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Operating instructions
Analytical balance

KERN AXS, AXE

Type TAXS-A, TAXE-A

Version 1.0

2024-06

GB

TAXS-A_TAXE-A-BA-e-2410

GB

KERN AXS, AXE

Version 1.0 2024-06

Operating instructions
Analytical balance

Contents

1 Introduction

1.1 General notes on these instructions

INFORMATION

! Read the operating instructions completely before using the appliance. Only use the appliance in accordance with the specifications described in these operating instructions. This serves to protect against personal injury and damage to property.

These operating instructions contain the information you need to use your appliance as intended.

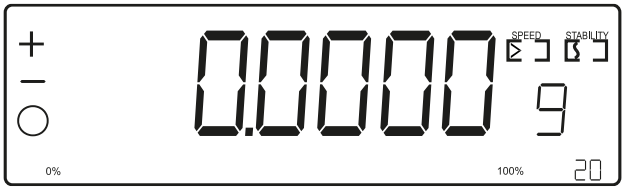
These operating instructions are a translation of the original German version.

1.2 Presentation conventions

1.2.1 Representations of the text

Text	Designation
●	Enumeration
⇨	Instruction for action
1. **2.** **...**	Steps in assembly / installation instructions, the sequence of which must be followed
[ ]	Square brackets are used to display buttons *Example:* **[X]** button
< >	Angle brackets are used to display content that is shown on the device display (e.g. menu items, parameters, notifications, ...) *Example:* **<MENU>**

1.2.2 Representations of the device operation

Symbol	Meaning
	Short keystroke
	Long button press / press and hold button
	Display on the scales (example illustration)

1.2.3 Binding information

Important and binding information describes facts that must be emphasised, which you must take note of and which are always valid (e.g. legal provisions or terms and conditions).

INFORMATION

Here you will find important binding information

1.2.4 Additional information, tips and recommendations

Additional information, tips and recommendations can be found here

2 Technical data

KERN	AXS 100-4	AXS 200-4
Item number / type	TAXS 120-4-A	TAXS 220-4-A
Readability (d)	0,0001 g	
Weighing range (max)	120 g	220 g
Taring range (subtractive)	120 g	220 g
Reproducibility	0,0002 g	0,0002 g
Linearity	± 0,0003 g	
Settling time (typical)	3 s	
Smallest part weight for piece counting under laboratory conditions*	1 mg	
Smallest part weight for piece counting under normal conditions**	10 mg	
Recommended calibration weight, not included, (class)	100 g (E2)	200 g (E2)
Warm-up time	8 h	
Weighing units	g, mg, ct, oz	
Air humidity	max. 85% rel. (non-condensing)	
Permissible ambient temperature	+15 °C ... + 25 °C	
Input voltage device	9 V, 3 A	
Input voltage power supply unit	100 V - 240V AC 50 / 60Hz	
Housing dimensions	195 x 300 x 295 (W x D x H) [mm]	
Windscreen dimensions	180 x 175 x 200 (W x D x H) [mm]	
Weighing plate, stainless steel	Ø 80 mm	
Net weight (kg)	5 kg	
Interfaces	RS-232	

KERN	AXE 100-4	AXE 200-4
Item number / type	TAXE-120-4-A	TAXE 220-4-A
Readability (d)	0,0001 g	
Weighing range (max)	120 g	220 g
Taring range (subtractive)	120 g	220 g
Reproducibility	0,0002 g	0,0002 g
Linearity	± 0,0003 g	
Settling time (typical)	3 s	
Smallest part weight for piece counting under laboratory conditions*	1 mg	
Smallest part weight for piece counting under normal conditions**	10 mg	
Recommended calibration weight, not included, (class)	Internal	
Warm-up time	8 h	
Weighing units	g, mg, ct, oz	
Air humidity	max. 85% rel. (non-condensing)	
Permissible ambient temperature	+15 °C ... + 25 °C	
Input voltage device	9 V, 3 A	
Input voltage power supply unit	100 V - 240V AC 50 / 60Hz	
Housing dimensions	195 x 300 x 295 (W x D x H) [mm]	
Windscreen dimensions	180 x 175 x 200 (W x D x H) [mm]	
Weighing plate, stainless steel	Ø 80 mm	
Net weight (kg)	5 kg	
Interfaces	RS-232	

*** Smallest part weight for piece counting - under laboratory conditions:**

- There are ideal environmental conditions for high-resolution counting
- The counting parts have no dispersion

**** Smallest part weight for piece counting - under normal conditions:**

- Unsettled ambient conditions prevail (wind draught, vibrations)
- The counting parts scatter

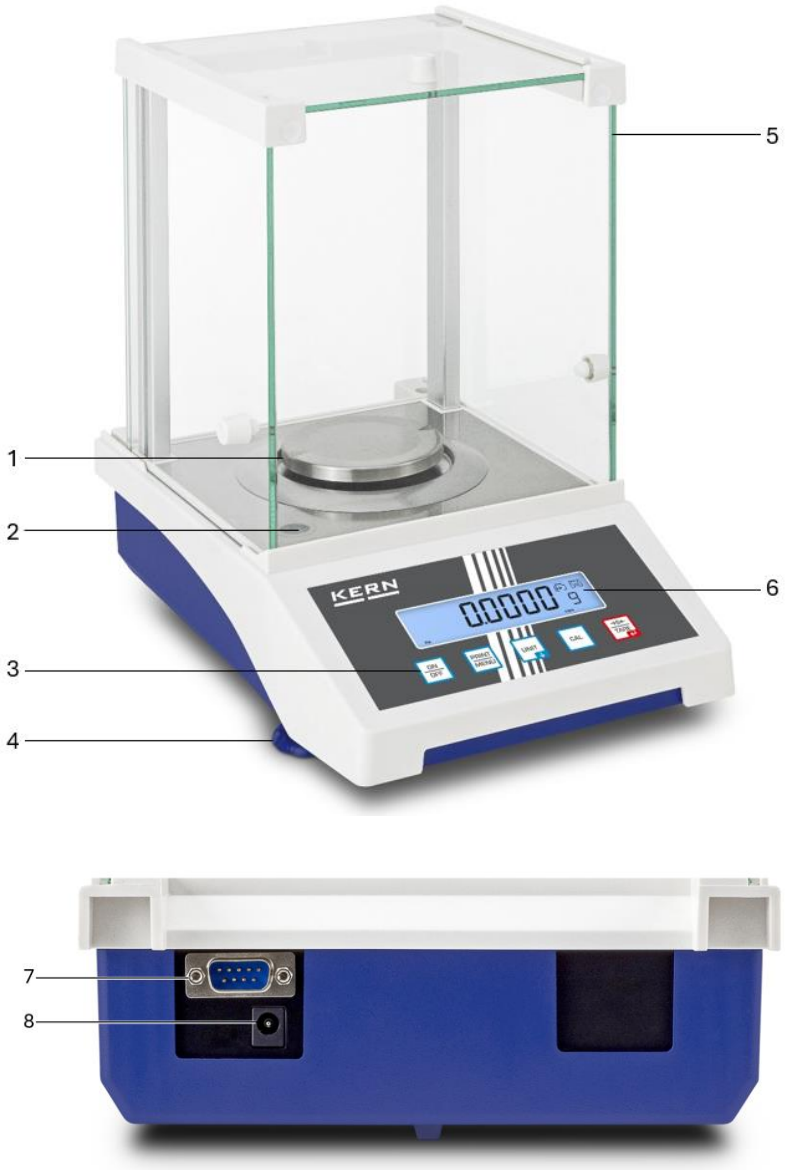
3 Declaration of Conformity

You can find the current EC/EU Declaration of Conformity online at

www.kern-sohn.com/ce

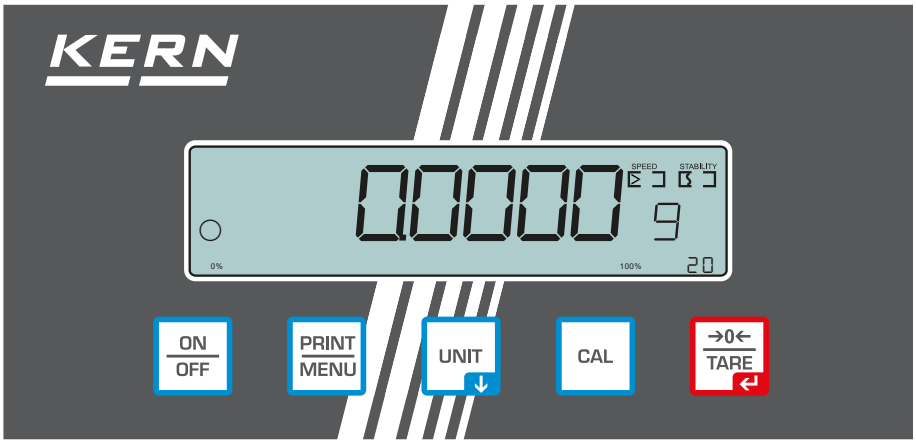
4 Device overview

4.1 Components



Pos.	Designation
1	Weighing plate
2	Spirit level
3	Keyboard
4	Foot screw
5	Windbreak
6	Display
7	RS232C Interface
8	Mains adapter connection

