

**BOSCH eBIKE**  
**SCOTT SPORTS SA**  
**TECH WORKSHOP MY20**



# COMPANY





## A Brief History of Robert Bosch GmbH

### An early passion for cycling

In 1886, Robert Bosch GmbH was founded as the "Workshop for Precision Mechanics and Electrical Engineering" in Stuttgart, Germany. From 1890 onward, Robert Bosch (1861 – 1942) used a modern "safety bike" – a forerunner of today's bicycles – to visit his customers. At this time, "penny farthings" were customary and Robert Bosch attracted a lot of attention in the streets of Stuttgart with his vehicle.



## A Brief History of Robert Bosch GmbH



Around **410000**  
employees worldwide



Capital shares **92 %**  
held by the non-profit organisation  
Robert Bosch Stiftung GmbH

More than **30**  
billion euros invested  
in research and development  
in the last five years



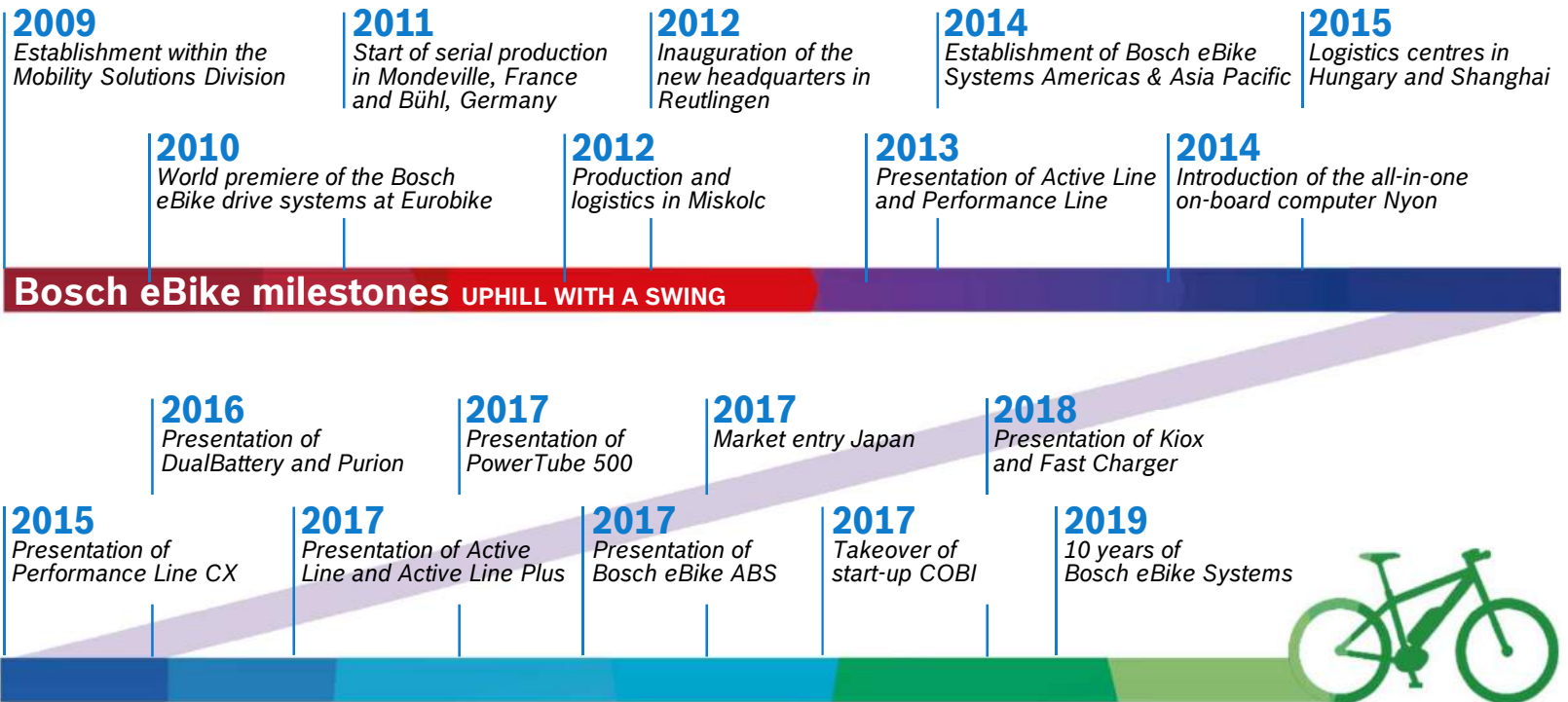
Robert Bosch

Roughly **460**  
subsidiaries and regional  
companies in some  
60 countries

**125**  
development sites worldwide



## Bosch eBike landmarks



## Product portfolio for Model Year 2020



Purion



Intuvia



Nyon



Kiox



SmartphoneHub



COBI.Bike Hub



Active Line



Active Line Plus



Cargo Line / Speed



Performance Line / Speed



Performance Line CX

PowerPack  
300 / 400 / 500PowerTube  
400 / 500 / 625DualBattery  
1000 / 1250

Compact, Standard und Fast Charger

DiagnosticTool /  
CapacityTester

Bosch eBike ABS



eSuspension



# Product portfolio for Model Year 2020 NEW



Kiox



SmartphoneHub



PowerTube 400 / 500 / 625



DualBattery 1000 / 1250



DiagnosticTool



Cargo Line / Speed



Performance Line / Speed



Performance Line CX



eSuspension

# DISPLAY





KIOX



## Connected biking with Kiox **NEW**

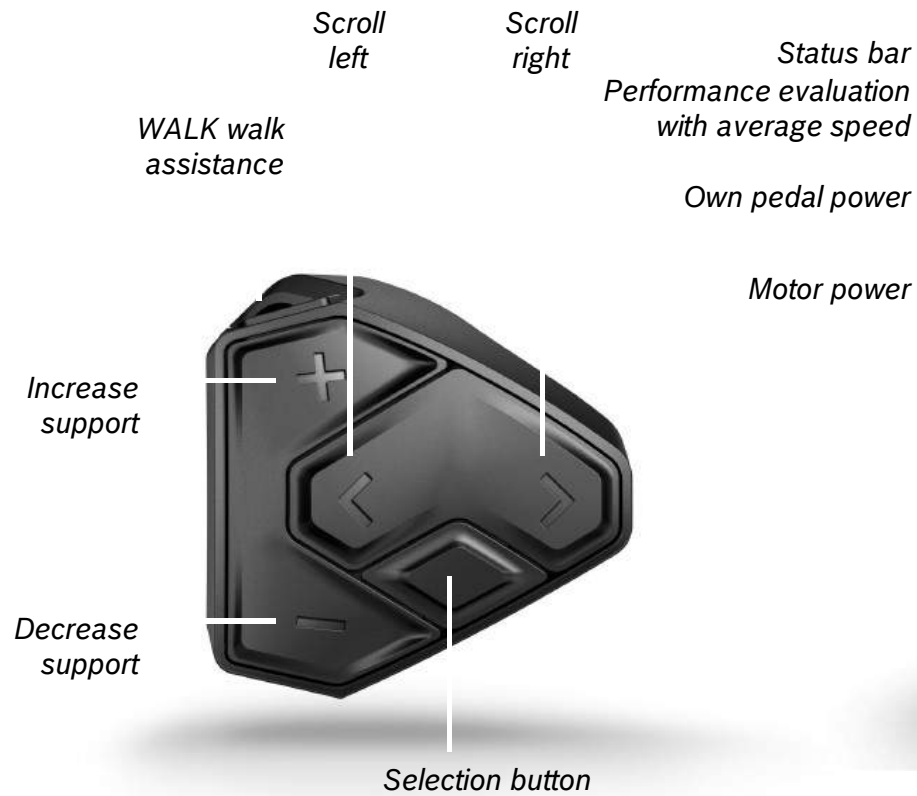
For riders with sporty ambitions:  
compact, robust and connected

eBike Connect App

Activity tracking



## How to operate Kiox





## How to operate Kiox

### Other screens

- ▶ Time, Range
- ▶ Trip distance, Trip Time
- ▶ Performance, cadence
- ▶ Average speed, max. speed
- ▶ Distance, Range, Power, Heart rate
- ▶ Heart rate
- ▶ Calorie consumption, total distance
- ▶ Status screen

### Off-board mode

- ▶ When removed from mount, information about the last trip as well as status information



## How to operate Kiox: Status screen



## How to operate Kiox

### Settings

- ▶ Reset riding data / Range
- ▶ eShift
- ▶ Wheel circumference
- ▶ Service interval
- ▶ Component information
- ▶ Bluetooth function
- ▶ Display brightness / background
- ▶ Units
- ▶ Language
- ▶ Time, date, time format / zone
- ▶ Reset to the factory settings





## Pairing Kiox and the eBike Connect App

**NEW**

Activate Bluetooth on the smartphone

Select **My eBike** then **Add New eBike Device** and **Add Kiox**

Kiox displays a 4-digit identification number

Select Kiox in the app and pair



## Kiox and eBike Connect App **NEW**

### *My eBike* menu

- ▶ **Selected device**
- ▶ **eBike**
- ▶ **Lock function menu:** Displayed after the purchase of the premium function in the shop **NEW**
- ▶ **Remove Kiox**

### *Shop* menu

- ▶ **Lock** premium function



# Kiox and eBike Connect App **NEW**

## More Settings menu

- ▶ **My profile** (e.g. personal health data)
- ▶ **Store geolocation data**
- ▶ **Use mobile Data**
- ▶ **Logoff**

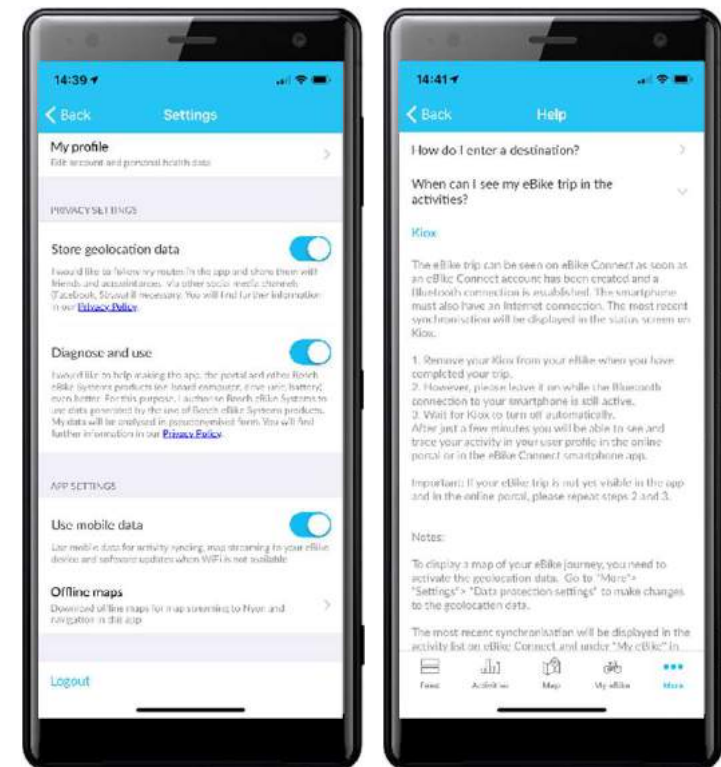
## More – Help menu

## More - Info menu

- ▶ eBike Connect App software version and privacy policy

## Kiox firmware update

- ▶ New firmware is automatically transferred to Kiox by the app

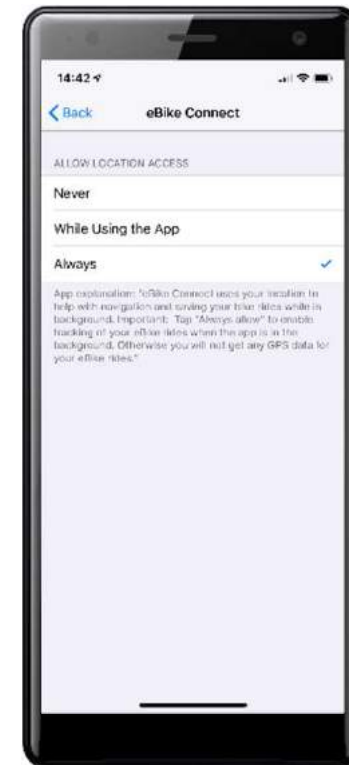




## Kiox and eBike Connect App NEW

### *Activity Tracking* information

- ▶ Activity tracking uses GPS signals from the smartphone and stores data in the eBike Connect App and eBike Connect portal
- ▶ Prerequisites:
  - A Bosch user account
  - Activate **Save Geolocation Data** in the app
  - Activate GPS positioning on the smartphone
- ▶ The colour of the GPS symbol indicates the quality of the signal (white = good, yellow = poor)

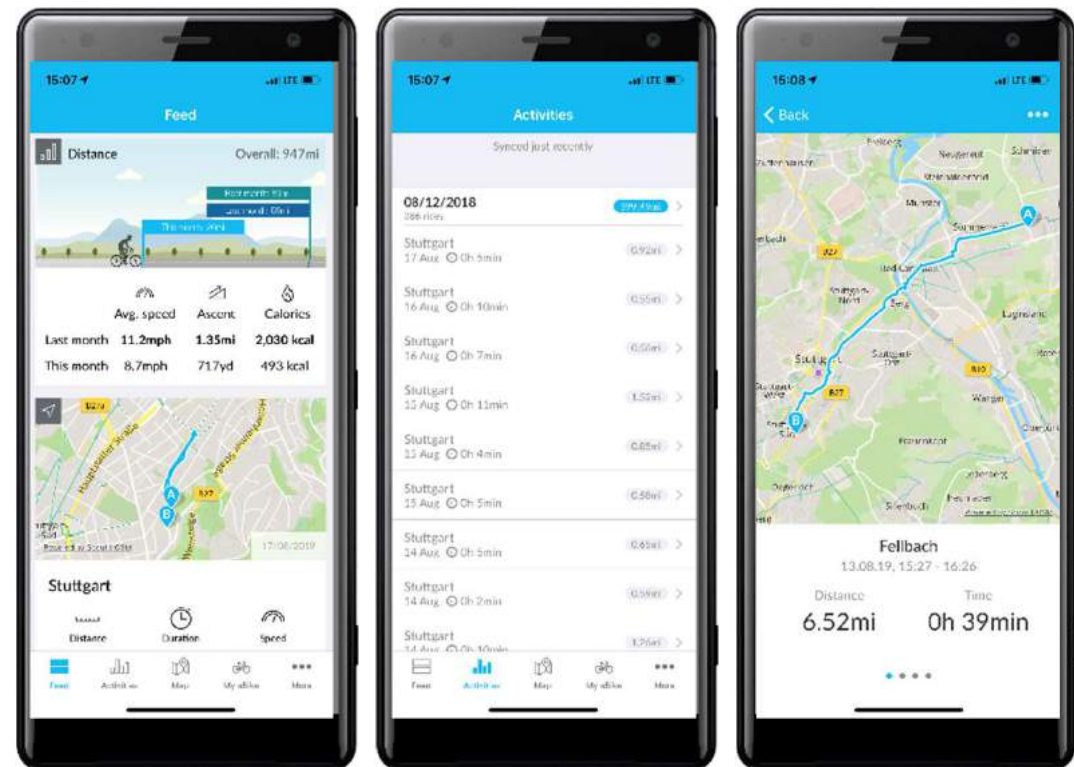


# Kiox and eBike Connect App **NEW**

Feed menu

Activities menu

Detailed activity views



## 'Lock' premium function for Kiox

NEW

Motor support is disengaged when the Kiox is removed

The lock is disengaged again when Kiox is re-connected

The eBike cannot be used with different displays

Theft becomes an unattractive prospect

Compatible with BDU3xx and BDU4xx



## 'Lock' premium function for Kiox

NEW



### Activate Lock

- ▶ Under More / Shop in the eBike Connect App
- ▶ Prerequisite:
  - Kiox is installed
  - The smartphone and Kiox are connected via Bluetooth
  - The smartphone is connected to the internet
- ▶ Activate 'Lock' in the app
- ▶ Remove the Kiox from the mount to activate 'Lock'



