be soiled or contaminated and must be completely dry before inserting the battery.

24.2 Cleaning the charger

- Clean the exterior of the charger gently with a cloth or soft brush.
- If necessary, use a mild soap solution for the external removal of coarser soiling.

IMPORTANT: Dampen the cloth only slightly or wring it out well to prevent liquid from penetrating the inside of the housing and the connections. If liquid enters the interior of the housing or the connections, the charger may be damaged and electrical safety may be impaired.

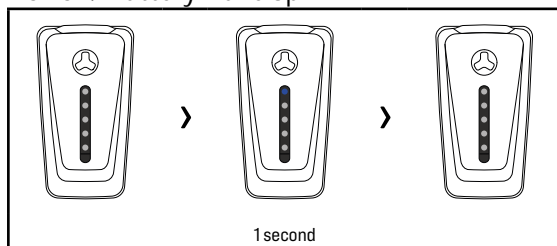
- Wipe all surfaces dry after cleaning.

ANNEX

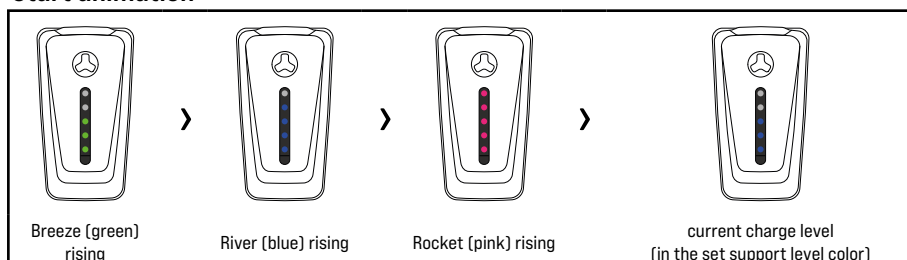
25 OVERVIEW OF DISPLAYS

25.1 Overview of LED Hub display

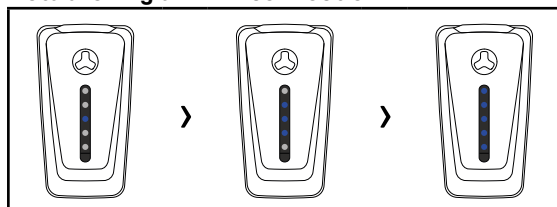
Power / Battery Wake Up*



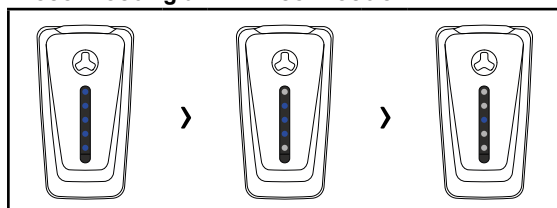
Start animation



Establishing a BLE connection**



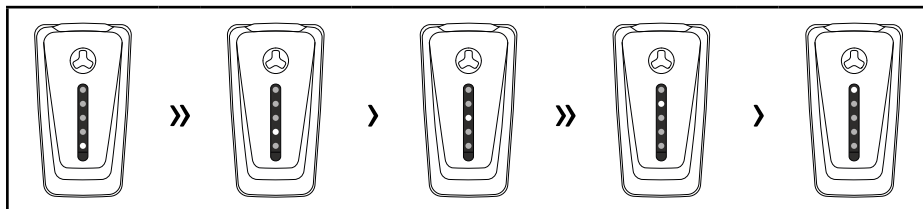
Disconnecting a BLE connection**



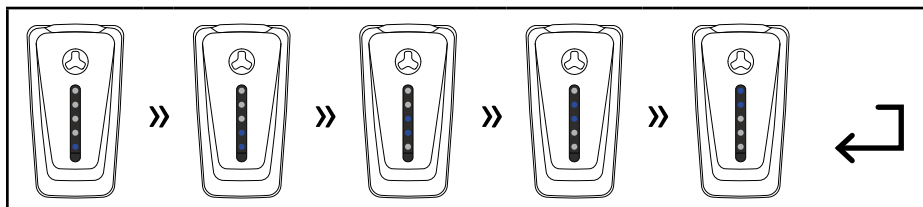
* One LED lights up blue briefly if any movement is applied to the Bike. No action is required.
Battery automatically returns to sleep mode on its own.

