

CamperBALANCE-Pro (CB-Pro)

Thank you for purchasing our products. With your purchase, you support our small business

<https://www.3D4U-Freiburg.com>

and our hobby of developing, testing and marketing our own products for motorhomes for little money.

Thank you, Lars & Nils

The sale and use of the **CamperBALANCE-Pro** is subject to exclusion of warranty.

Using the CB-Pro

The **CamperBALANCE-Pro** is used to obtain precise information on the necessary wedging of the vehicle - in cm per wheel, in order to quickly and easily park the vehicle perfectly balanced in the scale (in the "water"). We refer to this condition of the perfectly balanced vehicle as "**zero point**". Please

do not use the CB-Pro while driving and only turn it on for the process of balancing the vehicle - and then turn it off again.

Commissioning:

1. To start up *the CB-Pro for the first time*, place the vehicle perfectly balanced (e.g. with a spirit level, on the dining table or stove) on a flat surface in order to adjust the CB-Pro to the vehicle once and record this zero point.
2. Turn on the CB-Pro by turning the upper half of the case counterclockwise to the lower half, from the **0** to the **I** position.
3. Insert the CB-Pro lightly into the dashboard cup holder to the left of the driver. Now make sure that when switched on, the white arrow on the top of the CB-Pro points perfectly in the direction of travel.
4. If this is the case, push the CB-Pro down into the cup holder to lock it in that position.
5. From now on, ideally leave the CB-Pro in the cup holder.
6. Follow the instructions on the display and now enter the center distance* using the +/- buttons on the lid
 - If the +/- button is held down, the value changes in 10mm increments.
Short press changes the value in 1mm increments.
 - Confirm the entered value by pressing the middle "S" button (Set) to apply the desired value.
7. Now repeat steps 5 and 6 for the track width*. In the event that this is different at the front and back, calculate the average of the two values.



* these values can be researched online or measured using a folding rule/tape measure. It doesn't matter +/-5mm.

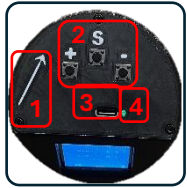
The CB-Pro is now tuned to the vehicle and the perfect zero point is recorded. From now on, ideally leave the CB-Pro in the cup holder. To turn it on, turn the top half of the CB-Pro **counterclockwise** until it clicks into place slightly (marked on "I"). To **turn it off**, turn the top half of the CB-Pro **clockwise** until it clicks into place slightly (marked at "0"). Switch the CB-Pro on for use only - and turn it off again after successful wedging.

We recommend using the CB-Pro with the engine off.

When the engine is running, the values usually oscillate by 1cm around the correct value. In this case, the intermediate value must be used.

Example: when the engine is running, the values front-right and front-left oscillate between 5 and 7cm wedge height. The correct wedge height is in between and is 6cm.

Controls



1. Alignment arrow for direction of travel
1. Control panel with buttons "S", "+" and "-"
2. USB-C Charging socket
3. Indicator

Buttons "+" or "-"



These buttons are used to enter the center distance and the track width in mm during the first commissioning (or later adjustment). If the +/- button is held down, the value changes in 10mm increments. Short press changes the value in 1mm increments.

To adjust the stored values *center distance* or *track width*, hold down the + and – buttons at the same time to return to the setup menu and determine them again as described in steps 6 and 7.

Pressing the "+" and "-" buttons at the same time for about 5seconds will perform a reset to the delivery state.

Button „S“:



When programming the values for track width and center distance, they are stored in the programming via pressing for 2seconds the set "S" key.

From time to time, it may be necessary to reassess this zero point of a perfectly balanced vehicle.

This can be done at any time by pressing the "S" key for 3 Seconds.

Meaning of the values shown in the display:



In the display, **the** wheel-specific wedge heights are listed in cm in the **corners**. In this example, front left 18cm, front right 15cm and rear left 2cm (to bring all wheels to the same height as the rear right wheel).

In the **middle of the display**, the **inclination** in the direction of travel V/H (front/rear) as well as the lateral inclination L/R (right/left) **are listed in degrees** (with one decimal place).

The **font color of** these values changes depending on the necessary wedge height (green: less than 4cm, yellow: greater than 4cm and less than 8cm, red: over 8cm).

In the middle below is the **battery voltage** in volts (normally this is between 4.2 and 3.2 volts) and the **remaining capacity** of the battery in %.

Indicator light (to the right of the USB-C charging socket)



While using the CB-Pro, the indicator light (analogous to the color of the degree indicator in the display) shows the range of the necessary wedge height with the colors green/yellow/red.

During the charging process, the indicator light with the color red indicates the charging process. The color blue means that the battery is fully charged.

How the CB-Pro works

The **CamperBALANCE-Pro** uses a highly sensitive, electronic gyroscope/accelerometer microchip that measures the inclination using the earth's gravity.

The self-written software calculates the required wedge height in cm per wheel based on the vehicle data to be stored once (wheelbase and wheelbase) via the measured angle of inclination in order to perfectly balance the vehicle.

Furthermore, the balancer has a strong 3.7V, at least 2000mAh lithium-ion battery, as well as a USB-C charging socket (charging cable not included). One battery charge is sufficient for several months of daily use.

All components are connected to each other via a self-created circuit board and soldered manually. Each Gyroscope MicroChip and each battery are individually read out and calibrated. These specific values are stored in the programming of each CamperBALANCE-Pro to ensure the highest accuracy.

We hope you enjoy the **CamperBALANCE Pro!!**