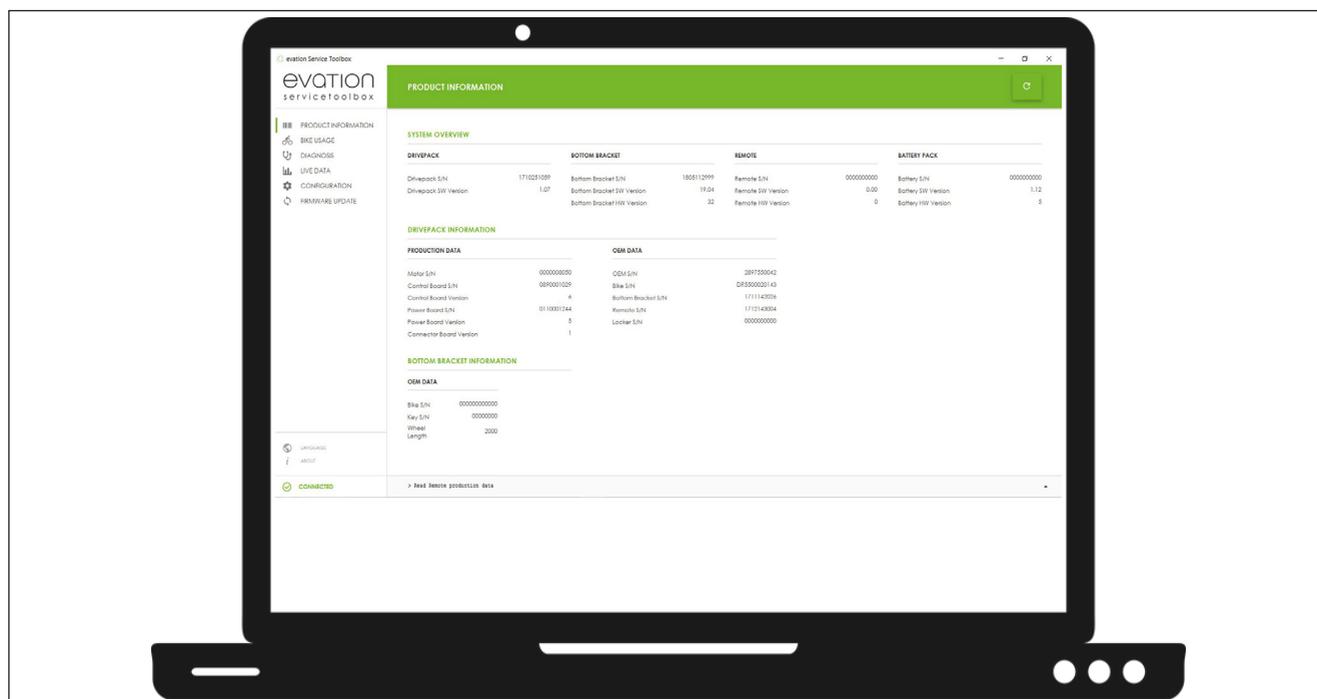




evation Service Toolbox 1.07

Basic



ENGLISH

evation 1.0
pedelec drive system

Table of Contents

1. Basics of the Service Toolbox	2
1.1 Functionalities of Service Toolbox	2
1.2 Usage Requirements	2
1.3 Downloading the Software	2
1.4 Prepare eBike for the Service Toolbox	3
1.5 User Interface	4
2. Menus of the Service Toolbox	5
2.1 Product Information	5
2.2 Bike Usage	6
2.3 Diagnosis	7
2.4 Live Data	9
2.5 Configuration	10
2.6 Firmware Update	11

1. Basics of the Service Toolbox

1.1 Functionalities of Service Toolbox

- Available for Windows and Linux
- System diagnostics and storage of reports
- Firmware updates to extend the functionality and improve the stability of the software in the bike
- Reading live data from the eBike components
- Support via remote desktop access

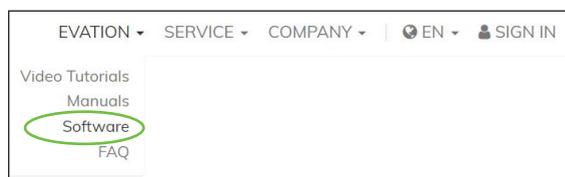
1.2 Usage Requirements

- USB 2.0 or higher
- Java 8
- USB cabel (USB-A to Mini USB-B)

