

ON-BOARD UNIT

USER MANUAL

Toll Collect GmbH, On-Board Unit User Manual, V 4.0, GB – as at 08/2017



i Note on the change to the display on the On-Board Unit and the weight declaration in this version of the User Manual.

In accordance with changes to the German Federal Trunk Road Toll Act, an extension of the toll requirement to all federal roads is planned for 1 July 2018. At the same time, weight classes will be introduced in addition to the existing axle categories.

The truck toll system will be updated in line with these changes. All On-Board Units can continue to be used. There will be changes to the display of the On-Board Unit.

In addition, an extended declaration of the vehicle weight will be required after July 2018. The change to the display will not be implemented on the effective date, but over a period of several weeks in the first half of 2018. The weight declaration will be enforceable from 1 June 2018 and will be obligatory from 1 July 2018.

The main part of this document covers the displays still used at present. An overview of the changes can be found starting on page 28.

Up-to-date user information on the current status is available online at www.toll-collect.de.

Responsible for content:

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Users of the automatic toll collection system are obliged to operate the On-Board Units correctly in accordance with Clause 32 of the General Standard Terms and Conditions of Toll Collect GmbH. In particular, they are obliged to ensure that the On-Board Unit is ready for use and that the details concerning the vehicle status are correct before using toll roads. Toll Collect GmbH hereby informs users that the On-Board Unit records timestamped information concerning the simultaneous starting of the On-Board Unit with the truck as well as all changes to the settings made by the driver on the On-Board Unit and errors with regard to the readiness of the On-Board Unit for toll collection.

As part of their toll enforcement activities, officials from the Federal Office for Goods Transport can request this information from each On-Board Unit and carry out a timestamped check to determine whether a customer is fulfilling his obligations.

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1 General information

! Please familiarise yourself with the functions of your On-Board Unit before starting your first journey. The On-Board Unit must not be operated while driving.

- The driver is obliged to set the correct vehicle weight and number of axles before driving on toll roads in Germany.
- A** ■ Before driving on toll roads in Austria, the correct number of axles (category) must be declared in accordance with the “Tolling Regulations for the Motorways and Expressways of Austria (Mautordnung für die Autobahnen und Schnellstraßen Österreichs)”. The current version of the tolling regulations is available at www.asfinag.at.
- In Germany, you must book the toll route segment manually using the Toll Collect app, at a toll station terminal or via online log-on if the On-Board Unit malfunctions.
- In Austria, you must pay the toll retroactively at a GO distribution outlet in accordance with the tolling regulations if the On-Board Unit malfunctions. In the event of permanent On-Board Unit failure, a GO-Box can be obtained at any time from the GO distribution outlet.
- The On-Board Unit must have been installed and sealed in your vehicle by an authorised Toll Collect Service Partner as per the instructions.
- Do not interfere with the On-Board Unit or the cables and do not change the angle of inclination.
- Do not use any sharp-edged or pointed objects to press the buttons.
- Do not use any abrasive cleaning agents or solvents such as thinners or benzine to clean the On-Board Unit. Clean the OBU with a slightly damp cloth.
- In order to guarantee that the On-Board Unit will work properly, there must be no objects between the windscreen and the DSRC module. Similarly, in the case of the Continental dashboard-mounted unit, objects must not be placed next to or on the On-Board Unit or positioned above the On-Board Unit.

2 The automatic toll collection system

Dear Customer,

The On-Board Unit is used for automatic toll collection on toll roads in Germany and for optional toll collection on toll roads in Austria.



From 1 July 2018, in accordance with changes to the German Federal Trunk Road Toll Act, an extension of the toll requirement to all federal roads as well as the introduction of weight classes is planned. The technology of the On-Board Units of the automatic toll collection system will be converted for this purpose. You will receive a new display and will be required to specify the gross vehicle weight within the new weight classes. The weight declaration will be enforceable from 1 June 2018 and will be obligatory from 1 July 2018. You will find all of the necessary information on the display change and the new weight classes in Chapter 5 of this User Manual.

The functions of the On-Board Unit in Germany are as follows:

- Continuous determination of the vehicle position using satellite technology
- Transmission of vehicle data and vehicle features to the toll collection centre
- Reporting of (visual and acoustic) interference that prevents automatic toll collection
- Display of the vehicle declaration and the toll service used on the display



The functions of the On-Board Unit in Austria remain unchanged:

- Position-independent tolling of vehicles on toll gantries installed over the road using microwave (DSRC) technology
- Signalling of toll collection by means of signal tones only
- Reporting of (visual and acoustic) interference that prevents toll collection

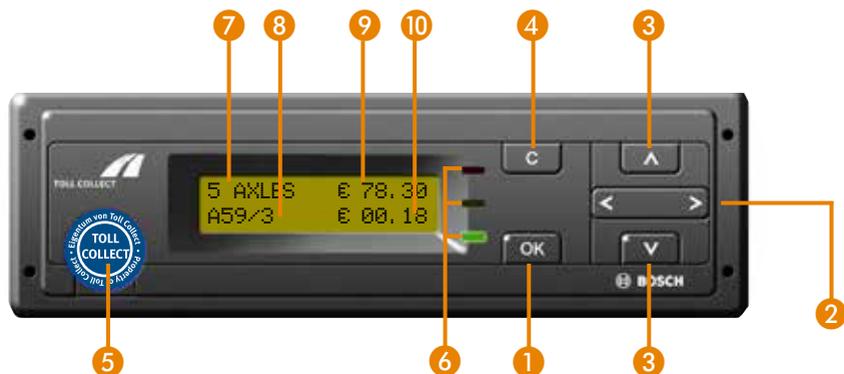
Please read this User Manual carefully and familiarise yourself with the functions of the On-Board Unit. Keep all of the supplied documentation in a safe place.

We wish you a safe and pleasant journey.