## 'Lock' premium function for Kiox

NEW



### Procedure for replacing the smartphone, Kiox or eBike

- ▶ When the smartphone is changed, the Kiox and premium function data is preserved
- ▶ Pair the new Kiox using the app and reactivate 'Lock'
- ▶ 'Lock' must be reactivated when changing the Drive Unit

## 'Lock' premium function for Kiox

**NEW**

### Using the 'Lock' function for more than one eBike

- ▶ Can be activated / deactivated on up to four eBikes using the same eBike Connect user account
- ▶ It is possible to use up to four Kiox systems
- ▶ At least two hours must elapse between activations using the same user account
- ▶ Several riders can unlock an eBike using their own Kiox
- ▶ Only one Kiox can be connected with a user's smartphone app at any one time



## 'Lock' premium function for Kiox

**NEW**

### Practical tips

1. Acoustic notifications
2. Always disconnect Kiox directly after a trip
3. Disconnect Kiox before charging the eBike, activating 'Lock'
4. Deactivate 'Lock' when sending the eBike for service



## Kiox and eBike Connect portal: ebike-connect.com



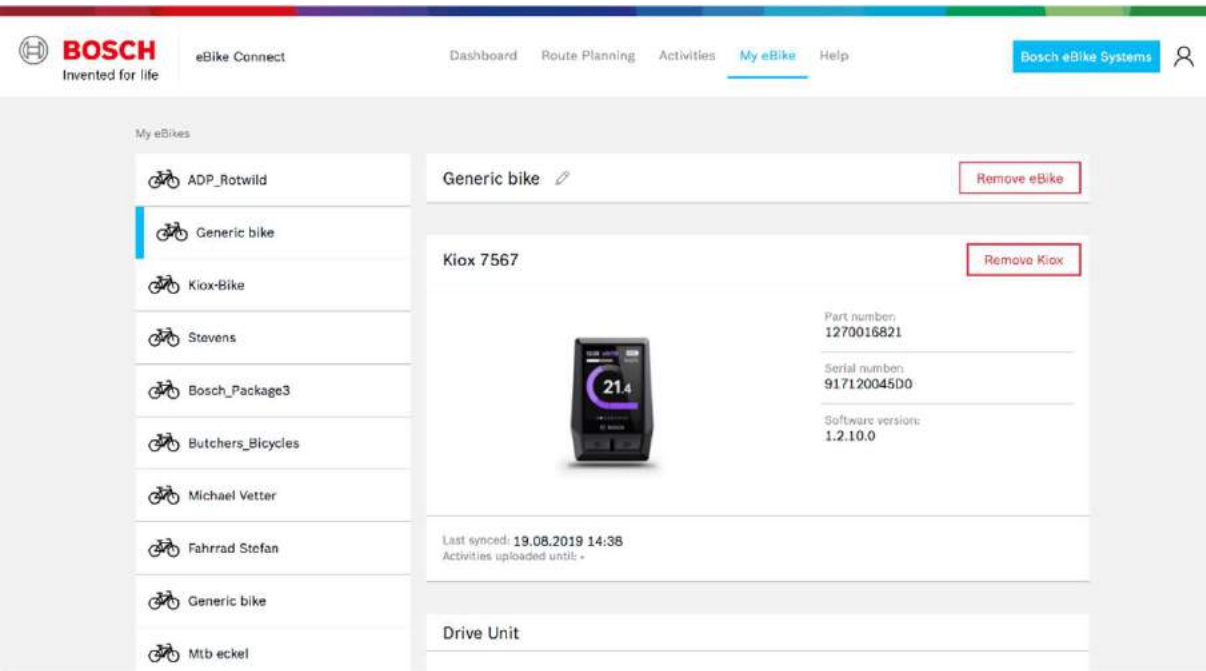
### Dashboard menu

- Overview of last activities
- Software updates and news

### Activities menu

- Riding statistics with map view, graphical analysis
- Link to social media functions

## Kiox and eBike Connect portal: ebike-connect.com



### *My eBike* menu

- Component information

### *My Profile* menu

- Edit health-related data
- Select a country and language
- Select units (kilometres / miles)

### *Data protection settings* menu

### *Help* menu



## Connected biking with SmartphoneHub NEW

Intelligence on your handlebar  
with SmartphoneHub and COBI.Bike app

- ▶ Navigation, live weather, music and audio book streaming, fitness tracking
- ▶ Telephoning
- ▶ Integration of services such as Strava and komoot

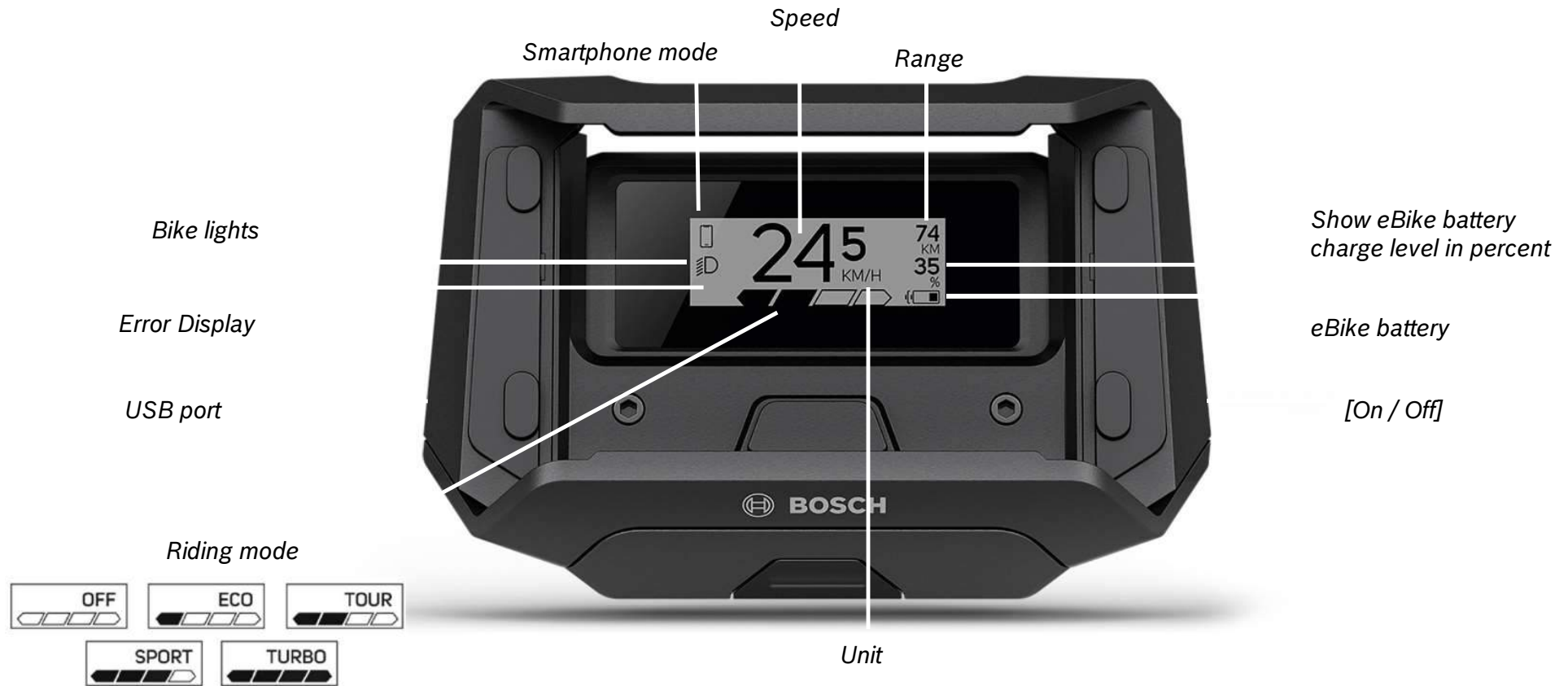
### SmartphoneHub

- ▶ eBike control even without a smartphone
- ▶ Integrated display shows key riding data



# How to operate SmartphoneHub

NEW



# How to operate SmartphoneHub

NEW

COBI  
A Bosch Company

40



 **BOSCH**

## Managing SmartphoneHub NEW

COBI.Bike account required

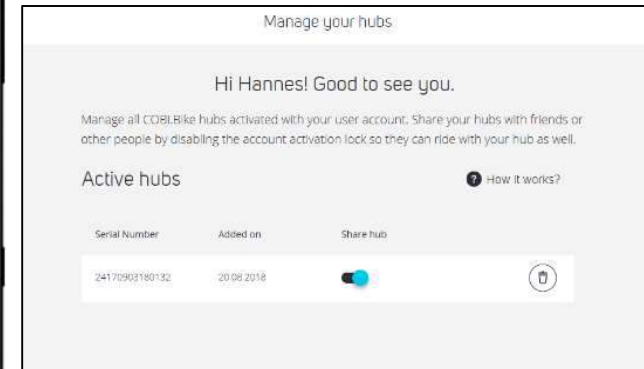
eBike must be switched on

Activate Bluetooth on the smartphone  
and press the Hub button

The COBI.Bike app connects

Managing the SmartphoneHub in the  
COBI.Bike portal

- ▶ Release or bloc the SmartphoneHub
- ▶ Can be deleted in the portal and app





## COBI.Bike app home screen for **SmartphoneHub** and **COBI.Bike Hub**

Last known location of the bicycle

Charge state of the eBike battery

Access to all settings

Fitness / Music Quick Start Guide

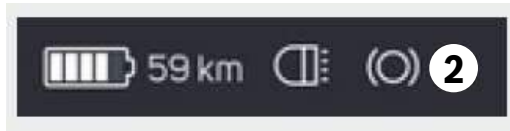
Quick access to contacts

Integrated bike finder and theft alarm  
(for the COBI.Bike Hub only)



Status bar

## Dashboard



Current speed

Distance ridden

Duration of current trip to date

Average speed

Compass

**1** Quick settings (light modes, smartphone charging, voice feedback – speed limit exceeded)

NEW

**2** Display rear light connected to the hub

## Fitness

Calorie consumption, Speed, Cadence, Heart rate

Calculation based on sensor data, personal data and bike data

Connecting a Bluetooth smart-compatible sensor

Customisable heart rate and cadence zones

Synchronisation with Google Fit, Apple Health, Strava or komoot



## Navigation

Route planning always starts from the current location of the bicycle

Red lines in the map indicate cycle paths

Download maps to the settings

For use of komoot tours





## Live weather



Probability of rain, hail or snow

Temperature experienced along the route for the next 120 minutes

With active navigation: Time required to reach destination

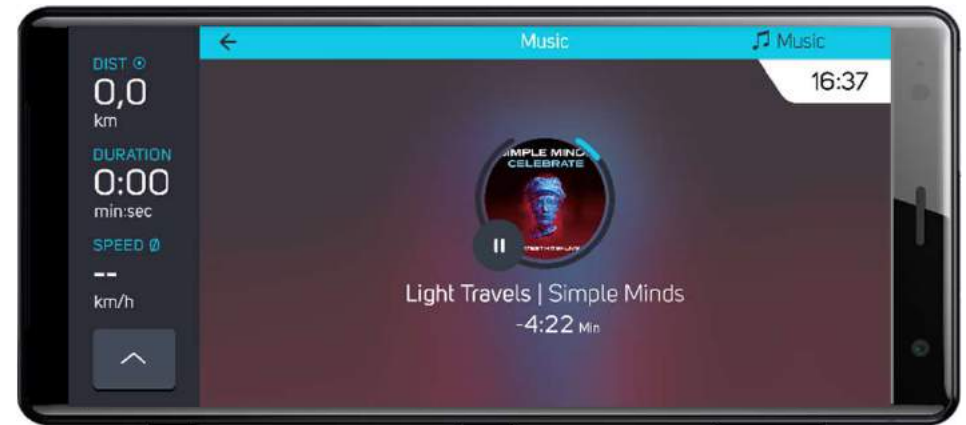
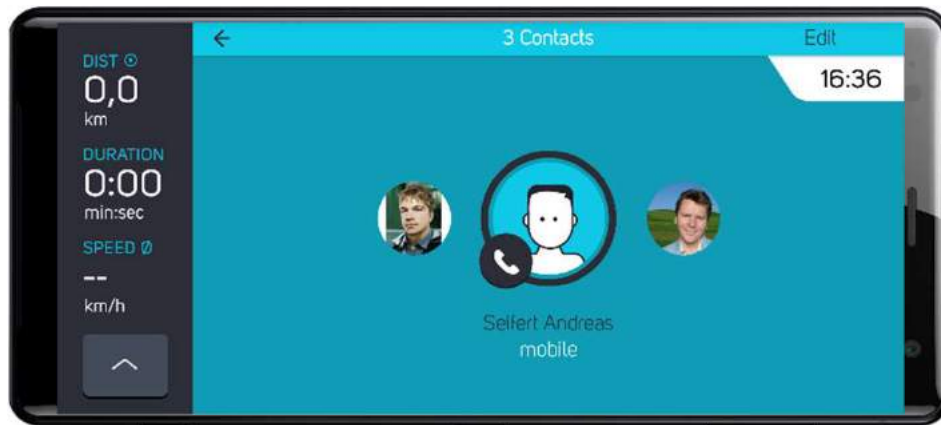
Visualisation of sunset

## Music and contacts

Integration from the smartphone contact list

Limit to a max. 10 contacts

NEW



Local music library or streaming service

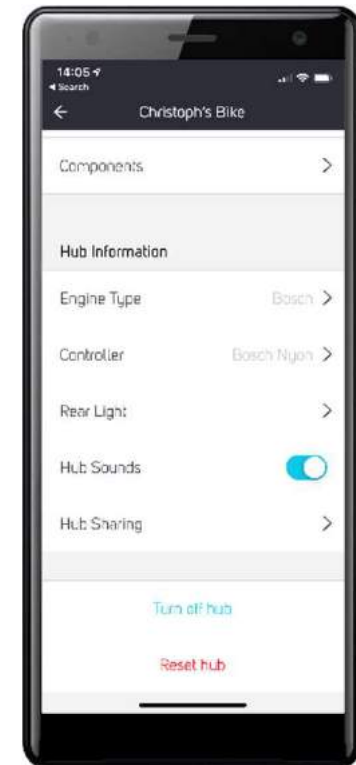
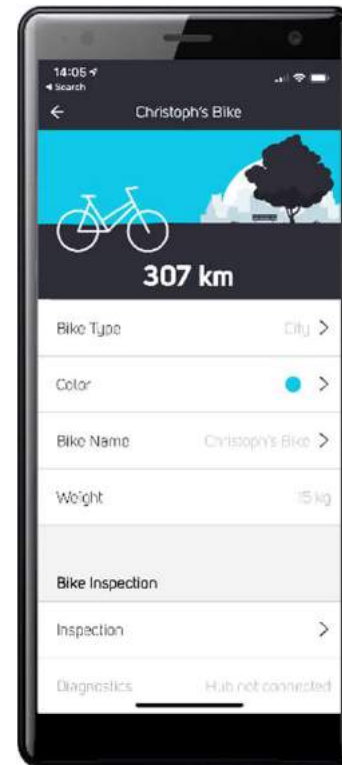
## Bike and hub settings

Configure information about the app and bike

Bike inspection and Diagnostics

Bike settings, Controller and Rear light

Hub info; Hub Sounds and release



## App and trip settings



### My Account

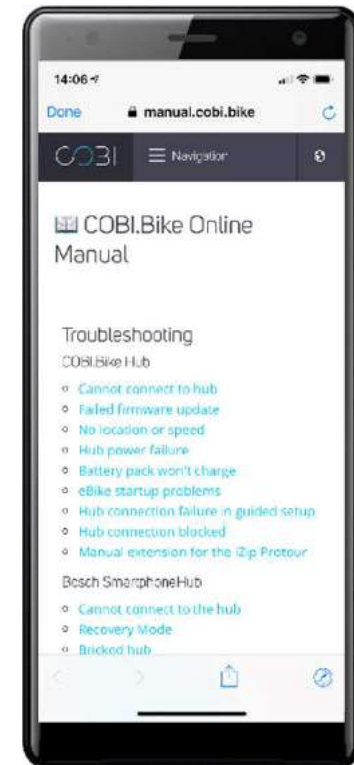
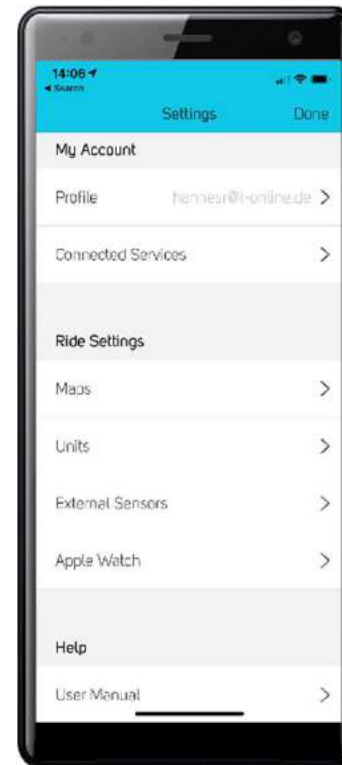
- ▶ Profile with personal information and fitness data
- ▶ Connected services (e.g. Google Fit, etc.)