1.3 Downloading the Software

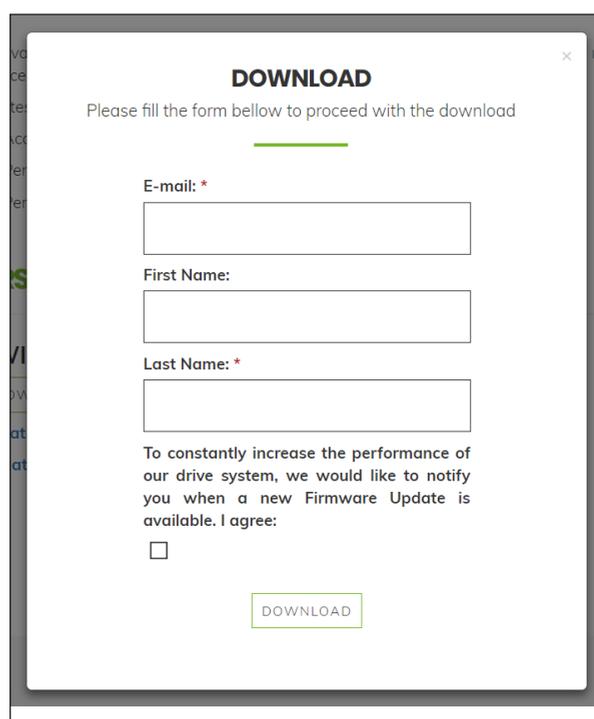
The download links for the evation Service Toolbox can be found on the website under the tab *Evation/Software*: <https://fazua.com/en/evation/software/>

You can download the retail version of the software in German and in English, which can be selected on the top right corner.



Before saving and opening the file, please fill out the form with your name and email address.

Afterwards you can download the evation Service Toolbox by clicking on the download button.

A screenshot of a 'DOWNLOAD' form. The title is 'DOWNLOAD' in bold. Below it, the text says 'Please fill the form bellow to proceed with the download'. There are three input fields: 'E-mail: *', 'First Name:', and 'Last Name: *'. Below the fields, there is a checkbox and the text: 'To constantly increase the performance of our drive system, we would like to notify you when a new Firmware Update is available. I agree:'. At the bottom right, there is a 'DOWNLOAD' button.

1.4 Prepare eBike for the Service Toolbox

- 1
Turn on the battery.

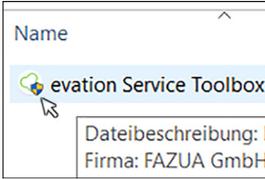
→ 
- 2
Slide the battery into the drivepack.

→ 
- 3
Remove the USB cap (Torx 10). Use a soft plastic lever to remove the USB cap.

→  
- 4
Insert the drivepack into the eBike.

→ 
- 5
Check: Batterie is switched on!
Connect the drivepack (Mini USB) to the computer (USB) using a USB cable.

