User Manual

Sartorius Cubis Series

Electronic Semimicro, Micro, Precision and Analytical Balances
MSA Models

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Notes on Using this Manual

- ▶ Please read this entire manual carefully and completely before using the device.
- ▶ Read the safety precautions carefully.
- ▶ This manual is part of the product. Keep it in a safe and easily accessible location.
- ▶ If the manual should be lost or misplaced, please contact Sartorius for a replacement or download the latest manual from our website: www.sartorius.com

Symbols and Signs

The following symbols are used in this manual:

	Warning symbol for various types of dangers. These symbols are explained in more detail in the section on safety precautions.
	This symbol indicates useful information and tips.
	This symbol indicates notes on use of the balance in legal metrology within the scope of validity of Council Directive No. 90/384/EEC, replaced by 2009/23/EC (Models MS...-. CE...).
	The hand symbol indicates operating steps that involve touch screen controls.
( )	This symbol means that the USER key should be pressed.
( )	This symbol means that the TASK key should be pressed.
	When individual buttons are displayed, they should be pressed.

Explanation of Symbols

The following symbols are used in these instructions:

- ▶ Indicates a required action
- ▷ Describes what happens after you have performed a particular step

1., Perform steps in the specified order
2.

– Indicates an item in a list

Technical advice / hotline:
Phone: +49 0551.308.4440
Fax: +49 0551.308.4449

Safety Precautions

This device complies with European Council Directives as well as international regulations and standards for electrical equipment, electromagnetic compatibility, and the stipulated safety requirements. Improper use or handling can, however, result in damage and/or injury.
This device should only be operated by trained personnel.
Operators must read these installation instructions, particularly the safety information, and must be familiar with the operation of the equipment. The operator is required to supplement these safety precautions as appropriate. The operating personnel must be provided with the appropriate training.
The requirements pertaining to applicable installation regulations must be followed when using electrical equipment in systems and environmental conditions with increased safety requirements. Relevant laws, standards, regulations, guidelines and environmental protection laws valid in your country must be observed.
Always keep the equipment and balance freely accessible. Any installation work or balance operation that does not conform to the instructions will result in forfeiture of all claims under the manufacturer's warranty.

Danger of Explosion!

Do not use this equipment in hazardous areas in which explosive materials are present.

Danger of Electrical Shock!

If the device is not used in accordance with the instructions, this can affect the product liability for the device.

Make sure that the voltage rating printed on the AC adapter is identical to your local line voltage. The wall outlet must have a protective grounding conductor. The operating instructions included with the AC adapter must be followed.

Do not switch on the equipment if the AC adapter or power cord are damaged.
If the balance itself, the AC adapter or any cables on the balance are damaged, disconnect the equipment from the power supply and secure it so that it cannot be turned on.

Chemicals (e.g., gases or liquids) that can corrode and damage the inside or outside of the balance, AC adapter, power cable or peripherals must be kept away from the equipment.

Do not operate the balance unless the housing and the display are undamaged and the housing is closed so that inadvertent contact with parts inside the equipment is not possible. Make sure that no liquids penetrate the balance and do not allow conductive parts to touch the balance.

Note on Installation:
The operator shall be solely responsible for any modifications to the equipment and for connecting any cables or equipment not supplied by Sartorius.
Information on operational quality is available upon request from Sartorius.
You should only use peripherals and options supplied by Sartorius.

Protection Class of the Balance Housing
- Models with a readability of >10 mg: These models fulfill the requirements of protection class IP54.
  The IP protection only applies to the balance housing and not to the AC adapter.
- The IP protection is only guaranteed when the weighing pan is mounted.
- The IP protection is restricted if the data interfaces are used. Retain the cover cap for the data output.
  When the data output is not in use, reapply the cover cap to protect it against vapors, moisture, and dust or dirt.

Note on cable quality:
CE conformity is only guaranteed with well shielded cables.
The shielding braid of the cable must be made of metal with at least 80% coverage and also covered with metal foil as much as possible.
The shielding on both sides on the full metal or metalized connector casing, as well as on the casing inlet, must be high-frequency compliant and have a flat design.

You can only turn off power to the device by pulling the plug or disconnecting the power cord, or by unscrewing the four-pin plug at the DC supply cable for the balance.

Do not exert mechanical pressure on the display with sharp objects, as this will damage the display. Liquid penetration can damage the electrical components.

Only use a lightly-moistened cloth for cleaning. See “Care and Maintenance” for cleaning the device. Do not compromise the IP protection of the balance.

Do not open the balance housing. If the seal is broken, this will result in forfeiture of all claims under the manufacturer’s warranty.
The device may only be opened by specialized personnel trained by Sartorius.

Disconnect the balance from the wall outlet prior to moving the device.

Avoid condensation damage to the device. When the balance is turned on, condensation build-up is not possible. If the device is moved from a cool environment to a warm environment, you must allow the device to acclimatize for approx. 2 hours before connecting to the power supply.

Hazards at the Place of Installation and During Operation

Avoid generating static electricity and establish equipotential bonding.
A 10 kOhm ground is used when connecting the balance to the power supply. Disconnecting the ground conductor is not permitted.

Exercise caution to avoid glass breakage.
There is a danger of lacerations or cuts caused by sharp edges on glass or metal (contact springs), particularly when removing or replacing the glass draft shield panels; during cleaning; if a glass sample container breaks, or when modifying the balance hardware configuration.

Models with a separate electronics module (e. g. MSx6.6/3.6/2.7):.
Do not replace the electronics module.
Replacing with, e. g. models of the ME/SE series will damage the device.

Make sure all equipment operators have received proper instructions when working with hazardous or toxic materials.
Failure to follow correct handling procedures can result in breakage of parts or spillage of liquids or other substances.
Make sure the necessary protective clothing or equipment is worn, such as protective gloves, clothing, eyewear.
All safety regulations applicable in the laboratory must be observed.

Exercise caution to avoid squeezing or crushing fingers when
- Operating the electronic draft shield
- Removing or installing the panels
- Adjusting the display

Do not expose the device to aggressive chemical vapors or to unnecessarily extreme temperatures, moisture, shocks, or vibration.

The device should be set up in areas away from equipment or devices that have strong magnetic properties. Extreme electromagnetic fields from electrical lines should also be avoided.

Intended Use

Cubis models are high-resolution balances. They were specially developed for exact determination of material mass in liquid, paste, powder or solid form.

Appropriate containers must be used for each type of sample material.
Specific models cover specific weighing ranges: see "Technical Specifications."

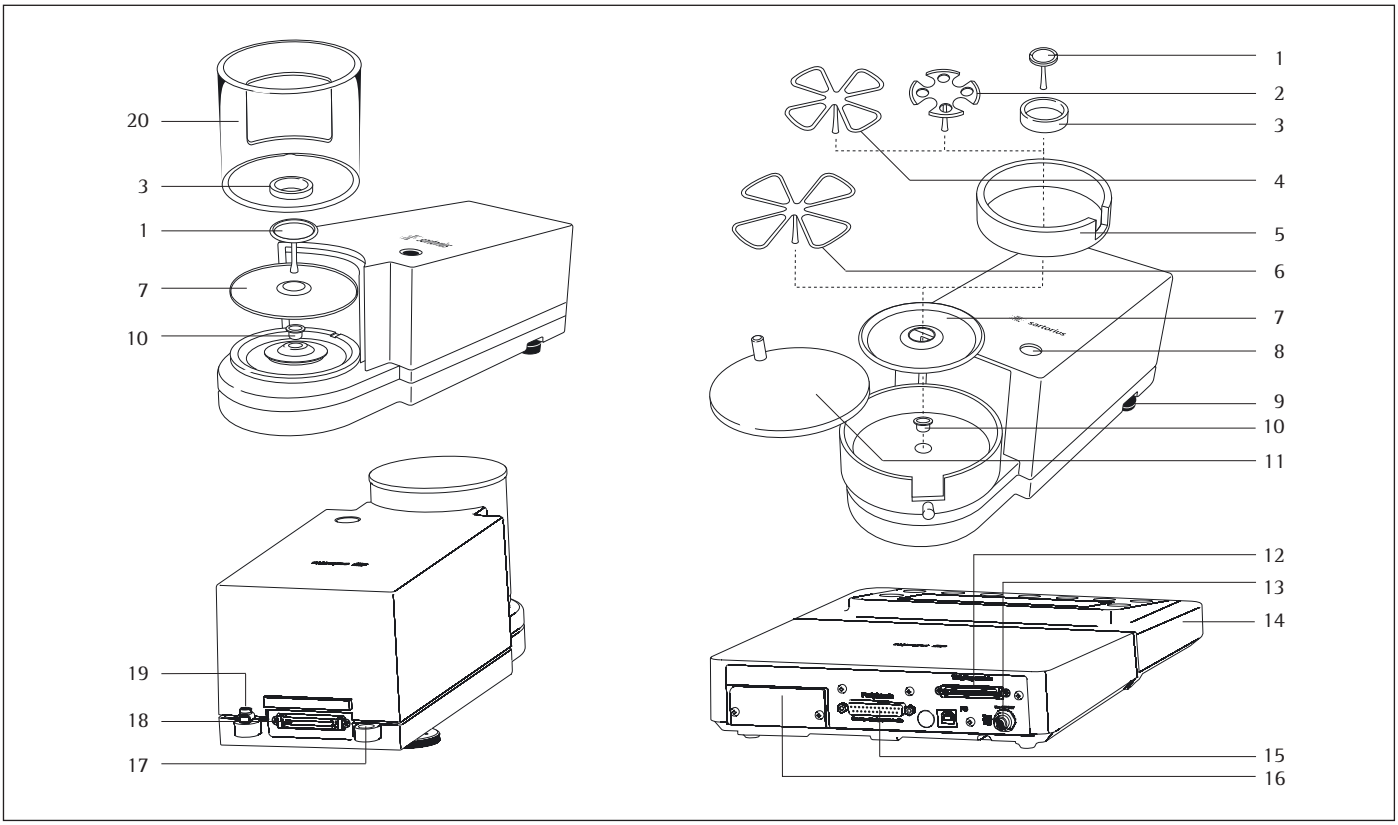
Cubis models are designed specially for use in research, education and day-to-day laboratory tasks in science and industry.

They are designed to be used exclusively indoors.

Cubis models can be operated as standalone, connected to a PC, or on a network.

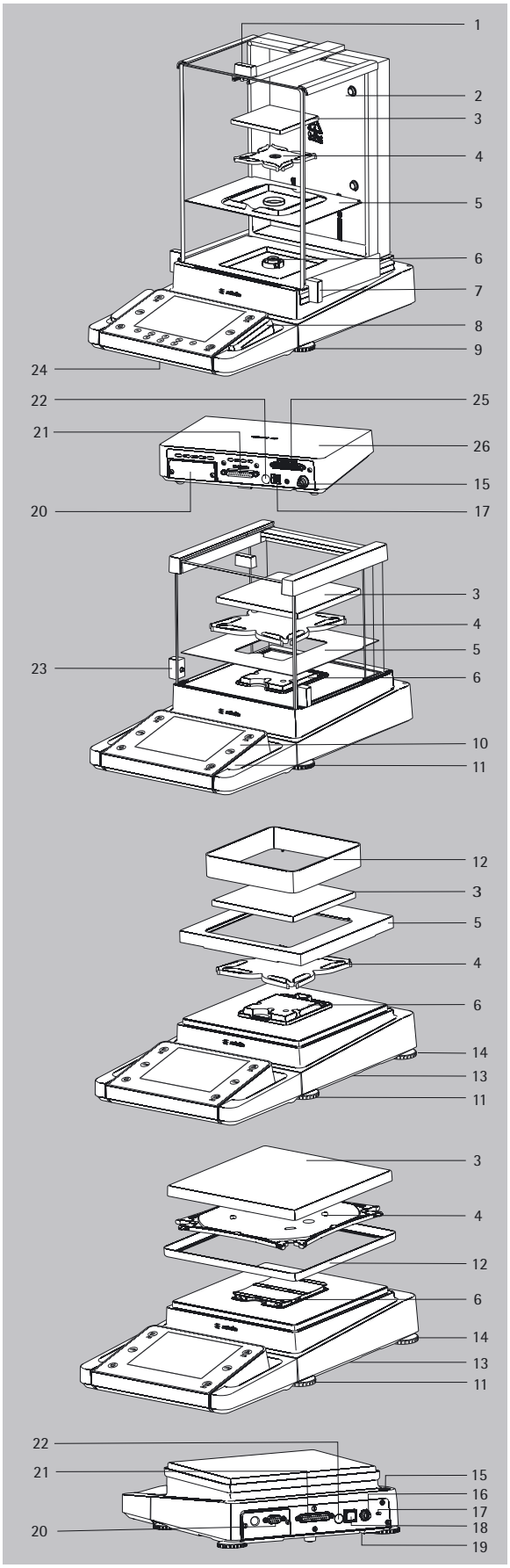
General View of the Equipment and Equipment Supplied

Balances with a readability of ≤ 1 µg



Pos.	Description
1	Weighing pan
2	Filter weighing pan ∅ 50 mm
3	Internal draft shield (for MSx2.7S-F only)
4	Optional weighing pan ∅ 75 mm
5	Shield disk
6	Optional weighing pan ∅ 90 mm
7	Shield plate
8	Level indicator
9	Leveling foot
10	MSA2.7..model: bush
11	Draft shield cover

Pos.	Description
12	Female connector for weigh cell
13	DC jack
14	Display and control unit
15	Serial communications port (PERIPHERALS)
16	Slot for optional interfaces (e.g., 9-pin data output and PS2 or Bluetooth)
17	Lug for attaching antitheft locking device
18	Equipotential bonding conductor terminal
19	Equipotential bonding conductor terminal
20	Draft shield
	Not shown: AC adapter, USB cable



General View of the Equipment and Equipment Supplied

Analytical and precision balances with a weighing range of up to 15 kg

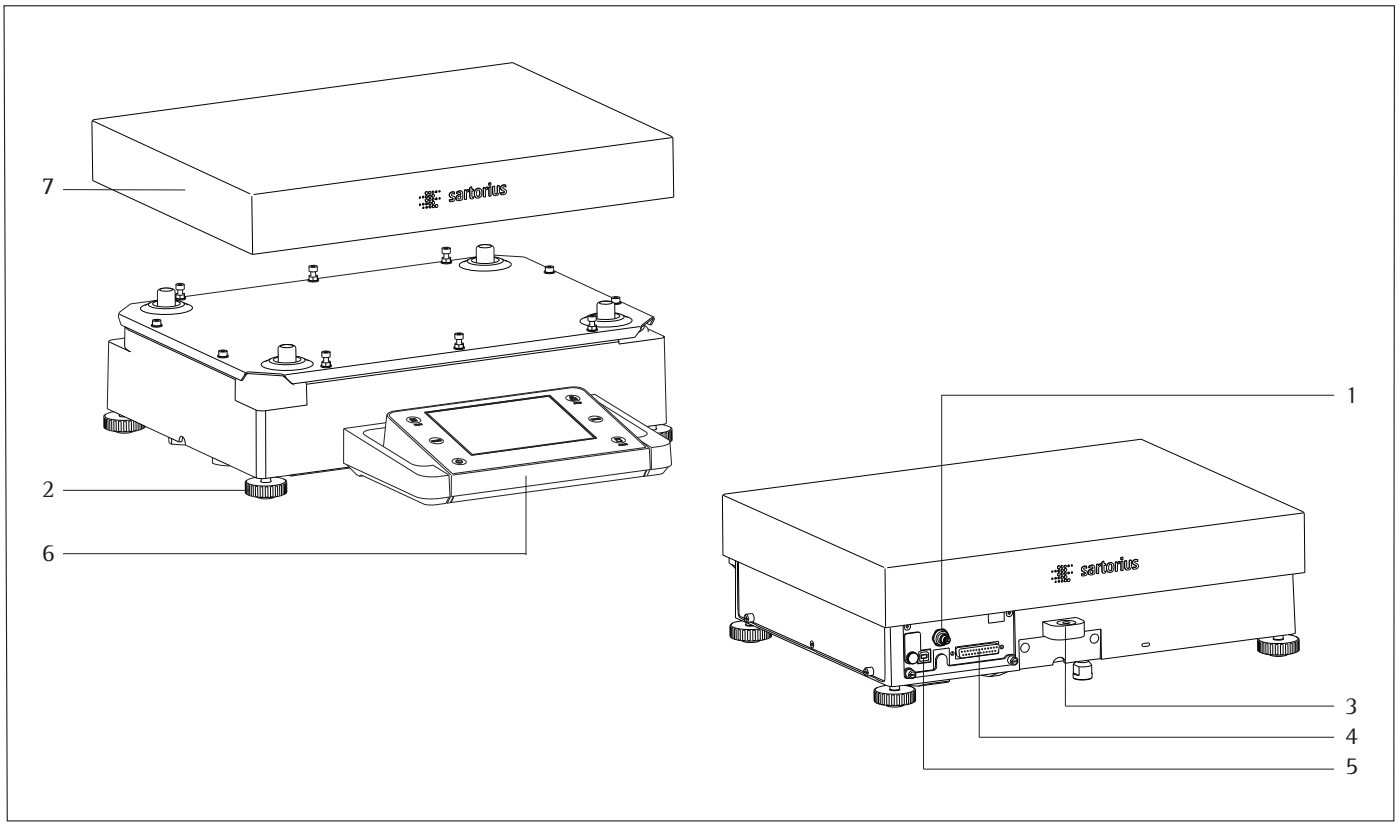
Pos. Description

1 Upper sliding draft shield panel/Handle
2 Back panel
3 Weighing pan
4 Pan support (not for MSx225.../MSx125... models)
5 Shield plate
6 Pan retainer
7 Right sliding panel/Handle
8 SD card slot (for MSU, MSA models)
9 Leveling foot
10 Display
11 Display and control unit
12 Draft shield/Shield disk (only for models with a readability of 1 mg and 10 mg)
13 Below-balance weighing port (on the bottom of the balance)
14 Leveling foot
15 Level indicator
16 Power socket
17 Slot for attaching an anti-theft device
18 USB socket for a PC connection
19 Below-balance weighing hook
20 Slot for optional interfaces, e.g., 9-pin data output and PS2 (as shown) or Bluetooth
21 Communication port (PERIPHERALS) for accessories
22 Menu access switch
23 Left sliding panel/handle
24 Ethernet Interface (on the bottom of the display and control unit)
25 Semi-microbalances: Female connector for weigh cell
26 Semi-microbalances: Electronics module (for MSx225.../MSx125... models)

Not shown:
– AC adapter
– USB cable
– Operating instructions

General View of the Equipment and Equipment Supplied

Balances with a weighing range of 20 kg or more



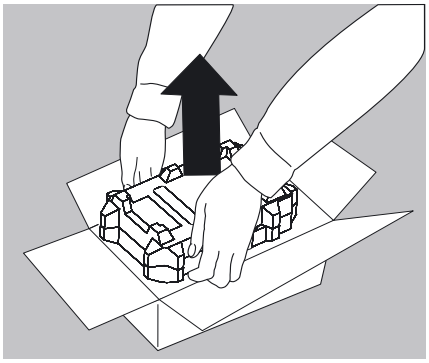
Pos.	Description
1	DC jack
2	Leveling foot
3	Level indicator
4	Serial communications port (PERIPHERALS)

Pos.	Description
5	USB socket for a PC connection
6	Display and control unit
7	Weighing pan

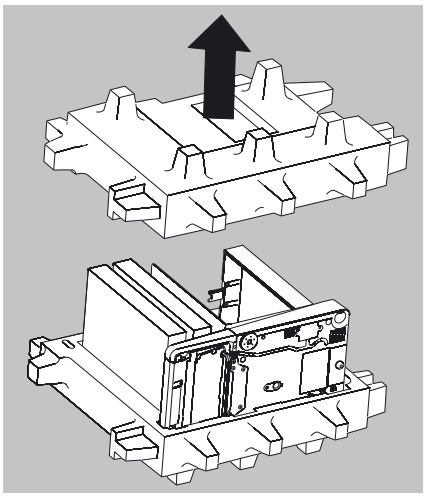
Not shown: AC adapter, USB cable

Getting Started

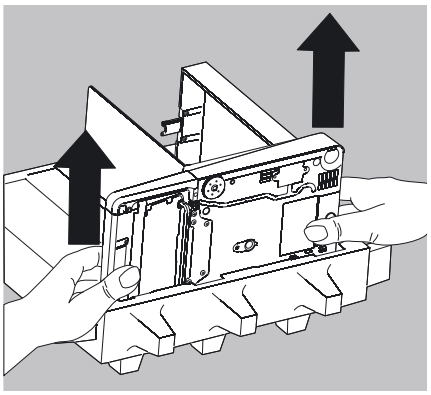
Unpacking the Equipment



- Open the packaging at the top.
- Use both hands to lift the balance, with the packaging, out of the cardboard box.

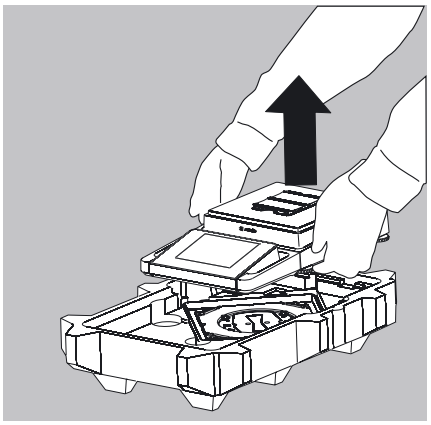


- Place the packaging with the balance on the floor.
- Remove the top part of the packaging.



Balance with Draft Shield

- Remove the packages (containing draft shield panels, weighing pan, pan support, AC adapter, etc.) from the lower packaging and place them to one side.
- Use both hands to lift the balance out of the packaging.



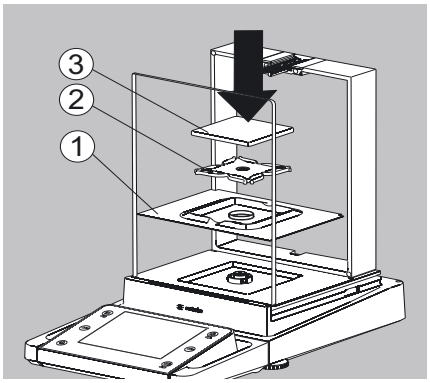
Exercise caution to avoid glass breakage.
Never lift the equipment by the draft shield panels to remove it from the packaging.

- Place the balance on an even surface.

Balance with No Draft Shield

- Use both hands to remove the model without a draft shield from the packaging.
- Remove the AC adapter and the balance parts from the packaging.