Toll Collect GmbH

3 Controls

3.1 BOSCH and BOSCH 2 On-Board Units



i To open the menu, press the **OK** button once and you can then use the **▼** button to scroll through the menu items.

The menu navigation of the BOSCH On-Board Unit looks slightly different to that of the Grundig and Continental On-Board Units, but the sequence and operation are exactly the same.

An example of the differences is illustrated in the image below:

BOSCH ↓	Grundig/Continental ↓
MENU NUMBER OF AXLES	MENU NUMBER OF AXLES
NUMBER OF AXLES 2	NUMBER OF AXLES 2

In contrast to the displays for the other On-Board Units, the euro symbol (€) is shown after the toll amount.

Buttons

- 1 OK button:**
For calling up the menu, for confirming menu selections and messages
- 2 Right and left arrow buttons:**
For selecting and setting functions
- 3 Up and down arrow buttons:**
For moving forwards and backwards in the menu
- 4 Clear button:**
For cancelling entries
For switching to a higher menu level
- 5 Service interface:**
For service purposes only
(Please take care not to damage the seal)

LED

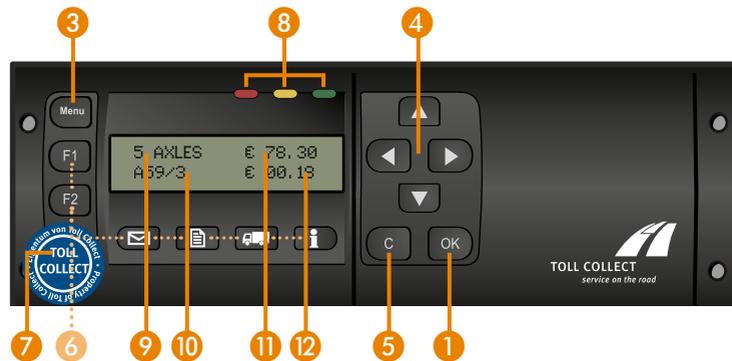
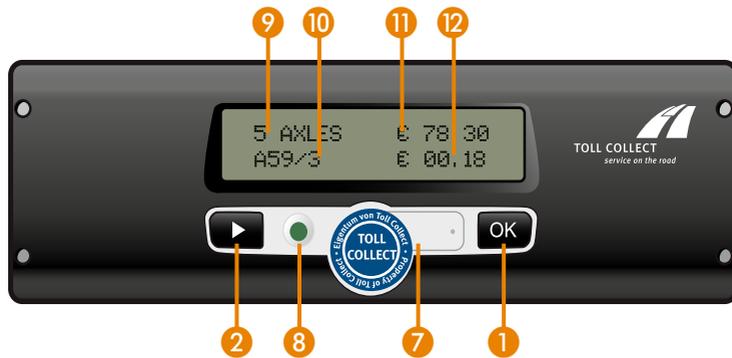
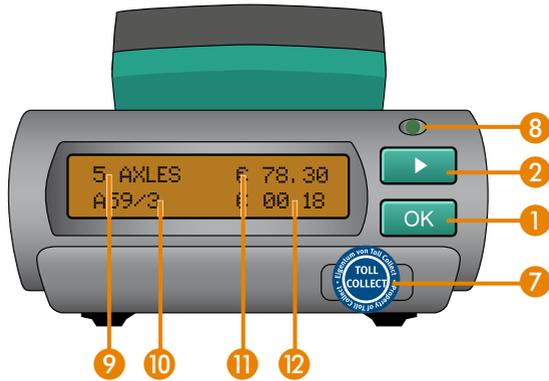
- 6 Green:**
On-Board Unit ready for use; all requirements for automatic toll collection have been met
- Red:**
The On-Board Unit is not participating in the automatic procedure, as it is not required to pay a toll according to the declaration or is not ready for use according to the display information

Display

- 7** Most recent setting for number of axles
- 8** Motorway being driven on and next junction or federal road being driven on with federal road number
- 9** Total toll amount
- 10** Partial route amount

i **The controls of the second generation of the BOSCH On-Board Unit are the same as those of the first generation. The old devices still have two service interfaces.**

3.2 Grundig and Continental On-Board Units



Buttons

- 1 OK button:**
For confirming menu selections and messages
- 2 Selection button:**
For selecting and setting functions
For moving forwards in the menu
- 3 Menu button:**
For calling up and exiting the menu
- 4 Arrow buttons:**
For moving forwards and backwards in the menu
For selecting settings and digits
- 5 Clear button:**
For cancelling entries
For switching to a higher menu level
- 6** Button has no function at present
- 7 Service interface:**
For service purposes only
(Please take care not to damage the seal)

LED

- 8 Green:**
On-Board Unit ready for use; all requirements for automatic toll collection have been met
- Red:**
The On-Board Unit is not participating in the automatic procedure, as it is not required to pay a toll according to the declaration or is not ready for use according to the display information

Display

- 9** Most recent setting for number of axles
- 10** Motorway being driven on and next junction or federal road being driven on with federal road number
- 11** Total toll amount
- 12** Partial route amount

4 Operation

4.1 Entering customer data

Before the start of your journey, you will be instructed automatically by the On-Board Unit to enter your customer data when the ignition is switched on.

Weight The weight of the vehicle is based on the maximum permissible weight of the combination (tractor unit including trailer or semi-trailer). This information is only relevant for toll payment in Germany.

The display text "VEHICLE WEIGHT" is only displayed if the vehicle weight recorded on your On-Board unit is under 7.5 tons. In this case you are instructed to enter the gross vehicle weight. With a registration of a gross vehicle weight of 7.5 tons or more, entry begins automatically with the querying of the number of axles.

BOSCH/Grundig ↓

Continental ↓

VEHICLE WEIGHT
<7.5t

VEHICLE WEIGHT
>=7.5t

Use the arrow buttons (for Grundig) and (for the BOSCH On-Board Unit) to choose between (less than 7.5 tons) and (7.5 tons or more). Confirm the correct vehicle weight with .