** BLE = Bluetooth® Low Energy

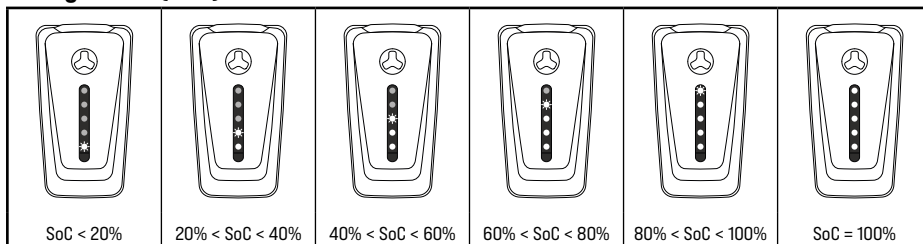
Push Assist



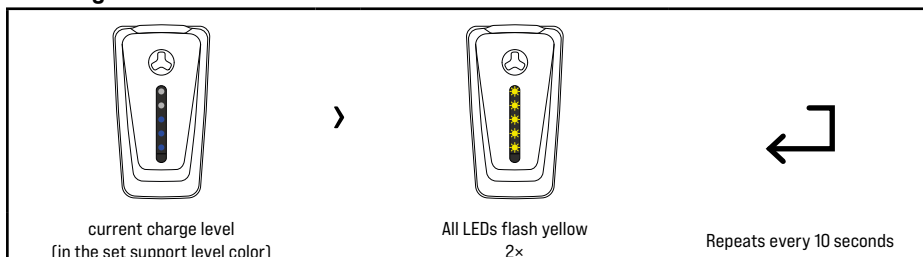
Boost function



Charge level [SoC]*



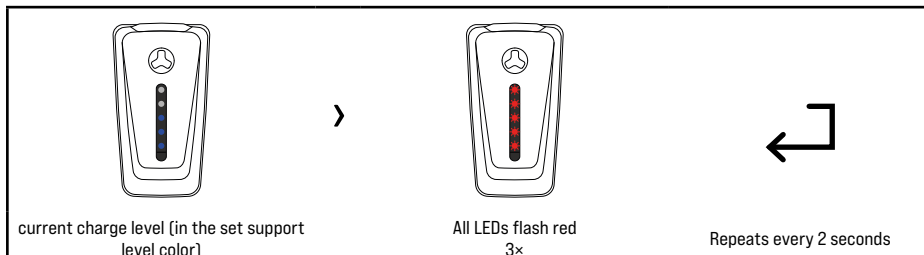
Warning**



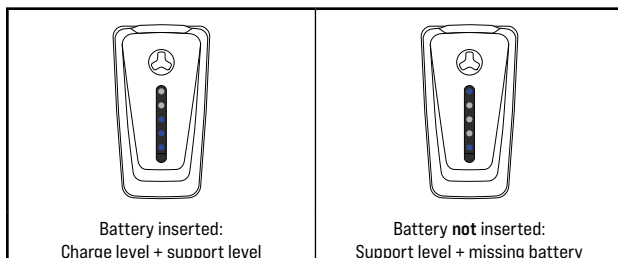
* The charge level [SoC] is displayed in the set support level color (see [Chapter 17.2 "Pedal Assist/support levels"](#)).

** The "Warning" animation appears in the event of technical faults which require the rider's attention but do not necessarily hinder use of the drive system. In principle, the fault can be repaired by the rider.

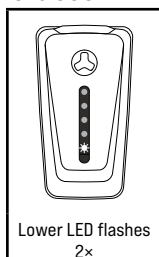
Fault*



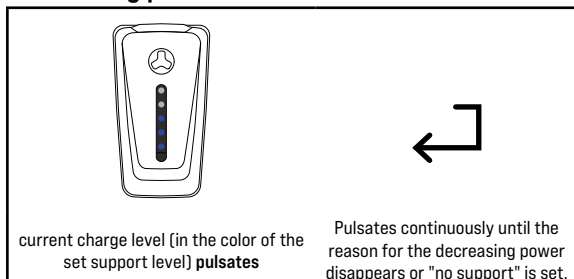
USB connection



0% SoC



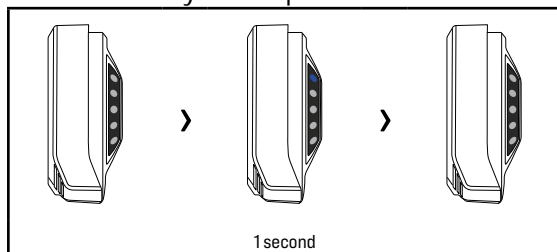
Decreasing power of the drive unit



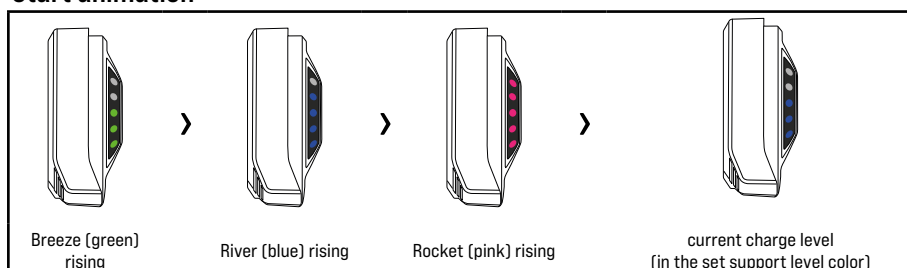
* The "Fault" animation appears in the event of technical faults which hinder use of the drive system and require immediate attention.