### Ride settings

- ▶ Download maps and map settings
- ▶ Units
- ▶ External Sensors
- ▶ Apple Watch

### Help

### Legal notes & data privacy





# Displays at a glance

Purion



Intuvia



Nyon



COBI.Bike



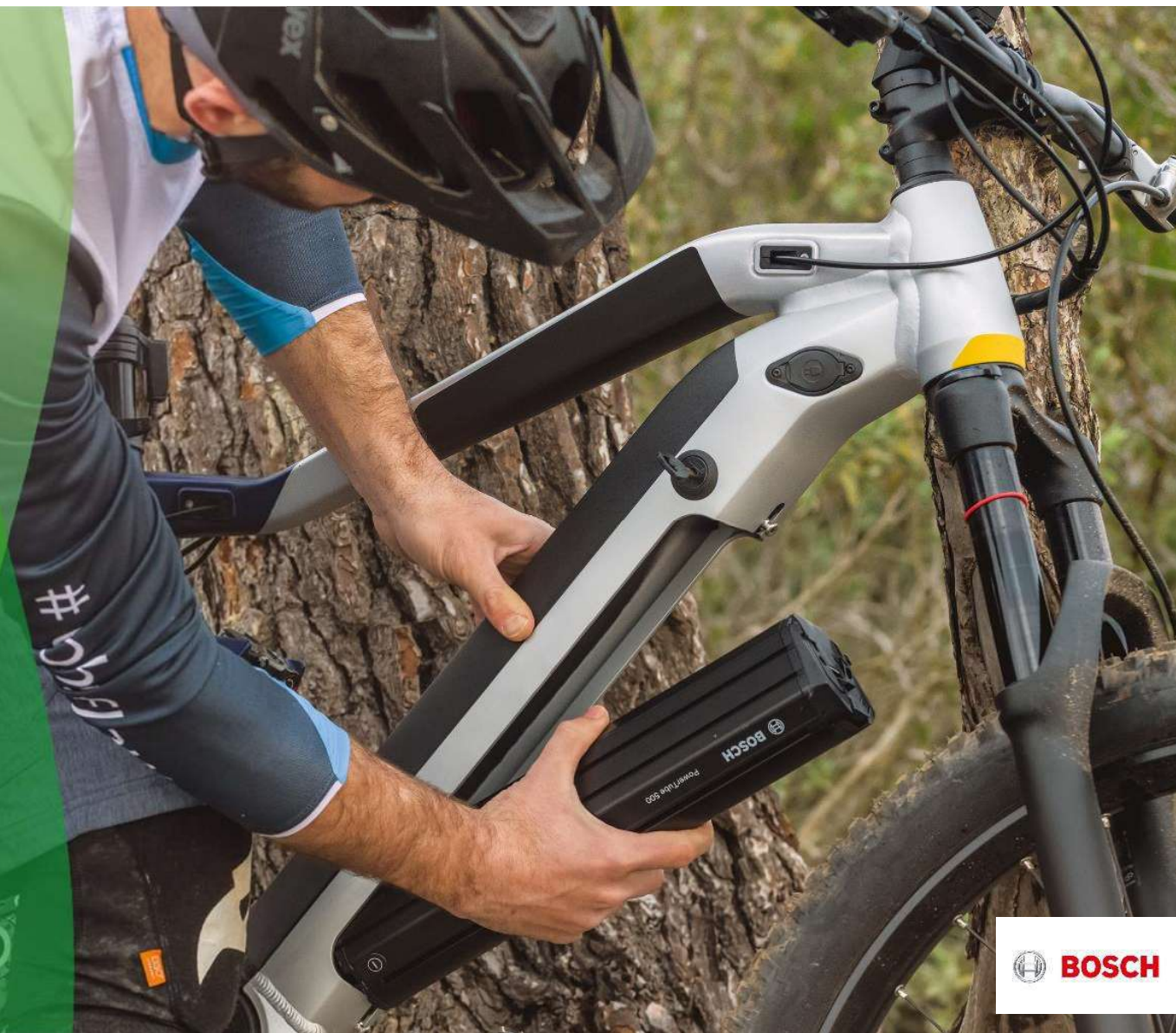
Kiox



SmartphoneHub



# BATTERIES AND CHARGERS





## The benefits of Bosch eBike rechargeable batteries

High mileage, low weight and modest size

Bosch Battery Management System (BMS)

- ▶ Protection from overcharging, overvoltage, overheating and short circuiting

Ergonomic design, easy and simple handling

Exceptional quality, extensive testing

- ▶ High-quality cells
- ▶ Regular internal testing within Bosch



## Batteries at a glance



**PowerPack**



**PowerTube**

	PowerPack			PowerTube		
	300	400	500	400	500	625
Size	Powerpack: 325 x 92 x 90 mm Powerpack Rack: 372 x 122 x 80 mm			horizontal: 349 x 84 x 65 mm vertical: 349 x 65 x 84 mm	horizontal: 416 x 84 x 65 mm vertical: 416 x 65 x 84 mm	
Gewicht Rahmenakku/ Gepäckträgerakku	ca. 2,5 kg / ca. 2,6 kg			ca. 2,9 kg	ca. 3,5 kg	
Energiegehalt	ca. 300 Wh	ca. 400 Wh	ca. 500 Wh	ca. 400 Wh	ca. 500 Wh	ca. 625 Wh

## PowerTubes at a glance



NEW

PowerTube 400 for stylish city bikes

PowerTube 500 for trekking and  
eMountain bikes

NEW

PowerTube 625 for maximum range and  
altitudes on long, mountainous rides

► Not interchangeable with PowerTube 400 / 500



## DualBattery at a glance

Ideal for tour bikers, long-distance commuters, cargo bikers or eMountain bikers, long distances and heavy loads

Double the range, capacity up to 1250 Wh

Both batteries charged using smart control software



## Information about charging with DualBattery

The two batteries are charged in succession up to approx. 80 – 90 %, then both are charged in parallel































The batteries can be charged separately provided they are taken from the mount

Batteries with a closed charging socket can only be charged outside of the mount



## Charger at a glance



Bosch Akku	PowerPack 300	PowerPack 400 PowerTube 400	PowerPack 500 PowerTube 500	PowerTube 625	DualBattery 1250
Compact Charger	 5 h  2 h	 6,5 h  2,5 h	 7,5 h  3,5 h	 8,8 h  4,2 h	 17,6 h  8,4 h
Standard Charger	 2,5 h  1 h	 3,5 h  1,5 h	 4,5 h  2 h	 4,9 h  2,1 h	 9,8 h  4,2 h
Fast Charger*	 2,5 h  1 h	 2,5 h  1 h	 3 h  1,2 h	 3,7 h  1,4 h	 7,4 h  2,8 h

 50 % Ladung  100 % Ladung

## Factors that influence the service life of the battery

Intensity of usage

Storage temperature

Charge state of the battery during storage

The effect of heat

Natural ageing





## Tips for an optimum service life

Store in dry conditions between 0 °C and 20 °C  
at charge levels between 30 % and 60 %

► Winter storage of CapacityTester

Protect the battery against extreme heat

In winter store at room temperature / laden;  
do not install on the bike until just before use

Avoid battery temperatures below -10 °C and  
above 60 °C

Regular inspection (CapacityTester)

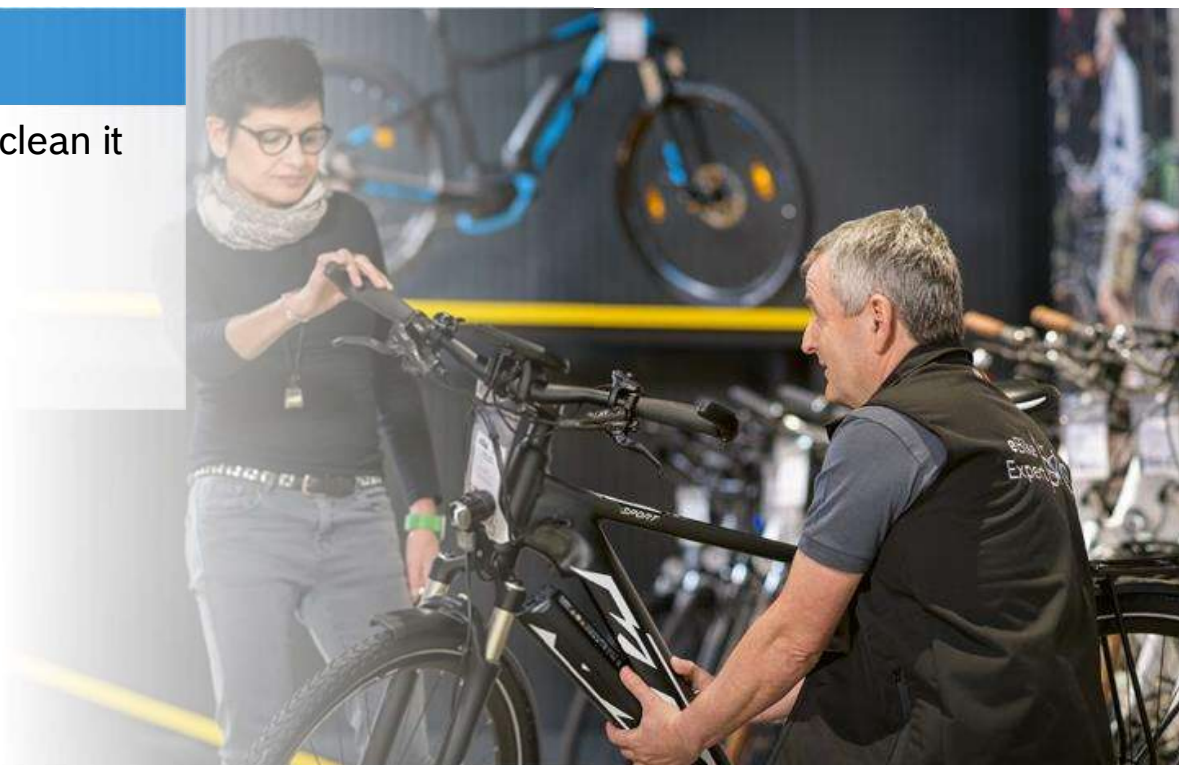




## Handling and care

### Cleaning

- ▶ Do not immerse the battery in water or clean it with a high pressure cleaner
- ▶ Wipe with a damp cloth
- ▶ Clean and lightly grease the plug poles occasionally
- ▶ Dry the contact points



## Handling and care



### Transport (private individuals)

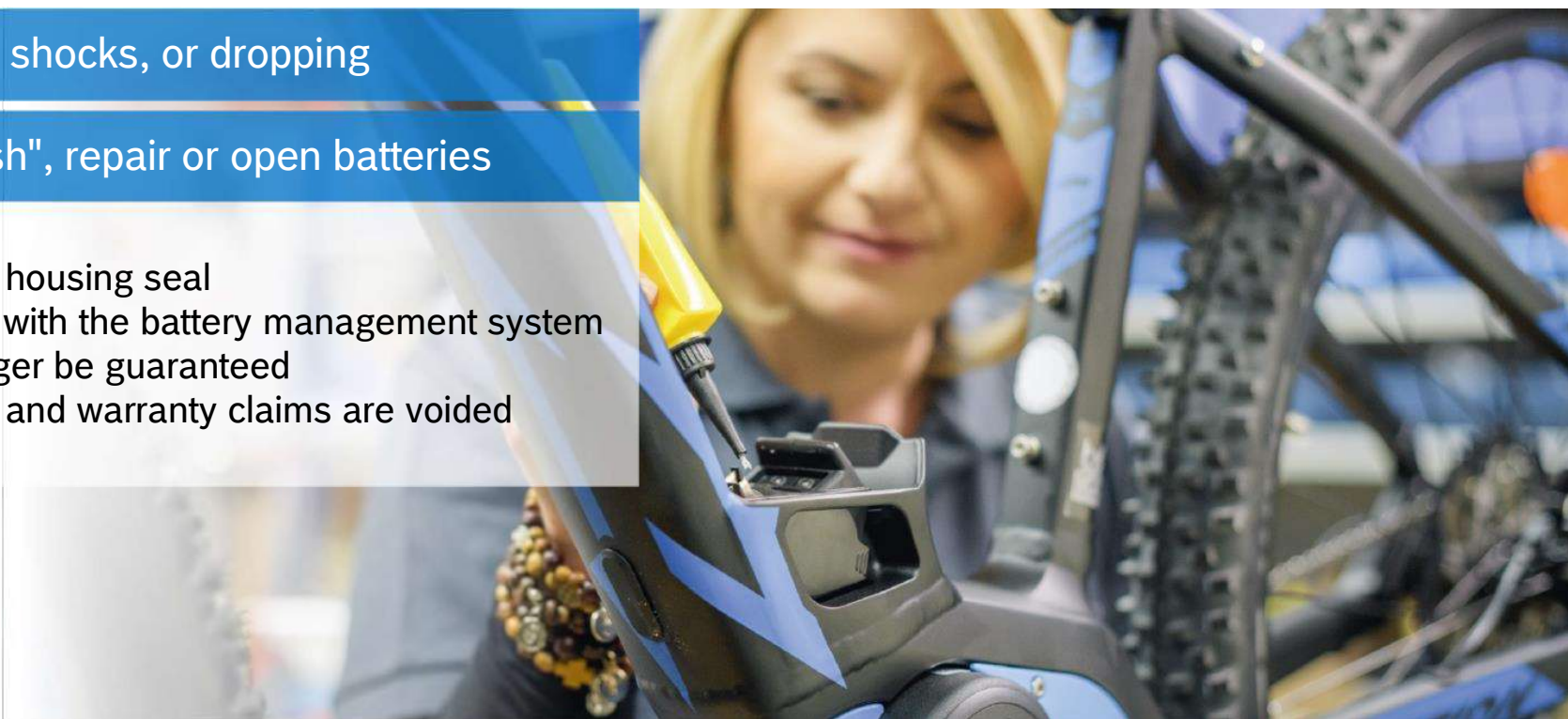
- ▶ By car
  - Remove the battery and store it safely
- ▶ Flying
  - Transport on cargo planes only
  - Transportation on passenger planes is prohibited
- ▶ Public transport
  - Remove the battery and store it safely at your seat

