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Operating instruction Platform scale

KERN EOB_M

Version 1.0

07/2007

GB

EOB_M-BA-e-0710



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1 Technical data

KERN	EOB 6K2M	EOB 15K5M	EOB 30K10M
<i>Readability (d)</i>	2 g	5 g	10 g
<i>Weighing range (max)</i>	6 kg	15 kg	30 kg
<i>Minimum load (Min)</i>	40 g	100 g	200 g
<i>Verification value (e)</i>	2 g	5 g	10 g
<i>Verification class</i>	III	III	III
<i>Reproducibility</i>	2 g	5 g	10 g
<i>Linearity</i>	4 g	10 g	20 g
<i>Recommended adjustment weight, not added (class)</i>	5 kg (M3)	10 kg (M3)	20 kg (M3)
<i>Stabilization time (typical)</i>	2 – 3 sec.		
<i>Warm-up time</i>	10 min		
<i>Operating temperature</i>	+ 5° C + 35° C		
<i>Electric Supply</i>	Mains adapter 300 mA/15V		
	Battery operated 6 x 1.5V, AA size Service life 60 h		
<i>Auto Off</i>	After 3 min without change of load		
<i>Humidity of air</i>	max. 80 % (not condensing)		
<i>Housing (B x D x H) mm</i>	290 x 270 x 50 (platform) 210 x 110 x 45 (terminal)		
<i>Weighing plate mm</i>	290 x 270		
<i>Weight kg (net)</i>	3,6		

KERN	EOB 60K20M	EOB 150K50M
<i>Readability (d)</i>	20 g	50 g
<i>Weighing range (max)</i>	60 kg	150 kg
<i>Minimum load (Min)</i>	400 g	1000 g
<i>Verification value (e)</i>	20 g	50 g
<i>Verification class</i>	III	III
<i>Reproducibility</i>	20 g	50 g
<i>Linearity</i>	40 g	100 g
<i>Recommended adjustment weight, not added (class)</i>	40 kg (M3)	100 kg (M3)
<i>Stabilization time (typical)</i>	2 – 3 sec.	
<i>Warm-up time</i>	10 min	
<i>Operating temperature</i>	+ 5° C + 35° C	
<i>Electric Supply</i>	<i>Mains adapter 300 mA/15V</i>	
	<i>Battery operated 6 x 1.5V, AA size Service life 60 h</i>	
<i>Auto Off</i>	<i>After 3 min without change of load</i>	
<i>Humidity of air</i>	<i>max. 80 % (not condensing)</i>	
<i>Housing (B x D x H) mm</i>	<i>290 x 270 x 50 (platform) 210 x 110 x 45 (terminal)</i>	
<i>Weighing plate mm</i>	290 x 270	
<i>Weight kg (net)</i>	3,6	

2 Declaration of conformity



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Declaration of conformity

Declaration of conformity for apparatus with CE mark

Konformitätserklärung für Geräte mit CE-Zeichen

Déclaration de conformité pour appareils portant la marque CE

Declaración de conformidad para aparatos con disitintivo CE

Dichiarazione di conformità per apparecchi contrassegnati con la marcatura CE

- English** We hereby declare that the product to which this declaration refers conforms with the following standards.
- Deutsch** Wir erklären hiermit, dass das Produkt, auf das sich diese Erklärung bezieht, mit den nachstehenden Normen übereinstimmt.
- Français** Nous déclarons avec cela responsabilité que le produit, auquel se rapporte la présente déclaration, est conforme aux normes citées ci-après.
- Español** Manifestamos en la presente que el producto al que se refiere esta declaración está de acuerdo con las normas siguientes
- Italiano** Dichiariamo con ciò che il prodotto al quale la presente dichiarazione si riferisce è conforme alle norme di seguito citate.

