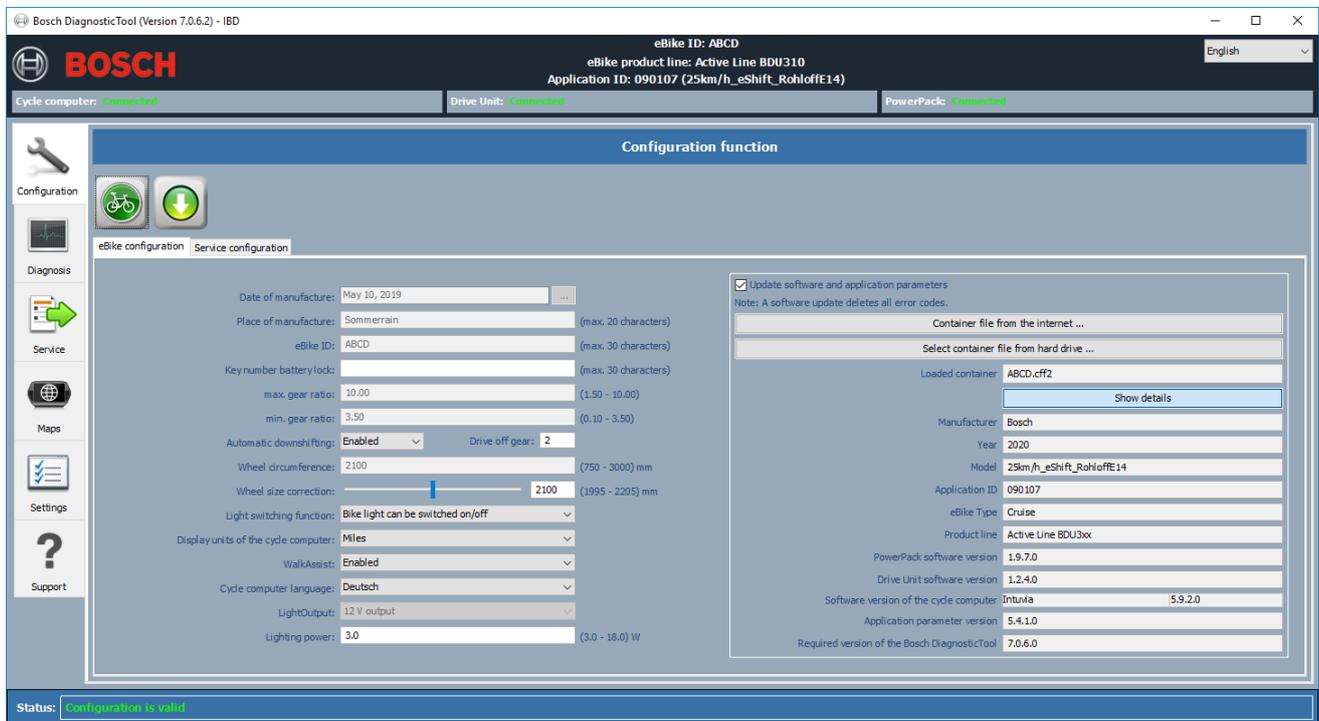


Bosch DiagnosticTool



Manual

IBD - Version 7.1.0.0 and above



BOSCH

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1 Introduction

This manual provides an overview of the Bosch DiagnosticTool. All the information contained in this manual is based on the latest product information that was available at the time the document went to print. We reserve the right to make changes without prior notice.

The Bosch DiagnosticTool is designed to be used by trained service technicians to diagnose and repair electronic vehicle systems. We have done our utmost to ensure that the information contained herein, based on the information available from Bosch Service at the time of going to press, is technically complete and accurate. However, the manufacturer reserves the right to make any changes without prior notice.

To familiarise yourself with the Bosch DiagnosticTool, all its functions and how to use them, please read through the manual carefully before you start working with the Bosch DiagnosticTool.

The Bosch DiagnosticTool features the following functions:

- Configure Bosch eBike systems
- Diagnose Bosch eBike systems
- Program the electronic control units of Bosch eBike systems
- Transfer map data to Nyon
- Perform remote diagnostics (internet connection required)
- Test the power capacity of the Bosch PowerPack (Bosch CapacityTester required)

2 Warning texts

In this manual:

- CAUTION: Indicates a possible risk of injury for the user or other persons.
- NOTE: Indicates a risk of possible damage to system components.

2.1 Warnings concerning system use and operation

NOTE

- Please read this entire manual carefully before starting the Bosch DiagnosticTool.
- Connect the USB cable and the supplied Bosch dongle before you start working with the Bosch DiagnosticTool.

3 System requirements

3.1 Hardware

Processor:

- Minimum: Intel® Core™ i3-3217U processor or equivalent processor.
- Recommended: Intel® Core™ i5-8250U or equivalent or higher performance processor.

RAM capacity:

- Minimum: 4 GB
- Recommended: 8 GB

Available hard disk space:

- Minimum 2 GB

USB:

- USB 2.0 or higher
- 2 free USB ports

3.2 Operating system

- Windows 10, 64-bit

4 Installing/uninstalling the Bosch DiagnosticTool

4.1 Installation

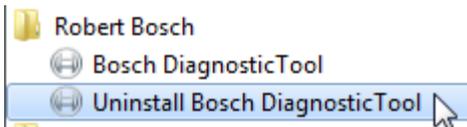
You can download the Bosch Diagnostic Tool from the internet through the Bosch eBike dealer portal. To do this, use your web browser to navigate to the <http://www.bosch-ebike.net> page and log in (if you are visiting the dealer pages for the first time, you must register first and then await activation). Then select **Downloads** under **Service** and save the latest installation program to a suitable data storage medium or directly to your computer.

The system automatically searches for the latest version of the Bosch DiagnosticTool on the internet. This can subsequently be downloaded and installed directly.

Double-click to start the installation program. An icon is created on the desktop, and an entry inserted in the Start menu. The Bosch DiagnosticTool can now be started. If a previous version of the Bosch DiagnosticTool is already installed on your computer, this will then be uninstalled automatically.

4.2 Uninstallation

- Start the following program to uninstall the Bosch DiagnosticTool: **Uninstall Bosch Diagnostic-Tool**



or choose the program you want to uninstall by selecting **Start – Control Panel – Programs and Features** in the Start menu.

5 Starting the program

5.1 Step 1: Connecting the eBike to the computer

Connect the eBike to the computer that you have installed the Bosch DiagnosticTool on. To do this, connect the USB cable

- to a free USB port on your computer.
- to the USB port on the cycle computer (HMI).

5.2 Step 2: Connecting the dongle to the computer

Plug the supplied Bosch dongle into a free USB port on your computer.

If no Bosch dongle is detected when you start the application, you will see the message "USB Dongle not connected".

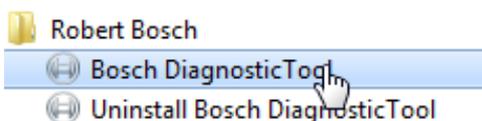


After you have connected the Bosch dongle to the computer, the application starting process resumes

5.3 Step 3: Starting the Bosch DiagnosticTool

Start the application via

- the entry in the Start menu (Start – All Programs – Robert Bosch – Bosch DiagnosticTool)



or

- the desktop icon



When the application is started, the Bosch DiagnosticTool checks whether your dongle is detected on the computer and whether an eBike is already connected to the computer. This process may take a few seconds.

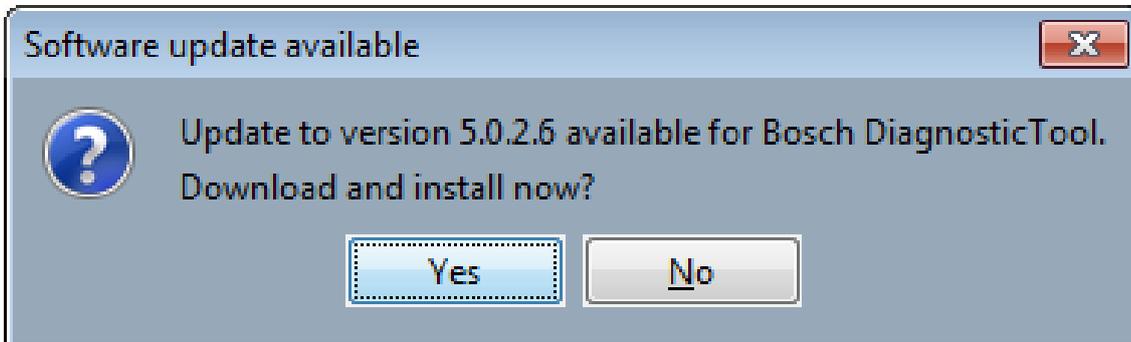
5.4 Step 4 [optional]: Entering internet data

If your computer has an internet connection, you can download diagnostic software updates, system firmware and maps for the connected eBike directly from the Bosch update server and upload them to the connected eBike. To do this, you may have to enter a proxy in the Bosch DiagnosticTool. You can also start a remote diagnostic session.

You can find out how to adjust these settings under Settings (see chapter 6.2.13.2 Defining the proxy setting).

5.5 Bosch DiagnosticTool Update

Each time the Bosch DiagnosticTool is restarted, the system checks whether a later version is available. The following message appears if this is the case:



6 Functions of the Bosch DiagnosticTool

The Bosch DiagnosticTool is used for reading and writing configuration parameters, carrying out parameter and software updates and checking error codes and diagnostic parameters. In addition, a remote diagnostic session can be started (internet connection required) and the capacity of Bosch PowerPacks (Bosch Battery CapacityTester required) can be determined.

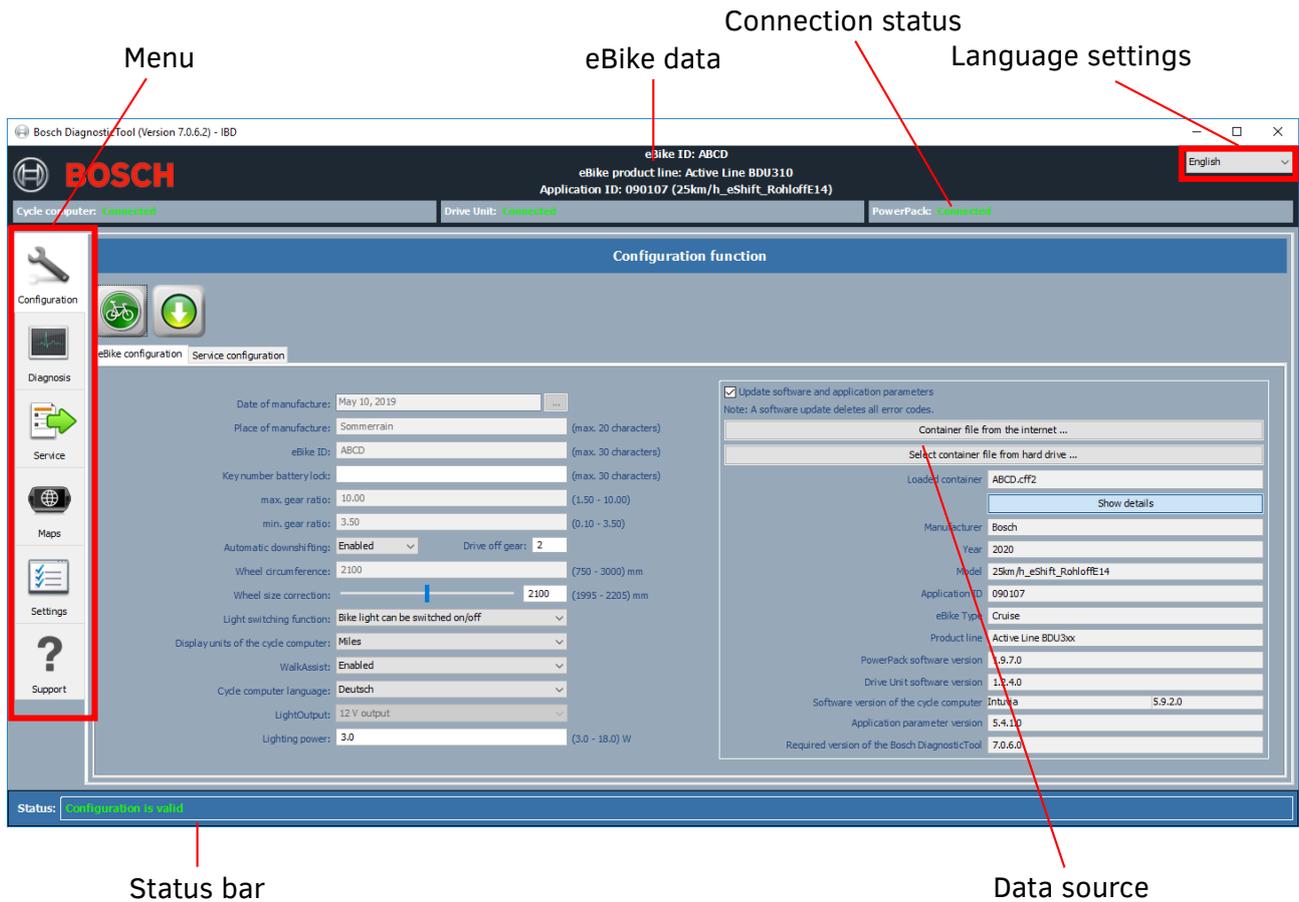
NOTE

- Make sure that the USB cable and dongle are properly connected before working with the Bosch DiagnosticTool.
- Never remove the USB cable whilst the Bosch DiagnosticTool is updating the eBike system.
- Make sure that only one eBike is connected to the computer at any one time.
- Make sure that the eBike battery has sufficient charge (at least one LED lights up, i.e. 20% capacity).

