



# BOSCH ON-BOARD UNITS

## USER MANUAL

Before the first journey:  
Set the technically permissible  
maximum laden mass!



Updated requirement  
**Tolls from 3.5t**  
07/2024

# For your safety

## Statutory provisions

**Please note: Anyone in Germany who intentionally or negligently fails to pay the toll properly commits a civil offence which can be punished with a penalty of up to 20,000 euros (§ 10 para 2 German Federal Trunk Road Toll Act (BFStrMG)).**

- » The driver's statutory responsibility includes properly entering the vehicle weight class and number of axles before driving on toll roads in Germany.
- » In the event of On-Board Unit malfunction in Germany, you are required by law to manually log onto the route section subject to toll using the Toll Collect app, or via online log-on.

## Instructions on using the On-Board Unit

**Please familiarise yourself with the functions of your On-Board Unit before beginning your first journey. The controls of the On-Board Unit must not be operated during the journey.**

- » The BOSCH DIN standard dashboard cutout On-Board Unit has been installed and sealed in your vehicle by a service partner authorised by Toll Collect.
- » Due to the battery in the unit, the BOSCH windshield On-Board Unit must not be installed in dangerous goods transporters (ADR vehicles) and must not be operated in areas at risk of explosion.
- » Do not attempt to open or modify the On-Board Unit or the supply lines connected to it.
- » Do not change the installation position of the On-Board Unit.
- » Do not use sharp-edged or pointed objects to press the keys on the On-Board Unit, as this could result in damage.
- » Simply clean the On-Board Unit with a cloth slightly moistened with water. Abrasive cleaning agents or solvents such as thinner or petrol result in damage.
- » In order to ensure that the On-Board Unit functions correctly, there must be no objects blocking the space between the windshield and the BOSCH windshield On-Board Unit or the DSRC module.
- » If there are multiple On-Board Units in the vehicle with the Germany service activated, ensure that only one On-Board Unit collects the toll at any one time.

*Responsible for the content: Toll Collect GmbH, Linkstr. 4, 10785 Berlin | [www.toll-collect.de](http://www.toll-collect.de)*

*By using the On-Board Unit, you are accepting the general standard terms and conditions of Toll Collect GmbH.*

*The general standard terms and conditions are available to view online at [www.toll-collect.de/go/agb](http://www.toll-collect.de/go/agb).*

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*Version 4.5.2 B.C.DG - 06/2024*

# Foreword

Dear reader,

The On-Board Unit acts as the basis for automatic toll collection on toll roads within Germany, and also for the additionally possible toll collection on toll roads in Austria.

The task of the On-Board Unit is automatic collection of toll fees. The user manual describes the vehicle data that must be entered before starting the journey and the information that is sent via visual and acoustic messages during travel.

The Bosch DIN standard dashboard cutout and windshield units are operated identically.

The windshield On-Board Unit mounted on the windshield includes all components required for collecting the toll fees and must be connected to the on-board electronics during the journey. A fixed, permanent connection to the vehicle electrical system is recommended for frequent use.

Please read through this user manual carefully and familiarise yourself with how the On-Board Unit works. Retain all documents supplied along with the OBU. We wish you a safe and pleasant journey.