Electronic Scale: KERN EOB_M

Mark applied	EU Directive	Standards
	89/336/EEC EMC	EN 61000-6-3: 2001+ A11:2004 EN 61000-6-1: 2001

Date: 10.05.2007

Signature: 

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Management

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Declarations of conformity

Declaration of conformity for apparatus with CE mark

Konformitätserklärung für Geräte mit CE-Zeichen

Déclaration de conformité pour appareils portant la marque CE

Declaración de conformidad para aparatos con marca CE

Dichiarazione di conformità per apparecchi contrassegnati con la marcatura CE

- English** We hereby declare that the product to which this declaration refers conforms with the following standards.
This declaration is only valid with the certificate of conformity by a notified body.
- Deutsch** Wir erklären hiermit, dass das Produkt, auf das sich diese Erklärung bezieht, mit den nachstehenden Normen übereinstimmt.
Diese Erklärung gilt nur in Verbindung mit der Konformitätsbescheinigung einer benannten Stelle.
- Français** Nous déclarons avec cela responsabilité que le produit, auquel se rapporte la présente déclaration, est conforme aux normes citées ci-après.
Cette déclaration est valide seulement avec un certificat de conformité d'un organisme notifié.
- Español** Manifestamos en la presente que el producto al que se refiere esta declaración está de acuerdo con las normas siguientes.
Esta declaración solo será válida acompañada del certificado de conformidad de conformidad de la parte nominal.
- Italiano** Dichiariamo con ciò che il prodotto al quale la presente dichiarazione si riferisce è conforme alle norme di seguito citate.
Questa dichiarazione sarà valida solo se accompagnata dal certificato di conformità della parte nominale.

Electronic Scale: KERN EOB_M

EU Directive	Standards	EC-type-approval certificate no.	Issued by
90/384/EEC	EN 45501	T7183	NMI

Date: 10.05.2007

Signature:

Gottl. KERN & Sohn GmbH
Management

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3 Basic Information (General)

3.1 Intended use

The balance you purchased is intended to determine the weighing value of 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 placed in the centre of the weighing plate. As soon as a stable weighing value is reached the weighing value can be read.

3.2 Improper Use

Do not use 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: Slowly draining fluids from a container on the balance.)

Do not leave permanent load on the weighing plate. This may damage the measuring system.

Impacts and overloading exceeding the stated maximum load (max) of the balance, minus a possibly existing tare load, must be strictly avoided. Balance may be damaged by this.

Never operate balance in explosive environment. The serial version is not explosion protected.

The structure of the balance may not be modified. This may lead to incorrect weighing results, safety-related faults and destruction of the balance.

The balance may only be used according to the described conditions. Other areas of use must be released by KERN in writing.

3.3 Warranty

- Warranty claims shall be voided in case
- Our conditions in the operation manual are ignored
- The appliance is used outside the described uses
- The appliance is modified or opened
- mechanical damage and damage caused by media, liquids
- natural wear and tear
- The appliance is improperly set up or incorrectly electrically connected
- The measuring system is overloaded

3.4 Monitoring of Test Resources

In the framework of quality assurance the measuring-related properties of the balance and, if applicable, the testing weight, must be checked regularly. The responsible user must define a suitable interval as well as type and scope of this test. 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. In KERN’s accredited DKD calibration laboratory test weights and balances may be calibrated (return to the national standard) fast and at moderate cost.

4 Basic Safety Precautions

4.1 Pay attention to the instructions in the Operation Manual

Carefully read this operation manual before setup and commissioning, even if you are already familiar with KERN balances.

4.2 Personnel training

The appliance may only be operated and maintained by trained personnel.

5 Transport and storage

5.1 Testing upon acceptance

When receiving the appliance, please check packaging immediately, and the appliance itself when unpacking for possible visible damage.

5.2 Packaging

Keep all parts of the original packaging in case you need to return the appliance. Only use original packaging for returning. Before sending, disconnect all connected cables and loose/movable parts.

6 Unpacking, Setup and Commissioning

6.1 Installation Site, Location of Use

The balances are designed in a way that reliable weighing results are achieved in common conditions of use.

You will work accurately and fast, if you select the right location for your balance.

Therefore, observe the following for the installation site:

- Place the balance on a firm, level surface;
- 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. Non-permitted condensation (condensation of air humidity on the appliance) may occur if a cold appliance is taken to a considerably warmer environment. In this case, acclimatize the disconnected appliance for ca. 2 hours at room temperature.
- Avoid static charging of the material to be weighed, weighing container and windshield.

If electro-magnetic fields or static charge occur, or if the power supply is unstable major deviations on the display (incorrect weighing results) are possible. In that case, the location must be changed.