6.1 Overview

The Bosch DiagnosticTool features the following functions:

- Menu: selects the function pages of the Bosch DiagnosticTool
 - Configuration
 - Diagnosis
 - Service
 - Maps
 - Capacity test (only together with the Bosch CapacityTester)
 - Settings
 - Support
- eBike product line: displays the product line of the currently connected eBike
- eBike ID: displays the eBike ID of the currently connected eBike
- Application ID: displays the application ID of the currently connected eBike
- Connection status: displays the current status of the connections to the control units
- Language settings: selects the language of the Bosch DiagnosticTool
- Status bar: displays the status of the Bosch DiagnosticTool
- Content varies depending on which function page is currently selected



6.2 General

6.2.1 Setting the application language

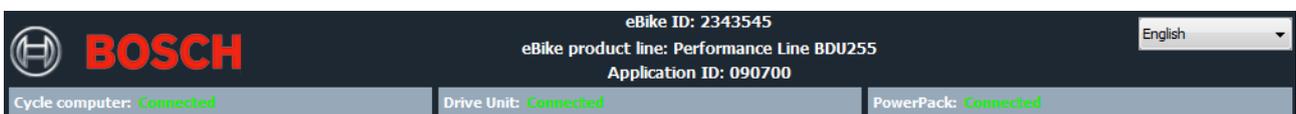
To change the screen language, use the selection box at the top right-hand corner of the screen. After changing the language, you must restart the Tool. A dialogue box will prompt you to do this.

6.2.2 Connection status of the control units

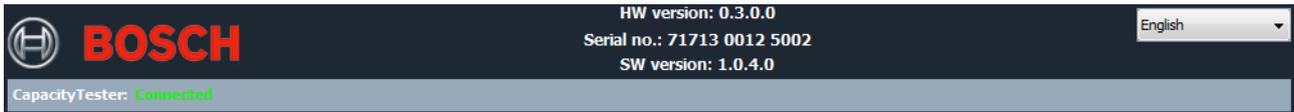
The connection status shows which eBike control units are responding to queries from the Bosch DiagnosticTool. When no eBike control units are connected, the following connection status is shown:



When an eBike is connected, the connection status changes:



When the CapacityTester is connected, the connection status changes and the PowerPack is not displayed as well:



If a control unit displays the connection status *Connected (FBL)*,



then a connection has been established between the Bosch DiagnosticTool and the control unit, but no functioning software has been uploaded to the control unit. In this case, perform a software update of the eBike control unit software.

To ensure a good connection, always connect the battery to an eBike before connecting the eBike. Disconnect the eBike from the computer, connect the battery and then connect the eBike to the computer again.

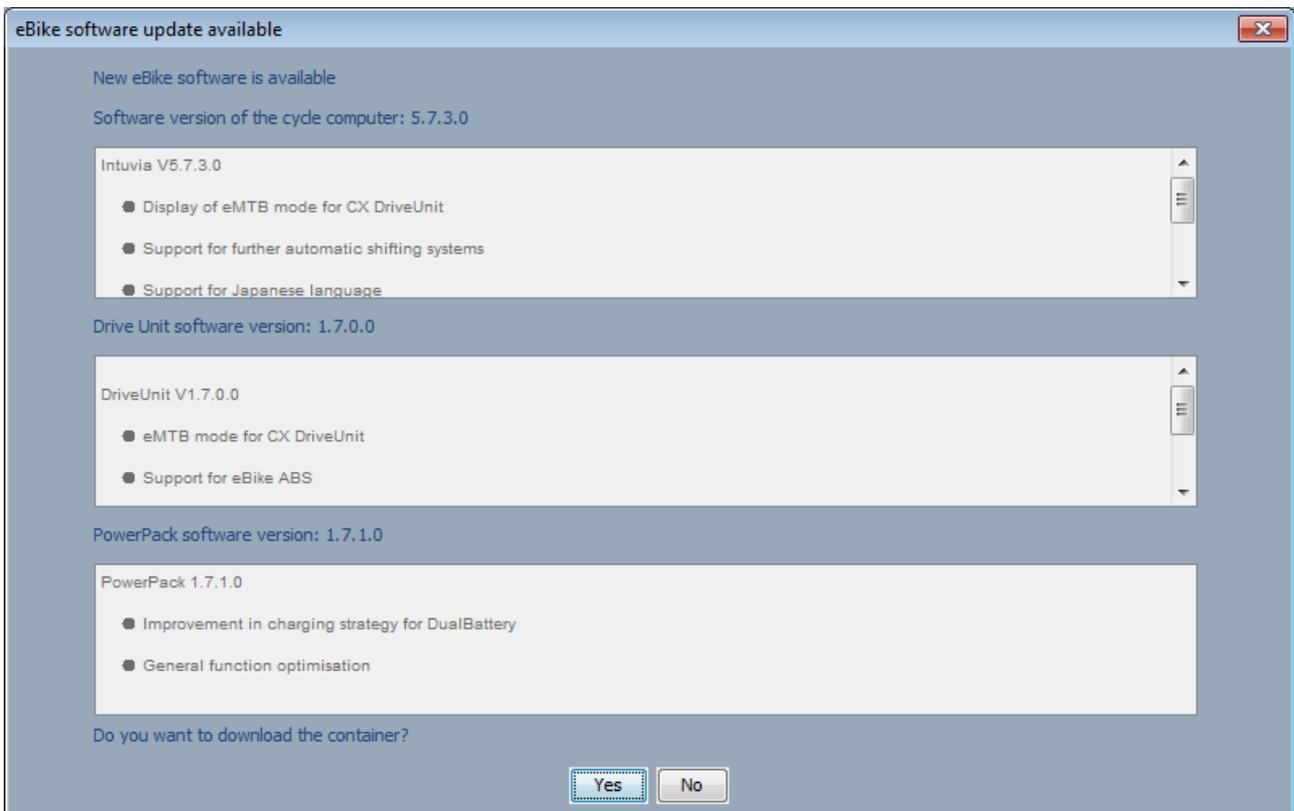
NOTE

If one or more eBike control units do not respond, check the cables and plug connections. If the cycle computer has the status *Connected (FBL)*, the other control units cannot be detected.

If one or more components are in FBL mode, you can still perform a software update. A number of programming procedures may then be required.

6.2.3 Automatic control unit software update

If an eBike system is connected to the Bosch DiagnosticTool, the program searches automatically for the latest control unit software and displays it for installation.



NOTE

An update container can contain software for one or more eBike control units.

6.2.4 Menu selection

The menu selection feature lets you switch between the basic functions of the Bosch DiagnosticTool. It contains the menu items:

- Configuration
- Diagnosis
- Service
- Maps (not together with the Bosch CapacityTester)
- Capacity test (only together with the Bosch CapacityTester)
- Settings
- Support

Click on **Configuration**, **Diagnostics**, **Service**, **Maps**, **Capacity test (optional)**, **Settings** or **Support** to select the desired function.



The individual functions are described on the following pages. The capacity test is described in more detail in chapter 6.2.11.

6.2.5 Configuration



eBike configuration

The Configuration page displays all the important configuration settings of the eBike. Fields that cannot be changed are greyed out.

To view the current data for the connected eBike, click on the button with the bicycle icon



All settings for using a service interval can be made in the **Service configuration** area (see chapter 6.2.5.4).

6.2.5.1 Configuring an eBike

This involves reading out and editing the eBike data entered by the bicycle manufacturer. Fields that cannot be changed are greyed out.

The screenshot shows a configuration interface for an eBike. The fields are as follows:

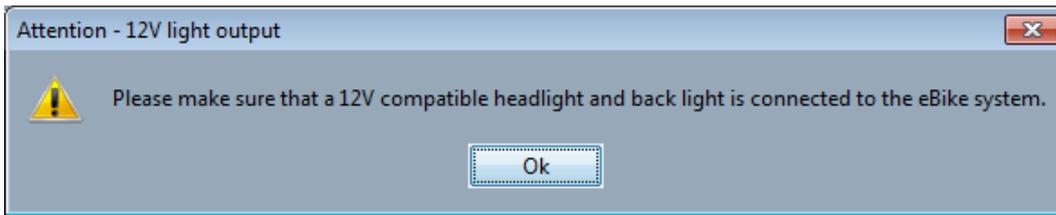
Date of manufacture:	Dec 05, 2018	...
Place of manufacture:	Hamburg	(max. 20 characters)
eBike ID:	B-0001	(max. 30 characters)
Key number battery lock:		(max. 30 characters)
max. gear ratio:	3.00	(1.50 - 10.00)
min. gear ratio:	1.00	(0.10 - 3.50)
Automatic downshifting:	Enabled	Drive off gear: 2
Wheel circumference:	2200	(750 - 3000) mm
Wheel size correction:	<input type="range"/>	2200 (2090 - 2310) mm
Light switching function:	Bike light permanently on	
Display units of the cycle computer:	Kilometres	
WalkAssist:	Enabled	
Cycle computer language:	English	
LightOutput:	12 V output	
Lighting power:	16.7	(3.0 - 18.0) W
12V connection:	Disabled	

The following fields can be configured:

- Key number battery lock
- Automatic downshifting (can be set for eBikes with automatic gear shifting)
- Drive-off gear selection (can be set for eBikes with automatic gear shifting)
- Wheel size correction by +/- 5% (not for generation 1)
- Light switching function: Controls the power supply for the bicycle lights. Three value combinations are available: "Bike light disabled", "Bike light can be switched on/off" and "Bike light permanently on". The available options depend on the version and possibly on the bicycle type (e.g. S-Pedelec).
- Display units of the cycle computer
NOTE: This field is not displayed for Nyon (only Nyon BUI270 and BUI275)!
- WalkAssist/Drive off (Drive off cannot be disabled on the Speed-Pedelec)
- Cycle computer language
NOTE: This field is not displayed for Purion and Nyon (only Nyon BUI270 and BUI275)!
- As of model year 2017, the output voltage for the lights can be configured for Drive Units generation 2 (6 V or 12 V).

NOTE

If the output voltage is set to 12 V, it is important to ensure that the connected headlight and back light are 12 V compatible.



- Lighting power: For Drive Units generations 3 and 4, the power of the installed lighting must be specified when the light switching function is activated.
- 12V connection: The additional 12 V output can be activated for Drive Units generation 4. This output must be deactivated if it is not used.

After you have filled in these fields, the status field tells you whether the content is valid or whether information is missing or incorrect.

If the configuration parameters are valid and complete, the following status is displayed:



Important: You must program the configuration in the eBike in order to complete this step (see next section).

The system must then be switched off and on again once in order to activate the configuration in the eBike.

6.2.5.2 Programming the configuration in the eBike

To program the configuration data in the eBike, click on the **Transfer configuration to eBike** button.



NOTE

Make sure that the **Perform software and application parameter update** check box is not activated.

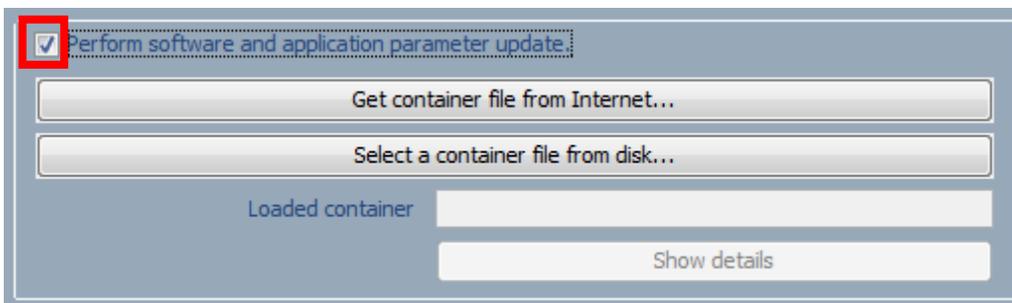


6.2.5.3 Programming the configuration and software and application parameters in the eBike

NOTE

- If you do not select a suitable container file for the connected eBike, the software and application parameters cannot be installed.
- Make sure that the container file is suitable for the connected eBike. A container file contains the eBike control unit software for the different control units as well as the application parameters.
- Make sure that the eBike battery is properly charged (at least one LED lights up, i.e. 20% capacity)
- Never disconnect the USB cable during programming.

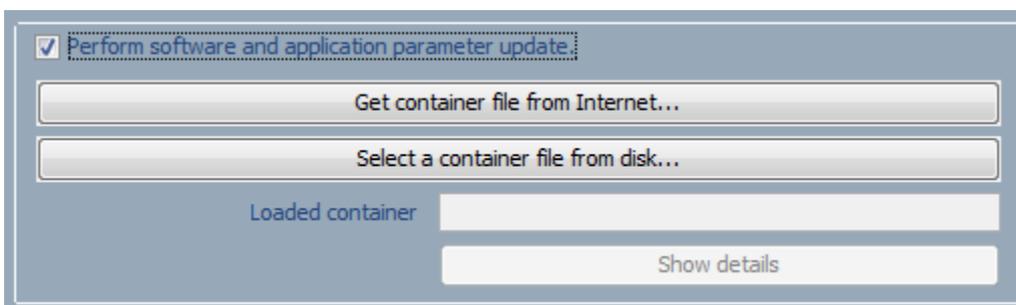
To install the eBike configuration and software, tick the **Perform software and application parameter update** check box.



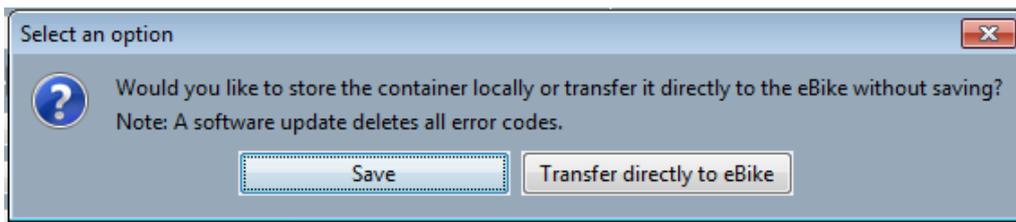
6.2.5.3.1 Loading software and application parameters from the internet

Requirement: The system has already been programmed at least once with a standard container.

- Your computer must be connected to the internet.
- Select the option **Get container file from Internet...**



- This allows you to request a container file from the Bosch update server. The Bosch Diagnostic-Tool collects all the information it needs from the connected eBike in order to request new software from the server and download it to your computer.
- Before the container file is downloaded, a dialogue box opens. In this box, you can choose to either save the container file on your computer (for later use) or transfer it directly to the eBike.



When the suitable container has been selected and is displayed in the selection field, you can click on the **Show details** button to display information about the software versions available in the container file.

NOTE

By requesting the suitable container from the internet, you can be sure that you always receive the latest software versions for the components.

Update software and application parameters
 Note: A software update deletes all error codes.

