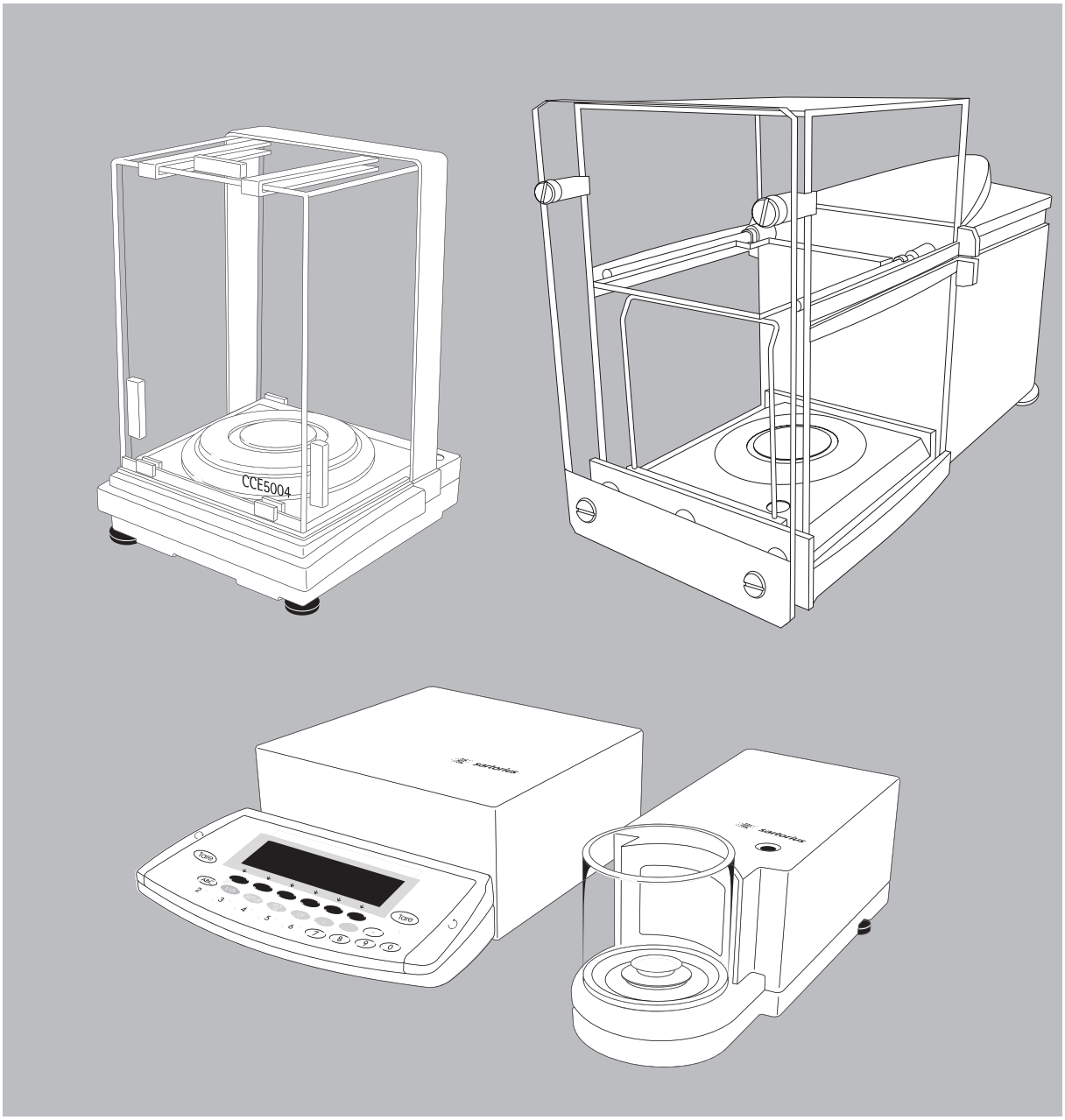
sartorius

Operating Instructions

Sartorius CCE Series

Electronic Mass Comparators



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Intended Use

CCE mass comparators are ideal for use as inspection, measuring and test equipment in quality management systems. Their special performance features include:

- The fully automatic calibrating and adjustment function isoCAL, allowing you to store adjustment data records (time- and temperature-dependent)
- ISO/GLP-compliant recording capability for printouts
- Password-protected menu lock
- Display of maintenance/service intervals when due

The CCE mass comparator meets the highest requirements placed on the accuracy and reliability of weighing results through the following features:

- Efficient filtering-out of vibrations
- Fully automatic draft shield with three motorized, self-teaching draft shield elements
- Stable and repeatable results
- Excellent readability under any lighting conditions
- Rugged design and long service life

The CCE mass comparators facilitate and speed up both simple and complex routine applications through:

- Fast response times

Built-in application program, application level 1:

- Mass Comparison
- Automatic initialization when you switch on the mass comparator
- Easy input of IDs for samples or other weighed objects
- If requested: Control using an external computer

Symbols
The following symbols are used in these instructions:

●	Indicates steps you must perform
○	Indicates steps you must perform only under certain conditions
>	Describes what happens after you have performed a particular step
–	Indicates an item in a list
⚠	Indicates a hazard

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Contents

Warning and Safety Instructions

The mass comparator complies with the regulations and standards for electrical equipment, electromagnetic compatibility, and the stipulated safety requirements. Improper use or handling, however, can result in damage and/or injury.

Read these operating instructions thoroughly before using your mass comparator to prevent damage to the equipment.
Keep these instructions in a safe place.

Follow the instructions below to ensure safe and trouble-free operation of your mass comparator:

⚠ Do not operate in a hazardous area

⚠ Make sure that the voltage rating printed on the AC adapter is identical to your local line voltage

⚠ If you use electrical equipment in installations and under ambient conditions requiring higher safety standards, you must comply with the provisions as specified in the applicable regulations for installation in your country.

⚠ The display value can be affected by extreme electromagnetic influences. When there is no longer any interference, your mass comparator will again be fully operable.

– The only way to switch the power off completely is to disconnect the AC adapter.

– The housing is protected against the penetration of solid objects and dripping water (IP32) – the housing is not completely dust- and leak-tight, however.

– Protect the AC adapter from contact with liquids

– Note on installation:
The operator shall be responsible for any modifications to Sartorius equipment and for any connections of cables or equipment not supplied by Sartorius and must check and, if necessary, correct these modifications and connections. Information on operational quality is available on request from Sartorius (in line with the above-mentioned norms pertaining to immunity).

– Connect only Sartorius accessories and options, as these are optimally designed for use with your mass comparator.

When cleaning your mass comparator, make sure that no liquid enters the mass comparator housing;
use only a slightly moistened cloth to clean the mass comparator.

Do not open the mass comparator housing.
If the seal is broken, this will result in forfeiture of all claims under the manufacturer's warranty.