## Safety Instructions

Avoid impact, shocks, or dropping

Do not "refresh", repair or open batteries

- ▶ Risk of fire
- ▶ Risk to the housing seal
- ▶ Interaction with the battery management system can no longer be guaranteed
- ▶ Guarantee and warranty claims are voided





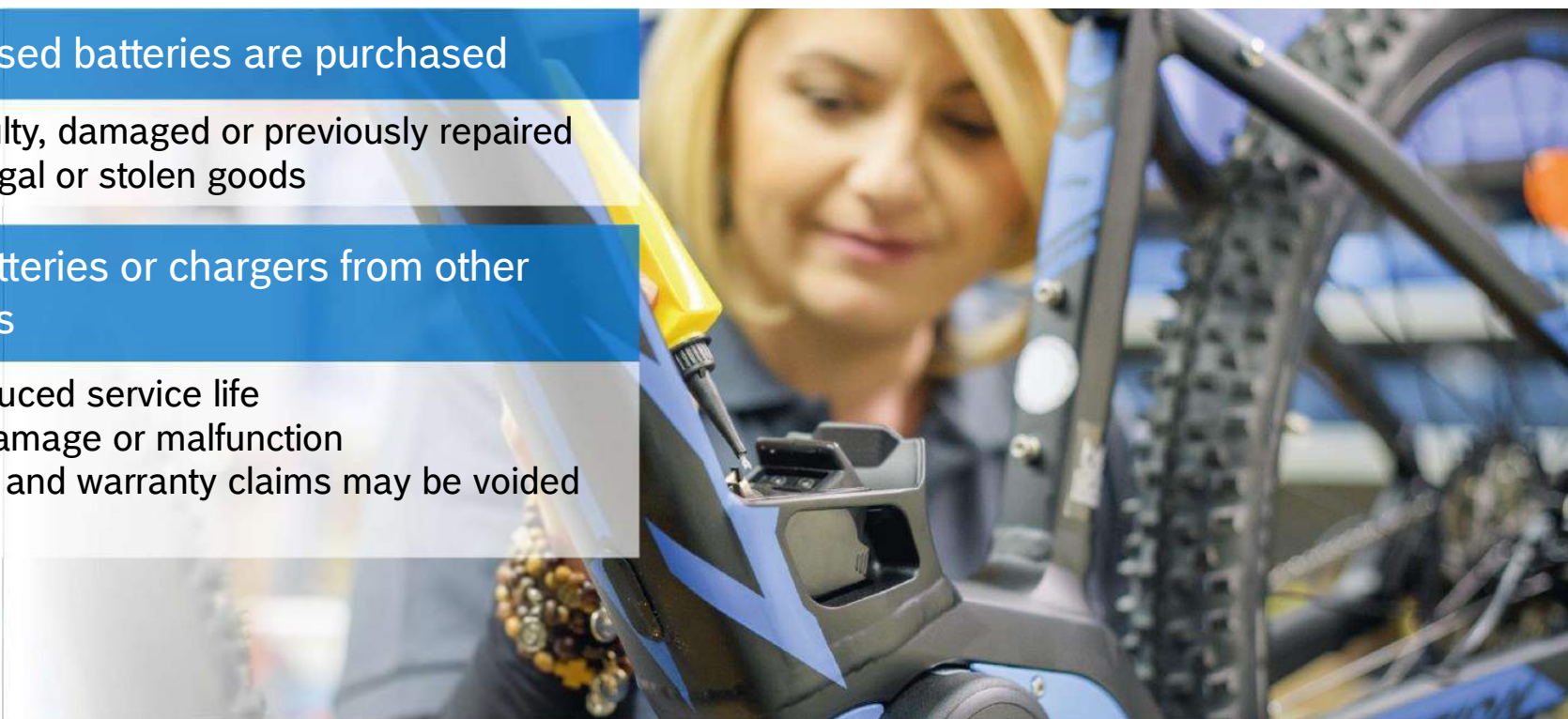
## Safety Instructions

### Risks when used batteries are purchased

- ▶ May be faulty, damaged or previously repaired
- ▶ May be illegal or stolen goods

### Never use batteries or chargers from other manufacturers

- ▶ Risk of reduced service life
- ▶ Possible damage or malfunction
- ▶ Guarantee and warranty claims may be voided



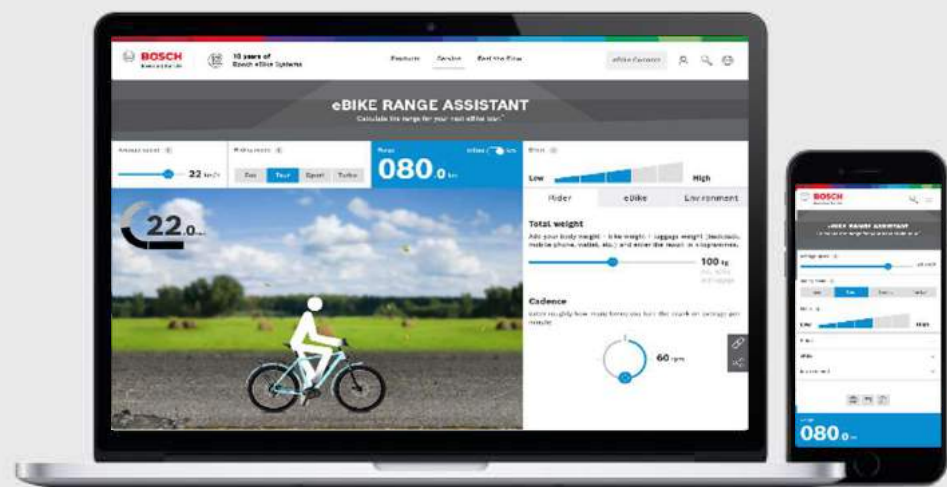
## Optimising the range

### What factors influence range?

- ▶ Riders
- ▶ Environment
- ▶ eBike

### Tips for optimum range

1. Constant cadence over 50 rpm
2. Use the shifting system/shift recommendation
3. Observe the motor performance indicator
4. Minimise the weight of the bike/luggage as much as possible
5. Use the most even possible riding style
6. Always ride with tyres at the maximum permitted pressure
7. You can expect a reduced range in winter





## Test bench measurement R200

NEW

Cooperation between Bosch eBike Systems, the German Bicycle Association (ZIV) and other companies in the bicycle industry

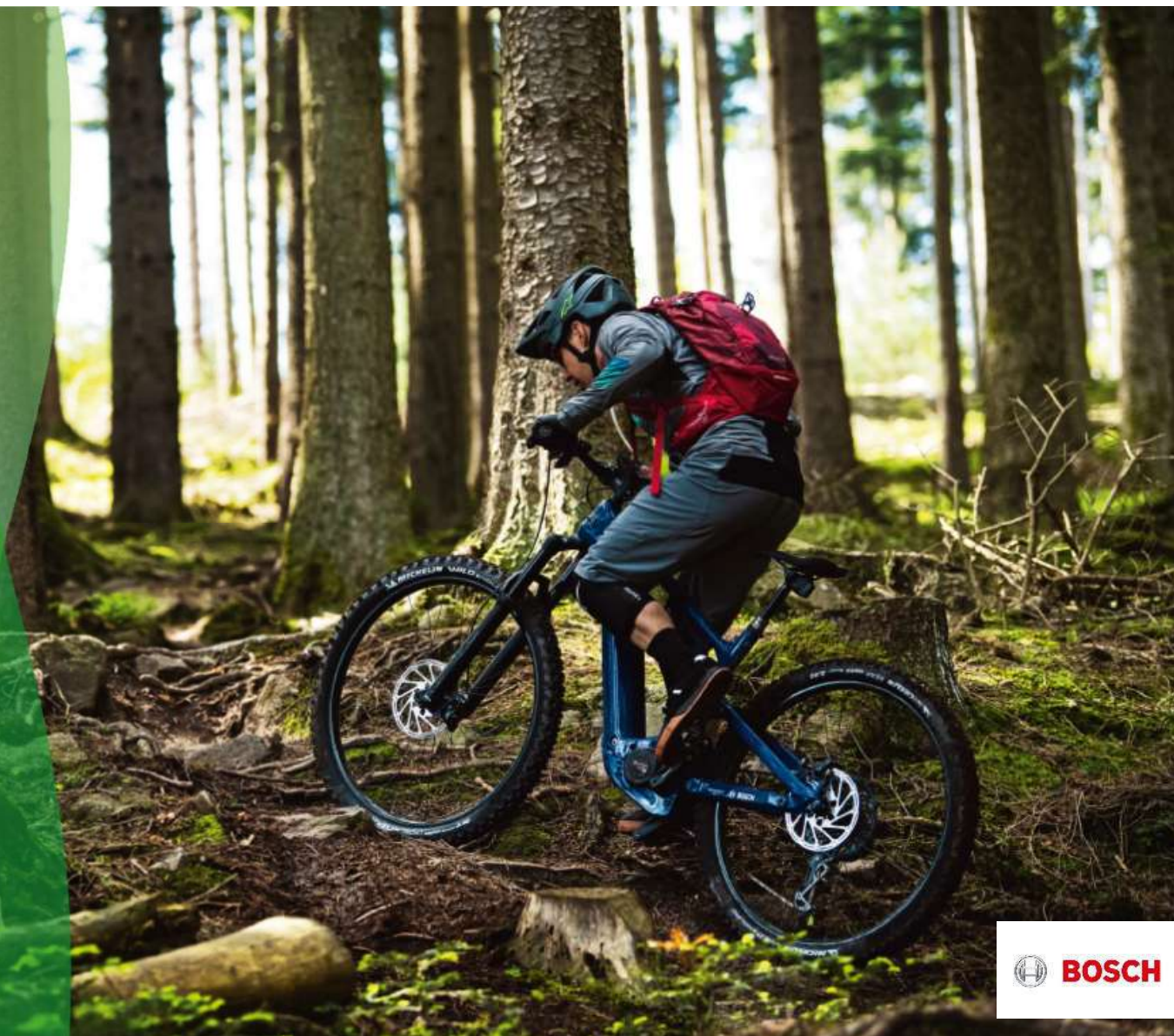
Standardising range

Measurement method

- ▶ Uniform support factor of 200 %
- ▶ Speed 20 km/h
- ▶ Cadence 60 rpm
- ▶ Standardised real conditions

**ZIV**  
Zweirad-Industrie-Verband

# DRIVE UNIT





## Gen 1



Classic Line

## Gen 2



Active Line



Performance Line



Performance Line CX

## Gen 3



Active Line



Active Line Plus

NEW



Performance Line

## Gen 4

NEW



Performance Line CX

NEW



Cargo Line /Speed

NEW



Performance Line Speed



## Active Line (Gen3)



### **Max. Torque**

Up to 40 Nm



### **Max. Support**

Up to 250 %



### **Drive Unit**

Cruise up to 25 km/h



### **Backpedal function**



## Active Line Plus (Gen3)



**Max. Torque**  
up to 50 Nm



**Max. Support**  
Up to 270 %



**Drive Unit**  
Cruise up to 25 km/h



**Backpedal function**





## Performance Line (Gen3)

**NEW**

**Max. Torque**  
up to 65 Nm



**Max. Support**  
Up to 300 %



**Drive Unit**  
Cruise up to 25 km/h



**eMTB Modus**  
120 – 300 % dynamic  
Support



## Performance Line CX (Gen4) **NEW**



**Max. Torque**  
Up to 75 Nm



**Max. Support**  
Up to 340 %



**eMTB Modus**  
140 – 340 % dynamic  
Support





## Performance Line Speed (Gen4)

**NEW**

**Max. Torque**  
Up to 75 Nm



**Max. Support**  
Up to 340 %



**Drive Unit**  
Speed up to 45 km/h



## Cargo Line Gen4

**NEW**

**Max. Torque**  
Up to 75 Nm



**Max. Support**  
Up to 400 %



**Drive Unit**  
Cruise up to 25 km/h  
Speed up to 45 km/h





## eMTB mode

### Function

- ▶ Progressive motor support depending on the rider's pedal pressure
- ▶ Varies between Tour and Turbo riding modes
- ▶ Individual riding styles are dynamically enhanced
- ▶ Two applications for crank lengths: < 165 mm and > 170 mm

### Benefits

- ▶ Perfect uphill flow with a natural riding sensation, maximum traction and optimum control
- ▶ No need to switch between riding modes
- ▶ Effortless riding on technical uphill sections or over obstacles

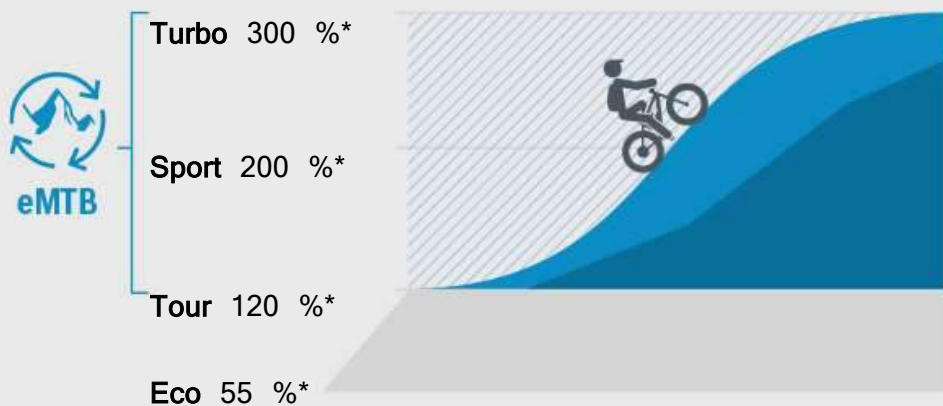




## eMTB mode

### Performance Line (BDU365):

Dynamic support for pedal force  
120 - 300 %



### Performance Line CX (BDU450 CX):

Dynamic support for pedal force  
140 - 340 %



\* Support as a percentage of pedal power

## Walk assistance

Can be activated in two stages

Speed-regulated walk assistance (min. 3 km/h, max. 6 km/h), or start-up help up to 18 km/h for Performance Line Speed

Maximum speed between 3 km/h and 6 km/h, depending on the gear selected



## Legal status of S-Pedelecs

### Definition of S-Pedelecs

- ▶ Pedalling support up to max. 45 km/h
- ▶ Max. continuous rated power of the motor: 4000 W
- ▶ Max. four-fold riding support
- ▶ Classified under EU law as a small two-wheeled motor vehicle
- ▶ Vehicle class L1e-B

### Required documents

- ▶ Operating licence with registered tyre size
- ▶ Liability insurance including Licence number
- ▶ Vehicle class AM





## Legal status of S-Pedelecs

### Special equipment regulations

- ▶ Tyres with UN/ECE-R75 test symbol (country code encircled, e.g. "E1" for Germany and "75R" on the side wall of tyre)
- ▶ On vehicles with a technically permissible total mass of up to 150 kg, tyres without type approval with a cross-section width of max. 67 mm may be mounted
- ▶ Rear-view mirrors
- ▶ Insurance certificate mounted and illuminated
- ▶ At least one stand, self retracting for S-Pedelecs over 35 kg
- ▶ Two independent brakes
- ▶ Brake lever with ball ends