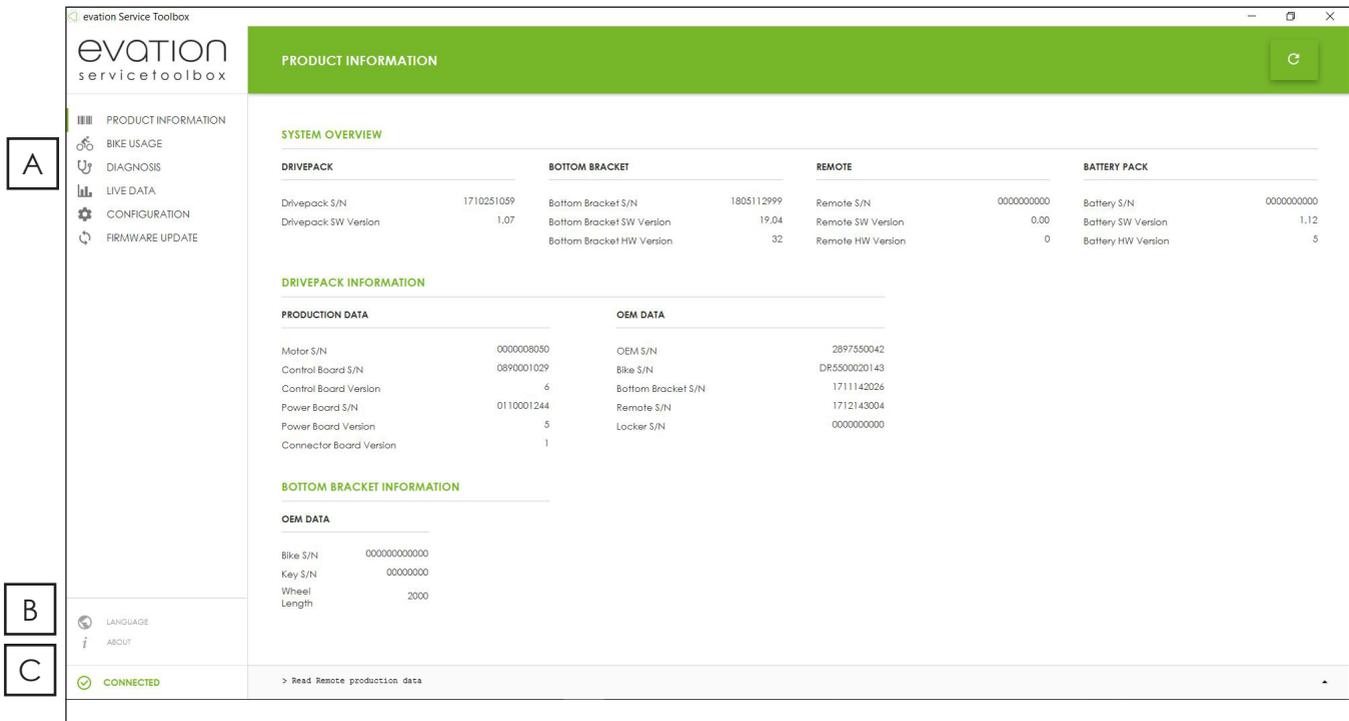
→ 
- 6
Start the Service Toolbox on the computer (double-click on the desktop icon).

→ 

If the evation Service Toolbox does not connect to the system, the following reasons may be the cause:

REASON	SOLUTION
USB cable defective, USB connection dirty	Use another USB cable, clean the USB port
Linux Version: missing FAZUA evation USB Drivers	Follow the Linux installation requirements steps explained at the Service Toolbox's download page: https://fazua.com/en/evation/software/

1.5 User Interface



A: Menu



B: Settings: language selection

C: Connection status of the drive system



2. Menus of the Service Toolbox

2.1 Product Information

A: System Overview

- Software and hardware versions of the individual components.
- Drivepack SW Version: Here you see the currently loaded firmware on the drivepack. To make a firmware update, please see chapter 2.6
- Respective serial number of the component

B: Drivepack Information

- Serial numbers of the components in the drivepack.
- OEM data stored in the drivepack.

C: Bottom Bracket Information

- OEM data stored in the bottom bracket.

PRODUCT INFORMATION ⌂

A SYSTEM OVERVIEW

DRIVEPACK	BOTTOM BRACKET	REMOTE	BATTERY PACK
Drivepack S/N	Bottom Bracket S/N	Remote S/N	Battery S/N
Drivepack SW Version	Bottom Bracket SW Version	Remote SW Version	Battery SW Version
	Bottom Bracket HW Version	Remote HW Version	Battery HW Version

B DRIVEPACK INFORMATION

PRODUCTION DATA	OEM DATA
Motor S/N	OEM S/N
Control Board S/N	Bike S/N
Control Board Version	Bottom Bracket S/N
Power Board S/N	Remote S/N
Power Board Version	Locker S/N
Connector Board Version	

C BOTTOM BRACKET INFORMATION

OEM DATA
Bike S/N
Key S/N
Wheel Length

2.2 Bike Usage

A: Drivepack Usage

- Detailed information such as system power, temperatures and charge cycle data.
- Last 5 bottom brackets and batteries which were used with this special drivepack.

B: Bottom Bracket Usage

- Total mileage of this bottom bracket with support.

