



KERN RPB

Version 1.1 02/2006

Operating Manual

Price calculating balance

Contents

1	Technical data	31
2	Declaration of conformity	33
3	Appliance overview	33
3.1	Overview of display	37
3.1.1	Display weight	38
3.1.2	Display basic price	38
3.1.3	Display sales price	38
3.2	Keyboard overview	39
4	Basic Information (General)	40
4.1	Proper use	40
4.2	Improper Use	40
4.3	Warranty	40
4.4	Monitoring of Test Resources	41
5	Basic Safety Precautions	41
5.1	Pay attention to the instructions in the Operation Manual	41
5.2	Personnel training	41
6	Transport and storage	41
6.1	Testing upon acceptance	41
6.2	Packaging	41
7	Unpacking, Setup and Commissioning	42
7.1	Installation Site, Location of Use	42
7.2	Unpacking	42
7.2.1	Setup	42
7.2.2	Scope of delivery	43
7.3	Mains connection	43
7.4	Battery power supply	43
7.5	Initial Commissioning	43
7.6	Adjustment	44
7.7	Verification	46
7.7.1	Jumper and seals	47

8	<i>Operation</i>	48
8.1	Switch on/off and set zero	48
8.2	Simple weighing	48
8.3	Weighing with taring	49
8.4	Weighing with price determination	50
8.4.1	Manual input of a basic price	50
8.4.2	Saving and calling up a basic price	50
8.5	AUTO CLEAR	52
9	<i>Display background illumination</i>	52
10	<i>AUTO SLEEP-function</i>	53
11	<i>Service, maintenance, disposal</i>	54
11.1	Cleaning	54
11.2	Service, maintenance	54
11.3	Disposal	54
12	<i>Instant help</i>	55

1 Technical data

KERN	RPB 6K2M	RPB 6K2HM	RPB 15K5M
<i>Readability (d)</i>	2 g	2 g	5 g
<i>Weighing range (max)</i>	6 kg	6 kg	15 kg
<i>Minimum load</i>	40 g	40 g	100 g
<i>Verification value</i>	2 g	2 g	5 g
<i>Verification class</i>	III	III	III
<i>Reproducibility</i>	2 g	2 g	5 g
<i>Linearity</i>	± 4 g	± 4 g	± 10 g
<i>Stabilization time</i>	2 sec.	2 sec.	2 sec.
<i>Recommended adjusting weight (not supplied)</i>	6 kg (M2)	6 kg (M2)	15 kg (M2)
<i>Net weight (kg)</i>	4,3	5,2	4,3
<i>Dimensions of the housing (B x D x H)</i>	315 x 355 x 110	315 x 355 x 110 without tripod 315 x 355 x 540 with tripod	315 x 355 x 110
<i>Weighing plate, stainless steel</i>	225 x 275 mm		
<i>Weighing unit</i>	€/kg; €/g		
<i>Permissible ambient condition</i>	-10° C to 40° C		
<i>Humidity of air</i>	max. 80 % relative (not condensing)		
<i>Voltage</i>	230 V		
<i>Battery</i>	Operating time ca. 70 hrs. / loading time ca. 12 hrs.		

KERN	RPB 15K5HM	RPB 30K10M	RPB 30K10HM
<i>Readability (d)</i>	5 g	10 g	10 g
<i>Weighing range (max)</i>	15 kg	30 kg	30 kg
<i>Minimum load</i>	100 g	200 g	200 g
<i>Verification value</i>	5 g	10 g	10 g
<i>Verification class</i>	III	III	III
<i>Reproducibility</i>	5 g	10 g	10 g
<i>Linearity</i>	± 10 g	± 20 g	± 20 g
<i>Stabilization time</i>	2 sec.	2 sec.	2 sec.
<i>Recommended adjusting weight (not supplied)</i>	15 kg (M2)	30 kg (M2)	30 kg (M2)
<i>Net weight (kg)</i>	5,2	4,3	5,2
<i>Dimensions of the housing (B x D x H)</i>	315 x 355 x 110 without tripod 315 x 355 x 540 with tripod	315 x 355 x 110	315 x 355 x 110 without tripod 315 x 355 x 540 with tripod
<i>Weighing plate, stainless steel</i>	225 x 275 mm		
<i>Weighing unit</i>	€/kg; €/g		
<i>Permissible ambient condition</i>	-10° C to 40° C		
<i>Humidity of air</i>	max. 80 % relative (not condensing)		
<i>Voltage</i>	230 V		
<i>Battery</i>	Operating time ca. 70 hrs. / loading time ca. 12 hrs.		