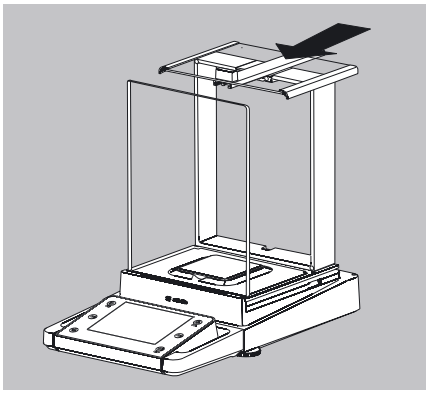
Assembly



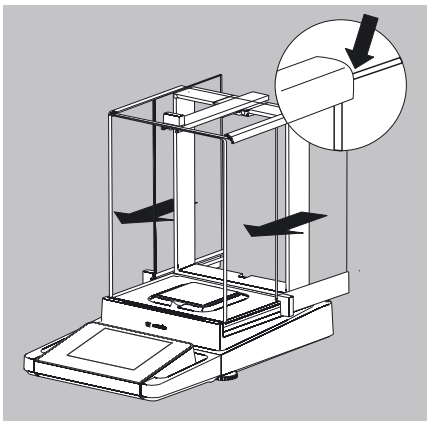
Installing the Analytical Draft Shield Labeled DA, DI, and DU, Assembling the Balance

▶ Fit parts onto the balance as shown in the picture.

1. Shield plate
2. Pan support (not for MSx225.../MSx125... models)
3. Weighing pan



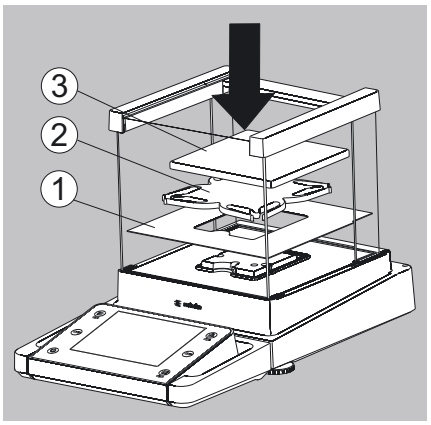
▶ Slide the upper draft shield panel into the guide rails from the rear.



▶ Slide the left and right draft shield panels into the guide rails from the rear. Make sure the panels are within the upper and lower guide rails.
▶ Slide the panels in until they engage.

1. Right draft shield panel
2. Left draft shield panel

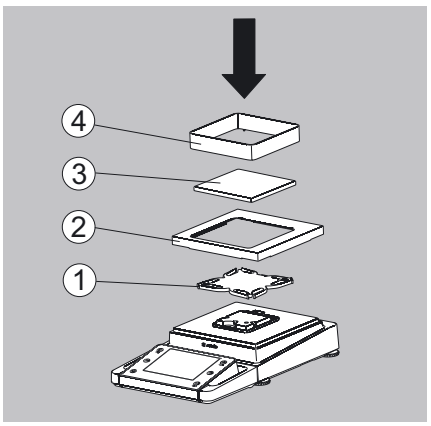
▷ This completes the balance assembly.



Installing the Draft Shield Labeled DE for Milligram Balances, Assembling the Balance

▶ Fit parts onto the balance as shown in the picture.

1. Shield plate
2. Pan support
3. Weighing pan

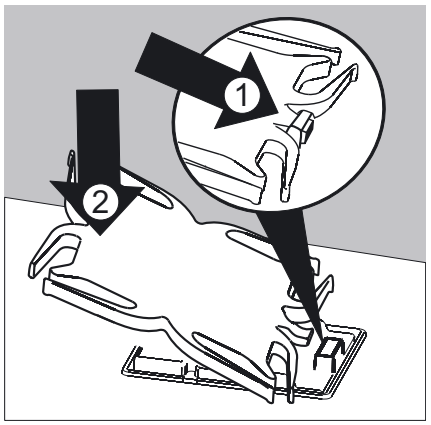


Assembly of Milligram Balances without Glass Draft Shield (DR option), Assembling the Balance

▶ Fit all components listed below onto the balance in the order given:

1. Pan support (see also next section)
2. Shield plate
3. Weighing pan
4. Draft shield frame

▶ First insert the shield plate.



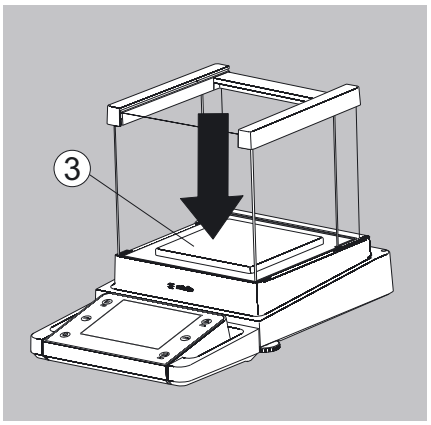
▶ Make sure the pin on the pan support is facing toward the front, and slide it under the clip on the pan retainer.

1. Insert the pan support.

▶ After inserting the pan support, press it down against the shield plate so that it lies flat.

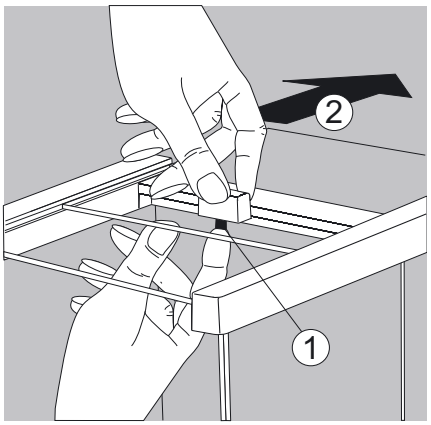
2. Press down the pan support.

Exercise caution to avoid pinching or crushing fingers.



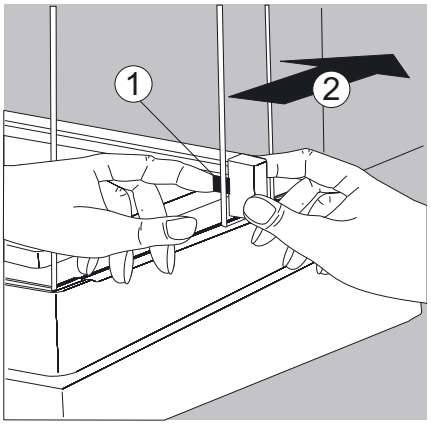
▶ Place the weighing pan on the pan support.

3. Weighing pan



▶ Slide the upper draft shield panel into the guide rails from the rear while pressing the locking tab.

▶ Slide the left and right draft shield panels into the guide rails from the rear while pressing the locking tab.

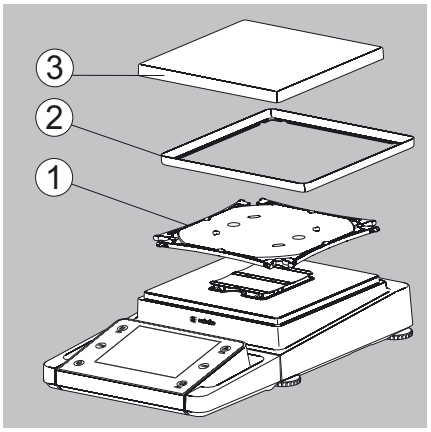


▷ This completes the balance assembly.

▶ If it becomes necessary to remove a panel:

1. Press on the locking tab.
2. Remove the panel

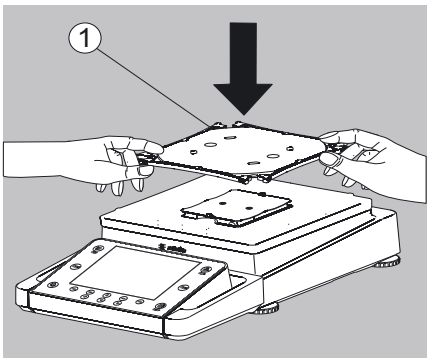
▶ Place the panel in the storage slot at the back of the balance.



Assembling Precision Balances without a Draft Shield and with a Weighing Range of up to 15 kg

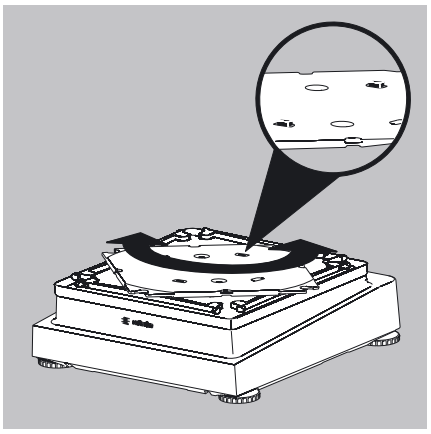
▶ Carefully fit all parts onto the balance.

1. Pan support
2. Shield plate/Draft shield
3. Weighing pan

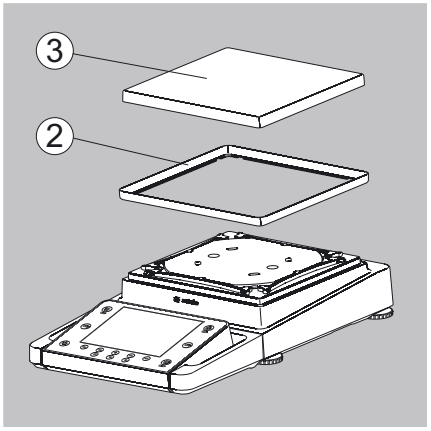


▶ Position the pan support diagonally and press down lightly.

1. Pan support



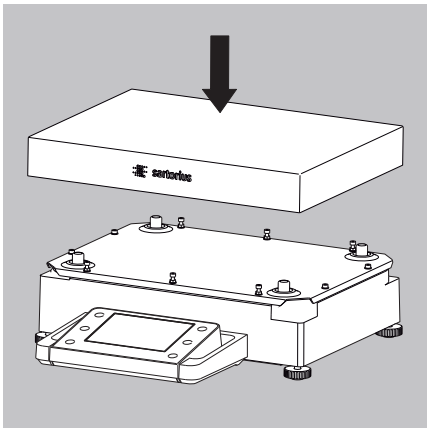
▶ Carefully turn the pan support clockwise until the two buttons engage. The pan support is now attached.



▶ **2.** Insert the shield plate/draft shield.

▶ **3.** Place the weighing pan on the pan support.

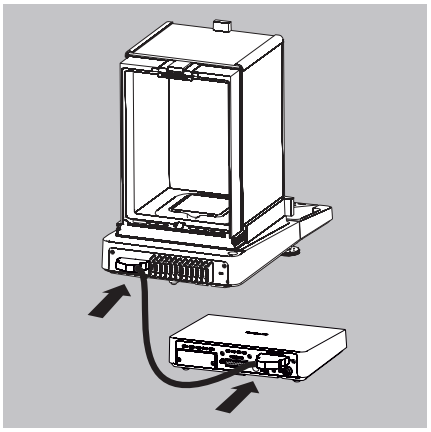
▷ This completes the balance assembly.



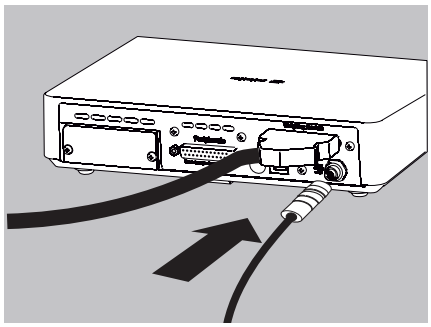
Models with a weighing range of 15 kg or more:

▶ Place the weighing pan on the balance.

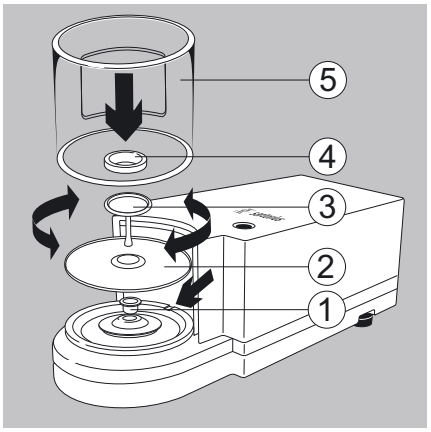
MSx225..., MSx125:



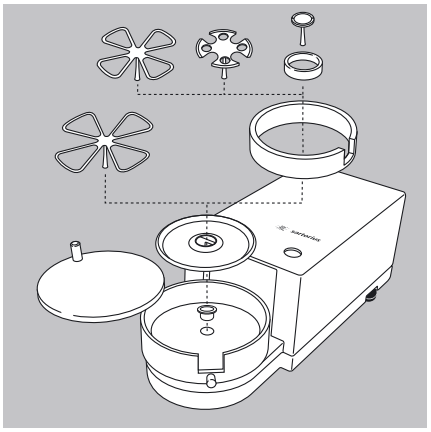
MSx6.6S/3.6P/2.7S:



MSx6.6S/3.6P/2.7S:



MSx6.6S-F/2.7S-F:



Connecting the Weigh Cell to the Electronics Module/Evaluation Unit

▶ Connect the weigh cell and electronics module using the connection cable: Make sure that the connectors click into place so that both ends are locked in properly.

⚠ Please check the plug contacts to ensure a proper connection. There should be no tension on the connection cable, e.g., if pushed directly against a wall.

▶ Connect the weigh cell to the evaluation unit: Make sure that the connector clicks into place so that the connection is locked in properly.

⚠ Models with a separate electronics module (e.g., MSx6.6/3.6/2.7, MSx225S/P, and MSx125P): Do not replace the electronics module. Replacing with models from the ME/SE series, for example, will damage the device.

Microbalances (Models MSx6.6S/3.6P/2.7S): Placing Components on the Weigh Cell

▶ Install the following components in the order listed:

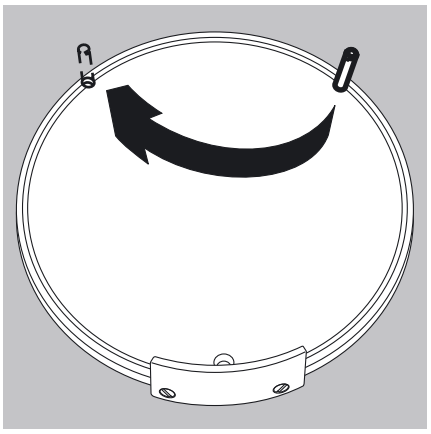
1. MSA2.7S model: bush
2. Shield plate
3. Weighing pan
   Note: After inserting the weighing pan, turn it slightly to the left and right, while pressing down lightly.
4. Internal draft shield (for MSx2.7S only)
5. Draft shield: Center the hole over the pan (see arrows)

Filter Balances (Models MSx6.6S-F/2.7S-F): Placing Components on the Weigh Cell

▶ Place the components listed below on the weigh cell in the order given:

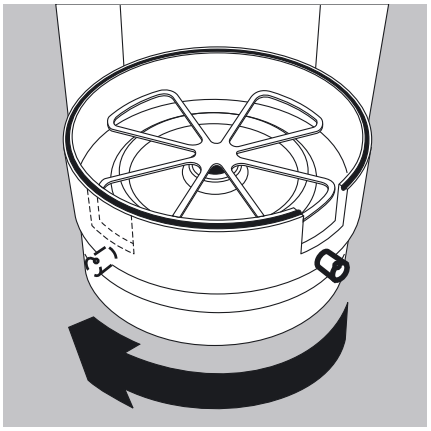
– MSA2.7S model: bush
– Shield plate
– Internal draft shield
– Filter weighing pan ∅ 50 mm or weighing pan
  (optional filter weighing pan ∅ 75 mm or ∅ 90 mm)
  Note: After inserting the pan, turn it slightly to the left and right, while pressing down lightly.
– Draft shield cover

⚠ Tip: Turn the balance off and then on again after replacing the pan during operation.

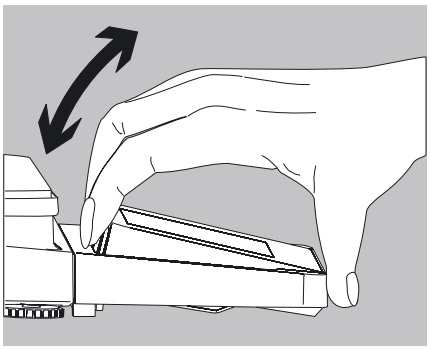


Setting Up a Filter Balance for Left-Handed Users:

- ▶ Remove the draft shield cover
- ▶ Unscrew the pin and move from the right to the left side



- ▶ Turn draft shield parts approx. 90 degrees to the left (loosen knurled screw)



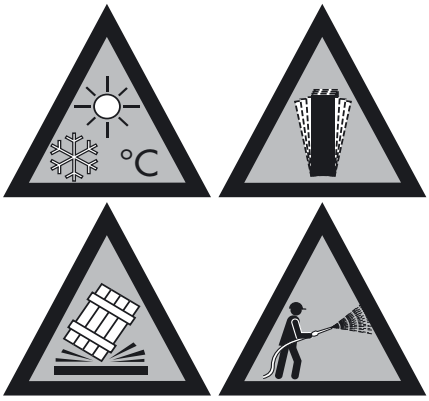
Setting the Angle for the Display and Control Unit
The angle of the display and control unit can be adjusted by the user, in order to ensure optimal readability of the weight values on the display at all times.

- ▶ On MSA and MSU models, the display and control unit can be tilted as desired.

Installation Instructions

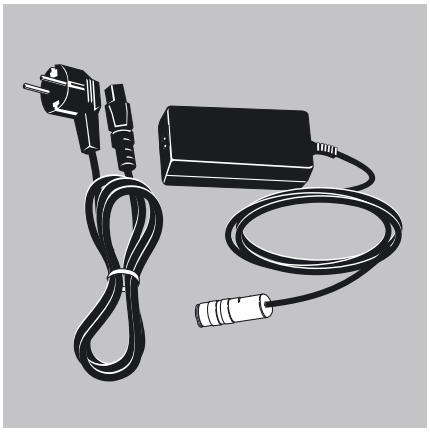
▶ Select the proper setup location:
- Set up the device on a stable, even surface that is not exposed to vibrations (e.g., weighing stone).
- Place the device in a location with enough free space around it so that excessive heat cannot build up.
- Maintain free access to the device at all times.

Choose a location that is not subject to the following negative influences:
- Heat (heater or direct sunlight)
- Drafts from open windows, AC systems and doors
- Extreme vibrations during weighing
- Excessive moisture



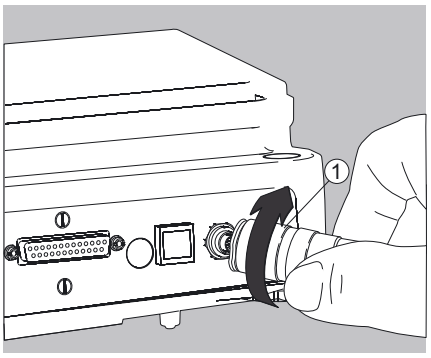
Acclimatization
Condensation from humidity can form on the surfaces of a cold device when it is brought into a substantially warmer area.
To avoid the effects of condensation, condition the balance for about two hours at room temperature, leaving it unplugged from the power supply.
Carefully read all warnings and safety precautions in the respective section of this manual.

Power Cord Receptacle



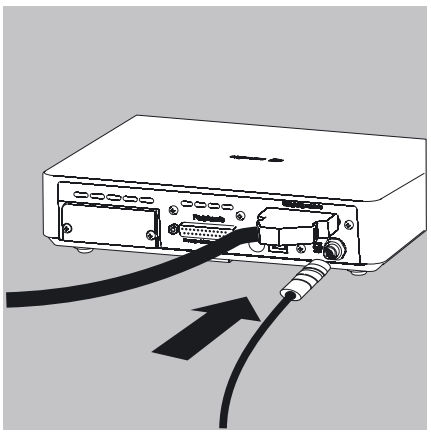
▶ Check the voltage rating and plug design.

- Make sure that the voltage rating printed on the manufacturer's ID label is identical to that of your local line voltage.
- If the stated supply voltage or the plug design of the power cord does not comply with your country's standard, please inform the nearest Sartorius representative or your dealer.
- The power connection must be made in accordance with the regulations applicable in your country.
- In order to connect the equipment to the power supply (protection class 1), use a correctly installed wall outlet with a protective grounding conductor (PE) and a fuse of maximum 16 A.
- Only use original Sartorius AC adapters.



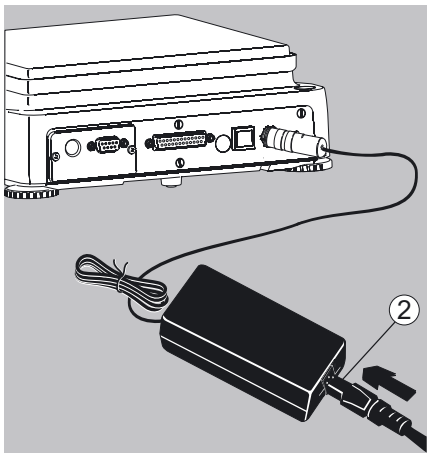
Analytical and precision balances:

1. Plug the DC supply cable of the AC adapter into the power socket of the balance and tighten the threaded fitting.



Balances with a readability of ≤ 0.01 mg

1. Plug the DC supply cable of the AC adapter into the power socket of the electronics module and tighten the threaded fitting.

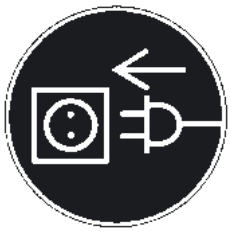


2. Plug the other end of the power cord into the AC adapter.
3. Insert the AC adapter power plug into the wall outlet.

▷ The balance is now ready to use.

Safety Precautions

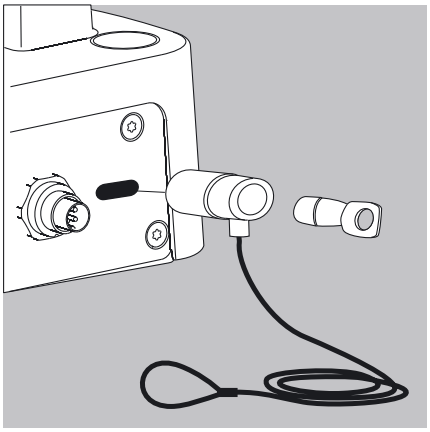
The output line of the adapter has a terminal (GND) connected to the metal housing of the balance. The data port is also galvanically linked to the balance housing (GND).



Connecting Electronic Devices (Peripherals)

- Make absolutely sure that the device is unplugged from the power supply before connecting/disconnecting any peripheral device (printer, scanner, PC) to or from the data port.

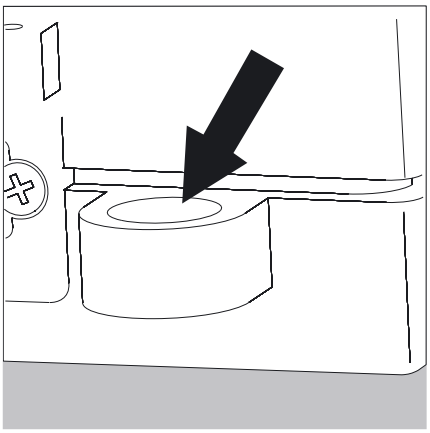
A device connected to the power supply should never be opened.



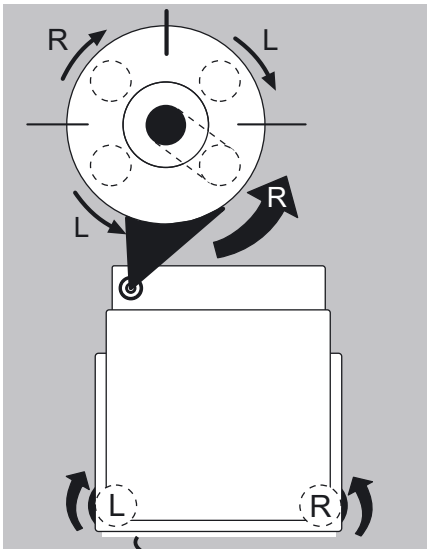
Anti-theft Locking Device (Accessory)

Balances with a readability of ≤ 0.01 mg

- An anti-theft locking device can be installed on the back of the balance if required.