Use the button to choose between (less than 7.5 tons) and (7.5 tons or more). Confirm the correct vehicle weight with .

For a weight class of (less than 7.5 tons), no toll is collected on toll roads in Germany. "AUTOMATIC COLLECT INACTIVE" appears automatically on the display and the red LED lights up.

Toll payment in Austria does not depend on the vehicle weight setting, but does require correct specification of the number of axles. You can change the number of axles at any time in "NUMBER OF AXLES".

For information on the correct counting of the number of axles in Austria (declaration of vehicle category), please refer to the current version of the "Tolling Regulations for the Motorways and Expressways of Austria" (Mautordnung für die Autobahnen und Schnellstraßen Österreichs), which is available at www.asfinag.at.

Number of axles

The most recent setting for the number of axles appears automatically on the display.

BOSCH/Grundig ↓

Continental ↓

NUMBER OF AXLES
2
:
:
NUMBER OF AXLES
8

Use the arrow buttons (for Grundig) and (for the BOSCH On-Board Unit) to choose between a minimum of 2 and a maximum of 8 axles. Confirm the correct number of axles with .

Use the button to choose between a minimum of 2 and a maximum of 8 axles. Confirm the correct number of axles with .

Please note that you cannot set a number of axles that is smaller than the number of axles recorded on your On-Board Unit.

Route data

In Germany, the toll amount payable within a route can be totalised by the On-Board Unit. With this function you choose whether you want to start a new route or continue with the current route after starting a journey.

This function is not available for toll collection in Austria.

BOSCH/Grundig ↓

Continental ↓

NEW ROUTE?
YES

NEW ROUTE?
NO

Use the arrow buttons (for Grundig) and (for the BOSCH On-Board Unit) to choose between to start a new route or to continue with the current route. Confirm the desired route data with .

Use the button to choose between to start a new route or to continue with the current route. Confirm the desired route data with .

If you select YES, the total toll amount is reset on the display and starts with . If you select NO, the partial route amounts are added to the total toll amount.

- i** When you select NO, the On-Board Unit switches automatically to the operating display. The entries for a cost centre are not required; if a cost centre was entered for the previous route, this is applied.

Cost centre You can enter a cost centre for your route.

COST CENTRE

:

COST CENTRE
12345678

BOSCH/Grundig ↓

Enter the first digit of your cost centre using the or buttons. To switch to the next digit, press the button. Repeat these steps to enter additional digits. To correct an entry, use the button to return to the previously entered digits. Confirm the desired cost centre with .

Continental ↓

Enter the first digit of your cost centre using the button. To switch to the next digit, press the button. Repeat these steps to enter additional digits. To correct the previously entered digits, use the button to select the function and then confirm with . You can now correct the previously entered digits using the button. Confirm the desired cost centre with .

- i** A maximum of 8 digits can be entered for a cost centre.



For the BOSCH and Grundig On-Board Unit:



As soon as the vehicle starts to move, the customer data query is no longer displayed. The display switches automatically to operating mode during the journey and the set number of axles and the vehicle weight from the previous route are applied.



For the Continental On-Board Unit only:



When the vehicle has been moving for more than three seconds, the customer data query is no longer displayed. The display switches automatically to operating mode and the set number of axles and the vehicle weight from the previous route are applied.

4.2 Toll collection services in Germany and Austria

- A** If your On-Board Unit is authorised for toll collection in Germany and Austria, the operating mode switches automatically to the respective service of the country that you are in after you cross a border. Information on the service status is available in the “Services” menu:

BOSCH/Grundig ↓

Continental ↓

MENU
SERVICES

DE
ACTIVE

AT
ACTIVE

Select the On-Board Unit menu with the  button. Use  for the BOSCH On-Board Unit. Use the  or  buttons to scroll through the various menu functions until you reach “SERVICES”. Press  to open the “SERVICES” menu. The current operating mode “DE ACTIVE” for Germany or “AT ACTIVE” for Austria is displayed in the “SERVICES” menu.

Use the  button to switch from the selected sub-menus back to the main menu. Use the  or  button (for the BOSCH On-Board Unit) to switch from the main menu back to the operating display.

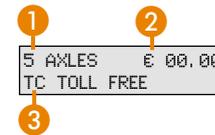
To call up the menu, keep pressing the  button in operating display mode until  appears on the display. Confirm  by pressing . The On-Board Unit switches automatically to the main menu. When you have opened the menu, scroll with the  button until “SERVICES” is displayed. Press  to open the “SERVICES” menu. The current operating mode “DE ACTIVE” for Germany or “AT ACTIVE” for Austria is displayed in the “SERVICES” menu. The On-Board Unit returns to the main menu when you press .

To exit the menu, keep pressing the  button until “MENU BACK” appears. Confirm “MENU BACK” by pressing . The Continental On-Board Unit returns to the operating display automatically.

4.3 Operating displays

4.3.1 Operating displays on routes in Germany

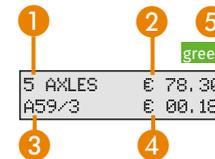
Toll-free route


 1 2
 5 AXLES € 00,00
 TC TOLL FREE
 3

You are on a toll-free route in Germany.

- 1 Most recent setting for number of axles
- 2 Total toll amount
- 3 Message indicating toll-free route

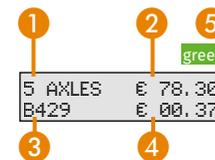
Toll route on a German motorway


 1 2 5
 5 AXLES € 78,30
 B59/3 € 00,18
 3 4 green

You are on a toll motorway route in Germany.