## Legal status of S-Pedelecs

### Special equipment regulations

- ▶ A suitable protective helmet must be worn
- ▶ At least one electrical device for "sound" (horn according to UN/ECE-R28)
- ▶ Additional side reflectors
- ▶ Permanently mounted pedal reflectors
- ▶ Fixed lighting system (light must switch on automatically when the drive unit is activated)
- ▶ Brake light
- ▶ Headlight (approved according to UN/ECE-R74)





## Legal status of S-Pedelecs

### Conversion and replacement of bicycle parts

### Trailers

- ▶ Children's trailers/bicycle seats are not allowed

### Other provisions

- ▶ Same alcohol restrictions as for cars
- ▶ Must not be used on cycle paths
- ▶ Riders must not enter one-way streets in the wrong direction



## Dealing with eBike tuning



### Measures to combat tuning

- ▶ The software of the Bosch eBike system detects tuning and switches to emergency mode
- ▶ Restoration of the original settings after the eBike has been ridden for around 90 minutes
- ▶ After the third time, emergency mode can only be deactivated by a dealer /using the DiagnosticTool
- ▶ Tampering and the number of tampering incidents are displayed in the DiagnosticTool
- ▶ Bosch eBike Systems cooperates closely with bicycle manufacturers, associations and official bodies to prevent tuning



## Relaxed riding with eShift

Intuvia



Kiox



Nyon



**SHIMANO**

**enviolo**





# DIAGNOSTICS



## DiagnosticTool at a glance



Optimising functionality and stability

Identification of malfunctions

Diagnosis reports

Configuring the eBike

Tampering detection

Service intervals



## DiagnosticTool at a glance



Processing service cases

Remote diagnostics

Final deactivation of defective batteries

Functional test of the ABS speed sensors

Installation of maps for Nyon

## Prerequisites for Use



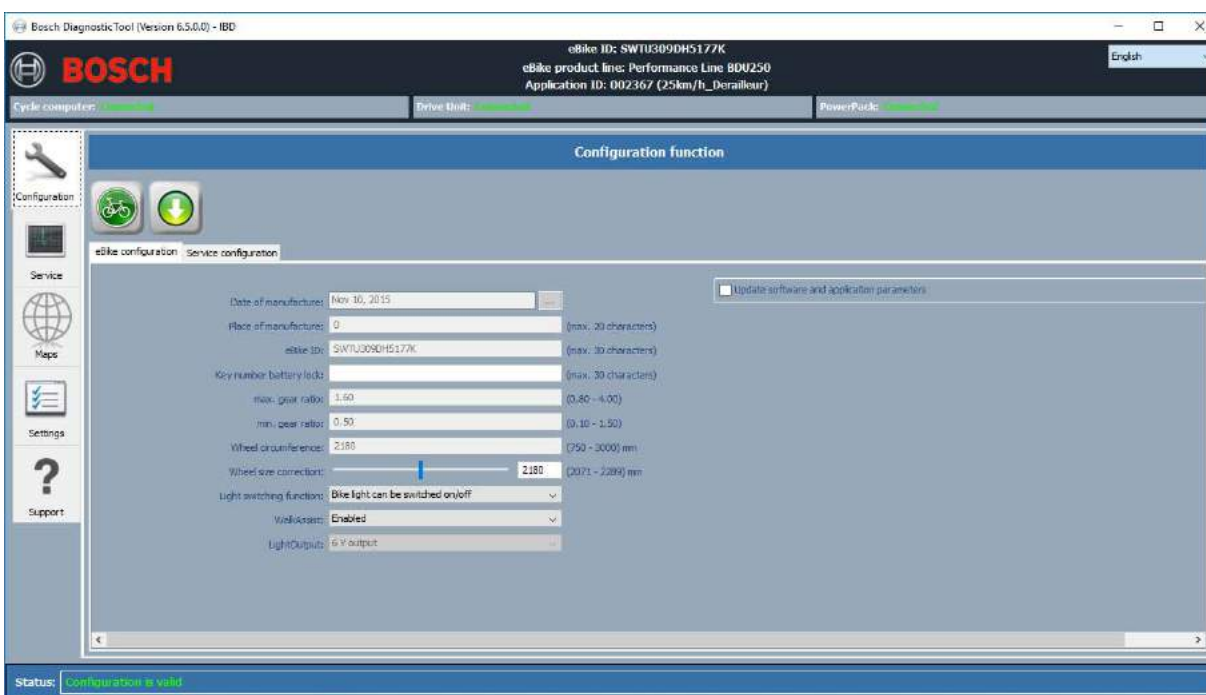
System requirements met

Certificate

DiagnosticKit and CapacityTester (Bosch eBike online stores)

Current software (dealer portal)

# User Interface



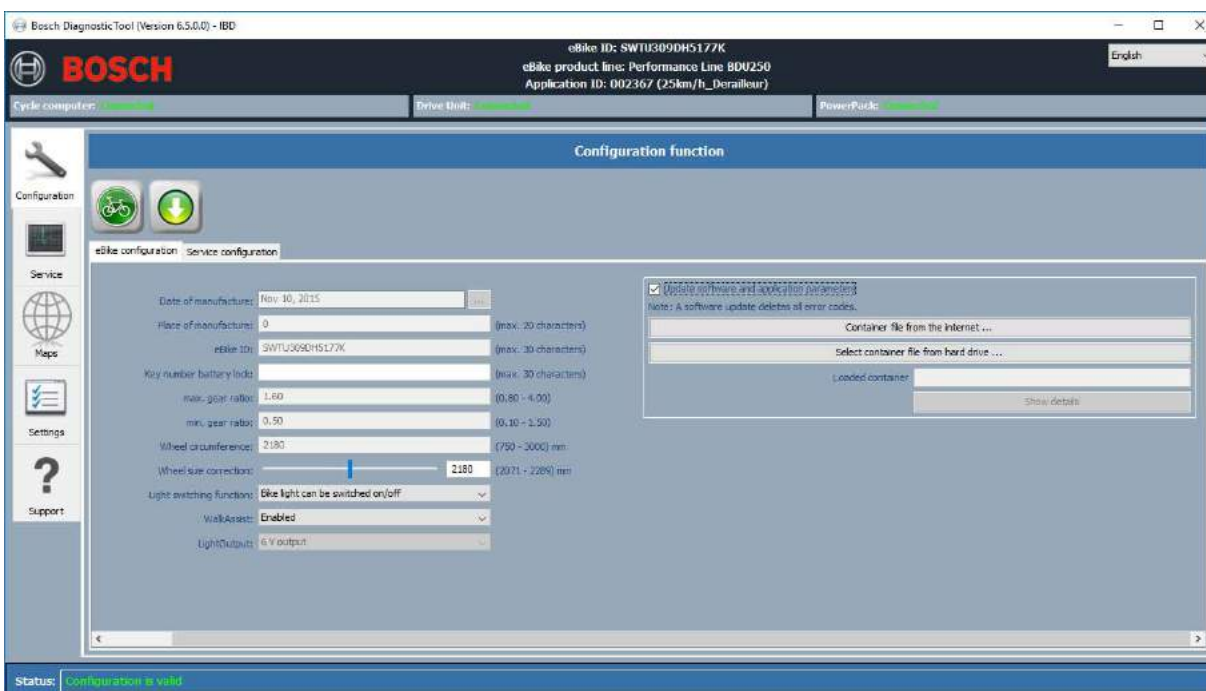
## Software version of DiagnosticTool

## Information about the connected system

- ▶ eBike ID
- ▶ Product line and code
- ▶ Application ID
- ▶ Gear system type
- ▶ Programming error message
- ▶ Connection status
- ▶ Warning that sample software / components have been detected

NEW

## Menu Configuration



Reading out configuration data

Modification of configuration data

- Code number for battery lock, wheel size correction, light switch function, power supply, walk assistance, Intuvia and Kiox language and units, auto-down shift

Lighting output

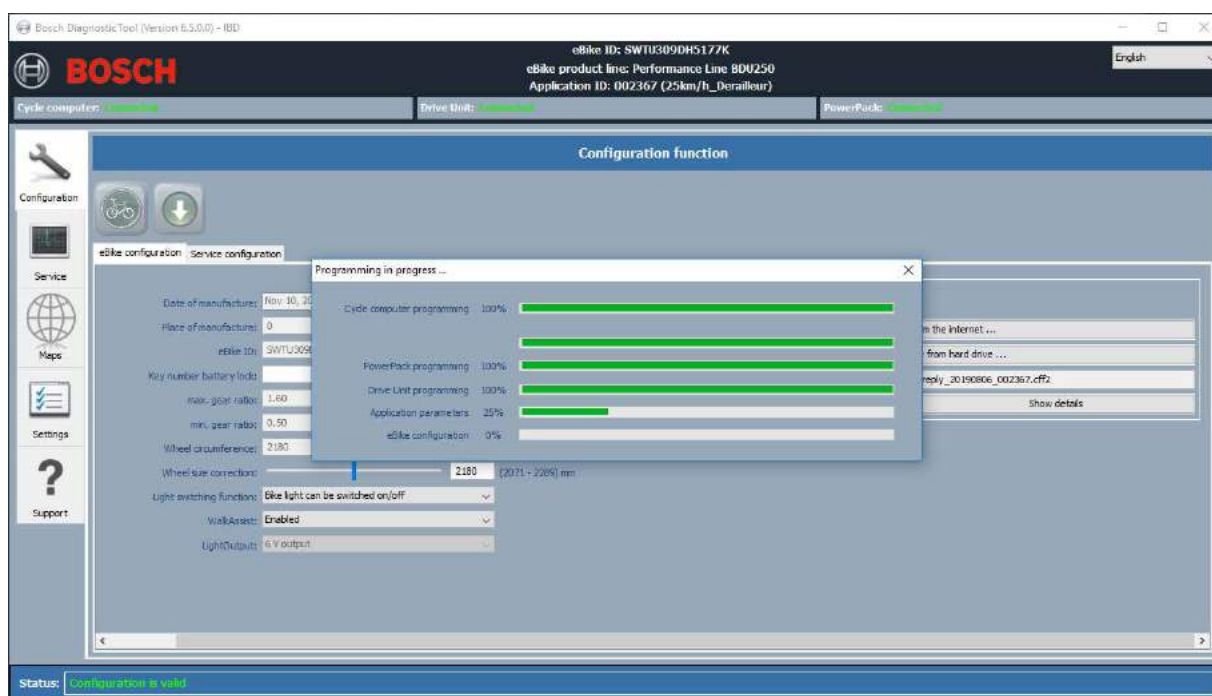
NEW

Power Port (12 V)

NEW



## Menu Configuration



### eBike software update

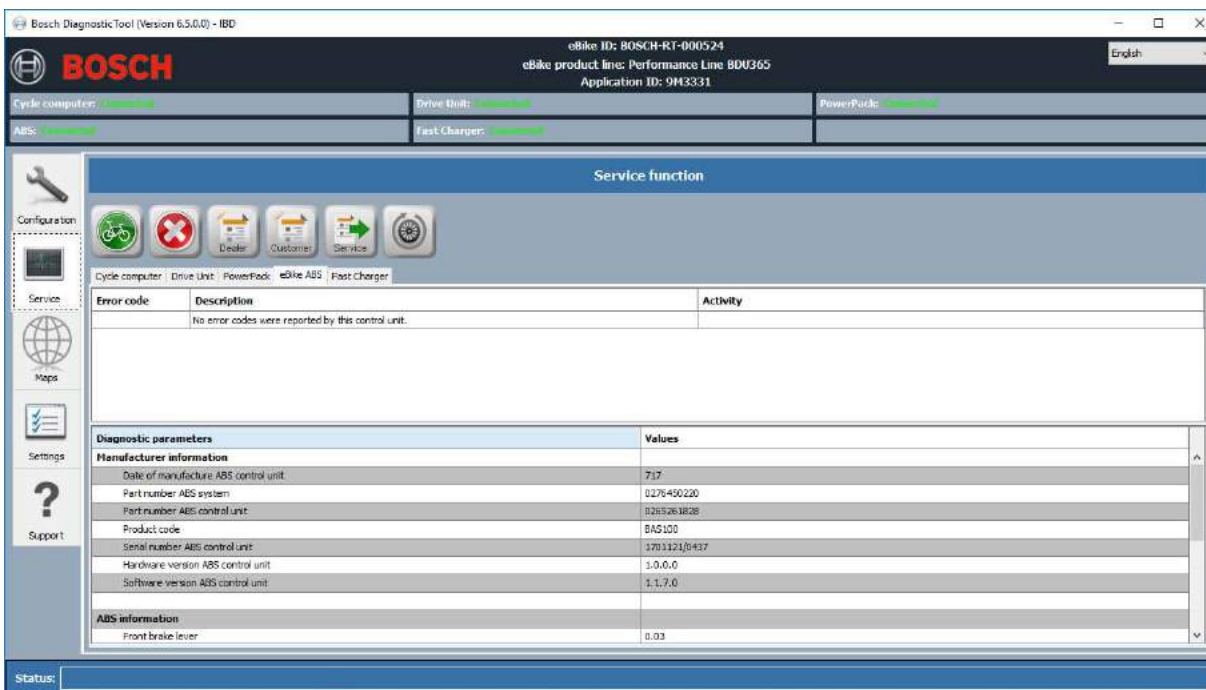
- Three applications for Performance Line CX: Sport, eMTB (> 170 mm), eMTB short cranks (< 165 mm)

### Restore (reprogram) Kiox / Nyon

### Individual updates for Intuvia / Nyon

### Perform service configuration

## Menu Service



eBike diagnostics

New parameters

NEW

- Measures to protect against tuning
- Detection of sample components and sample software

Diagnostics/software update for the Fast Charger

Functional test of the ABS speed sensors

## Menu Service

Bosch DiagnosticTool (Version 6.5.0.0) - IED

eBike ID: SWT0309DHS177K  
eBike product line: Performance Line BDU250  
Application ID: 002367 (25km/h\_Derailleur)

Language: English

Cycle computer: OK Drive Unit: OK PowerPack: OK

### Service function

Configuration | Service | Maps | Settings | Support

Service function icons:

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

### Diagnostic parameters

Diagnostic parameters	Values
<b>Current ride statistics</b>	
Distance in Turbo mode (with assistance)	105.5 km
Distance in Sport mode (with assistance)	39.8 km
Distance in Tour mode (with assistance)	27.6 km
Distance in Eco mode (with assistance)	8.0 km
Distance without assistance	0.0 km
Energy consumption	10.8 Wh/km
Distance in user-defined assistance mode 1 (with assistance)	0.0 km
Distance in user-defined assistance mode 2 (with assistance)	0.0 km
Distance in user-defined assistance mode 3 (with assistance)	0.0 km
Distance in user-defined assistance mode 4 (with assistance)	1.1 km

### Energy consumed by motor (classified according to assistance mode)

Mode	Percentage
Turbo	72%
Eco	1%
Tour	14%
Sport	13%
UDAM 1	0%
UDAM 2	0%
UDAM 3	0%
UDAM 4	0%

Status: OK

Create reports

Delete error messages / riding statistics

Reset "Lock"

NEW

Create or expand a service case

► Upload file attachments

NEW

Disable batteries permanently

## Report for customers

## Editable fields in programs such as Acrobat Reader

## Checklist for testing eBike components during a service appointment

Free text field for further services



## Cross-Swap - Application Areas



Pinpoint the affected component

Confirm error symptoms

The on-board computer indicates **USB connected**, however components are displayed in the DiagnosticTool as **Not connected**