2 Declaration of conformity



KERN & Sohn GmbH

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Konformitätserklärung

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.
- 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 RPB

Mark applied	EU Directive	Standards
CE	89/336/EEC EMC	EN 50081-1 EN 50082-1
	73/23/EEC Low Voltage	EN 60950

Date: 27.12.2005

Signature: 

Gottl. KERN & Sohn GmbH
Management

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Konformitätserklärungen

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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.

Model:	KERN RPB
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EU Directive	Standards	EC-type-approval certificate no.	Issued by
90/384/EEC	EN 45501	T6860	NMI

Date: 27.12.2005

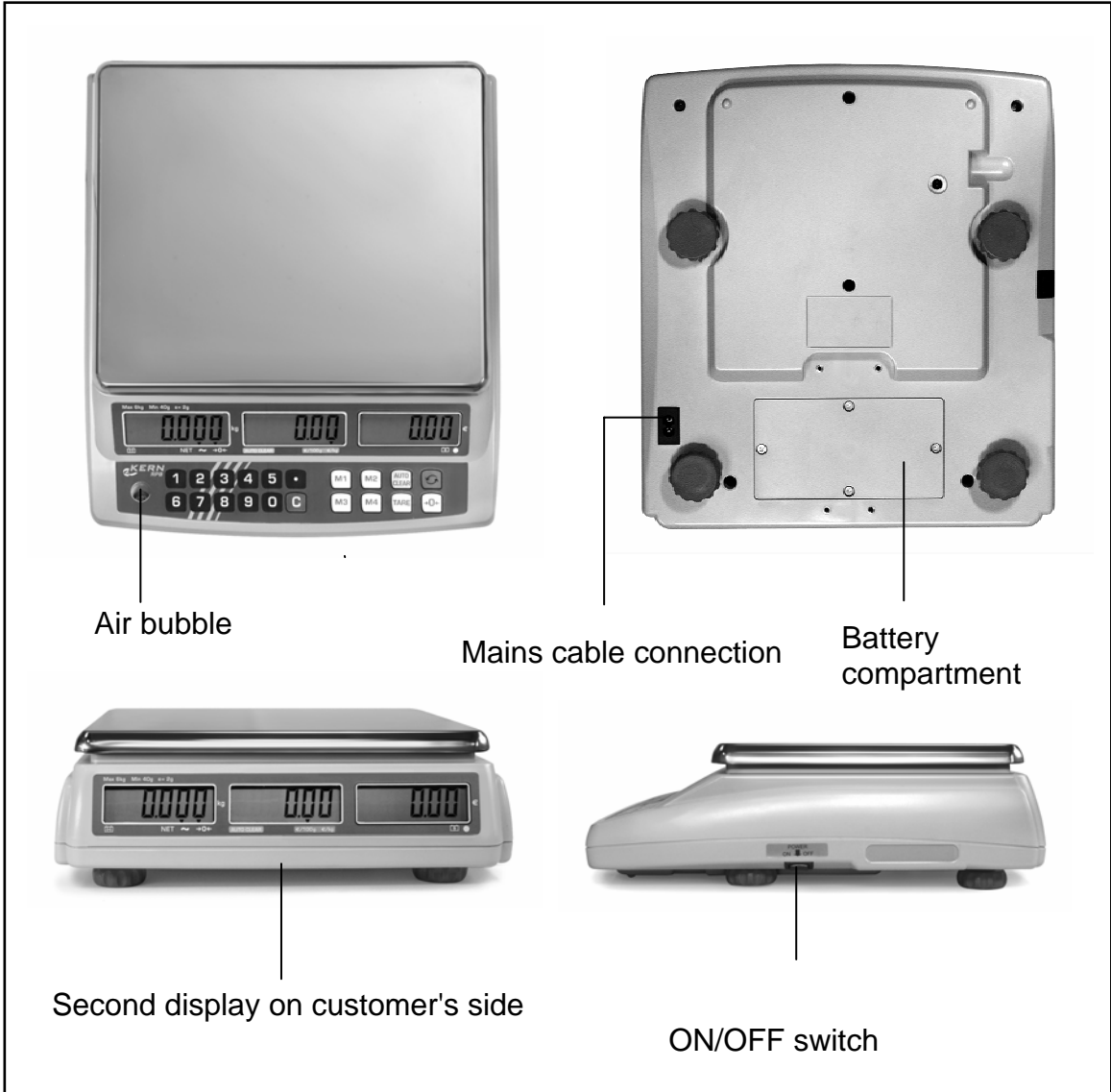
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**Gottl. KERN & Sohn GmbH
Management**