BIKE USAGE	
A	DRIVEPACK
Total Mileage (km) ⓘ	53
Max Temp Control Board (°C)	36
Max Temp Power Board (°C)	37
Max Temp Gear Box (°C)	33
Min Temp Control Board (°C)	6
Max Speed with Support (km/h)	28
Average Power (W)	150
Total Motor ON Time (h)	1
Battery Charge Cycles	0
USED BOTTOM BRACKETS ⓘ	
S/N Bottom Bracket 1	000000119
S/N Bottom Bracket 2	000000103
S/N Bottom Bracket 3	1707242003
S/N Bottom Bracket 4	1705172004
S/N Bottom Bracket 5	1706272014
USED BATTERIES ⓘ	
S/N Battery 1	000000000
S/N Battery 2	000000000
S/N Battery 3	000000000
S/N Battery 4	000000000
S/N Battery 5	000000000
B	BOTTOM BRACKET
Total Mileage (km) ⓘ	0
USED DRIVEPACKS ⓘ	
S/N Drivepack 1	000000000
S/N Drivepack 2	000000000

2.3 Diagnosis

- In the *Diagnosis* menu, you can read errors that the software can find in the system.
- If your system does not work as expected, we always recommend the following:

Troubleshooting

Please check if the problem can be solved by the following troubleshooting:

Nr	Problem	Typical Reason	Typical Solution
Drivepack			
1	Motor power feels low	Drive system might be brand new	The whole drive system needs to cover a few kilometers before reaching full performance
2	Motor power feels low	It's very hot and the battery and drivepack heat management limits the power	
3	Motor power feels low	It's very cold so the lithium ion batteries cannot perform as usual	
4	Not possible to click in drivepack into down tube. The lock does not grab the drivepack	Red locking mechanism is not activated	Push the black chock into the lock so the red locking mechanism slides out, thus enabling the drivepack to click into place
5	Drivepack can't be clicked out	Lock defect. Dust and mud could be inside. Probably you rode without a drivepack during bad weather conditions	Please contact your FAZUA service partner
6	Drivepack makes scratching noises	Polygon sleeve is moving	Please contact your FAZUA service partner
7	Drivepack makes clicking noises	The clutch experienced too much pressure on one side	Please contact your FAZUA service partner
Remote			
1	Red LED lights up	There is a connection failure between drivepack and bottom bracket. Dirt on the interface may hinder connection	Clean the connectors on the bottom bracket as well as on the drivepack side
2	Yellow LED lights up	Bad connection between speed sensor and bottom bracket	Check position of speed sensor and magnet. Otherwise please contact your FAZUA service partner
3	Remote is blinking white LEDs	Software is updating	After a new firmware update, the remote automatically updates itself. Please wait and do not turn off the remote until the LEDs stop flashing
4	Remote does not turn on	Battery turned off due to timeout (8 hours)	Turn battery on
5	Remote does not turn on	There may be dirt at the interface between the battery and the drive system	Clean the interface between the battery and the drivepack
Battery			
1	The battery does not fit in the drivepack - the battery latch cannot close	Dirt or something in the drivepack located between the battery and motor connector	Check the inside of the drivepack and clean it
2	Sudden lack of support when riding the bike Support does not come back	BMS protection	Push the on/off button for 3 seconds to switch battery off and turn it on again

 If you could not find or fix the problem, please contact the FAZUA service team or your FAZUA service partner or dealer.

 Please note that opening or otherwise changing the components of the evation drive system may result in a loss of warranty!

■ Service hotline for the FAZUA service team

Availability: Mo - Fr 9am - 5pm

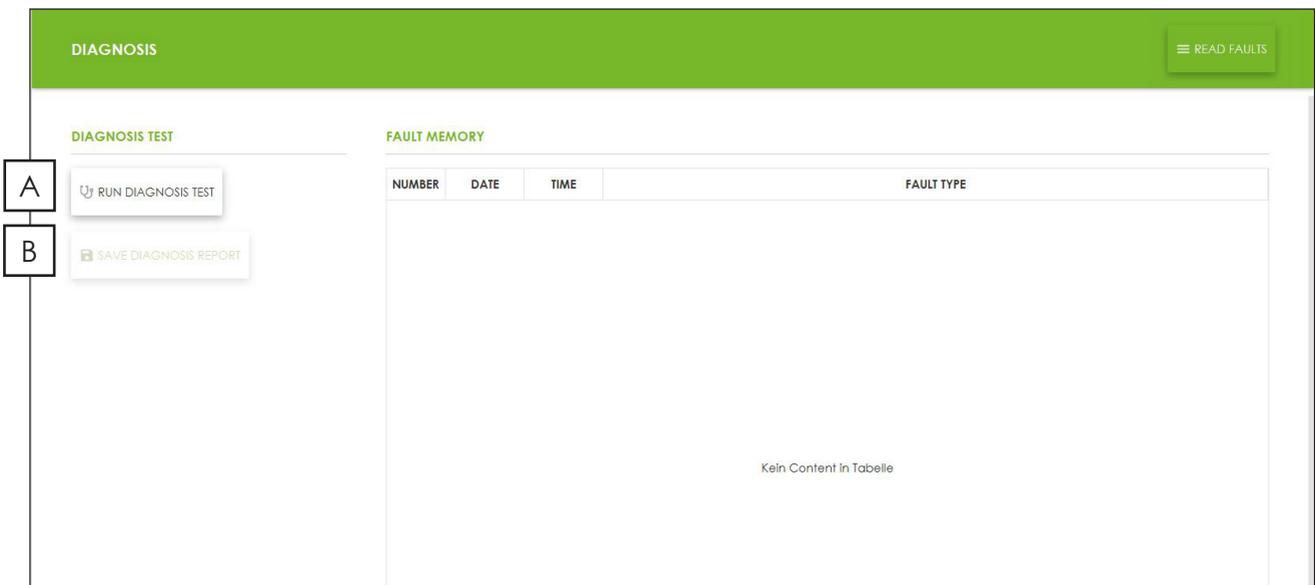
E-Mail: service@fazua.com
Telephone: +49 (0)89 171 000 691