- 1 Most recent setting for number of axles
- 2 Total toll amount
- 3 Motorway being driven on and next junction
- 4 Partial route amount
- 5 LED is green (ready for use)

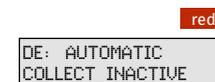
Toll route on a federal road


 1 2 5
 5 AXLES € 78,30
 B429 € 00,37
 3 4 green

You are on a federal toll road in Germany.

- 1 Most recent setting for number of axles
- 2 Total toll amount
- 3 Federal road being driven on with federal road number
- 4 Partial route amount
- 5 LED is green (ready for use)

Automatic collect inactive


 DE: AUTOMATIC
 COLLECT INACTIVE red

The On-Board Unit is ready for use in the following cases, although automatic toll collection does not take place:

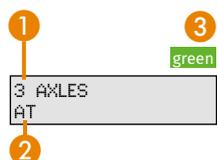
1. A maximum gross vehicle weight of  was set.
2. The setting “TOLL COLLECTION MANUAL” was selected in the “TOLL COLLECTION” sub-menu. In this case, you book manually via online log-on, using the Toll Collect app or at a toll station terminal.

4.3.2 Operating displays on routes in Austria

A On toll roads in Austria, toll collection with the On-Board Unit is performed with acoustic signals only. The acoustic signals cannot be switched off. The LEDs and displays of the On-Board Unit do not provide any toll collection information on these routes.

The On-Board Unit emits an acoustic signal following successful toll payment when a toll gantry is passed. If the On-Board Unit is disabled, four acoustic signals are output in succession. If no acoustic signal sounds when passing a toll gantry in Austria, toll collection has probably not taken place. You must pay the outstanding toll retroactively at a GO distribution outlet. In the event of permanent On-Board Unit failure, a GO-Box can be obtained at any time from the GO distribution outlet.

A Austria service area – with AT service activated



You are in the Austria service area and have registered your Toll Collect On-Board Unit for Austrian toll collection.

- 1 Most recent setting for number of axles
- 2 Country code/country designation for Austria
- 3 LED is green (no meaning)

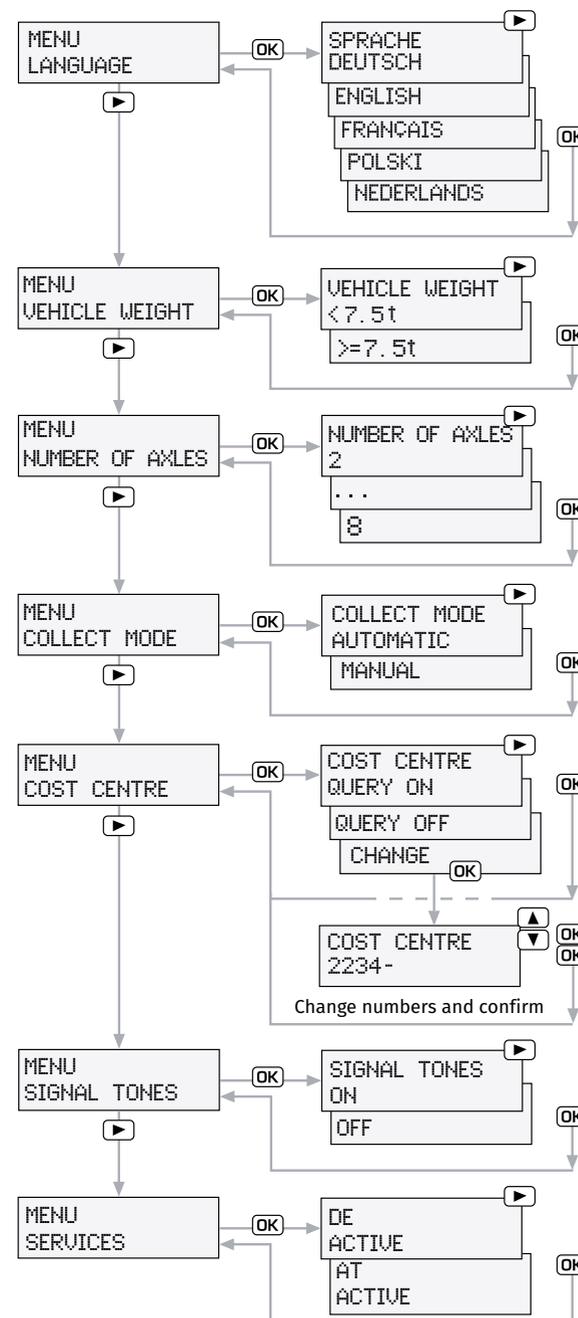
A Austria service area – without optional AT service



You are in the Austria service area, but have not registered your Toll Collect On-Board Unit for Austrian toll collection.

- 1 Most recent setting for number of axles
- 2 Toll collection with the On-Board Unit does not take place
- 3 LED is green (no meaning)

4.4 Menu settings



Continental
In the case of the Continental On-Board Unit, you will receive a confirmation message after changing a setting.

! The weight declaration will be enforceable from 1 June 2018 and will be obligatory from 1 July 2018. You will find all of the necessary information on the new weight classes in Chapter 5 of this User Manual.

i The “SERVICE”/“SERVICE MENU” menu is only required for servicing purposes at the workshop.

i The display messages provided may vary slightly depending on the hardware type and the installed software version.

When an On-Board Unit is ready for use, you can make various settings in the menu to suit your preferences.



The menu can only be operated when the vehicle is stationary.

Opening the main menu

Select the main menu with the  button (use  for the BOSCH On-Board Unit).

BOSCH/Grundig ↓

Continental ↓

To call up the main menu, keep pressing the  button in operating display mode until  appears on the display. Confirm  by pressing .

Navigation in the sub-menu

Use the buttons   (for the Grundig On-Board Unit) or   (for the BOSCH On-Board Unit) to scroll through the various menu functions. Press  to open the desired sub-menu.