25.2 Overview of Control Hub display

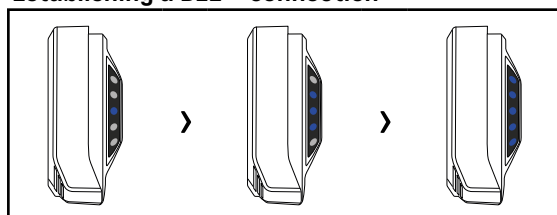
Power / Battery Wake Up*



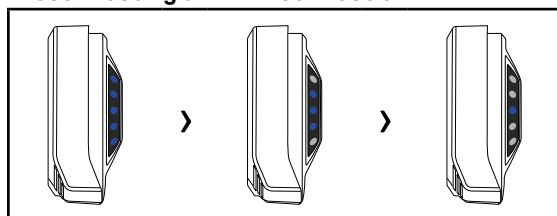
Start animation



Establishing a BLE** connection



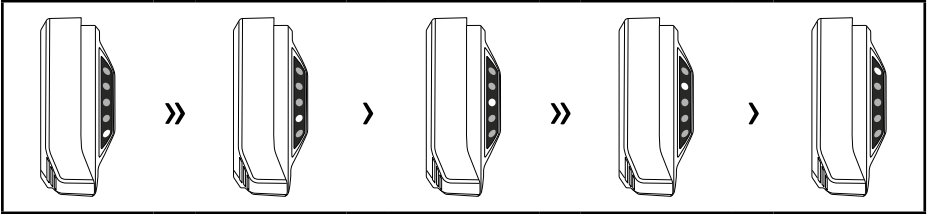
Disconnecting a BLE** connection



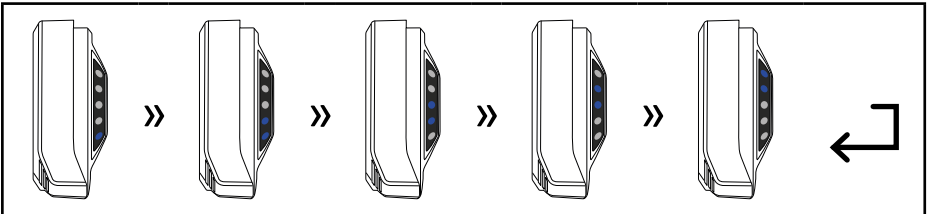
* One LED lights up blue briefly if any movement is applied to the Bike. No action is required.
Battery automatically returns to sleep mode on its own.