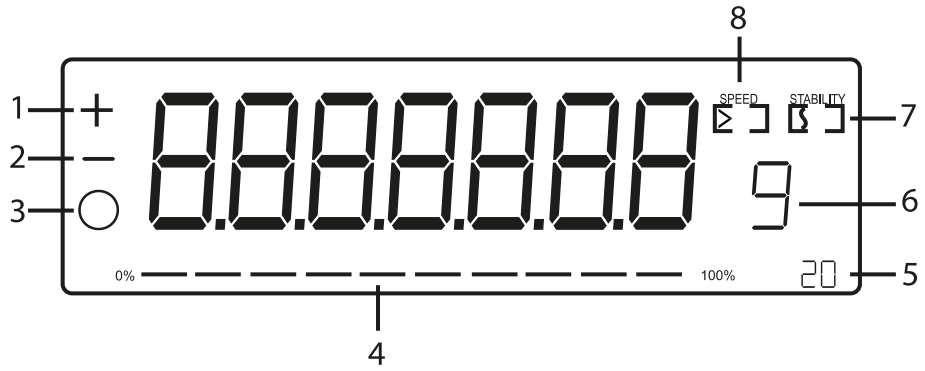
4.2 Operating elements



4.2.1 Keyboard overview

Button	Name	Function in operating mode	Function in the menu
ON OFF	**[ON/OFF]**	➢ Switch on/off	
PRINT MENU	**[PRINT | MENU]**	➢ Transmit weighing data via interface ➢ Call up menu ➢ (long keystroke)	➢ Navigation button at the top level of the menu structure
UNIT	**[UNIT]**	➢ UNIT button Change weighing unit	➢ Navigation button in the submenus
CAL	**[CAL]**	➢ CAL button Start calibration	
→0← TARE	**[→0← | TARE]**	➢ Zeros ➢ Taring	➢ Select menu item ➢ Confirm selection

4.2.2 Display overview



Position	Display	Description
1	**+**	Plus display
2	**-**	Minus display
3	○	Stability indicator
4	0% 100%	Bar graph
5	20	Autocal interval in min.
6	**Unit display**	Selectable: g, mg, ct, oz
7	STABILITY	Stability display
8	SPEED	Reaction display

5 Basic information (general)

5.1 Intended use

The scales you have purchased are used to determine the weight of goods to be weighed. It is intended for use as a "non-automatic scale", i.e. the sample is placed manually, carefully and centred on the weighing plate. Once a stable weight value has been reached, the weight value can be read off.

5.2 Improper use

- Our scales are non-automatic scales and are not intended for use in dynamic weighing processes. However, the scales can also be used for dynamic weighing processes after checking the individual area of application and, in particular, the accuracy requirements of the application.
- Do not leave a permanent load on the weighing plate. This can damage the measuring mechanism.
- Avoid shocks and overloading the scales above the specified maximum load (Max), minus any tare load already present. This could damage the scales.
- Never operate the scales in potentially explosive atmospheres. The standard version is not explosion-proof.
- The scale must not be modified in any way. This can lead to incorrect weighing results, safety-related defects and the destruction of the scale.
- The scale may only be used in accordance with the specifications described. Deviating areas of use/application must be approved in writing by KERN.

5.3 Guarantee

Warranty expires with:

- Non-compliance with our specifications in the operating instructions
- Use outside the described applications
- Modifying or opening the device
- Mechanical damage and damage caused by media, liquids, natural wear and tear
- Improper set-up or electrical installation
- Overload of the measuring unit

5.4 Test equipment monitoring

As part of quality assurance, the metrological properties of the scales and any test weights must be checked at regular intervals. The responsible user must define a suitable interval as well as the type and scope of this check. Information regarding the monitoring of test equipment for balances and the test weights required for this is available on the KERN homepage (www.kern-sohn.com). In its accredited calibration laboratory, KERN can calibrate test weights and scales quickly and cost-effectively (traceability to the national standard).

6 Basic safety instructions

6.1 Observe the notes in the operating instructions

⇨ Read the operating instructions carefully before installation and commissioning, even if you already have experience with KERN scales.

6.2 Staff training

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

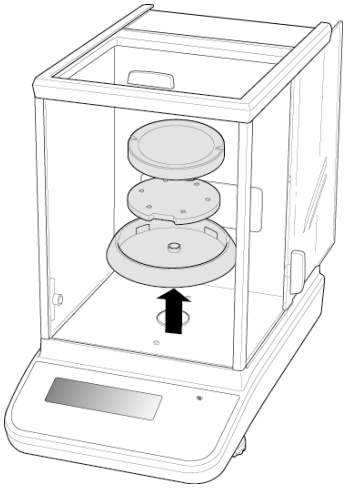
7 Transport and storage

7.1 Control on takeover

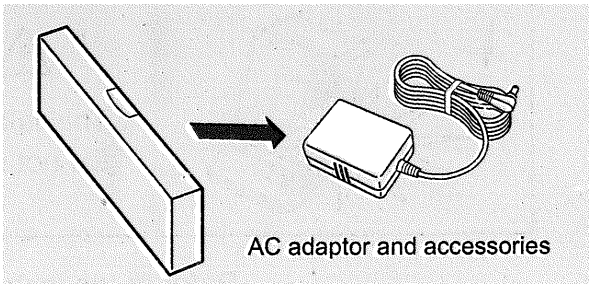
Please check the packaging immediately upon receipt and the appliance for any visible external damage when unpacking.

7.2 Packaging/return transport

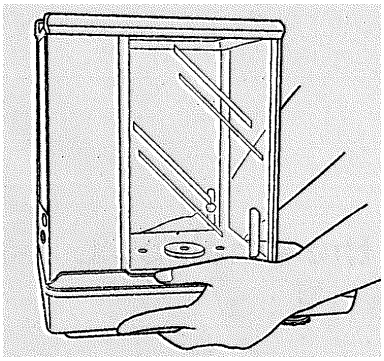
- ⇨ Keep all parts in the original packaging for any necessary return transport.
- ⇨ Only the original packaging is to be used for return transport.
- ⇨ Disconnect all connected cables and loose/movable parts before despatch.



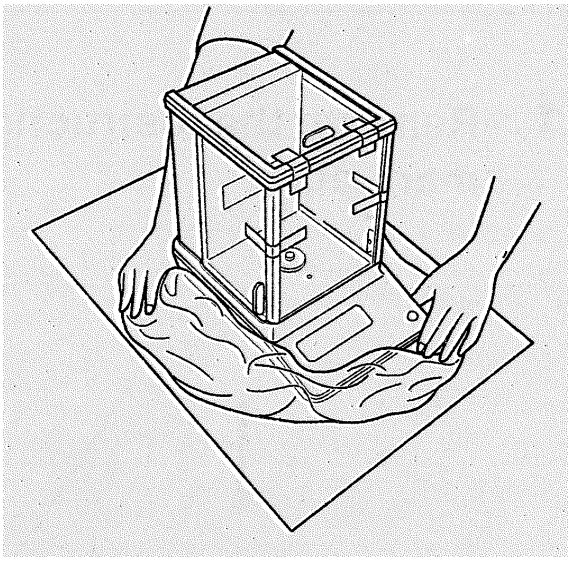
- ⇨ Refit any transport locks provided.
- ⇨ Secure all parts, e.g. glass draft shield, weighing plate, power supply unit, etc. against slipping and damage.