6.2 Placing

The balance must be installed in a way that the weighing plate is exactly in horizontal position.

6.2.1 Unpacking

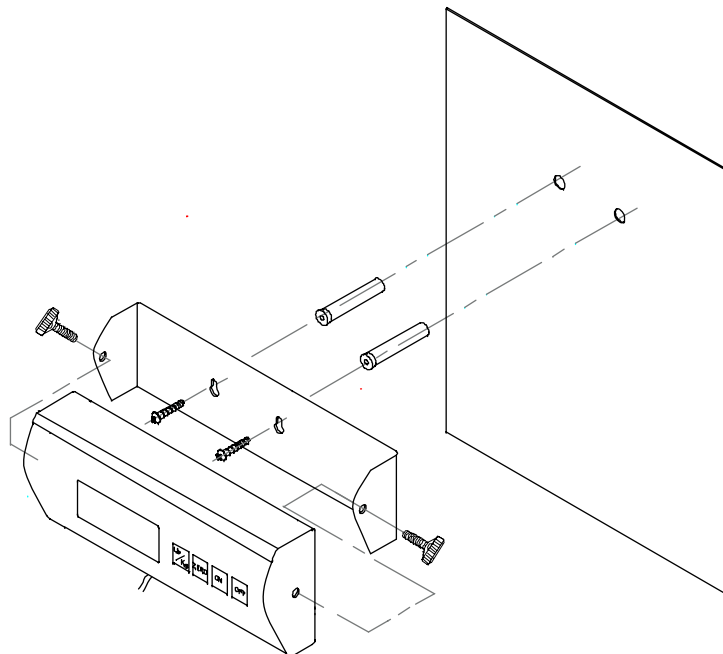
Carefully remove the balance from the packaging, remove plastic cover and setup balance at the intended workstation.

6.2.2 Scope of delivery

Serial accessories:

- Platform (stainless steel weighing plate) and display unit
- Mains power supply
- Wall mounting (incl. fastening screws)
- Operating Manual

6.2.3 Assembly instructions for use of wall mounting



6.2.4 Assembly instruction for use of tripod KERN EOB-A01 (option)

- Attach the tripod, using the 4 screws, to the underside of the weighing scales
- Remove the two lateral rubber stoppers from the display unit
- Attach the display unit to the mounting by using the two knobs.
- Position the display unit with the help of the knobs



Picture: Example model KERN EOB

6.3 Mains connection

Power is supplied via the external mains adapter. The stated voltage value must be the same as the local voltage.

Only use original KERN mains adapters. Using other makes requires consent by KERN.

6.4 Battery operation

Remove the battery cover from the underside of the display unit. Connect the 6 x 1,5V round cells. Reinsert the battery cover.

In order to save the battery, the balance switches automatically off after 3 minutes without weighing. Additional switch-off times can be set in the menu (function "A.OFF"), see chpt. 6.91, and 6.9.2. respectively.

Used batteries are indicated by "LO" on the display. Press **[ON/OFF]** key and replace the batteries immediately.

If the balance is not used for a longer time, take out the batteries and store them separately. Leaking battery liquid could damage the balance.

6.5 Initial Commissioning

In order to obtain exact results with the electronic balances, your balance must have reached the operating temperature (see warming up time chap. 1). During this warming up time the balance must be connected to the power supply (mains, accumulator or battery).

The accuracy of the balance depends on the local acceleration of gravity. Strictly observe hints in chapter Adjustment.

6.6 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. To receive accurate measuring values it is also recommended to adjust the balance periodically in weighing operation.


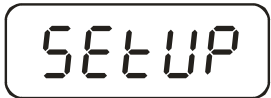

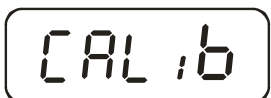

With an adjustment weight, the weighing accuracy can be checked and re-adjusted at any time.


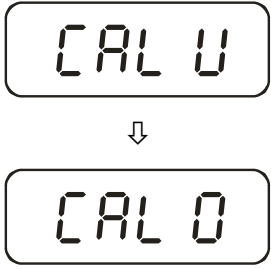
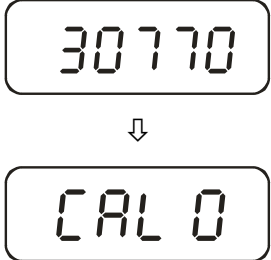





6.6.1 Procedure when adjusting

Observe stable environmental conditions. A warming up time (see chapter 1) is required for stabilization.