When you have opened the menu, use the  button to scroll through the various menu functions. Press  to open the desired sub-menu. Select the desired function using the  button. Confirm the desired function with . Repeat these steps to set additional functions.

Exiting the main menu

Use the  button to switch from the selected sub-menus back to the main menu. Use the  button ( for the BOSCH On-Board Unit) to switch from the main menu back to the operating display.

To exit the menu, keep pressing the  button until “MENU BACK” appears. Confirm “MENU BACK” by pressing . The Continental On-Board Unit returns to the operating display automatically.



If more than 10 seconds pass without any button being pressed after calling up the menu, or if the vehicle starts to move when the menu is open, the On-Board Unit switches automatically to the operating display.

Language menu

MENU
LANGUAGE

SPRACHE
DEUTSCH

⋮

TAAL
NEDERLANDS

BOSCH/Grundig ↓

In the “LANGUAGE” menu, use the  or  buttons to choose between “DEUTSCH, ENGLISH, FRANÇAIS, POLSKI or NEDERLANDS”. Confirm the desired language with .

Continental ↓

In the “LANGUAGE” menu, use the  button to choose between “DEUTSCH, ENGLISH, FRANÇAIS, POLSKI or NEDERLANDS”. Confirm the desired language with . “LANGUAGE CHANGED” appears on the display and the unit returns automatically to the main menu.

Vehicle weight menu

MENU
VEHICLE WEIGHT

VEHICLE WEIGHT
<7.5t

VEHICLE WEIGHT
>=7.5t

BOSCH/Grundig ↓

In the “VEHICLE WEIGHT” menu, use the arrow buttons   for Grundig and   for the BOSCH On-Board Unit to choose between 7.5t (less than 7.5 tons) and 7.5t (7.5 tons or more). Confirm the correct vehicle weight with .

Continental ↓

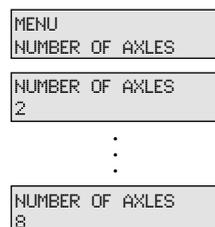
In the “VEHICLE WEIGHT” menu, use the  button to choose between 7.5t (less than 7.5 tons) and 7.5t (7.5 tons or more). Confirm the correct vehicle weight with . “VEHICLE WEIGHT CHANGED” appears on the display and the unit returns automatically to the main menu.



For a weight class of 7.5t (less than 7.5 tons), no toll is collected on toll roads in Germany. “AUTOMATIC COLLECT INACTIVE” appears automatically on the display and the red LED lights up.

Number of axles menu

You can change the number of axles that was set when entering the customer data at any time in the “NUMBER OF AXLES” menu.



To change the number of axles, use the **◀** or **▶** button to choose between a minimum of 2 and a maximum of 8 axles. Confirm the correct number of axles with **OK**.

BOSCH/Grundig ↓

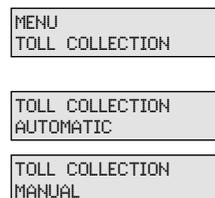
Use the **▶** button to choose between a minimum of 2 and a maximum of 8 axles. Confirm the correct number of axles with **OK**. “NUMBER OF AXLES CHANGED” appears on the display and the unit returns automatically to the main menu.



Please note that you cannot set a number of axles that is smaller than the number of axles recorded on your On-Board Unit.

Toll collection menu

Automatic toll collection with the On-Board Unit can be deactivated for the German road network if required. In Austria, toll collection with the On-Board Unit is always activated as long as the vehicle is authorised for the service for Austria.



In the “TOLL COLLECTION” menu, use the **◀** or **▶** buttons to choose between automatic and manual toll collection. Confirm the desired toll collection method with **OK**. When “TOLL COLLECTION MANUAL” is set, “DE: AUTOMATIC COLLECT INACTIVE” appears automatically on the display and the red LED lights up.

BOSCH/Grundig ↓

Continental ↓

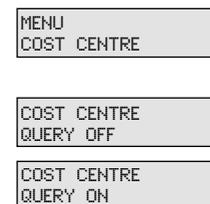
In the “TOLL COLLECTION” menu, use the **▶** button to choose between automatic and manual toll collection. Confirm the desired toll collection method with **OK**. “TOLL COLLECTION CHANGED” appears on the display and the unit returns automatically to the main menu. When “TOLL COLLECTION MANUAL” is set, “DE: AUTOMATIC COLLECT INACTIVE” appears automatically on the display and the red LED lights up.



With the manual toll collection procedure in Germany, you book via online log-on, using the Toll Collect app or at a toll station terminal.

Cost centre menu

You can activate or deactivate the cost centre query as well as change an existing cost centre. A maximum of 8 digits can be entered for a cost centre.



In the “COST CENTRE” menu, use the **◀** or **▶** buttons to choose between “QUERY ON”, “CHANGE” and “QUERY OFF”. Confirm the desired setting with **OK**.



To change a cost centre, proceed as follows: Enter the first digit of your cost centre using the **▲** or **▼** buttons.

To switch to the next digit, press the **▶** button. Repeat these steps to enter additional digits. To correct a number, use the **◀** button to return to the previously entered digits. Confirm the desired cost centre with **OK**.

BOSCH/Grundig ↓

In the “COST CENTRE” menu, use the **▶** button to choose between “QUERY ON”, “CHANGE” and “QUERY OFF”. Confirm the desired setting with **OK**. With “QUERY ON” and “QUERY OFF”, “COST CENTRE CHANGED” appears on the display and the unit returns automatically to the main menu.

To change a cost centre, proceed as follows: Enter the first digit of your cost centre using the **▶** button.

To switch to the next digit, press **OK**. Repeat these steps to enter additional digits. To correct the previously entered digits, use the **▶** button to select the **←** function and then confirm with **OK**.

(Continued →)

(Continued)

BOSCH/Grundig ↓**Continental** ↓

You can now correct the previously entered digits using the  button. After entering the desired cost centre, confirm your entry with . "COST CENTRE ACCEPTED" appears on the display and the unit returns automatically to the main menu.