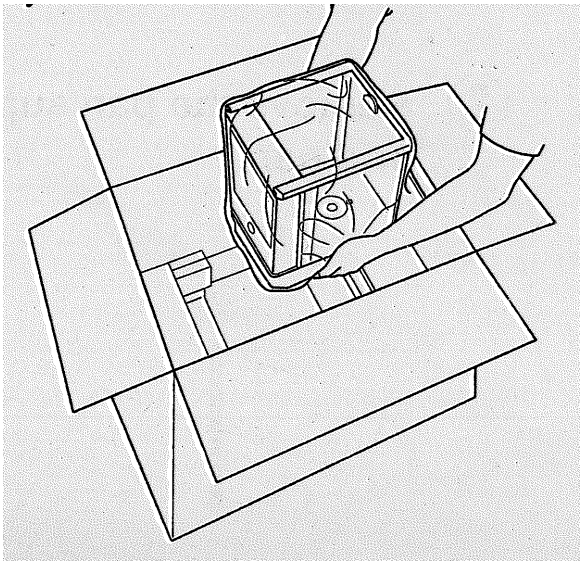


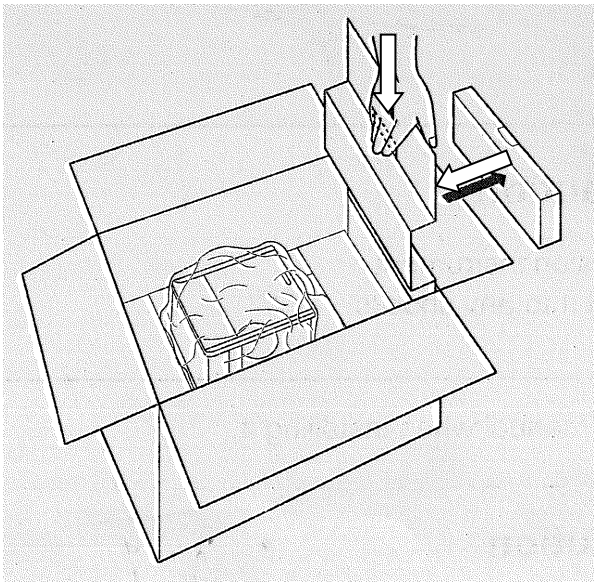
- ⇨ Packing the mains adapter and accessories

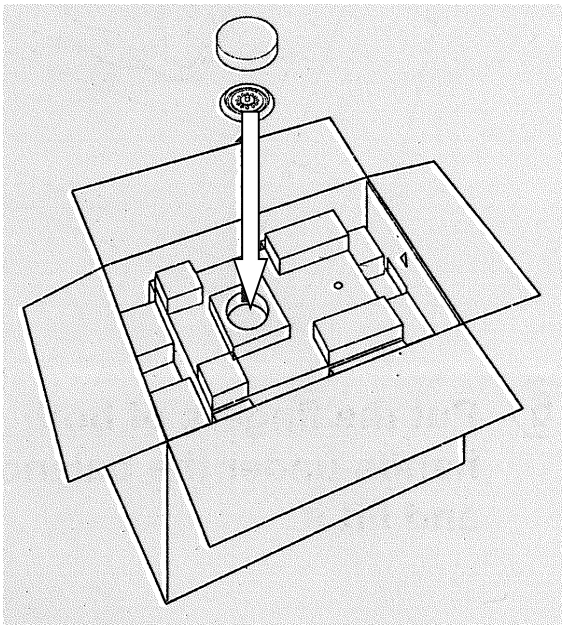


- ⇨ Lift the scales with both hands









Example illustration

8 Unpacking, installation and commissioning

8.1 Installation site, place of use

The scales are designed to achieve reliable weighing results under normal operating conditions.

You can work accurately and quickly if you choose the right location for your scales.

Observe the following at the installation site:

- Place the scales on a stable, level surface.
- Avoid extreme heat and temperature fluctuations, e.g. by placing the appliance next to a radiator or in direct sunlight.
- Protect the scales from direct draughts through open windows and doors.
- Avoid vibrations during weighing.
- Protect the scales from high humidity, vapours and dust.
- Do not expose the appliance to high humidity for long periods of time. Unauthorised condensation (condensation of humidity on the appliance) can occur if a cold appliance is brought into a much warmer environment. In this case, acclimatise the appliance disconnected from the mains for approx. 2 hours at room temperature.
- Avoid static charging of items to be weighed and weighing containers.
- Do not operate in potentially explosive atmospheres or in areas at risk of explosion due to gases, vapours, mists or dusts!
- Chemicals (e.g. liquids or gases) that could attack and damage the inside or outside of the scales must be kept away.
- If electromagnetic fields or static charges occur (e.g. when weighing / counting plastic parts) or if the power supply is unstable, large display deviations (incorrect weighing results and damage to the scales) are possible. The location must then be changed or the source of interference eliminated.

8.2 Unpacking and checking

Remove the appliance and accessories from the packaging, remove the packaging material and set up at the designated workstation. Check that all parts included in the scope of delivery are present and undamaged.

Scope of delivery / standard accessories:

- Scale, see Chap. 4.1
- Weighing plate
- Mains adapter
- Operating instructions

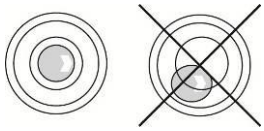
8.3 Assembly, installation and levelling

The correct location makes a decisive contribution to the accuracy of the weighing results of high-resolution analytical balances (see section 7.1)

⇨ Install the weighing plate and, if necessary, the draft shield.

⇨ Make sure that the scales are level.

⇨ Level the scale with the foot screws until the air bubble in the spirit level is in the prescribed circle.



⇨ Check levelling regularly

8.4 Mains connection

Select the country-specific mains plug and plug it into the power supply unit.

Check that the voltage input of the scale is set correctly. The scale may only be connected to the mains if the information on the scale (sticker) and the local mains voltage are identical.

Only use original KERN power supply units. The use of other makes requires the consent of KERN.

Important:

- ➢ Check the mains cable for damage before commissioning.
- ➢ Ensure that the power supply unit does not come into contact with liquids.
- ➢ The mains plug must be accessible at all times.

8.5 Connection of peripheral devices

Before connecting or disconnecting additional devices (printer, PC) to the data interface, the scale must be disconnected from the mains.

Only use accessories and peripherals from KERN with your balance, as these are optimally matched to your balance.

8.6 Initial commissioning

In order to obtain accurate weighing results with electronic scales, the scale must have reached its operating temperature (see warm-up time, section 1). The scale must be connected to the power supply (mains connection, rechargeable battery or battery) for this warm-up time.

The accuracy of the scale depends on the local gravitational acceleration.

It is essential to follow the instructions in the Adjustment chapter.

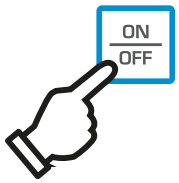
8.7 Adjustment

As the value of the acceleration due to gravity is not the same at every location on earth, each scale must be adjusted to the prevailing acceleration due to gravity at the installation site in accordance with the underlying physical weighing principle (only if the scale has not already been adjusted to the installation site at the factory). This adjustment process must be carried out when the scale is first put into operation, after each change of location and in the event of fluctuations in the ambient temperature. In order to obtain accurate measured values, it is also advisable to periodically adjust the scale during weighing operation.

- Carry out adjustment as close as possible to the maximum load of the scale (for recommended adjustment weight, see chapter 1). Adjustment is also possible with weights of other nominal values or tolerance classes but is not optimal from a metrological point of view. The accuracy of the calibration weight must correspond approximately to the readability [**d]** of the scale, or slightly better.
  Information on test weights can be found on the Internet at: http://www.kern-sohn.com
- Ensure stable ambient conditions. A warm-up time (see section 1) is required for stabilisation.
- Ensure that there are no objects on the weighing plate.
- Avoid vibrations and air currents.
- Only carry out adjustment with the standard weighing plate in place.

8.7.1 External adjustment AXS models

Realisation:



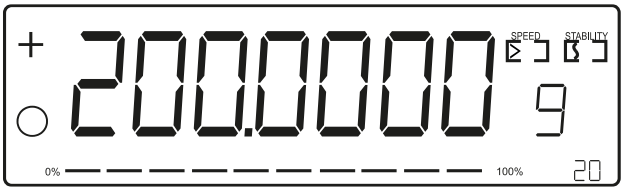
⇨ Press **[ON | OFF].**

⇨ Press **[→0← | TARE]** to set the scale to zero

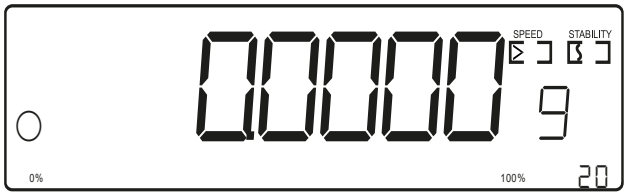
⇨ Press **[CAL].**

⇨ **<CAL-100> or**
<CAL-200> is displayed (depending on model)

⇨ Apply calibration weight



⇨ After successful adjustment, <200.0000 G> is displayed.