Balances with a readability of ≤ 1 µg
To fasten an antitheft locking device, use the lug located on the back of the weigh cell.



Leveling the Balance, Setting the Level Indicator

Leveling the balance compensates for slant or unevenness at the place of installation. The balance must be perfectly horizontal to ensure consistent, reproducible weighing results. All models are equipped with an electronic tilt angle detection feature. If the balance is not level, all balance models issue an alert on the display.
Push-button automatic leveling is available on models with motorized leveling feet. For models with manual leveling feet, please follow the instructions on the display.

Leveling the Balance Manually

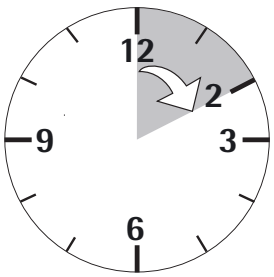
- ▶ The balance is leveled using both front leveling feet.
- ▶ Screw in both back leveling feet (only for models with back leveling feet).
- ▶ Turn the two front leveling feet as shown in the illustration until the air bubble is centered within the circle of the level indicator.
- ▷ Normally, several leveling attempts are required.

- ▶ Unscrew both back leveling feet until they touch the setup surface (only for models with back leveling feet).

Switching On

- ▶ Turn on device via the (⏻) key. The following appears on the display:

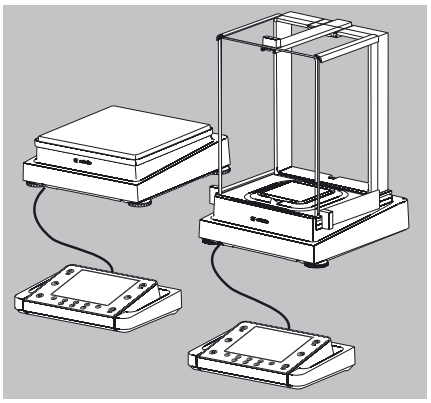
- ▷ You can now follow the brief instructions to configure balance settings before beginning weighing operations.



Warm-up Time

- ▷ To deliver precise results, the balance must warm up for at least 30 minutes after initial connection to the power supply. Only after this time will the device have reached the required operating temperature.

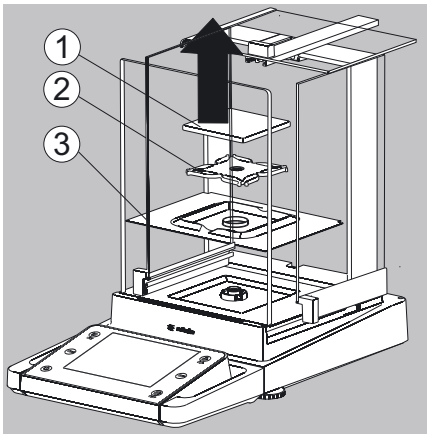
M When a verified balance used in legal metrology (legal-for-trade applications) is connected to the power, it must warm up for at least two hours before operation.



Modifying the Balance

Setting Up the Display and Control Unit at the Place of Use

The display and control unit can be removed for all models to enable the operator to customize the work space.



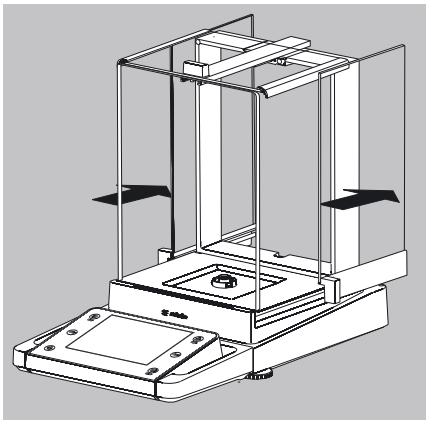
Removing the Retainer with the Display and Control Unit

▶ Remove all items (such as weights) from the draft shield.

▶ Carefully remove all parts as shown in the illustration.

1. Weighing pan
2. Pan support (not for MSx225.../MSx125... models)
3. Shield plate/Draft shield

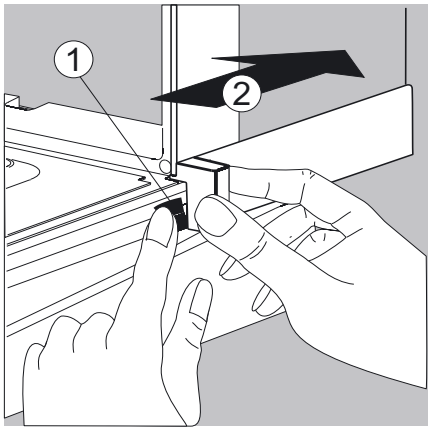
▶ Keep all parts in a safe place.

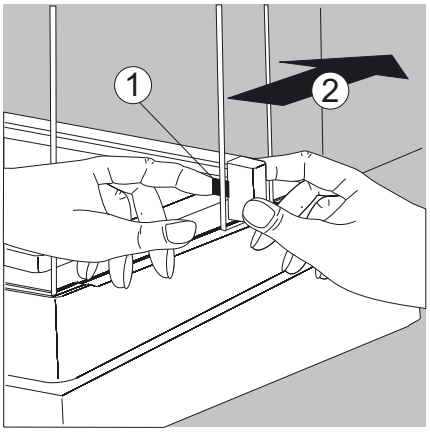


▶ Remove the panels (right and left).

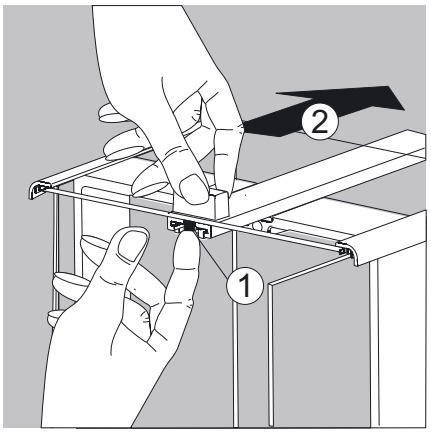
Models with the analytical draft shield:
1. Press on the locking tab.
2. Remove the panel.

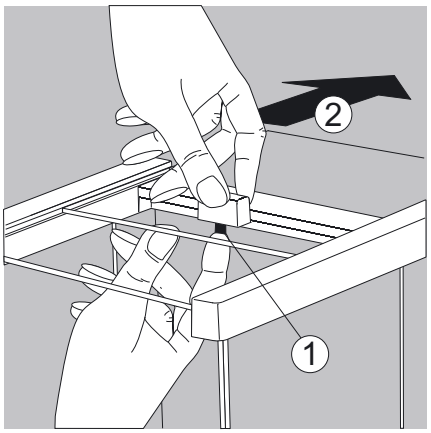
Models with the milligram draft shield:
1. Press on the locking tab.
2. Remove the panel.





▶ Keep all parts in a safe place.



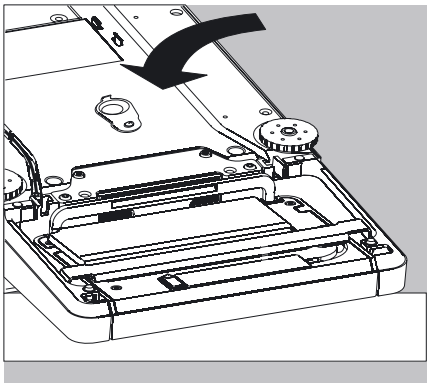


▶ Remove the upper draft shield panel.

Models with the analytical draft shield (left illustration).
1. Press on the locking tab.
2. Remove the panel.

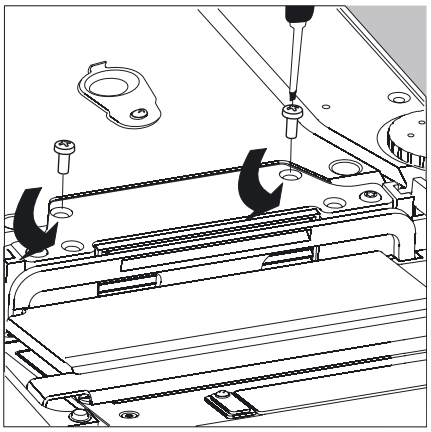
Models with the milligram draft shield (right illustration):
1. Press on the locking tab.
2. Remove the panel.

▶ Keep all parts in a safe place.



▶ Turn over the balance and place it on a soft surface.

⚠ Exercise caution to avoid breaking the glass on models with a draft shield.

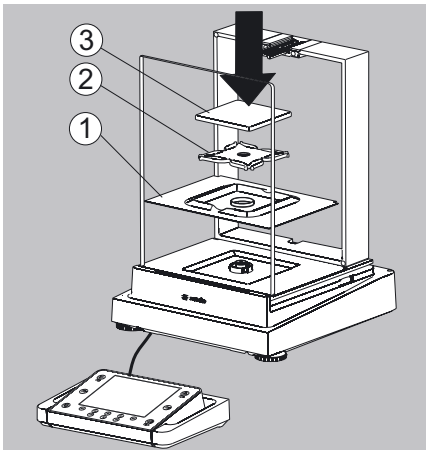


▶ Use a 2.5 mm Allen wrench to remove the two screws from the display and control unit retainer bracket.

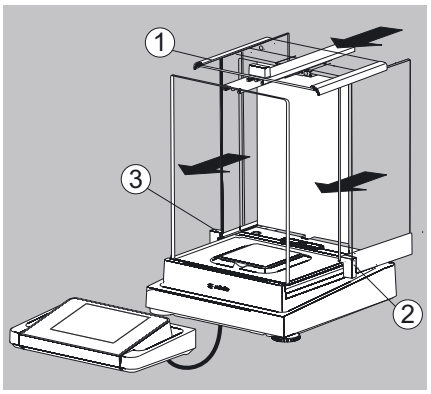
▶ Remove the display and re-insert both screws back into their holes.

▶ Lengthen the cable and position the display and control unit as desired.

▶ Turn the balance over again and place it on an even surface.



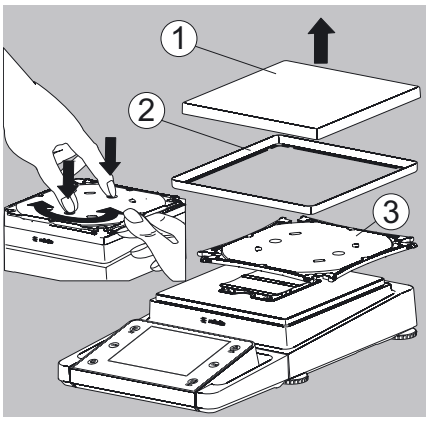
▶ Carefully place all parts on the balance.
1. Shield plate/Draft shield
2. Pan support (not for MSx225.../MSx125... models)
3. Weighing pan



▶ Replace the upper and side shield panel.

1. Upper draft shield panel
2. Right draft shield panel
3. Left draft shield panel

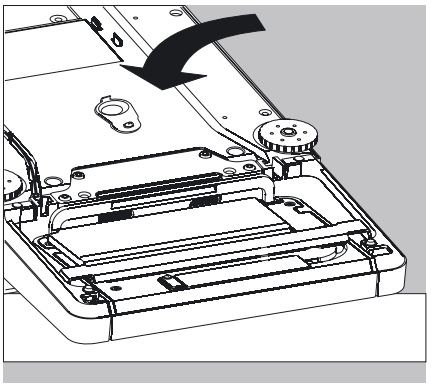
Removing the Display and Control Unit from Precision Balances with a Weighing Range of up to 15 kg



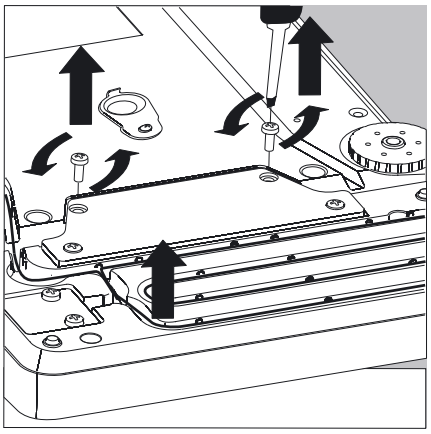
▶ Carefully remove all parts as shown in the illustration.

1. Weighing pan
2. Shield plate/Draft shield
3. Pan support

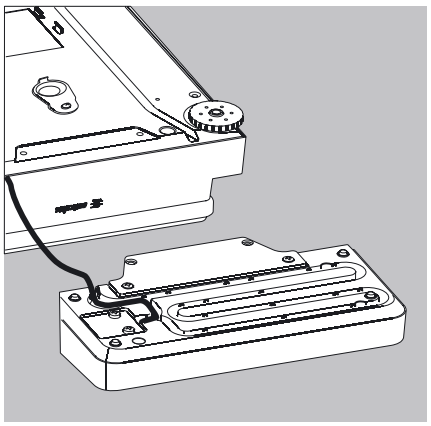
▶ Keep all parts in a safe place.



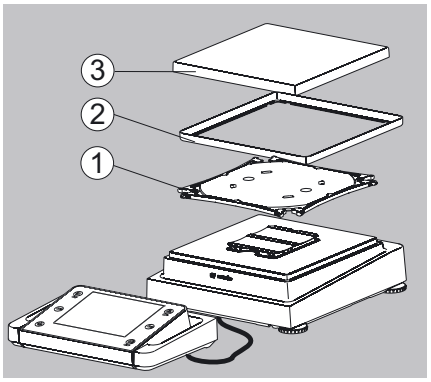
▶ Turn over the balance and place it on a soft surface.



- ▶ Remove the two retaining screws.
- ▶ Remove the display and re-insert both screws back into their holes.
- ▶ Carefully pull the cable connected between the display and control unit from the retainer.



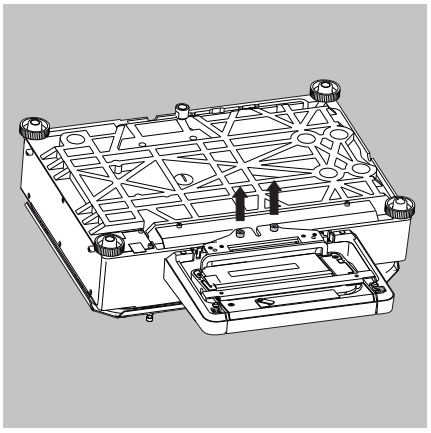
- ▶ Determine the required cable length.



- ▶ Return the balance to an upright position and fit the parts onto the balance.

1. Attach the pan support.
2. Shield plate (only for models with a readability of 10 mg)
3. Weighing pan

- ▶ Level the balance.



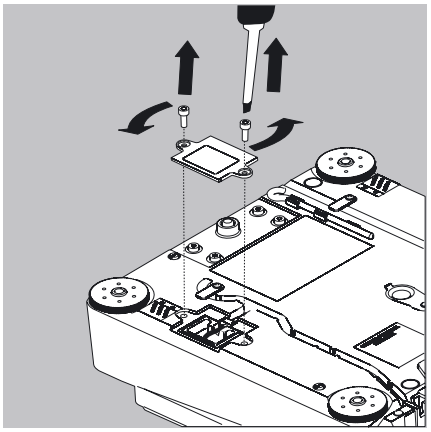
Removing the Display and Control Unit from Models with a Weighing Range of 20 kg or more

⚠ Remove the weighing pan before unscrewing the control unit, so that the weighing pan does not fall and cause injury.

- ▶ Turn over the balance so that the pan side is facing down.
- ▶ Remove the two fixing screws using a screwdriver.
- ▶ Remove the control unit and re-insert both screws into their holes.
- ▶ Carefully remove the connection cable from its holder.
- ▷ Long connection cables should only be installed by a Sartorius technician.

Semi-microbalances: Attaching the Display and Control Unit to the Electronics Module (MSx225.../MSx125... models)

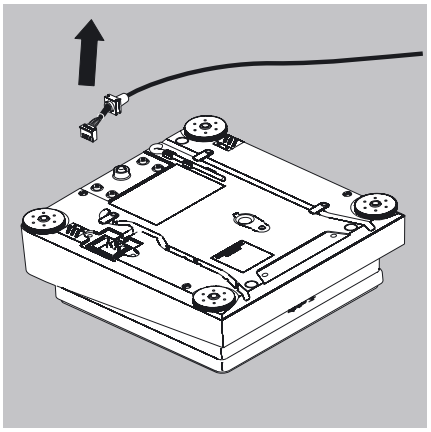
The display and control unit can also be attached to the electronics module if required for operation.



▶ Turn over the balance and place it on a soft surface.

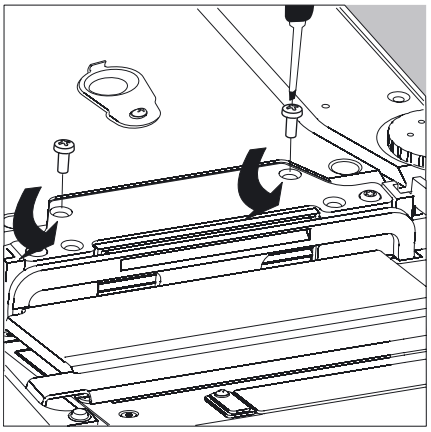
Remove the connection cable from the cable channel:

▶ Remove two screws from beneath the weigh cell and detach the plate.



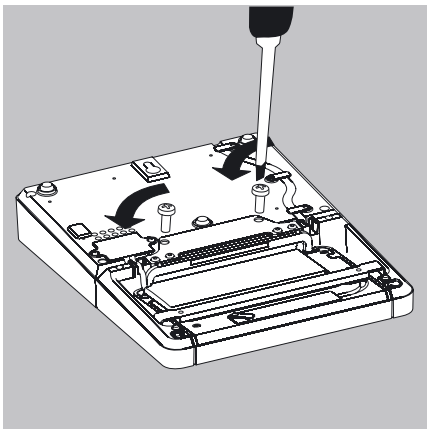
▶ Remove the connection cable plug.

▶ Then reattach the plate to the slot.

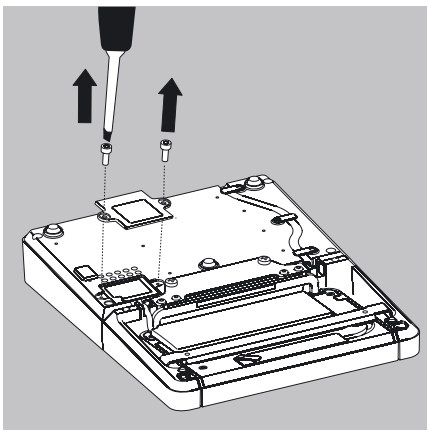


▶ Remove the display and control unit from the weigh cell:
Remove two retaining screws.

▶ Remove the display and control unit.

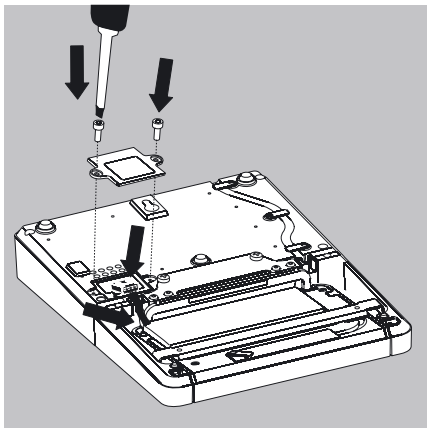


▶ Attach the display and control unit to the electronics module:
Reattach the two retaining screws.



Open the slot for the connection cable on the electronics module:

▶ Remove the screws from beneath the electronics module and detach the plate.



Connect the display and control unit to the electronics module:

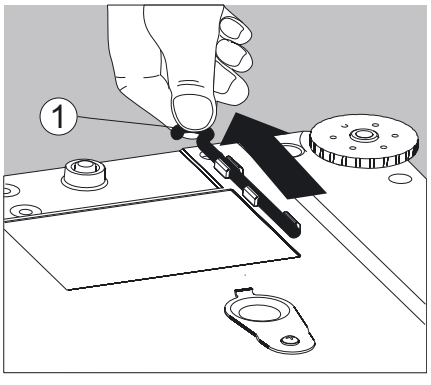
▶ Plug in the connection cable.

▶ Then reattach the plate to the slot.

▶ Slide plate cable that sticks out into the cable channel.

Preparing Below-Balance Weighing

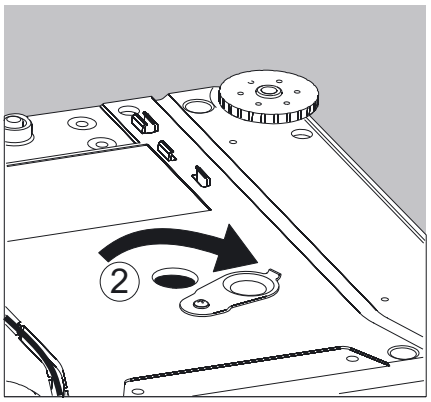
A port for a below-balance weighing hook is located on the bottom of the balance.



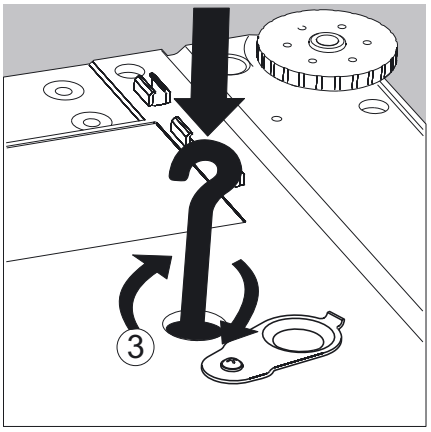
M The below-balance weighing port must not be opened or used on balances used for legal metrology.

Analytical and Precision Balances with a Weighing Range of up to 15 kg:

1. Remove the hook for below-balance weighing from the clip on the bottom of the balance.



2. Push the cover of the below-balance weighing port to one side.



3. Carefully screw on the below-balance weighing hook.

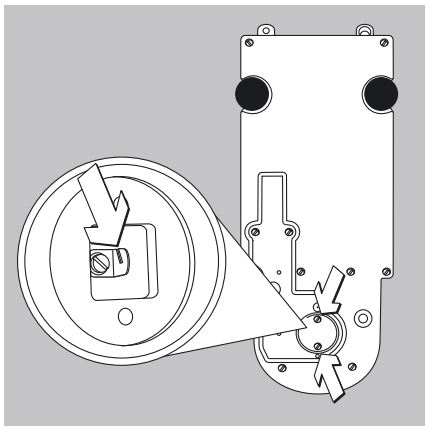
Do not screw it in too tightly,as this could damage the thread or the balance.

Install a draft protection shield.

▶ Attach the sample (e.g., using a suspension wire) to the hook.

4 When weighing has been completed, unscrew the hook and return it to the clip.

▶ Close the cover of the below-balance weighing port.