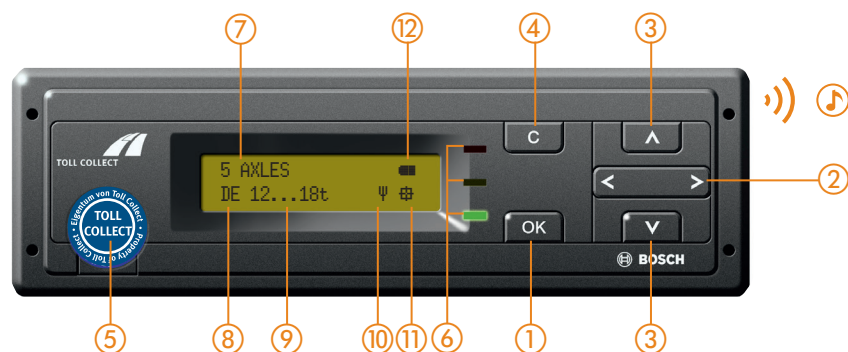
Your Toll Collect

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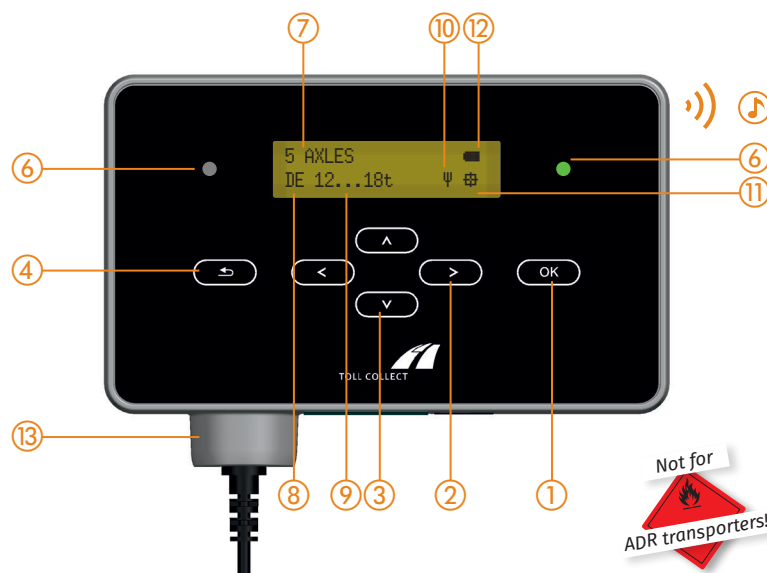
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# 1 CONTROL ELEMENTS

## BOSCH DIN standard dashboard cutout On-Board Unit



## BOSCH windshield On-Board Unit



**Keys**

- ① **OK key:**  
Open the menu,  
confirm menu inputs and messages

- ② **Left and right arrow keys:**  
Select and set functions

- ③ **Up and down arrow keys:**  
Move forwards and backwards in the menu

- ④ **Clear key:**  
Cancel inputs,  
go to higher menu level

**Interface**

- ⑤ For service purposes only  
(seal must not be damaged)

**LED**

- ⑥ **Green:** On-board unit technically ready for operation, all requirements for automatic toll collection are met.

**Red:** On-board unit not ready for operation in Germany, the requirements for automatic toll collection are not met.

**Flashing red:** Visual indication of faults that have not yet been acknowledged with the OK button, accompanied by acoustic error tones.

**Display**

- ⑦ Number of axles currently set

- ⑧ Service (DE = Germany)

- ⑨ Current weight class declaration

- ⑩ Display for active mobile communication (data transmission) with the Toll Collect data centre

- ⑪ Satellite reception display

- ⑫ Battery charge status (single-use or rechargeable)

**Signal tones**

⑬ **Acoustic signals:**

- Info sound → 🎵
- Warning sound → 🎵
- Fault sound → 🎵

BOSCH windshield only:  
Additional sounds when keys are activated

**Connection**

- ⑬ Power supply cable

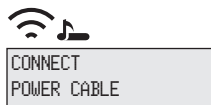
## Windshield On-Board Unit with flexible power supply



- ① The power supply for the BOSCH windshield On-Board Unit can be established via the cigarette lighter (SAE J563, diameter 21 mm).
- ② For power connection via an on-board socket (DIN ISO 4165, diameter 12 mm), the adapter must be removed.

As soon as the windshield On-Board Unit is connected to the power supply of your vehicle and when the ignition is switched on, the unit boots up and is ready for operation.

Ensure that the windshield On-Board Unit is permanently connected to the power supply of your vehicle before driving on toll roads. Attach the power cable so that the cable cannot be disconnected from the vehicle electrical system during travel or impair the operation of the vehicle.



If the power cable is removed during travel, the message **“CONNECT POWER CABLE”** appears. To view the operating display, reconnect the power cable.



If the power cable of the windshield On-Board Unit was removed for too long during operation and the battery no longer has sufficient capacity as a result, the LED switches to red and the windshield On-Board Unit shuts down with the error message **“OBU SWITCHING OFF LOW BATTERY”**.



If the power cable of the windshield On-Board Unit was removed and the vehicle is stationary for longer than three seconds, the LED switches to red and the On-Board Unit shuts down. The power cable must be reconnected before continuing the journey with the windshield On-Board Unit.