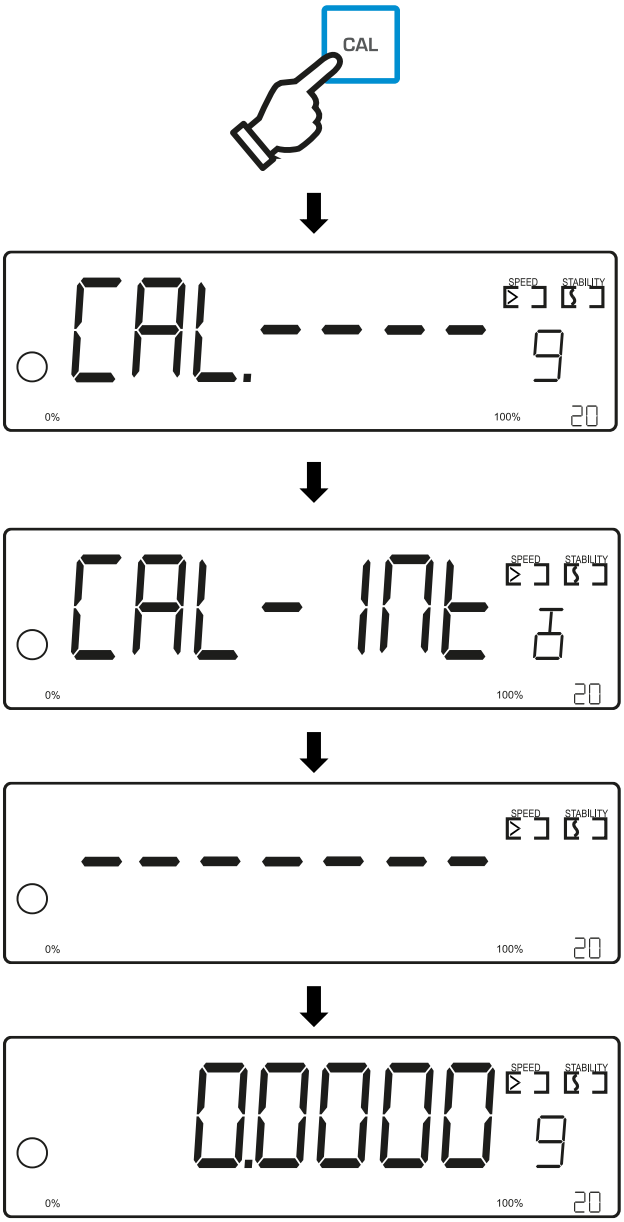


⇨ Remove the calibration weight

⇨ The scales are now ready for weighing

8.7.2 Internal adjustment AXE models

Realisation:



⇨ Press **[CAL].**

⇨ Calibration is started.

⇨ <CAL.----> is displayed

⇨ Avoid moving the scales during the calibration process

⇨ <CAL- int> is displayed flashing

⇨ Internal adjustment is carried out

⇨ <--------> is displayed

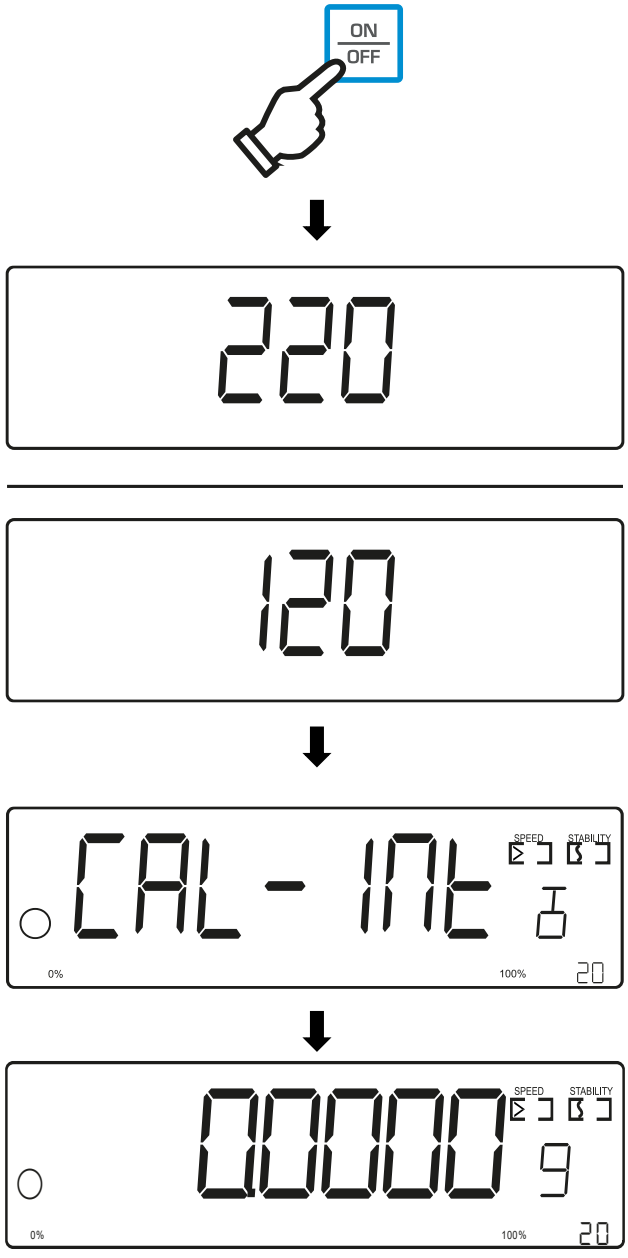
⇨ The scales are now ready for weighing

9 Basic operation

9.1 Switch on/off

Switch on

Realisation:



⇨ Press **[ON | OFF].**

⇨ The maximum weight in g is displayed.

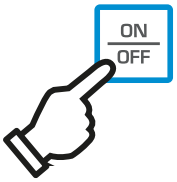
⇨ The scale performs an internal adjustment.

(AXE models only)

⇨ The scales are now ready for weighing

Switch off:

Realisation:

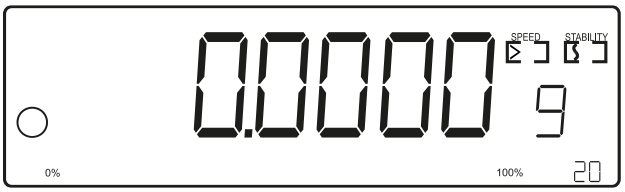


⇨ Press **[ON | OFF].**

⇨ The display switches off

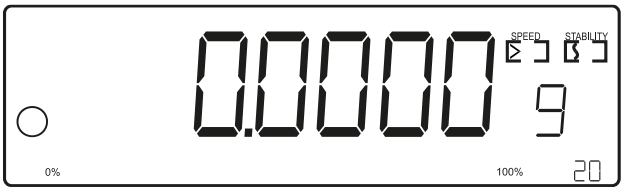
9.2 Simple weighing

Realisation:

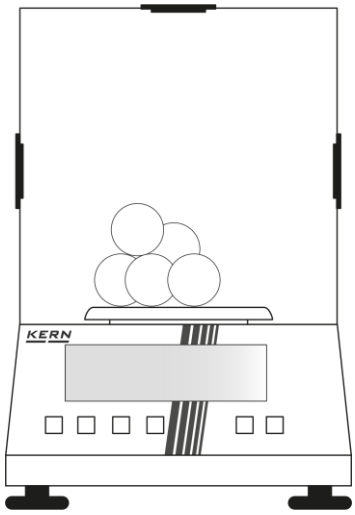


⇨ Check zero display

⇨ Press **[→0← | TARE]** if necessary



⇨ The scale is ready to weigh



Load the sample

⇨ Wait until the stability indicator **<O>** is displayed

⇨ The weighing result can be read off

Overload warning

Avoid overloading the appliance beyond the specified maximum load (Max), minus any existing tare load.
This could damage the appliance.

Exceeding the maximum load is indicated by the display <Err. 3> is displayed. Unload the scale or reduce the preload.

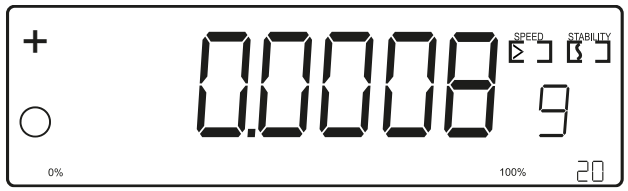
9.3 Zeros

To achieve optimum weighing results, zero the scales before weighing.

Zeroing is only possible in the range ± 2% max.

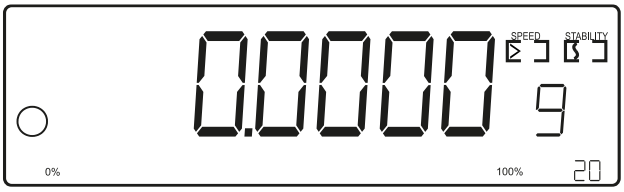
The tare function is activated for values greater than ± 2% max.

Realisation:



⇨ Unload the scales and check the stability indicator

⇨ Press **[→0← | TARE].**

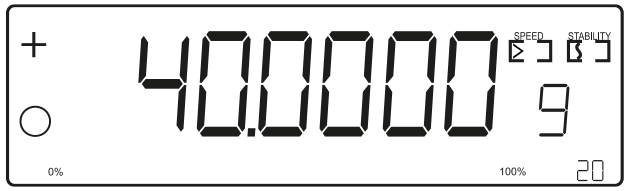


⇨ The scale is ready to weigh

9.4 Taring

The tare weight of any weighing container can be tared off at the touch of a button so that the net weight of the weighed goods is displayed for subsequent weighings.