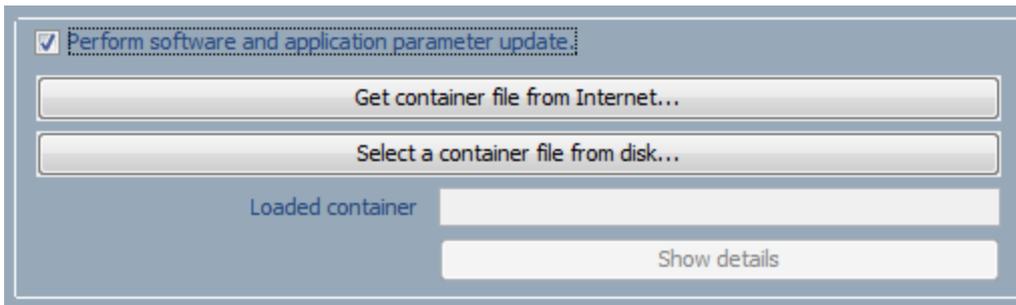
Container file from the internet ...

Select container file from hard drive ...

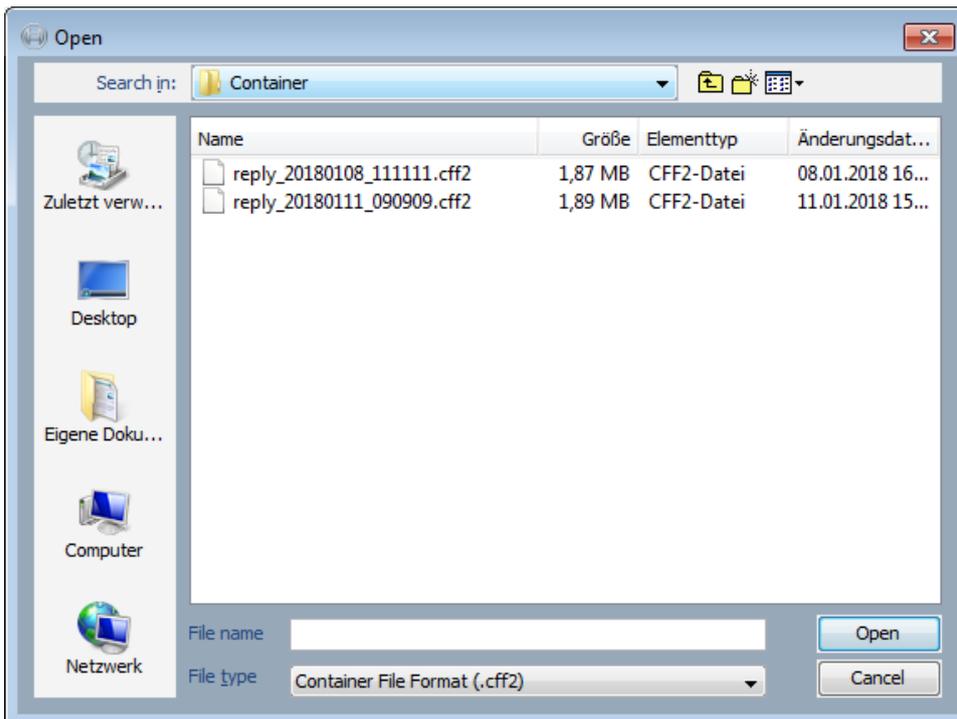
Loaded container	reply_20180111_090909.cff2	
	Show details	
Manufacturer	Bosch_Package3	
Year	2019	
Model A	20mph_Derailleur	
Application parameters Reference ID	090909	
Model B	20mph_Derailleur_eMTB	
Application parameters Reference ID	A90909	
eBike Type	Sport	
Product line	Performance Line CX BDU2xx	
PowerPack software version	1.7.8.0	
Drive Unit software version	1.7.9.0	
Software version of the cycle computer	Intuvia	5.7.90.1
eBike ABS software version		
Application parameter version	5.0.0.1	
Required version of the Bosch DiagnosticTool	5.0.0.0	

6.2.5.3.2 Loading software and application parameters from the hard disk

- Click **Select a container file from disk...**



- Navigate to where the suitable container file is stored, select it and then click **Open**.



- Once it has opened, the name of the container file is displayed in the text field.

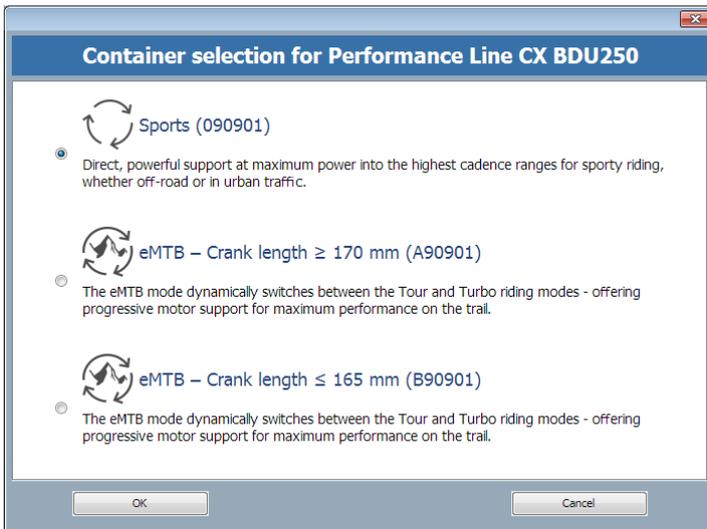
6.2.5.3.3 Programming the configuration and software and application parameters in the eBike

To program the selected configuration and the container file in the bicycle, click on the **Transfer configuration to eBike** button. (This button can only be selected if the container file and eBike configuration are available).

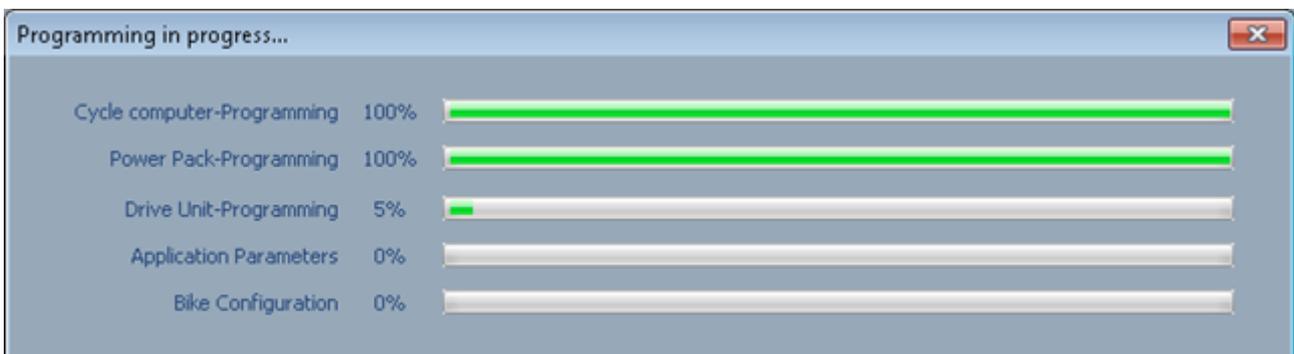


The system checks the software versions and application parameters before programming the eBike. The eBike cannot be programmed to an older software version.

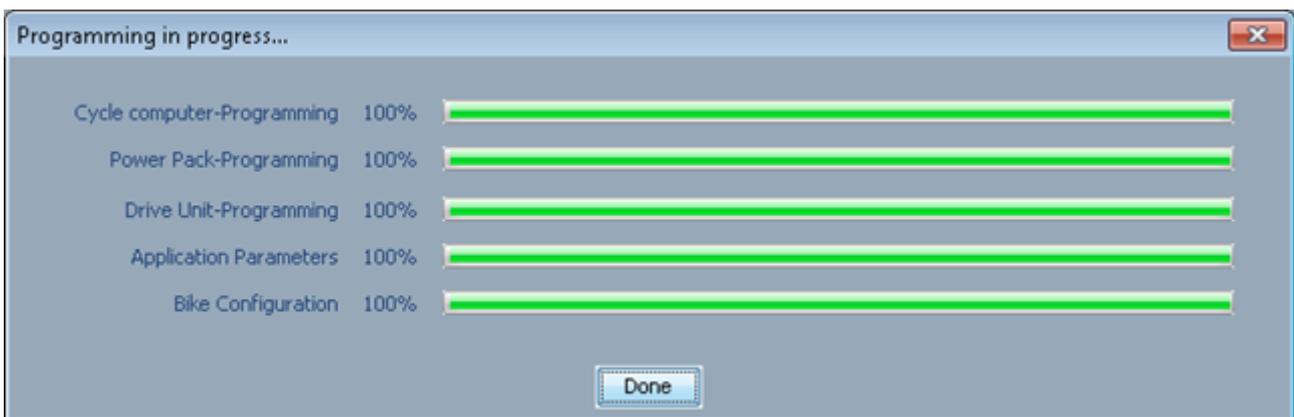
If the container file contains several model variants (e.g. eMTB mode), a dialogue box in which you can select one of the available model variants will appear before starting flash programming.



When the suitable container for the eBike has been selected, programming begins and the status information is displayed:



When programming is finished, the **Done** button appears. Please click on this to close the dialogue box.



NOTE

The display may be different depending on which optional components are installed. The Bosch SmartphoneHub cannot be updated by the Bosch DiagnosticTool. It can be updated only by the Bosch eBike Connect app.

Following successful transmission, the following status is displayed:



The system must then be switched off and on again once in order to activate the configuration in the eBike.

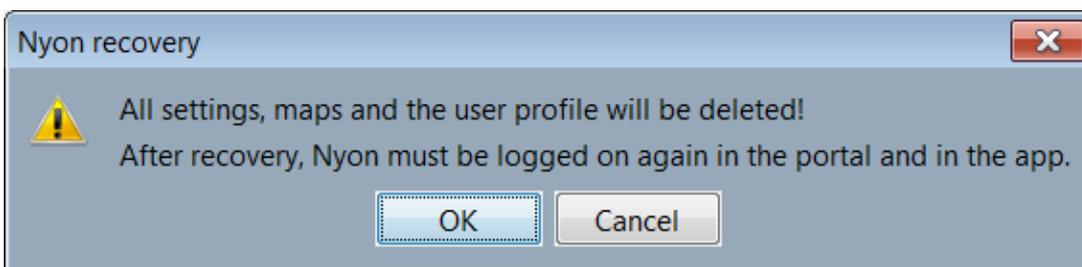
6.2.5.3.4 Nyon recovery

It may be helpful to reset the BUI270 and BUI275 to the factory settings (possible from the software for model year 2018).

To do this, connect Nyon without eBike to the computer and activate the **Cycle computer recovery** check box.



Before starting programming, you must confirm that Nyon was reset to the factory settings.



NOTE

During Nyon recovery, all settings, maps and the user profile will be deleted.

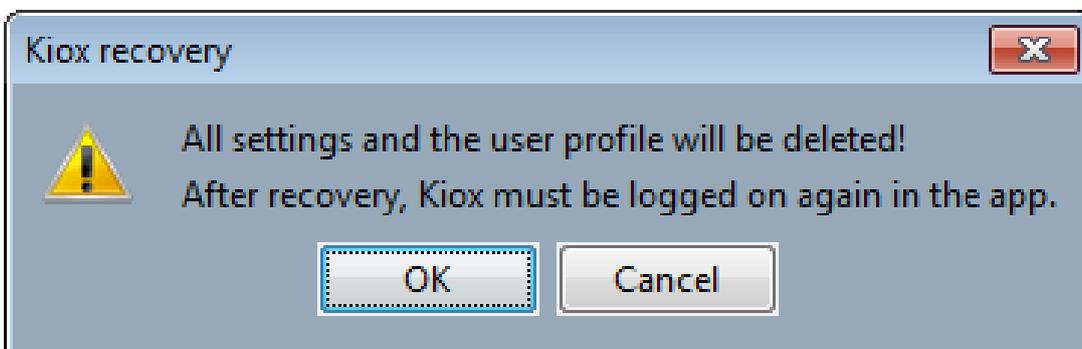
6.2.5.3.5 Kiox recovery

It may be helpful to reset Kiox to the factory settings.

To do this, connect Kiox without eBike to the computer and activate the **Cycle computer recovery** check box.



Before starting programming, you must confirm that Kiox was reset to the factory settings.



NOTE

During Kiox recovery, all settings and the user profile will be deleted.

6.2.5.4 Service configuration

The Configuration page displays all the important service interval settings for the eBike. The dealer can choose whether the next service should be set according to date or mileage (or both). When a service is due, the customer sees a message to this effect on the display when switching on the eBike.

NOTE

A date for the service interval cannot be specified for Purion.

Next service

Next service on: ...

Next service at odometer reading: ...

Current odometer reading:

Service history

Date	Odometer reading
2018-01-22	0.0 mi
2017-11-30	0.0 mi
2017-06-01	0.0 mi
2017-05-17	0.0 mi
2017-05-04	0.0 mi
2017-04-27	0.0 mi
2017-04-26	0.0 mi
2017-04-25	0.0 mi
2017-03-14	0.0 mi
2017-01-10	0.0 mi

After servicing, the current date and the current odometer reading are transferred into the history using the button with the green arrow. The data for the next service is transferred at the same time.



The button with the red X can be used to delete a scheduled service.



6.2.6 Diagnosis



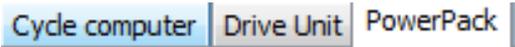
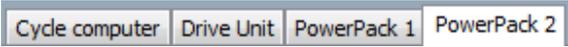
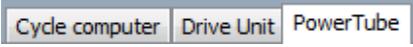
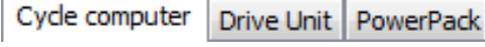
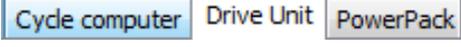
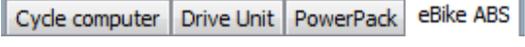
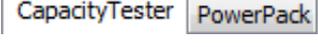
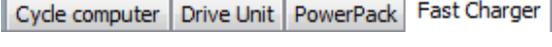
The Diagnostics page displays information about the connected control units, e.g. the stored error codes and diagnostic parameters.

6.2.6.1 Retrieving diagnostic data from the eBike

To retrieve data from the eBike, click on the **Load eBike configuration** button:



Select the tab for the component you wish to view:

- PowerPack 
- PowerPack 2 (optional) 
- PowerTube (optional) 
- Cycle computer 
- Drive Unit 
- eShift (optional) 
- eBike ABS (optional) 
- CapacityTester 
- Fast Charger 

Each tab shows both the error codes, their descriptions and instructions for correcting errors as well as the diagnostic parameters and their values.