If the windshield On-Board Unit was installed without mobile communication, wait for the message **“PERSONALISATION SUCCESSFUL [OK]”** and acknowledge with the OK key. The unit then shuts down and the ignition must be switched off and on again.

If the windshield On-Board Unit is permanently connected to the vehicle electrical system, it behaves like a DIN standard On-Board Unit. It boots up when the ignition is switched on and shuts down when the ignition is switched off.



Please also note the safety instructions and legal information in the manufacturer's quick guide:

[https://downloads.bosch-carmultimedia.net/file\\_downloads/8637104220\\_ka\\_ws-obu\\_v2.pdf](https://downloads.bosch-carmultimedia.net/file_downloads/8637104220_ka_ws-obu_v2.pdf)

# 2 OPERATION

All vehicles and vehicle combinations (= vehicle and trailer) with a technically permissible maximum laden mass (F.1 on the vehicle registration certificate) of 3.51 tonnes or more are subject to toll. There is a legal obligation to check that the correct weight class and – for vehicles over 18 tonnes – the correct number of axles are set before starting each journey. The technically permissible maximum laden mass specified when registering the vehicle is permanently stored in the on-board unit. This technically permissible maximum laden mass is referred to below as the registered weight.

For vehicles with trailers, the technically permissible maximum laden mass to be declared is calculated as the sum of the technically permissible maximum laden mass of the vehicle and the trailer. The registered weight can be declared as the smallest technically permissible maximum laden. From 4.5 tonnes, a declaration in incremental steps of 1.5 tonnes is possible. When making the declaration, select a weight that is in the correct weight class and corresponds as closely as possible to the technically permissible maximum laden mass of your vehicle including trailer. For a gross vehicle weight over 18 tonnes, all axles of the vehicle and trailer must be specified.

Weight classes	Weight declaration	Axle declaration
3.51 t to 7.49 t	„3,7t“ – „4,5t“ – „6t“ * <i>(display: „3,51t ... 7,49t“)</i>	***
7.5 t to 11.99 t	„7,5t“ – „9t“ – „10,5t“ <i>(display: „7,5t ... 11,99t“)</i>	***
12 t to 18 t	„12t“ – „13,5t“ – „15t“ – „16,5t“ – „18t“ <i>(display: „12t ... 18t“)</i>	***
over 18 t	„>18t“ ** <i>(display: „&gt;18t“)</i>	Number of axles must be provided: up to 3 axles 4 axles from 5 axles

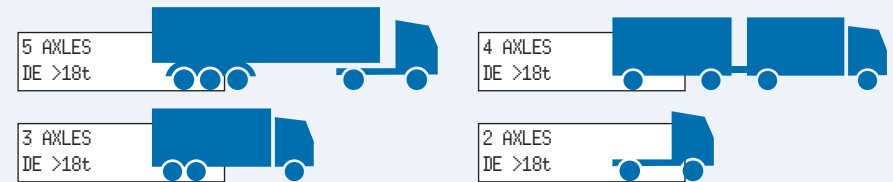
\* If the registered weight is between 3.51 and 7.49 tonnes, the registered weight (for example “3.7t” in the table) is displayed first when the OBU is started up. This can be changed to “4.5t”, “6t” or a higher technically permissible maximum laden mass. If the technically permissible maximum laden mass declared is to be reduced from “4.5t”, for example, “3.7t” can be selected again as the smallest value.

\*\* Over 18 t, no further weight declaration is possible.

\*\*\* The information on the number of axles has no impact on the toll fees.

If the gross vehicle weight and number of axles change due to a trailer being attached/detached, the gross vehicle weight and number of axles must be adjusted on the On-Board Unit before starting a journey.