No diagnostic values displayed

Control unit does not respond to the touch of a button

## Cross-swap – possible components



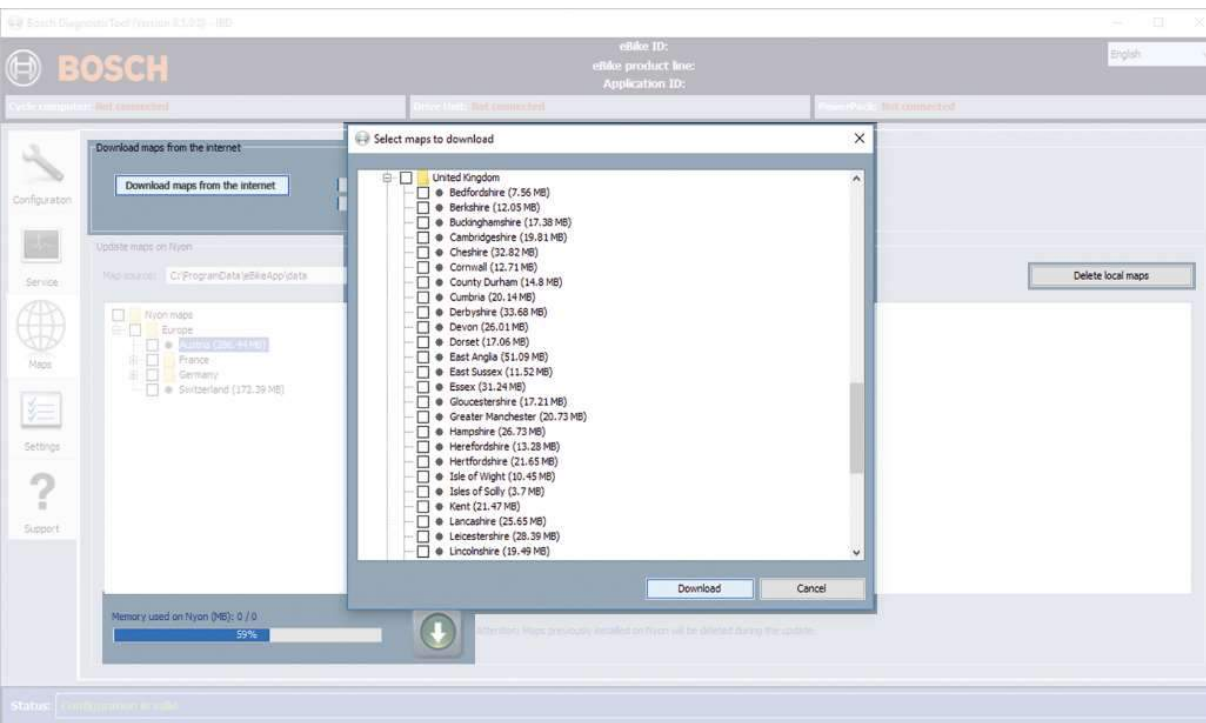
On-board computer, rechargeable battery, charger, speed sensor

Mount and control unit

Battery cable, light cable

- Connect a new cable directly to the drive unit slot

## Menu Maps



Download maps onto the computer and then install on Nyon

- Nyon MY 2015 storage capacity: 500 MB, more recent version 6 GB
- Overwrites existing maps

Delete local maps button

NEW

Icon indicates new maps

NEW

## Menu Settings

Bosch DiagnosticTool (Version 6.5.0.0) - IBD

eBike ID: SWTU309DH5177K  
eBike product line: Performance Line BD0250  
Application ID: 002367 (25km/h\_Derailleur)

Language: English

Cycle computer: OK Drive Unit: OK PowerPack: OK

**Configuration**

**Bosch update server settings**  
Currently used URL:   
Change URL to:

**Proxy settings**  
☒ No proxy  
☐ Use system proxy settings  
☐ Manual proxy settings  
Address:  Port:   
User:  Password:

**Unit conversion settings**  
Distance:  Speed:  Temperature:  Height:  Circumference:

**Map memory**  
Storage location:

**Dealer information**  
Company name:   
Customer number:   
Address:   
Phone:   
E-mail:   
Website:

**Your Personal eBike Dealer**

**Capacity test logs**  
Storage location:

Status: OK

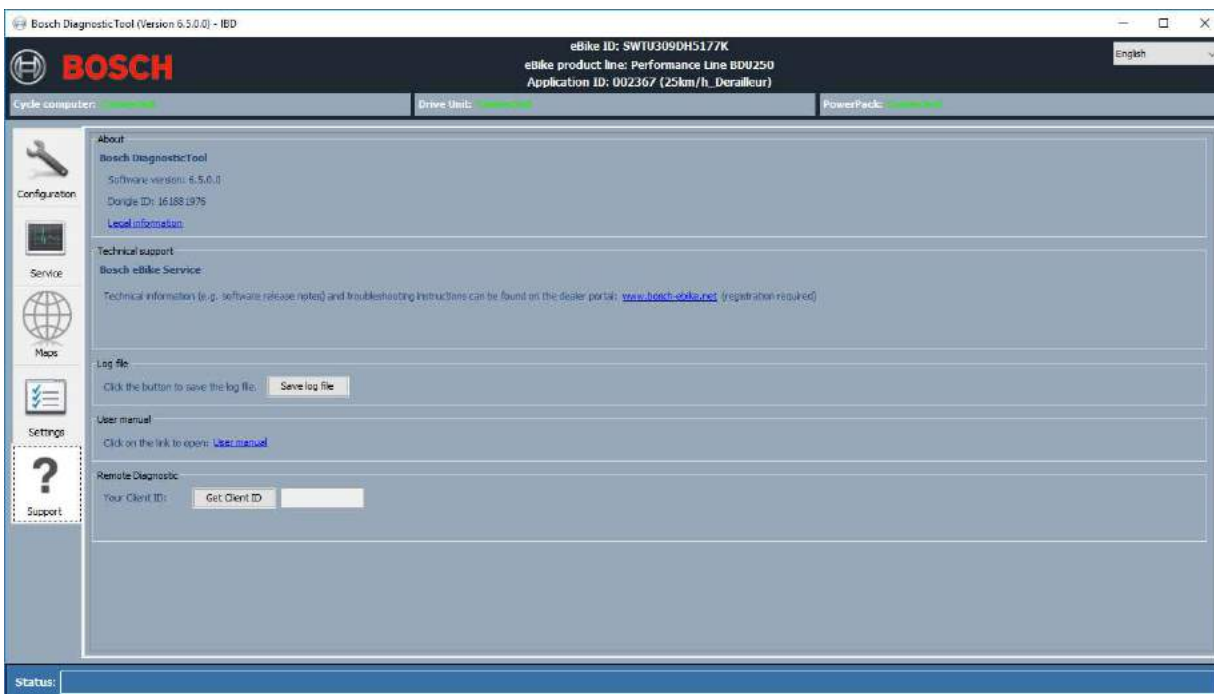
Define storage location for Nyon maps

Save dealer data and logo for eBike service report

Storage location for eBike battery capacity report



## Menu Support



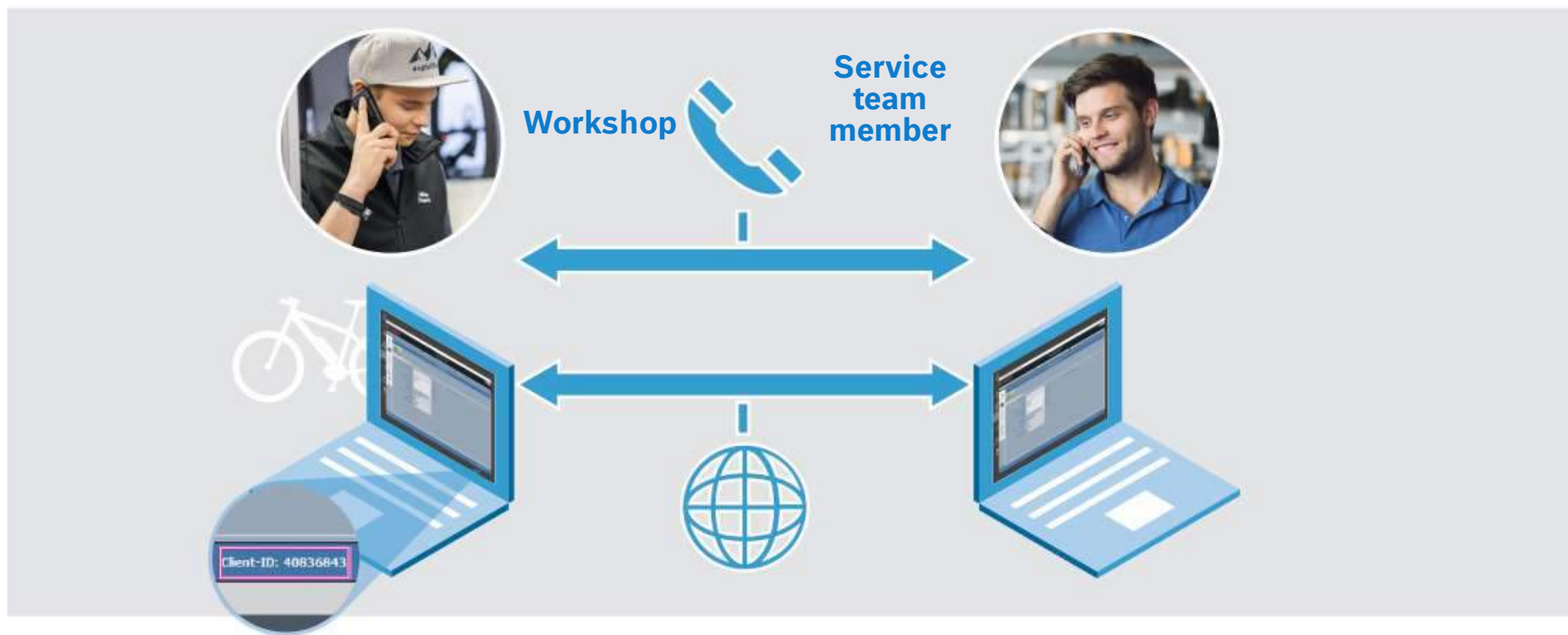
Software version of DiagnosticTool,  
Dongle ID

Link to technical information in the  
dealer portal

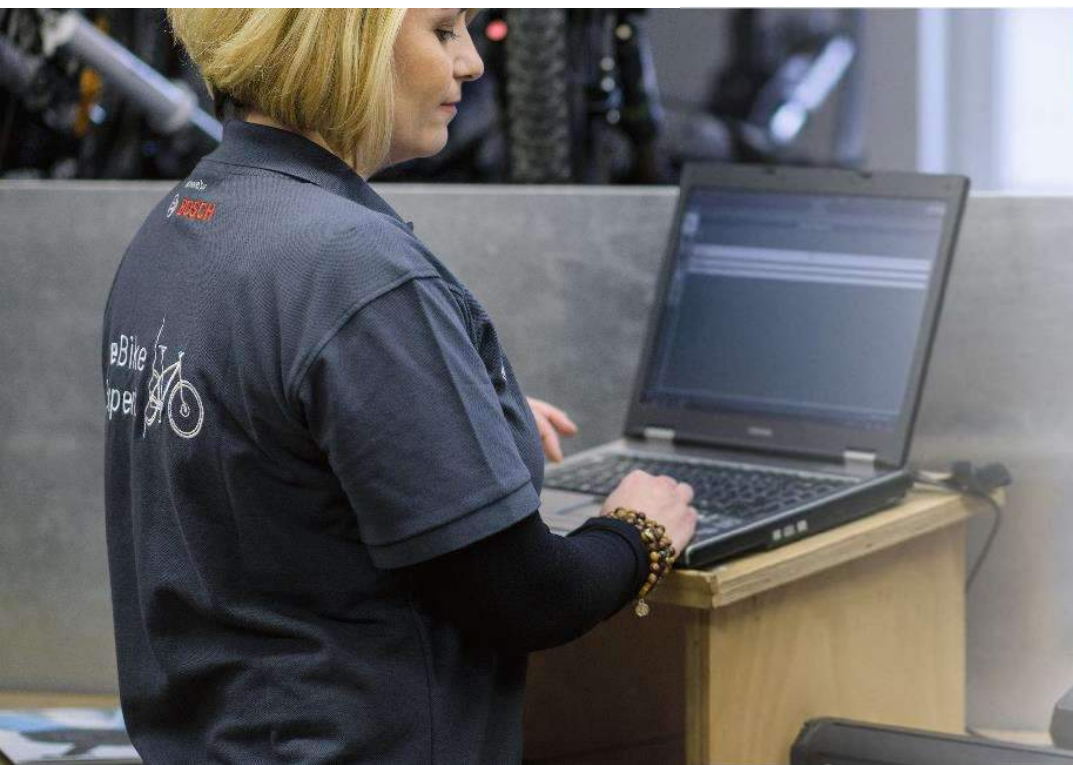
Link to the user manual

Link to client ID for remote  
diagnostics

## Remote Diagnostics



## CapacityTester at a Glance



Can be controlled via DiagnosticTool

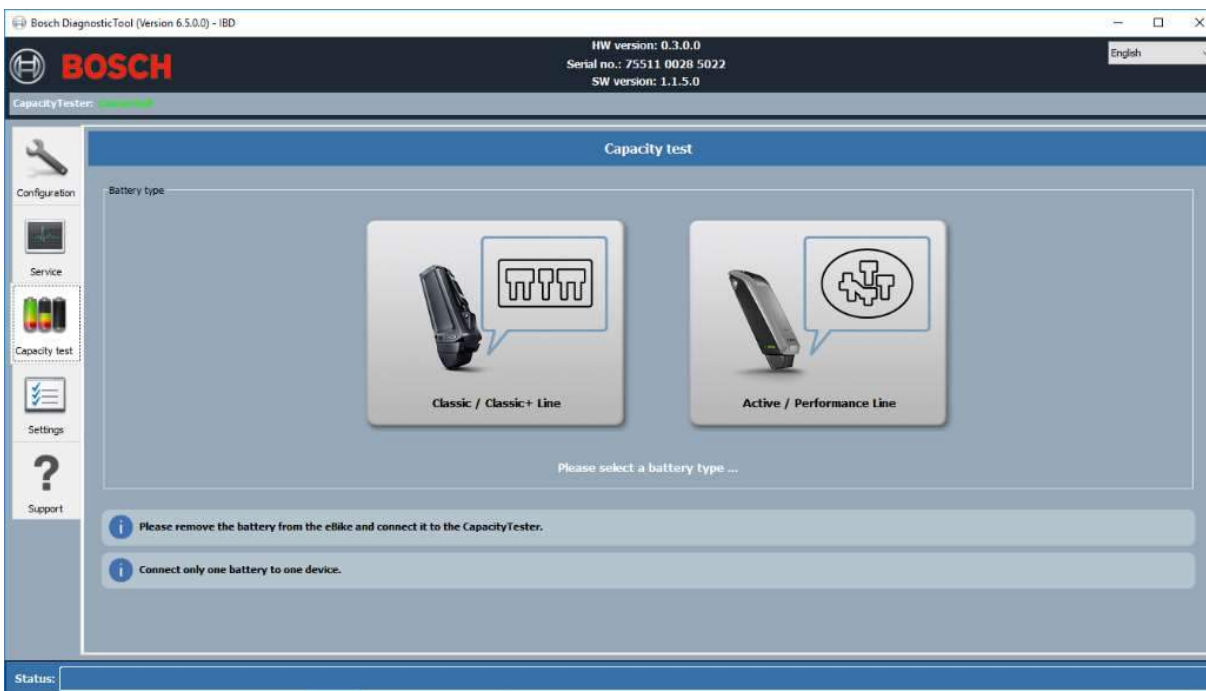
Measurement of the energy content of batteries

