Operating Instructions Hanging Balances

1 Technical Data

KERN	*20K10*	*20K50*	*50K20*	*50K100*
Readout	*10 g*	*50 g*	*20 g*	*100 g*
Weighing range	*20 kg*	*20 kg*	*50 kg*	*50kg*

KERN	*99K50*	*100K200*	*200K100*	*200K500*
Readout	*50 g*	*200 g*	*100 g*	*500 g*
Weighing range	*99 kg*	*100 kg*	*200 kg*	*200 kg*

2 Fundamental information (general)

2.1 Intended use

The balance you have acquired serves to determine the weighing value of the material to be weighed. It is intended to be used as a “non-automatic“ balance, i.e. the material to be weighed is manually and carefully attached at the balance. The weighing value can be read off after a stable weighing value has been obtained.

2.2 Inappropriate use

Do not use the balance for dynamic weighing. In the event that small quantities are removed or added to the material to be weighed, incorrect weighing results can be displayed due to the “stability compensation“ in the balance. (Example: Slow flow of liquids from a container suspended from the balance).
Do not suspend a permanent load from the balance This can damage the measuring equipment (Risk of fracture). Be sure to avoid impact shock and overloading the balance in excess of the prescribed maximum load rating (max.), minus any possible tare weight that is already present. This could cause damage to the balance(danger of fracture).
Important:

- **Always make sure that there are no people or materials below the load that could be injured or damaged!**
- **The balance is not suitable for weighing people.**
- **The balance does not comply with the medical product law (MPG).**

Never operate the balance in hazardous locations. The series design is not explosion-proof. Structural alterations may not be made to the balance. This can lead to incorrect weighing results, faults concerning safety regulations as well as to destruction of the balance. The balance may only be used in compliance with the described guidelines. Varying areas of application/planned use must be approved by KERN in writing.

2.3 Guarantee

The guarantee is not valid following

- non-observation of our guidelines in the operating instructions
- use outside the described applications
- alteration to or opening of the device
- mechanical damage and damage caused by media, liquids
- natural wear and tear
- inappropriate erection or electric installation
- overloading of the measuring equipment

2.4 Monitoring the test substances

The metrology features of the balance and any possible available adjusting weight must be checked at regular intervals within the scope of quality assurance. For this purpose, the answerable user must define a suitable interval as well as the nature and scope of this check. Information is available on KERN’s home page (www.kern-sohn.com) with regard to the monitoring of balance test substances and the test weights required for this. Test weights and balances can be adjusted quickly and at a reasonable price in KERN’s accredited DKD calibration laboratory (return to national normal).

3 Fundamental safety information

3.1 Observe the information in the operating instructions

Please read the operating instructions carefully before erecting and commissioning, even if you already have experience with KERN balances.

3.2 Staff training

The device may only be operated and looked after by trained members of staff.

4 Transport and storage

4.1 Acceptance check

Please check the packaging immediately upon delivery and the device during unpacking for any visible signs of external damage.

4.2 Packaging

Please retain all parts of the original packaging in case it should be necessary to return items at any time.
Only the original packaging should be used for return consignments. Before despatch, disconnect all attached cables and loose/movable parts. Apply any intended transport security devices. Secure all parts, e.g. glass windshield, weighing plate, power unit etc., to prevent slipping and damage.

5 Unpacking, installation and commissioning

5.1 Place of installation, place of use

The balance is constructed in such a way that reliable weighing results can be achieved under normal application conditions. By selecting the correct application location ***f***or your balance, you will be able to work quickly and precisely.
Therefore please observe the following at the* application location*:

- Avoid extreme heat as well as temperature fluctuation caused by installing next to a radiator or in the direct sunlight;
- Protect the balance against direct draughts due to open windows and doors;
- Avoid jarring during weighing;
- Protect the balance against high humidity, vapours and dust;

- Do not expose the device to extreme dampness for longer periods of time. Inadmissible bedewing (condensation of air moisture on the device) can occur if a cold device is taken into a significantly warmer environment. In this case, please acclimatise the device for approx. 2 hours at room temperature after it has been disconnected from the batterys.
- Avoid static charging of the material to be weighed, weighing container and windshield.

Major display deviations (incorrect weighing results) are possible if electromagnetic fields occur as well as due to static charging and instable power supply. It is then necessary to change the location.

5.2 Unpacking

Carefully remove the balance from its packaging, remove the plastic wrapping and position the balance in its intended working location.

5.2.1 List of items supplied

Standard accessories:

- Hanging balance
- Batteries
- Operating instructions

5.3 Battery operation and change

Push off the battery cover on the back of the balance. Insert 3 AAA batteries. Replace the battery cover. When the batteries are exhausted the message "**LO**" appears in the balance display. Press the "**ON/OFF"** key and replace the batteries immediately. To preserve battery life the balance switches off automatically after 4 minutes if no weighing has taken place.