6.2.6.2 Diagnostic report

You can use the *Diagnostic report* function to document the current status of an eBike and the Bosch DiagnosticTool version used, e.g. before and after repairs so that changes can be tracked.

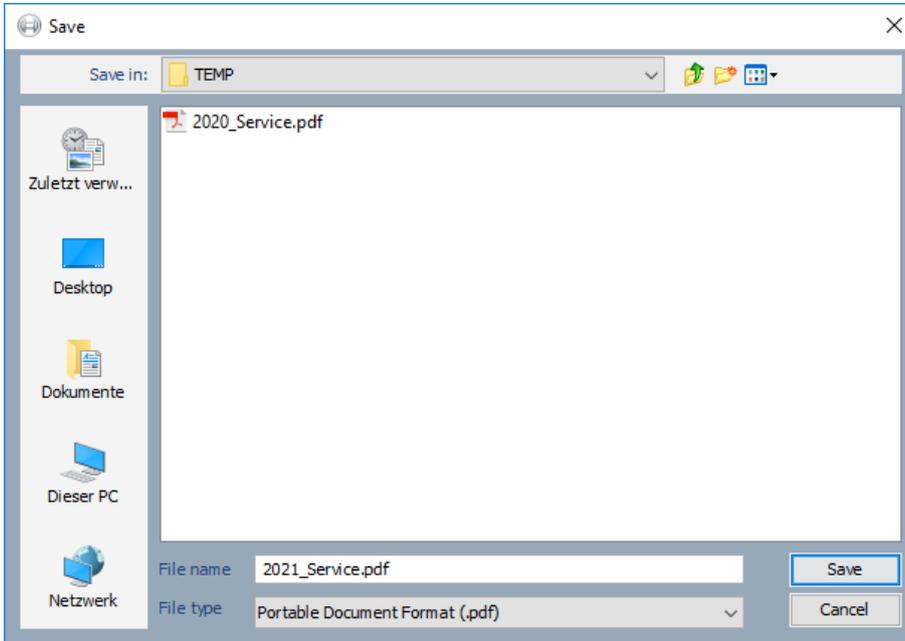
Two different diagnostic reports are available:

- Dealer diagnostic report (PDF format)
- Customer diagnostic report (PDF format)

To create a diagnostic report, click on the **Create diagnostic report** button.



Then select the storage location on the computer and the file name:



After the report has been successfully saved, the following status message appears:



The diagnostic report can be opened with any program that can process the PDF format (e.g. Acrobat Reader). Furthermore, data relating to the eBike owner, services, comments and entries can be added in the service log.

An example of a dealer diagnostic report is shown below.

eBike diagnostic report

Dec 16, 2019 09:53

Bosch DiagnosticTool Version: 7.0.6.2

Customer number: 111111

Cycle computer

Error codes

No error codes were reported by this control unit.

Component information

Manufacturer information	
Date of manufacture	960
Part number	1270020909
Product code	BUI255
Serial number	0x31FFD6054B43353544502200
Hardware version	0.0.2.2
Software version	5.9.2.0
Cycle computer settings	
Distance units	mi
Language settings	Deutsch
Cycle computer information	
Current time	09:45 hh:mm
Current date	Dec 16, 2019
Clock display mode	24h
Trip time	00:00 hh:mm
Trip distance	0.00 km
max. speed	0 km/h
Component	Intuvia
“WalkAssist” button	Button not pressed
“Plus” button	Button not pressed
“Info” button	Button not pressed
“Minus” button	Button not pressed
“Reset” button on the cycle computer	Button not pressed
“Power” (On/Off) button on the cycle computer	Button not pressed
“Info” button on the cycle computer	Button not pressed
“Light” button on the cycle computer	Button not pressed

An example of a customer diagnostic report is shown below.



eBike diagnostic report

Dec 11, 2018 14:51

Contact person			
	Dealer	Owner	
Name	Testfirma		
Address	Teststrasse 11, 12345 Teststadt		
Phone number	+49 1234 56 78		
E-mail	test@____.com		
Website	www._____.com		
eBike			
eBike product line	Performance Line	eBike type	Speed
eBike ID	B-0001	max. support speed	0 km/h
Key number battery lock			
Components			
			
Component	Intuvia	Drive Unit Speed	PowerPack Frame 400
Part number	1270020903	123456789100	123456789100
Serial number	0x35FFD9053452393639572500	00000 2000	75322 0047 04
Software version	5.8.3.0	0.2.4.0	1.8.10.0
Error codes			
Component	Error code	Description	
Cycle computer		No error codes were reported by this control unit.	
Drive Unit		No error codes were reported by this control unit.	
PowerPack		No error codes were reported by this control unit.	
Settings			
Display unit	24h	max. gear ratio	3.00
Language settings	English	min. gear ratio	1.00
Light switch status	Bike light permanently on	Wheel circumference	2200 mm
LightOutput	12 V	Wheel size correction	
Lighting power ¹	16.7 W	WalkAssist	Enabled
eBike Systems Lock Function	not available		

The following section shows the service log header:

Service log				
Component	Activity	OK	not OK	corr.
Cycle computer	Check that the eBike switches on/off at the cycle computer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Carry out a function test on all buttons	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Legend:

Abbreviation	Meaning
OK	okay
not OK	not okay
corr.	corrected

6.2.6.3 Deleting error codes

After you have checked all error codes and corrected the errors, you can delete the error codes that are stored in the system. To do this, click on the **Delete error codes in eBike** button



NOTE

- Make sure that the eBike battery has sufficient charge (at least one LED lights up, i.e. 20% capacity).
- Never remove the USB cable while the error codes are being deleted.

6.2.6.4 Deleting statistical data

The **Reset statistical data** button resets all the stored statistical data (distance driven per support mode).



NOTE

- All statistical data is irretrievably deleted!

6.2.6.5 Disable battery

The connected battery (from battery software model year 19) can be disabled for good using the **Disable battery** button.



NOTE

- To use this function for DualBattery, please remove the battery you do not want to deactivate.
- Attention: Once disabled, the battery cannot be activated again.

6.2.6.6 BOSCH eBike LOCK

A blocked system can be re-activated with the aid of the reset code using the **LOCK Service** button.

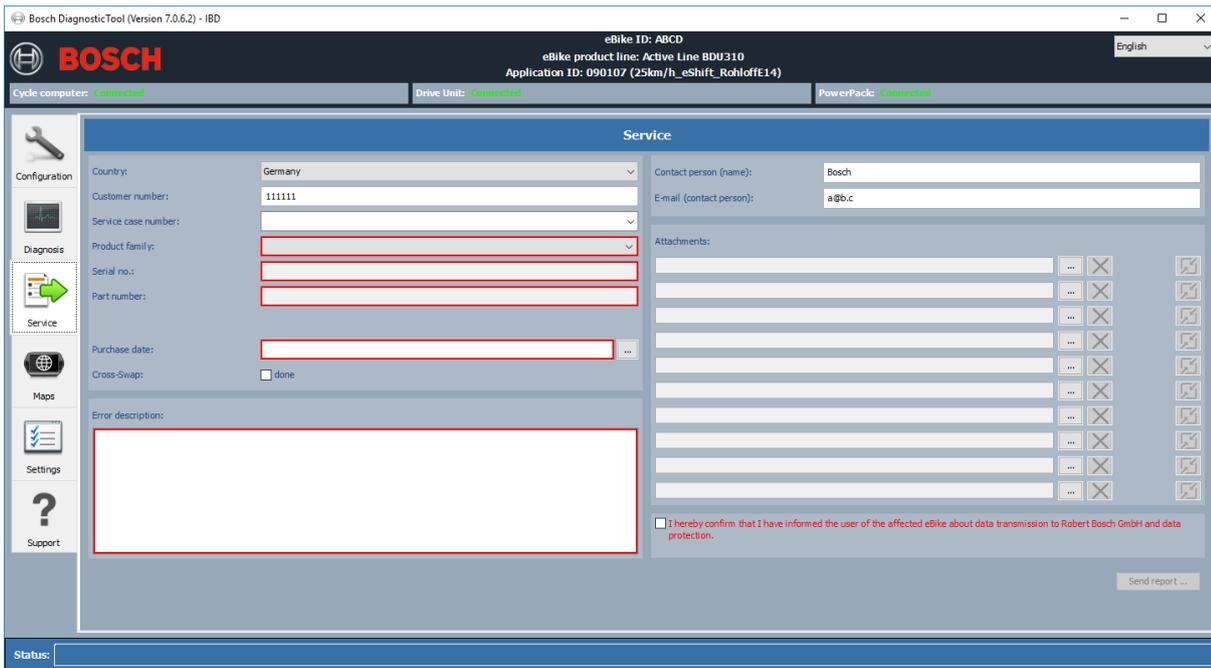


The reset code can be requested from the Bosch eBike Service hotline based on the *LOCK number*.

6.2.7 Creating a service case

Use the **Service** page to send a report to the eBike Service and create a service case, or add to a service case if you specify an existing case number.





NOTE

- If the data is sent successfully, the Bosch eBike Service will initiate all further steps.
- The case number must look like this: It begins with "EB-" followed by at least 6 digits (no letters), a dash, then exactly four digits or letters. The whole case number must not be more than 30 characters long. Example: EB-123456789-1AB4
- Video file attachments can be compressed, if necessary.

6.2.8 Maps (only Nyon BUI270 and BUI275)



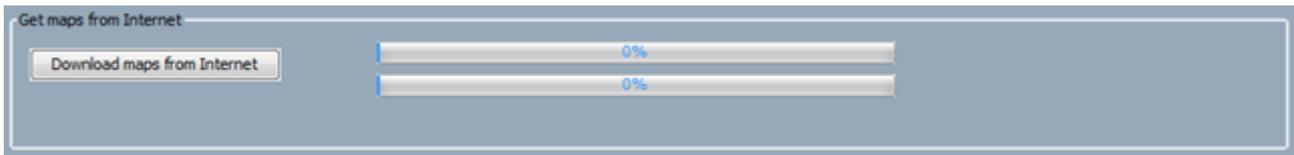
Clicking on the **Maps** button lets you download current maps for the Nyon navigation system to your local hard disk. You can also use this menu item to update Nyon with new or updated maps.

Any new maps are displayed on the tab:

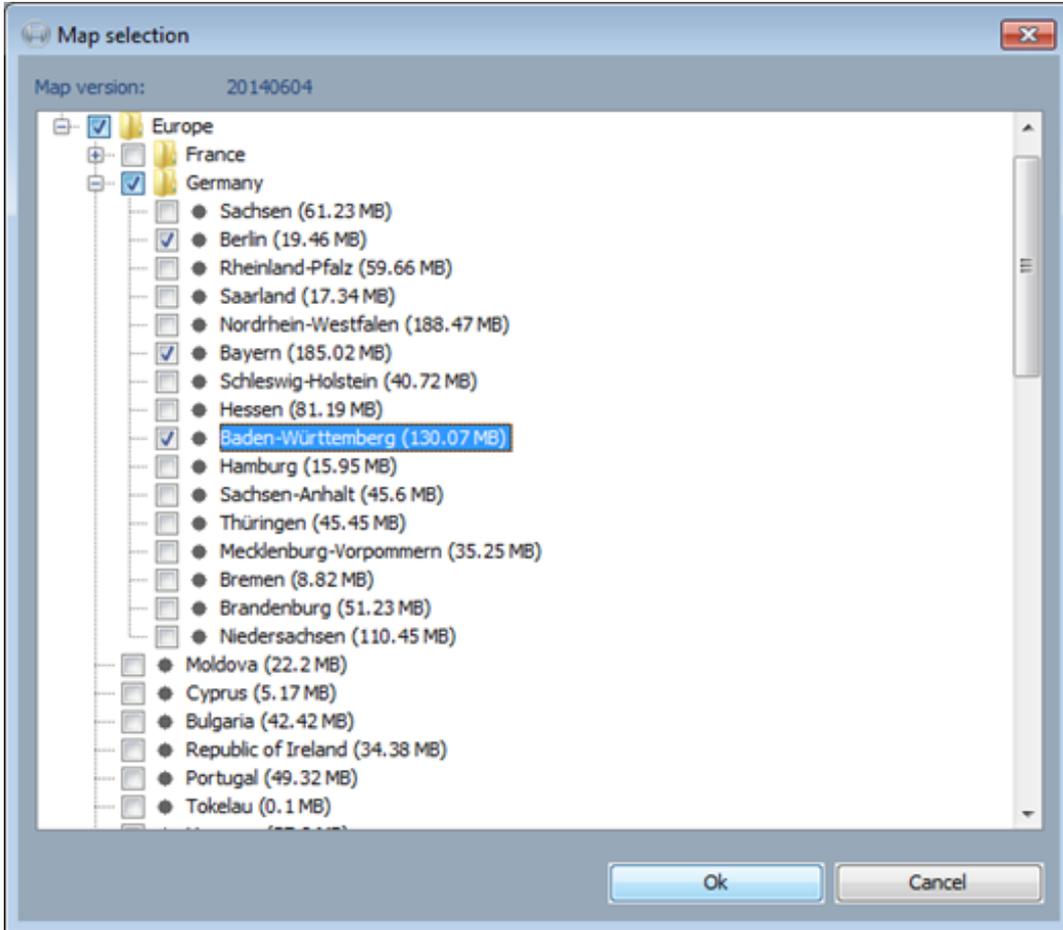


6.2.8.1 Downloading maps from the internet to your local hard disk

To download the maps for navigation, you must select them first. Click on the **Download maps from Internet** button.



You can then select the required maps in the following dialogue box:



Select the maps you want by ticking the check boxes. Individual maps or all the maps for an area (e.g. county/state or country) can be selected.

The selected maps are downloaded when you confirm your selection by clicking **OK**. The status of the download process is shown on the right next to the Download button.

The map material is stored in the directory on the computer that was configured under **Settings – Map memory** (chapter 6.2.13.4).