eBike battery diagnostics

Winter storage

Evaluation of measurement results in a warranty context

## Prepare a Capacity Test



Current software DiagnosticTool +  
DiagnosticDongle attached

Rechargeable battery, at least 15 °C

Battery not in FBL mode

Battery fully charged

Battery not inserted in the eBike

Please note the safety instructions  
for use



## Perform Capacity Test



### Perform capacity test

- If measurement is cancelled, capacity determined up to that point is displayed

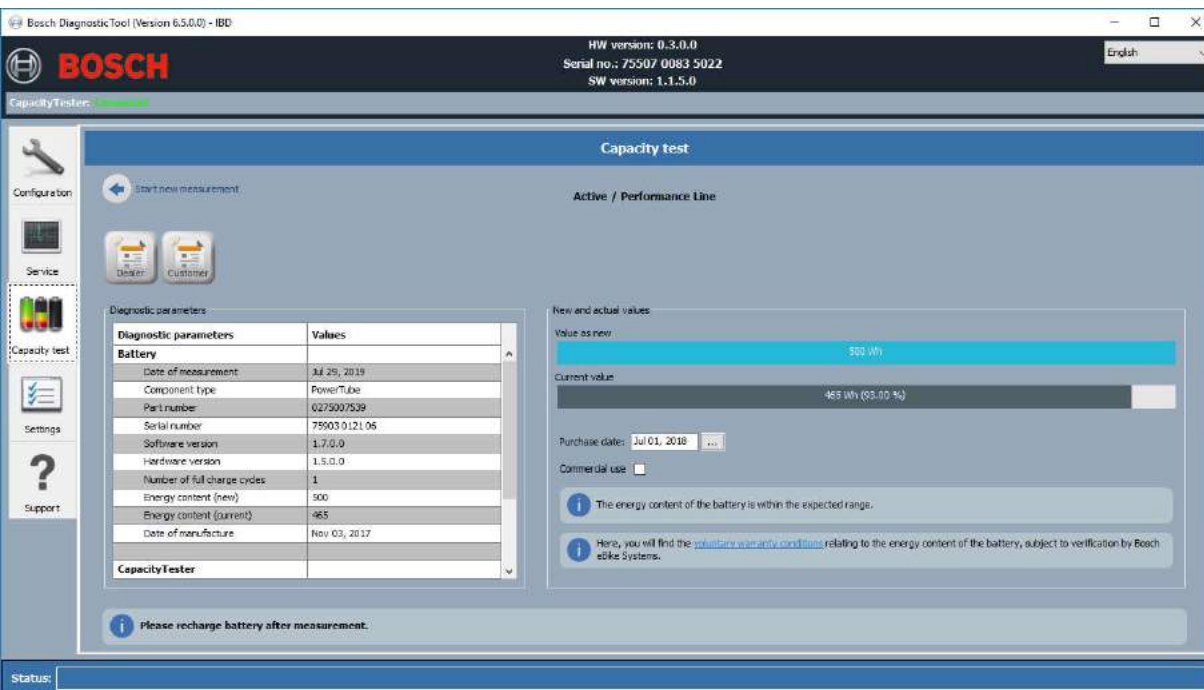
### Create battery capacity report even if measurement is cancelled

NEW

### Test duration

- 300 Wh battery: approx. 1.6 h
- 400 Wh battery: approx. 2.3 h
- 500 Wh battery: approx. 2.8 h
- 625 Wh battery: approx. 3.5 h

## Perform Capacity Test



### Warranty evaluation

- Determined parameters
- Purchase date
- Type of use (commercial yes/no)

### Energy content of batteries when new

- Slight deviation from the nominal value is possible
- Reason: manufacturing-related tolerances

## Perform Capacity Test

The screenshot displays the Bosch DiagnosticTool interface. The top bar shows the software version (6.5.0.0) and hardware/serial numbers. The main window is titled 'Capacity test' and shows 'Active / Performance Line'. On the left, a sidebar contains icons for Configuration, Service, Capacity test, Settings, and Support. The 'Capacity test' section is active, showing a table of diagnostic parameters and their values.

Diagnostic parameters	Values
<b>Battery</b>	
Date of measurement	11.29.2019
Component type	PowerTube
Part number	0275007539
Serial number	75903 0121 05
Software version	1.7.0.0
Hardware version	1.5.0.0
Number of full charge cycles	1
Energy content (new)	500
Energy content (current)	465
Date of manufacture	Nov 03, 2017
<b>CapacityTester</b>	

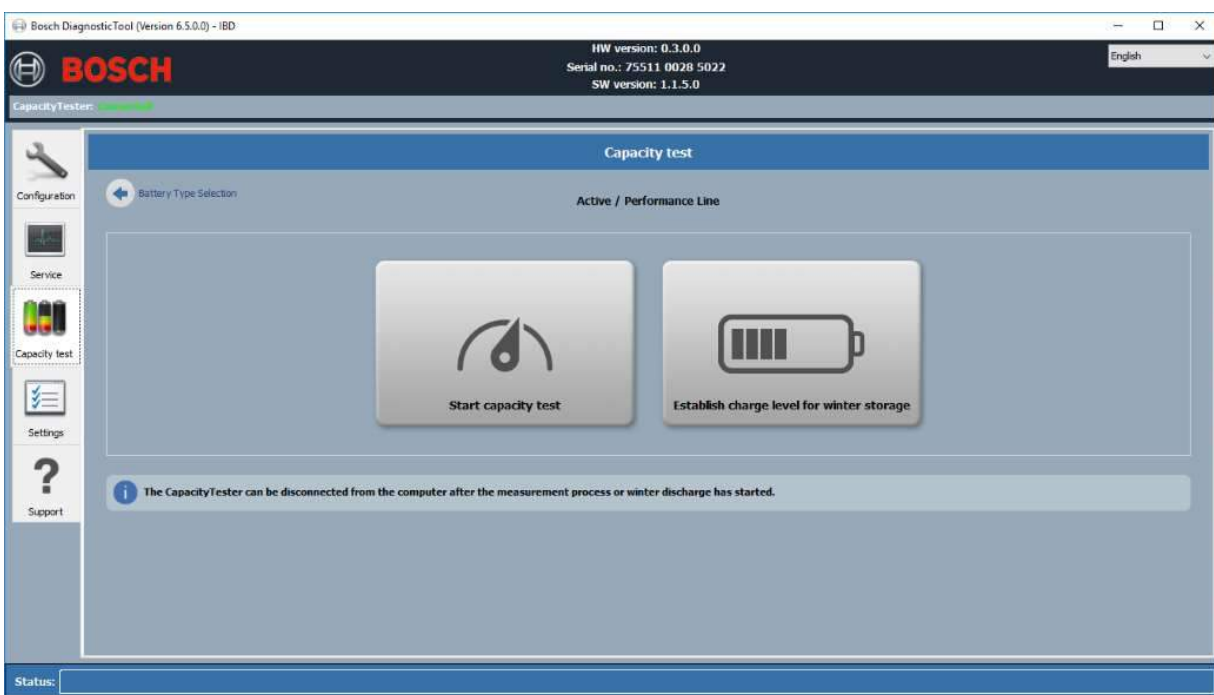
On the right, the 'New and actual values' section shows a bar chart comparing the 'Value as new' (500 Wh) and the 'Current value' (465 Wh, 93.00 %). Below this, the 'Purchase date' is set to Jul 01, 2018, and the 'Commercial use' checkbox is unchecked. Two informational messages are displayed: 'The energy content of the battery is within the expected range.' and 'Here, you will find the [warranty warranty conditions](#) relating to the energy content of the battery, subject to verification by Bosch eBike Systems.'

At the bottom, a status bar indicates: 'Please recharge battery after measurement.'

### Natural ageing process

- From the time of production, the energy content can decrease by up to 0.5 % per month (even if there are no loading or unloading processes)

# Functions of the CapacityTester



## Winter storage

- The battery is discharged to the ideal charge level

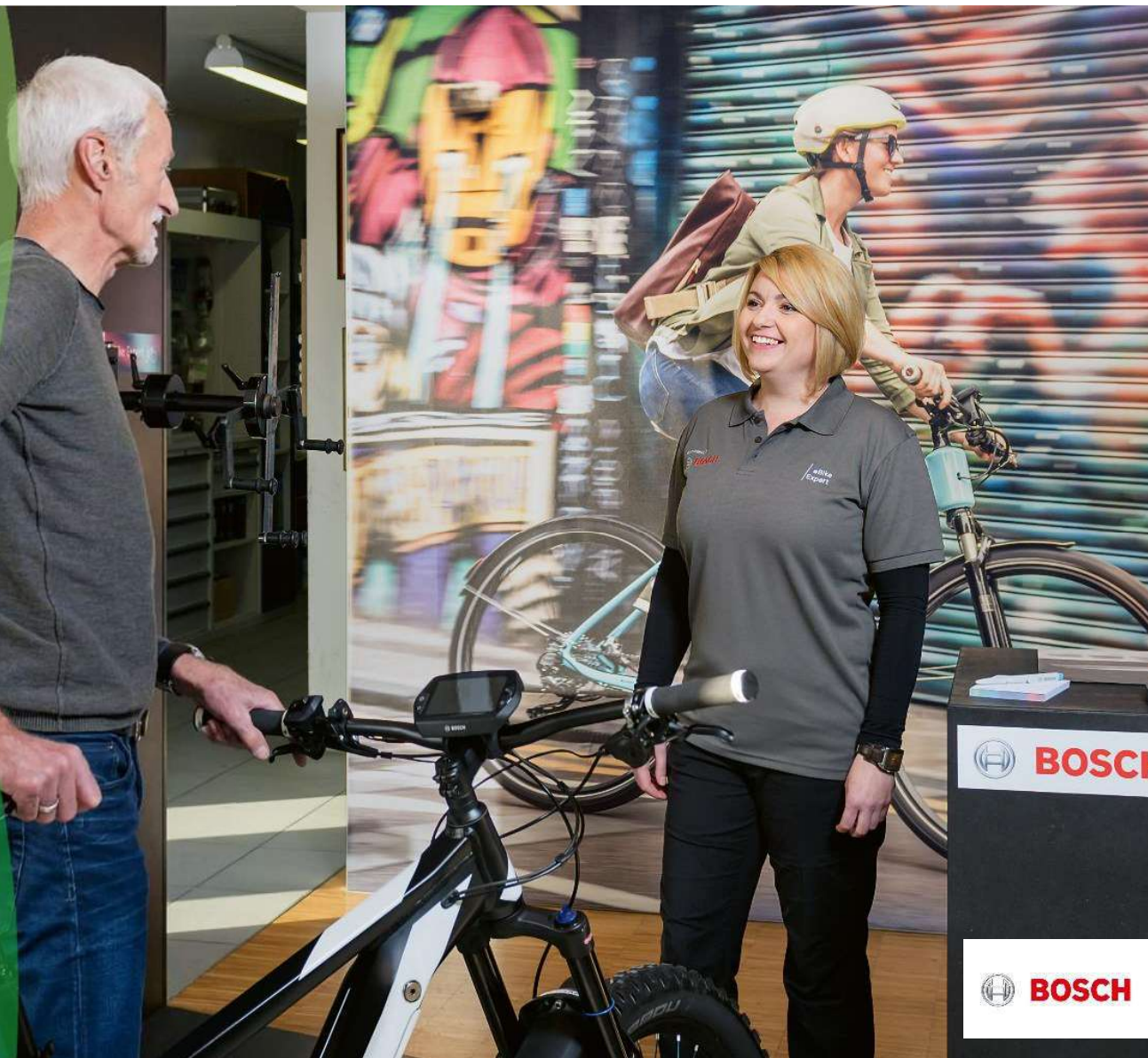
## Software update for CapacityTester

- Under the Configuration menu





# SERVICE OFFERS FOR DEALERS



## Online Contact Points at a Glance

Bosch eBike dealer portal

Bosch eBike online stores

Customer website

Social Media



## Bosch eBike dealer portal: [bosch-ebike.net](https://bosch-ebike.net)

Service cases at a glance

DiagnosticTool software

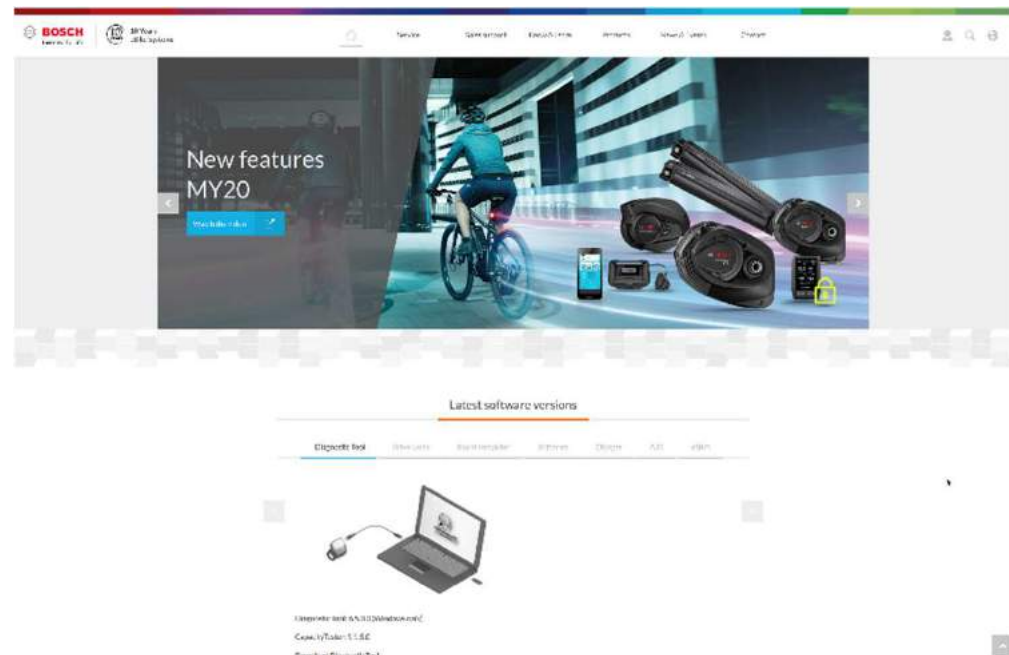
Online Training Courses

Download options (brochures, operating and assembly instructions, etc.)