With a weight over **18 tonnes**, please check that the correct number of axles is set before every journey – for example:



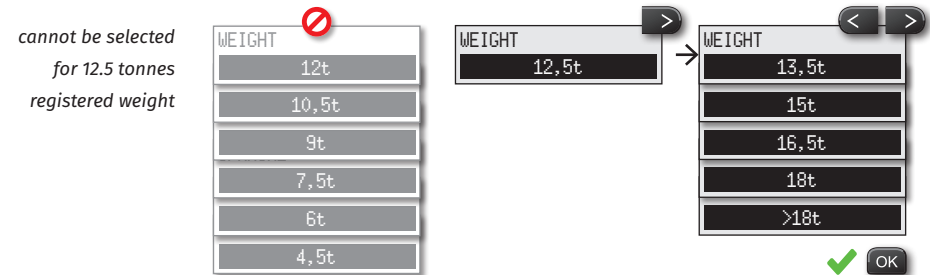
## 2.1 Entering vehicle data

After ignition but before beginning your journey, you will be automatically prompted by the On-Board Unit to enter the vehicle data relevant for toll collection.

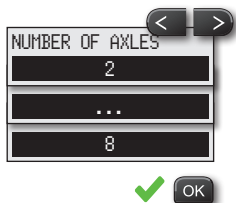
**Weight** After switching on the ignition, the weight that was set for the last journey is displayed. Check the weight and change it if necessary.

It is not possible to set a weight that is lower than the registered weight.

**Example** Registered weight: 12.5 tonnes



### Number of axles

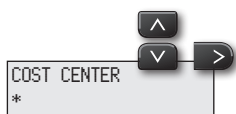


The “**NUMBER OF AXLES**” menu allows you to change the number of axles set when the On-Board Unit is started.

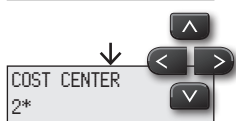
Select the correct number of axles between a minimum of two and a maximum of eight.

The number of axles cannot be set lower than the number of axles permanently saved in the On-Board Unit.

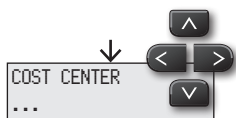
### Cost center



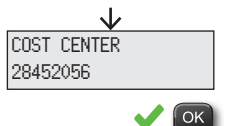
A cost centre can be defined for invoicing purposes before starting a journey. Entering a cost centre enables the toll costs to be invoiced for individual customer journeys, which can then be called up directly in the Toll Collect customer portal.



Enter your cost centre using the arrow keys. A maximum of eight digits can be entered. The individual digits can be selected with the arrow keys on the right and left. Confirm the desired cost centre with OK.



The end of the journey can be indicated under the menu item “**CASH CLOSURE**”. Further information can be found in chapter 2.3 “Menu settings” on page 13.

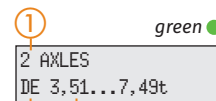


As soon as the vehicle is moving faster than 20 km/h, the operating display appears. The keys can no longer be actuated after this point.

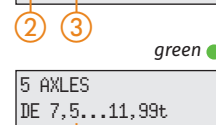
## 2.2 Operating displays

After starting the journey, the display will continuously show the selected weight class and the number of axles. Here are four examples of operating displays:

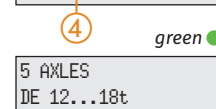
### Operating display on toll roads



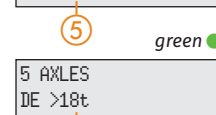
Vehicle with 2 axles  
Weight of 6 tonnes



Vehicle with 5 axles  
Weight of 9 tonnes



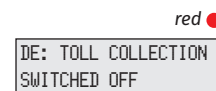
Vehicle with 5 axles  
Weight of 16.5 tonnes



Vehicle with 5 axles  
Weight of 40 tonnes

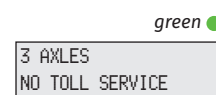
- ① Number of axles currently set
- ② Service area
- ③ Current weight class (3.51 t to 7.49 t)
- ④ Current weight class (7.5 t to 11.99 t)
- ⑤ Current weight class (12 t to 18 t)
- ⑥ Current weight class (over 18 t)

### Operating display when toll collection is switched off







If you want to switch off toll collection via the on-board unit to log the toll manually instead, you can switch off automatic toll collection in the menu “**TOLL COLLECTION**” either until the next time the on-board unit is restarted by selecting “**DE: MANUAL**” or permanently with the option “**DE: SWITCHED OFF**” (see chapter 2.3 “Menu setting”, page 13). Automatic toll collection can be switched on again here at any time.