** BLE = Bluetooth® Low Energy

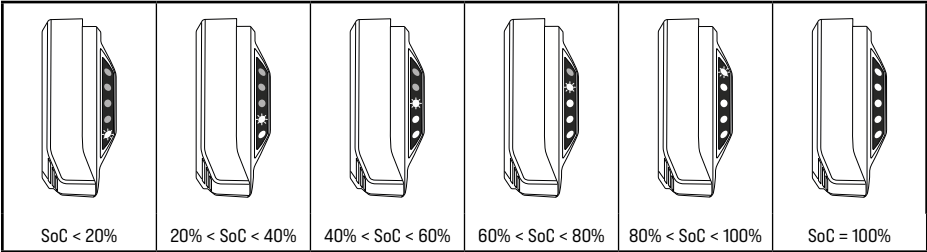
Push Assist



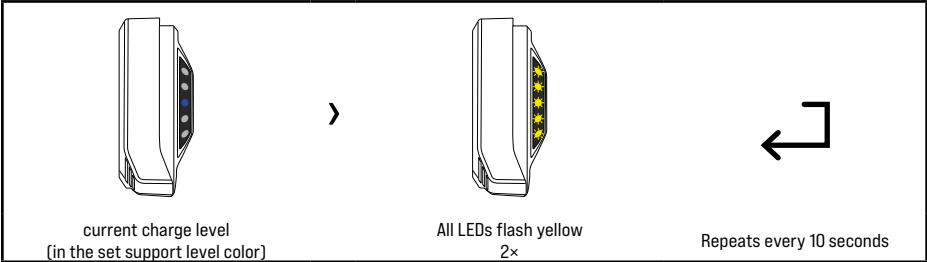
Boost function



Charge level [SoC]*



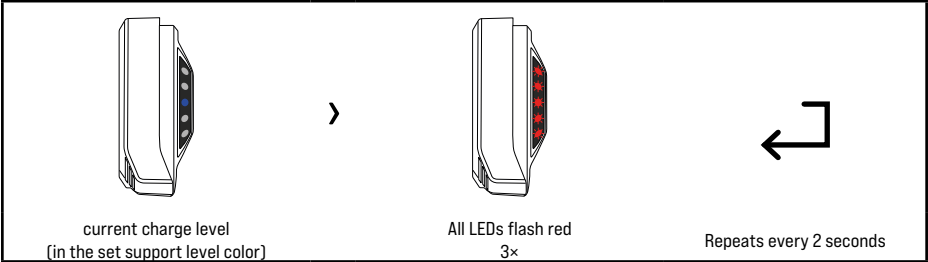
Warning**



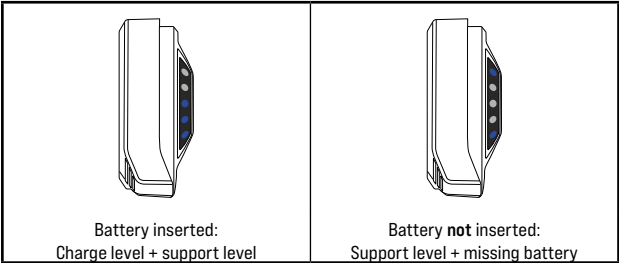
* The charge level [SoC] is displayed in the set support level color [see [Chapter 17.2 "Pedal Assist/support levels"](#)].

** The "Warning" animation appears in the event of technical faults which require the rider's attention but do not necessarily hinder use of the drive system. In principle, the fault can be repaired by the rider.

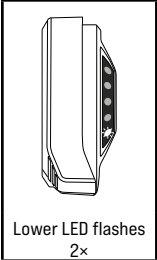
Fault*



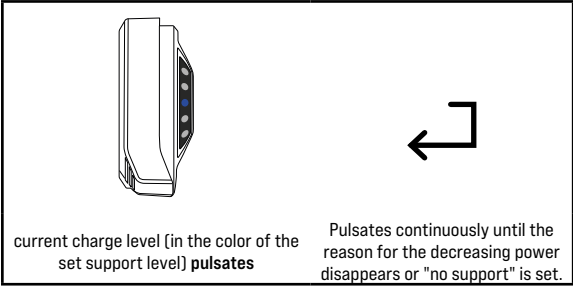
USB connection



0% SoC



Decreasing power of the drive unit



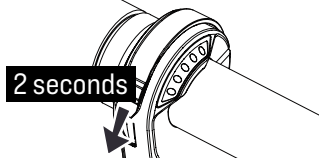
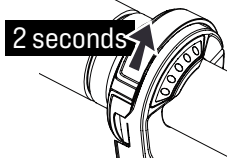
* The "Fault" animation appears in the event of technical faults which hinder use of the drive system and require immediate attention.

26 OVERVIEW OF CONTROL ELEMENTS

26.1 Overview of Control Hub

Switching the drive system on and off

→ For detailed information, see [Chapter 17.1 "Switching the drive system on and off"](#).

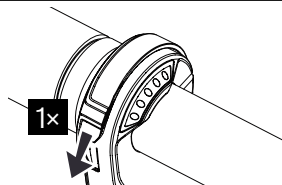
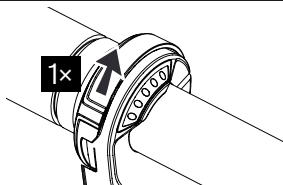


→ To **switch on**, keep the control switch [B.1] pressed upwards (for at least 2 seconds) (with the drive system switched off).

→ To **switch off**, keep the control switch [B.1] pressed downwards (for at least 2 seconds) (with the drive system switched on).

Setting the Pedal Assist function (changing support level)

→ For detailed information, see [Chapter 17.2 "Pedal Assist/support levels"](#).



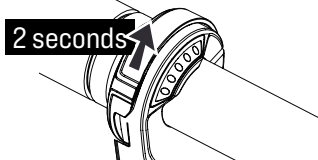
→ To change to the **next** support level up, press the **control switch [B.1]** 1× briefly **upwards**.

→ To change to the **next** support level down, press the **control switch [B.1]** 1× briefly **downwards**.