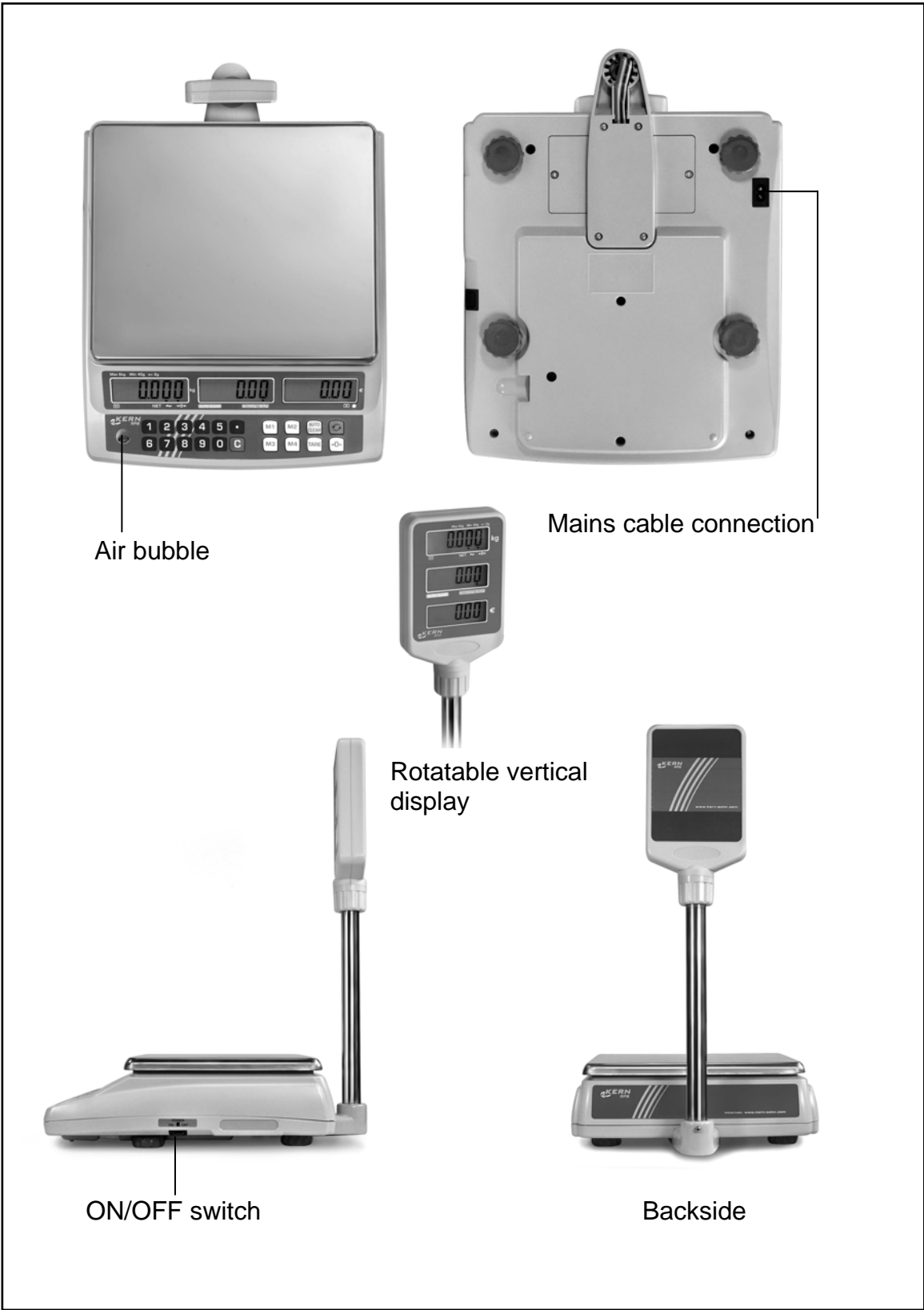
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3 Appliance overview