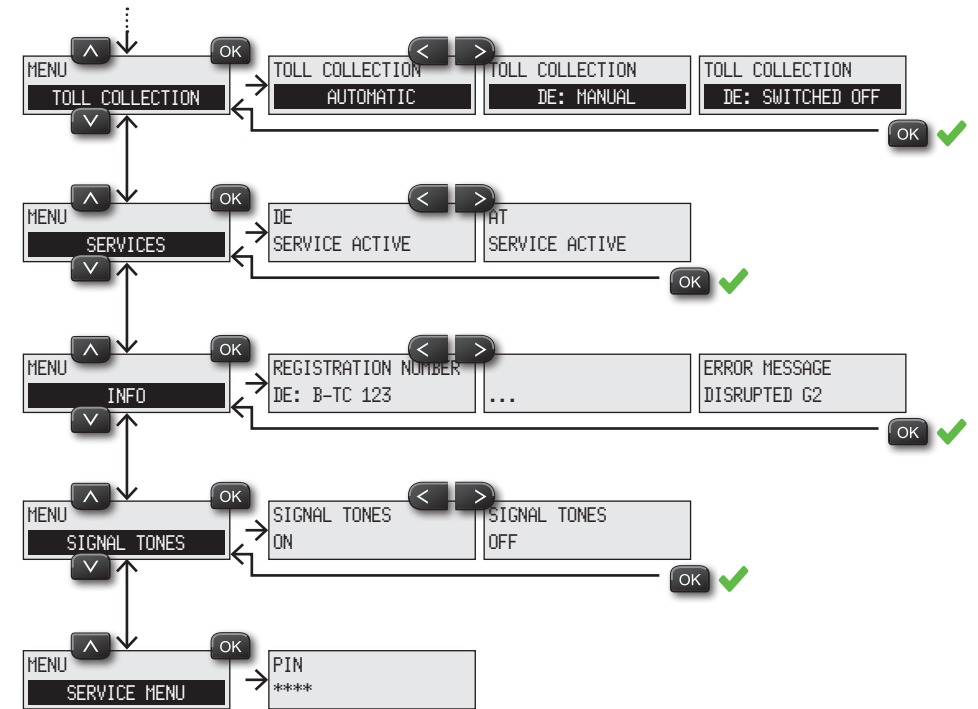
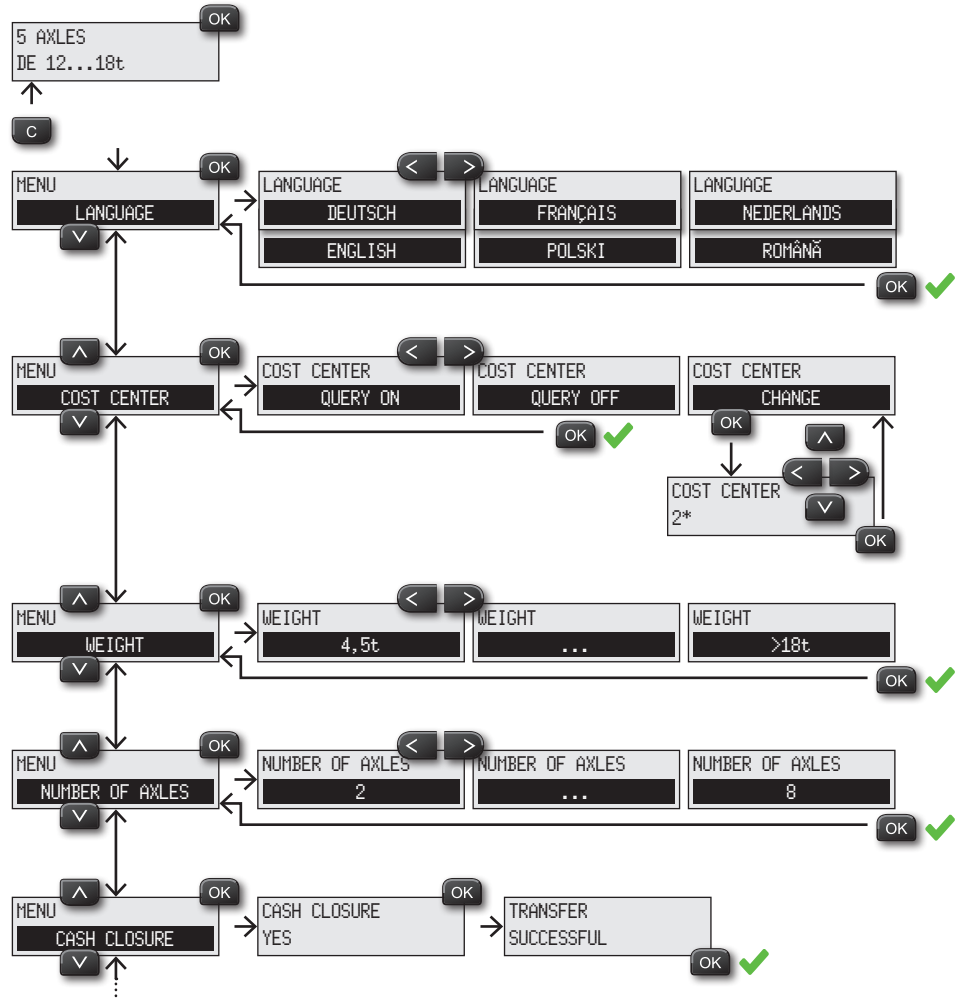
### Operating display when not on toll roads