26.1 Overview of Control Hub

Activating Boost function

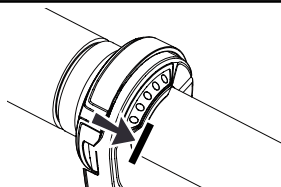
→ For detailed information, see [Chapter 17.3](#) "Boost function".



→ To activate the Boost function, keep the control switch **[B.1]** pressed upwards (for at least 2 seconds) (with the drive system switched on).

Using Push Assist

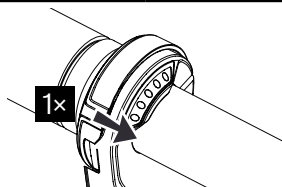
→ For detailed information, see [Chapter 17.4](#) "Push Assist mode".



→ To use the Push Assist function, press and hold the control switch **[B.1]** towards the center of the handlebars.

Switching the bicycle lighting on and off

→ For detailed information, see [Chapter 17.5](#) "Switching the bicycle lighting on and off".



→ To **switch** the bicycle lighting on, briefly press the control switch **[B.1]** 1× towards the center of the handlebars.

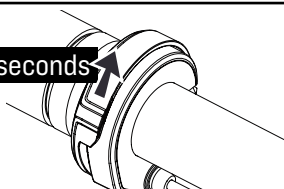
→ To **switch** the bicycle lighting off, press the control switch **[B.1]** 1× again towards the center of the handlebars.

26.2 Overview of Ring Control

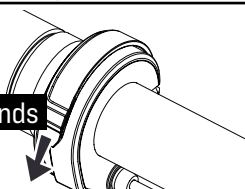
Switching the drive system on and off

→ For detailed information, see [Chapter 17.1 “Switching the drive system on and off”](#).

2 seconds



2 seconds



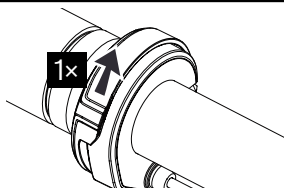
→ To **switch on**, keep the control switch [B.1] pressed upwards (for at least 2 seconds) (with the drive system switched off).

→ To **switch off**, keep the control switch [B.1] pressed downwards (for at least 2 seconds) (with the drive system switched on).

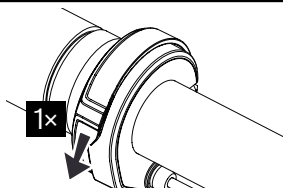
Setting the Pedal Assist function (changing support level)

→ For detailed information, see [Chapter 17.2 “Pedal Assist/support levels”](#).

1×



1×



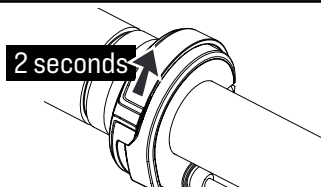
→ To change to the **next** support level up, press the **control switch [B.1]** 1× briefly **upwards**.

→ To change to the **next** support level down, press the **control switch [B.1]** 1× briefly **downwards**.

26.2 Overview of Ring Control

Activating Boost function

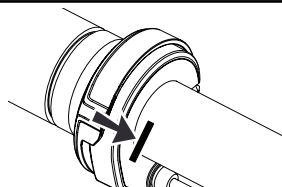
→ For detailed information, see [Chapter 17.3](#) "Boost function".



→ To activate the Boost function, keep the control switch [B.1] pressed upwards (for at least 2 seconds) (with the drive system switched on).

Using Push Assist

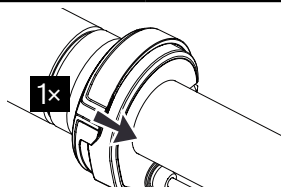
→ For detailed information, see [Chapter 17.4](#) "Push Assist mode".



→ To use the Push Assist function, press and hold the control switch [B.1] towards the center of the handlebars.

Switching the bicycle lighting on and off

→ For detailed information, see [Chapter 17.5](#) "Switching the bicycle lighting on and off".



→ To **switch** the bicycle lighting on, briefly press the control switch [B.1] 1× towards the center of the handlebars.

→ To **switch** the bicycle lighting off, press the control switch [B.1] 1× again towards the center of the handlebars.

26.3 Overview of Mode Control

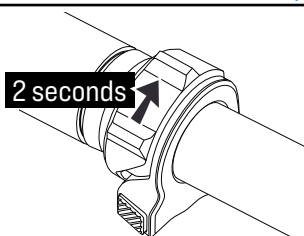


Depending on the manufacturer, **Mode Control** is configured in "**Urban**" or "**MTB**" mode.

