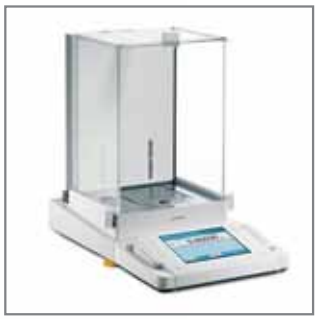
sartorius
mechatronics

Brief Instructions

Sartorius Cubis Series

Electronic Precision and Analytical Balances
MSA Models



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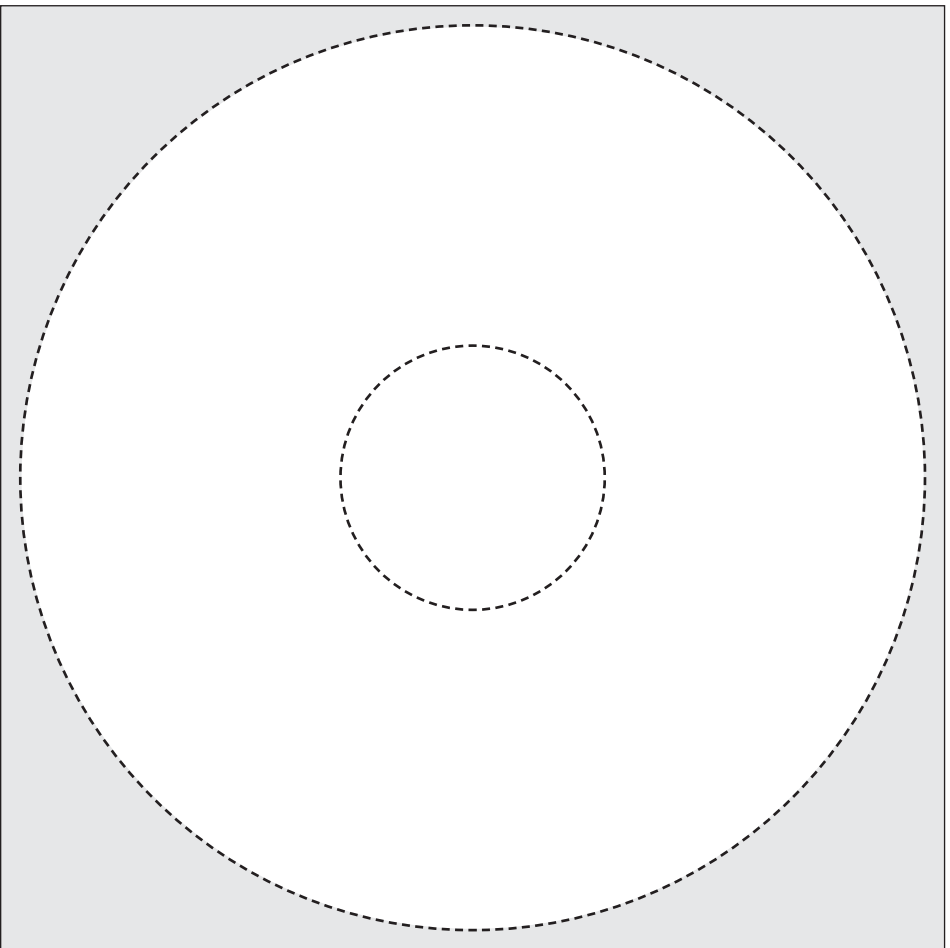
Contents

These **brief instructions** will help familiarize you with operation of the balance, introduce to you the Q-Guide operating concept and offer you examples of how to perform simple tasks.

The **user manual** additionally contains:
- Safety precautions
- Description of all operating processes
- Description of all applications
- Cleaning and care instructions
- Maintenance and repair instructions
- Information on disposal
- Technical data



The enclosed CD-ROM contains the user manual as a PDF file. To read and print the file, you require the program Acrobat Reader, which you can download for free from the Adobe website (www.adobe.com).

Software drivers for configuration of USB interfaces can also be downloaded from the internet:
http://www.ftdichip.com/FTDrivers.htm

The installation guides for these drivers can be found here:
http://www.ftdichip.com/Documents/InstallGuides.htm

Notes on Using this Manual

- ▶ Please read these entire instructions carefully before using the balance.
- ▶ Please ensure that you read the safety precautions carefully.
- ▶ This manual is considered a part of the product. Keep this manual 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 these instructions:

	**Warning symbol for various types of dangers.** This symbol is 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.
	The hand symbol indicates operating steps that involve touchscreen 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.

- ▶ Indicates a required action
- ▷ Describes the result of an action
1. If a procedure has multiple steps...
2. ... the steps are numbered consecutively.

– Indicates an item in a list

Additional Documents

In addition to this manual (“Brief Instructions”), a set of installation instructions is included in printed form with the Cubis balance, and full operating instructions are included as a PDF file on the enclosed CD-ROM.

Technical advice / hotline:
Telephone: +49.551.308.4440
Fax: +49.551.308.4449

Safety Instructions

The balance/scale has been constructed in accordance with the European Directives as well as international regulations and standards for operation of electrical equipment, electromagnetic compatibility and applicable safety requirements. However, improper use or handling can result in damage and/or injury.

The equipment may only be operated by trained personnel. Operators must read these installation instructions, particularly the safety instructions, and must be familiar with the operation of the equipment. The operator must supplement these warnings and safety precautions if necessary and train operating personnel accordingly.

Before operating the balance, be sure to read the section on safety instructions in the enclosed installation manual.

Sharp or pointed instruments (such as ballpoint pens) can damage the device.
Use only your fingertips and press gently to operate touchscreen controls.

Intended Use

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

Suitable containers must be used to hold the materials.
The maximum balance capacity depending on the model ranges from 0.01 mg (smallest mass determination) to 12.0 kg (largest mass determination).

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

They are designed to be used exclusively indoors.
Cubis models can be operated standalone, connected to a PC or in a network.

Operation

Turning the Balance On and 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 has been set up).

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

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

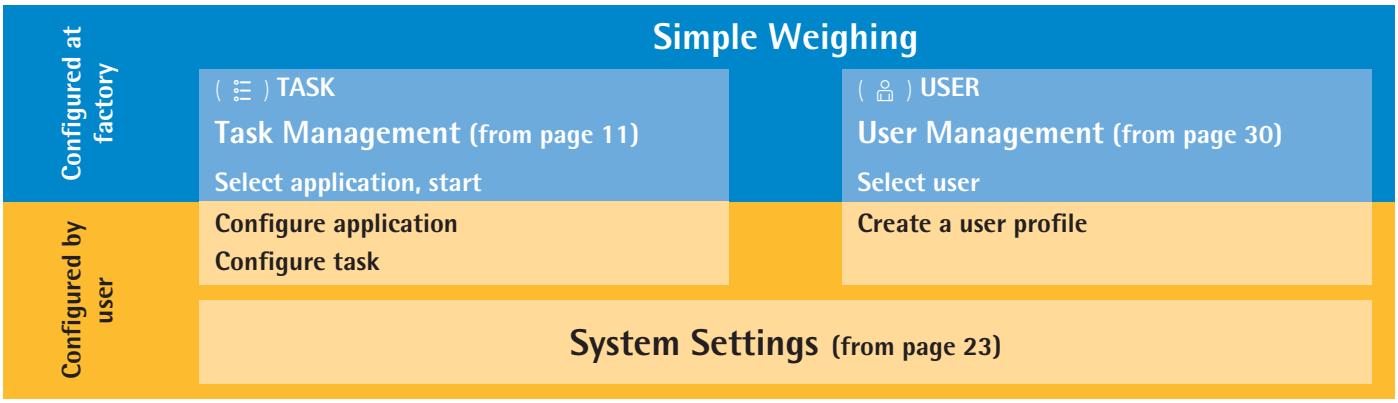
▶ Close the draft shield (if present on your model).

Q-Guide Operating Concept

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 goal more quickly.
Although operation of the balance is for the most part 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 entitled “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:



The **Task Management** area under **(TASK)** incorporates numerous preconfigured applications that can be selected and executed directly. For more complex requirements, separate tasks can be configured as needed.
The **User Management** area under **(USER)** lets you set up user profiles with specific sets of configuration settings and user rights. You can also set up password protection to meet your security requirements.

If you do not require the user management features, simply leave this area unconfigured; the balance can be operated without defining any users.
The **System Settings** area **(Menu)** contains all basic settings and parameters that affect the entire operation of the balance.

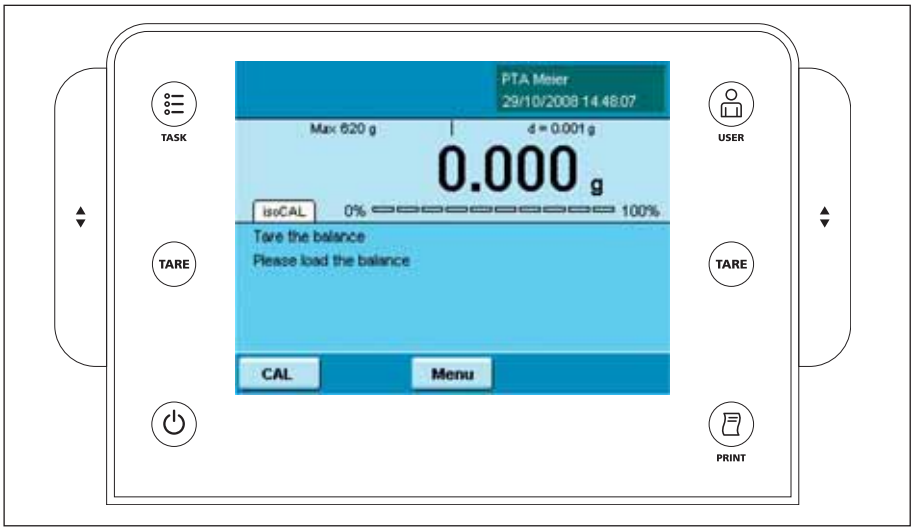
The Wizard

In some menus, you can switch between two types of display:

Overview In the Overview, all parameters with configured options are listed; you can select each individual option to change its setting.

Wizard If you activate the Wizard in the same menu, the program guides you forward **in steps**: The individual parameters and their options are then displayed in sequence.