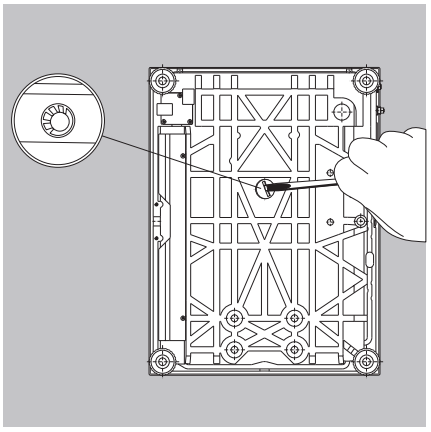


Balances with a Readability of ≤ 1 µg:

▶ Remove both screws from beneath the weigh cell and detach the cover plate.

▶ Attach a wire, for example, to the sample and hang it on the notched hook.

Install a draft protection shield.

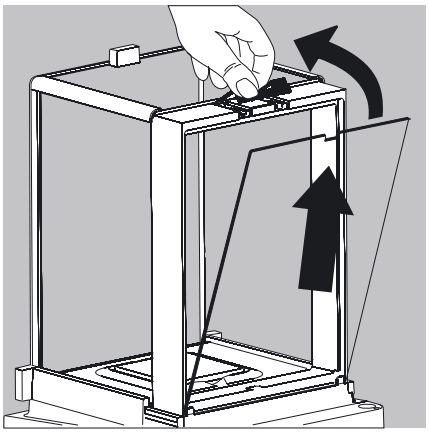


Balances with a Weighing Range of 20 kg or more:

▶ Use a suitable screwdriver to unscrew the cover plate from the bottom of the balance.

▶ Request the hook directly from Sartorius.

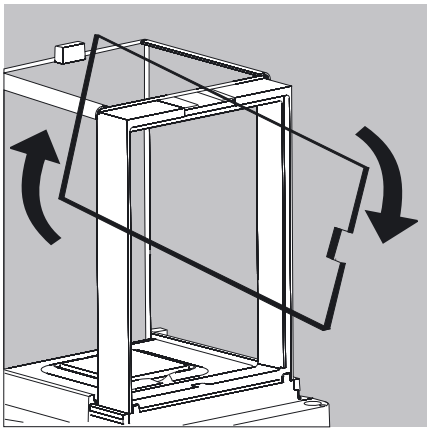
Install a draft protection shield.



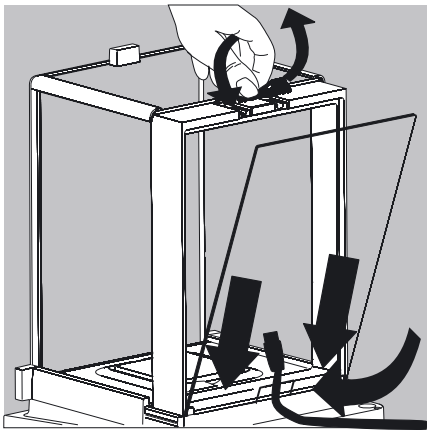
Using the Cable Opening of the Draft Shield

Models with an analytical draft shield have an opening for passing a cable (for example, for a temperature sensor) through to the interior of the weighing chamber.

1. Lift the locking tab on the rear panel of the analytical draft shield.
2. Lift the panel out of the draft shield.



▶ Turn the panel clockwise 180° so that the opening is at the bottom.

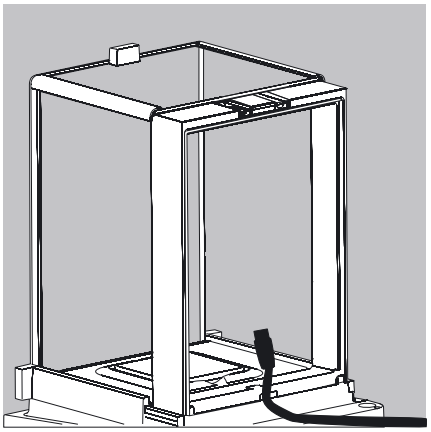


▶ Install the desired sensor.

▶ Insert the panel in the guide rail.

▶ Lift the locking tab and gently press the panel into position.

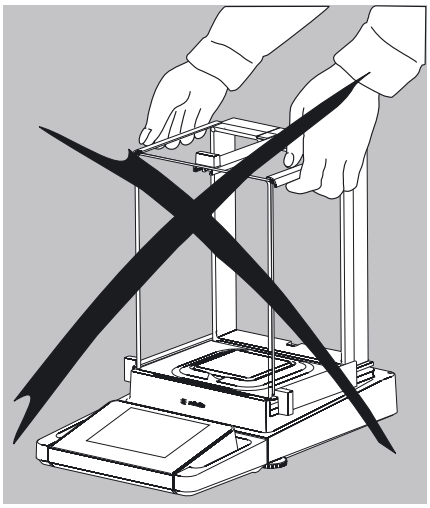
▶ Press the locking tab down and close it.



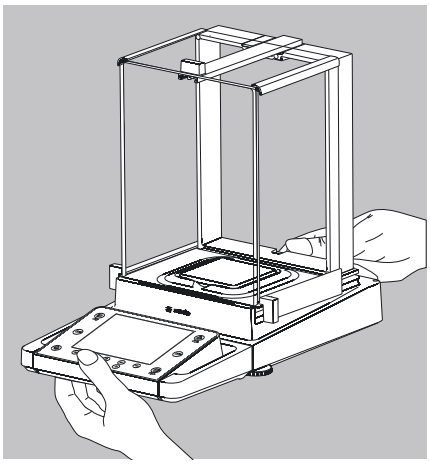
▶ You can now begin weighing.

Moving the Balance

Transporting the Device over Short Distances

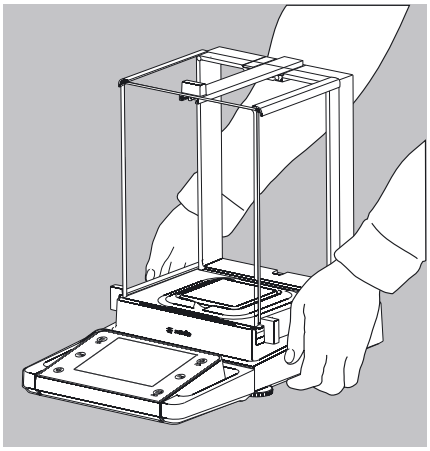


Exercise caution to avoid glass breakage.
Never lift and carry the balance by its draft shield.



▶ Carry as shown in the first illustration.

or



▶ Carry as shown in the second illustration.

Storage and Shipping Conditions

- Permitted storage and shipping temperature: -10 to +60 °C
- Unpacked devices can lose their precision if subject to extreme vibrations.
- Excessive vibrations may compromise the safety of the equipment.

Save the packaging for any future storage or shipment of the balance.
Only the original packaging provides optimum protection for the equipment.

- Follow all warnings and safety precautions.
- Follow the instructions in the chapter: “Transporting the Balance.”

Using the Balance

Turning the Balance On/Off

▶ Make sure the balance has been installed and put into operation in accordance with the installation instructions.

(⏻) ▶ Press the on/off key (⏻) on the control unit.

▷ The start screen appears briefly on the display, then the user interface appears.

On subsequent starts, the most recently active user profile and task are opened (if at least one user profile and task have been set up).

▶ If prompted, level the balance (see “Leveling the Balance” for details).

(⏻) ▶ To put the balance in standby mode or switch it off, press the key (⏻).

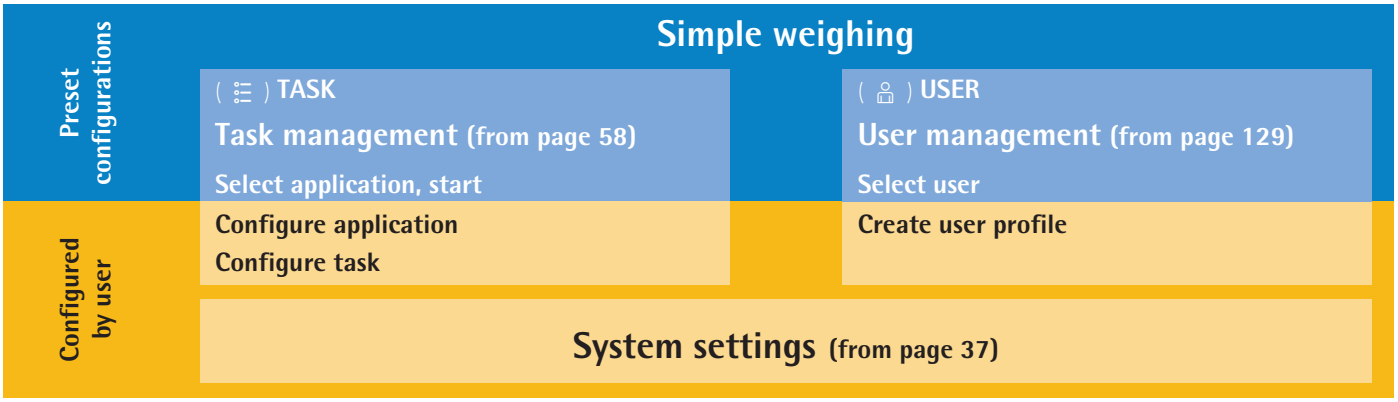
▶ Close the draft shield (if your model has one).

Operating Concept: Q-Guide

The Cubis precision and analytical balances are controlled by application software with interactive operator guidance. Once you open a menu or select an application, brief instructions shown on the display will guide you through the menu or application step-by-step. At each step along the way, the display shows only those options that are relevant to your process; this helps prevent unnecessary “detours” and enables you to reach your destination more quickly.
This type of user guidance is mostly intuitive. Although operation of the balance is also mostly intuitive, this manual includes a section with very detailed, step-by-step instructions where you can learn about all of the available options (see “Creating User Profiles” in the chapter “User Management”).

Basic Operational Structure

The most basic functions, weighing and taring, can be carried out as soon as the balance is switched on. The application software is divided into three general areas in which individual settings can be configured:



In **Task Management (TASK)**, task profiles with specific applications, weighing and printout settings can be configured.
User Management (USER) lets you set up user profiles with specific configuration settings and user rights. You can also set up password protection to meet your security requirements. Your balance can also be used for user management.

The **System Settings (Menu)** contains all basic settings and parameters used to operate the balance that affect the entire balance operation. They can also be used for creating new tasks.

The Wizard

You can choose between two display types in several menus:

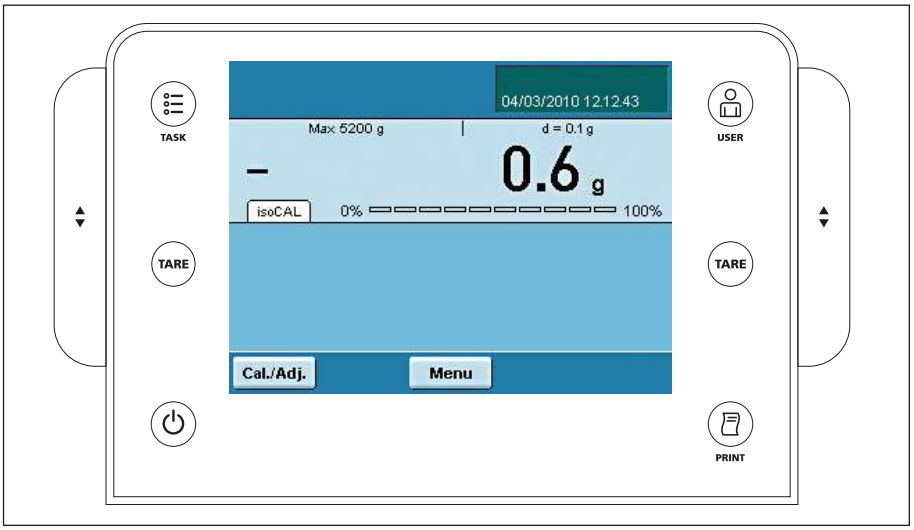
Overview

The overview lists all parameters with their set options. You can select each individual option to change its setting.

Assistent

When you activate the wizard in the same menu, the program guides you **step-by-step**: The individual parameters and their options are displayed in succession.

Using the Display and Control Unit



Control keys:

(☰)	TASK key: Opens Task Management in which applications can be selected and tasks defined. While working in this menu, you can also use the TASK key to cancel at any time and return to task overview.
(👤)	USER key: Opens User Management in which users can be selected and user settings can be made. While working in this menu, you can also use the USER key to cancel at any time and return to user overview.
(TARE)	Left and right TARE keys: Used to zero and tare the balance.
(🖶)	PRINT key: Used to print the currently displayed measurement results or a user-specific print out.
(⏻)	On/Off key: Used to switch on/off and to standby.
▲▼	Operating elements for electronic draft shield (optional)

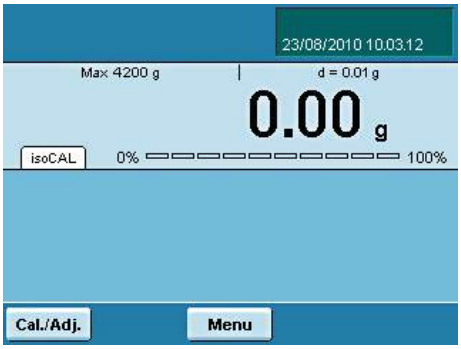
Display and Control Unit

The tilt angle of the display and control unit can be set as desired to enable optimal readability for changing working conditions. The color and brightness of the display can also be changed to match the lighting conditions in the room (see “User Management” and “System Settings”).

SD Memory Card for Data Exchange

The display and control unit is equipped with a slot for an SD memory card where you can import and export data (task, user profiles). Handling the memory card is explained in chapter **Importing/Exporting Data**.

Setting the Language



▷ The default language for the display is English.

▶ To change the language, select **Menu** and then **Lang**.

▶ Use the cursor softkeys to select the desired language.
▷ The display changes directly to the selected language.

▶ If you would like to select a language that was not included with the equipment supplied but was later downloaded from the Cubis website, you must first import the language files (see chapter “Importing/Exporting Data”).

▷ To display the downloaded language, select the “Loadable language” in the language list.

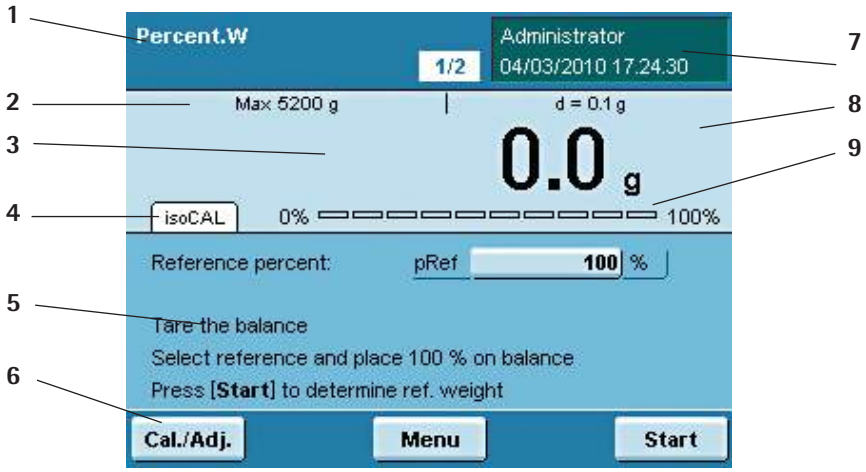
Quick Guide: First Weighing

(⏻) ▶ Press the operating key (⏻)to turn on the balance.
▶ Close the draft shield (if available).
(TARE) ▶ Press the tare key (TARE) to tare the balance.
▷ The balance is tared and the displayed value is zero.
▶ If required, open the draft shield and carefully place the sample on to the weighing pan (in a suitable container if required).
▶ Close the draft shield (if available).
▶ You can read the measured value as soon as the weight value stops changing and the unit is displayed.

User Interface (Touch Screen)

Many operating steps are carried out via the display using the touch screen. The display varies depending on whether the application software is in operating mode or a menu is currently open (setup mode).

Display in Operating Mode



M Verified balances feature the following additional displays:

In the line for metrological data:
- **Min** Minimum weight
- **e** Verification scale interval

In the value range:
- **o** Calculated values, such as:
- ⚠ Values ≤ 0 and other values
- **pcs** Piece count

1 **Function display**: Current task (here: Step 1 of 2)
Touching this area displays the description of the task.
2 **Line for Metrological Data:** left: Weighing Capacity (max); right: **d** = Readability (resolution) of the balance.
3 **Value range** with current measurement value (the numeric value is displayed in black numbers once the weighing system reaches stability; beforehand it is displayed in gray numerals)
4 Field for **status and warning messages** (see below)
5 Task area with instructions on how to proceed
6 Toolbar with currently available buttons
7 User field: Displays the current user, date and time
Touching this area displays the description of the user.
8 For _.CE model balances verified for use as legal measuring instruments: Displays the weights that are not weight values, such as calculated values
9 Scaled measurement value display (percentage of used weighing capacity)

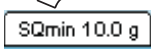
Status and Warning Messages

Tabs with the following messages may be shown here:
isoCAL is displayed: isoCAL is active (extended temperature range)
isoCAL flashes: Calibration is required
Touch the tab to activate the function.

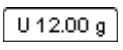
Level me flashes: Balance is not level, leveling is required
Touch the tab to activate the function.

Service: The date for the next service has arrived.
Touch the tab to find Sartorius Service contact information.

GLP: GLP print is active, the header will be printed.
Touch the tab to print the footer.



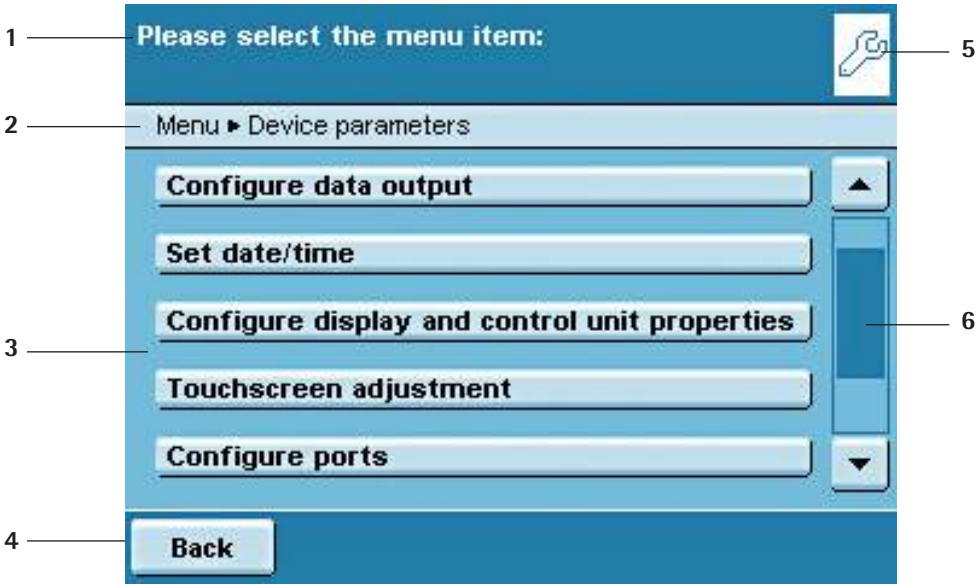
SQmin: The SQmin value entered is permanently displayed.
SQmin flashes: the weight value is less than the entered SQmin value.



U or **U*** or **PA**: The selected DKD value (measurement uncertainty) is currently displayed.

Ion: Ionizer in progress (only when ionizer available)
Touch the tab to deactivate the function.

Display in Setup Mode

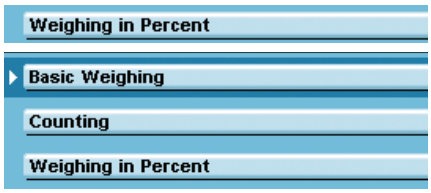


1 Interactive area with instructions on how to proceed
2 The navigation line shows your current location in the menu structure
3 Working environment with selectable options
4 Toolbar with the available buttons
5 Symbol indicating which menu (TASK, USER or MENU) is currently open
6 Scroll bar to browse the selection area

Using the Touch Screen

Equipment may be damaged by objects with points or sharp edges (e.g., pens).
The touch screen should only be operated using the finger tips.

All **operating elements** on the touch screen are depicted in a light color with a shadowed 3D effect. They are activated with a light touch.



Alternative selection: When only one of several options is available, always touch the desired option and the program will automatically switch to the next view.

Multiple selection: When several options are available for selection, each option will have a checkbox. You can select or deselect the desired option by touching the checkbox (adding or removing the checkmark).
Touch Next to go to the next query.

For some displays, you will need to use the **scroll bar** to view all options. You can either slide the bar (touch it and drag in the desired direction) or touch the up or down arrow keys.

Entering Text and Numbers

A keyboard will appear whenever you have to enter text and numbers. A cursor appears in the entry line above the keyboard.

▶ Select the desired character with a light touch.

▷ The entered text will appear in the entry line.

Press the **shift button** to change the input mode between uppercase letters, lowercase letters, numbers and the complete character set with special characters.

The **backspace key** is used to delete the character to the left of the cursor.

Touching the entry line toggles the input mode.
Overwrite mode: The cursor marks an individual character or the entire entry. The marked text will be overwritten by the new entry.
Input mode: The cursor is positioned in the blank space between characters so that you can enter more characters.

Use either of the **arrow keys** to move the cursor one space to the left or to the right.

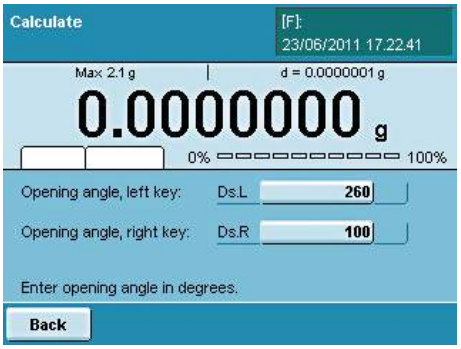
The **Back** key cancels the entry process and takes you back one step to the last view.

The **OK** key ends the process and saves character input.

Opening and closing the rotation draft shield (models MSx6.6S/3.6P/2.7S):

Defining the opening width:

▶ Touch **DraftShd**.



▷ The settings for the opening angle are displayed.

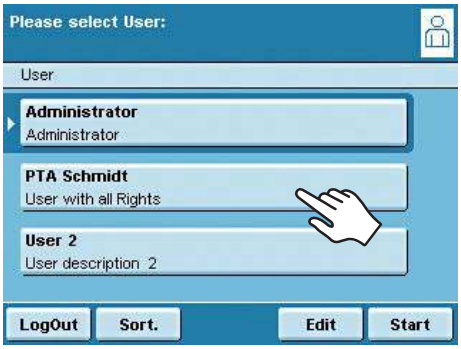
▶ Check the settings and change as required.

Draft shield opens according to the opening angle setting.

Activating/Switching Users

When the balance is in the operating mode, the active user is shown at the top right of the display in the user field. To activate another user, open the User Management menu.

(👤) ▶ Press the USER key (👤).



▷ The user selection is displayed. The current, active user can be recognized by the small arrow and the dark background.
▶ Touch the user you want to activate.
▶ If password protection activated, enter your password.
▷ The program switches back to operating mode, with the selected user profile activated.

▶ When you touch **Start**, the user who is currently selected will be activated.