Models without vertical display:



Models with vertical display:



3.1 Overview of display

Operator display balance:





Vertical display for models with tripod:



3.1.1 Display weight

Here, the weight of your goods is displayed.

The arrows above the symbols show:

	Battery very low
NET	Net weight
	Stability display
→0←	Zeroing display

3.1.2 Display basic price

Here, enter your basic price in €/kg or €/100 g via keyboard. The basic price can be switched to €/kg or €/100 g.

The arrows above the symbols show:











AUTO CLEAR	Set basic price is deleted automatically when balance is unloaded
€/100 g	Saved basic price in €/100 g
€/kg	Saved basic price in €/kg

3.1.3 Display sales price

Here the sales price is displayed in Euro [€].

3.2 Keyboard overview



Choice	Function
	<ul style="list-style-type: none"> Number keys, enter basic price /PLU
	<ul style="list-style-type: none"> Delete key
  	<ul style="list-style-type: none"> Saving and calling up the three most frequently used PLU values
	<ul style="list-style-type: none"> Saving and calling up the other PLU values
	<ul style="list-style-type: none"> Taring key Save
	<ul style="list-style-type: none"> Zeroing key Back to weighing mode
	<ul style="list-style-type: none"> Set basic price is deleted automatically when balance is unloaded
	<ul style="list-style-type: none"> Switch-over key €/kg or €/100 g

4 Basic Information (General)

4.1 Proper 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.

4.2 Improper Use

Do not use balance for dynamic weighings. 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.

4.3 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 or damage by media, liquids, natural wear and tear
- The appliance is improperly set up or incorrectly electrically connected
- The measuring system is overloaded

4.4 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.

5 Basic Safety Precautions

5.1 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.

5.2 Personnel training

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

6 Transport and storage

6.1 Testing upon acceptance

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

6.2 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.

Attach possibly existing transport safeguards. Secure all parts, e.g. weighing plate, power unit etc., to prevent slipping and damage.

7 Unpacking, Setup and Commissioning

7.1 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 charge of goods to be weighed or weighing container.

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.

7.2 Unpacking

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

7.2.1 Setup

Level balance with foot screws until the air bubble of the water balance is in the pre-scribed circle.

7.2.2 Scope of delivery

Serial accessories:

- Balance
- Weighing plate
- Power cable
- Protective cover
- Battery
- Operating Manual

7.3 Mains connection


Power supply is carried out by means of the supplied power cable (220 V, 50-60 Hz).

7.4 Battery power supply

The battery is charged via the internal power supply.