Attention:

In calibrated balances the adjustment function is switch locked. To carry out adjustments, set the switch to adjustment position (centre position). (See chpt. 6.8).

Operation	Display
Turn on balance by pressing the [ON/OFF] key.	
Press the [→0←]-key for c. 3 sec until "SETUP", followed by "UNIT" appears	 ↓ 
Press the [TARE]-key repeatedly until "CALib" appears	
Press the [HOLD]-key	

<p>Press the [TARE] key.</p> <p>The superimposed triangle ◀ must be at the right hand top corner. If not, press the [TARE]-key.</p>	
<p>Press the [HOLD]-key repeatedly until "CAL 0" appears.</p>	
<p>Press the [TARE]-key, a numeric value is shown on the display.</p> <p>After that press the [→0←]-key.</p>	
<p>Press the [HOLD]-key</p>	
<p>Press the [TARE] key.</p> <p>Enter the required size of the adjustment weight (See chpt. 1, "specifications"): To select the digit to be changed, press the [HOLD]-key and to select the numeric value, press the [TARE]-key.</p>	
<p>Confirm by pressing the [→0←]-key.</p>	
<p>Place the adjustment weight carefully in the centre of the weighing platform; the display shows a numeric value. Press the [HOLD]-key. The adjustment process is started.</p>	
<p>If the adjustment was successful the weighing scales will return automatically to weighing mode and will show the weighing value of the adjustment weight.</p> <p>Take away adjustment weight.</p>	
<p>Notice: For calibrated scales turn off the scales and reset the adjustment switch to calibrating position.</p>	

6.7 Verification

General introduction:

According to EU directive 90/384/EEC balances must be officially verified if they are used as follows (legally controlled area):

- a) For commercial transactions if the price of goods is determined by weighing.
- b) For the production of medicines in pharmacies as well as for analyses in the medical and pharmaceutical laboratory.
- c) For official purposes
- d) For manufacturing final packages

In cases of doubt, please contact your local trade in standard.

Verification instructions

An EU type approval exists for balances described in their technical data as verifiable. If a balance is used where obligation to verify exists as described above, it must officially verified and re-verified in regular intervals.

Re-verification of a balance is carried out according to the respective national regulations. The validity for verification of balances in Germany is e.g. 2 years.

The legal regulation of the country where the balance is used must be observed!

Balances with obligation to verify must be taken out of operation if:

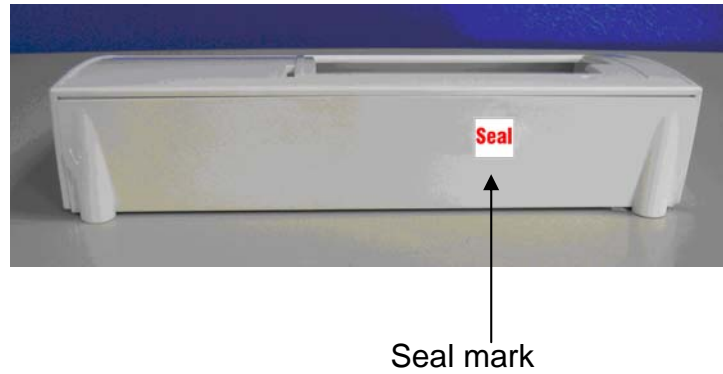
- **The weighing result of the balance is outside the error limit.** Therefore, in regular intervals load balance with known test weight (ca. 1/3 of the max. load) and compare with displayed value.
- The **reverification deadline** has been exceeded.