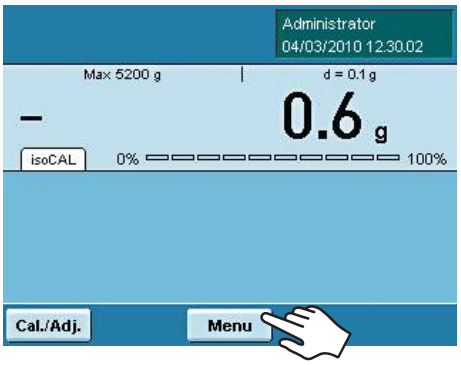
System Settings (Menu)

This menu summarizes all the balance settings relevant to the device. Basic settings can be made here that immediately affect the device. Changed settings do not affect previously defined tasks and user profiles.

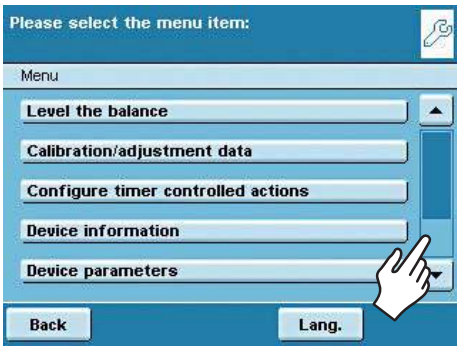
All system settings are user-independent, i.e., they are valid for all users.

As long as a task is active and/or a user has been selected, several basic settings cannot be changed. In order to change all settings, “Weighing” has to be selected in the operating mode and no user may be selected.

Not all functions/settings can be selected on balances used in legal metrology!



▶ To open System settings, touch **Menu** when the balance is in the **operating mode.**



▷ The list of available system settings is displayed.
▶ To view all menu items, use the right scroll bar.
▶ Touch the menu item whose settings you want to change.

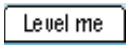
System settings are divided into the following menus:
- Level the balance
- Configure calibration/adjustment
- Configure timer-controlled actions
- Display device information
- Configure device
- Import/export data
- Activate service mode

You have already learned how to use the menus (see chapter “Using the Touch Screen”). Only the configuration options and their meanings are described below.

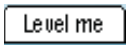
Leveling the Balance (Q-Level)

It is essential for exact weighing results that the balance is absolutely level.
The front leveling feet can be used to level out small tilts of the floor.
Leveling must always be carried out when the balance is moved to another setup location or shifted in its place.
Depending on the model, the balance is equipped either with leveling feet that can be operated manually or motorized leveling feet.
An integrated sensor detects the alignment of the balance and triggers a warning message when leveling is required. You can configure the leveling notice and the automatic leveling function (see System Settings/Device Parameters).
When the isoCAL function is activated, the isoCal function is triggered after manual leveling. Balances with motorized leveling feet are leveled automatically prior to each new calibration/adjustment.

Note: The balance needs to be re-leveled and then adjusted each time its setup location is changed.



When “Level me” appears on the display, you must level the balance.
The process is quick and easy.

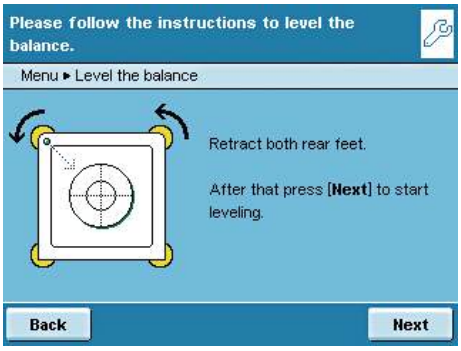


▶ Touch the tab **Level me**

or

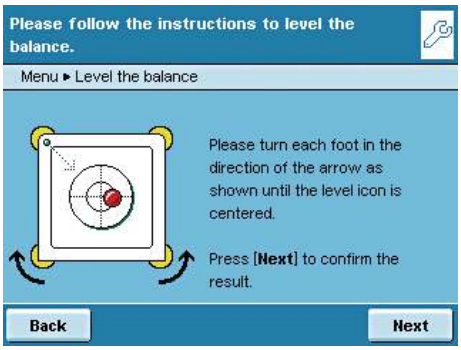
▶ Select the option **Level the balance** from the menu.
▶ Make sure that the weighing pan is empty.

Balance with motorized leveling feet
(available for all models with weighing ranges of > 6.1 g and ≤ 6.200 g):



▶ To start the leveling function, touch **Start**.
▶ Follow the instructions on the display.

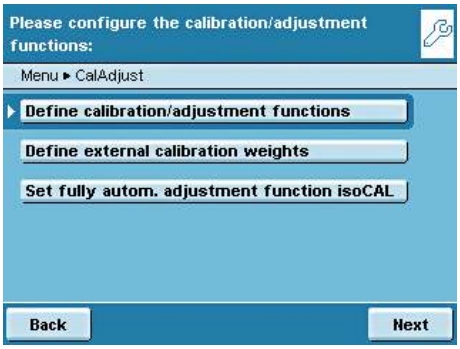
Balance with electronic level indicator and manual leveling feet



▶ Follow the instructions on the display.

After each leveling routine, the balance must be **calibrated/adjusted** (see chapter **Calibration and Adjustment**).

Configuring Calibration/Adjustment



Setting options are divided into the following sections:
- Defining calibration/adjustment functions
- Defining external calibration weights
- Setting fully automatic adjustment function isoCAL

▶ Enter the desired settings in all submenus.

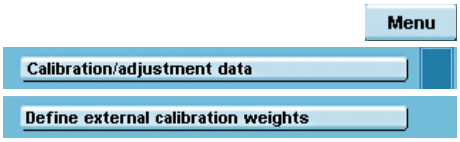
▶ To save settings, touch **Save**.

Factory settings are marked with an *.

Defining Calibration/Adjustment Functions

cal./adj. key: Function of the key: Block key/*Configure key selection menu/ Select fixed 1-key function.
cal./adj. selection menu: Which calibration/adjustment functions should be offered when touching the cal./adj. key?
Cal./adj. sequence: Options: *Calibration, thenperform auto. adjustment/ calibration and then manual adjustment.
Cal./adj. unit: Options: *gram/kilogram/defined by data record.

Defining External Calibration Weights



Number of ext.calibration weights: Enter the number.
External calibration weight n: Enter the data for each calibration weight: Weight value
(in grams)/ID/Certificate/Validation

Configuring Fully Automatic Adjustment Function isoCAL

isoCAL: Define the function: Off/Only warning level, manual trigger/*On, automatic implementation
isoCAL warning level: *Only isoCAL status field/Warning message, repeat/ Alarm message, adjustment mandatory.
isoCAL temperature: Enter temperature differential (in Kelvin).
isoCAL interval: Enter interval in hours.

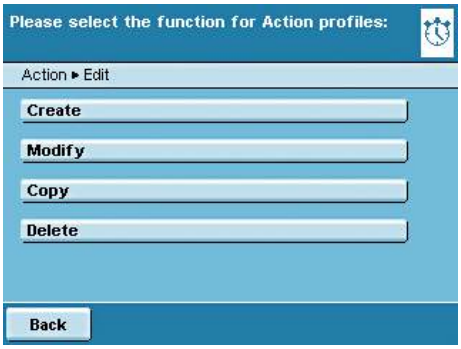
Timer-controlled Actions

You can program the following actions so that they are run automatically at pre-specified times:

- Display a message and execute a command (see example below)
- Execute a command
- Show a message (e.g., a prompt as a reminder)

▷ The available actions are displayed. When you open this menu for the first time, the list will be empty.

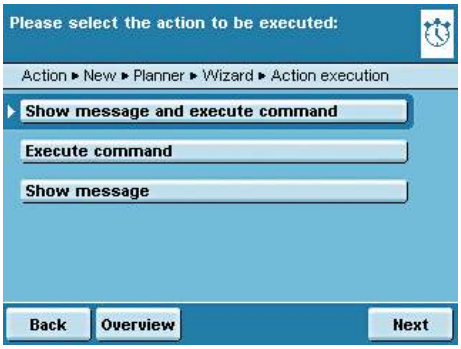
▶ Touch **Edit**.



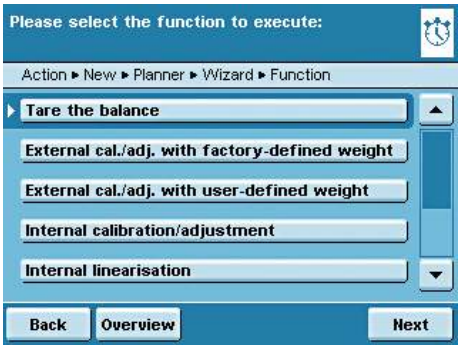
▶ To define a new timer-controlled action, touch **Create**.

Here you can later also modify, copy or delete each action.

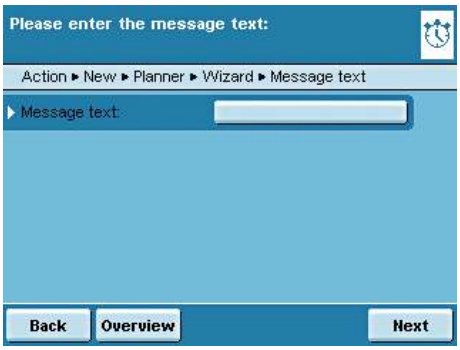
Example: You want to have the “Internal calibration/adjustment” function performed each morning at 7:00 a.m. In addition, you want a message to be displayed.



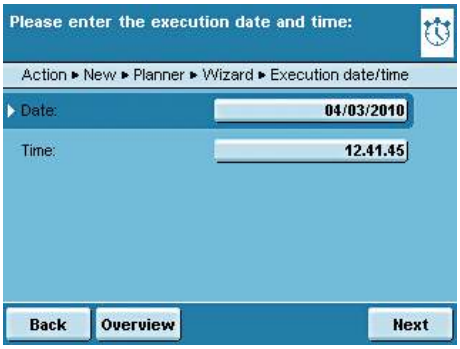
▶ Select the action you want to install (e.g., Show message and execute command).



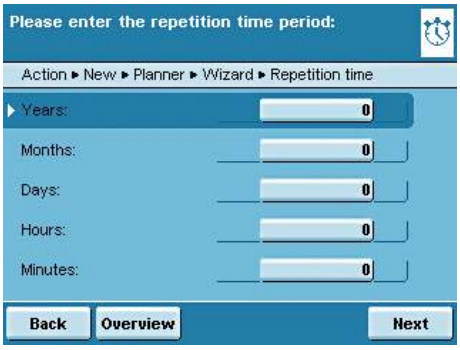
▶ Select the command you want to have executed (e.g., Internal calibration/ adjustment).



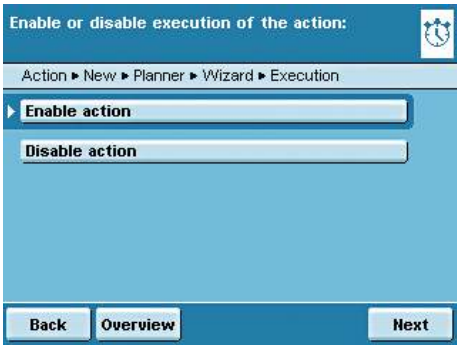
▶ Enter the text you want to be displayed during the action (e.g., Timer-controlled adjustment).



▶ Enter the time when the action should be performed for the first time.

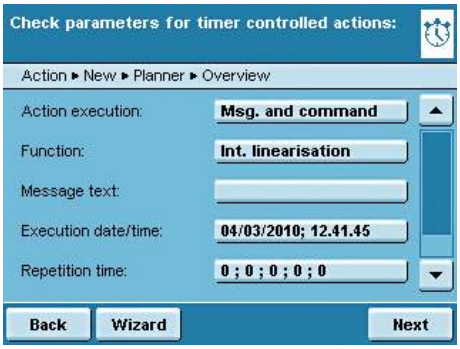


▶ Define the time interval at which you want the action to be performed repeatedly (e.g., 1 day for daily repetition).



▶ To start the action at the time set, select **Enable action**.

Here you can disable the programmed action at any time and re-enable it later with a new starting time.

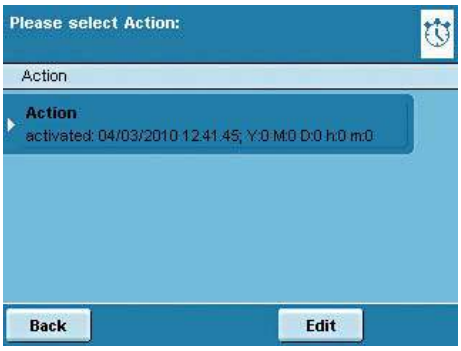


▷ The overview of all settings for the action is displayed.

▶ Check and correct all settings as required.

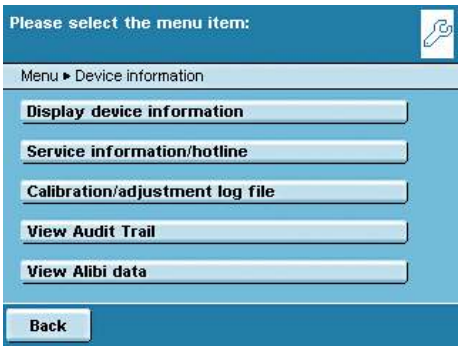
▶ Touch **Next**.

▶ Enter a name and a description for the action.
▶ To save the action, touch **Save**.

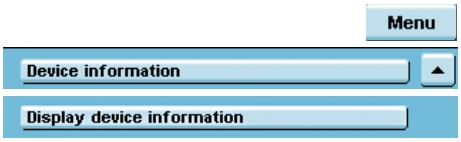


▷ The programmed action is displayed in the list of actions.
Here you can edit them again at any time.

Displaying Device Information



You can view various information here.
▶ Select the appropriate area for the information that you want to view.



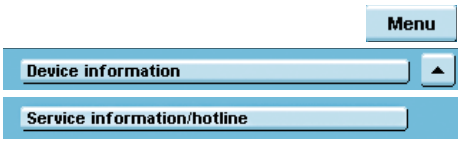
Viewing Basic Information

Here you can find all information about manufacturer, model, serial number, host name and IP address used.

▶ To display SQmin and DKD parameters, touch **SQminDKD**.

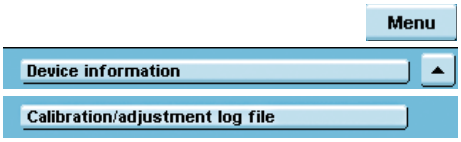
▶ To view the version of the balance, display and control unit and application software, e.g., **Version**.

▶ To view the weighing ranges and digits (resolution), touch **Ranges**.



Information about Service and the Hotline

Service contact information is displayed here along with the hotline number as well as maintenance contract and maintenance interval information.



Viewing Calibration and Adjustment Data

The log file is displayed here with the results of all calibration and adjustment routines.

Viewing Records in Audit Trail

In Audit Trail, all changes are logged that have been performed in the menu, in the user profiles and in the task profiles.
The following will be recorded: user, profile, parameter ID, parameter, old and new setting.

Alibi Memory

The alibi memory contains (stores) weighing results with date and time and process number. This takes place every time a print event is triggered (e.g., by pressing **Print** ( )). The alibi memory is required when you wish to continue working with the weighing data on a computer.

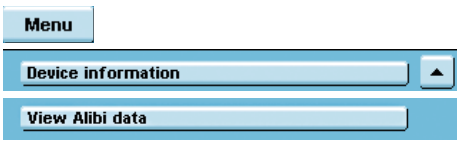
The data memory has a ring buffer. The oldest data records can thus be overwritten by new ones. The user can define a memory-time dependent overwrite protection as well as a storage period if desired (default: 90 days, see chapter “Device Parameters”). The alibi memory can contain approximately 450,000 data records; the storage capacity depends on the volume of the individual data records.

M The alibi memory is verifiable. When the balance is verified, you must check the correct function of the alibi memory by saving some values.

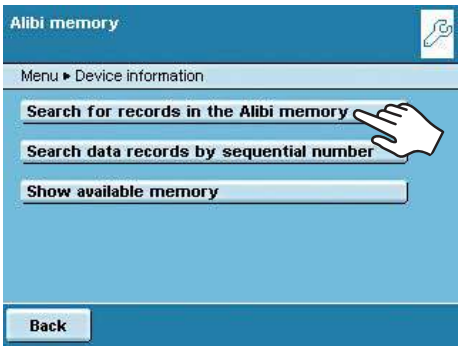
M If the alibi memory is used in legal metrology (according to Council Directive 90/384/EEC, replaced by 2009/23/EC , you should observe the following instructions:

- Make sure that there is sufficient storage capacity. Responsibility for this lies with the operator.
- The weighing results should be stored together with a unique ID code (e.g., number or date and time). This makes it possible for every weighing operation or weighing result to be assigned and verified if necessary without any problem. These ID codes must be indicated on any records generated on peripheral devices.
- When data are output, all the required tare and net values will be saved.
- It must be possible for the contractual partners involved to be able to check and verify the stored weighing results.
- Any continuously indicated weighing results that are not previously stored and have no identification codes may only be used in applications that are not for use in legal metrology (e.g., batching, controlling or the like). It is not permissible to circulate any results lacking identification codes for applications used in legal metrology!
- Records can be prepared by a peripheral device not subject to legal verification according to the preamble to Annex I of Directive 90/384/EEC (2009/23/EC) and Section 7b (3) 2 of the German Verification Act.
  These records must contain the following information:
  - An ID for every weighing result;
  - When used in Germany, an additional indication that the weighing results may be compared with the weighing results legally stored on basis of the identification.

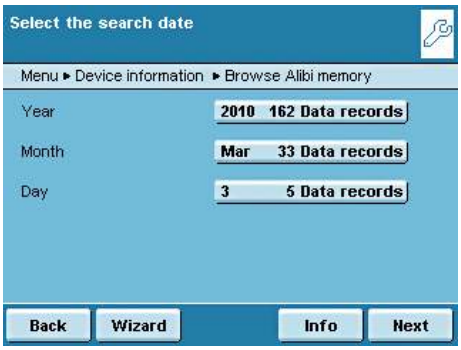
You must first install and activate the alibi memory in order to use it (see Device Parameters/Configuring the Alibi Memory).



Searching for and Displaying Data in the Alibi Memory
You can search for data using various search criteria and view the storage capacity of the alibi memory.



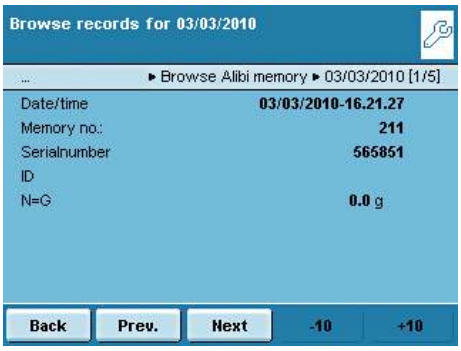
Searching for Data Records by Date



▷ An overview appears in the display.

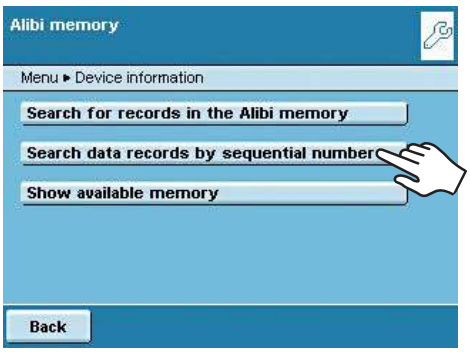
▶ Limit the search by selecting year, month or day.

▶ Touch **Next**.

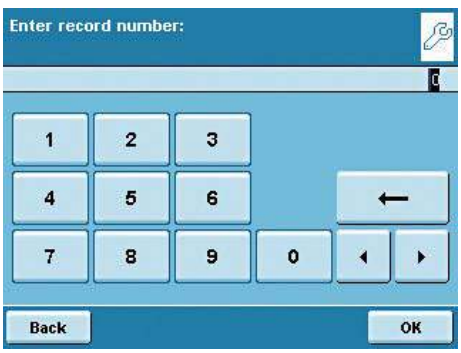


▷ The desired data are displayed.

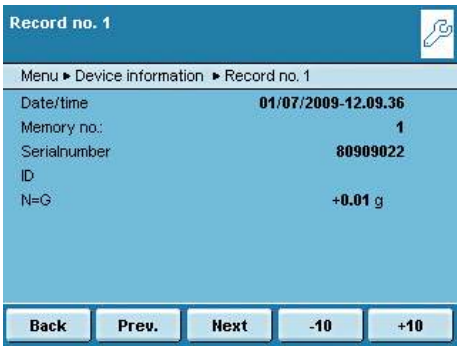
▶ Using the **Prev.** and **Next** buttons, you can display more data records from the selected date.



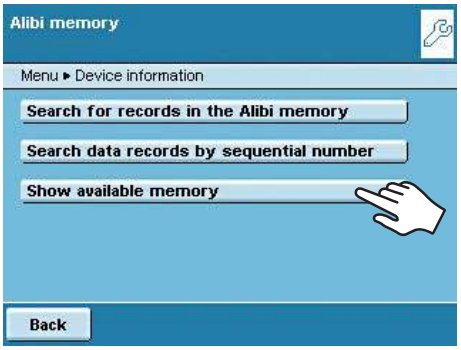
Searching Data Records by Sequential ID Number (Data Record Number)



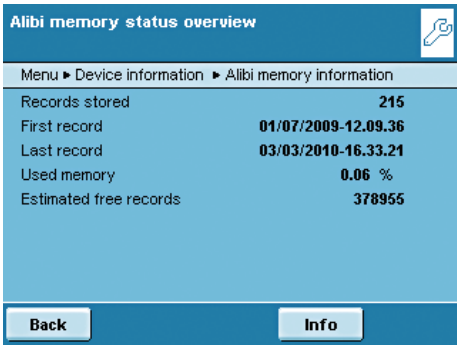
▶ Input the number of the desired data record.
▶ Touch **OK**.



▷ The desired data record appears in the display.

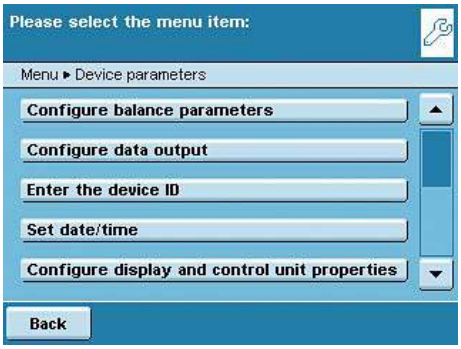


Viewing Information on the Alibi Memory and Available Memory Space



All important status information on the alibi memory are shown here. You can view the percentage of storage capacity utilized and an estimation of the number of data records that can still be stored. The exact number depends on the volume of the individual data records.

Device Parameters

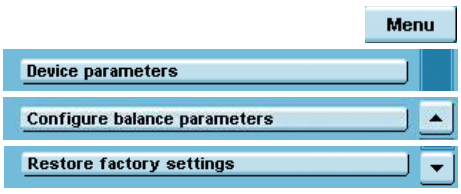


Here you can change the following equipment settings and update the software. All settings are user-independent.

- Balance parameters
- Data output
- Device ID
- Date and time
- Display and control unit properties
- Touch screen adjustment
- Interfaces
- Alibi memory
- Load a software update
- Software activation codes (e.g., for “Q-Apps” software options)
- Restore factory settings
- Motorized draft shield (optional)
- Ionizer (optional)

Configuring Balance Parameters

Factory settings are marked with an *.