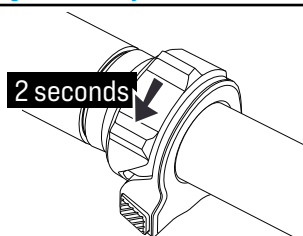
The way in which the control switch **[B.1]** and button **[B.4]** function differs to some extent in the two configuration modes. For this reason, both "Urban" and "MTB" are included in the Mode Control descriptions below. If the respective function is identical for both configuration modes, they are not shown separately.

Switching the drive system on and off

→ For detailed information, see [Chapter 17.1 "Switching the drive system on and off"](#).



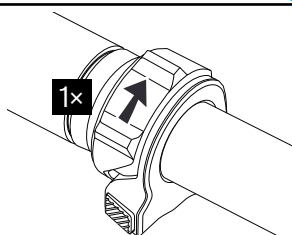
→ To **switch on**, keep the control switch **[B.1]** pressed upwards (for at least 2 seconds) (with the drive system switched off).



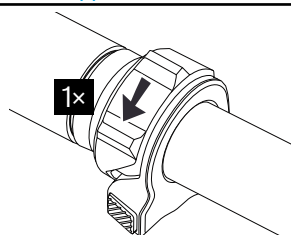
→ To **switch off**, keep the control switch **[B.1]** pressed downwards (for at least 2 seconds) (with the drive system switched on).

Setting the Pedal Assist function (changing support level)

→ For detailed information, see [Chapter 17.2 "Pedal Assist/support levels"](#).



→ To change to the **next** support level up, press the **control switch [B.1]** 1× briefly upwards.



→ To change to the **next** support level down, press the **control switch [B.1]** 1× briefly downwards.

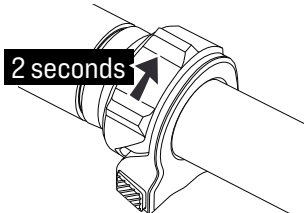
26.3 Overview of Mode Control

Activating Boost function

→ For detailed information, see [Chapter 17.3 "Boost function"](#).

Mode Control (Urban)

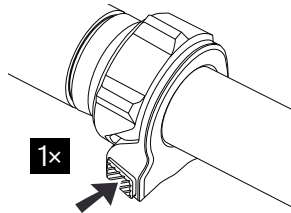
2 seconds



→ To activate the Boost function, keep the control switch [B.1] pressed upwards (for at least 2 seconds) (with the drive system switched on).

Mode Control (MTB)

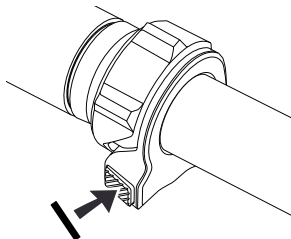
1×



→ To activate the Boost function, press the button [B.4] 1×.

Using Push Assist

→ For detailed information, see [Chapter 17.4 "Push Assist mode"](#)

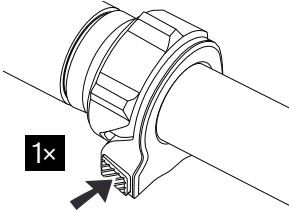
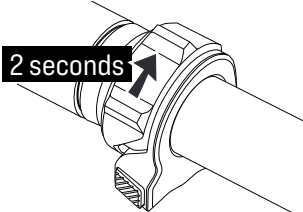


→ To use the Push Assist function, press and hold the button [B.4].

26.3 Overview of Mode Control

Switching the bicycle lighting on and off

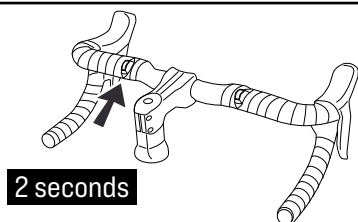
→ For detailed information, see [Chapter 17.5 “Switching the bicycle lighting on and off”](#).

Mode Control (Urban)	Mode Control (MTB)
	
→ To switch the bicycle lighting on, briefly press the button [B.4] 1x.	→ To switch the bicycle lighting off, keep the control switch [B.1] pressed upwards (for at least 2 seconds) (with the drive system switched on).
→ To switch the bicycle lighting off, activate the control switch [B.1] or the button [B.4] again in the same way as when switching on.	

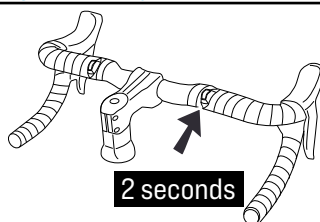
26.4 Overview of Road Control -V1

Switching the drive system on and off

→ For detailed information, see [Chapter 17.1 “Switching the drive system on and off”](#).



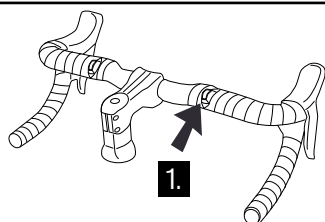
→ To **switch on**, press and hold the left switch **[B.6]** (for at least 2 seconds) (with the drive system switched off).