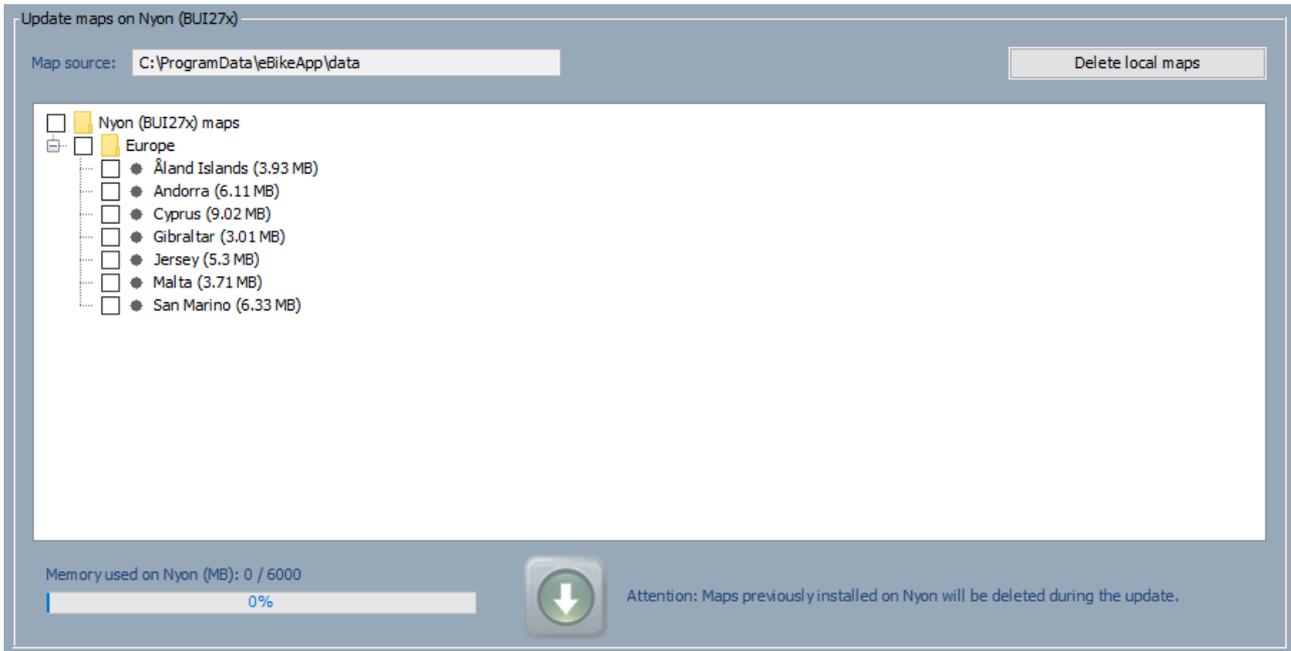
Once the map download from the internet starts, the **Download maps from Internet** button disappears and the **Cancel map download** button appears. Pressing this button cancels the map download for the map currently being downloaded and skips the download for any pending maps.

The **Cancel map download** button is greyed out until this cancellation process is concluded. Once the process is finished, a new map download can be started again.

If you have selected several maps to download, the maps that have already been completely downloaded are retained. If the download of a previously existing map is cancelled, the original map is retained only if the map version has not changed.

6.2.8.2 Updating maps on the "Nyon" cycle computer

When the Bosch DiagnosticTool is connected to Nyon, the **Update Maps on Nyon** option is active.



Select the maps you want by ticking the check boxes. Individual maps or all the maps for an area (e.g. county/state or country) can be selected.

Depending on which maps you have selected, the resulting memory used on Nyon is displayed. The maps are transferred to Nyon by pressing the button to the right of the memory usage display.

NOTE: All maps stored previously on Nyon are deleted!



The amount of memory available for storing maps on Nyon is limited. If the maximum memory capacity is exceeded, the display is shown in red. The button for transferring maps is deactivated in this case.



6.2.9 eBike ABS

Function test

Proceed as follows to check the functionality of the eBike ABS system: Connect the eBike to the **Bosch DiagnosticTool** and switch to the eBike ABS tab on the Diagnostics tab. Now make sure that both wheels can turn freely and turn them one after the other. If the ABS function is available, the status of "Sensor test on front wheel/rear wheel" will change from "pending" to "successful".

ABS information	
Front brake lever	not actuated 0.06 bar
Speed front wheel	Value not available
Speed rear wheel	Value not available
Sensor test on front wheel	pending
Sensor test on rear wheel	pending

The test result is reset each time the eBike is disconnected from the Bosch DiagnosticTool or using the "Reset sensor test" button.



6.2.10 Test hardware

If you have stored sample components in the eBike or if a container with sample software is loaded on the eBike, this state is indicated in the connection status.



On the Diagnostics tab, sample hardware is identified with a corresponding addition in the part number; sample software is identified in the software version.

Part number	123456789012 (sample)
-------------	-----------------------

6.2.11 Bosch CapacityTester

The CapacityTester lets you determine the capacity of Bosch PowerPacks generations 1 (via the adapter) and 2. A winter discharge can also be started. The CapacityTester is connected to the computer via the supplied USB cable. The Bosch PowerPack to be tested must be connected fully charged to the CapacityTester in order to perform a measurement. For the winter discharge, it must be more than 50% charged. The Bosch DiagnosticTool is required for starting and evaluating the test or discharge.

Functions:

- Upgrades the CapacityTester software
- Reads and deletes the fault memory
- Starts and evaluates a measurement
- Connects to a CapacityTester on which a measurement is currently running
- Starts the winter discharge of the Bosch PowerPack

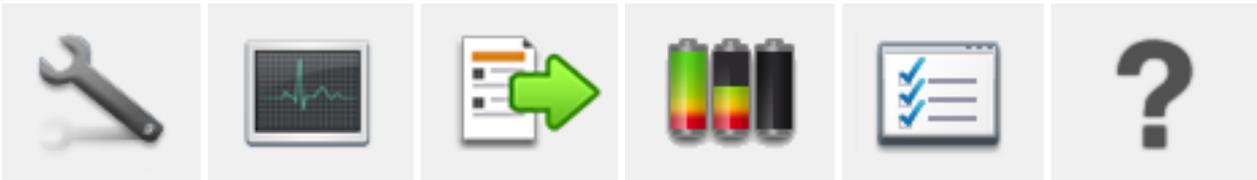
Once a CapacityTester is connected, the menu bar and the interface of the Bosch DiagnosticTool will adjust accordingly.

NOTE

- In case of an error, the three LEDs on the CapacityTester flash simultaneously and error codes and a description are entered into the Diagnostics tab of the CapacityTester.

6.2.11.1 Menu

The menu selection changes as soon as a CapacityTester is connected. The **Capacity test** menu item is displayed instead of the Map menu.



If you disconnect the Bosch DiagnosticTool from the CapacityTester, the menu item is retained. The view of the Bosch DiagnosticTool changes to the Settings page and the **Capacity test** menu item cannot be selected again.

6.2.11.2 Configuration

CapacityTester: **Connected**

Diagnostic parameters	Values
CapacityTester	
Part number	0273016938
Serial number	75312 0011 5022
Hardware version	0.3.0.0
Software version	1.1.5.0

Status:

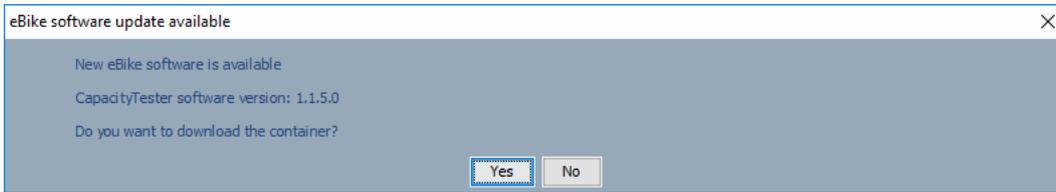
The current connection status of the CapacityTester is displayed in the Configuration menu.

The status of the CapacityTester can be determined on the device itself based on the **Ready**, **Running** and **Finished** LEDs.

The CapacityTester software can be updated via the Bosch update server. Clicking the green arrow button will start the process.

NOTE

As soon as a new software version for the CapacityTester is available, the following message appears:



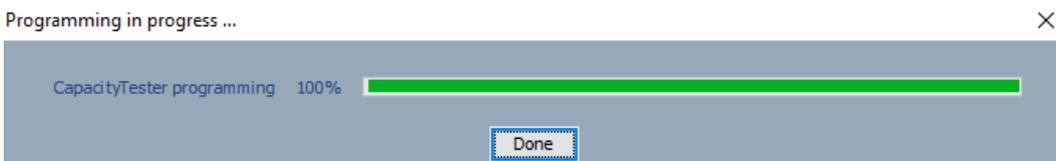
Start the process by clicking on the button with the green arrow.



If there is no connection to the Bosch update server, a corresponding error message appears and the URL (see chapter 6.2.13.1) should be checked and corrected if necessary. If there is a connection, then the CapacityTester software will be updated.



After programming is successfully concluded, the **Done** button appears. Please click on this to close the dialogue box.



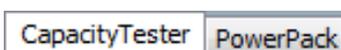
6.2.11.3 Diagnosis



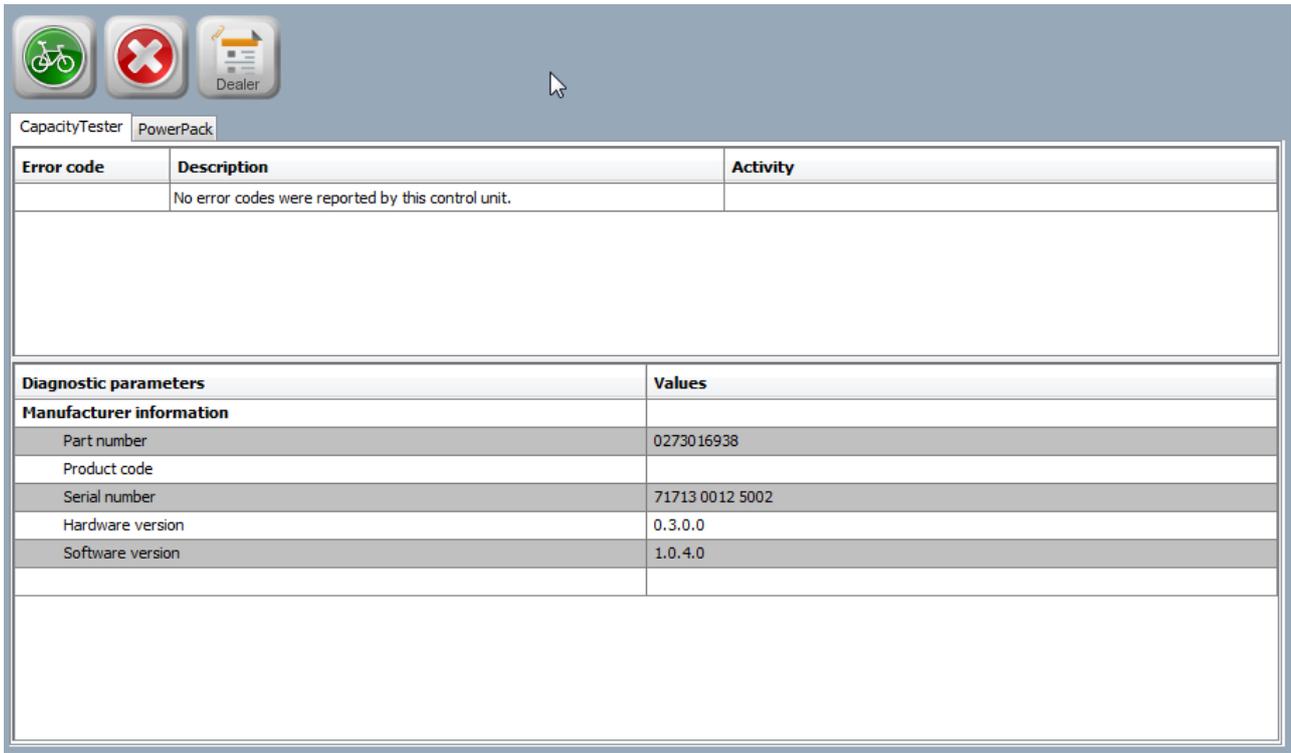
When a CapacityTester is connected, all CapacityTester information is automatically read out in the Diagnostics tab under the **CapacityTester** tab. You can find all the information about the connected Bosch PowerPack under the **PowerPack** tab. These values can also be read out manually using the **Load the configuration from the eBike** button.



Select the tab for the component you wish to view:



Similar to the other eBike components, the error codes, their description and corresponding recommendations for action are displayed in the upper part. The lower part shows diagnostic parameters and manufacturer information.



The screenshot shows the CapacityTester interface with a top navigation bar containing icons for a bicycle, a red 'X' error icon, and a 'Dealer' icon. Below the navigation bar, there are two tabs: 'CapacityTester' and 'PowerPack'. The main content area is divided into two sections. The upper section is a table with three columns: 'Error code', 'Description', and 'Activity'. The lower section is a table with two columns: 'Diagnostic parameters' and 'Values'.

Error code	Description	Activity
	No error codes were reported by this control unit.	