Before the first use, the battery should be charged by connecting it to the mains power supply for at least 15 hours. The operating time of the battery is about. 70h. Charging time until complete recharging ca. 12h.

AUTO-OFF function after 15 min to protect the battery.

If an arrow shows in the weight display [▼] above the battery symbol  the capacity of the battery will soon be exhausted. The balance will be ready to operate for about another 10 hrs., then it will switch off automatically. Connect the power adaptor as soon as possible to change the battery.

The LED display below the parts counting window informs you about the charge status of the battery.

red: Battery is almost discharged

green: Battery is completely discharged

yellow: Battery should be charged over a longer period (over night)

7.5 Initial Commissioning

A warming up time of 5 minutes after switching on stabilizes the measuring values.

The accuracy of the balance depends on the local acceleration of gravity.

Strictly observe hints in chapter Adjustment.








7.6 Adjustment


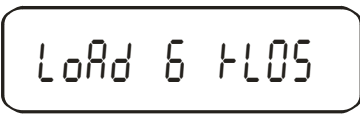

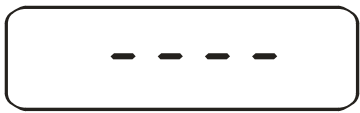






As the acceleration value due to gravity is not the same at every location on earth, each balance must be coordinated - in compliance with the underlying physical weighing principle - to the existing acceleration due to gravity at its place of location (only if the balance has not already been adjusted to the location in the factory). This adjustment process must be carried out for the first commissioning, after each change of location as well as in case of fluctuating environment temperature. To receive accurate measuring values it is also recommended to adjust the balance periodically in weighing operation.

Procedure when adjusting:

For verified balances adjustment by means of a jumper is locked. In order to carry out adjustment the two contacts of the conductor plate must be shorted with a jumper (see chapt. 7.7.1).

Observe stable environmental conditions. A warming up time of ca. 10 minutes is required for stabilization. Ensure that there are no objects on the weighing plate.

Operation	Display
Switch on balance and during self-check press the TARE key 	
Use the number keys to enter password „0000“:  confirmar	 ↓ 
 Ensure that there are no objects on the weighing plate.	

 <p>Zero point will be saved.</p>	<p>The required adjustment weight is displayed:</p> 
<p>Carefully place adjusting weight in the centre of the weighing plate</p>  <p>The adjustment process is started.</p> <p>The adjustment process has been successfully completed.</p> <p>Remove adjustment weight, in case of an adjustment error or incorrect adjustment weight an error message is shown (SPAN / FAKLD) on the display, repeat adjustment process.</p>	 <p style="text-align: center;">↓</p>  <p style="text-align: center;">↓</p> 
<p>Return to weighing mode:</p> 	
<p>Back to adjustment process:</p> 	

Notice: For verified balances reset jumper.

7.7 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.

After verification the balance is sealed at the indicated positions.

Verification of the balance is invalid without the "seal/lead seal".

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.**

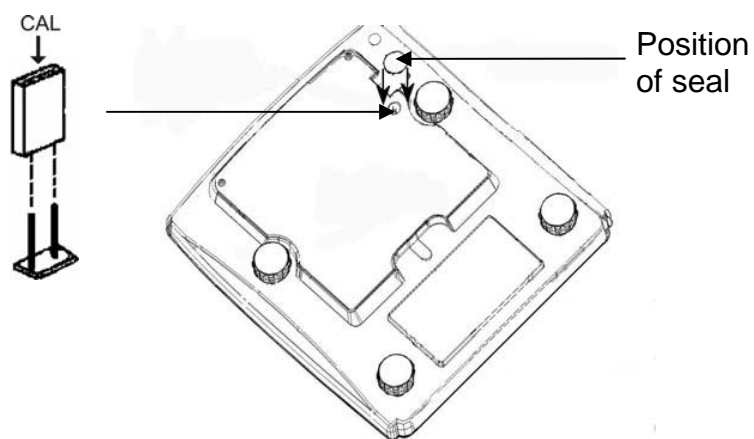
7.7.1 Jumper and seals

1. Bottom of the balance

Access to conductor plate:

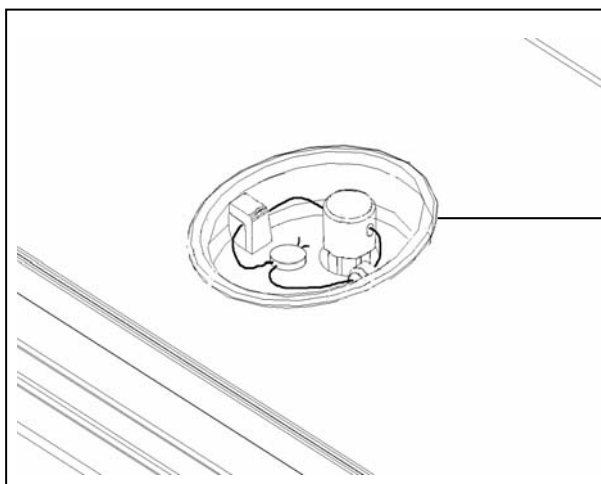
- Place your balance upside down
- Remove seal
- For verified balances, the jumper is on a pin
- For adjustment the jumper must be set on both pins

Position jumper for adjustment



2. Top of the balance



- Remove weighing plate



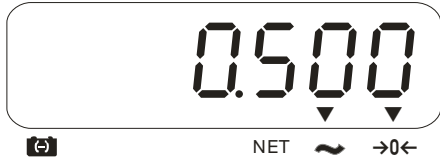
Sealing by seal or by lead seal

8 Operation

8.1 Switch on/off and set zero

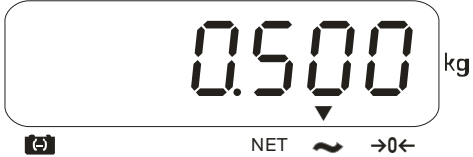


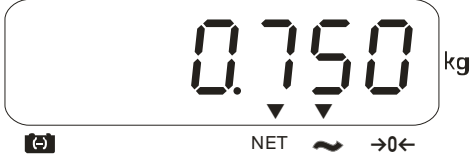
Operation	Display
<p>1. Switch on balance</p> <p>Press ON/OFF switch and hold briefly (at the bottom right side of the balance)</p> <p>The balance will carry out a self-test</p>	<p>As soon as the weight display shows "0" in all the three display windows your balance is ready to weigh.</p>
<p>2. Zeroing</p> 	 <p>The zero display and the arrow above the „→0←“ symbol are displayed.</p>

8.2 Simple weighing

Operation	Display
<p>Place goods onto weighing plate</p>	<p>Read weighing result</p>  <p>If weighing values are stable the arrow will be displayed above the ~ symbol.</p>
<p>If the goods are heavier than the weighing range, the display will show "QL" (=Overload), and a whistle is sounded.</p>	

8.3 Weighing with 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.

Operation	Display
Place empty tare container on the weighing plate. The total weight of the container is displayed.	
Reset display to "0": 	 <p>The weight of the container is now internally saved. Zero display and the arrow above the "NET" symbol are displayed.</p>
Place the goods to be weighed into the tare container.	Read the weight of the goods on the display. 

The taring process can be repeated any number of times, e.g. when adding several components for a mixture (adding).

8.4 Weighing with price determination

As soon as the goods to be weighed are placed on the balance and the basic price has been set the price is calculated automatically and displayed in the provided field.


8.4.1 Manual input of a basic price

Operation	Display		
	Weight [kg]	Basic price	Price [€]
If you are using a weighing container, tare	0.000	0.00	0.00
Place goods to be weighed on balance	1.300	0.00	0.00
Enter basic price via number keys; sales price is automatically calculated	1.300	5.00	6.50


8.4.2 Saving and calling up a basic price

- The balance is able to save up to 43 PLU values as basic price.
- The PLU value may be saved as €/kg or €/100 g.
- The keys M1, M2 and M3 are used to save /call up the three most frequently used PLU values
- The other PLU values are saved/called up via the M4-key.