6.8 Adjustment switch and seals

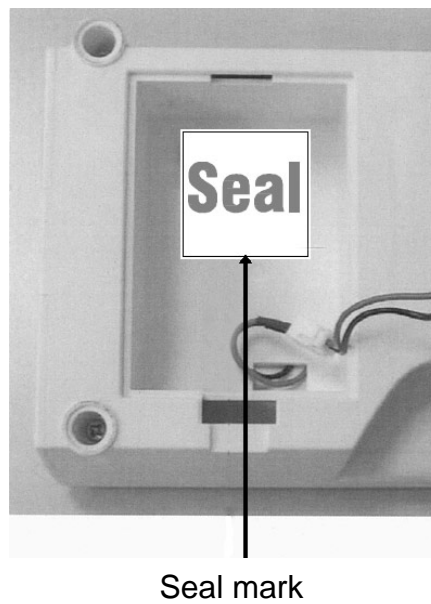
After verification the balance is sealed at the indicated positions.
Verification of the balance is invalid without the "seal".

Position of the official seals:

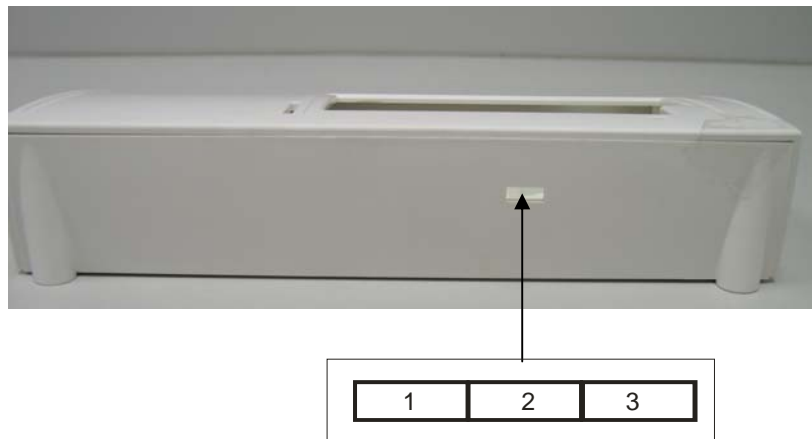
1. Rear side



2. Seal mark in the battery compartment



Position of adjustment switch:



Position of adjustment switch	Status
1. to the left	Not documented
2. concentric	adjustment position – enables adjustment
3. to the right	Verification position - Adjustment locked

6.9 Checking scale settings with respect to the calibration of weighing scales

For the adjustment function, the balance must be switched over to the service mode. To achieve this, set the adjustment switch to adjustment position (See chpt. 6.8).

In the service mode all parameters of the balance can be modified. The service parameters may not be modified, as this could damage the balance settings.

6.9.1 Menu overview in service mode (adjustment switch in adjustment position)

This overview exists merely for the examination of the set parameters by the authorized Verification Standards Department.