Diagnostic parameters	Values
Manufacturer information	
Part number	0273016938
Product code	
Serial number	71713 0012 5002
Hardware version	0.3.0.0
Software version	1.0.4.0

6.2.11.4 Capacity test

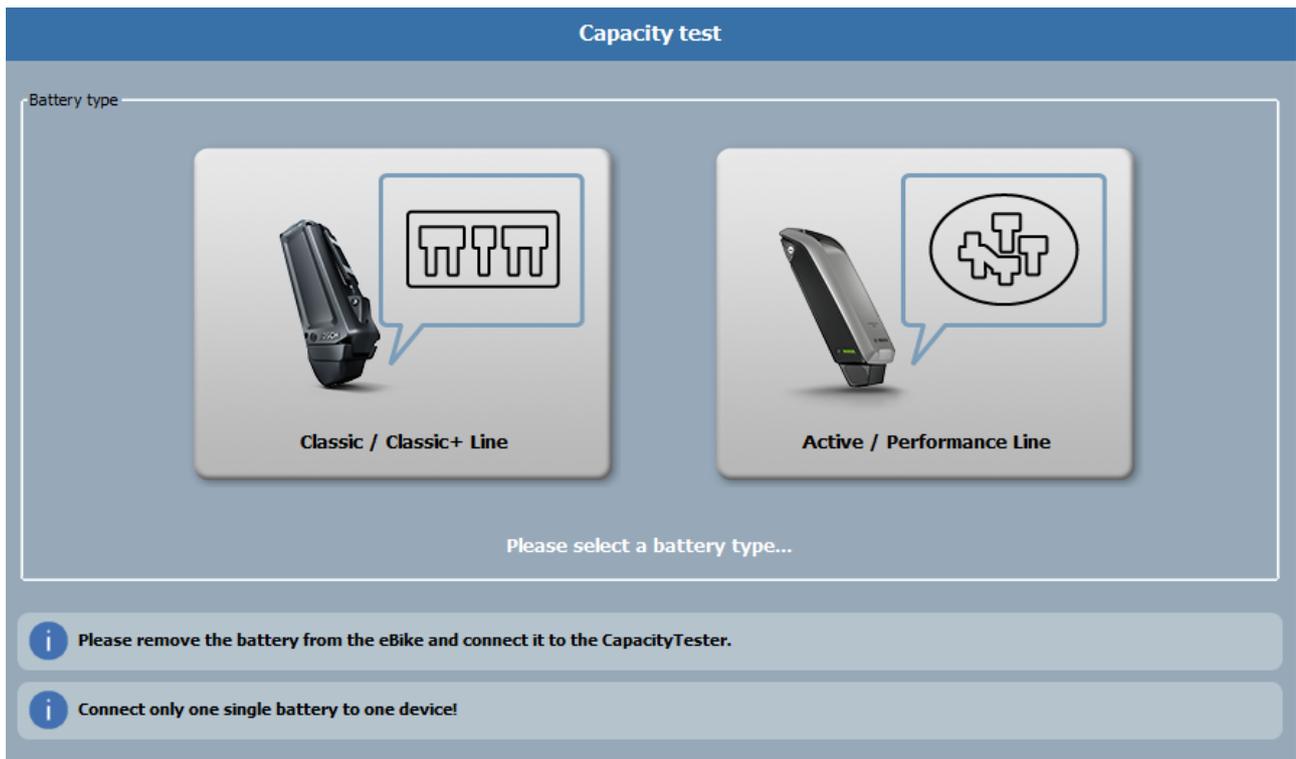


You can use the CapacityTester to measure the power capacity of a connected PowerPack. Before a measurement can be started, you must select the connected battery type. You can select the battery type from the **Capacity test** menu item.

6.2.11.4.1 Battery type selection

The battery type selection is displayed when the CapacityTester is connected and the **Capacity test** menu item is selected. Here you can choose between an Active / Performance Line battery and a Classic / Classic + Line battery. When the battery type is accepted by the CapacityTester, the screen for starting a measurement is displayed.

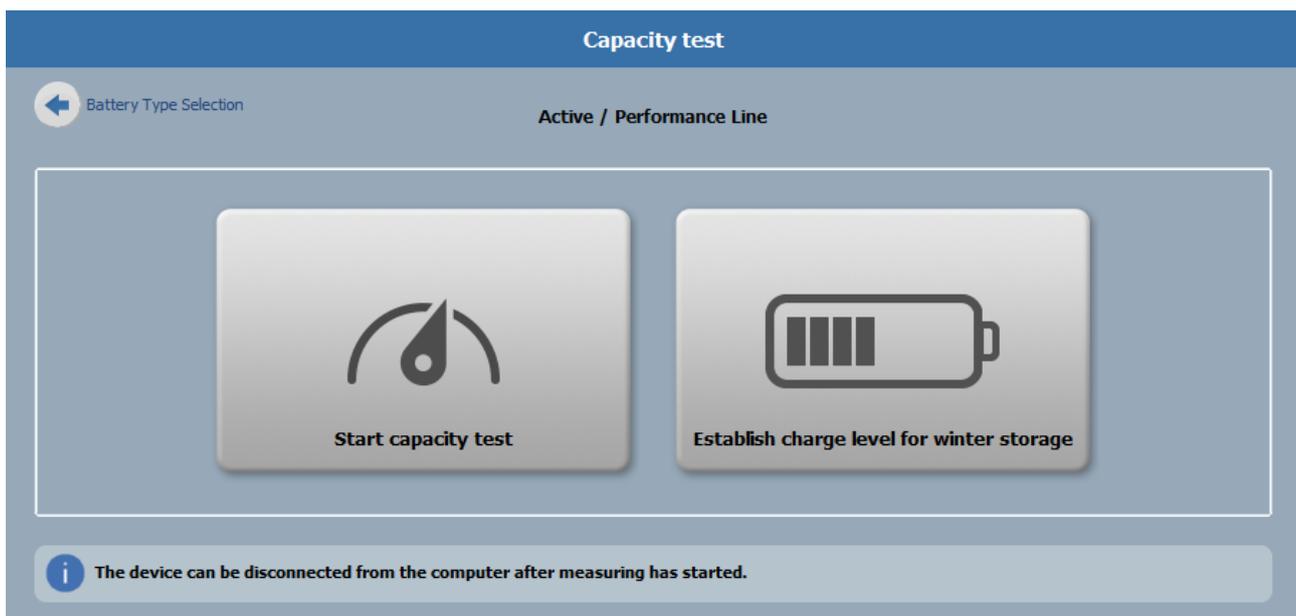
Info texts will help you to handle the CapacityTester with the battery.



When you select a battery type that does not match the connected PowerPack, a corresponding message will be displayed and the measurement cannot be performed. A corresponding message is also displayed when there is a problem with the PowerPack.

6.2.11.4.2 Measurement

You can return to the Battery type selection window at any time from the view used to start the measurement. Please use the corresponding button. The battery type you selected is displayed for orientation purposes.



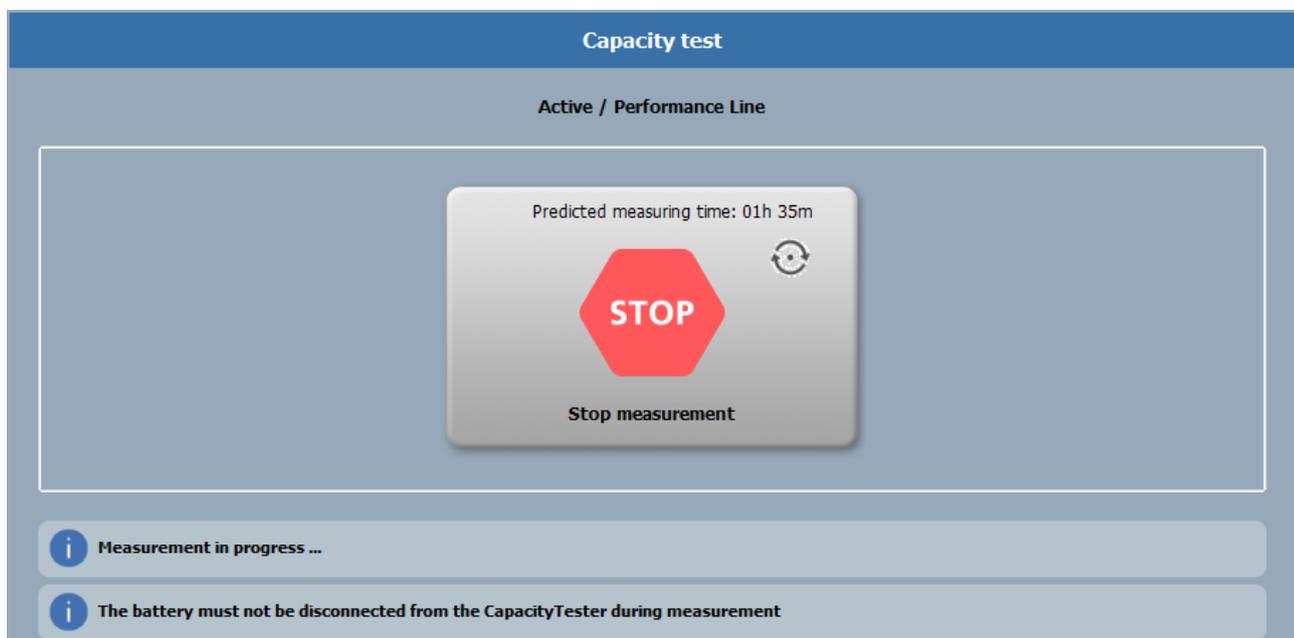
NOTE

- Please make sure that the connected PowerPack is fully charged (at least 98%) before starting a measurement. Also, the PowerPack may not be in FBL mode.
- Make sure that the CapacityTester is not covered and the ventilation slots of the unit are freely accessible.

Press the **Start capacity test** button to start the measurement. The CapacityTester starts with an audible noise after a few seconds. A corresponding message is displayed should an error occur at the start or during the measurement.

The remaining time until the measurement is concluded is displayed. The CapacityTester can be disconnected from the computer (disconnect the USB cable) during the measurement. The CapacityTester performs the measurement independently of the Bosch DiagnosticTool. The current measurement is indicated by the "Running" LED on the CapacityTester.

The "Battery Type Selection" button is disabled during the measurement.



When the CapacityTester is connected to the computer, you can cancel the measurement using the **Stop measurement** button. The CapacityTester is then in the "Measurement aborted" state. An info text is displayed and afterwards the Battery type selection window is displayed and no measured values are available.

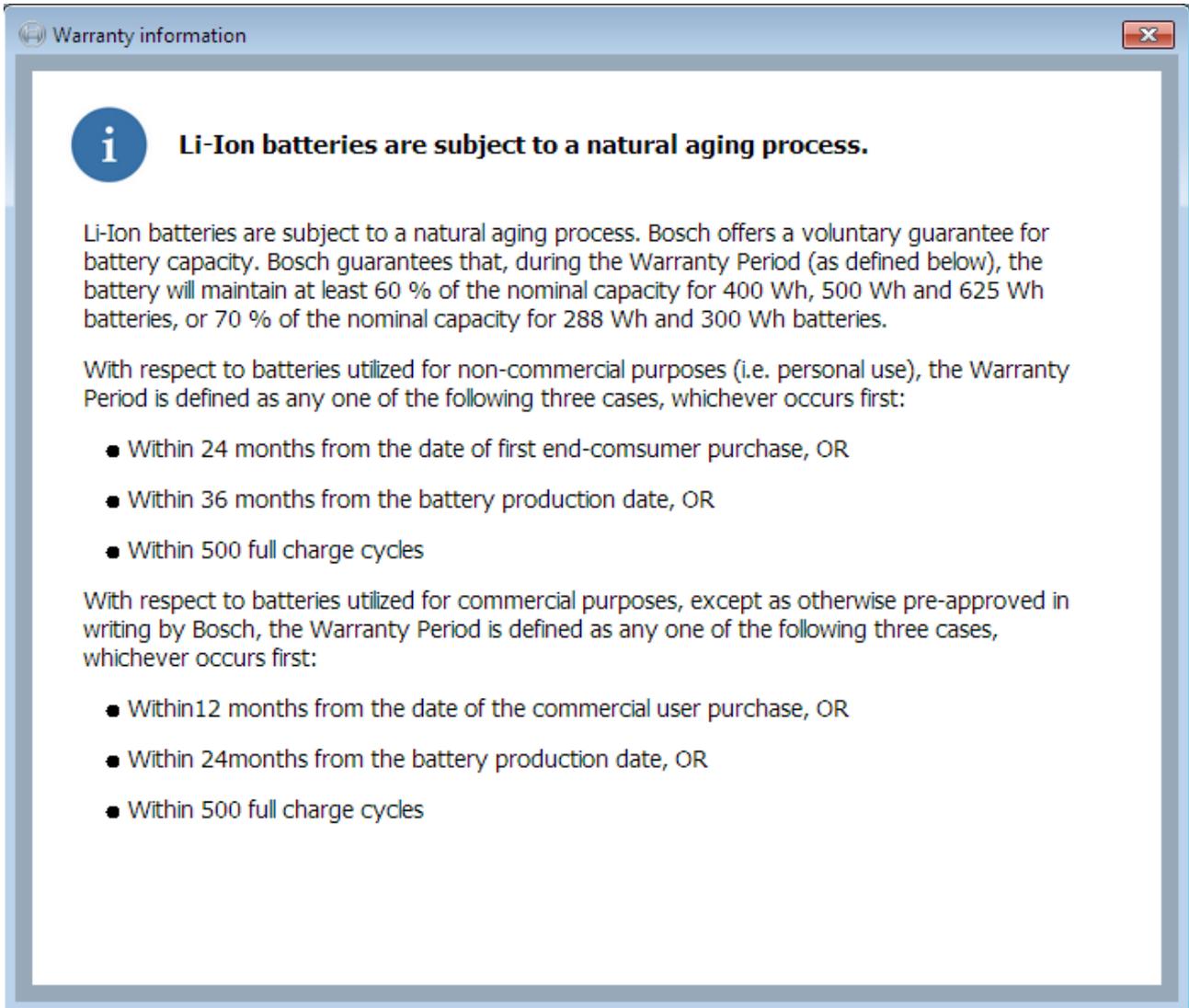
When the measurement is successfully completed, the "Measurement finished" page is displayed and the "Finished" LED is active on the CapacityTester. This page is similar to the previous pages. In addition, the measurement data is displayed as a graphic and listed in a table. The diagnostic reports are then stored as dealer and customer reports in the defined storage location.

WARRANTY ASSESSMENT Bosch offers a voluntary guarantee for the energy content of the batteries. However, the warranty claim is checked by entering the purchase date and activating the commercial use option. To do this, you can enter the values under the measured data for the battery by specifying the nominal value and current value. The lower information section contains a link that opens a window containing information about the voluntary guarantee conditions. The information window can be closed using the [X] in the top right corner.

WARRANTY ASSESSMENT – Purchase date When you enter the purchase date, the system checks

automatically to see whether there is an entitlement under warranty. The result of the check is displayed immediately in the upper information section. You can look up the stored time periods in the warranty conditions.

WARRANTY ASSESSMENT – Commercial use The time periods of the warranty claim change when commercial use is activated. These can also be viewed in the warranty conditions.



Li-Ion batteries are subject to a natural aging process.

Li-Ion batteries are subject to a natural aging process. Bosch offers a voluntary guarantee for battery capacity. Bosch guarantees that, during the Warranty Period (as defined below), the battery will maintain at least 60 % of the nominal capacity for 400 Wh, 500 Wh and 625 Wh batteries, or 70 % of the nominal capacity for 288 Wh and 300 Wh batteries.