Use of the Display and Control Unit



Operating Keys:

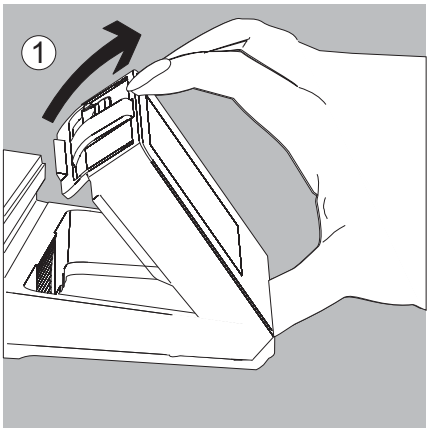
(☰)	TASK key: Opens the Task Management menu for selecting applications and configuring tasks. You can also press the TASK key from this menu at any time to switch to the operating mode.
(👤)	USER key: Opens the User Management menu, where user settings can be configured. You can also press the USER key from this menu at any time to switch to the operating mode.
(TARE)	TARE keys (left and right): Tares the balance.
(🖶)	PRINT key: Prints the measurement results currently displayed or an application-specific printout.
(⏻)	On/off key: Switches on/off and into standby.
▲▼	Keys for operating the electronic draft shield (optional)

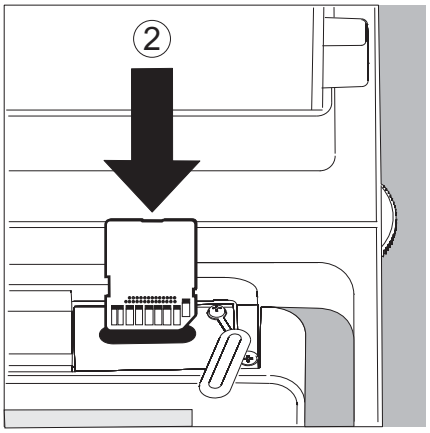
Setting Up the Display and Control Unit

You can adjust the angle of the tiltable display and control unit as desired to ensure optimal readability in every situation. The color and brightness settings can also be adapted to the prevailing lighting conditions (see “User Management” and “System Settings” for details).

Inserting a Memory Card in the Display and Control Unit

You can copy data, such as application data or user profiles, to an SD memory card. This is a quick and easy method of transferring settings between balances. The slot for the SD card is located on the back of the display and control unit.





1. Tilt the control unit towards you until it is almost vertical.
2. Lift the cover of the card slot. Hold the card with the metal contacts facing towards you.
3. Push the card into the slot as far as it will go.

▷ The card snaps into place.

▶ To remove the card, push it in and then release. The card will pop out for easy removal.

4. Press on the position lock and tilt the control unit back to the desired position.

Quick Start: First Weighing Operation

(⏻) ▶ Push the on/off key to switch the balance on.

▶ Close the draft shield (if present on your model).

(TARE) ▶ Push the TARE key to tare the balance.

▷ When the balance has been tared, the readout will show a zero value.

▶ Open the draft shield (if applicable) and carefully place the sample on the weighing pan (in a suitable container).

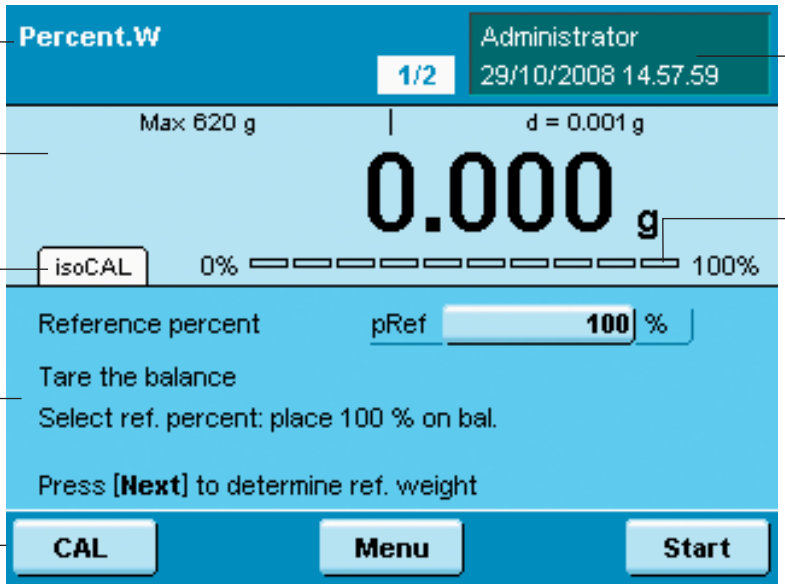
▶ Close the draft shield (if present on your model).

▶ Once the readout has stabilized and the unit of measurement is displayed, you can read off the measurement value.

Touchscreen User Interface

Many of the operating steps involve use of the touchscreen. The layout of the display depends on whether the application software is in operating mode or whether a menu is open (configuration mode).

Display in Operating Mode

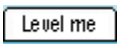


1 Function area: Shows the active application (here: step 1 of 2)
Press this area to view a description of the application.
2 Line for metrology data with weighing capacity (left) and reading precision (resolution) of the balance.
3 Value area with the current measured value
4 Area for status messages and alerts (see below)
5 Task area with instructions on how to proceed
6 Operating bar: Shows the controls currently available
7 User info area: Displays the current user, date and time
Press in this area to display a description of the user.
8 Scaled display of measured value (percentage of weighing capacity utilization)

Status Messages and Alerts

The following messages may be shown here:

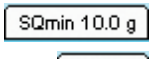
isoCAL shown continuously: isoCAL function active (extended temperature range)
isoCAL flashing: Calibration/adjustment required



Level flashing: Balance not level, leveling required

Print: Printout is active; print job not yet completed

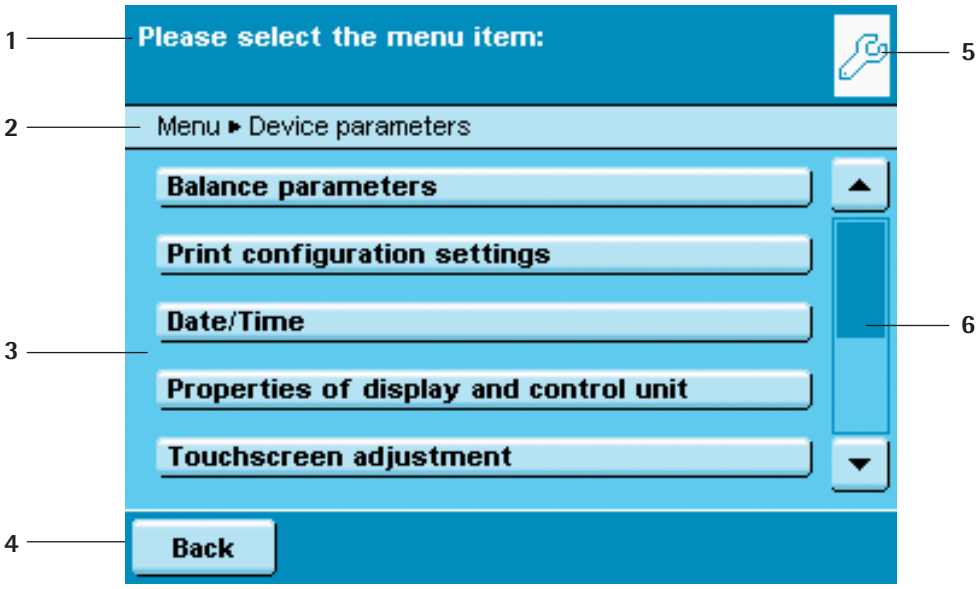
GLP: GLP-compliant printing is active (includes header)



SQmin: SQmin value is shown if the weight value is less than SQmin

U or U* or PA: The selected DKD value (measurement uncertainty) is shown

Display in Configuration Mode

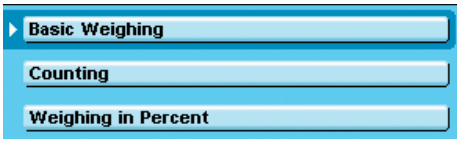


1 Interactive area with instructions on how to proceed
2 Orientation line: Shows the current menu level
3 Selection area: Shows available options
4 Operating bar: Shows the controls currently available
5 Symbol indicating which menu (Task, User or Setup) is currently open
6 Scroll bar for scrolling through selection area

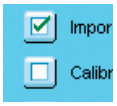
Using the Touchscreen

Sharp or pointed instruments (such as ballpoint pens) can damage the device.
Use only your fingertips and press gently to operate touchscreen controls.

All **operating elements** on the touchscreen are depicted in a light color with a shadowed, 3-D-effect. Press a button gently to activate the corresponding function.



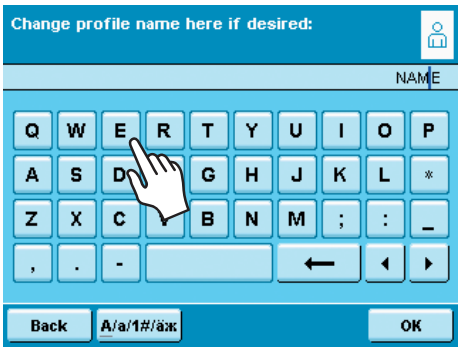
Selecting a single option: If only one of several options can be selected, simply press the corresponding button and the program continues to the next step automatically.



Selecting multiple options: If several options can be selected, press the checkbox next to each desired option; a checkmark indicates that the option has been selected. To remove a checkmark, press the box again.
To continue to the next program step, press **Next**.

In some instances you will need to use the **scroll bar** to see all the available options. To do this, either place your fingertip on the dark blue part of the scroll and slide it up or down or press the “up” and “down” arrow buttons.

Entering Letters and Numbers



When alphanumerical input is required, a keypad is shown on the touchscreen. A cursor is shown in the input line above the keypad.

▶ Press the desired character to enter it.

▷ The characters are shown in the input line as they are entered.

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

Press the **Backspace button** to delete the character to the left of the cursor.

Press on the input line to change the cursor mode. The cursor now marks a character you can overwrite directly.
Press on the input line again to return the cursor to the “Insert” mode so that you can add a character.

The two **arrow buttons** move the cursor one character to the left or right.

Press **Back** to cancel the input and go back one step to the last screen.

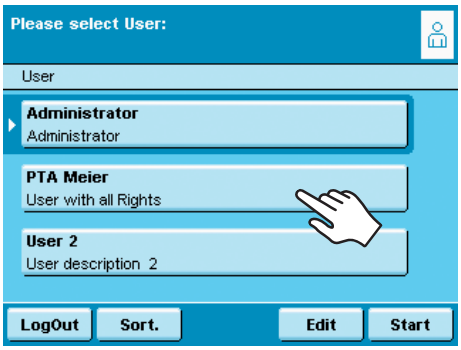
Press **OK** to end the input and save your entry.

Activating or Changing Users

In the operating mode, the active user is displayed in the user info area in the upper right-hand corner of the display. To activate a different user, open the User Management menu.

(👤)

▶ Press the key USER (👤).



▷ The available users are listed. The currently active user is indicated by an arrow and a darker background.

▶ Press the button indicating the user you wish to activate.

▷ The program returns to the operating mode, the selected user is logged in with the corresponding rights.

▶ Pressing **Start** will activate the currently selected user.

Task Management

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

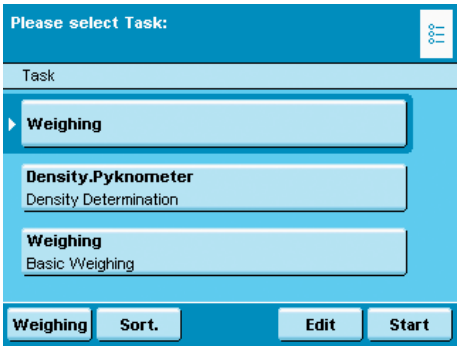
Numerous **applications** are available to you for configuring a **task**, such as weighing, part counting, calculating. Every task contains at least one of these applications, but it can also comprise a combination of multiple applications. You can use applications with the settings configured at the factory or edit the settings for your own requirements and preferences. The application **Weighing** is present as a basic function for every task.