Technical and service instructions

Current software versions & news area

Hazardous goods transport



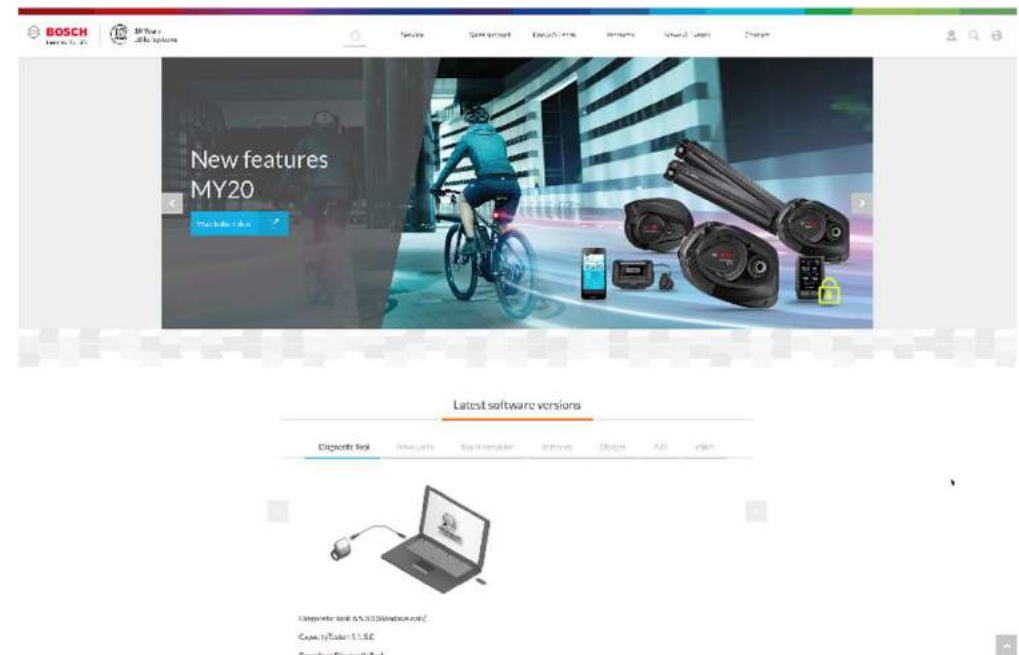
# Newsletter

Software updates

New features

Services

Training course schedules, legal topics,  
eBike market





Bosch eBike online stores: [www.bosch-ebike.de/webshop](http://www.bosch-ebike.de/webshop)

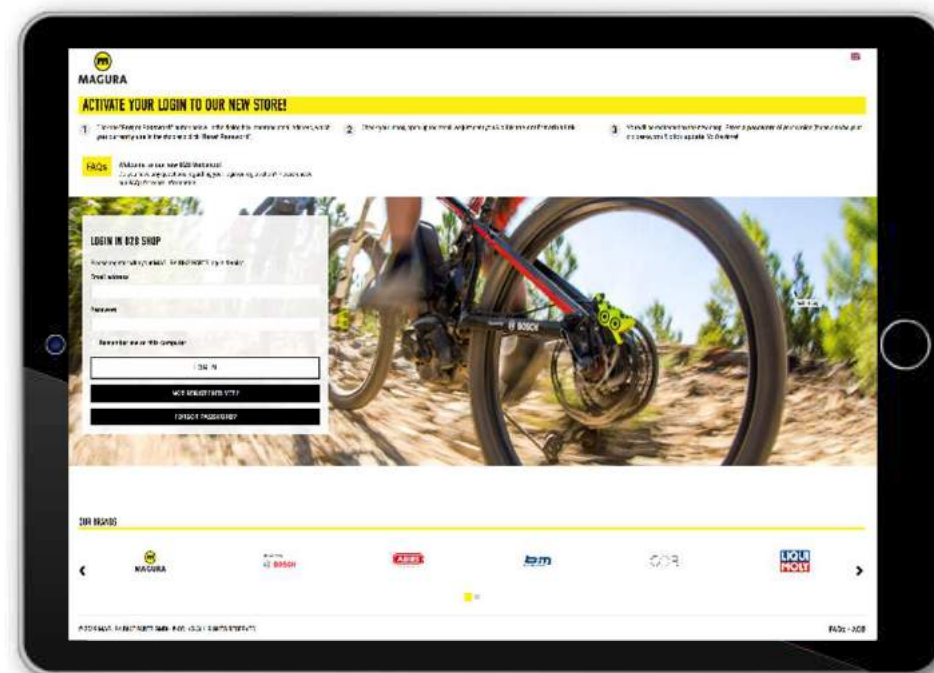
Spare parts, tools and accessories

Products for retrofitting

Diagnostic Tools

Brochures and Catalogues

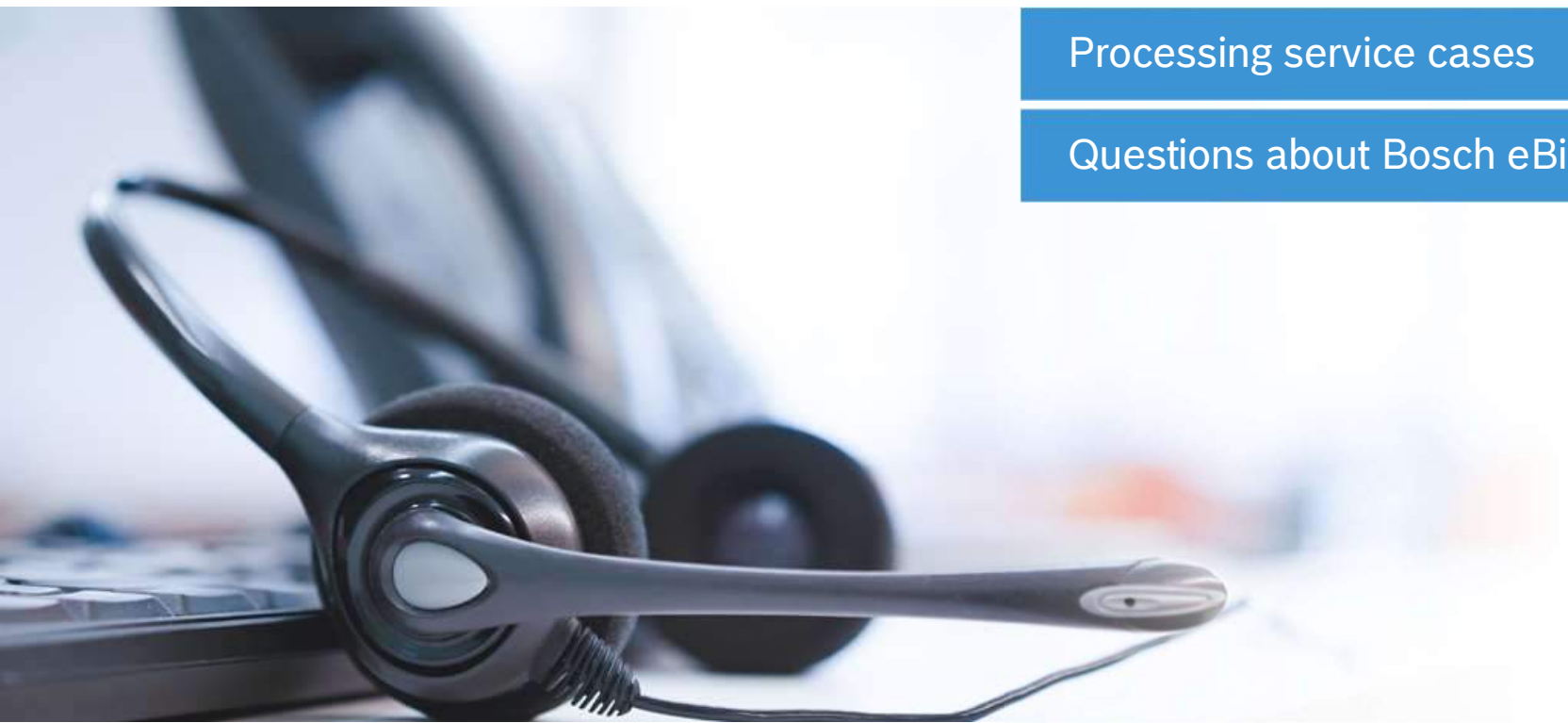
Advertising resources, clothing



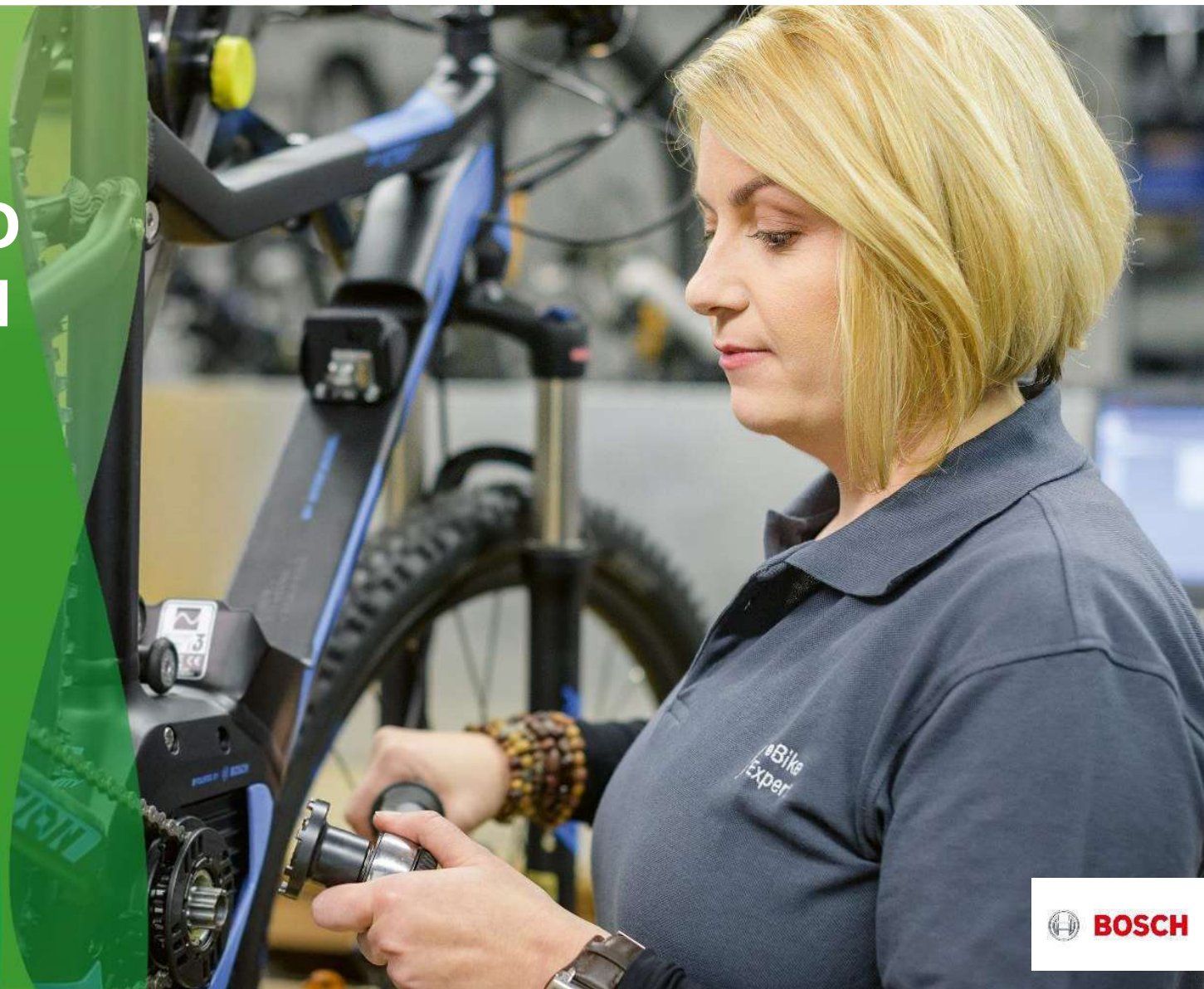
## Bosch eBike Service Team

Processing service cases

Questions about Bosch eBike systems



# REMOVAL AND INSTALLATION









## Installing Intuvia



### Gold-plated contacts improve system performance

NEW

- ▶ Intuvia mounts have been supplied with two additional gold contacts since July 2019 to ensure less play between the display and mount, thus improving contact quality
- ▶ Observe the following during assembly:
  - Never exceed the tightening torque of 1 Nm
  - Never secure the mount in the conical handlebar area
  - The lower side of the mount must not rest on the stem



To avoid damage, never clean the gold contacts

## Installing PowerTube

### Mounting aids

- ▶ **Vertical assembly jig**  
(orange handle, inscribed *vertical*)  
For PowerTube 400 / 500: **0.275.009.015**  
For PowerTube 625: **0.275.009.019**
- ▶ **Horizontal assembly jig**  
(black handle, inscribed *horizontal*)  
For PowerTube 400 / 500: **0.275.009.014**  
For PowerTube 625: **0.275.009.018**



## Checking the PowerTube mount

### Mounting aids

- ▶ **Vertical assembly jig**  
(orange handle, inscribed *vertical*)  
For PowerTube 400 / 500: **0.275.009.017**  
For PowerTube 625: **0.275.009.021**
- ▶ **Horizontal assembly jig**  
(black handle, inscribed *horizontal*)  
For PowerTube 400 / 500: **0.275.009.016**  
For PowerTube 625: **0.275.009.020**



## Removing the Drive Unit (BDU450 CX / 490 P) **NEW**



### Tool

- ▶ Allen key size 8
- ▶ Standard crank-puller
- ▶ Lockring tool **0.275.009.003** available from Bosch eBike online stores



## Installing the Drive Unit (BDU450 CX / 490 P) **NEW**



### Tool – Torx Plus 40

- Special profile for mechanical screw joints with particularly flat screw heads with high tightening torques. Standard Torx 40 can be used, but even with a new screw insert there is a risk of increased wear and possible damage to the screw threads



TORX



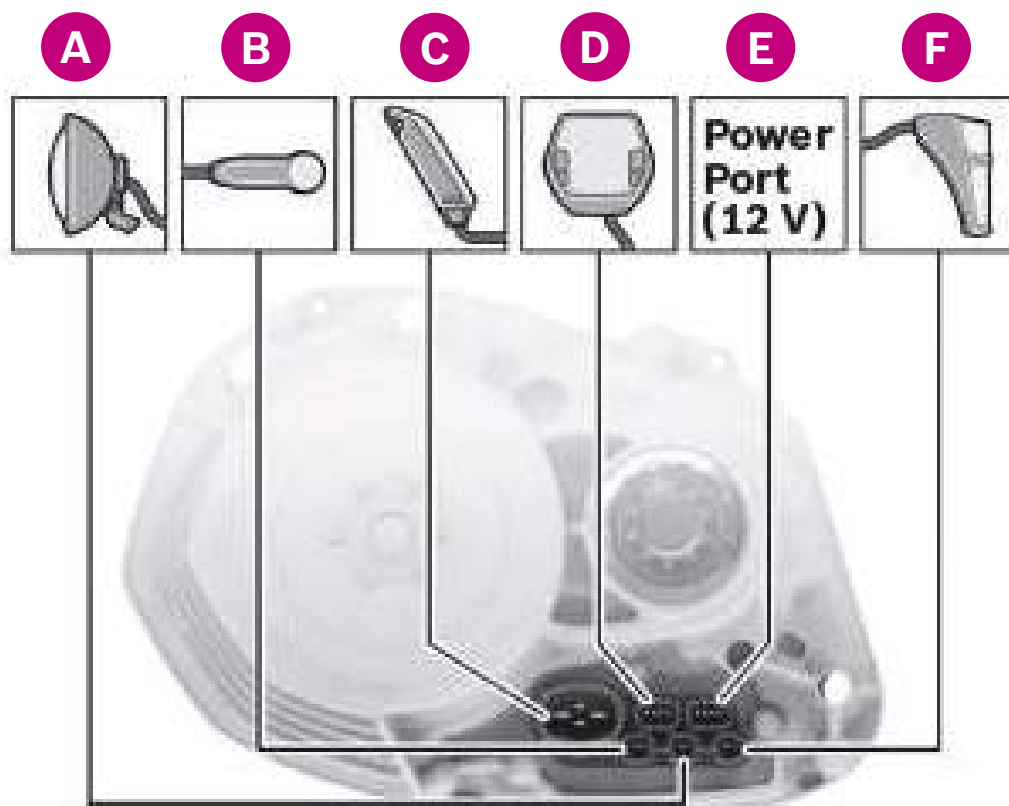
TORX-PLUS

## Drive Unit (Gen 4) dismantle

**NEW**

Never loosen the screw connection of the retaining plates in the motor housing! Direct screwing into the magnesium housing as well as loosening screws from the housing are not permitted. Risk of corrosion and loss of warranty and warranty

## Installing the Drive Unit (BDU450 CX / 490 P) **NEW**



Pos.	Anschluss	Farbe	Spannung
A	Frontlight	blue	12 V
B	Speed Sensor	grey	3,3 V/ mind. 3,1 V
C	Battery	black	36 V
D	Display	black	12 V
E	Power Port (12 V)	black	12 V
F	Backlight	black	12 V



The Drive Unit can be damaged if a plug is connected incorrectly.



# THANKS!