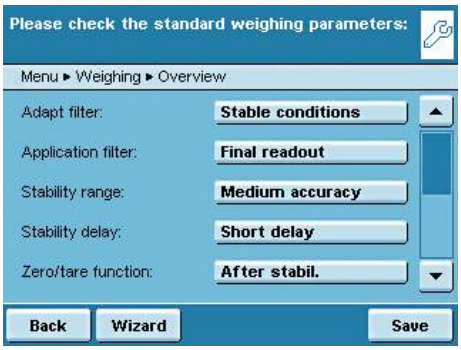


General Weighing Settings

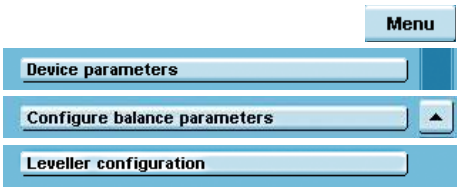
Here you can configure the standard settings for the general weighing functions. These settings can be changed for a specific task whenever a new task is created.

These settings can only be changed when the balance is set to “Weighing” in the operating mode. If **General weighing settings** cannot be selected, you can touch **TASK** (☰) to toggle to Task Management and select **Weighing**.

In order to receive detailed information on the individual setting options, touch **Info**.

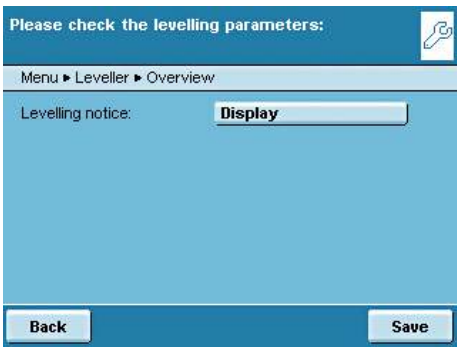


Adapt filter: This setting defines the measuring time of the balance to filter out the effects of unfavorable weighing conditions such as drafts or vibration.
Options: Very stable/*stable/unstable/very unstable conditions
Application filter: Equalizing the load deviations in the display.
Options: *Final readout/Filling mode/Low filtering/W/o filtering
Stability range: The stability indicator lights up when the weight results are constant within a defined range. Options: Maximum precision/very precise/*precise/ fast/very fast/maximum speed.
Stability delay: This setting lets you compensate for slowly abating disturbances, such as turbulence in the weighing chamber of an analytical balance).
Options: *Very short/short/medium/long delay.
Zero/tare function: Conditions for carrying out the tare function.
Options: Without/*after/at stability.
Auto zeroing: When this option is turned on, changes of a set fraction of scale intervals per second from the display zero point are tared automatically.
Options: On/*Off
Base unit: Weight unit to be used for this task. Options: All available weight units, *gram.
Display accuracy: A lower display accuracy results in a faster display.
Options: *All places on/Last place off
Tare/zero at Power: Automatic taring when the balance is switched on.
Options: *On/Off



Setting Up Q-Level Leveling Function

You can configure the leveling function here.



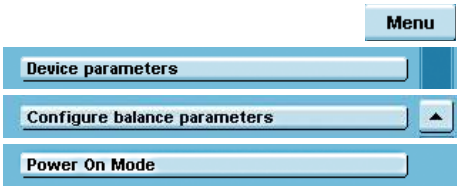
Leveling Notice

Off, no notice: The prompt to perform leveling is omitted.
Status display: As soon as leveling is required, the tag **Level me** appears and flashes.
Alarm message, leveling mandatory: As soon as leveling is required, the tag **Level me** appears and flashes. If this notice is ignored, an alarm message appears after 5 minutes. In that case, you can only continue working after you have performed leveling.

Automatic Leveling (Balances with Motorized Leveling Feet Only)

Off, start by touching: To activate automatic leveling, touch **Start**.
Activate the fully automatic function: Before every calibration/adjustment routing, the balance will be leveled automatically.

▶ To save settings, touch **Save**.

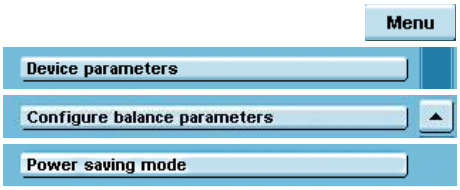


Defining the Startup Mode of the Balance

▶ You can select the mode that is used when the balance is turned on and when you touch the (⏻) operating key repeatedly.

Options: **On/standby** or **Always on**

▶ To save settings, touch **Save**.



Defining the Power Saving Mode of the Balance

▶

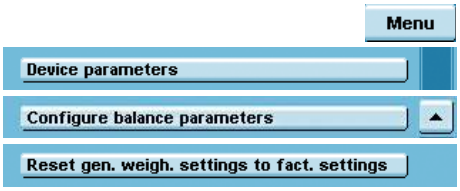
Switch the power saving mode of the balance on or off.

Off, no function:

The power saving mode is not in use.

Auto shutoff after 2 minutes: The backlighting of the display and control unit switches off if the device is not operated for 2 minutes.

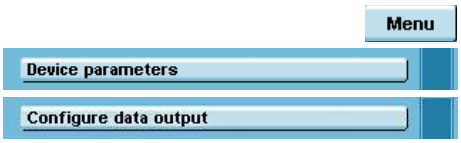
▶ To save settings, touch **Save**.



Resetting General Weighing Settings to Default

You can reset all balance settings back to the default delivery status (after a security prompt).

Configuring Data Output (Print Parameters)



Here you can configure all settings for printing and data output.
Several of these settings depend on the interface configuration
(see chapter Interfaces).

Factory settings are marked with an *.

Info

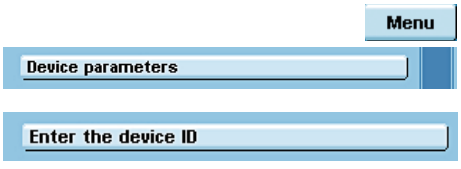
In order to receive detailed information on the individual setting options, touch **Info**.

Interface to the print output: Options: COM port (peripheral), Port A
PC (USB), Port B
Optional, Port C
Network, Port D
Print to file
Protocol: Options: Print/SBI/XBPI/Web service/SICS/Remote display.
This setting cannot be changed here, but is defined when configuring the interfaces.

The parameters and settings displayed here depend on the configured protocol.
GLP standard print: When should the ISO/GLP output be possible?
Options: *Off/enabled for cal.-adjustment/always enabled.
Taring after printout: Automatic tare after printing? Options: *Off/on.
Print event: What event should trigger printing? Options: *PRINT key/Start of task/Initialization of application/Result of application/Printing component/Evaluation of application/Exit task/Calibration - adjustment.
Print key elements: Which elements should be printed?

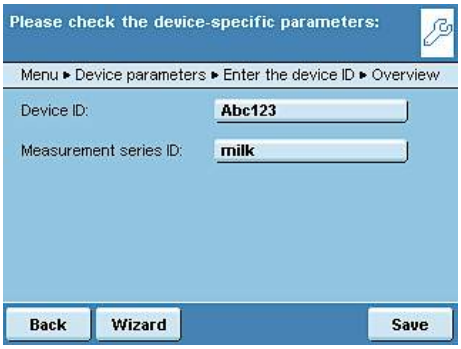
For further information, please refer to the chapter **Interfaces**, in the section **Configuring a Printout**.

Entering the Device ID



These two IDs can be added to the printout.

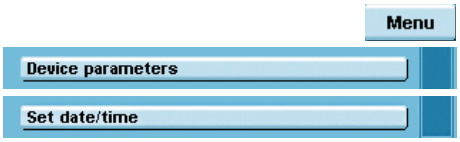
- ▶ Select the entry for both IDs.
- ▶ Enter the desired value (text) for each ID.



- ▶ To save settings, touch **Save**.

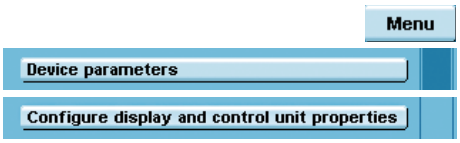
For related input and output commands for the printout, see chapter “Interfaces: SBI Commands” on page 156.

Setting the Date and Time



▶ Enter the current date and time in the prescribed format.

Configuring Display and Control Unit Properties

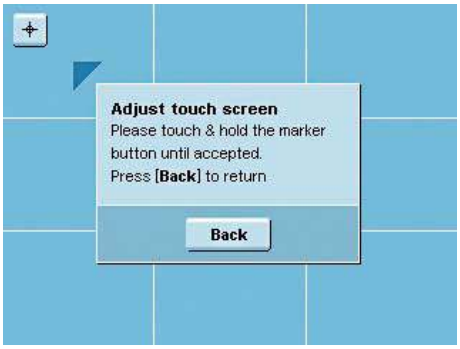


The following properties of the display and control unit can be changed, as necessary: **Language**, **background colors**, **brightness**, **acoustic signal**.

These general properties are applied to all user profiles, are also used when no user is logged in, and serve as a template when a new user profile is created.

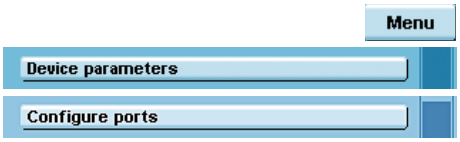
Adjusting the TouchScreen

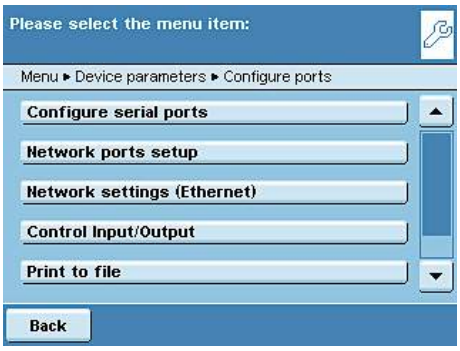
Here you can customize the marker button on the touch screen (finger pressure, angle of touch, etc.)



▶ Follow the instructions on the display.

Configuring Interfaces and Network Settings



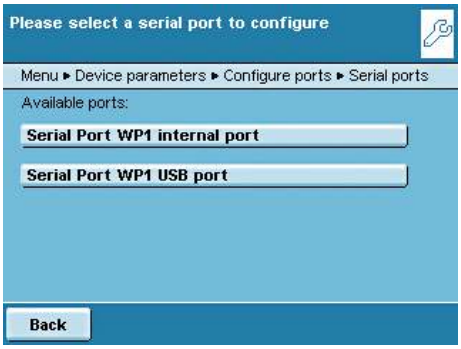


Here you can configure the serial interfaces and define settings for the network.

There are also settings for:
- Control inputs/outputs
- Print to file
- FTP server settings

A detailed description of the connection options and data interface ports can be found in the chapter **Interfaces**.

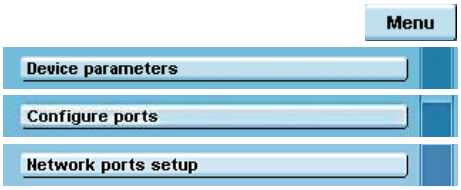
Configuring Serial Ports



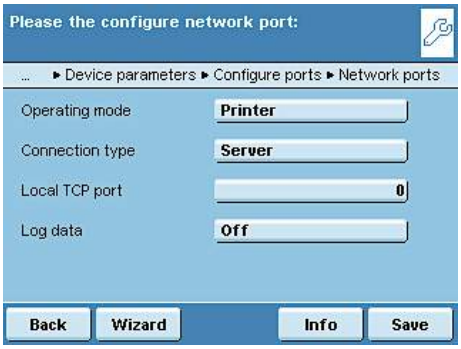
▷ The available interfaces are displayed.
▶ Select the interface you want to configure.
▶ Determine all settings for this interface.

▶ To save settings, touch **Save**.

Configuring the Network Interface (Ethernet)



For more information on network operation, see chapter **Interfaces**, section Network Interface.



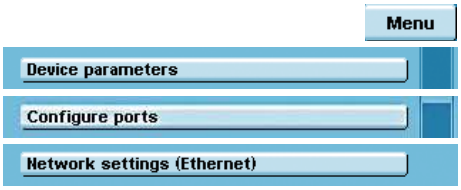
▶ Select operating mode for the network interface.
No function/**xBPI** (extended Sartorius communication) **SBI** (Sartorius standard protocol)/**Printer output**/**SICS Protocol**

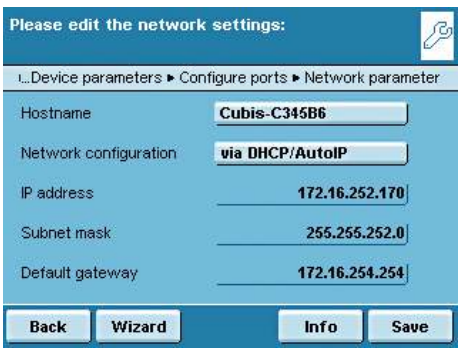
▶ Select connection type.
Server or **client** connection

▶ Configure the local TCP port.

▶ To save settings, touch **Save**.

Configuring Network Settings (Ethernet)

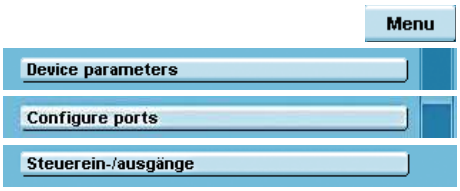




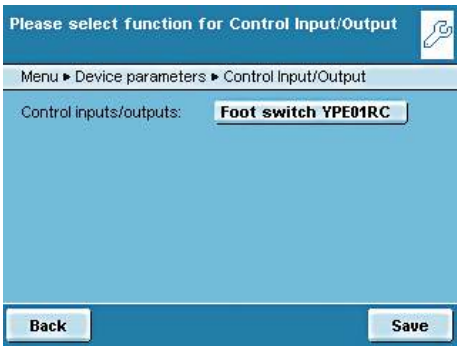
▶ Define the settings for network operation.

The **device name** (max. 24 characters) that you define here can be printed on logs.
The **IP address** can be entered as default or obtained automatically.

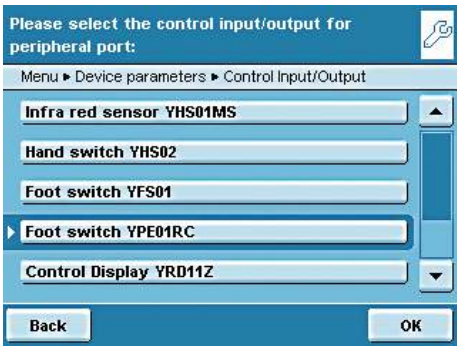
▶ To save settings, touch **Save**.



Configuring Control Inputs/Outputs (e.g., for Remote Switch)
If you have connected a remote switch, for example, via the peripheral or optional port, you can define its function here.

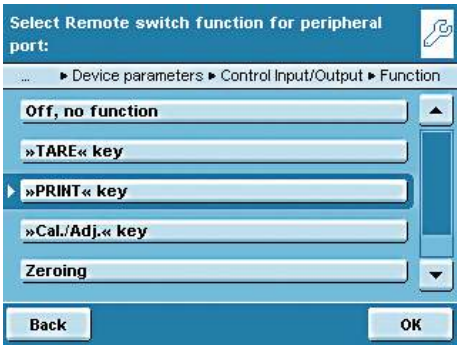


▶ Define the setting for each ported interface.



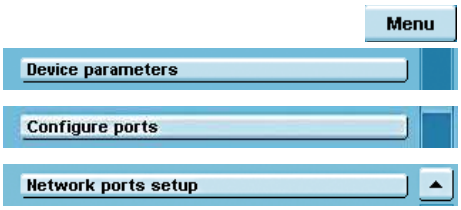
▶ Select the ported hardware device or control function.

During checkweighing, the control outputs have no function when set to:
- Foot switch YPE01RC
- Control inputs



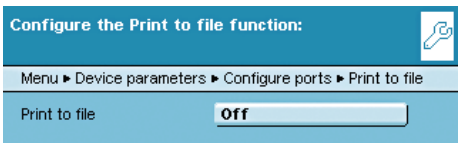
▶ Define the settings for the control inputs/outputs.
Off, no function/TARE key/PRINT key/Cal./adj. key/Zeroing/taring

▶ To save the settings, touch Save.

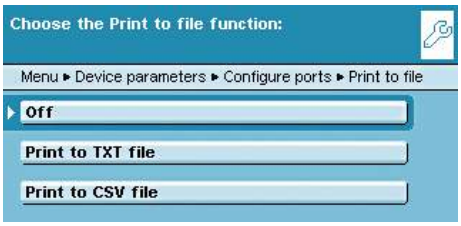


Configuring "Print to file"

Purpose:
- Transferring a print file in TXT or CSV format to a SD card or FTP server.
- Viewing a print file directly in an internet browser.

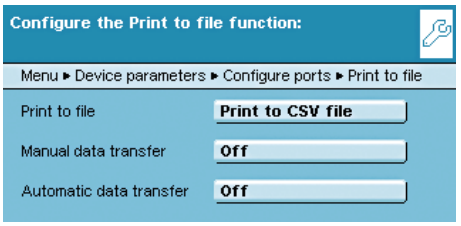


▶ Select **Off**.



▶ Specify the file format.

Print to CSV file:
In addition to the SBI output (like in the TXT file), three additional columns are also written to the file: ID, Value and Unit. The 4 columns are separated by the ";" character. The "+" sign has also been removed in the third column and the decimal point has been replaced by a decimal comma (because of Excel).

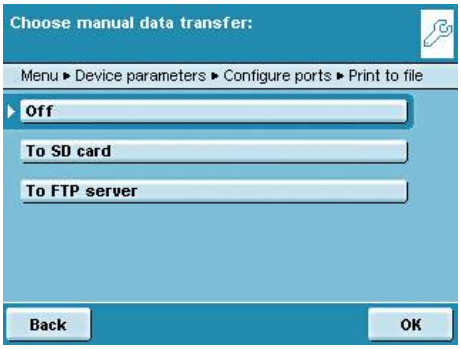


▶ Touch **Off** to specify the settings for automatic or manual data transfer.

▷ The data is deleted from the balance after the automatic or manual transfer so that only the new data is transmitted the next time there is an automatic transfer.

▷ Manual transfer:
Touch **Trans.SD** or **Trans.FTP** during operation to transfer data to the SD card in the balance or to the FTP server.

▷ The transfer takes place in the data/print directory.



▶ Select the output medium for the file.

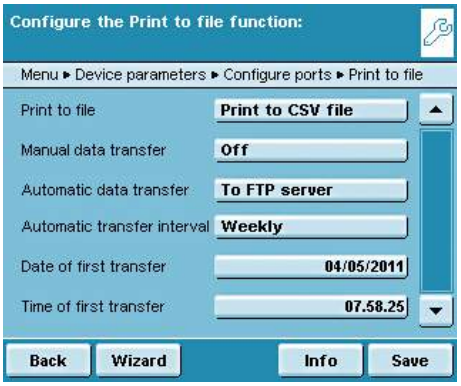
▷ This file can be transferred manually or automatically to the SD card of the FTP server. Combinations are also possible, e.g., manual transfer to the SD card and automatic transfer to the FTP server.

"To SD card:"

▷ When exporting, print files can also be exported to the SD card independent of the transfer. This will create a copy (backup) of the file to the SD card. This does not delete the file from the balance. After the export, the files are located in the directory data/all/EXPORTxxxx/print.

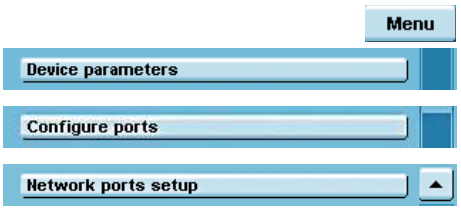
"To FTP server:"

▷ If you use the FTP server option for the transfer, the parameters for the FTP server must be entered in the menu (see next section). The user must have the rights to create subdirectories on the FTP server.

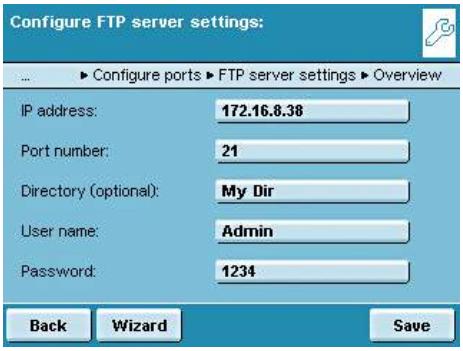


▶ Select the desired interval, the date and the time of the first transfer.

▶ To save settings, touch **Save**.

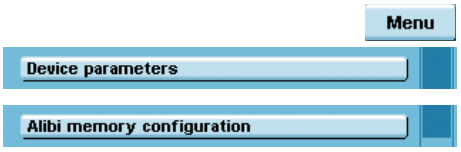


Configuring Data Transfer Setting for an FTP Server



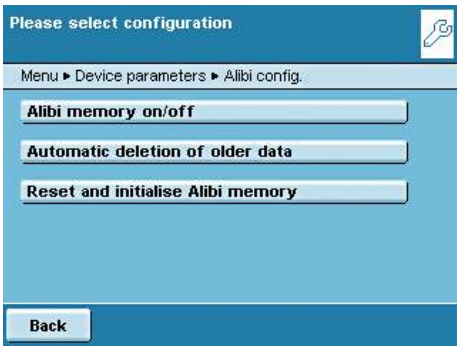
- ▶ Specify the data transfer settings to an FTP server.
- ▶ Enter the following parameters for the FTP server:
  IP address, port, FTP user name, FTP password, subdirectory also optional.
  The user must have the rights to create directories on the FTP server
- ▶ For more information about displaying a print record via an internet browser, go to chapter **Interfaces,** section “Remote Control of the Balance from a PC via Ethernet.”

Configuring the Alibi Memory



Here you can switch on the alibi memory, delete the recorded data and set the interval for automatic deleting.

- ▶ Slide the right scroll bar in the submenu **Device parameters** downward to the menu item **Alibi memory configuration**.



Turning the Alibi Memory On/Off

- ▶ Select whether you want to have the alibi memory switched on or off.

Automatic Deletion

- ▶ Define whether the data stored in the alibi memory should be deleted automatically at regular intervals after a pre-specified time.
- ▶ As appropriate, enter the desired interval (in days).

Resetting and Initializing the Alibi Memory

You can delete the alibi memory immediately. The settings for the alibi memory (On/Off, automatic deletion) will remain stored.

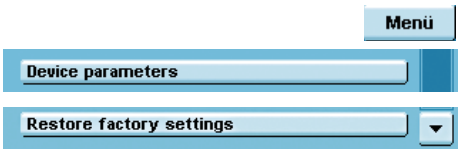
- ▶ To delete data in the alibi memory, confirm the security prompt.

Loading a Software Update

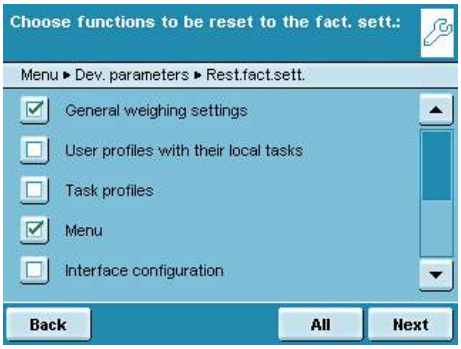
Cubis software is updated at regular intervals. A detailed description of how to perform a software update on your balance can be found in chapter **Updating the Software**.