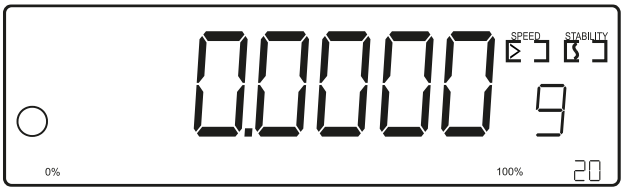
Realisation:



⇨ Place the weighing container on the weighing pan

⇨ Wait until the stability display **<O>** appears.

⇨ Press **[→0← | TARE].**



⇨ The weight of the value is now stored internally

⇨ The scale is ready to weigh

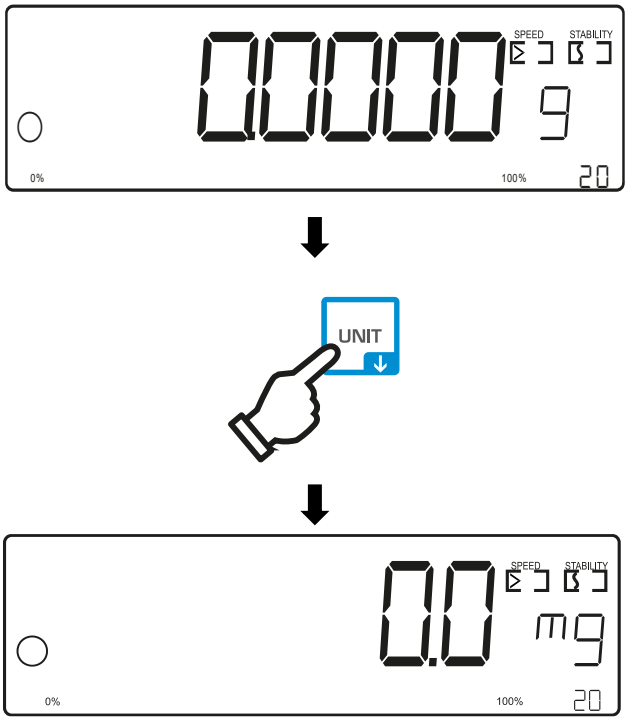
- When the scales are unloaded, the stored tare value is displayed with a negative sign.
- To delete the stored tare value, unload the weighing plate and press **[→0← | TARE].**
- The taring process can be repeated any number of times, for example when weighing in several components to form a mixture (additional weighing). The limit is reached when the taring range is fully utilised.

9.4.1 Switching the weighing unit

By default, **[UNIT] is** set so that you can switch between the weighing units by **briefly** pressing the button.

Switch unit:

Realisation:



⇨ Press **[UNIT]** to select between units

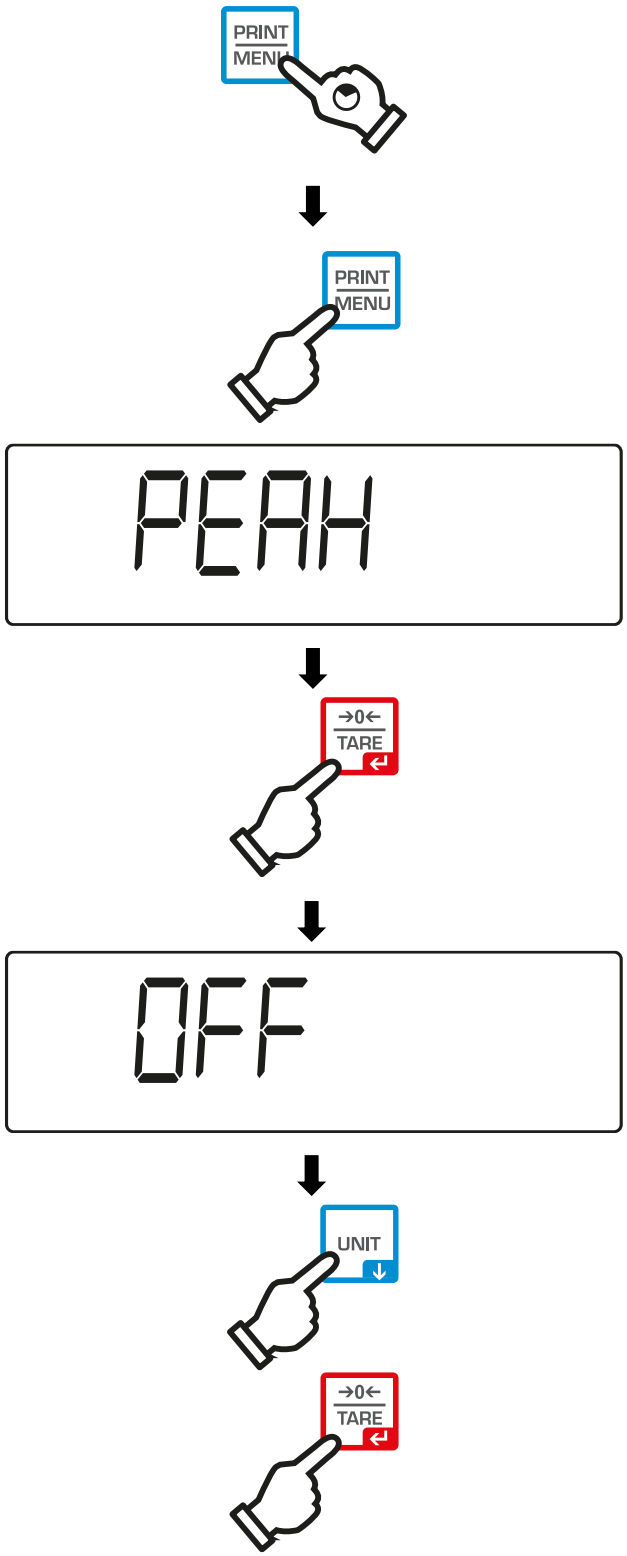
⇨ The unit is changed over. Confirmation by the operator is not required

10 Application <Weighing>

How to carry out a simple weighing and taring procedure is described in Chap. 9.2 and 9.4 respectively. Further specific setting options can be found in the following chapters.

10.1 PEAK HOLD function

Realisation:



⇨ Press and hold **[PRINT | MENU]** until you hear a long beep.

⇨ <un it> is displayed

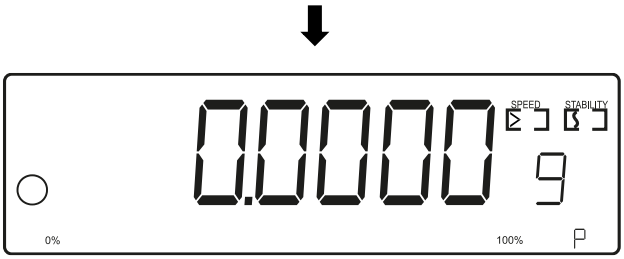
⇨ Press **[PRINT | MENU]** until <PEAH> is displayed

⇨ Press **[→0← | TARE].**

⇨ <OFF> is displayed by default.

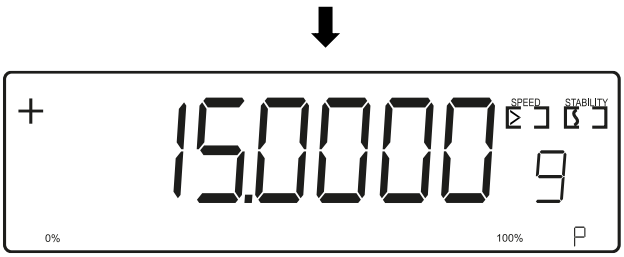
⇨ Use **[UNIT] to** select between <On> and <OFF>.

⇨ Confirm the desired setting with **[→0← | TARE].**

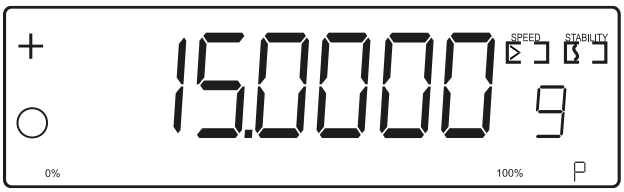


⇨ The scale is now in PEAK HOLD mode

⇨ A <P> appears in the bottom right-hand corner of the display.