The On-Board Unit is located outside the active toll service regions in Germany and Austria. No toll collection takes place.

## 2.3 Menu settings

-  Access the menu and confirm menu inputs
-  Scroll through menu entries
-  Select and set functions
-  Cancel inputs, go to higher menu level



### Language menu

In the **“LANGUAGE”** menu, one of the six display languages (German, English, French, Dutch, Polish or Romanian) can be selected. Press the OK key twice when this is displayed in order to access the menu.

### Cost centre menu

In this menu, you have the option of switching the cost centre query on or off or changing the cost centre.



After selecting the **“QUERY OFF”** function, the cost centre query no longer appears when the On-Board Unit starts up.



You can start the starting point for a journey before setting off with **“CHANGE”** and end it after the journey by pressing **“CHANGE”** again (see chapter 2.1 “Entering vehicle data” on page 10).

### Weight menu

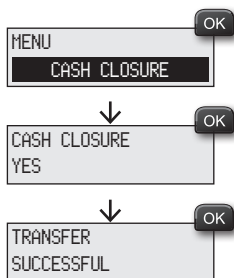
The weight of the vehicle set when entering the vehicle data can be changed in the menu **"WEIGHT"** (see chapter 2.1 "Entering vehicle data" on page 9).

### Number of axles menu

The number of axles set when entering the vehicle data can be changed in the menu **"NUMBER OF AXLES"** (see chapter 2.1 "Entering vehicle data" on page 10).

### Cash closure menu

The **"CASH CLOSURE"** function ends a journey for which a cost centre has been entered. The cash closure triggers transmission of the trip data, which is sent to the Toll Collect data centre. The toll costs for the journey will then be available to access online soon after in the customer portal.



**Please wait for the message "TRANSFER SUCCESSFUL" before switching off the ignition. If the message "TRANSFER FAILED" appears, the cash closure must be carried out again.**

### Toll collection menu

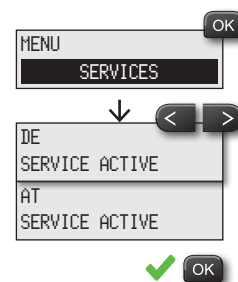
In this menu, you can switch automatic toll collection on or off (see chapter 2.3 "Entering vehicle data" on page 11).



**If a toll requirement applies, you must log your journey manually if automatic toll collection is switched off.**

### Services menu

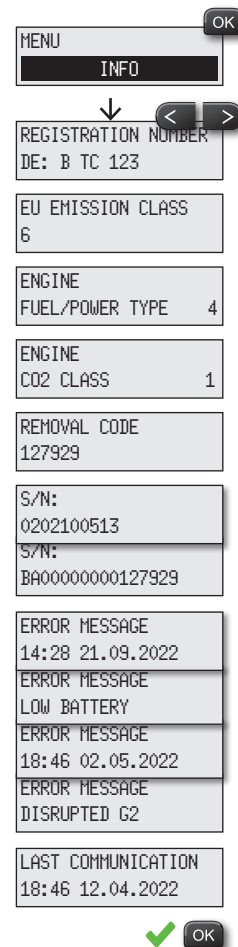
Toll collection via the On-Board Unit can be used in Germany and Austria (see chapter 3 "Toll collection in Austria" on page 19). The country services available on your On-Board Unit can be viewed as a status display in the **"SERVICES"** menu.