Before contacting the FAZUA service team, please prepare the defect images and all information about the corresponding components.

Diagnostics using the Service Toolbox

- If you can not find the error with the troubleshooting you can use the software to perform a diagnosis test using the Service Toolbox and generate a diagnostic report. Although this option is available to you, we kindly ask you to contact your FAZUA service partner or bicycle dealer if you have any further problems.



NUMBER	DATE	TIME	FAULT TYPE
Kein Content in Tabelle			

A: With this button you start the diagnosis.

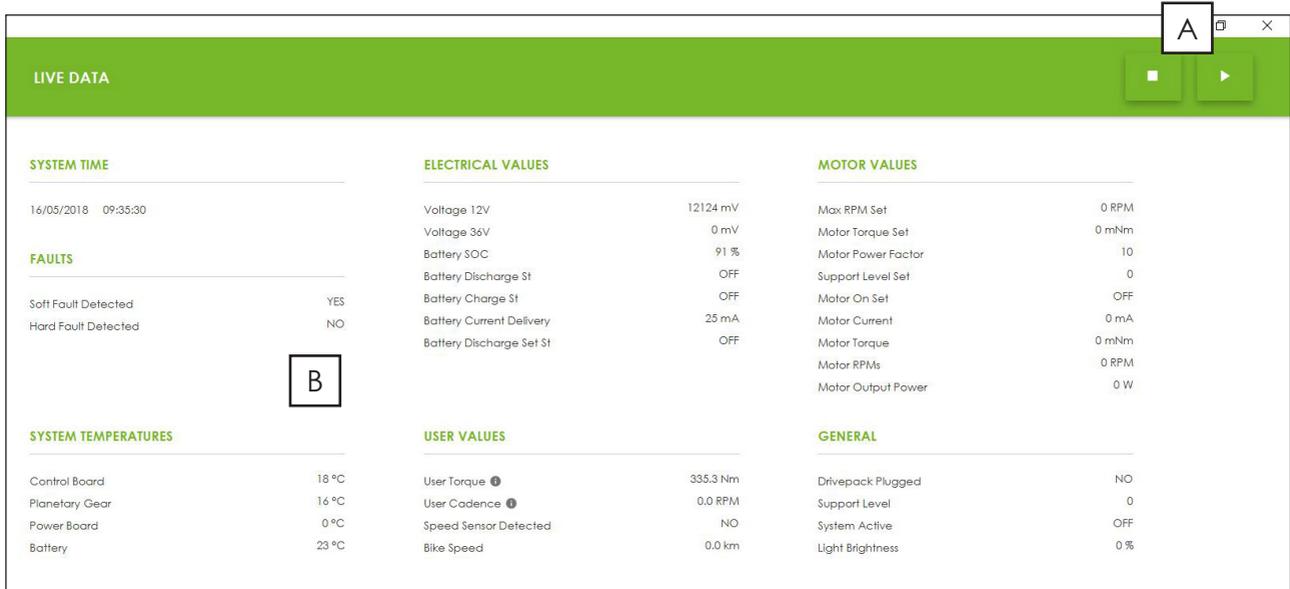
 A pop-up will appear, informing you of the correct procedure and the start up of the engine.