Restoring Factory Settings

You can reset all settings individually to the factory settings at any time.



▶ Use the cursor softkeys to navigate through the **Device parameters** submenu to **Restore factory settings**.



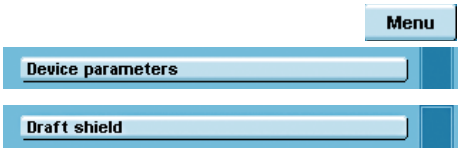
▶ Mark any settings you want to reset and select **Next**.
▶ Confirm the reset when prompted.

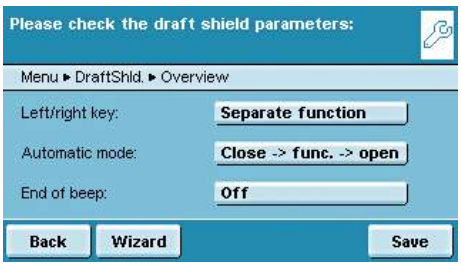
Installing the Motorized Draft Shield (Optional)

▲
▼

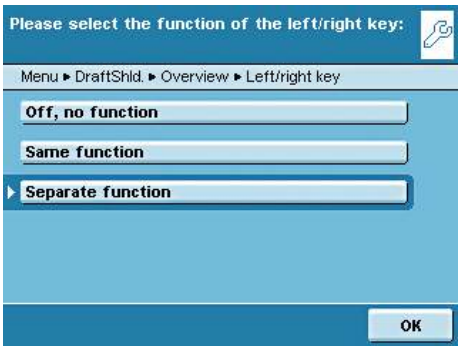
On balances equipped with a motorized draft shield, the control unit has buttons on the right and left sides. These buttons can be used for motor-driven opening and closing of the draft shield doors. You can configure the functionality of these keys in the menu.

Models with the analytical draft shield:
For example, you can configure the left key to open and close the right and upper door (for right-handed users) and the right key to open and close the left door (for left-handed users). The opening width (entirely or partially) of the sliding panels can also be defined. You can configure these settings manually on the draft shield itself (see “Learning Function” below).

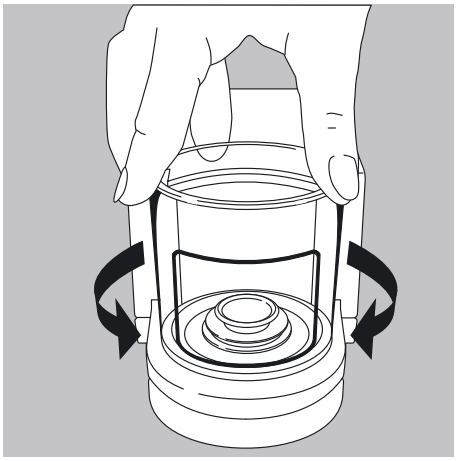


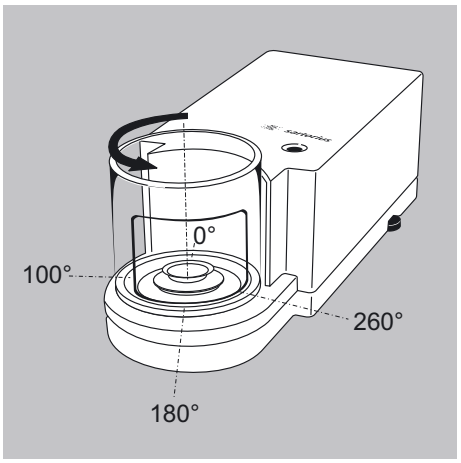


▶ Check and correct all settings as required.
▶ To save settings, touch **Save**.



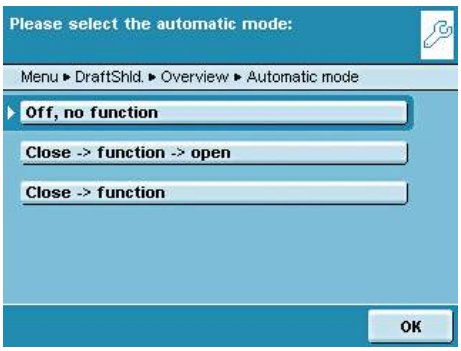
▶ Define the functions for the left and right keys:
Off, no function: The keys have no function.
Same function: Both keys have identical functions.
*__Separate function__: The left and right keys are configured with different functions.





Models with a rotation draft shield (MSx6.6S/3.6P/2.7S):

	Same function (one opening angle)	Separate function (2 opening angles)
Define the opening width	Manually select the desired opening angle	–
Touch the ▲▼ key	1) Open to the previously selected opening angle 2) Close	1) Touch the left ▲▼ key: Opens 260° clockwise Right ▲▼ key: Opens 100° counterclockwise 2) Close



▶ Configure the automatic mode for the draft shield.
*__Off, no function__: Automatic mode is off.
__Close > function > open__: The draft shield doors are closed in automatic mode while the function is executed, and then the doors re-open.
__Close > function__: The draft shield doors are closed in automatic mode while the function is executed.

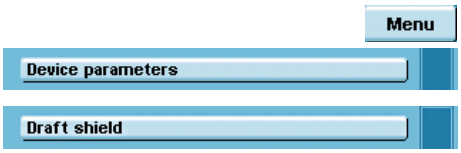
Automatic mode can be executed using the following keys:
- __TARE__ key
- __PRINT__ key
- __Cal./Adj.__ key
- or can be executed __when a component is saved__ for logging applications (statistics, formulation, totalization)

If automatic mode is on, the draft shield doors automatically close when the balance is switched to standby.

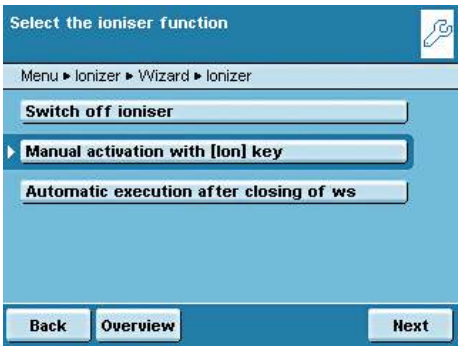
Assigning Opening Functions to Keys (Learning Function)
Example: The keys should be cross-configured (left key opens/closes right door and vice versa).
The balance must be turned on.
▶ Close all draft shield doors.
▶ Manually operate the door you want to assign to the left key: Push the right door open to the extent you want it to be opened (entirely or partially).
▶ Press the left key ▲▼.
▷ The door will close again. Now you have configured the left key so that when pressed, it opens or closes the right door.
▶ Proceed accordingly to configure the left door/right key.

According to the same pattern, you can assign operation of the upper door to one of the keys. You can also configure one key to move both doors by manually opening both doors during set up before you press the desired key.

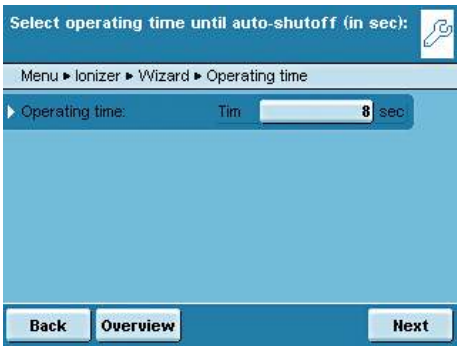
Installing the Ionizer (Optional)



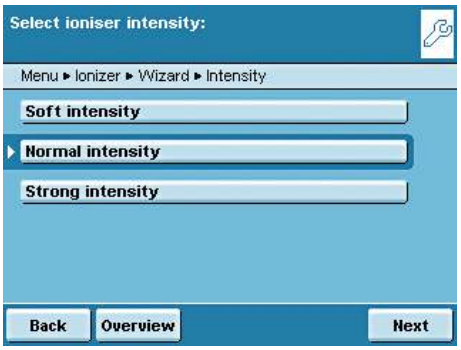
If your balance is equipped with an ionizer module, you can configure the basic settings for the ionizer module here. During any task, you can change these settings as needed.



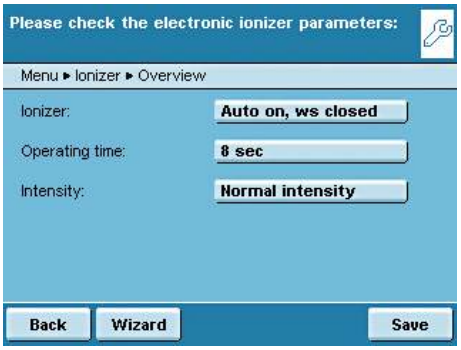
▶ Define the ionizer function.
__Switch off ionizer__: The ionizer is switched off.
__Manual activation__: Ionization can be turned on at any time by pressing the __Ion__ key.
*__Automatic execution after closing of ws__: Ionization is executed automatically, as soon as the draft shield is closed.



▶ Define how long an ionization routine should take.
Operating time in seconds: 3 to 15 sec, *8 sec.



▶ Define the intensity level at which the ionizer operates.
Soft, ***Normal**, **Strong**



▶ Check and correct all settings as required.
▶ To save settings, touch **Save**.

Task Management

In the Task management menu (TASK), you can:
– Start a task
– Configure a new task
– Edit an existing task (modify, copy, delete)

For **task** configuration, there are numerous **applications** available, e.g., weighing, parts counting, calculation. Each task contains at least one of these applications. However, it can also have a combination of several applications. Each application can be used either with their factory settings or you can also modify them as desired. The **Weighing** application is available as a basic function for every task. Each task also contains the individual balance settings and the individually configured printout.

The options available to you in Task Management depend upon your user access rights: An **Administrator** can use all options while a **User** can only use limited options (see “User Management” in the User Management chapter).
If no users have been defined, all options can be accessed with no restrictions.
A max. of 15 tasks (TASK) can be created.

The administrator can **create tasks with restricted use**, i.e., tasks that can only be used by certain users or only by the administrator.

Global tasks can be used by all users.
Separate tasks are only accessible to the users who created them.
Exception: A user can copy global tasks to use them afterwards as a local task.

Option	Administrator	User
Configure, modify, delete separate tasks		☑
Configure, modify, delete global tasks	☑	
Execute or copy separate tasks		☑
Execute or copy global tasks	☑	☑

Selecting tasks:

( )

▶ To enter the Task Management, press the key **TASK** ( ).

▷ A list of available tasks is displayed.
Initially, this overview is empty. Once tasks have been configured, they will be displayed here.

▶ When you touch **Start**, the task currently selected will be started (this can be identified by the dark background).

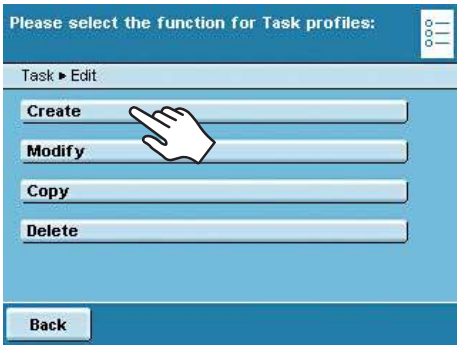
Importing tasks:
You can also load preconfigured tasks to the balance:
1) Unpack the desired ZIP archive file to the root directory (Root Dir) of an SD card after download from the Sartorius homepage or from the included CD.
2) In the Balance menu, submenu “Import/Export data”:
Select “Import files from the SD card.”
3) Insert the SD card into the balance.
4) Select the corresponding import file and load the task via **Next**. Then exit the menu.
5) Start the loaded task via the selection list.

Using Applications with the Factory Settings

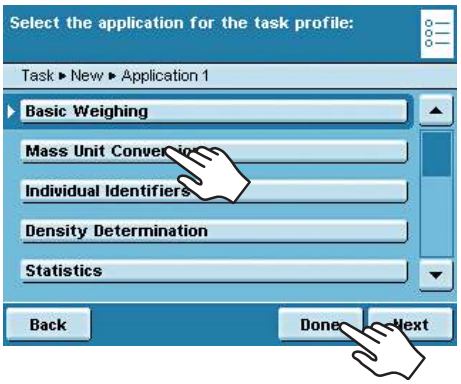
Each application comes with specific factory settings.
If you want to apply these settings unchanged, you can do this quickly during configuration:

(☰) **Edit**

▶ Open Task Management and touch **Edit.**



▶ Select **Create.**



▷ An application list is displayed.
▶ Select the application you want to assign to the new task.
▶ Touch **Done**.

▶ Enter a name and a description for the task and then touch **Save**.
▷ The new task is saved with the factory settings and displayed in the task list.

Sorting the Task List

New tasks are always added to the end of the task list. After you have configured several tasks, it may be helpful to sort the task list.

(☰)

▷ The task selection is displayed.

Sort.

▶ Touch **Sort**.
▷ The list is sorted alphabetically (A – Z).
▶ To reverse the sorting, re-touch **Sort**.
▶ To sort tasks by the date of last use, re-touch **Sort**.

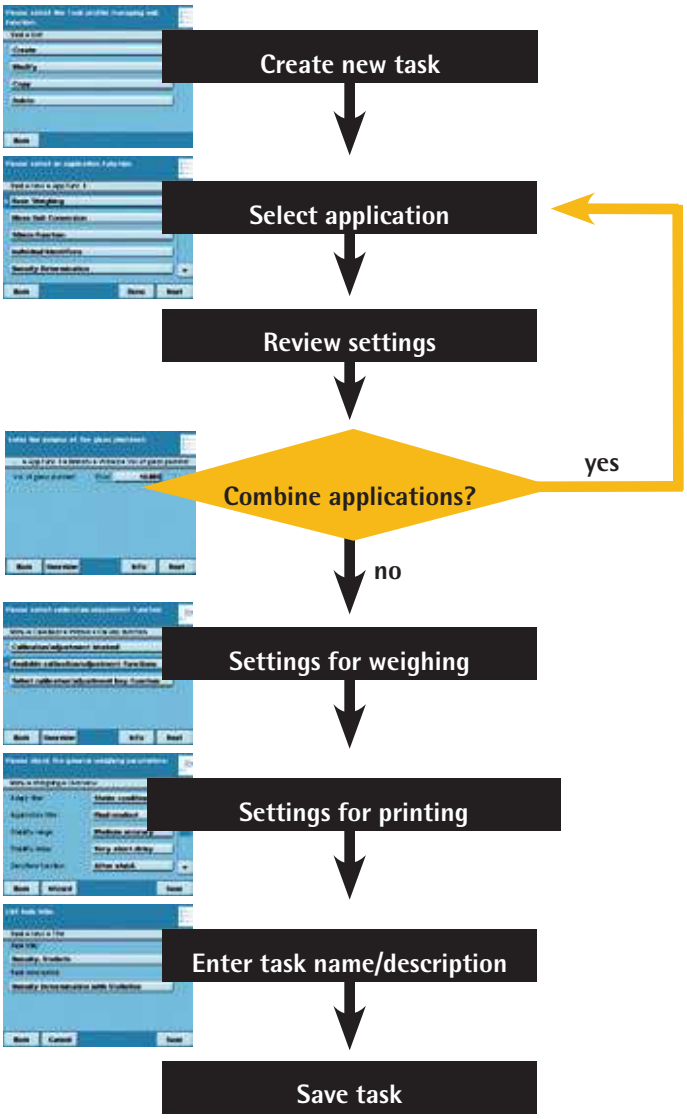
Creating New Tasks (Configuration)

The Cubis software contains the following applications that you can configure as a task to meet your own requirements:

- Weighing
- Mass unit conversion
- SQmin Minimum sample quantity (optional)
- Individual identifiers
- Density determination
- Statistics
- Calculation
- Averaging
- Draft shield (optional)
- Individual process (Q-App)
- Formulation
- Weighing in percent
- Timer-controlled functions
- Totalizing
- DKD measurement uncertainty (optional)
- Second tare (preset tare)
- Parts counting
- Checkweighing
- Ionizer (optional)

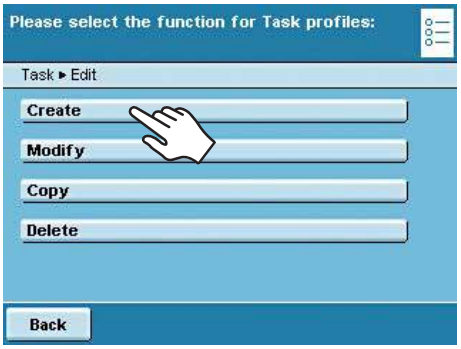
The basic process for task configuration is as follows:

1. Create new task.
2. Select application.
3. Review all of the following prompts and configure your own settings as required.
4. Perform steps 2 and 3 for additional applications if you would like to combine multiple applications.
5. Check settings for weighing and printouts and modify as required.
6. As Administrator, you define whether the new task can be used by all or only by certain users.
7. Enter a name and description for the new task.
8. Save task.

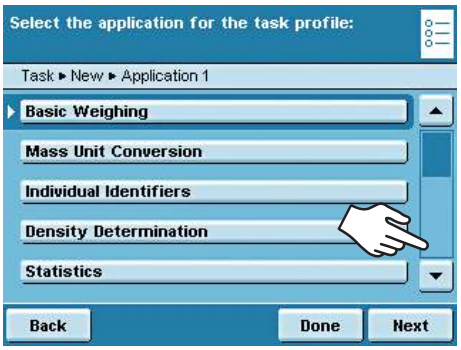


Example: Creating a Task

▶ Open Task Management and touch **Edit.**



▷ The list of options is displayed.
▶ To define a new task, touch **Create**.



▷ An application list is displayed.
▶ To view all applications, use the scroll bar on the right.
▶ Select the application you want to assign to the new task.
▶ Configure this application as required. The program guides you through the configuration menu.
▶ If you want to assign additional applications to the task, these applications should also be configured (see Combining Applications into One Task).

▷ After all applications for the new task have been configured, the following parameters have to be set: Configure the settings for weighing and printouts. All settings make here will only affect **the new task**.

On balances verified for use in legal metrology, modification of some settings may limited or prohibited altogether.

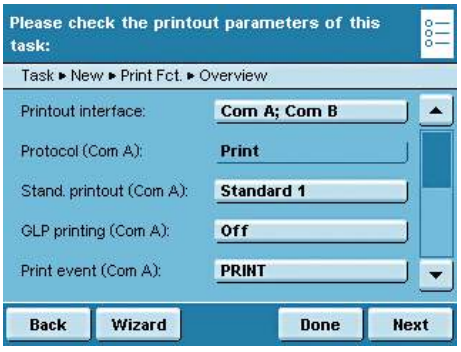
Settings for Weighing

▶ Check all settings and change as required.

Explanations for the individual options can be found in the following section.

▶ Touch **Next**.

Settings for Printouts



▶ Check all settings and change as required.

Explanations for individual options can be found in the following section.

▶ Touch **Next**.

▶ Enter a short name and a description for the new task.
▶ Touch **Save**.
▷ The task selection list with the new task is displayed.

Configuring a Printout

You can configure the printout at two places; for example you can have the printout for basic weighing differ from all the other applications.

In System Settings (Menu) In this menu, you define the basic settings. Previously created tasks will not be affected by modifications to the basic settings.

Creating Tasks This is where you can specifically modify the user-defined settings for any task. You will be routinely prompted for the printer settings with every new task you create and can be modify them.

Printout (example):	Print events:	Printout content (record)	Print elements
	Start task	---------- 21.02.2011 09:17 SARTORIUS Mod. MSA 224S Ser.-Nr. 12-34-56 ----------	GLP header
	Start task In this example: Start task	Laboratory technician Product.....	Operator name ID1, identification: fixed/variable
	(🖹) key	123.5678g ----------	Measured value
	Exit task	21.02.2010 09:20 Name: ----------	GLP footer

Setting Options for Printouts
The options for printouts depend on the how the interfaces and their operating modes are configured. So if not all options are available, check the interface configuration.

The configuration of standard printout parameters defines the following:

Interfaces for Printer Output Peripheral port (Com A), USB/PC (Com B), optional interface (Com C), Ethernet (Com D)

Protocol (Operating Mode) Depends on the interface: Print, SBI, xBPI, SICS

Output Depends on the operating mode: Single printout or automatic (not with printer), with/without stability

Printout Criterion Manual without stability, manual with stability

Format Autoprint 22 characters for applications, 16 characters for raw data

Standard Data Output Standard 1 (measured value only), Standard 2 (measured value and date/time), Standard 3 (date/time, weight block (N,T,G) and dotted line

GLP-compliant Printout Turned off/on for Cal./adjust./Always On

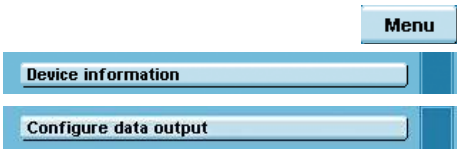
Print Event Defines which event should trigger a print job.
The selectable print events depend on the selected application.
For basic weighing: (🖹) key, start or end task, calibration/adjustment result
For calculating applications: Additionally, initialization and result
For logging applications: Additionally, component and evaluation

Print Elements The elements to be printed also depend on the selected application. You define the print elements for each each event, e.g., date and time, dotted line, measured value and the sequence they should be printed in, etc.

Tare after Printing: Turn off, on (auto. tare after printing)

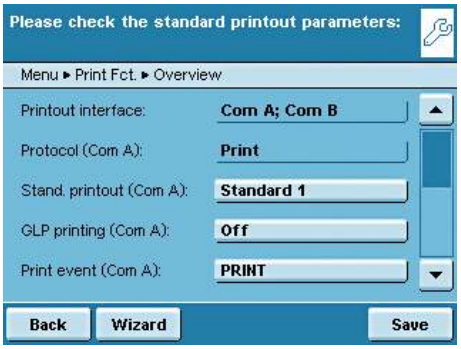
Configuring Printouts in the System Settings (Menu)

The settings can only be modified as long as no task has been activated (ready to start) in the operating mode. Make sure that basic weighing is active in the operating mode.



- ▶ Toggle to the System Settings menu.
- ▶ Open the **Configure data output** submenu.

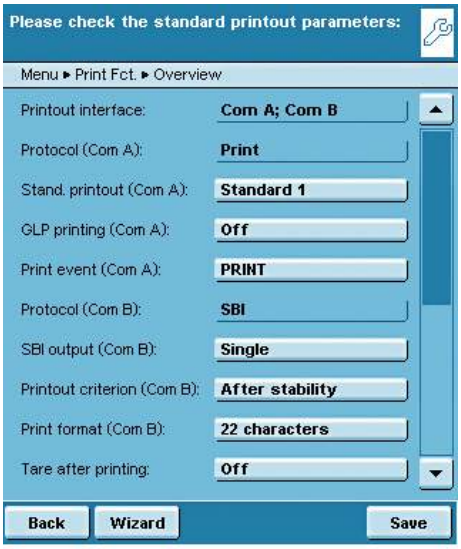
If the submenu is not selectable, check the operating mode and select basic weighing.



▷ The setting menu will open. Several options are not modifiable because they are preset by the interface configuration.

The initial default setting and several exemplary settings are described in the following.

Standard Printout Parameters when the Balance Is first Delivered



When the balance is first delivered, two interfaces are configured: The peripheral port (Com A) is configured for one printout, the USB interface (Com B) is configured for data with a PC per SBI protocol.