⇨ Load the sample



⇨ Wait until the stability indicator **<O>** is displayed

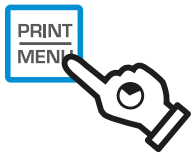
⇨ The first stable PEAK value is still shown in the display after unloading

⇨ The sample can be removed from the weighing pan

⇨ The weighing result can be read off

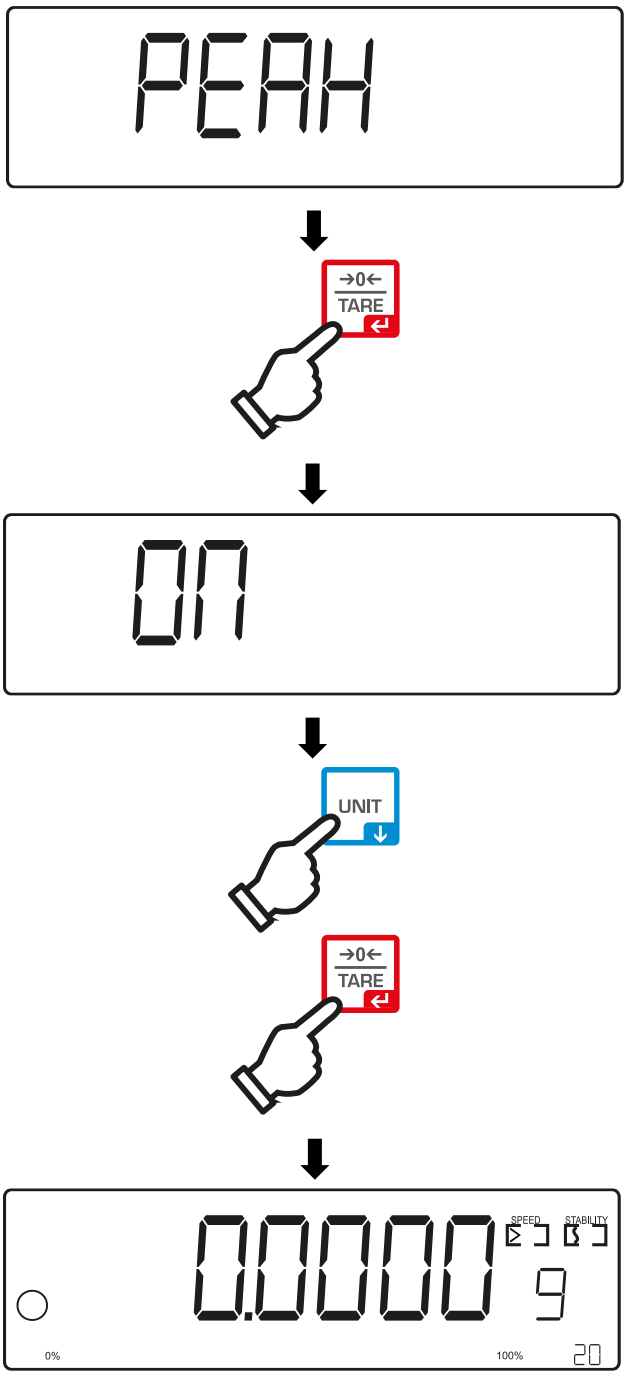
⇨ The weight can be deleted with **[→0← | TARE]** to start a new PEAK HOLD process

Deactivate PEAK:



⇨ Keep **[PRINT | MENU]** pressed

⇨ Press **[PRINT | MENU]** until **<PEAH>** is displayed



⇨ Press **[→0← | TARE].**

⇨ <On> is displayed.

⇨ Use **[UNIT] to** select between <On> and <OFF>.

⇨ Confirm the desired setting with **[→0← | TARE].**

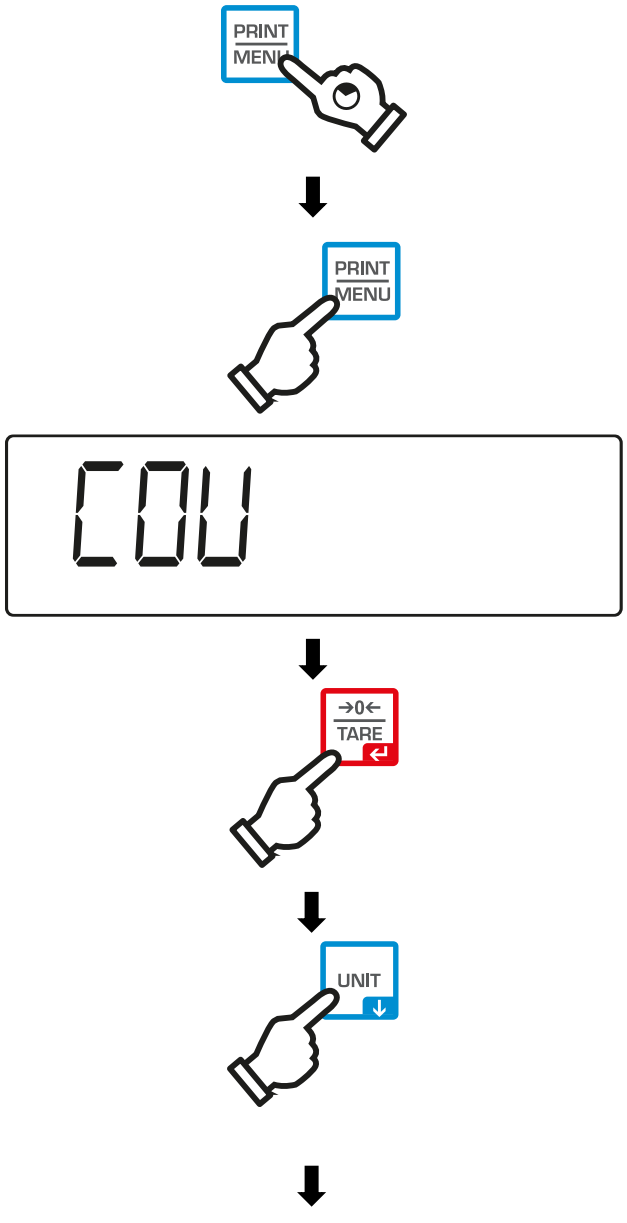
⇨ The scale is now in weighing mode

11 Application <Count>

Before the scale can count parts, it must know the average piece weight, the so-called reference. To do this, a certain number of the parts to be counted must be placed on the scale. The scale determines the total weight and divides it by the number of parts, the so-called reference piece count. The count is then carried out on the basis of the calculated average piece weight.

- The higher the reference quantity, the greater the counting accuracy.
- The reference must be set particularly high for small or very different parts.
- For minimum counting weight see table "Technical data".
- If the <Count> application is not already active, select the menu setting < COU >

Realisation:

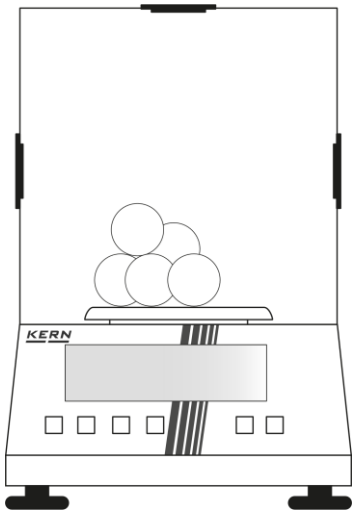


⇨ Keep **[PRINT | MENU]** pressed

⇨ Press **[PRINT | MENU]** until **<COU>** is displayed

⇨ Press **[→0← | TARE].**

⇨ Press **[UNIT]** to select the reference quantity

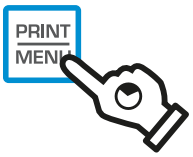


⇨ Place reference quantity

⇨ Press **[→0← | TARE]** to confirm

⇨ The scales are now in counting mode

Exit the <Count> application



⇨ Keep **[PRINT | MENU]** pressed

⇨ <WEIGHT> is displayed

⇨ Press **[→0← | TARE]** to exit Count.

⇨ Navigation in the menu, see Chap. 14.1

Overview:

Level 1	Level 2	Description / Chapter
cou Reference quantity	5	Reference quantity 5
	10	Reference quantity 10
	20	Reference quantity 20
	50	Reference quantity 50
	100	Reference quantity 100
	200	Reference quantity 200
	---	0.0001 g corresponds to 1 piece

12 Application <weighing in per cent>

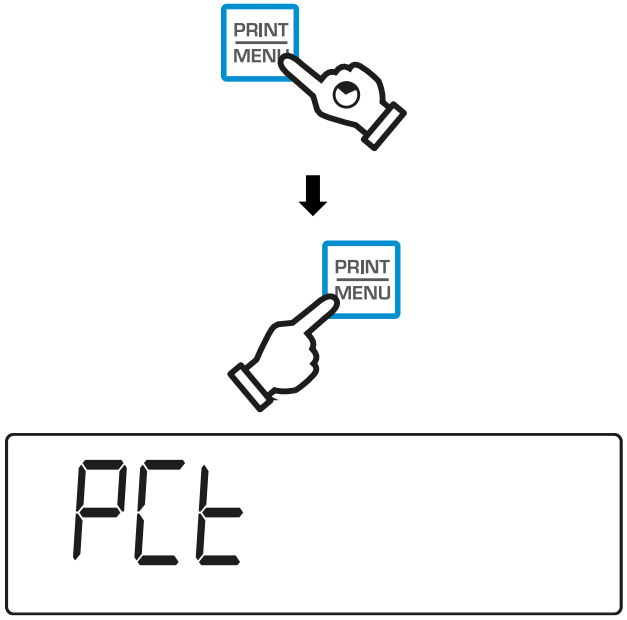
Before the scale can weigh in per cent, it must know the reference, in this case 100%. To do this, the part that corresponds to 100% must be placed on the scale. The scale saves this value and uses it to determine the percentage of the parts that are then placed on the scale. The calculations are carried out on the basis of the reference placed on the scale.