When a new cost centre is entered, the total toll amount is reset on the display and starts with .

Signal tones menu

The signal tones for successfully acknowledging toll collection can be deactivated for toll roads in Germany. In Austria, toll collection must always be signalled using the tones, which cannot therefore be switched off.

In the "SIGNAL TONES" menu, the acoustic signal tones of the On-Board Unit can be switched on or off for toll roads in Germany.

BOSCH/Grundig ↓**Continental** ↓




In the "SIGNAL TONES" menu, use the  or  buttons to choose between the functions "SIGNAL TONES ON" and "SIGNAL TONES OFF". Confirm the desired setting with .

In the "SIGNAL TONES" menu, use the  button to choose between "SIGNAL TONES ON" and "SIGNAL TONES OFF". Confirm the desired setting with . "SIGNAL TONES CHANGED" appears on the display and the unit returns automatically to the main menu.



Warnings and error messages are still signalled acoustically by the On-Board Unit in all situations even when signal tones are switched off.

Services menu

If your On-Board Unit is authorised for toll collection in Germany and Austria, the operating mode switches automatically to the respective service of the country that you are in after you cross a border. You can see the available services on your On-Board Unit in the "Services" menu.

BOSCH/Grundig ↓**Continental** ↓


Select the On-Board Unit menu with the button  (for the Grundig On-Board Unit) or  (for the BOSCH On-Board Unit). Use the  or  buttons to scroll through the various menu functions until you reach "SERVICES".

To call up the menu, keep pressing the  button in operating display mode until  appears on the display. Confirm  by pressing .




Press  to open the "SERVICES" sub-menu. The current operating mode "DE ACTIVE" for Germany or "AT ACTIVE" for Austria is displayed in the "SERVICES" menu.

The On-Board Unit switches automatically to the main menu. When you have opened the menu, scroll with the  button until "SERVICES" is displayed. The current operating mode "DE ACTIVE" for Germany or "AT ACTIVE" for Austria is displayed in the "SERVICES" menu. The On-Board Unit returns to the main menu when you press .

Use the  button to switch from the selected sub-menus back to the main menu. Use the  button ( for the BOSCH On-Board Unit) to switch from the main menu back to the operating display.

On the BOSCH On-Board Unit, the  button also switches from the sub-menus back to the main menu, and to the operating display when pressed again.

To exit the menu, keep pressing the  button until "MENU BACK" appears. Confirm "MENU BACK" by pressing . The Continental On-Board Unit returns to the operating display automatically.



Service statuses

In the “SERVICES” menu, you can see the current status of a service. Service “ACTIVE” means that you can use the service. Service “INACTIVE” means that the service has not been booked (currently only applies to Service AT). Service “DEFECTIVE” indicates a malfunction of the On-Board Unit, please contact your service partner. “BLOCKED DE” or “BLOCKED AT” is shown on the display when a block is initiated by Toll Collect. The status in the Services menu is “BLOCKED”. In this case, please contact Toll Collect Customer Service.

Service menu

```
MENU
SERVICE
```

```
PIN
****
```

The “SERVICE” menu (“SERVICE MENU” for BOSCH) is secured by a PIN request. Access is reserved exclusively for Toll Collect Service Partners.

4.5 Warnings and error messages

The On-Board Unit automatically checks specific technical requirements that must be met for proper toll collection operation in Germany and Austria. If one or more of these requirements are at risk or lost:

- An acoustic signal sounds (error tone)
- An error message appears on the display (in some cases with a diagnosis number)
- The LED lights up red (only relevant for toll collection in Germany)



For more accurate troubleshooting, error messages are also displayed with a diagnosis number in brackets after the display message. The diagnosis number assists the Service Partner in troubleshooting. Please make a note of this number and give it to the Service Partner along with the exact display message. Details of error messages and their meaning for the respective service area are provided later in this document.

Possible warnings and error messages are either

1. Messages that refer to a technical fault in the On-Board Unit and its installation (your contact in this case is the Toll Collect Service Partner) or
2. Messages that relate to the toll collection service and its administration (your contact in this case is Toll Collect Customer Service).

4.5.1 Warnings and error messages for technical faults

Operating data invalid

red

```
DE: OPERATING
DATA INVALID
```

The message “DE: OPERATING DATA INVALID” appears when there is no valid operating data for the automatic toll collection system in Germany. This message is only relevant for toll collection in Germany. In Austria, the toll can continue to be collected despite this error message.

 The operating data is updated automatically every time the On-Board Unit is started. When the message “DE: OPERATING DATA INVALID” appears, please switch on the ignition again after a waiting period of at least 5 minutes and check whether the operating data has been updated. If “DE: OPERATING DATA INVALID” continues to appear after 24 hours and after repeated start-up of the ignition, please contact your Toll Collect Service Partner. The display “OPERATING DATA INVALID” will no longer apply following the introduction of central toll collection.

 **If the operating data is invalid, the On-Board Unit will not be ready for the automatic toll collection system in Germany when you drive from Austria into Germany. Before crossing the border, switch on the ignition and check whether the operating data has been updated. If the problem persists even after starting the On-Board Unit again before crossing the border, book manually via online log-on, using the Toll Collect app or at a toll station terminal.**

GPS error

 DE: GPS ERROR SERVICE (X)

A

The message “DE: GPS ERROR SERVICE” plus a diagnosis number appears if GPS (Global Positioning System) reception is interrupted. In this case, please contact your Toll Collect Service Partner. This message is only relevant for toll collection in Germany. In Austria, the toll can continue to be collected despite this error message provided the error message **only appears after driving into Austria has been recognised**.