Which options are available to a given user in the Task Management depends on that user's rights: **Administrators** have access to all options, while normal **users** have only limited access (see "User Administration" in the chapter "User Management"). If no users have been defined, the Administrator is automatically active.

Global tasks can be accessed by all users, while **local tasks** are available only to the users who create them. Exception: A user can copy global tasks, with or without modification, to use as a basis for local tasks.

Option	Administrator	User
Configure, change, delete local tasks		☑
Configure, change, delete global tasks	☑	
Execute, copy local tasks		☑
Execute, copy global tasks	☑	☑

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



▷ The available tasks are listed as touchscreen buttons.
When the balance is delivered, this overview is empty. Only after tasks have been configured are they displayed here.

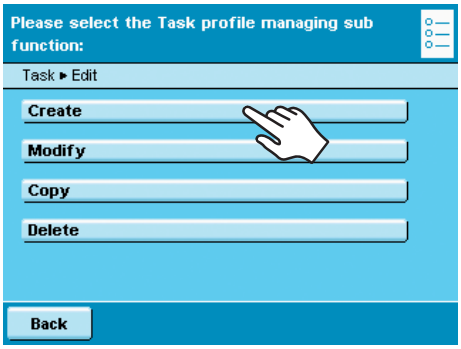
▶ Press **Start** to start the currently selected task (identifiable based on the darker background).

Using Applications with Factory Settings

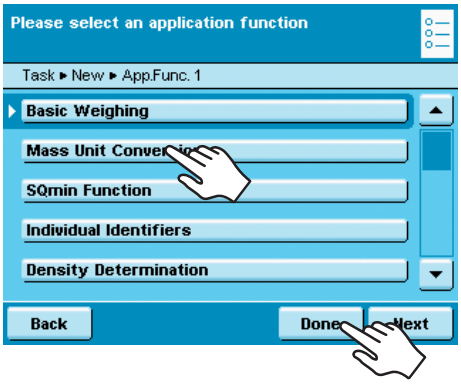
All applications are prepared at the factory with certain configuration settings. If you wish to use the factory settings, you can use the quick method for configuring a task:

(☰) **Edit**

▶ Open the Task Management and press **Edit**



▶ Select **Create**



▷ The list of applications is displayed.
▶ Select the application you wish to use in the new task.
▶ Press **Done**.
▶ Enter a name and a description for the task and press **Save**.
▷ The new task is stored with the factory-set application configuration and added to the task list.

Sorting the Task List

New tasks are always added to the end of the task list. Once you have configured a number of tasks, you may find it helpful to sort the list.

(☰)

▷ Open the task list.

Sort.

▶ Press **Sort**.
▷ The tasks are listed in alphabetical order (A - Z).
▶ To reverse the sort order, press **Sort** again.
▶ To sort the tasks by the date of the last use, press **Sort** once more.

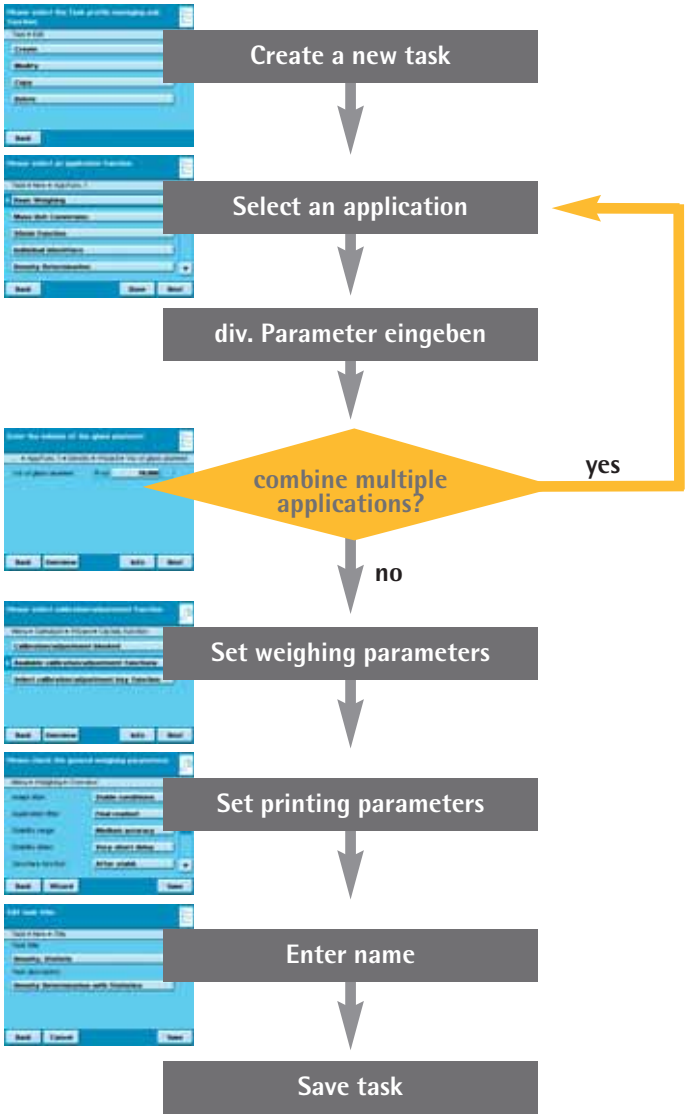
Configuring a New Task

The software in your Cubis balance includes the following applications, which you can configure as tasks according to your requirements and preferences:

- Basic Weighing
- SQmin Function
- Density Determination
- Calculation
- Formulation
- Timer-Controlled Functions
- DKD Measurement Uncertainty
- Counting
- Mass Unit Conversion
- Individual Identifiers
- Statistics
- Averaging
- Weighing in Percent
- Totalizing
- Second Tare Memory (Manual Tare)
- Checkweighing

The basic process for configuring a task is:

1. Create a new task.
2. Select an application.
3. Work through all subsequent prompts and configure your own values for the respective parameters, if desired.
4. Perform steps 2 and 3 for additional applications if you would like to combine multiple applications.
5. Check the general parameters (weighing parameters and printout parameters) for the new task, and change them if necessary.
6. Enter the name and description for the new task.
7. Save the task.

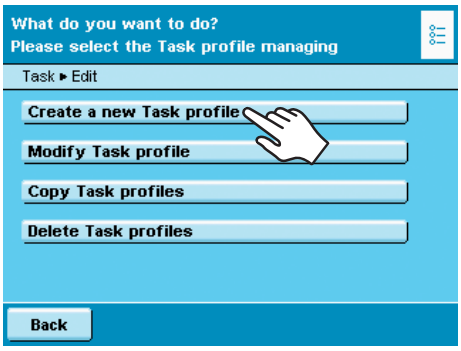


A detailed description of how to combine tasks as well as an overview of the combination possibilities can be found in the user manual on the included CD-ROM.

(☰) **Edit**

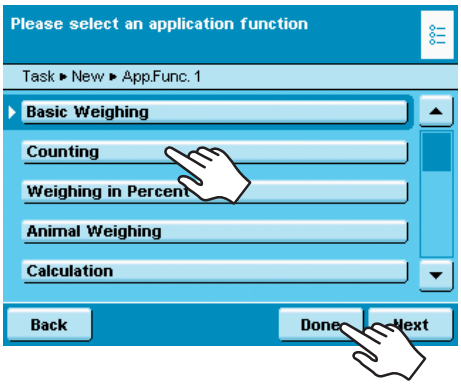
Example: Creating a Task

▶ Open the Task Management and press **Edit**.



▷ The list of options is displayed.

▶ To define a new task, press **Create a new Task profile**.



▷ The list of applications is displayed.

▶ Use the scroll bar on the right-hand side to view all applications.

▶ Select the application you wish to use in the new task.

▶ Configure the application as desired. The program automatically guides you through the configuration procedure.

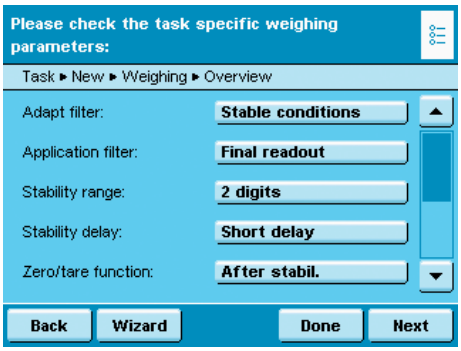
▶ Configure additional applications for the task, if desired.

▷ After configuring all applications for the new task, two more prompts follow: Weighing parameters and printout parameters. All settings configured here affect **only the new task**.

M If the balance is verified for use in legal metrology, some of the options for modifying parameters may be hidden or limited.

Weighing Parameters Prompt

▶ Check the settings and modify them as needed.

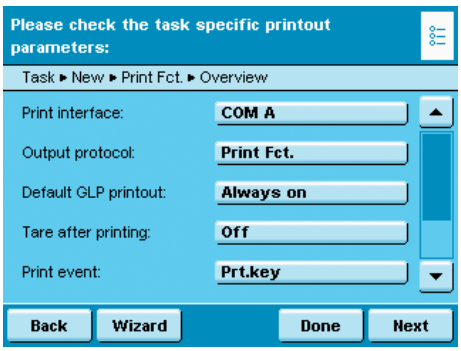


Explanations of the individual options can be found in the **System Settings** chapter in the section **Device parameters**.

▶ Press **Next**.

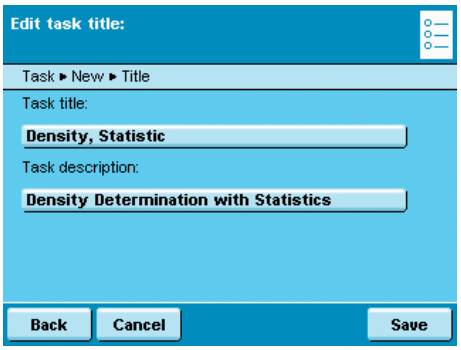
Printout Parameters Prompt.

▶ Check the settings and modify them as needed.



Explanations of the individual options can be found in the **System Settings** chapter in the section **Device parameters**.

▶ Press **Next**.



- ▶ Enter a short name and a description for the new task.
- ▶ Press **Save**.
- ▷ The task list is then shown and now includes the new task.

Executing a Task

Once your tasks have been configured, you can select and execute a task.

(☰)

- ▶ Switch to Task Management, if you have not already done so.
- ▷ The task list is displayed.
- ▶ Press the button for the desired task.

or

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

In this brief instruction manual, we only describe the applications **Weighing** and **Density Determination**. For complete descriptions of all applications, please refer to the full user manual on the included CD-ROM.