B: You can save the report to your computer by clicking *Save Diagnostics Report*.

2.4 Live Data

A: The reading of the live data must be activated via the play button and deactivated via the stop button.

B: Here you can view various live data on the system, even when the motor is active.



The screenshot displays a 'LIVE DATA' window with a green header and a play button (labeled 'A'). The data is organized into several sections:

- SYSTEM TIME:** 16/05/2018 09:35:30
- FAULTS:** Soft Fault Detected (YES), Hard Fault Detected (NO)
- SYSTEM TEMPERATURES:** Control Board (18 °C), Planetary Gear (16 °C), Power Board (0 °C), Battery (23 °C)
- ELECTRICAL VALUES:** Voltage 12V (12124 mV), Voltage 36V (0 mV), Battery SOC (91 %), Battery Discharge St (OFF), Battery Charge St (OFF), Battery Current Delivery (25 mA), Battery Discharge Set St (OFF)
- USER VALUES:** User Torque (335.3 Nm), User Cadence (0.0 RPM), Speed Sensor Detected (NO), Bike Speed (0.0 km)
- MOTOR VALUES:** Max RPM Set (0 RPM), Motor Torque Set (0 mNm), Motor Power Factor (10), Support Level Set (0), Motor On Set (OFF), Motor Current (0 mA), Motor Torque (0 mNm), Motor RPMs (0 RPM), Motor Output Power (0 W)
- GENERAL:** Drivepack Plugged (NO), Support Level (0), System Active (OFF), Light Brightness (0 %)

A box labeled 'B' highlights the 'SYSTEM TEMPERATURES' section.

2.5 Configuration

These values were set up during the final assembly at the bicycle manufacturer. Although you can not change any settings by yourself, your FAZUA service partner can set up your bike according to your personal preferences. Here are a few explanations:

A: If you want to disassemble the remote and still receive support, your dealer can set a *default level of support*, which will be fixed from then on.

B: In the fields of *Max Power Level (%)*, you can define the maximum percentage of power per support level. This way your dealer can personalize the levels according to your taste.

The screenshot displays the 'evation Service Toolbox' interface, specifically the 'CONFIGURATION' section. The left sidebar lists navigation options: PRODUCT INFORMATION, BIKE USAGE, DIAGNOSIS, LIVE DATA, CONFIGURATION (highlighted), and FIRMWARE UPDATE. The main content area is titled 'CONFIGURATION DATA' and lists various settings in two columns. The 'Remote Enabled' setting is marked with a box labeled 'A' and is currently turned on. The 'Max Power Level 2 - River (%)' setting is marked with a box labeled 'B' and is set to 62%. Other settings include Shaft Offset (5237), PID Controller Conf - P (500), PID Controller Conf - I (15), PID Controller Conf - D (0), Default Wheel Length (2315 mm), Bike Max Gear Ratio (5), Maximum Bike Speed (55 km/h), Max Motor RPM (3000), Default Support Level (2), Max Power Level 1 - Breeze (31%), Max Power Level 3 - Rocket (100%), Logs Period (600 ms), and various temperature sensor offsets (all set to 0°C).

Setting	Value
Shaft Offset	5237
PID Controller Conf - P	500
PID Controller Conf - I	15
PID Controller Conf - D	0
Default Wheel Length (mm)	2315
Bike Max Gear Ratio	5
Maximum Bike Speed (km/h)	55
Max Motor RPM (no Speed Sensor)	3000
Default Support Level	2
Max Power Level 1 - Breeze (%)	31
Max Power Level 2 - River (%)	62
Max Power Level 3 - Rocket (%)	100
Logs Period (ms)	600
Control Board Temp Sensor Offset (°C)	0
Gear Temp Sensor Offset (°C)	0
Power Board Temp Sensor Offset (°C)	0

2.6 Firmware Update

FAZUA provides firmware updates at regular intervals in order to constantly improve the range of functions of the drive system. The updates can only be transferred to the drive system with the evation Service Toolbox. You can update to a new firmware either by yourself or get help from your FAZUA service partner.

1. Prepare eBike for update

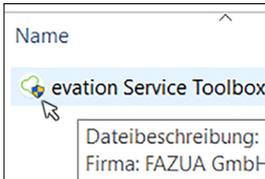
- 1
Turn on the battery.


- 2
Slide the battery into the drivepack.


- 3
Remove the USB cap (Torx 10). Use a soft plastic lever to remove the USB cap.