You can see the respective status of a service in the **"SERVICES"** menu. The display **"SERVICE ACTIVE"** means that the service can be used. The display **"SERVICE INACTIVE"** means that the service is not registered.

### Info menu

The **"INFO"** menu contains data about your vehicle already stored in the On-Board Unit, as well as information about current error messages.



Display of the licence plate number.

Display of the Euro emission class of the vehicle.

Display of the vehicle drive type.

Display of the vehicle CO<sub>2</sub> emission class.

Display code for the removal process.

Displays for the serial number of the On-Board Unit, Part 1 and 2.

Displays for the last and second to last error in the On-Board Unit with date, time and diagnosis information.

Display of the last successful communication with the Toll Collect data centre.

### Signal tones menu

The "SIGNAL TONES" menu has no function with the BOSCH DIN standard dashboard cutout On-Board Unit; the key tones can be activated here for the BOSCH windshield On-Board Unit.



### Service menu

The "SERVICE MENU" is protected by a PIN request. Access is reserved exclusively for Toll Collect service partners.

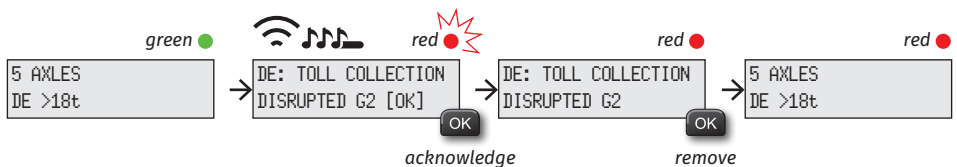


## 2.4 Error messages

The On-Board Unit automatically checks the technical requirements for error-free toll collection. If errors occur:

- » An error message appears on the display (with a two-digit error code in certain cases).
- » The LED lights up red and blinks to make it more noticeable.
- » The error tone, an acoustic signal with two short tones and one long tone, sounds. The error tone repeats every five minutes until you acknowledge the error message.

Error messages completely overlay the operating display; if there are multiple messages, the most recent is shown first.



Acknowledge the error message with the OK key. To return to the operating display, you can remove the message by pressing the OK key again.

**There is a risk of distraction when processing error messages during travel! Bring the vehicle to a stop in a suitable place before acknowledging an error message using the OK key on the On-Board Unit and turning off the error tone.**

**After an error message is received, the On-Board Unit does not collect toll fees. The On-Board Unit is not ready for operation. First, restart the On-Board Unit; if the problem persists, log on manually via online log-on or the Toll Collect app.**

### Error messages in the event of a fault or blocking of toll collection.



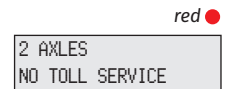
Error messages for a technical fault with a two-digit error code.



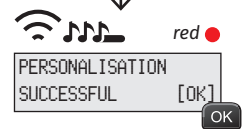
Error messages for a technical fault with a two-digit error code, which are only valid for toll routes in Germany.



Error messages if the On-Board Unit is blocked for toll routes in Germany. Please contact Toll Collect Customer Service free of charge by calling 0800 222 26 28 in Germany or 00800 0 222 26 28 outside Germany.



Display with red LED if the On-Board Unit is not yet ready for operation for toll routes in Germany after installation. Wait for the message "PERSONALISATION SUCCESSFUL [OK]" to appear and acknowledge it.

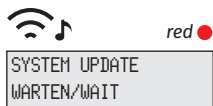


After the On-Board Unit is restarted, the operating display appears, along with a green LED to indicate that the unit is ready for operation. Check the number of axles and weight. Observe the note for windshield On-Board Units on page 7.



### Warning messages

Warning message for low battery level for DIN standard On-Board Units. The On-Board Unit is still operational. Have the battery replaced within the next four weeks.



### Info messages

Info messages if the On-Board Unit or connected DSRC module is carrying out a software update. Wait until the update is complete and the On-Board Unit has restarted if necessary. When the LED lights up green again and the operating display appears, the unit is ready for operation again.