Saving a basic price via the direct price keys M1, M2, M3:


Operation	Display		
	Weight [kg]	Basic price	Price [€]
Enter a basic price via keyboard	0.000	2.00	0.00
 3 sec.	PLU	1	5.96 €
Entry for M2/M3 is carried out in the same way			

Saving a basic price via the M4-key:

Operation	Display		
	Weight [kg]	Basic price	Price [€]
Enter your basic price via keyboard, either in €/kg or in €/100 g	0.000	2.00	0.00
 3 sec.	SAUE	Pos 00	
Enter the numbers of your desired PLU or leave the value 00 for [PLU4]		17	
The basic price is saved at the desired position. By means of an acoustic signal the saving of the PLU is acknowledged.	SAUE	Pos 17	
	PLU	SAUEd	

To modify values saved at a certain PLU position, repeat procedure.

Call up a basic price:

Operation	Display		
	Weight [kg]	Basic price	Price [€]
 + PLU-position	LOAD	17	
The basic price saved at this position is displayed	0.000	3.00	0.00

Notice: For the keys M1, M2 and M3 only press the respective key to display the saved basic price.




8.5 AUTO CLEAR

Use the  key to activate the **AUTO-CLEAR** function; at the same time the arrow above "AUTO CLEAR" appears in the display.

Remove the goods to be weighed from the weighing plate, this way the set basic price will remain.




For activated **AUTO-CLEAR** function the set basic price is automatically deleted when the balance is unloaded.

9 Display background illumination

Operation	Display
 Hold for 4 sec	<p style="text-align: center;"><i>EL AU</i></p>
<p>To select your setting:</p> 	<ol style="list-style-type: none"> 1. Background illumination off <p style="text-align: center;"><i>EL OFF</i></p> 2. Background illumination on <p style="text-align: center;"><i>EL On</i></p> 3. Automatic background illumination on when weighing plate is loaded <p style="text-align: center;"><i>EL AU</i></p>
<p>Saving your settings:</p> 	

10 AUTO SLEEP-function

With activated AUTO SLEEP function the balance will go into sleep mode after a defined period of time if the load is not changed or no key is pressed. Automatic activation of the display through load change or if any key is pressed.

Operation	Display
Switch on balance and press the →0← key during self test 	<p style="text-align: center;">SLEEP MODE</p>
To select your setting: 	<ol style="list-style-type: none"> 1. Automatic switch off deactivated <p style="text-align: center;">SLEEP MODE 0</p> 2. Automatic switch off after 1 min <p style="text-align: center;">SLEEP MODE 1</p> 3. Automatic switch off after 5 min <p style="text-align: center;">SLEEP MODE 5</p> 4. Automatic switch off after 30 min <p style="text-align: center;">SLEEP MODE 30</p>
Saving your settings: 	

11 Service, maintenance, disposal

11.1 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.

11.2 Service, maintenance

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

Before opening, disconnect from power supply.

11.3 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.

12 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.

Fault	Possible cause
<i>The displayed weight does not glow.</i>	• <i>The balance is not switched on.</i>
	• <i>The mains supply connection has been interrupted (mains cable not plugged in/faulty).</i>
	• <i>Power supply interrupted.</i>
	• <i>Batteries are inserted incorrectly or empty</i>
	• <i>No batteries inserted.</i>
<i>The displayed weight is permanently changing</i>	• <i>Draught/air movement</i>
	• <i>Table/floor vibrations</i>
	• <i>Weighing plate has contact with other objects.</i>
	• <i>Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)</i>
<i>The weighing result is obviously incorrect</i>	• <i>The display of the balance is not at zero</i>
	• <i>Adjustment is no longer correct.</i>
	• <i>Great fluctuations in temperature.</i>
	• <i>Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)</i>

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