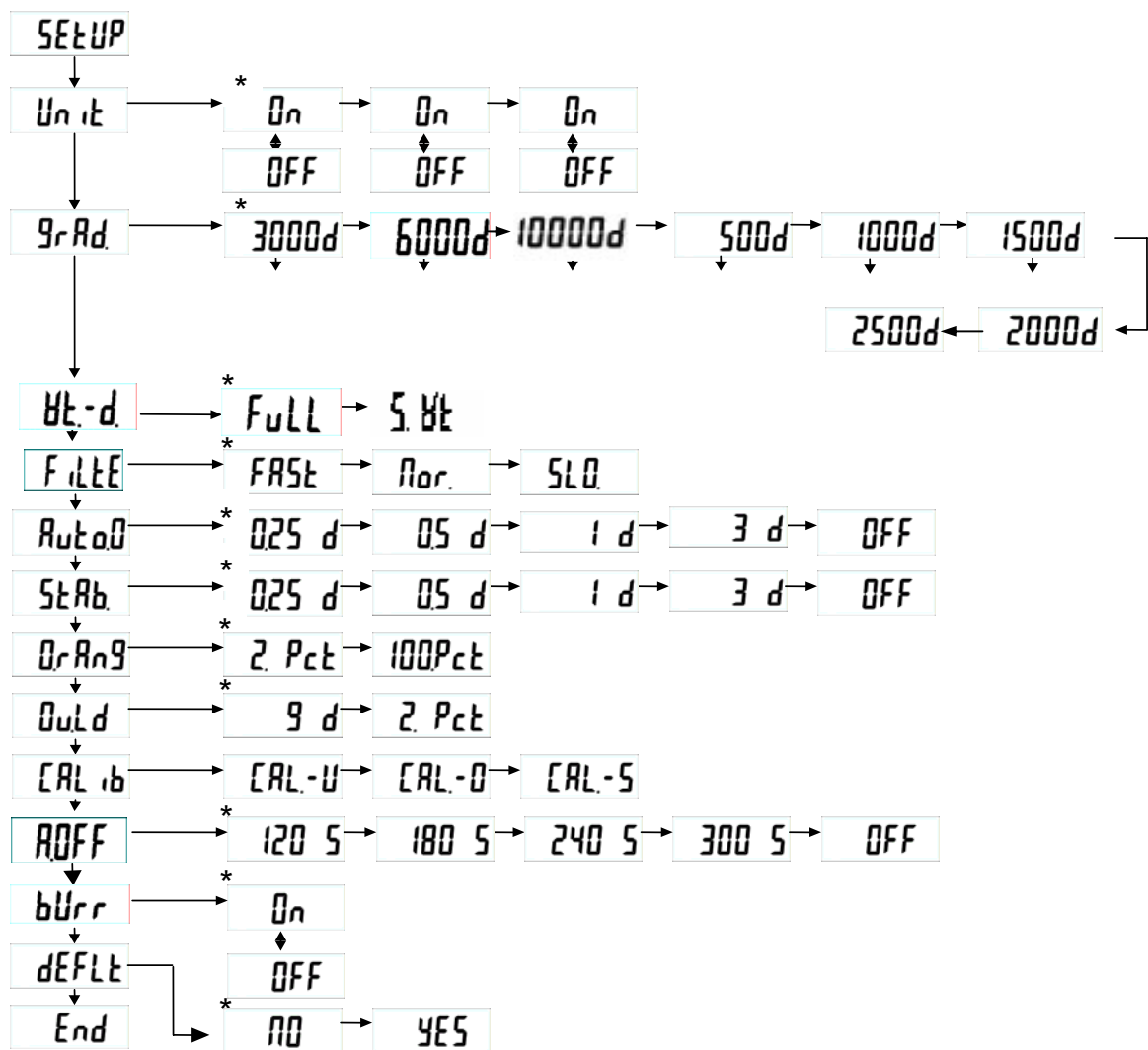
Changes may only be made to the parameters of the automatic switch-off function "R.OFF" and the acoustic signal "bUrr".

Navigation in the menu:

- With the weighing scales switched on, press the [→0←]-key for c. 3 sec until "SETUP", followed by "UNIT" appears.
- Press the [TARE]-key repeatedly until the desired function appears.
- Confirm the selected function by pressing the [HOLD]-key. The first parameter appears. To select the desired parameter, use the [HOLD]-key and confirm by pressing the [TARE]-key.

To exit the menu and to store, press the [TARE]-key repeatedly until “End” appears, then confirm by pressing the [HOLD]-key. The balance returns automatically into weighing mode.

A selection is made by pressing the [HOLD]-key → and the [TARE]-key ↓



* default setting

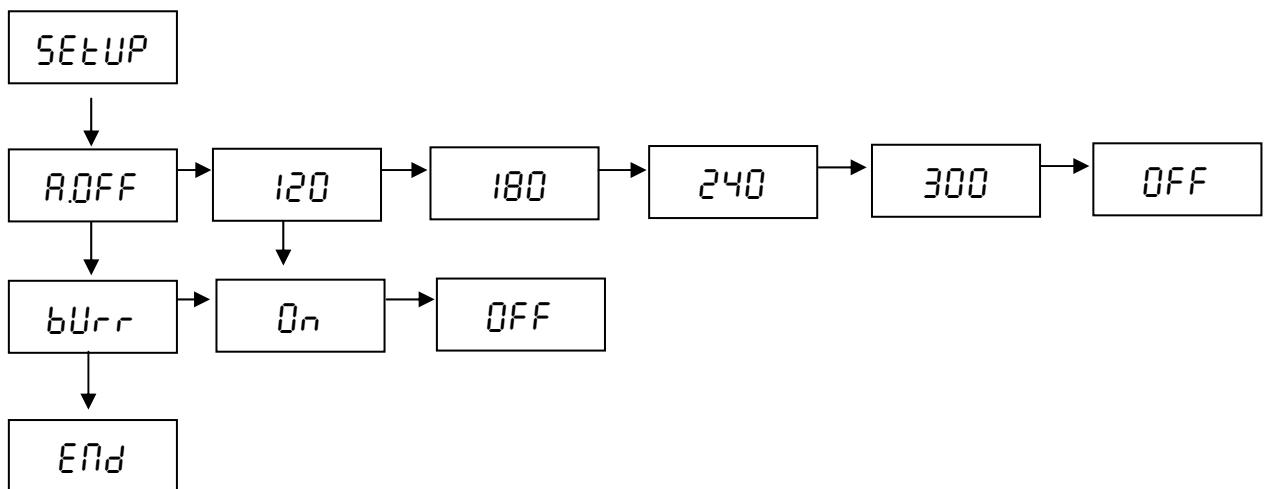
Description:

Unit	Weighing unit: Kg
GrAd	Dividing steps, weighing range (max) and readability (d)
Wt-d	Selection multi-range scales / single range scales
FULL	Single-range scales
S-Wt	Multi-range scales
FILT	Filter: Fast/normal/slow
Auto0	Auto Zero Tracking: 0.25d/ 0.5d/ 1d/ 3d/ OFF
StAb	Stabilisation range: 0.25d/ 0.5d/ 1d/ 3d/ OFF
OrRng	Zero range: 2% / 100%
OverLd	Overload range: 9d / 2%
CRLib	Adjustment
ROFF	Auto off: 120 sec/ 180 sec/ 240 sec/ 300 sec/ OFF
bUrr	Audio signal: ON/OFF
dEFLt	Reset to default settings (default setup)
End	Exit menu

6.9.2 Menu overview for calibrated scales (adjustment switch in calibrating position)

With the weighing scales switched on, press the [→0←]-key for c. 3 sec until "SETUP" followed by "A.OFF" appears.

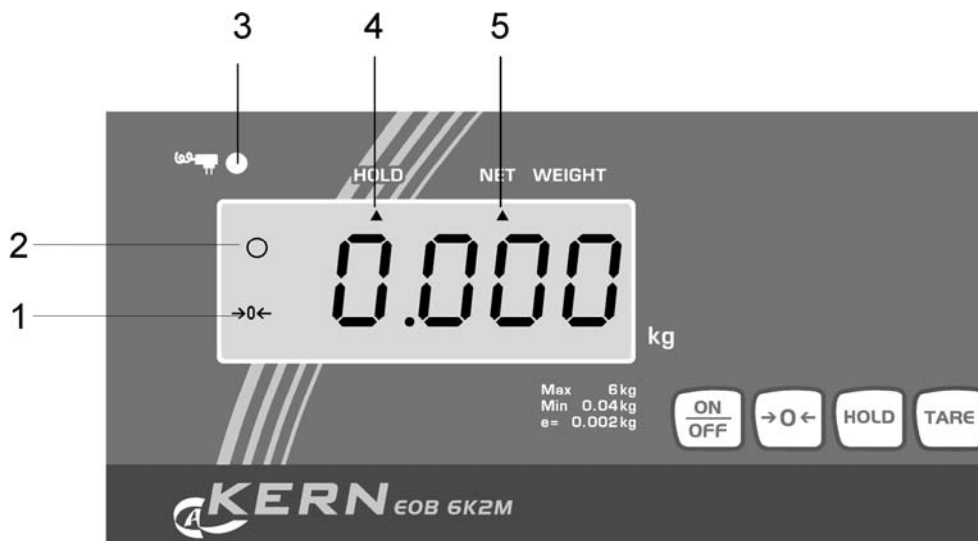
A parameter selection is made by pressing the [TARE] ↓-key and the [HOLD] →-key.



Press the [HOLD] →-key and return to the Normal-Mode.

7 Operation

7.1 Overview of display



No.	Display	Description
1	[->0<-]	Balance zero display If the scales do not display exactly zero despite the scales being without a load, press the [->0<-] -key. Your balance will be set to zero after a short standby time.
2	[o]	Stability display: If the display shows the stability display [o] the balance is in a stable status. The [o] indication disappears if the condition is unstable.
3		Lit up when power is supplied via line adapter
4	HOLD ▲	Hold/animal weighing function active
5	NET ▲	Stored tare value

7.2 Keyboard overview

Key	Description
ON/OFF	Turn on/off balance
→0←	Set scales to zero
HOLD	Hold/animal weighing function
TARE	Tare scales

7.3 Weighing

- ⇒ Turn on balance by pressing the [ON/OFF] key. The balance will carry out a self-test. Your balance is ready to weigh as soon as the "0.00 oz" display appears.
Information: The [→0←] key can be used to set the balance to zero at any time.
- ⇒ Place goods to be weighed on balance. Wait until the standstill display (o) appears, then read the weighing result.