- The more accurate the reference weight, the more accurate the calculations.
- If the reference weights are too small and the measuring conditions are not optimised, measurement deviations may occur.
- To activate the <Percentage weighing> application, select the < PCT> menu setting

12.1 Application-specific settings

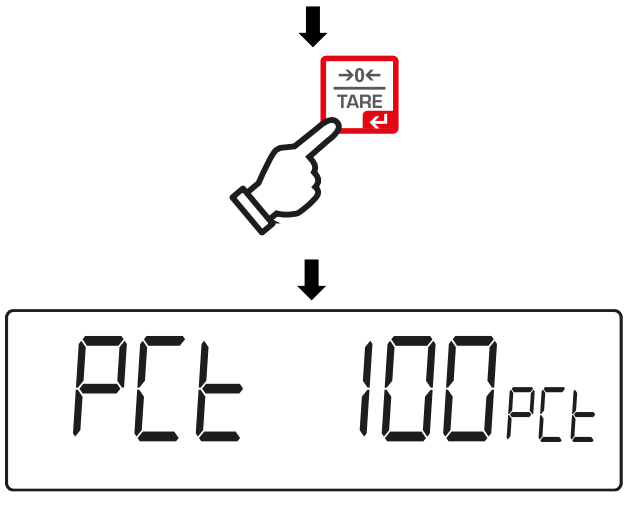
Call up menu:

Realisation:



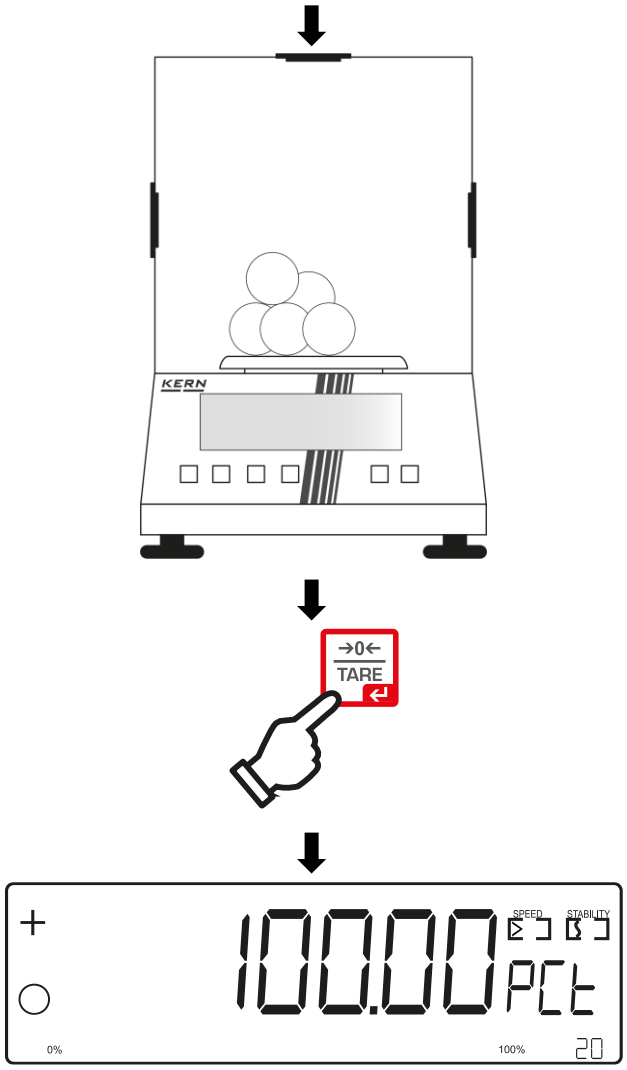
⇨ Keep **[PRINT | MENU]** pressed

⇨ Press **[PRINT | MENU]** until <PCt> is displayed



⇨ Press **[→0← | TARE].**

⇨ <Pct 100 Pct> is displayed.



⇨ Place reference quantity

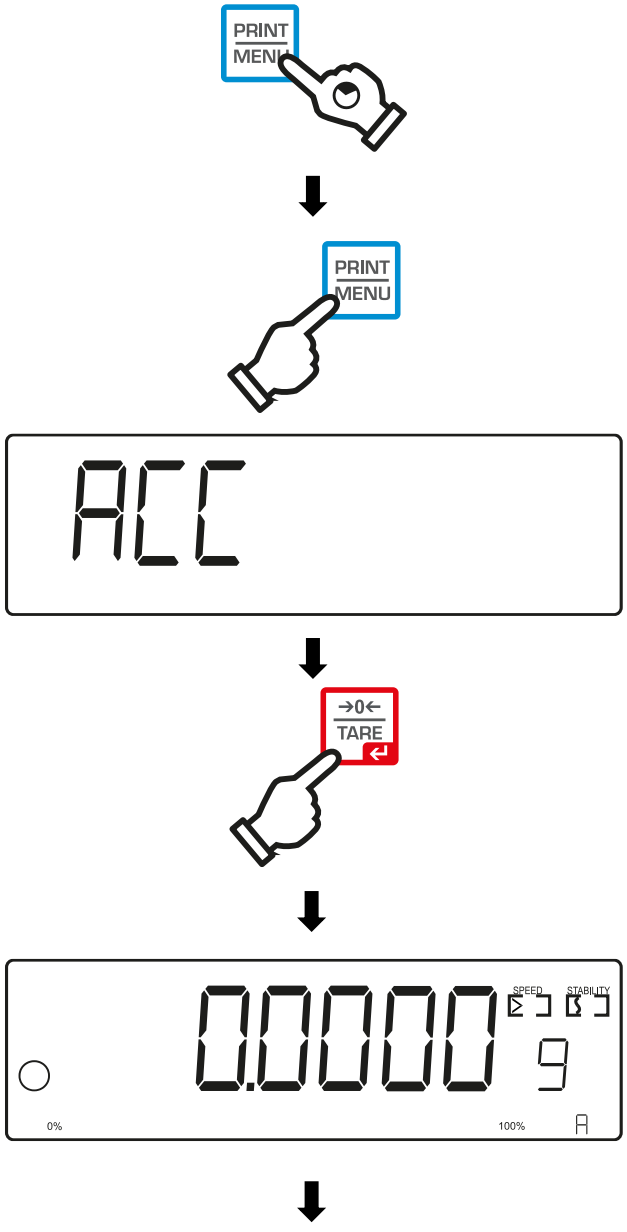
⇨ Press **[→0← | TARE]** to confirm

⇨ The scale is now in percentage weighing mode

13 Application <Summarise>

To activate the <Summing> application, select the < ACC> menu setting

Realisation:



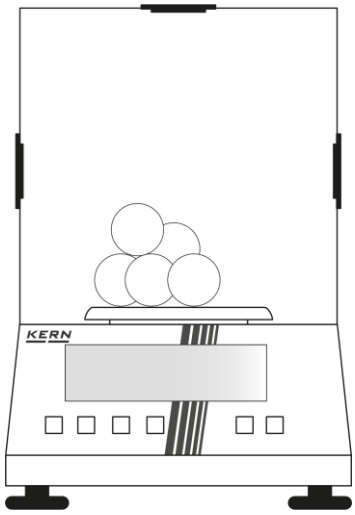
⇨ Keep **[PRINT | MENU]** pressed

⇨ Press **[PRINT | MENU]** until <ACC> is displayed

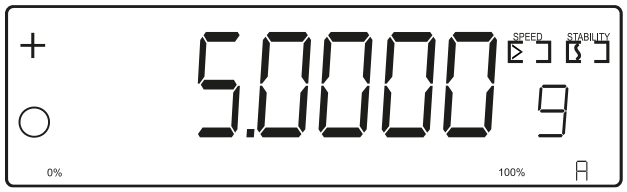
⇨ Press **[→0← | TARE].**

⇨ The scales are now in totalising mode

⇨ <A> is displayed at the bottom right of the screen to indicate the active totalising function

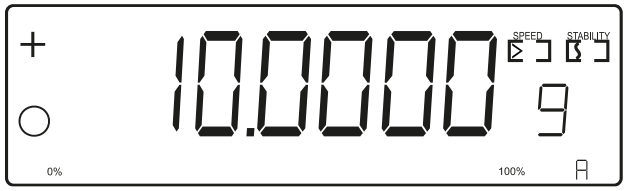


⇨ Load the sample



⇨ Press **[PRINT | MENU]** to totalise weight

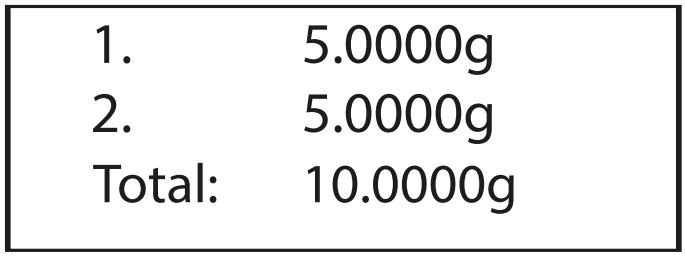
⇨ Press **[UNIT]** to display and print totalised weight



⇨ Totalised weight is displayed and output via the interface

13.1 Application with connected printer

If the scale is connected to a printer, each value is printed out with a numerical index when **[PRINT | MENU]** is pressed. If you press **[UNIT],** the total weight is printed out. This can be recognised by the "Total:" which precedes the weight value.