6 Adjustment

As the acceleration value due to gravity is not the same at every location on earth, each balance must be coordinated – in compliance with the underlying physical weighing principle - to the existing acceleration due to gravity at its place of location (only if the balance has not already been adjusted to the location in the factory). This adjustment process must be carried out during the initial start-up, after change in location and variation of surrounding temperature. It is also recommendable to adjust the balance periodically during weighing operation in order to obtain exact measured values.

6.1 Adjusting

Using a precision weight, the accuracy of the balance can be checked at any time and adjusted.
Adjustment procedure:
Check that the surrounding conditions are stable. A short warm-up time of about 1 minutes are recommended for stabilisation.
Press "**TARE**" key approx. 15 seconds, "**CAL**" and then the exact weight of the adjusting weight will appear at the display. Hang on the adjusting weight on the hook of the hanging balance. " **F**" will appear a short time later, and then turn off.
In case of an adjusting error or a wrong adjusting weight " **E**" appears in the display.

KERN	***20K10***	***20K50***	***50K20***	***50K100***
Adjusting weight (not included)	*10 kg (M3)*	*10 kg (M3)*	*20 kg (M3)*	*20 kg (M3)*

KERN	***99K50***	***100K200***	***200K100***	***200K500***
Adjusting weight (not included)	*50 kg (M3)*	*50 kg (M3)*	*100 kg (M3)*	*100 kg (M3)*

7 Operation Instruction

7.1 Weighing

- The balance is switched on by pressing the "**ON/OFF**" key.
- The balance display shows **"0.0".**
- Hook the object being weighed.
- The steady reading is the weight of the object.
- If the weighing object is heavier than the weighing range the display indicates "**E"** (=Overload).
- The balance is switched off by pressing the "**ON/OFF"** key once.

7.2 Taring

- Switch the balance on with "**ON/OFF"** key and wait for **"0.0"** to appear in the display. Hang the tare load and press the "**TARE**" key.
- The balance display becomes "**0.0".** The weight of the tare load has however been memorised internally. The item to be weighed can now be placed in the tare container and the weight can be read off.

7.3 Data HOLD

- When the "**HOLD**" key is pressed, the display value (even when the weight values vary) shown on the display will be held 5 seconds.

8 Maintenance, upkeep, disposal

8.1 Cleaning

Only use a cloth dampened with mild suds and not aggressive cleaning agents (solvents or similar). Please ensure that fluids are not able to get into the device and rub off using a clean, soft cloth. Loose sample residue/powder can be removed carefully using a brush or hand vacuum cleaner.

8.2 Maintenance, upkeep

The device may only be opened by trained service engineers authorised by KERN.

8.3 Disposal

The operating company shall dispose of the packaging and the device in compliance with the valid national or regional law of the operating location.

9 Troubleshooting

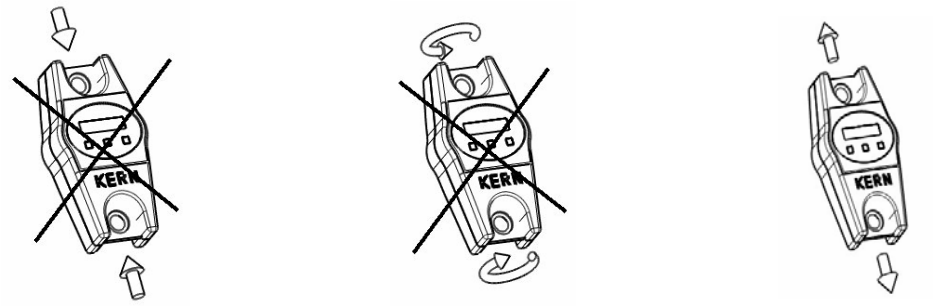
The balance should be switched off for a short time following an interruption in the programme sequence. It is then necessary to repeat the weighing process from the beginning.

Interruption	***Possible cause***
Weight display is not illuminated.	• *The balance is not switched on.* • *The batteries are wrongly inserted, the batteries are empty* • *No batteries are attached*
The weight display changes continually	• *Draught/air movement* • *Table/floor vibrations* • *Vibrations on the balance suspension* • *Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)*
The weighing result is obviously incorrect	• *The balance display is not set to zero* • *Adjustment is no longer correct.* • *Great fluctuations in temperature.* • *Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)*

Switch the balance off if other error messages should appear and then switch on again. Contact the manufacturer if the error message does not disappear.

Important using informations

NO **NO** **O.K.**



- Don’t use with pressure - Don’t twist - Just using with tension