 **If GPS reception is interrupted, the On-Board Unit will not be ready for the automatic toll collection system in Germany when you drive from Austria into Germany. If the problem persists even after starting the On-Board Unit again before crossing the border, book manually via online log-on, using the Toll Collect app or at a toll station terminal.**

OBU defective

 OBU DEFECTIVE SERVICE (X)

The message “OBU DEFECTIVE SERVICE” plus a diagnosis number appears when there is a technical fault in the On-Board Unit. In this case, please contact your Toll Collect Service Partner.



If the On-Board Unit is defective, it is not ready for the automatic toll collection system. In Germany, you should therefore book manually via online log-on, using the Toll Collect app or at a toll station terminal. In Austria, you must purchase a GO-Box in this case.

GSM error

 GSM ERROR SERVICE (X)

A

The message “GSM ERROR SERVICE” plus a diagnosis number appears when the On-Board Unit has only limited or no access to the mobile network. In this case, please contact your Toll Collect Service Partner. In Austria, the toll can continue to be collected despite this error message.



The On-Board Unit is not ready for use. In Germany, you should therefore book manually via online log-on, using the Toll Collect app or at a toll station terminal.

DSRC defective

 DSRC DEFECTIVE SERVICE



The message “DSRC DEFECTIVE SERVICE” appears if a DSRC module is defective. In this case, please contact your Toll Collect Service Partner.

The On-Board Unit is not ready for use. In Germany, you should therefore book manually via online log-on, using the Toll Collect app or at a toll station terminal. In Austria, you must purchase a GO-Box in this case.

4.5.2 Warnings and error messages for the toll collection service

Check credit line

 CHECK CREDIT LINE

“CHECK CREDIT LINE” This message is displayed if the On-Board Unit is unable to send its collection data to the toll collection centre for an extended period of time. In this case, please contact your Toll Collect Service Partner. The On-Board Unit remains operationally ready for the automatic toll collection system for a certain period.



The message “CHECK CREDIT LINE” will no longer apply following the introduction of central toll collection.

Unit blocked

red

UNIT BLOCKED

The message “UNIT BLOCKED” appears when the operator has initiated disabling of the On-Board Unit for all services in Germany and Austria. In this case, please contact Toll Collect Customer Service directly.



A

The On-Board Unit is not ready for use. In Germany, you should therefore book manually via online log-on, using the Toll Collect app or at a toll station terminal. In Austria, you must purchase a GO-Box in this case.

Service file defective

red

SERVICE FILE DEFECTIVE

The message “SERVICE FILE DEFECTIVE” appears in the event of a services or service defect as a result of inconsistencies in the On-Board Unit data. In this case, please contact your Toll Collect Service Partner directly.



A

The On-Board Unit is not ready for use. In Germany, you should therefore book manually via online log-on, using the Toll Collect app or at a toll station terminal. In Austria, you must purchase a GO-Box in this case.

Blocked DE

red

BLOCKED DE

The message “BLOCKED DE” appears when the operator has initiated disabling of the On-Board Unit for toll collection in Germany. In this case, please contact Toll Collect Customer Service directly.



A

The On-Board Unit is not ready for use. In Germany, you should therefore book manually via online log-on, using the Toll Collect app or at a toll station terminal. In Austria, the toll can continue to be collected despite this message.

Blocked AT

green

BLOCKED AT

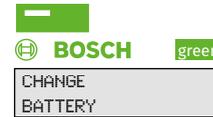
The message “BLOCKED AT” appears when the operator has initiated disabling of the On-Board Unit for toll collection in Austria for technical reasons. This warning message is accompanied by four signal tones. In this case, please contact your Toll Collect Service Partner directly.

A



The On-Board Unit is not ready for use. In Austria, you must purchase a GO-Box in this case. In Germany, the toll can continue to be collected despite this error message provided the error message only appears after driving into Germany has been recognised.

Battery voltage



The message “BATTERY VOLTAGE <25%”, “CHANGE BATTERY” or “PLEASE CHANGE BATTERY” appears when the power of the installed battery is low. You can acknowledge this message with OK and continue participating in the automatic procedure.



Please contact your Toll Collect Service Partner directly at your earliest possible convenience for a battery change.

5 Central toll collection

5.1 One-off change from local to central toll collection

In accordance with changes to the German Federal Trunk Road Toll Act, an extension of the toll requirement to all federal roads is planned for 1 July 2018. The On-Board Units of the automatic toll collection system will be converted for this purpose by this date. The change will not take place on the effective date, but over a period of several weeks in the first half of 2018.

The inclusion of 40,000 kilometres of federal road will present new challenges for the toll system. On federal roads, changes will be faster and more frequent than on motorways, e.g. construction sites, road closures, vehicle bans. The data for toll collection will therefore change more frequently and quickly than before. Toll Collect is therefore developing automatic log-on with the On-Board Unit. Until now, the OBUs sent the calculated tolls to the computing centre via mobile radio signals. In future, they will send only the vehicle data and the vehicle features relevant for toll collection to the toll collection centre, where the toll will then be calculated. Toll collection will therefore switch from local to central data processing.

From autumn 2017, the On-Board Units will gradually be changed over to central toll collection. Transport and logistics companies and drivers won't have to do anything.

The only visible indicator of the change will be a new display on the On-Board Unit. The acoustic signal usually heard when passing through a route segment will no longer apply. In future, the number of axles and the service name will appear on the display during the journey. Furthermore, correct collection of the toll will be signalled to the driver with the green LED. Information on the individual journeys will be available in the customer portal.

Note A message will be sent during the journey at the time of the changeover of the On-Board Unit. No action by the customer will be required.

green	
5 AXLES	€ 78.30
A59/3	€ 00.18

Standard display during the journey
(On-Board Unit is powered up, green LED)

green	
MAINTENANCE REQUESTED	
3s	

The command for changing the On-Board Unit will be received
(information visible for 3 seconds).

green	
5 AXLES	€ 78.30
A59/3	€ 00.18

Unchanged standard display during the journey
(On-Board Unit is powered up, green LED)

Execution

The next time the ignition is switched on, the On-Board Unit will be changed to central toll collection.

red	
DE: B-TC 123	
SKL: 6	
3s	

The On-Board Unit will power up with the red LED lit up and display the master data for 3 seconds as before.