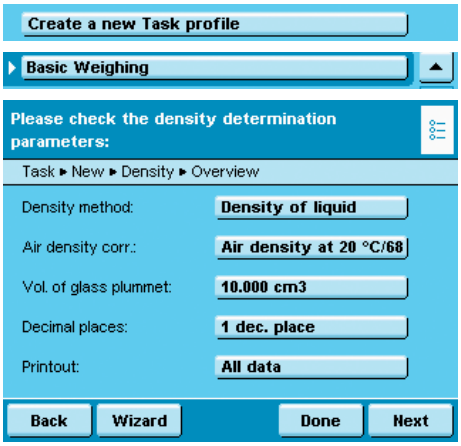
Weighing

Purpose: Determination of the weight within the framework of the device-specific weighing range (see Technical Data).

Combination options: SQmin Function, DKD Measurement Uncertainty, Mass Unit Conversion, Second Tare Memory and Individual Identifiers.

Task Configuration: Weighing

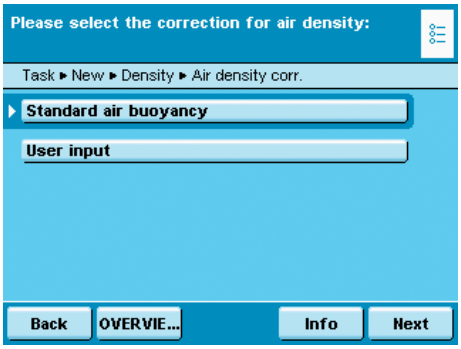
(☰) **Edit**



You cannot combine any other applications with this task.

▷ The prompt for general weighing parameters is presented.

▶ Check all the settings and modify them as needed.



▷ The prompt for general printout parameters is presented.

▶ Check all the settings and modify them as needed.

▶ Enter a short name and a description for the new task.

▶ To save the new task, press **Save**.

Task Execution: Weighing

(☰)

▶ Switch to Task Management, if you have not already done so.

▷ The task list is displayed.

▶ Press the button for the desired task.

or

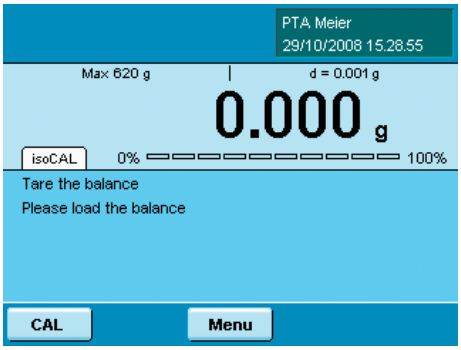
Start

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

or

Weighing

▶ Press **Weighing**.



▷ The program switches to the operating mode, and the task is activated.

▶ Follow the instructions on the display.

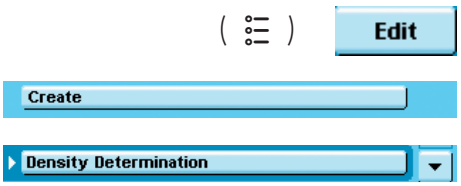
Density Determination

Purpose: You can determine the density and volume of liquid, solid or paste-like substances.
Combination options: Checkweighing, Timer-Controlled Functions, Totalizing, Statistics, SQmin Function, DKD Measurement Uncertainty, Second Tare Memory or Individual Identifiers.
Prerequisites: In order to perform a density determination, you must have the Sartorius Density Determination Kit YDK01MS or similar kit. The bases for calculation applied in density determination are described in the user manual on the included CD-ROM.

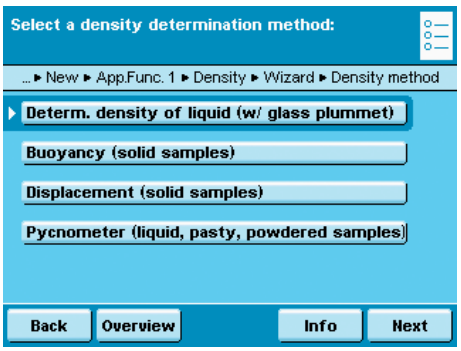
There are **four methods** of density determination to choose from:
- Determining density of liquid (with glass plummet)
- Determining density based on buoyancy with the Sartorius Density Determination Kit YDK01 (for solids)
- Determining density based on displacement (for solids)
- Determining density with a pycnometer (for liquid, pasty and powdered samples)

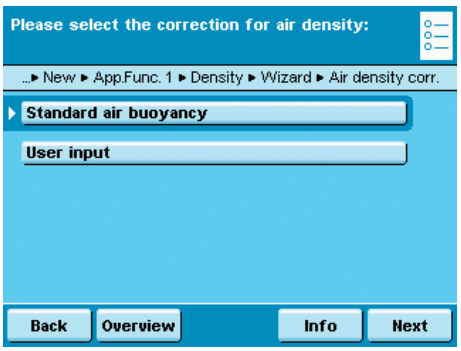
The bases for calculation applied in density determination are described in the user manual on the included CD-ROM.

Task Configuration: Determining the density of a liquid with glass plummet

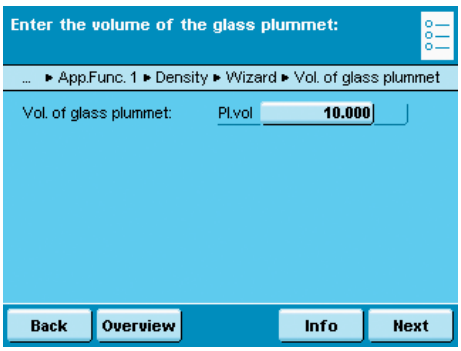


▶ Select the **Determ. density of liquid** method.

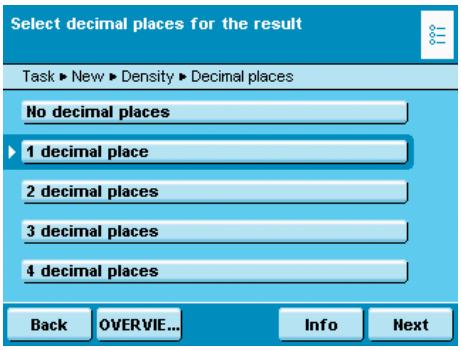




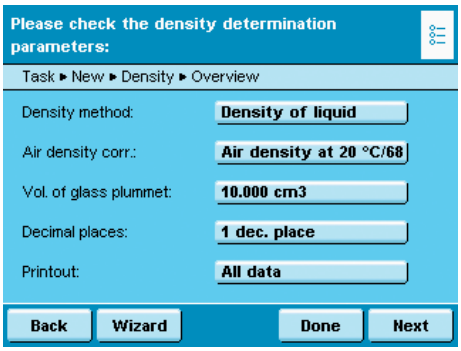
▶ Select the measurement conditions
Air density at 20 °C/68 °F: Select this option if analysis is performed under standard laboratory conditions (20 °C / 68 °C room and sample temperature).
User input: Select this option if performing the measurement under different conditions.
▶ Enter data as prompted.



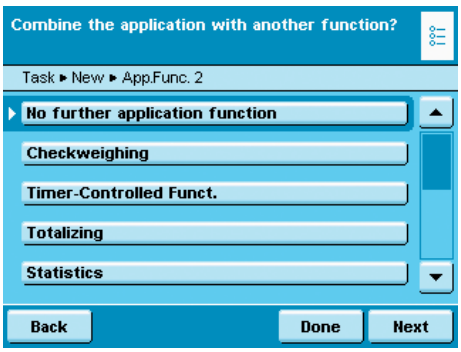
▶ Enter the volume of the glass plummet.



▶ Select the number of decimal places to be given in the analysis results.



▶ Review your settings in the overview. To change a setting, press the corresponding button.

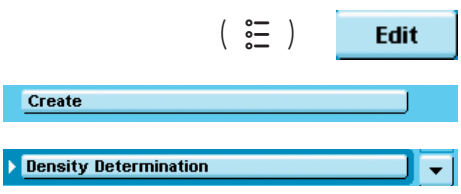


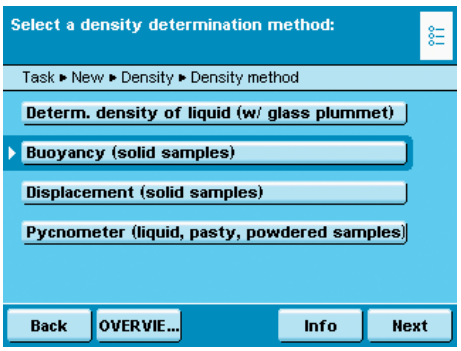
▶ Select **No further application function**

Options for combining applications are described in detail in the user manual on the included CD-ROM.

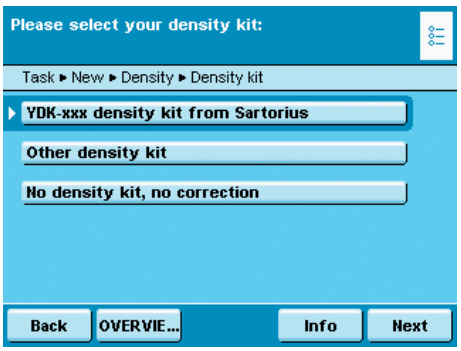
Task Configuration: Determining the Density of a Solid

Two methods are available for determining the density of solids: **Buoyancy** or **Displacement**.





▶ Select the method you wish to use in your task: Buoyancy or Displacement.



▶ Select the density determination kit you will be using.
YDK density kit from Sartorius: For analysis with the YDK kit.
Other density kit: If you would like to use a different kit
No density kit, no correction: If you are not using a kit.
▶ Enter values as prompted (see below for details).

Input Prompts/Settings for the YDK01MS Sartorius Density Determination Kit and for Density Determination Without a Kit
***= Factory Settings**
Liquid

*Water:	For determining density relative to water
Ethanol:	For determining density relative to ethanol
User input:	For density determination relative to a different liquid; enter both the liquid and its density at the indicated temperature.
Density at 20 °C/68 °F and exp. coefficient:	For density determination relative to a different liquid; enter the liquid, its density at 20 °C/68 °F and the expansion coefficient. The density at the indicated temperature is calculated automatically.

Air Density

*Air density at 20 °C/68 °F:	For analysis under standard laboratory conditions
User input:	For analysis under other conditions; enter the air density.

Number of Decimal Places

No decimal places:	The analysis result is displayed without decimal places.
1, *2, 3 or 4 places:	The analysis result is displayed with the selected number of decimal places.

Print Output

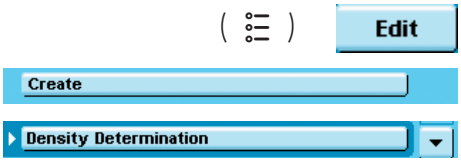
No printout	The results of the measurement are not printed.
*All results and parameters	The results of the measurement and all configured parameters are printed.