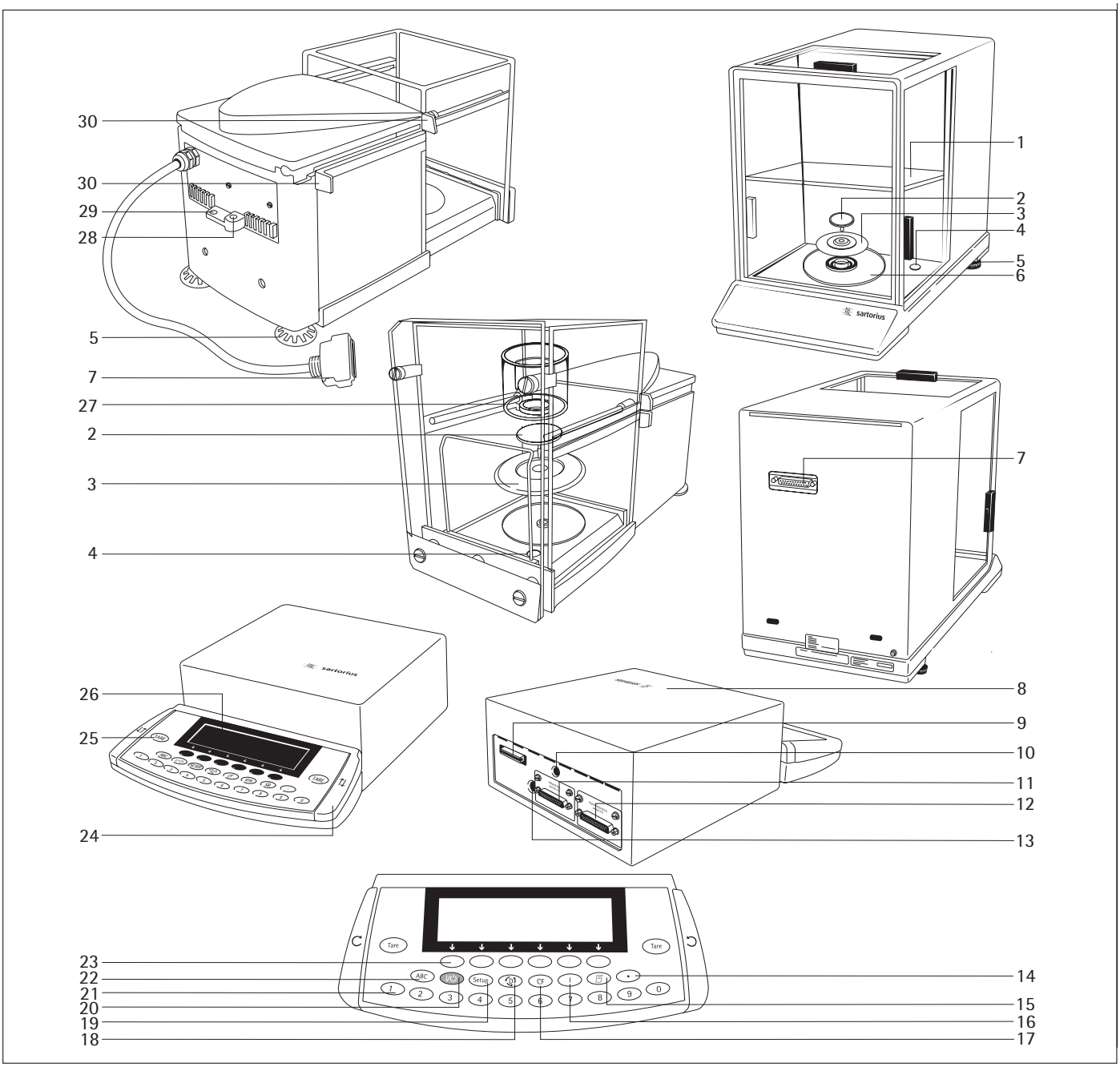
Should you have any trouble with your mass comparator:

○ Contact your local Sartorius office, dealer or service center

General Views of the Mass Comparator Models

CCE36, CCE66, CCE106, CCE605, CCE1005

CCE111



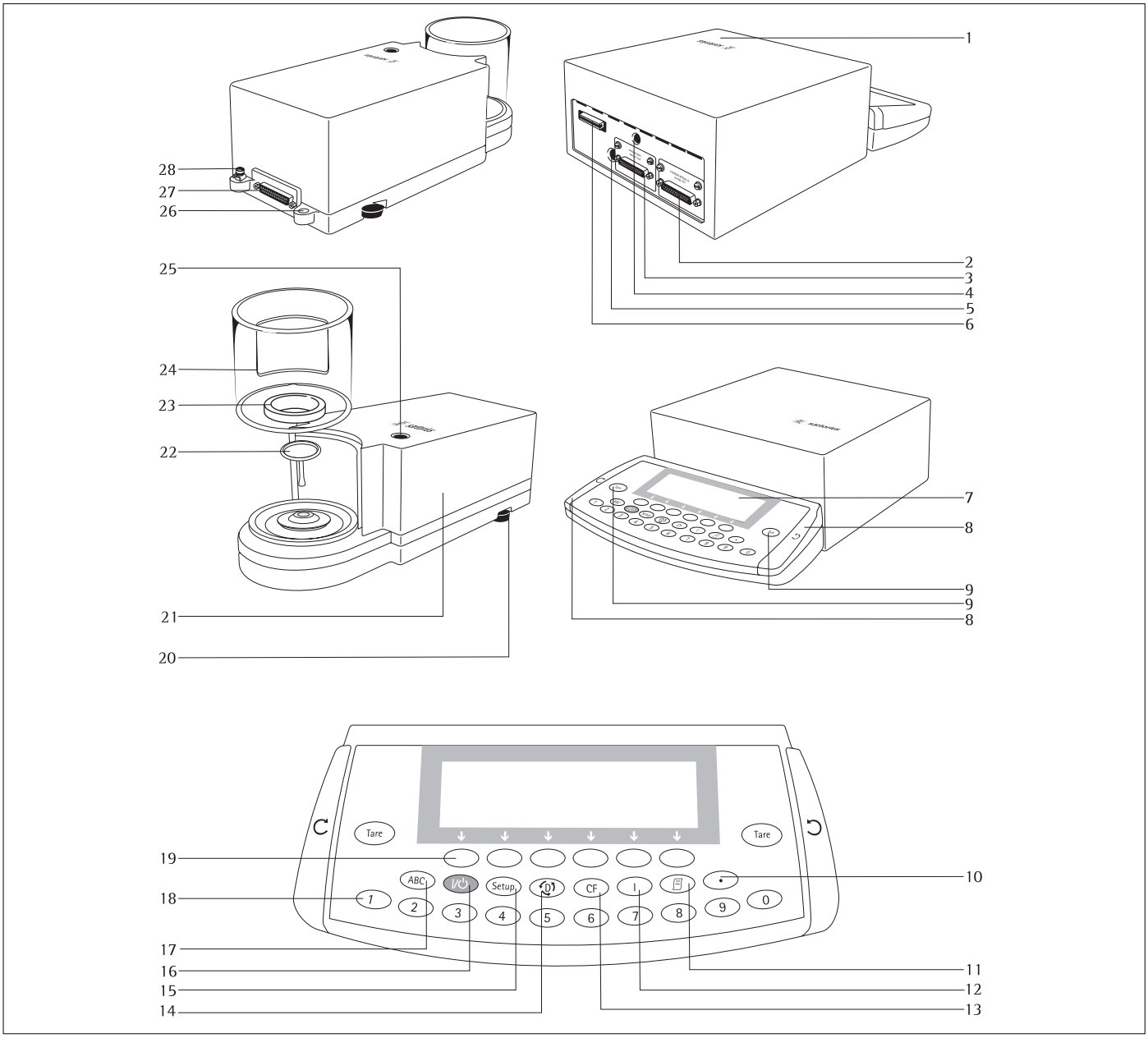
Pos.	Designation
1	Glass panel
2	Weighing pan
3	Sealing ring
4	Level indicator
5	Leveling foot
6	Shield disk
7	Connector plug: Weigh cell – Display and control unit
8	Display and control unit
9	Female connector for weigh cell
10	Menu access switch
11	Serial printer port (PRINTER)

Pos.	Designation
12	Serial communications port (PERIPHERALS)
13	DC jack
14	Decimal point key
15	Print key
16	Info key for displaying device information
17	CF key (clear function)
18	Toggle key for changing to the next application program
19	Key for accessing Setup mode (settings)

Pos.	Designation
20	On/off key
21	Numeric keys
22	Toggle key for alphabetic input
23	Function keys
24	Key for opening/closing draft shield
25	Tare key
26	Display
27	On models CCE36, CCE66: Internal draft shield
28	Lug for attaching antitheft locking device
29	Equipotential bonding conductor
30	Draft shield door grips