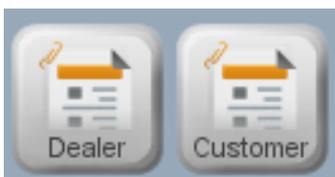
With respect to batteries utilized for non-commercial purposes (i.e. personal use), the Warranty Period is defined as any one of the following three cases, whichever occurs first:

- Within 24 months from the date of first end-consumer purchase, OR
- Within 36 months from the battery production date, OR
- Within 500 full charge cycles

With respect to batteries utilized for commercial purposes, except as otherwise pre-approved in writing by Bosch, the Warranty Period is defined as any one of the following three cases, whichever occurs first:

- Within 12 months from the date of the commercial user purchase, OR
- Within 24 months from the battery production date, OR
- Within 500 full charge cycles

6.2.11.4.3 Diagnostic report



The diagnostic reports can be stored using the two buttons "Dealer" and "Customer". (see chapter 6.2.6.2)

The following figure shows an example of a dealer report:



eBike battery capacity report (Dealer)

Jan 09, 2019 14:30

Contact person	
	Dealer
Name	eBike Shop
Address	Main Street 1
Phone number	+49 0000 0000 0000
E-mail	shop@bosch.com
Website	www.bosch.de
Customer number	999998

Measurement result	
Energy content (new)	400 Wh
Energy content (current)	352 Wh 88.0%
Date of measurement	Jan 09, 2019

Battery parameters	
	
Component type	PowerPack Frame
Part number	027500751000
Serial number	75322 0015 04
Software version	1.8.10.0
Hardware version	1.3.0.0
Number of full charge cycles	5
Energy content (new)	400 Wh
Energy content (current)	352 Wh
Date of manufacture	May 22, 2017
Error code(s)	

Test device parameters	
CapacityTester	
Part number	0273016938
Serial number	71713 0012 5002
Hardware version	0.3.0.0
Software version	1.1.3.0
Error code	

The following is a sample excerpt from the customer report:



eBike battery capacity report

Dec 11, 2018 14:37

Contact person		
	Dealer	Owner
Name	Testfirma	
Address	Teststrasse 11, 12345 Teststadt	
Phone number	+49 1234 56 78	
E-mail	test@____.com	
Website	www._____.com	

Measurement result		
Energy content (new)	500 Wh	
Energy content (current)	463 Wh	92.6%
Date of measurement	Dec 11, 2018	

Battery parameters	
	
Component type	PowerTube
Part number	123456789100
Serial number	75602 0006
Software version	1.8.9.0
Hardware version	1.5.0.0
Number of full charge cycles	3
Energy content (new)	500 Wh
Energy content (current)	463 Wh

This device only measures the Energy content of the battery.
A general function test of the battery is not performed. The device is also not calibrated or officially calibrated.

If you want to close the Bosch DiagnosticTool or leave the displayed page, a message is displayed informing you that no diagnostic report has been saved yet.

6.2.11.4.4 Winter storage

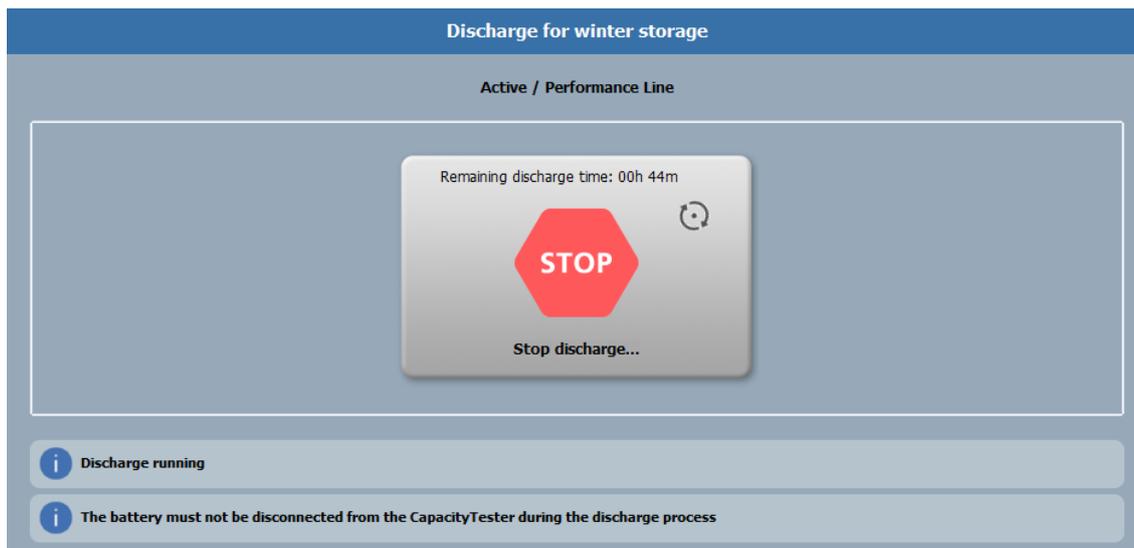
This function can be used to prepare the batteries for winter storage.

NOTE

- The battery must be at least 60% charged in order to start the discharge process
- If the charge level is less than 30%, the **"Establish charge level for winter storage"** button will be greyed out and the message shown below will be displayed underneath the buttons: "The charge level of the battery is too low. Please charge the battery."
- If the charge level of the battery is between 30% and 60%, the **"Establish charge level for winter storage"** button will be greyed out and the following message will be displayed underneath the buttons: "The battery is in winter storage state. No discharge is required."
- The CapacityTester software version must be 1.0.1.0 or higher, otherwise the **"Establish charge level for winter storage"** button will be greyed out and the message shown below will be displayed underneath the buttons: "To use the Winter storage function, the Bosch CapacityTester software must be updated."
- The discharge process is not started when an eBike is connected

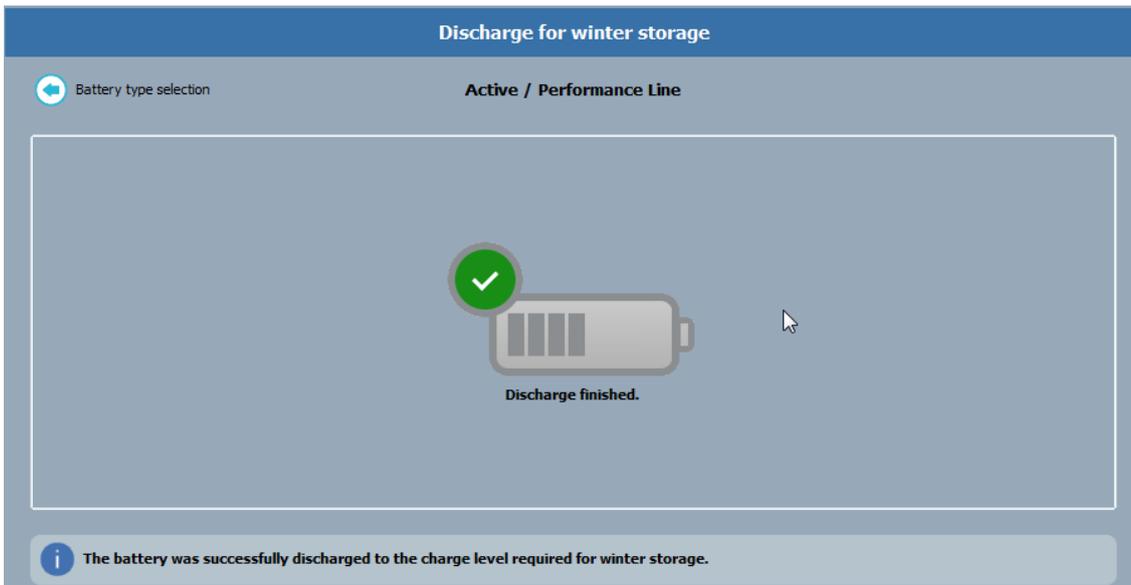
Steps required for winter storage

Press the **"Establish charge level for winter storage"** button to start the discharge process. The "Discharge for winter storage" screen appears. If an error occurs while starting or during the process, a corresponding message is displayed.



The remaining time until the process is concluded is displayed. The battery must not be disconnected from the CapacityTester during the discharge process. You can cancel the process at any time by pressing the "Stop discharge" button.

Once the process has been completed successfully, the result will be displayed.



6.2.12 Fast Charger

The Bosch DiagnosticTool can be used to update the Fast Charger or perform diagnostics.

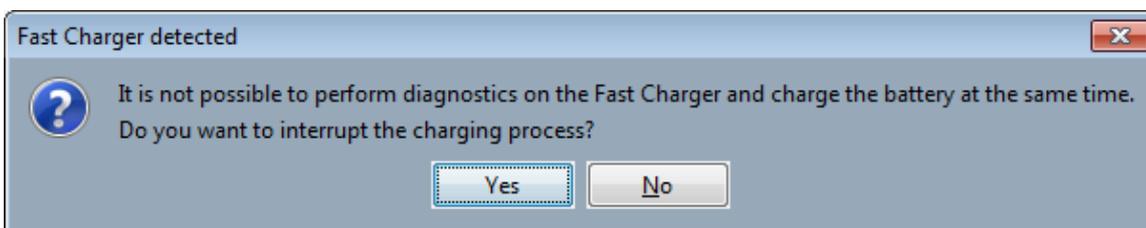
To do this, you must connect the Fast Charger to an eBike with the following prerequisites:

- The latest software must be installed on the eBike
- The eBike must have a new (MY19) charging socket. You will recognise this by the grey dot on the charging socket.
- Only one battery must be connected. Disconnect one of the connected batteries if necessary.

NOTE

Please note that diagnostics can only be performed on the Fast Charger. Other chargers cannot be diagnosed or programmed!

Once a suitable eBike with a connected Fast Charger is connected, a dialogue box appears asking whether you want to interrupt the charging process in order to start diagnostics on the Fast Charger.



Click on "No" if you want to continue charging the battery. If you confirm the dialogue by clicking on "Yes", you switch to the Fast Charger configuration function and the Bosch DiagnosticTool interface adapts accordingly. The Fast Charger is now displayed as "Connected" in the status bar.



NOTE

Only the Fast Charger can be programmed using the Fast Charger configuration function. If you want to program/update the eBike components, please disconnect the Fast Charger from the eBike and program your eBike as usual.

6.2.13 Settings



You can download updates for the Bosch DiagnosticTool, the eBike system and for the maps from the Bosch update server provided your computer is connected to the internet. To do this, the internet address of the Bosch update server and, if necessary, the proxy setting in the Bosch DiagnosticTool must be changed as required.

6.2.13.1 Entering the URL for the Bosch update server

The address <https://bosch-ebike-updates.com> is specified as the default for the connection to the Bosch update server. If the Bosch update server address is changed, you can enter the new

address in the **Change URL to:** line and save by clicking on the **Apply** button.

The image shows two sequential screenshots of the 'Bosch update server settings' dialog box. In the first screenshot, the 'Change URL to:' text box contains the full URL 'https://bosch-ebike-updates.com/' and the 'Apply' button is visible. In the second screenshot, the 'Change URL to:' text box contains only 'https://', indicating that the user has deleted the domain part of the URL.

6.2.13.2 Defining the proxy setting

If your network uses a proxy to access the internet, find out the proxy settings from your network administrator and enter the settings under **Settings** in the Bosch DiagnosticTool. Then click on **Save**.

The image shows the 'Proxy settings' dialog box. It features three radio button options: 'No proxy', 'Use system proxy settings' (which is selected), and 'Manual proxy settings:'. Under the manual settings, there are four input fields: 'Address:', 'Port:', 'User:', and 'Password:'. A 'Save' button is located at the bottom left of the dialog.

6.2.13.3 Defining unit conversion settings

The physical units are selected under **Unit conversion settings** using the drop-down menu. To do this, you must left-click the small black triangle on the button showing the display unit and select the unit you want. The display units can be changed for the following variables:

- Distance
- Speed
- Temperature
- Height
- Circumference

The image shows the 'Unit conversion settings' dialog box. It contains five dropdown menus: 'Distance: Kilometres', 'Speed: Kilometres per hour', 'Temperature: Celsius', 'Height: Metres', and 'Circumference: Millimetres'. Below these, there is a section labeled 'eBike config' with a dropdown menu that has 'Kilometres' selected and 'Miles' as an alternative option.

6.2.13.4 Setting the directory for storing maps

To change the storage location of the local maps, click on the **Select storage...** button.

The image shows the 'Map storage' dialog box. It features a text box labeled 'Storage location:' which contains the path 'C:\Karten'. To the right of the text box is a button labeled 'Select storage...'. The dialog has a light blue background.

Then select the storage location on your computer and confirm your selection by clicking **OK**.

6.2.13.5 Setting dealer information

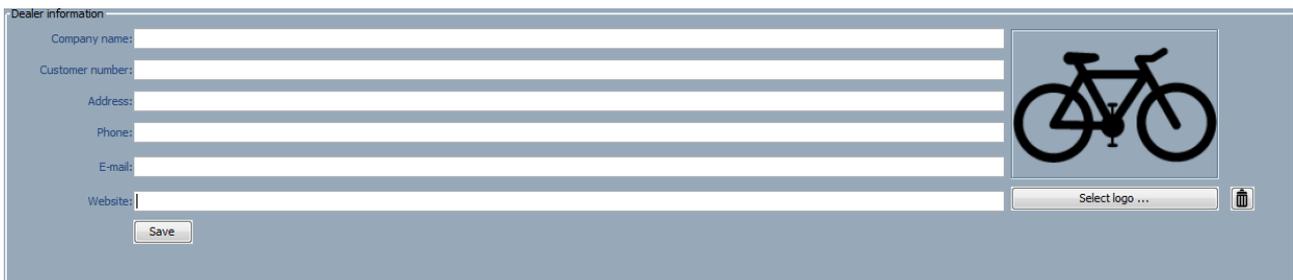
The dealer can enter the following information here:

- Company name
- Customer number
- Address
- Phone
- E-mail
- Website
- Logo: To select or change the logo, click the **Select logo** button. A file selection dialogue box appears. Once you have selected the logo and confirmed the Open button, the logo is displayed. To remove the logo again (it remains stored on the hard disk), click on the recycle bin symbol.

NOTE

To retain the quality of the displayed logo, the minimum size of the logo must be set to 100 x 80 pixels. Permitted formats include: jpg, jpeg, bmp, tif and png.

To apply the values you have entered, click on **Save**.

A screenshot of a software window titled "Dealer information". It contains several input fields: "Company name:", "Customer numbers:", "Address:", "Phone:", "E-mail:", and "Website:". A "Save" button is located at the bottom left. On the right side, there is a preview area showing a bicycle logo. Below the preview is a "Select logo ..." button and a trash can icon.