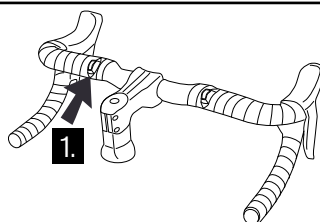
→ To **switch off**, press and hold the left switch **[B.5]** (for at least 2 seconds) (with the drive system switched on).

Setting the Pedal Assist function (changing support level)

→ For detailed information, see [Chapter 17.2 “Pedal Assist/support levels”](#).



→ To change to the **next support level up**, briefly press the right switch **[B.5]** 1×.

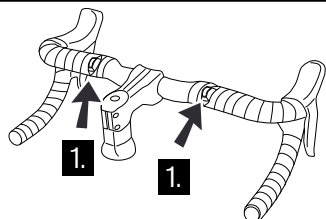


→ To change to the **next support level down**, briefly press the left switch **[B.6]** 1×.

26.4 Overview of Road Control -V1

Activating Boost function

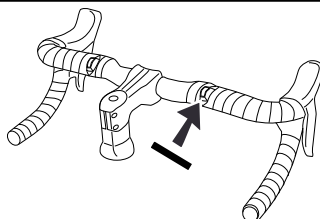
→ For detailed information, see [Chapter 17.3](#) "Boost function".



→ To activate the Boost function, briefly press the right switch [B.5] and the left switch [B.6] 1× at the same time.

Using Push Assist

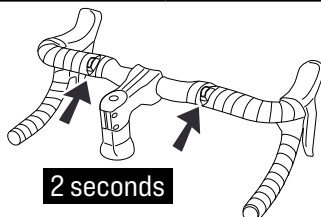
→ For detailed information, see [Chapter 17.4](#) "Push Assist" mode"



→ To use the Push Assist function, press and hold the right switch [B.5]

Switching the bicycle lighting on and off

→ For detailed information, see [Chapter 17.5](#) "Switching the bicycle lighting on and off".



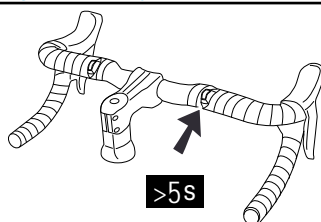
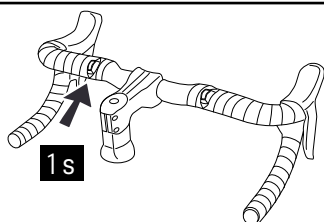
→ To **switch the bicycle lighting on**, press and hold the right switch [B.5] and the left switch [B.6] at the same time (for at least 2 seconds).

→ To **switch the bicycle lighting off**, press and hold the right switch [B.5] and the left switch [B.6] again at the same time (for at least 2 seconds).

26.5 Overview of Road Control -V2

Switching the drive system on and off

→ For detailed information, see [Chapter 17.1 “Switching the drive system on and off”](#).

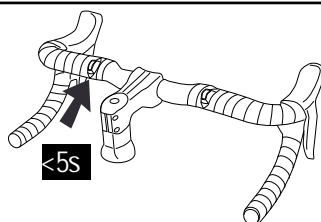
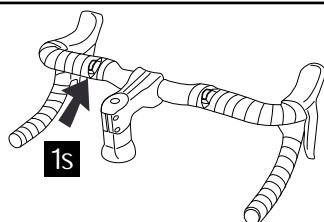


→ To **switch on**, press and hold the left switch **[B.6]** (for at least 1 second) (when the drive system is off).

→ To **switch off**, press and hold the right switch **[B.5]** (for at least 5 seconds) (with the drive system switched on).

Setting the Pedal Assist function (changing support level)

→ For detailed information, see [Chapter 17.2 “Pedal Assist/support levels”](#).



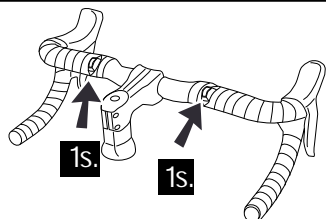
→ To change to the **next support level up**, briefly press the left switch **[B.6]** for 1 second.

→ To change to the **next support level down**, press the left switch **[B.6]** for less than 5 seconds.

26.5 Overview of Road Control -V2

Activating Boost function

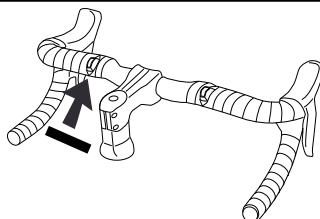
→ For detailed information, see [Chapter 17.3](#) "Boost function".