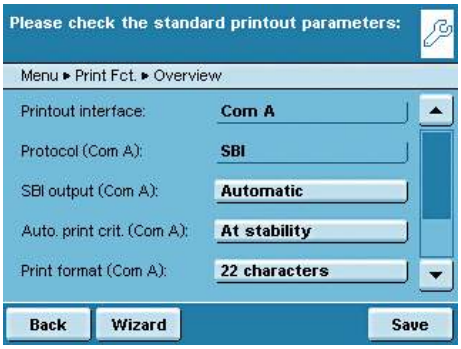
Interfaces: Com A (peripheral port) and Com B (USB/PC)
Protocol for Com A: Print (preset by the interface configuration)
Standard for output to Com A: Standard 1 (measured value only)
GLP-compliant printout to Com A: Off
Print event for output to Com A: Press the PRINT ( ) key
Element to be output via Com A: Measured value
Protocol to Com B: SBI (preset by the interface configuration)
SBI output to Com B: Single printout to the PC
Criterion for output to Com B: After stability of balance
Format for output to Com B: 22 characters
Tare after printing: Off

▶ You can select the variable parameters individually by clicking on the respective input field.

or

▶ To be guided step-by-step through the settings, use the wizard.

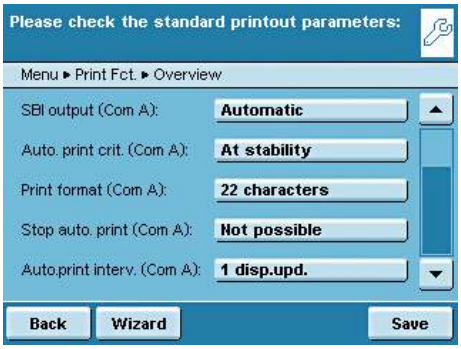
Example: Manual Printout to Peripheral Port, SBI Operating Mode



▷ After manual operation, you want an individual printout to be printed to the ported peripheral device.

Interface: Com A (peripheral port)
Protocol: SBI (toggling to the interface configuration possible)
SBI output: Individual printout
Criterion: Manual without stability
Format: 22 characters (for applications)
Tare after printing: Turned on or off

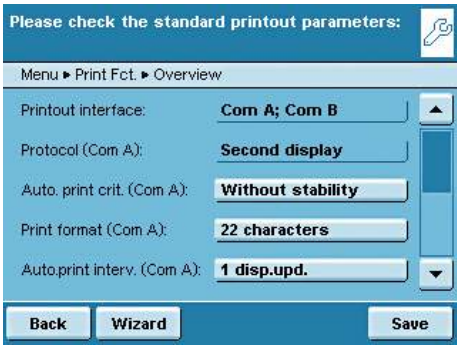
Example: Automatic Printout to Peripheral Port, SBI Operating Mode



▷ At a preset interval, automatic printouts should be sent to the ported peripheral device.

Interface: Com A (peripheral port)
Protocol: SBI (toggling to the interface configuration possible)
SBI output: Automatic printout
Criterion: Without stability, at stability or after load change
Format: 22 characters (for applications)
Stop automatic printing: Not possible or by using the Print ( ) key.
Interval for automatic printing: Number of cycles (1, 2, 5, 10 to100) and 0.1, 0.2, 0.5 to 10 seconds.

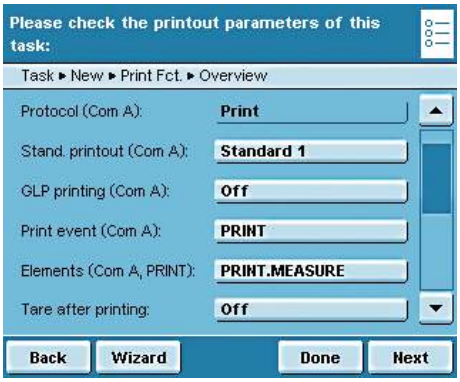
Example: **Automatic Printout to Peripheral Port, Remote Display Operating Mode**



▷ At a preset interval, automatic printouts should be sent to the ported peripheral device as remote display.

Interface: Com A (peripheral port)
Protocol: Remote display (toggling to the interface configuration possible)
SBI output: Automatic printout
Criterion: Without stability, at stability or after load change
Format: 22 characters (for applications)
Interval for automatic printing: Display updates (1, 2, 5, 10 to100) or every 0.1, 0.2, 0.5 to 10 seconds.

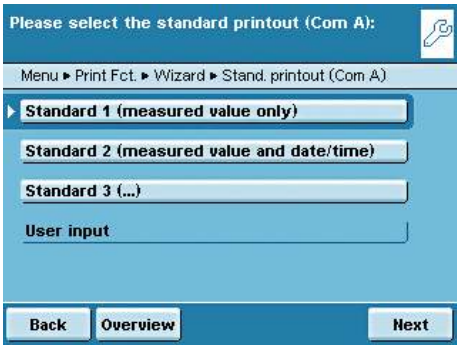
Example: **Printout to Peripheral Port only using the PRINT ( ) Key, Printer Operating Mode**



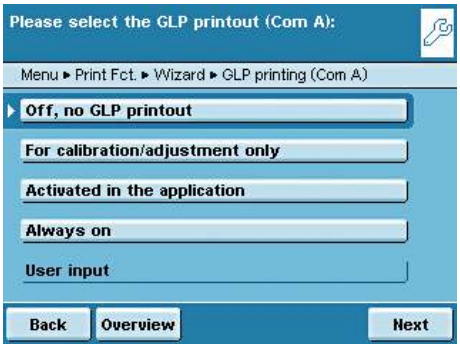
▷ After pressing the Print key, the measured value should be printed to the ported peripheral device.

Interface: Com A (peripheral port)
Protocol: Print (toggling to the interface configuration possible)
Standard data output: Standard 1 (measured value only), Standard 2 (measured value and date/time), Standard 3 (measured value with date/time and weight block)
GLP-compliant printout: Turned on or off
Print event: Press the PRINT key
Elements for the print event PRINT: Measured value PRINT.MEASURE
Tare after printing: Turned on or off

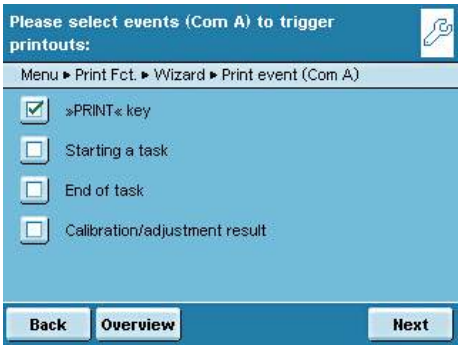
Setting Options of Printout Parameters



Standard Data Output
You can select which data should be printed out as default.
Standard 1 (measured value only)
Standard 2 (measured value with date/time)
Standard 3 (measured value with date/time and weight block)
User input is only selectable if the standard settings have been modified by the user.



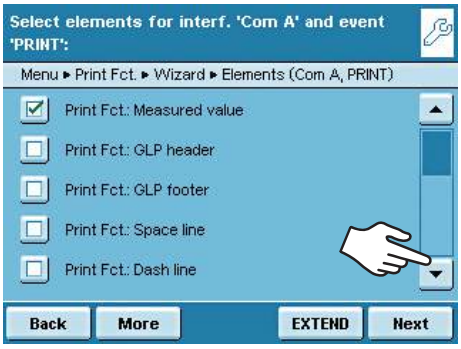
GLP-compliant Printout
You can select if and when the printout should be GLP-compliant.
Off, no GLP printout
For calibration/adjustment only
Activated in the application
Always on
User input is only selectable as long as none of the three options apply: i.e., if only a GLP header but not a GLP footer has been configured.



Print Events
You can define one or several events that trigger a printout. The number of selectable print events depends on the selected application.
Basic Weighing:
Press the PRINT key
Starting a task
End of task
Calibration/adjustment result, after calibration/adjustment

For **calculating applications** the following is **additionally** possible:
Initialization
Result

For **logging applications** the following is **additionally possible**:
Component
Evaluation
The application-specific print events cannot be configured in the Basic menu but only when you create a new task.

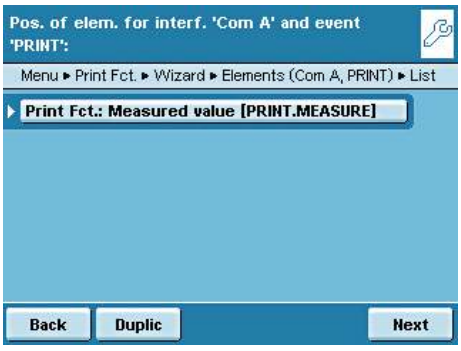


Print Elements
Which information should be printed?
Measured value
GLP header
GLP footer
Space line
Dash line
Form feed
Date and time
etc.

▶ To scroll through the extensive list, slide the right scroll bar downwards.
▶ To view the complete list, touch **EXTEND**.

▶ To minimize the list, touch **Reduce.**

▶ To reset to default, touch **Standard**.



Sequence of Print Elements
In which order should the print elements be printed?

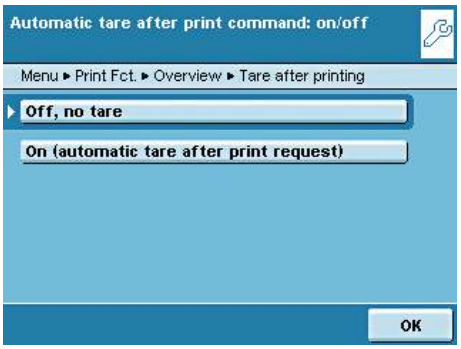
▷ The list of selected print elements is displayed.
You can change the order and can duplicate individual elements, for multiple printouts (e.g., at the beginning and end of the list).

▶ Mark the element that you wish to move or duplicate.

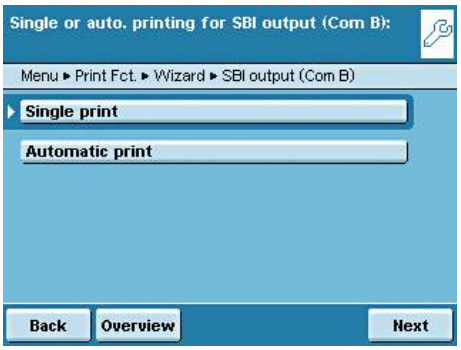
▶ To duplicate the element, touch **Duplic**.

▶ To move the element downwards in the list, touch **Down**.

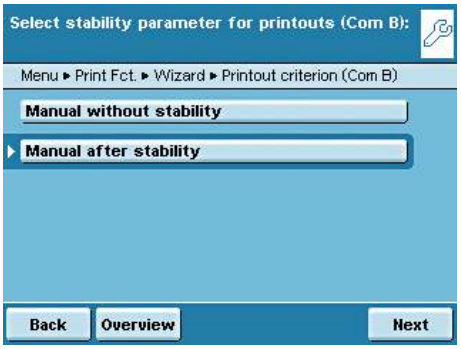
▶ To move the element upwards in the list, touch **Up**.



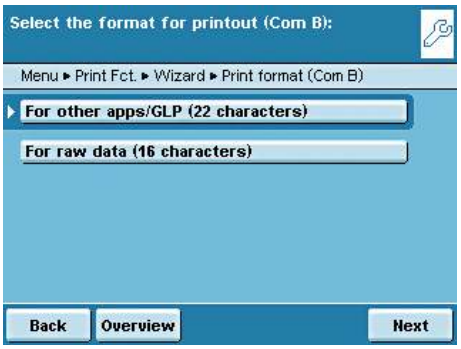
Automatic Tare after Printing
Should the balance be tared automatically after each printout?
Off, no tare
On (automatic tare after print request)



Setting Options for SBI Output
SBI Output Mode
How should SBI printout be output?
Single print: Printout generated by pressing the PRINT ( ) key or by ESC command via the interface
Automatic print: The printout is generated automatically in the weighing cycle



Stability Parameter for Printout
Should the printout be dependent on balance stability?
Manual without stability: Immediate printout without waiting.
Manual after stability: Printout generated immediately at stability, otherwise not until after next stability.



Format for Printout
How should the printout be formatted?
For other applications (22 characters): Printout with header; 20 characters plus line break (CR) and dotted line (LF)
For raw data (16 characters): Printout without header; 14 characters plus line break (CR) and dotted line (LF)

Combining Applications into One Task

You can combine applications that are saved in the balance into one task. The following rules need to be followed (see table below):

- An application can only be combined with applications from **different groups**.
- You can only combine the applications of the first three groups in the given **order**, e.g., weighing with checkweighing and totalizing. The sequence weighing, totalizing and checkweighing is not possible.
- The applications of the **Additional Functions** group can be combined freely, the order is not relevant in this case.

When you combine applications, the Cubis software automatically suggests only those applications that follow the corresponding rules.

Application group	Application	Weighing	Mass unit conversion	SQmin function	Individual identifiers	Density determination	Statistics	Calculation	Averaging	Formulation	Weighing in percent	Timer-controlled actions	Totalizing	DKD measurement uncertainty	Second tare memory	Parts counting	Checkweighing	Draft shield (optional)	Ionizer (optional)	Q-App (optional)
Calculating applications	Weighing	○	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆	◆
	Density determination	◆	●	x̄	●	○	●	⊘	⊘	○	⊘	○	○	x̄	●	⊘	○	●	●	○
	Calculation	◆	●	x̄	●	⊘	●	○	⊘	○	⊘	●	●	x̄	●	⊘	●	●	●	○
	Averaging	◆	●	●	●	⊘	●	⊘	○	○	⊘	○	●	●	●	⊘	●	●	●	○
	Weighing in percent	◆	●	x̄	●	⊘	●	⊘	⊘	●	○	●	●	x̄	●	⊘	●	●	●	○
	Parts counting	◆	●	x̄	●	⊘	●	⊘	⊘	○	⊘	○	●	x̄	●	○	●	●	●	○
Checking applications	Timer-controlled actions	◆	●	●	●	○	●	●	○	○	●	○	○	●	●	○	○	●	●	○
	Checkweighing	◆	●	●	●	○	●	●	●	○	●	⊘	●	●	●	●	○	●	●	○
Logging applications	Statistics	◆	●	●	●	●	○	●	●	⊘	●	●	○	●	●	●	●	●	●	○
	Formulation	◆	●	●	●	○	⊘	○	○	○	●	○	⊘	●	●	○	○	●	●	○
	Totalizing	◆	●	●	●	○	⊘	●	●	⊘	●	○	○	●	●	●	●	●	●	○
Additional functions	Mass unit conversion	◆	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○
	SQmin function	◆	●	○	●	x̄	●	x̄	x̄	●	x̄	●	●	●	●	x̄	●	●	●	○
	Individual Identifiers	◆	●	●	○	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○
	DKD measurement uncertainty	◆	●	●	●	x̄	●	x̄	x̄	●	x̄	●	●	○	●	x̄	●	●	●	○
	Second tare memory	◆	●	●	●	●	●	●	●	●	●	●	●	●	○	●	●	●	●	○
	Draft shield (optional)	◆	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	●
	Ionisator (optional)	◆	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	○	○	●
Individual processes	Q-App (optional)	◆	○	○	○	○	○	○	○	○	○	○	○	○	○	○	○	●	●	○

◆ Weighing is always available

● Combination possible

x̄ Combination possible is only activated as long as no calculating application is active

○ No combination with identical application possible

⊘ No combination with an application of the same group possible

○ No combination possible because it is not meaningful

Executing Tasks

After all required settings have been configured, you can now start and execute a task.

(☰) ▶ If you haven't already done so, go to Task Management.

▷ The task selection is displayed.
▶ Touch the desired task.

or

▶ If the desired task is already selected (dark background and arrow on the left), touch **Start**.
▷ The program switches to operating mode and the selected task is activated.
▶ Follow the instructions on the display.

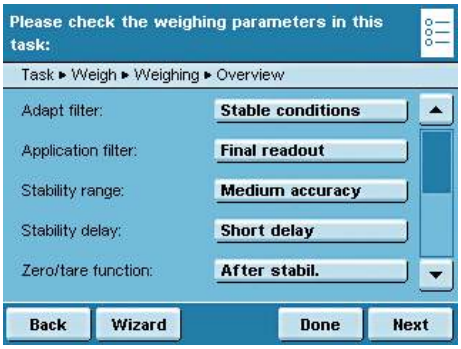
Weighing

Purpose: Weight determination within the scope of the device-specific weighing capacity (see Specifications).

Combination options: Mass unit conversion, second tare memory and individual identifiers, (SQmin function, DKD measurement uncertainty).

Configure Task: My Weighing

(☰) **Edit**



Weighing without combining it another application:

▷ The settings for **Weighing** are displayed.
▶ Check all settings and change as required.
▶ Touch **Next**.
▷ The settings for **Printouts** are displayed.
▶ Check all settings and change as required.
▶ Touch **Next**.
▶ If you are administrator: You define whether all or only individual users may use this task.
▶ Touch **Next**.
▶ Enter a short name and a description for the new task (e.g., “My Weighing”).
▶ To save the new task, touch **Save**.

Execute Task: My Weighing

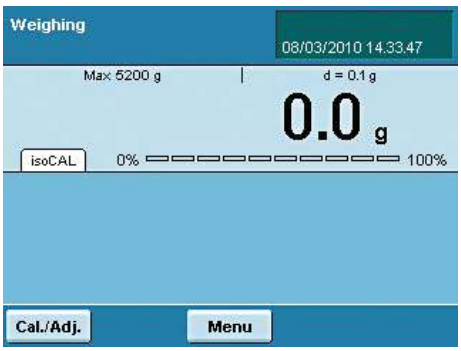
(☰)

▶ If you haven’t already done so, go to Application Management.
▷ The task selection is displayed.
▶ Touch the desired task.

or

Start

▶ If the desired task is already selected, press **Start**.
▷ The program switches to the operating mode, and the task is activated.



Mass Unit Conversion

Purpose: The weight value can be displayed in up to a maximum of five different units in succession (see table below). However, the desired weight units must be assigned beforehand (1 through 5).

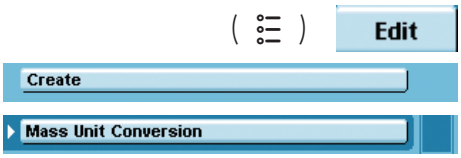
Combination options: Second tare, (SQmin function, DKD measurement uncertainty)

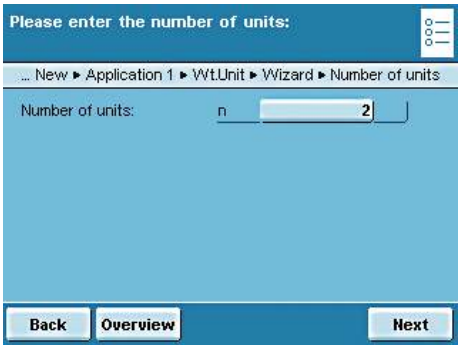
Not all units programs can be selected on balances used as legal measuring instruments. The user can only switch between metric units (e.g., milligram, gram, kilogram) (also model-specific).

Conversion Factors for Weight Units

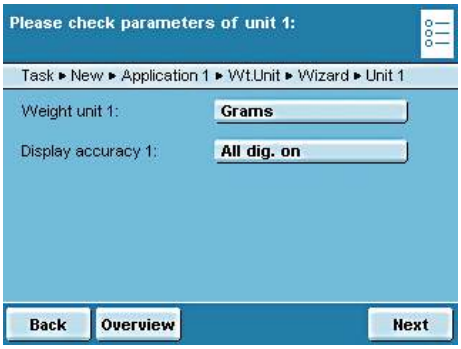
Unit	Factor	Display
Gram	1.00000000000	g
Kilogram	0.00100000000	kg
Carats	5.00000000000	ct
Pounds	0.00220462260	lb
Ounce	0.03527396200	oz
Troy ounce	0.03215074700	ozt
Hong Kong taels	0.02671725000	tlh
Singapore taels	0.02645544638	tls
Taiwan taels	0.02666666000	tlt
Grains	15.43235835000	GN
Pennyweight	0.64301493100	dwt
Milligram	1000.00000000000	mg
Parts per pound	1.12876677120	/lb
Chinese taels	0.02645547175	tlc
Mommes	0.26670000000	mom
Carats	5.00000000000	ct
Tola	0.08573333810	tol
Baht	0.06578947437	bat
Mesghal	0.21700000000	MS
Ton	0.00000100000	t
Pound:Ounce	0.03527396200	lb:oz
Newton	0.00980665000	N
Microgram	1000000.00000000000	µg

Configure Task: Mass Unit Conversion



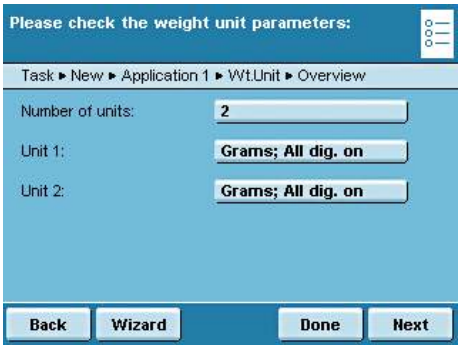


▶ Select the desired number of units (max. 5) to be used to display the weighing results.



▷ Now you will be prompted to enter the display accuracy and weight units of all the desired units one by one.
▶ Select the **Weight unit** (e.g.,. gram, kilogram, carat, pound) for the first unit.

▶ Select the **Display accuracy**: (e.g., complete display of all decimal places or leave off last place).



▷ An overview of all settings is displayed.
▶ Check settings and change as required.

▷ A message asks whether you would like to add another application.
▶ If required, select additional applications to be combined.

▷ Now you will be prompted to configure the weighing and printing functions.
▶ Check all settings and change as required.
▶ Enter a short name and a description for the new task.
▶ To save the new task, touch **Save**.

Execute Task: Mass Unit Conversion

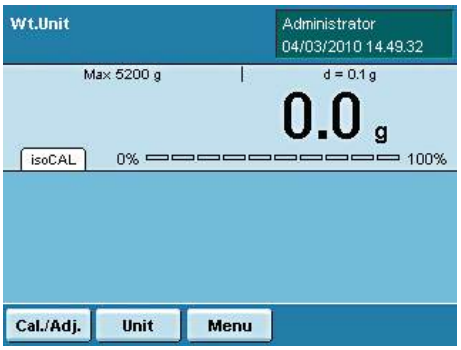
(☰)

▶ If you haven't already done so, go to Application Management.
▷ The task selection is displayed.
▶ Touch the desired task.

or

Start

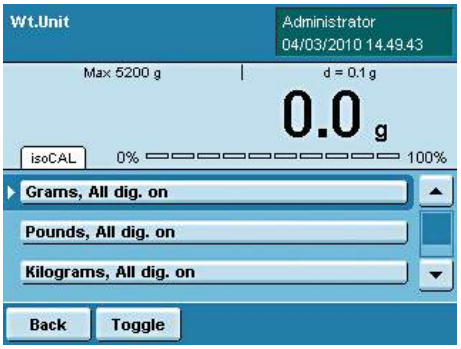
▶ If the desired task is already selected, press **Start**.



▶ Follow the instructions on the display.

Unit

▶ To change the displayed unit, touch **Unit**.



▶ Select the unit to be used to display the weighing results.
This setting remains in effect until you change the selection or end the task.

▶ To display weighing results in all units, touch **Toggle**.