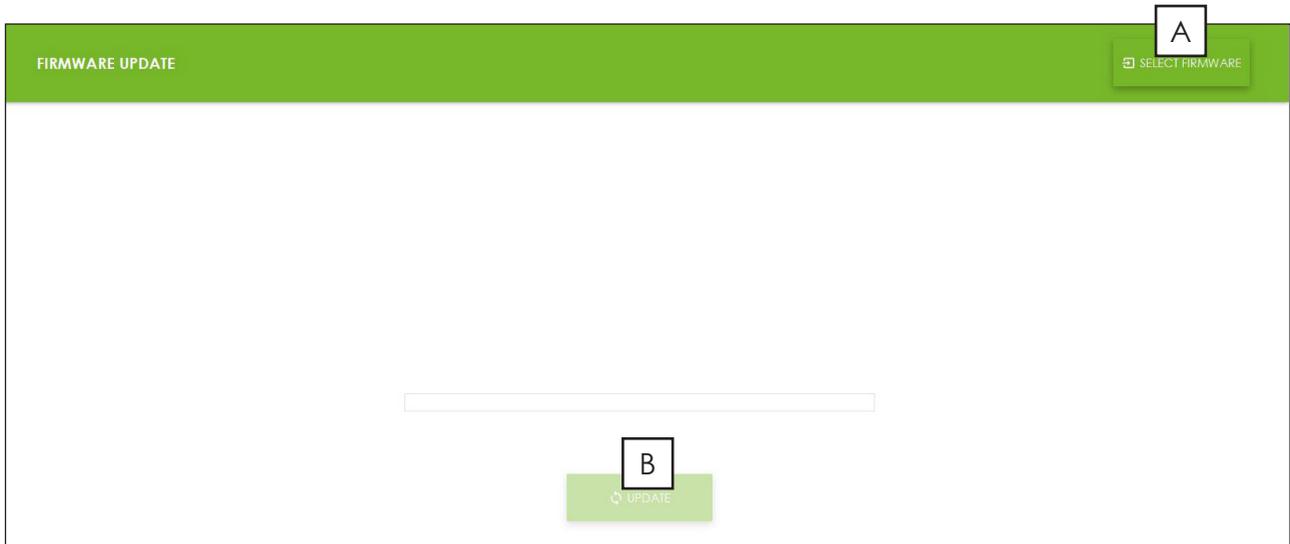

- 4
Connect the drivepack to the computer using a USB cable (USB-A to Mini USB-B).


- 5
Start the Service Toolbox on the computer (double-click on the desktop icon).


- 6
Perform the firmware update as described in the next step.

2. Procedure

- a. Download the latest firmware at <https://fazua.com/en/evation/software/> and save it on your computer.

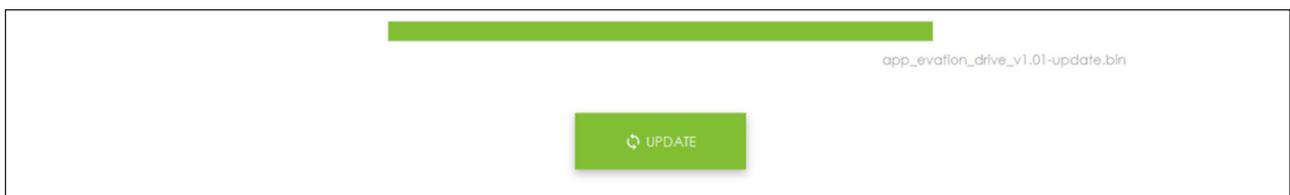


- b. Click on the button *Select Firmware* **A**, go to the folder where you saved the firmware and open it.

- c. Click on *Update* **B** and download the selected firmware to the drive system.



- The software disconnects and directly connects again with the drive system.
- As soon as the firmware update is complete, the loading bar fills green.
- In the *Product Information* menu, you can check the firmware version.



- d. Insert the drivepack into the eBike.



- As soon as you put the drivepack into the eBike, the remote is also updated automatically (during the installation, the remote flashes white) – this happens only if remote update is available.



IMPORTANT! If the firmware update fails, the system simply remains in the old state. In this case, please contact your FAZUA service partner.



FAZUA GmbH

Marie-Curie-Straße 6
85521 Ottobrunn
Germany
+49 (0)89 1710006 91
service@fazua.com
www.fazua.com