→ To activate the Boost function, briefly press the right switch [B.5] and the left switch [B.6] 1× at the same time.

Using Push Assist

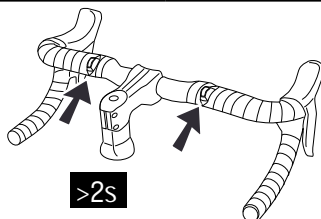
→ For detailed information, see [Chapter 17.4](#) "'Push Assist' mode"



→ To use the Push Assist function, press and hold the left switch [B.6]

Switching the bicycle lighting on and off

→ For detailed information, see [Chapter 17.5](#) "Switching the bicycle lighting on and off".



→ To **switch the bicycle lighting on**, press and hold the right switch [B.5] and the left switch [B.6] at the same time (for at least 2 seconds).

→ To **switch the bicycle lighting off**, press and hold the right switch [B.5] and the left switch [B.6] again at the same time (for at least 2 seconds).

27 **DATA SHEETS (TECHNICAL DATA)**

27.1 **Drive unit**

Model designation	→ RIDE 60 Drive Unit
Nominal power	→ 250 W
[Mechanical] power, max.	→ 450 W
Nominal voltage	→ 43.2 V
Support torque, max.	→ 60 Nm
Pedaling cadence [range]	→ 55–125 rpm
Protection type	→ IP54
Weight, approx.	→ 2000 g (4.4 lb)
Operating temperature	→ -5°C to +45°C (23°F to 113°F)
Storage temperature	→ -15°C to +40°C (5°F to 104°F)

27.2 **Control element and display**

27.2.1 **Control Hub**

Model designations	→ Control Hub S Control Hub L
Protection type	→ IP54 (in assembled state)
Operating temperature	→ -5°C to +45°C (23°F to 113°F)
Storage temperature	→ -15°C to +40°C (5°F to 104°F)

27.2.2 **Ring Control**

Model designation	→ Ring Control
Protection type	→ IP54 (in assembled state)
Operating temperature	→ -5°C to +45°C (23°F to 113°F)
Storage temperature	→ -15°C to +40°C (5°F to 104°F)

27.2.3 *Mode Control*

Model designation	→ Mode Control
Protection type	→ IP54 (in assembled state)
Operating temperature	→ -5°C to +45°C (23°F to 113°F)
Storage temperature	→ -15°C to +40°C (5°F to 104°F)

27.2.4 *Road Control*

Model designation	→ Road Control (Set)
Protection type	→ IP54 (in assembled state)
Operating temperature	→ -5°C to +45°C (23°F to 113°F)
Storage temperature	→ -15°C to +40°C (5°F to 104°F)

27.2.5 *LED Hub*

Model designations	LED Hub S
	LED Hub M
	→ LED Hub L
	LED Hub XL
Protection type	→ IP54 (in assembled state)
Operating temperature	→ -5°C to +45°C (23°F to 113°F)
Storage temperature	→ -15°C to +40°C (5°F to 104°F)

27.3 *Battery and charger*

27.3.1 *ENERGY 430 / ENERGY 430 fix*


Model designations	ENERGY 430
	→ ENERGY 430 fix
Weight, approx.	→ 2300 g (5.07 lb) 2200 g (4.85 lb) fix
Operating temperature	→ -5°C to +45°C (23°F to 113°F) [ambient temperature]
Storage temperature (optimal)	→ -15°C to +25°C (5°F to 77°F)

Charging temperature (optimal) → 0°C to +45°C (32°F to 113°F)

27.3.2 **ENERGY 480/ENERGY 480 fix**

Model designations	→ ENERGY 480 ENERGY 480 fix
Weight, approx.	→ 2300 g (5.07 lb) 2200 g (4.85 lb) fix
Operating temperature	→ -5°C to +45°C (23°F to 113°F) [ambient temperature]
Storage temperature (optimal)	→ -15°C to +25°C (5°F to 77°F)
Charging temperature (optimal)	→ 10°C to +45°C (50°F to 113°F)

27.3.3 **Charger 3A/3A90**

Model designations	→ Charger 3A (STC-8207LD) Charger 3A90 (STC-8207LD)
Nominal input voltage	→ 100–240 V AC
Frequency	→ 50–60 Hz
Charging current	→ 3 A
Charging time, approx.	→ 3.5 h
Protection class	→ 2 [symbol: 
Weight, approx.	→ 710 g (1.57 lb)
Operating temperature	→ 0°C to +35°C (32°F to 95°F) [ambient temperature]
Storage temperature	→ 0°C to +45°C (32°F to 113°F)



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