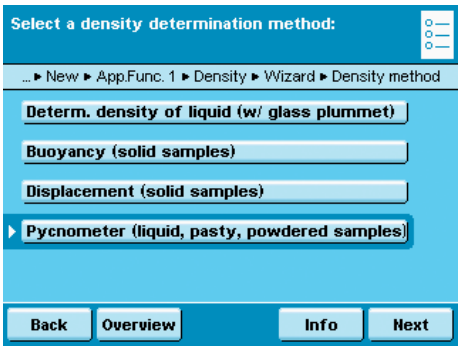
Input Prompts/Settings for Other Density Determination Kit
Parameters for the Density Kit

Name:	Enter the name of the kit
Number of wires:	Enter the number of wires in the density kit
Wire diameter:	Enter the diameter of the wires in mm
Vessel diameter:	Enter the diameter of the vessel in mm

All other prompts are the same as those for the Sartorius density kit (see above).

Task Configuration: Determining Density with a Pycnometer

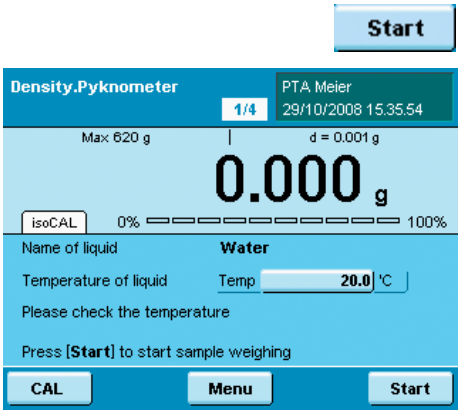




- ▶ Select the **Pycnometer** method.
- ▶ The subsequent prompts are the same as those described above for the Sartorius density kit.

Task Execution: Determining Density

- ▶ Prepare the density determination kit you wish to use.
- ▶ Switch to the application menu, if you have not already done so.
- ▷ The task list is displayed.
- ▶ Select the desired task.
- ▶ Press **Start** to begin the task.



- ▷ The program switches to operating mode.
- ▶ Follow the instructions on the display.

Calibration and Adjustment

Background

During **calibration**, a test weight is used to determine how much the displayed value differs from the value actually measured by the balance. This difference is compared to a predefined nominal mass value and is eliminated by subsequent **adjustment**. During **linearization**, the difference of the values from the ideal characteristic curve of the balance is compensated.

When to calibrate

Calibration and adjustment should be performed **regularly**, such as daily after switching on the balance. Also calibrate **after every leveling** and whenever the ambient conditions have changed (temperature, humidity or air pressure) and when the balance is set up in a new location.

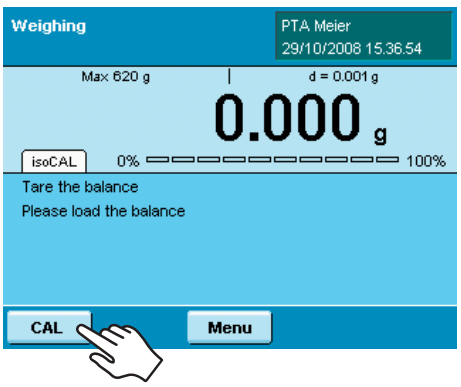
isoCAL is an automatic calibration function built in to every Cubis balance. You can modify this function for adaptation to your own requirements.

You also have the option of setting up a **reminder function** that prompts for calibration/adjustment at user-defined intervals.

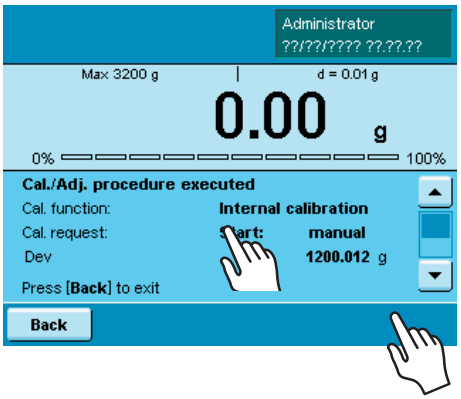
The process may differ depending on the presets (see System Settings / Weighing Parameters) for the calibration/adjustment function. The procedure described below uses the default factory settings.

Calibration/Adjustment with Built-in Calibration Weight

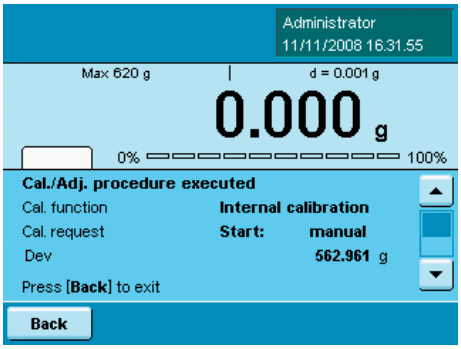
- Switch to the operating mode, if necessary.
- Make certain that the weighing pan is empty.



- Press **CAL**.



- Press **Internal calibration** and then **Start**.



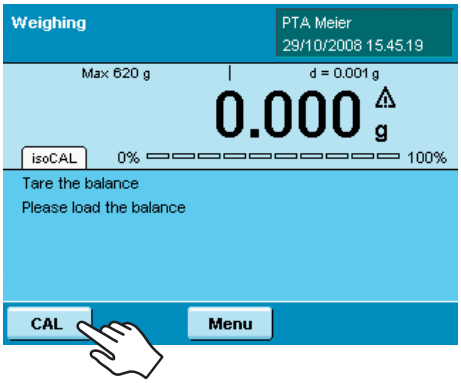
▷ The procedure is executed; progress is shown on the display.
▶ Wait until the calibration/adjustment has been completed.

▷ When the procedure has ended, the selection list is shown again.
▶ Press **Back** to return the balance to the operating mode.

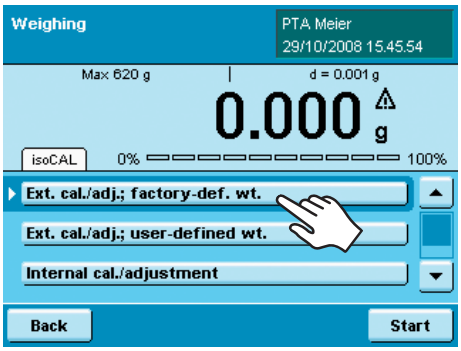
Calibration/Adjustment with External Calibration Weight

This function requires an external calibration weight. Please note the tolerance of the calibration weight you use.

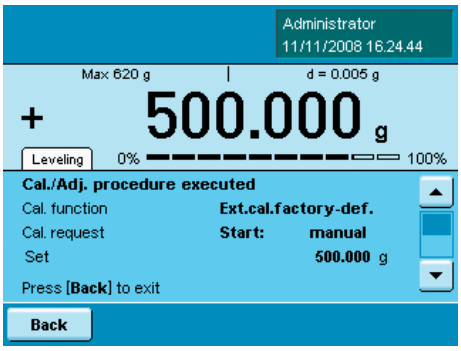
▶ Switch to the operating mode, if necessary.
▶ Make certain that the weighing pan is empty.



▶ Press **CAL**.



▶ Press **Ext. cal./adj.; factory-def. wt.** followed by **Start**
▶ As soon as you are prompted to do so, lay the calibration weight on the balance.



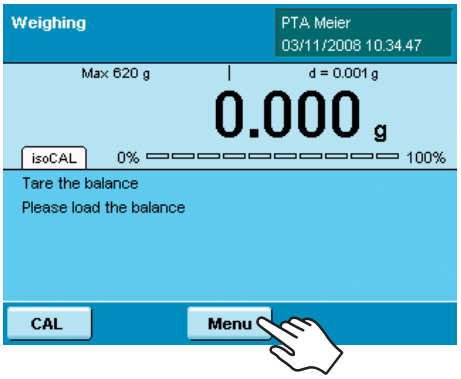
▷ The procedure is executed; progress is shown on the display.
▶ Wait until the calibration/adjustment has been completed (approximately 15 seconds).

▷ When the procedure has ended, the selection list is shown again.
▶ Press **Back** to return the balance to the operating mode.

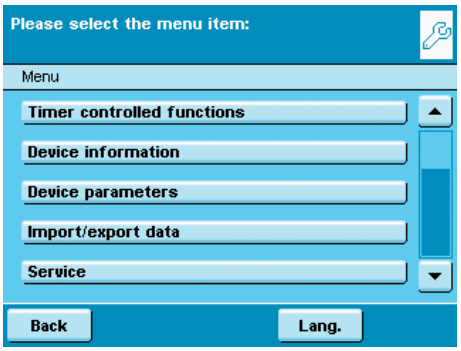
System Settings (Menu)

All of the settings that directly affect use of the balance are configured in this menu. These are basic settings; changes are effective as soon as they are stored. Changed settings do not affect already defined tasks.
Example: You can define the default values presented in the user menu when a new user profile is created. If you specify a certain color as the default (such as your company color), this setting will be preset upon creation of a user profile but can still be individually changed. This will not change already existing user profiles.

All system settings are user-independent; in other words, they are applied to all users.



▶ To open the System Settings menu, press the **Menu** button while in operating mode.



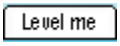
▷ The list of available system settings is displayed.
▶ To see all menu items, use the scroll bar on the right-hand side.
▶ Press the menu item for the settings you wish to edit.

The system settings are divided into the following six menus:
- Level the balance
- Calibration/adjustment data
- Timer controlled action
- Device information
- Device parameters
- Import/export data
- Service

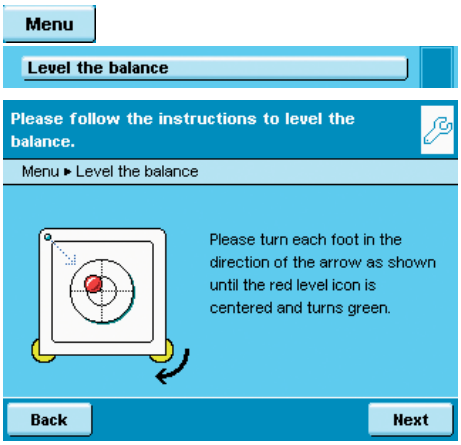
You have already learned how to use the menus.
Only the configuration options and their meanings are described below.

Level the balance (Q-Level)

For precise weighing results, it is essential that the balance be completely level. Any slight unevenness of the surface on which the balance rests can be compensated for by adjusting the front feet of the balance. All Cubis balances are equipped with the automatic leveling function **Q-Level**. An integrated sensor detects the alignment of the balance and generates a warning if leveling is required.

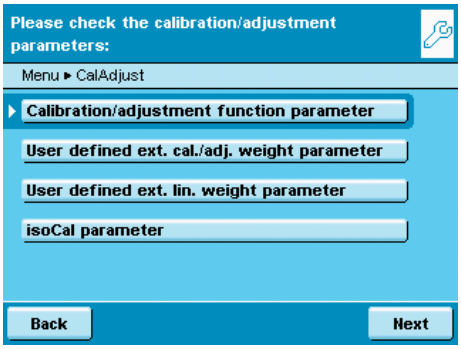


The leveling must be performed as soon as the message **Level me** appears in the display. This can be done very quickly thanks to the simple user guidance.