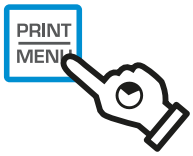
- Communication parameters of the printer and the scale must match

14 Menu

14.1 Navigation in the menu

Call up menu:

Application menu



⇨ Press and hold **[PRINT | MENU]** until the first menu item is displayed

Select and set parameters:

Scrolling on one level	The individual menu blocks can be selected in sequence with **[PRINT | MENU].** If the desired menu block is skipped, the menu must be called up again.
Activate menu item / Confirm selection	Press **[→0← | TARE].**

14.2 Overview Menu

Level 1	Level 2	Further levels / description
		Description of the
unit Unit	g	➔ gram
	mg	➔ Milligram
	CT	➔ Carat
	OZ	➔ Ounce
SPEEd Skill	[ ]	Very slow reaction speed
	[>]	Slow reaction speed
	[> >]	Moderate reaction speed
	[> > >]	Fast reaction speed
StAb Stability	[ ]	Very low sensitivity
	[S]	Low sensitivity
	[S S]	Moderate sensitivity
	[S S S]	High sensitivity
cou Counting	5	Reference weight: 5 parts
	10	Reference weight: 10 parts
	20	Reference weight: 20 parts
	50	Reference weight: 50 parts
	100	Reference weight: 100 parts
	200	Reference weight: 200 parts
	- - -	0.0001 g corresponds to 1 piece
dEFAuLt Factory settings		The scale is reset to the factory settings.
E-cAL	<cAL-200>	External adjustment
Pct Percentage weighing	100 Pct	Reference weight 100%

Level 1	Level 2	Further levels / description	
		Description of the	
AutocAL (AXE scales only) Automatic adjustment	oFF	Set interval for automatic adjustment	
	10 min		
	20 min		
	30 min		
	40 min		
	50 min		
	60 min		
	70 min		
	80 min		
	90 min		
PEAH Maintain peak value	on	Peak value function activated	
	oFF	Peak value function deactivated	
bAud Baud rate	1200*	Setting the baud rate	
	2400		
	4800		
	9600		
Print Print	once	The weight value is output after pressing the **[PRINT | MENU]** button (chap. 15.3.1)	
	co-S	Continuous data output (chap.15.3.2)	
	co-r	Automatic data output (chap. 15.3.3)	
	ASK	EWJ / PFB	
		Com-mand	Function
		S	Stable weighing value for the weight is sent via the interface
ACC Totalise		Activate totalising function	

*Factory setting

15 Communication with peripheral devices

Weighing data can be exchanged with connected peripheral devices via the interfaces.

The output can be sent to a printer or PC.

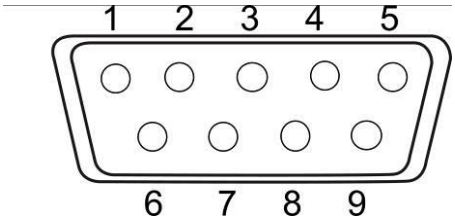
Software (e.g. KERN Balance Connection) is required for output via the PC.

15.1 RS232C interface

The scale is equipped as standard with an RS232C interface for the connection of an e-
The device is equipped with a peripheral device (e.g. printer or computer).

15.2 Technical data

Connection	9 pin D-Sub miniature socket
Baud rate	1200*/2400/4800/9600 selectable
Data Format	10 bits with a start bit (0), 8-bit data (ASCII code) and a stop bit (1)
Parity	None



*Factory setting

15.2.1 Interface cable

Scales			PC
9-pole			9-pole
RXD	2	———	3
TXD	3	———	2
GND	5	———	5

Scales			Printer
9-pole			9-pole
RXD	2	———	3
TXD	3	———	2
GND	5	———	5

15.2.2 Connect printer

⇨ Switch off the scale and printer.

⇨ Connect the scale to the printer interface using a suitable cable.
Error-free operation is only guaranteed with the appropriate KERN interface cable (optional).

⇨ Switch on the scale and printer.

ℹ Communication parameters (baud rate, bits and parity) of scale and printer must match

15.3 Output functions

15.3.1 Data output after pressing [PRINT | MENU] < onCE >

Activate function:

⇨ In the Setup menu, call up the menu setting < Pr int >➡ < onCE> and confirm with **[→0← | TARE]**.

⇨ After confirmation, the scale returns to weighing mode.

Place the goods to be weighed:

⇨ If necessary, place the empty container on the scales and tare.

⇨ Place the sample on the scale. The weight value is output after pressing **[PRINT | MENU].**

15.3.2 Automatic data output < co-S >

Data is output automatically without pressing **[PRINT | MENU]** as soon as the corresponding output condition is met, depending on the setting in the menu.

Activate function and set output condition:

⇨ In the setup menu, call up the menu setting <Pr int>➡ <co-S> and confirm with **[→0← | TARE]**.

⇨ After confirmation, the scale returns to weighing mode.

Place the goods to be weighed:

⇨ If necessary, place the empty container on the scales and tare.

⇨ Place the sample on the scale and wait until the stability indicator <o> appears. The weight value is output automatically.

15.3.3 Continuous data output < co-r >

Activate function

⇨ In the Setup menu, call up the menu setting <Pr int>➡ < co-r > and confirm with **[→0← | TARE]**.

⇨ After confirmation, the scale returns to weighing mode.

Load the sample

⇨ If necessary, place the empty container on the scales and tare.

⇨ Place the goods to be weighed.

⇨ The weight values are output at a defined interval

15.3.4 Remote-controlled data output <ASK>

Activate function and set output interval:

⇨ In the setup menu, call up the menu setting <Pr int>➡ <ASK> and confirm with **[→0← | TARE]**.

⇨ After confirmation, the scale returns to weighing mode.

Load the sample

⇨ If necessary, place the empty container on the scales and tare.

⇨ Place the goods to be weighed.

⇨ The weight values are output via a console command.

16 Maintenance, servicing, disposal

Disconnect the appliance from the operating voltage before carrying out any maintenance, cleaning or repair work.

16.1 Cleaning

Do not use aggressive cleaning agents (solvents or similar), but only a cloth moistened with mild soapy water. Ensure that no liquid penetrates the appliance. Wipe with a dry, soft cloth.

Loose sample residues/powder can be carefully removed with a brush or hand hoover.

Immediately remove any spilt weighing material.

- ⇨ Clean stainless-steel parts with a soft cloth soaked in a cleaning agent suitable for stainless steel.
- ⇨ Do not use cleaning agents containing caustic soda, acetic, hydrochloric, sulphuric or citric acid on stainless steel parts.
- ⇨ Do not use metal brushes or cleaning sponges made of steel wool, as this causes surface corrosion.

16.2 Maintenance, servicing

- ⇨ The device may only be opened by trained service technicians authorised by KERN.
- ⇨ Disconnect from the mains before opening.

16.3 Waste disposal

The operator must dispose of the packaging and appliance in accordance with the applicable national or regional legislation at the place of use.

17 Small breakdown service

In the event of a fault in the programme sequence, the scale should be switched off briefly and disconnected from the mains. The weighing process must then be re-started from the beginning.

Malfunction	Possible cause
The weight indicator does not light up.	• The scales are not switched on. • The connection to the mains is interrupted (mains cable not plugged in/defective). • The mains voltage has failed.
The weight display changes continuously	• Draught/air movement • Ambient conditions are not optimal • Glass doors are not closed • Vibrations of the table/floor • The weighing plate is scratched or has come into contact with foreign objects. • Electromagnetic fields/static charging (choose a different installation location/switch off the interfering device if possible)
The weighing result is obviously incorrect	• The scale display is not set to zero • The adjustment is no longer correct. • The scales are not level. • There are strong temperature fluctuations. • The warm-up time was not observed. • Electromagnetic fields / static charge (choose another installation location / if possible, switch off the interfering device)

18 Error messages

Error message	Explanation
Err.	Alignment error
Err. 1	COU-error (sample too light or overload)
Err. 2	Weighing plate incorrectly positioned
Err. 3	Overload
Err. 4/4A	Internal calibration error or motor error
Err. 5	PCT-error (sample too light or overload)