Info messages on changes to vehicle data. The message relating to the request briefly appears first, followed by the info message on the data update. The On-Board Unit is briefly not ready for operation while the vehicle data is updated. Wait until the LED lights up green again and the operating display appears.



## 3 TOLL COLLECTION IN AUSTRIA

The BOSCH On-Board Unit can also be used for collecting tolls on toll roads in Austria if the toll service TOLL2GO for Austria has been enabled on the Toll Collect On-Board Unit. If there are other toll recording units in the vehicle, these must be switched off in Austria.

### Statutory provisions

- In the event of On-Board Unit malfunction in Austria, you are obliged to subsequently pay the toll at a GO sales point in accordance with the Tolling Regulations.**

Alternatively, you can always obtain a GO-Box at the GO sales point if your On-Board Unit has permanently failed.

### Information on the number of axles

- In Austria, the precise number of axles for the vehicle and trailer must always be provided.**

Please consult the valid version of the “Tolling Regulations for the Motorways and Expressways of Austria” for information on how to correctly determine the number of axles in Austria (vehicle category declaration); these regulations can be viewed at any time at [www.asfinag.at](http://www.asfinag.at).

### TOLL2GO service for toll collection in Austria



If your On-Board Unit has been enabled for toll collection in Germany and Austria, its operating mode will automatically switch over to the service provider in the country where you are located when you cross the border. Consult the “**SERVICES**” menu for information on service status.

AT  
SERVICE ACTIVE

AT  
SERVICE INACTIVE

The display “**AT SERVICE ACTIVE**” means that you can use the service. The display “**AT SERVICE INACTIVE**” means that the service is not activated.

### Operating displays on route sections within Austria

#### Service area Austria

##### – with activated toll service TOLL2GO

- ① Number of axles currently set
- ② Service (AT = Austria)
- ③ LED (green: indicates operational readiness in Germany but in Austria means nothing; red: indicates an error, see chapter 2.4 “Error messages”, page 16)

①  
green ●  
3 AXLES  
AT

①  
green ●  
3 AXLES  
NO TOLL SERVICE

##### – without TOLL2GO and in other countries outside Germany

- ① Number of axles currently set
- ② No toll is collected with the On-Board Units
- ③ LED (see above “Service area Austria – with activated toll service TOLL2GO”)



### Acoustic signals

When driving through a toll point in Austria, pay attention to short signal tones. They are different signal tones to those in Germany.



**ONE** short signal tone means that the toll transaction was successful.



**TWO** short signal tones mean that the transaction was successful, but you are requested to visit your nearest GO sales point. You will receive further information there. Failure to follow this request can result in the On-Board Unit being automatically blocked for toll collection in Austria.



**FOUR** short signal tones mean that the On-Board Unit is blocked for Austria. In this case, you must find a GO sales point within 5 hours and 100 kilometres and subsequently pay for the toll route sections that were not paid for correctly.



**NO** signal tone means that no transaction took place. The toll must be paid subsequently at a GO sales point.

### Error messages in the event of a fault or blocking of toll collection in Austria

red ●  
TOLL COLLECTION  
DISRUPTED XX

Error messages indicating a technical fault. Purchase a GO-Box immediately and contact your Toll Collect service partner.

red ●  
3 AXLES  
NO TOLL SERVICE

The On-Board Unit is not ready for operation. Purchase a GO-Box immediately.

green ●  
AT: TOLL COLLECTION  
BLOCKED

If the toll service for Austria is blocked, you must purchase a GO-Box immediately. “**AT SERVICE BLOCKED**” appears in the “**SERVICES**” menu. Contact Toll Collect Customer Service.

AT  
SERVICE BLOCKED

### Error messages with no impact on toll collection in Austria

red ●  
DE: TOLL COLLECTION  
DISRUPTED XX

With error messages starting with “**DE:**” on the display, toll collection can still take place error-free in Austria if the error message only appears **after the system has detected that you have entered Austria**. Pay attention to the signal tones as usual.

red ●  
DE: TOLL COLLECTION  
BLOCKED

If toll collection for Germany is blocked, toll fees can still be collected in Austria error-free, despite the red LED. Pay attention to the signal tones as usual.