- ▶ Make certain that the weighing pan is empty.
- ▶ Follow the instructions on the display.

Calibration/adjustment data

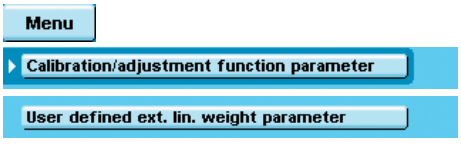


The configuration options are divided into four areas.

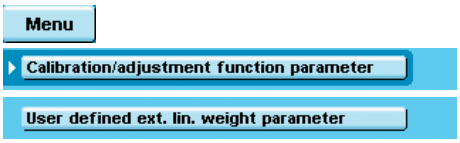
- ▶ Select the area in which you would like to configure settings.
- ▶ Follow the instructions on the display.

- ▷ As soon as all options have been configured, the overview of all settings is displayed.
- ▶ To save the settings, press **Save**.

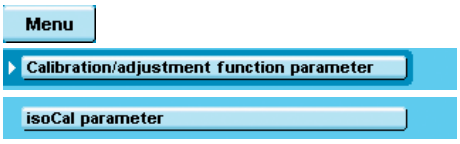
Defining Calibration and Adjustment Functions
Defining Functions of the CAL button. Options: Lock the button/*Configure the button selection menu/Select fixed 1-button function.
Defining the Selection Menu of the CAL button. Which calibration/adjustment functions should be offered after pressing the CAL button.
Selecting the Sequence for Calibration/Adjustment. Options: *Calibration and then automatic adjustment/Calibration and then manual adjustment.
Selecting the Unit for Calibration/Adjustment. Options: *Grams/kilograms.



Defining External Calibration Weights
Defining the Number of External Calibration Weights.
Entering the Data for External Calibration Weights. Weight value / identifier / certificate

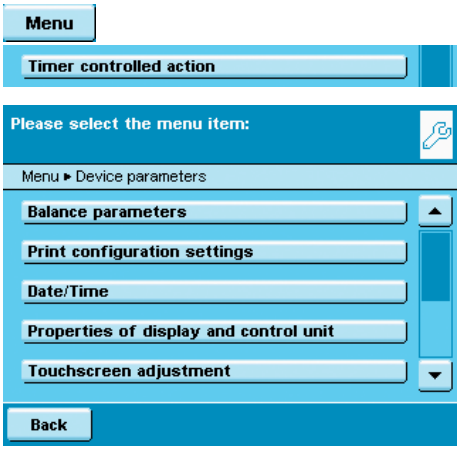


Defining External Linearization Weights
Entering the Data for External Linearization Weights. Weight values / identifier / certificate

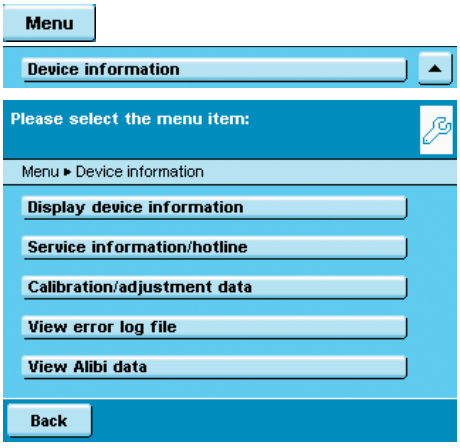


Configuring the Fully Automatic Adjustment Function isoCAL
Defining the isoCAL Function. Disabled/only warning stage, manual initiation/ *enabled, automatic execution
Defining the isoCAL warning stage. *Only isoCAL status field/warning message, repeated/ alarm message, adjustment mandatory.
Setting the isoCAL Temperature. Enter the temperature in degrees Celsius.
Setting the isoCAL Time Interval. Enter time interval in hours.

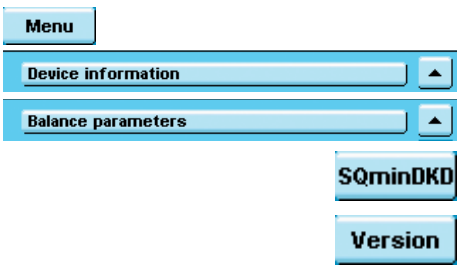
Timer controlled action



Device information



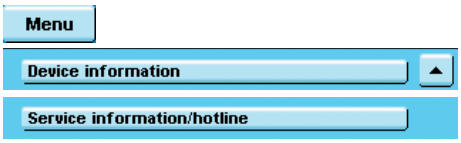
Here you can view various information and search directly within the Alibi memory.
▶ Select the area in which you would like to view information.



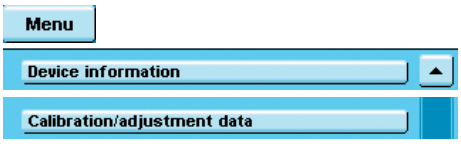
Viewing Basic Information
Displaying the manufacturer, model, serial number, host name, IP address

▶ To view the parameters for SQmin and DKD, press **SQminDKD**.

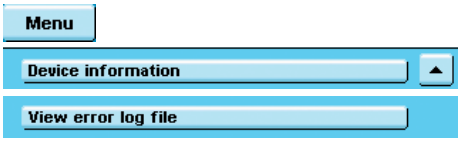
▶ To view the version of the balance, display and control unit and application software, press **Version**.



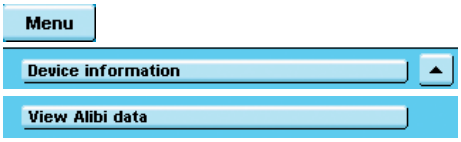
Information about Technical Service and the Hotline
Contact data for the technical service center, the hotline number and information about the maintenance contract and maintenance cycle are displayed here.



Viewing Calibration and Adjustment Data

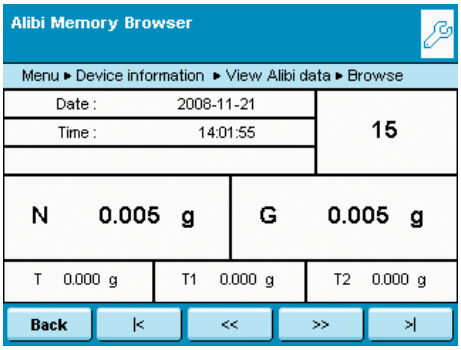


Viewing Error Messages in the Log File
All error messages are saved in the log file. You can view these here.



Alibi Memory
The Alibi memory records weighing results without changing any characteristics of the data. This is why it can take the place of a data printer.
The Alibi memory uses a ring buffer technique: when the memory is full, the oldest data records are deleted to make room for new data. You can define a storage period if desired (default: 3 months; see “Device Configuration” for details). The Alibi memory can contain approximately 100,000 data records. For further information on the Alibi memory, please refer to the user manual.

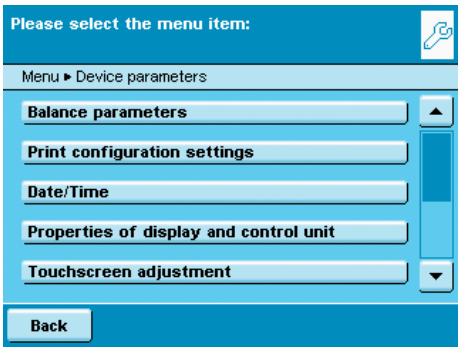
Search in the Alibi memory. You can search the Alibi memory according to various search criteria: Date, time/memory number/memory ID



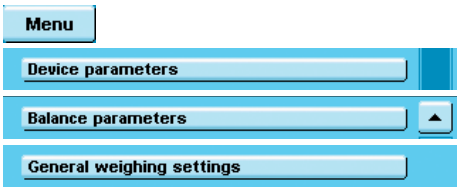
Browse Alibi memory. You can search the Alibi memory by paging through the entries with the arrow buttons.

View available memory Select this option to see how much capacity is available in Alibi memory.

Device parameters



Here you can edit the device configuration settings for the balance.
These settings are user-independent.

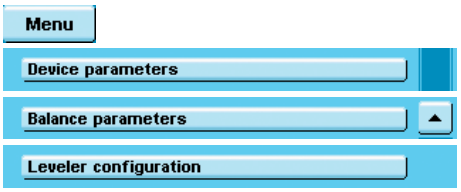


Defining Balance Properties

General weighing settings: Here you can define the default settings for the general device parameters. These settings can be changed within specific tasks when a new task is configured.

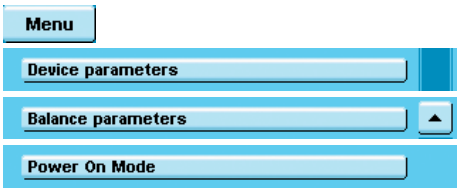
The factory settings are indicated with *.

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: Compensates for load fluctuations in the display. Options: *Final readout/filling mode/low filtering/without filtering
Stability: The stability symbol is displayed when the weighing result is constant within the defined stability range. Options: Maximum precision/very precise/*precise/fast/very fast.
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: Defines conditions for taring the balance. Options: Without/after/at stability.
Automatic zeroing: If this option is enabled, changes of a fixed, configured fraction of scale intervals per second starting from the display zero point are automatically tared. Options: On/*off
Basic weight unit: Weight unit to be applied for this task. Options: All available weight units, *gram.
Display accuracy: A lower display accuracy results in faster display of the value. Options: *All decimal places/disable last decimal place
Tare/zero at power on: The balance is automatically tared when switched on. Options: *On/off



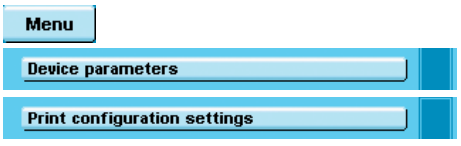
Configuring the Leveling Function Q-Level

Here you can define the properties of the leveling function. Options: Off, no function/*status display/warning message, repeated



Defining the Startup Mode of the Balance

Here you can select the mode that the balance should enter into when switched on and upon repeated presses of the on/off button (⏻). Options: OFF,ON,standby/on, standby/always on

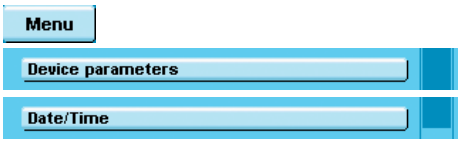


Configuring Printout Parameters

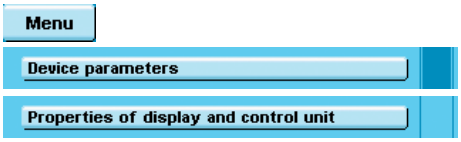
The factory settings are indicated with *.