Note:

If the material to be weighed is heavier than the weighing range, the display will show "Err" (=Overload).

7.4 Taring

The dead weight of any weighing container may be tared away by pressing a button, so that the following weighings show the net weight of the goods to be weighed.

- ⇒ Place empty tare container on the weighing plate. The total weight of the container is displayed.
- ⇒ To start the taring process press the [TARE] key. The weight of the container is now internally saved.
- ⇒ Place the goods to be weighed into the tare container.
- ⇒ Read the weight of the goods on the display.

Information:

The balance is able to only store one taring value at a time.

When the balance is unloaded the saved taring value is displayed with negative sign. Remove all items from the weighing plate in order to delete the stored tare value and subsequently press the [TARE] key.

The taring process can be repeated any number of times. The limit is reached when the whole weighing range is exhausted.

7.5 Hold function (animal weighing function)

The balance has an integrated animal weighing function (mean value calculation). This allows the exact weighing of pets or small animals (load min 1% of max) whilst the aforesaid are not perfectly still on the weighing platform.

Note: Movement that is too lively (strong display variations) makes a mean value calculation impossible.

- ⇒ Turn on balance by pressing the **[ON/OFF]** key. The balance will carry out a self-test. Your balance is ready to weigh as soon as the "0.00 g" display appears.
- ⇒ Press the **[HOLD]**-key. The triangle starts flashing on the display whilst the scales gather several measuring values during this time. Afterwards the calculated mean value is shown.
- ⇒ To reset the weighing scales to normal weighing mode, press the **[HOLD]**-key several times.
- ⇒ This function may be repeated at will by pressing the **[HOLD]**-key again.

7.6 Plus/minus weighing

For example unit weight control, fabrication control etc.

- ⇒ Switch-on the balance using the **[ON/OFF]** key and wait for the „0“ display.
- ⇒ Place target value on weighing platform and tare it to "0" by pressing the **[TARE]**-key. Remove the nominal weight.
- ⇒ Put the test objects subsequently on the weighing plate, the respective deviation from the nominal weight is displayed with the respective sign to „+“ and „-“.
- ⇒ According to the same procedure also packages with the same weight can be produced, referring to a nominal weight.
- ⇒ Back to weighing mode by pressing the **[TARE]** button.

8 Service, maintenance, disposal

8.1 Cleaning

Before cleaning, please disconnect the appliance from the operating voltage.

Please do not use aggressive cleaning agents (solvents or similar agents), but a cloth dampened with mild soap suds. Ensure that no liquid penetrates into the device and wipe with a dry soft cloth.

Loose residue sample/powder can be removed carefully with a brush or manual vacuum cleaner.

Spilled weighing goods must be removed immediately.

8.2 Service, maintenance

The appliance may only be opened by trained service technicians who are authorized by KERN.

Before opening, disconnect from power supply.

8.3 Disposal

Disposal of packaging and appliance must be carried out by operator according to valid national or regional law of the location where the appliance is used.

9 Instant help

In case of an error in the program process, briefly turn off the balance and disconnect from power supply. The weighing process must then be restarted from the beginning.

Help:

Fault

Possible cause

The displayed weight does not glow.

- *The balance is not switched on.*
- *The mains supply connection has been interrupted (mains cable not plugged in/faulty).*
- *Power supply interrupted.*

The displayed weight is permanently changing

- *Draught/air movement*
- *Table/floor vibrations*
- *The weighing plate is in contact with foreign matter.*
- *Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)*

The weighing value is obviously wrong

- *The display of the balance is not at zero*
- *Adjustment is no longer correct.*
- *Great fluctuations in temperature.*
- *Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)*

Should other error messages occur, switch balance off and then on again. If the error message remains inform manufacturer.