The dealer data and the dealer logo are displayed for the customer in the service report.

6.2.13.6 Selecting directory for capacity test logs

To change the storage location of the capacity test logs, click on the **Select storage location** button.

A screenshot of a software window titled "Capacity test logs". It features a text field labeled "Storage location:" containing the path "C:\BCT_Log". To the right of the text field is a button labeled "Select storage location ...".

Then select the storage location on your computer and confirm your selection by clicking **OK**.

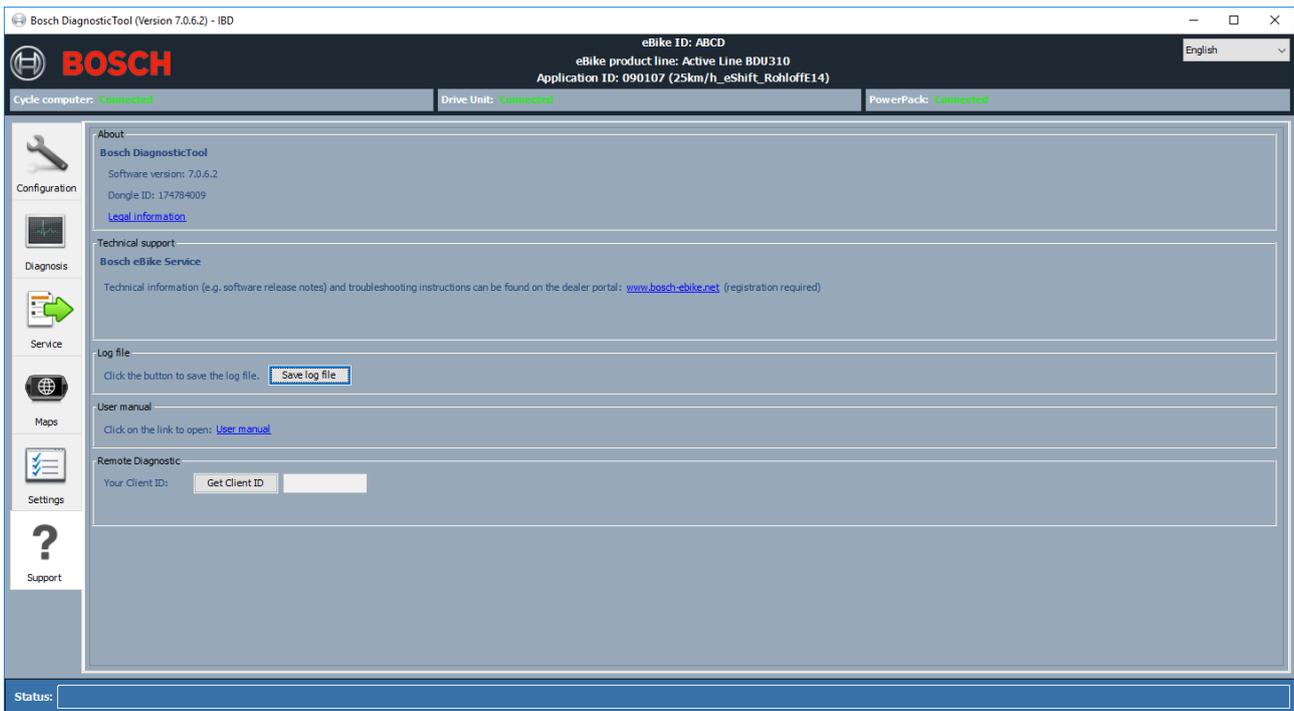
6.2.14 Support



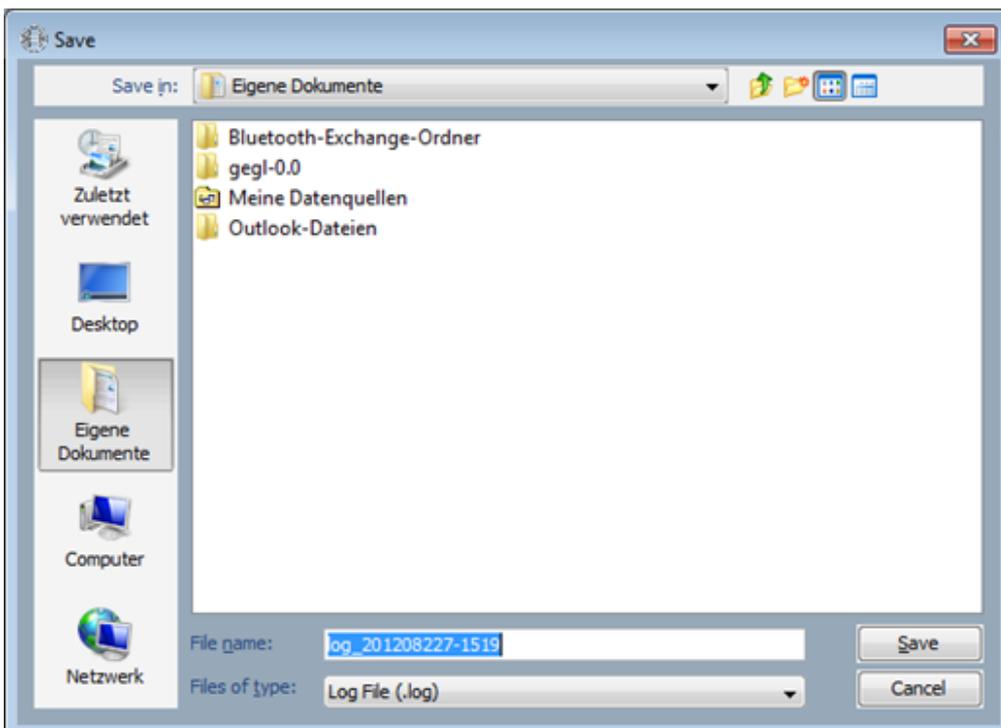
Click on the **Support** button to see the following general information. The software version number, the dongle ID, the contact person for technical support, how to save a log file when seeking service support, and the link to the user manual.

6.2.14.1 Saving the log file

In the event of technical problems, the Customer Service agent may ask you to save the log file and send it in.



Click on **Save log file** to open the dialogue box. You can now save the log file in any location.



6.2.14.2 Opening the user manual

Open the user manual by clicking on the **User Manual** link.



6.3 Remote diagnostics

In some cases it can be helpful when a hotline employee or bicycle manufacturer employee can assist you using the Remote Diagnostic function. The OEM or support employee can transfer his/her rights just for the duration of the remote diagnostic session.

6.3.1 System requirements

Internet connection bandwidth:

- Upstream: at least 1 Mbit/s
- Downstream: at least 6 Mbit/s

NOTE

A lower bandwidth can result in delays and connection failures during remote diagnostics.

NOTE

If a firewall or proxy server for accessing the internet is used in your network, this can result in function restrictions during the remote diagnostic session.

NOTE

No other programs may be used and no software updates or installation procedures may be carried out on the computer during the remote diagnostic session.

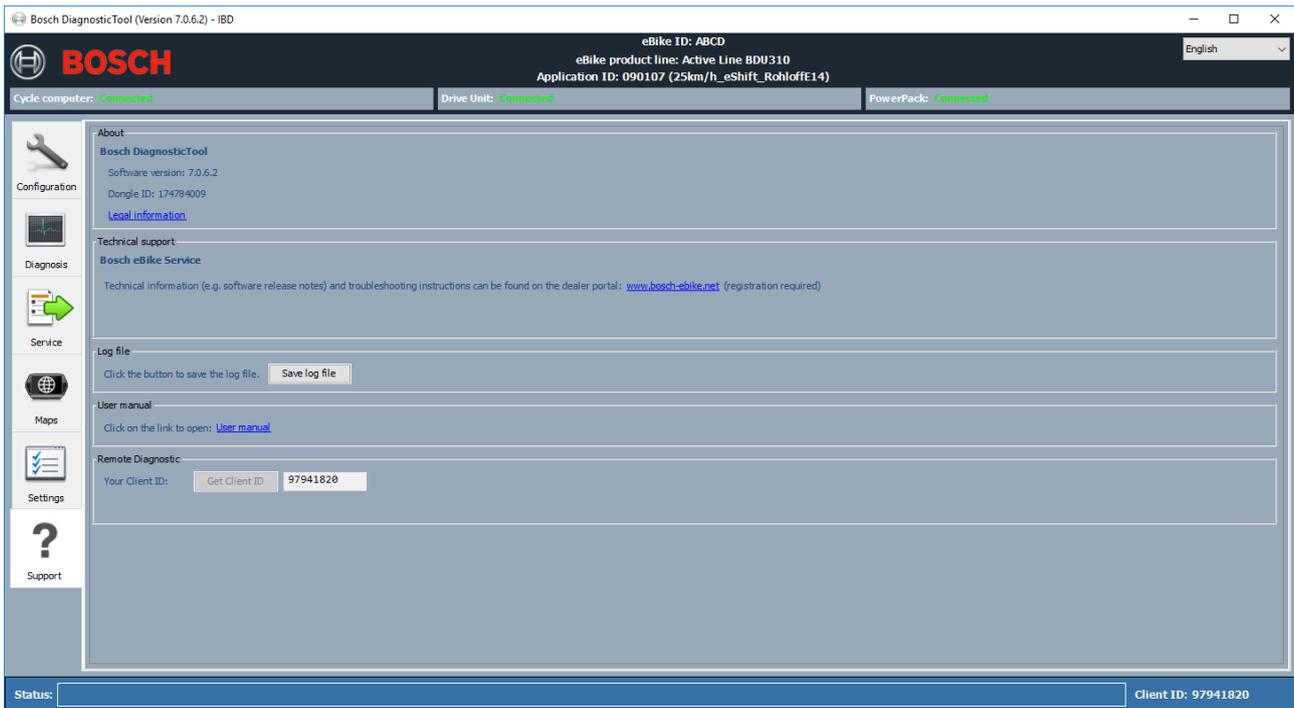
6.3.2 Starting a remote diagnostic session

NOTE

When using two or more screens, make sure that the Bosch DiagnosticTool is operated on the first screen (main screen) during the Remote Diagnostic session.

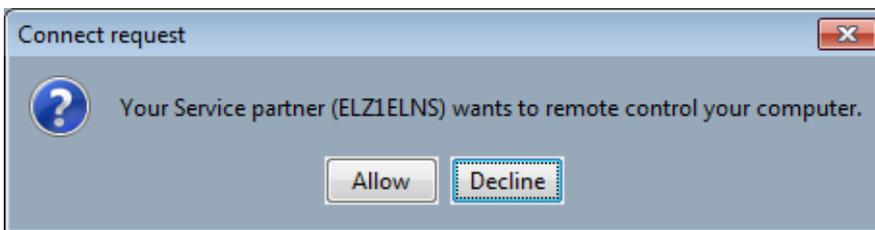
To start a Remote Diagnostic session, you need a personal IBD Client ID. You must get this by going to the Support function page and then pressing the "Get Client ID" button. The Client ID is then displayed at the bottom right of the Bosch DiagnosticTool screen.

If no Client ID is displayed at the bottom right, you must get it again as described above. This can happen, for example, if the linked server is not available or if the computer has lost the connection to the internet.



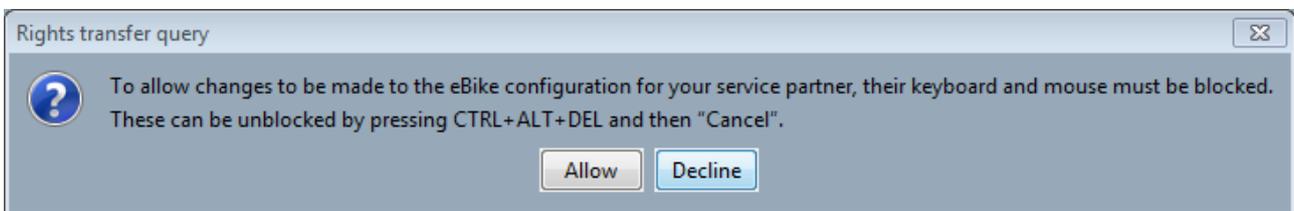
Following receipt of the IBD Client ID over the phone or by e-mail, the OEM or support employee starts a remote diagnostic session and a window appears in which you can allow the remote diagnostic session.

NOTE: Only allow trustworthy partners to access your computer.



If you click on the "Decline" button, a remote diagnostic session will not be started. The OEM or support employee then receives a message reporting that the connection request was rejected.

If the OEM wants to transfer his/her rights to you, another dialogue box will appear and you can either allow or decline this.



Clicking on the "Allow" button starts the remote diagnostic session and the OEM or support employee has access to your computer with the following options:

- Unrestricted use of your computer
- Block your keyboard and mouse
- Transfer OEM rights for the duration of the remote diagnostic session

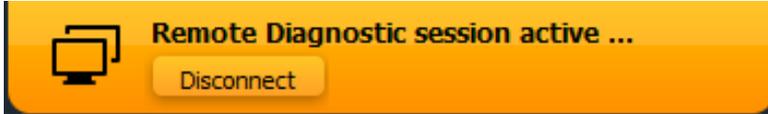
NOTE

To unblock your computer during the remote diagnostic session, press the key combination

CTRL+ALT+DEL and then select "Cancel".

NOTE

If you want to cancel the entire remote diagnostic session, you must first unblock the computer and then disconnect using the "Disconnect" button.



6.4 Closing the Bosch DiagnosticTool

To end your diagnostic session, close the program window. You can then disconnect the eBike from your computer and switch off the eBike.

7 Security settings

If security measures (e.g. firewall, proxy) are implemented on your computer or in your network, you may have to adjust certain settings.

Firewall:

To download Bosch DiagnosticTool updates, the Bosch DiagnosticTool must be able to access the TCP Port 443 (HTTPS port) of the Bosch update server (address: <https://bosch-ebike-updates.com>). This is the same port that is used to access websites and is therefore generally available. If you cannot access the server, please contact your firewall administrator.

Proxy:

If your network uses a proxy to access the internet, find out the proxy settings from your network administrator and enter the settings under **Settings** in the Bosch DiagnosticTool.

8 License agreements

Conditions of use for the Bosch DiagnosticTool

Directory <Installation folder>\licenses

Legal information

Directory <Installation folder>\licenses\compulsory_statement.html

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