Interface for print output: Connection of the printer used; options: COM port A, B, C/file/SD memory card
Output protocol: Options: *Print/SBI/XBPI/Web Service/SICS/second display
Standard printout GLP: Defines when ISO/GLP output should be possible. Options: *Off/enabled for cal.-adjustment/always enabled.
Taring after printout: Defines whether the balance is automatically tared after a printout is generated. Options: *Off/on
Print event: Defines which event should trigger a printout. Options: *Print button/start of the task/initialization of the application/result print event/printout of

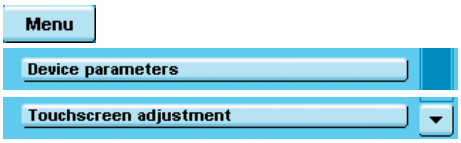
component/results of application/end task/calibration-adjustment protocol event
Configure data output: Options: *Configured print protocol/ FlexPrint
Print button elements: Defines which texts should be printed. Options: GMP header / GMP footer / empty line / dashed line / date and time / name / weight block / gross weight / gross2 weight / net weight / increased resolution weight value / tare weight / tare1 weight / tare2 weight / range 1 / metrol. minimum / metrol. maximum / metrol. verification scale interval “e” / metrol. scale interval “d” / number of areas / manufacturer / model / serial number / balance version / display version / interface version no. / draft shield version / service contact person / telephone no. / email address / technical hotline / Internet address / maintenance contract / maintenance cycle / IP address / host name / user name / user description / task title / task description / leveler result



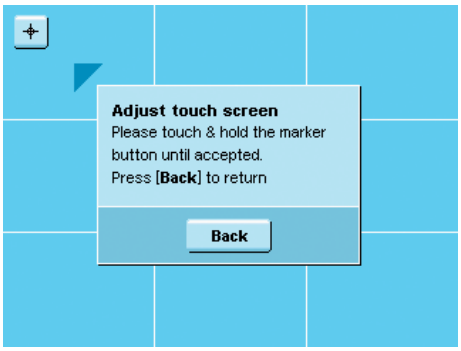
Setting the Date and Time
The system clock as well as the time setting of the weighing module is displayed. You can set the current date and time.



Defining Properties of the Display and Control Unit
The following properties of the display and control unit can be changed, as necessary: Language, help text (on/off), background colors, brightness, acoustic signal.

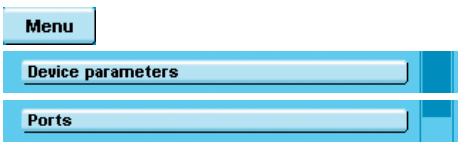


Touchscreen adjustment.



▶ Follow the instructions on the display.

This adjustment sets the sensitivity of the individual areas on the touchscreen. You can adapt the touchscreen (finger pressure, angle of impact, etc.) to individual requirements and preferences. We recommend that each individual user for whom a profile is created make this adjustment individually. To do this, make sure the desired user profile is active before making the adjustment.



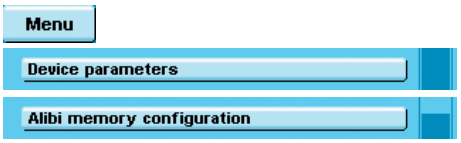
Defining Interfaces and Network Settings
Settings for Serial Interfaces. Here you can configure the serial interfaces.

Network Settings (Ethernet)
Here you can configure the network settings: Device name, network IP settings, IP address, subnet mask and standard gateway.
The device name (max. 24 characters) defined here can be printed on reports.
▶ To save the settings press **Save**.

Remote Network Settings

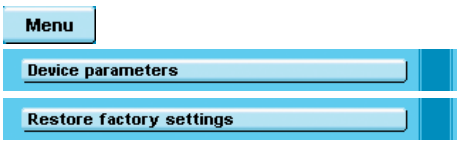
Enter here the network addresses for the VNC client and the LPR (remote) printer.

▶ To save the settings, press **Save**.



Configuring the Alibi Memory

Alibi Memory On/Off. You can switch the Alibi memory on or off.
Auto Delete. You can configure the Alibi memory to be regularly deleted and define the deletion cycle (in days).



Restoring the Factory Settings (Reset)

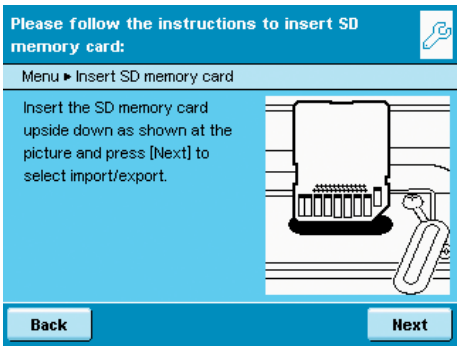
You can delete all of your settings and restore the factory settings.

Loading a Software Update

After downloading the current software version, you can transfer it to the device via an SD card.

▶ Follow the instructions on the display.
▷ After the software has been updated, the balance restarts.

Import/export data



▶ If you have not already done so, insert the SD card into the available slot (see “Inserting a Memory Card in the Display and Control Unit”), and press **Next**.
▶ Select whether you wish to export or import data.

Export:

▶ Select the data you wish to export and press **Next**.
▶ Edit the name of the export folder, if desired, and press **OK**.
▶ Press **Next**.
▷ The data is copied to the SD card.

Import:

▶ Press on the folder on the SD card from which you would like to copy data.
▶ Select the data you wish to import and press **Next**.
▷ The data is copied from the SD card.

User Management

You can configure the following settings in this menu:
- Activating a user
- Creating a user profile (only possible as Administrator)
- Editing user profiles (modify, copy, delete, change or delete password, depending on user rights)

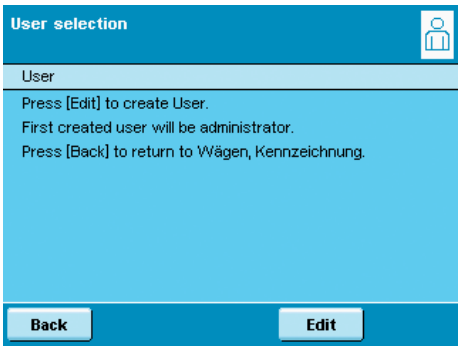
User Administration

The user administration allows for defining of users with distinct sets of rights: the Administrator and multiple users.
Administrators can access all functions (except for the Service area) and have all types of rights in all areas of the program. Only the Administrator can create new user profiles and assign them individual rights.
On the other hand, a **user** cannot use all functions. Users have restricted rights, which are defined in the user profile.

No user profiles exist when the balance is delivered. The balance is in Administrator mode so that all settings can be modified. The first user profile created is automatically an Administrator account. This account is used to create additional accounts.

()

▶ To open the User Management menu, press the button USER ().



▷ The menu is opened, and the list of user profiles is displayed.

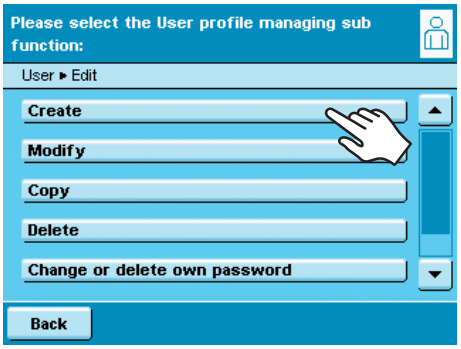
Creating a User Profile

This function is only available to an Administrator.

You can configure the following settings in a user profile; these settings apply only to the user defined by this profile:
- Language
- Display of help texts (on or off)
- Display settings (color, brightness)
- Acoustic signal: on/off; volume
- User rights
- Password protection
- Name and designation of the profile

(👤) **Edit**

▶ To create a new user profile, press **Edit**

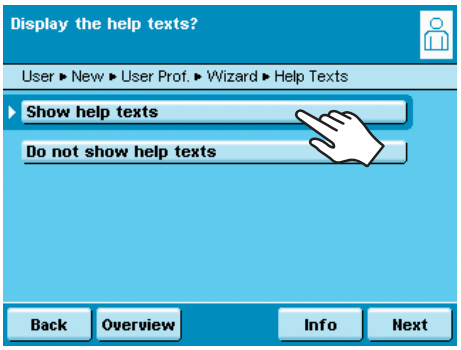


▶ Press **Create**.

The program guides you through the procedures for configuring the user profile. To select an option, press the corresponding button; the program automatically jumps to the next setting.
or
If the desired option is already selected (dark background), press **Next** to reach the next prompt.
If more than one option can be selected for a single setting, press **Next** after making your selection(s) to proceed to the next prompt.

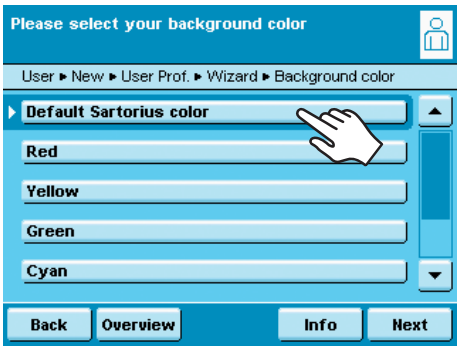
Step 1: Set the Language

▶ Press the button for the desired language.



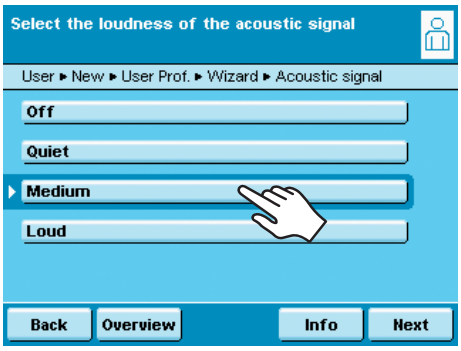
Step 2: Define Whether Help Texts are Displayed

▶ Select the corresponding button to define whether or not help texts should be shown.
Help texts are recommended in particular for new users. Once a user has become familiar with the operation of the balance, the user can switch off the help texts, if desired.



Steps 3 to 5: Setting the Colors and Brightness of the Display

▶ Select the color for the display background by pressing the desired color.
The standard Sartorius color for the background is light blue (factory setting).
▷ Once you have selected the background color, you are prompted to select a color for the user info area (see “Display in Operating Mode”).
▶ Press the desired color for the user info area.
The standard Sartorius color for the user info area is a slightly darker blue (factory setting).
▷ The display switches to the brightness setting.
▶ To change the brightness of the display, press the button indicating the desired option.



Step 6: Set the Acoustic Signal

If the signal is on, a short beep-tone is emitted each time an operating element on the display is used.

▶ Select the desired volume

or

▶ Press **Off** to disable the acoustic signal.

Step 7: Assign User Rights

▶ Select the corresponding options to define which functions the user can access.
The following rights can be assigned individually:
– Creating, copying, modifying and deleting tasks
– Importing data
– Modifying the calibration and adjustment parameters
– Modifying basic parameters
Administrators can access all functions.

▶ To move to the next menu item, press **Next**.

▷ An overview of all selected user settings is displayed.

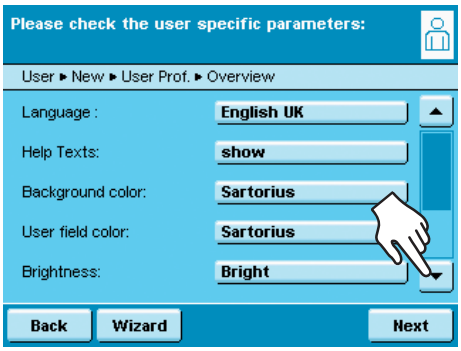
Step 8: Define Whether Password Protection is Active

If you assign a password, this profile cannot be used until the password has been entered.