Change to central toll collection

green	
5 AXLES	
DE >=7.5t	

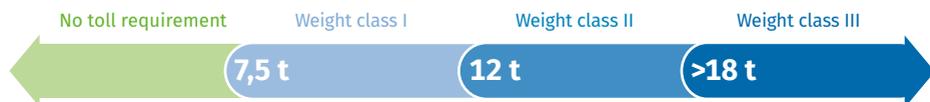
The display will now show only the declared number of axles, the toll service used, the current weight declaration and the readiness of the unit (green LED). The section currently being driven on will no longer be displayed (the associated signal tones will therefore no longer apply), nor will the toll amount and the total amount for the current route.



Before commencing your journey, you must enter the correct gross vehicle weight using the new weight declaration as described below.

5.2 Extended weight class declaration

After 1 June 2018, weight classes will be introduced in addition to the existing axle categories. The gross vehicle weight will be declared more precisely for this purpose:



All vehicles with a registered gross weight of over 7.5 tons are required to pay toll charges. The personalised vehicle weight specified in advance is permanently stored in the On-Board Unit. The new weight class declaration (see table) may require re-entry of the actual weight of the vehicle using the new weight classes before commencing your journey. This applies to vehicles with a gross vehicle weight of up to and including 18 tons. Declaration of the weight class is no longer required above 18 tons. Precise declaration of the vehicle weight will be divided into increments of 1.5 tons above 7.5 tons. A weight class that is smaller than the personalised weight on the On-Board Unit cannot be set.

Weight classes	Weight declaration *	Examples
No toll requirement <7.5 t	<7.5 t (display „<7.5t“)	Personalised weight 6 t = selection <7.5 t
Weight class I ≥7.5 t to <12 t	≥7.5 t – 9 t – 10.5 t (display „7.5t .. 11.99t“)	Personalised weight 11.99 t = selection 10.5 t (weight in range 10.5 to 12 t)
Weight class II ≥12 t to ≤18 t	≥12 t – 13.5 t – 15 t 16.5 t – ≤18 t (display “12t .. 18t”)	Personalised weight 14 t = selection 15 t (weight in range 13.5 to 15 t)
Weight class III >18 t	>18 t no weight declaration required (display „>18t“)	Personalised weight 22 t = no further weight declaration required

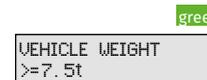
* in 1.5 t increments

! Before commencing your journey, you must enter the correct gross vehicle weight using the new weight declaration. Otherwise your On-Board Unit will have a false declaration.

5.3 Operation with central toll collection

Entering customer data

Weight When the ignition is switched on for the first time after the new weight declaration is enabled, the weight stored in the On-Board Unit will be shown on the display.

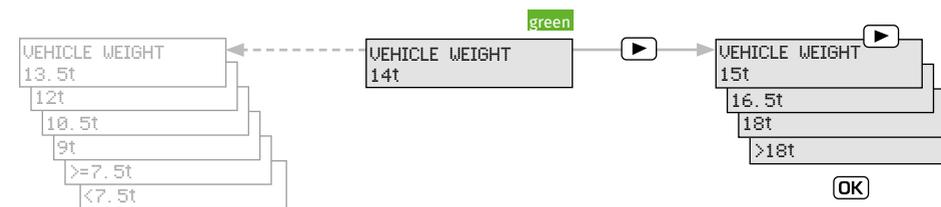


Ignition switched on



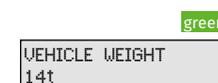
The pre-selection on the display depends on the personalised vehicle weight or the last active declaration.

i Please note that you cannot set a weight class that is smaller than the personalised weight on the On-Board Unit.



BOSCH/Grundig ↓

Continental ↓



Use the arrow buttons **▲ ▼** (for Grundig) and **◀ ▶** (for the BOSCH On-Board Unit) to choose the correct weight specification. Confirm the correct vehicle weight with **OK**.



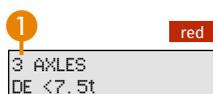
i For the Grundig On-Board Unit, the precise vehicle weight can be set (19.5t, 21t, 23.5t ...) in increments of 1.5 tons when the weight “>18t” is selected. This setting has no effect on the selected vehicle class.

Number of axles The most recent setting for the number of axles appears automatically on the display. The entry for the number of axles remains unchanged, see User Manual for description.

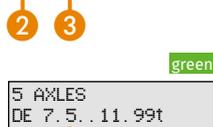
Route data The “ROUTE DATA” function no longer applies. In Germany, the toll amount payable within a route could be totalised by the On-Board Unit. This function will no longer apply with the introduction of central toll collection.

Operating display on routes in Germany

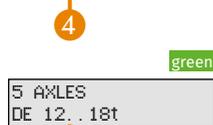
After starting a journey, the selected weight range is permanently shown on the display. Here are four examples:



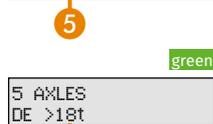
Vehicle with 3 axles
Toll-free <7.5 tons



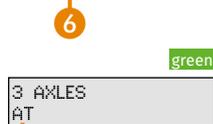
Vehicle with 5 axles
Weight 9 tons



Vehicle with 5 axles
Weight 16.5 tons



Vehicle with 5 axles
Weight >18 tons



Austria service area – with AT service activated

- ① Most recent setting for number of axles
- ② Service
- ③ Declared range: Toll free
- ④ Declared range: Weight class I
- ⑤ Declared range: Weight class II
- ⑥ Declared range: Weight class III