▶ Select the corresponding option to define whether the user profile is password-protected or not.

The password is defined in Step 10.

Only the Administrator can open the user profile without the password (for example, if the user forgets the password) and assign a different password. The Administrator can remove the password protection so that a new password can be set, if desired.

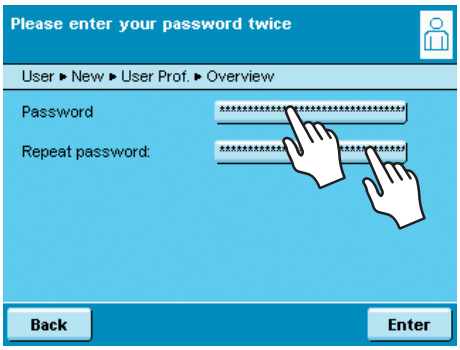


Step 9: Check Your Settings

▶ Use the scroll bar or press the down arrow to view all settings.

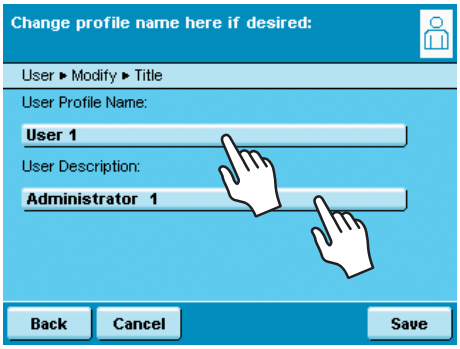
▶ To modify a setting, press the corresponding button. This opens a screen showing the options for that setting.

▶ If the settings are correct, press **Next**.



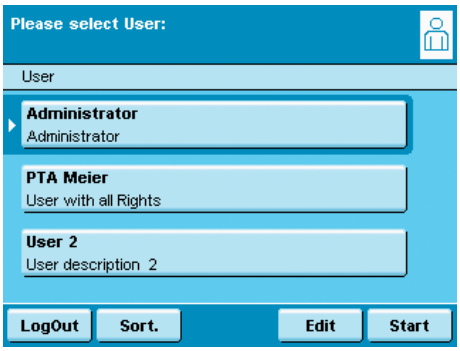
Step 10: Define the Password (If Password Protection Enabled)

▷ If you selected the option for password protection in Step 7 (see above), you are now prompted to enter the desired password twice.
▶ Press the upper button.
▶ Enter the desired password (minimum 4 characters, maximum 8; only numbers and uppercase letters are permitted).
▶ Press the lower button, and enter the password again.
▶ Press **Next**.



Step 11: Enter User Name and User Description

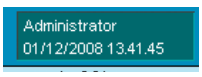
▶ To enter a name for the user profile, press the button **User name**. During operation of the balance, the user name is shown in the upper-right part of the display as long as the respective user profile is active.
▶ Enter the user name (maximum 40 characters) and press **OK**.
▶ To enter a description for the user profile, press the button **User description**.
The user description can be viewed at any time during operation of the balance by pressing the user info area in the display (see “Touchscreen User Interface”).
▶ Enter the description and press **OK**.
▶ To complete the process, press **Save**.



▷ The program switches to the user selection list. The newly created user profile is added to the end of the list.

▶ If you would like to activate the new user, press on the button with the corresponding user name.
▷ The program switches to the operating mode, and the selected user is activated.
or
▶ To create additional user profiles, press **Edit** and repeat the procedure as described above.
or
▶ If you would like to switch to the operating mode without changing the user, press **Start**.

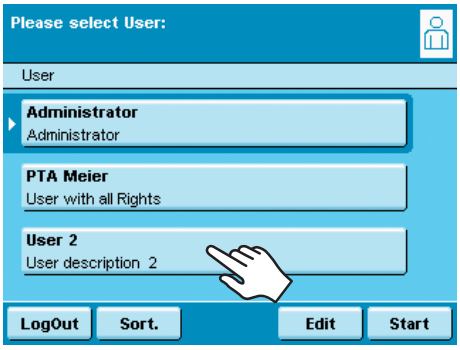
Activating a User



In the operating mode, the active user is displayed in the user info area in the upper right-hand corner of the display. To activate a different user, open the User Management menu and select the desired user.

(👤)

▶ Press the key USER (👤).

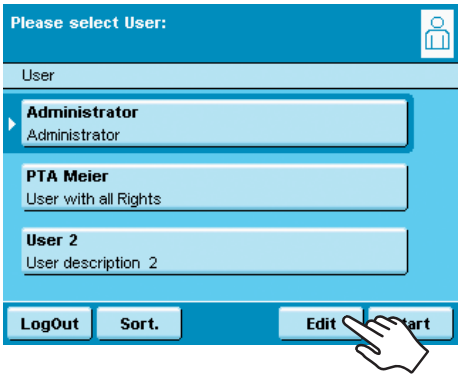


▷ The available users are listed. The currently active user is indicated by an arrow and a darker background.
▶ Press the button indicating the user you wish to activate.
▷ The program switches to operating mode; the selected user is activated and shown in the user info area on the upper right.

Editing a User Profiles

( )

▶ If you have not already done so, open the User Management by pressing the key USER ( ).



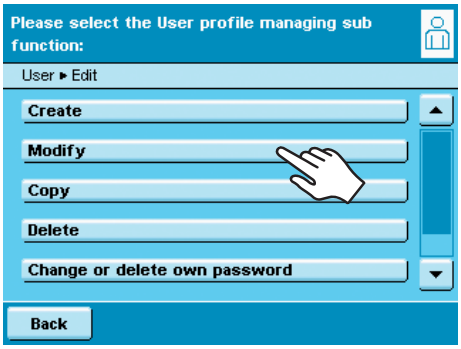
▶ To open the menu for editing profiles, press **Edit** from the user selection screen.

▷ The list of edit functions is displayed.

ⓘ Which options for editing user profiles are available depends on whether or not you have Administrator rights. The following table shows which changes can be made by each type of user.
The illustrations in this manual show the screen content listed when an Administrator profile is used; your screen content may differ.

Option	Administrator	User
Modify own profile	☑	☑
Modify other profiles	☑	
Copy profile	☑	
Delete profile	☑	
Change or delete own password	☑	☑
Change or delete passwords of other users	☑	

Editing a User Profile



▶ Select **Modify**.

▶ If you are logged as Administrator, you must select the profile you would like to change and then press **Next**.

▷ The overview of all settings for this profile is displayed. Select and edit the parameters you wish to change one-by-one.
or

▶ To have the program guide you through all settings step by step, press **Wizard**. All setting options are then displayed again in sequence and can be changed.

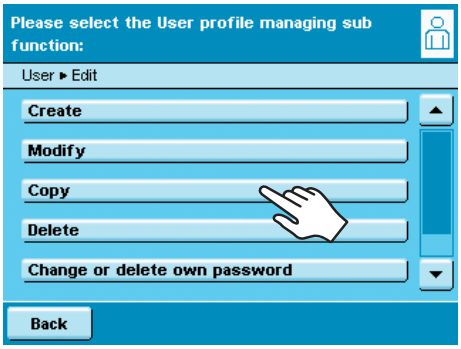
▶ Press **Next**.

▶ Edit the user name and description if desired.

▶ Press **Save**.

▷ The user profile has been changed. The display switches to the user selection list.

Copying a User Profile



ⓘ This function is only available to an Administrator.

ⓘ When you copy a user profile that is password-protected, the password is not copied to the new profile!

▶ Select **Copy**.

▷ All available user profiles are shown.

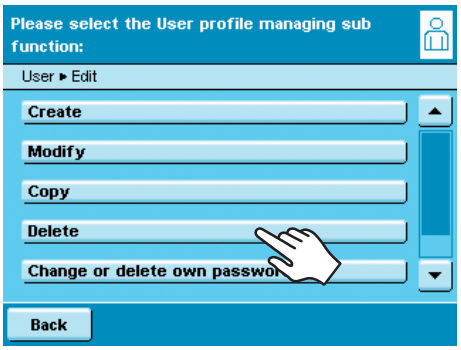
▶ Select the profile you wish to copy.

▶ Press **Next**.

▶ Enter a new profile name and a new description for the copied profile.

▶ Press **Save**.

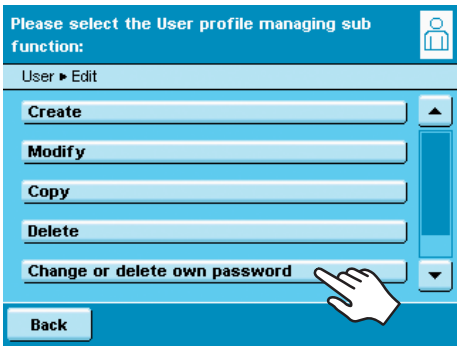
▷ The display switches to the user selection list, which now includes the new (copied) profile.



Deleting a User Profile

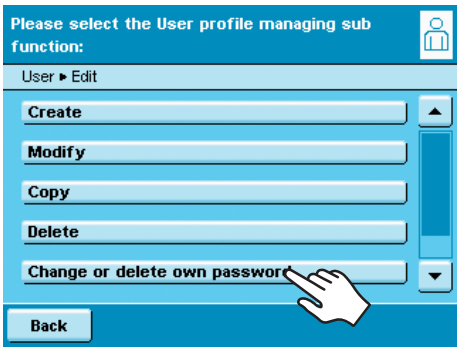
This function is only available to an Administrator.

- ▶ Select **Delete**.
- ▷ All available user profiles are shown.
- ▶ Select each profile that you wish to delete and press **Next**.
  or
- ▶ To delete all profiles, press **All**.
- ▷ The profiles selected for deletion are listed in a confirmation prompt.
- ▶ If you wish to modify the selection, press **No**.
  or
- ▶ To confirm the deletion, press **Yes**.



Changing or Deleting Your Own Password

- ▶ Activate your profile, if it is not already active.
- ▶ Press **Edit** below the user selection list.
- ▶ Select **Change or delete own password**.
- ▶ Press **Yes**.
- ▶ Enter the password twice, in the upper and lower fields.
- ▶ Press **Next**.
- ▷ The display switches to the list of functions for modifying profiles.



Deleting the Passwords of Other Users

This function is only available to an Administrator.

- ▶ Activate your own user profile.
- ▶ Press **Edit** below the user selection list.
- ▶ Select **Delete other passwords**.
- ▷ A list of all users that have passwords is displayed.
- ▶ Select each user whose password you wish to delete and press **Next**.

or

- ▶ To delete all passwords, press **All**.
- ▷ The users selected for password deletion are listed in a confirmation prompt.
- ▶ If you wish to modify the selection, press **No**.
  or
- ▶ To confirm the deletion, press **Yes**.
- ▷ The display switches to the screen for editing user settings.

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