General Views of the Mass Comparator Models

CCE6

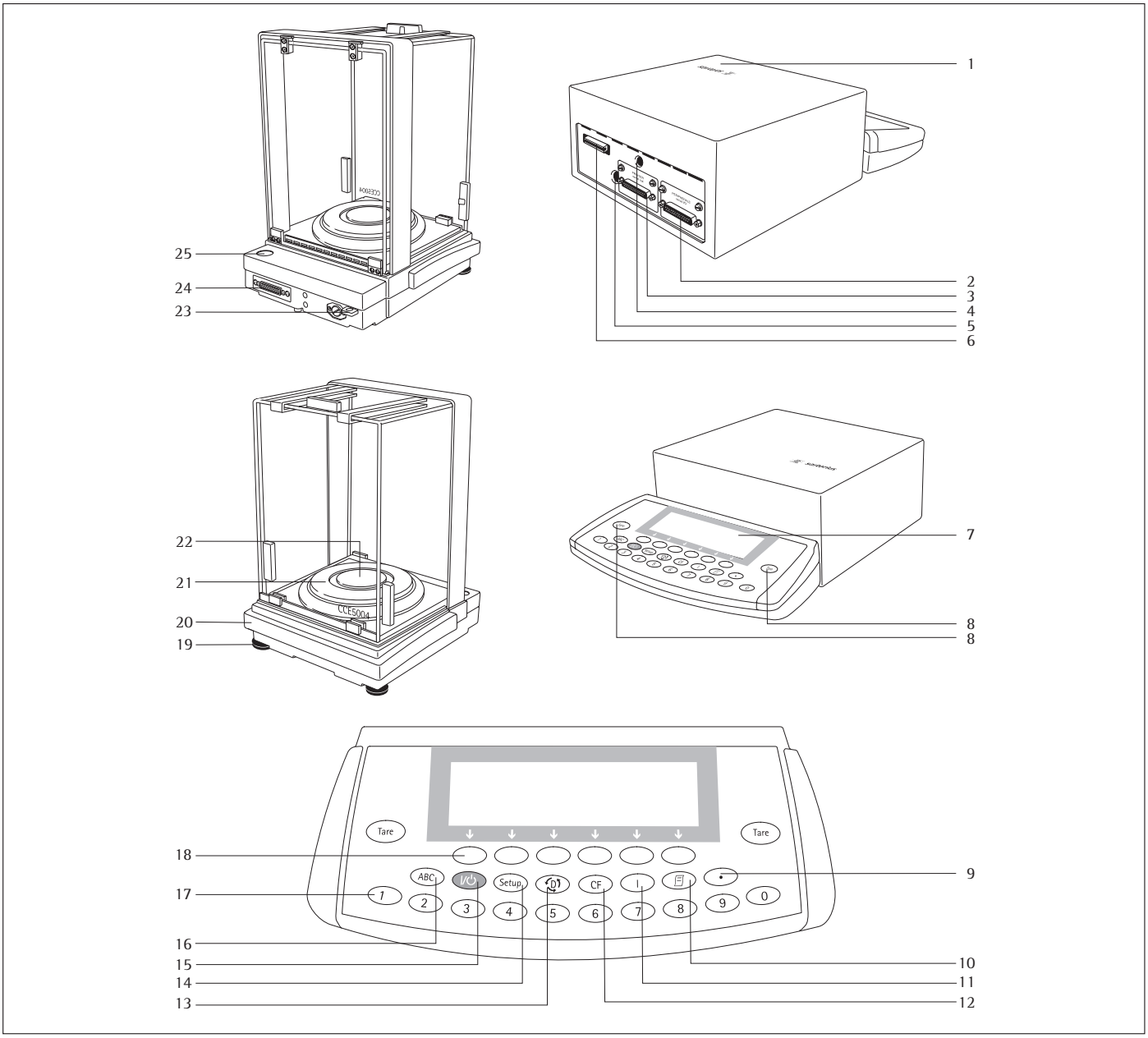


Pos.	Designation
1	Display and control unit
2	Serial communications port (PERIPHERALS)
3	Serial printer port (PRINTER)
4	Menu access switch
5	DC jack
6	Female connector for weigh cell
7	Display
8	Key for opening the draft shield clockwise | Key for opening the draft shield counterclockwise
9	Tare key
10	Decimal point key
11	Print key
12	Info key for displaying device information
13	CF key (clear function)
14	Toggle key for changing to the next application program

Pos.	Designation
15	Configuration
16	On/off key
17	Toggle key for alphabetic input
18	Numeric keys
19	Function keys
20	Leveling foot
21	Weigh cell
22	Weighing pan
23	Internal draft shield
24	Draft shield
25	Level indicator
26	Lug for attaching antitheft locking device
27	Female connector for evaluation unit
28	Equipotential bonding conductor

General Views of the Mass Comparator Models

CCE1004, CCE2004, CCE5004, CCE5003

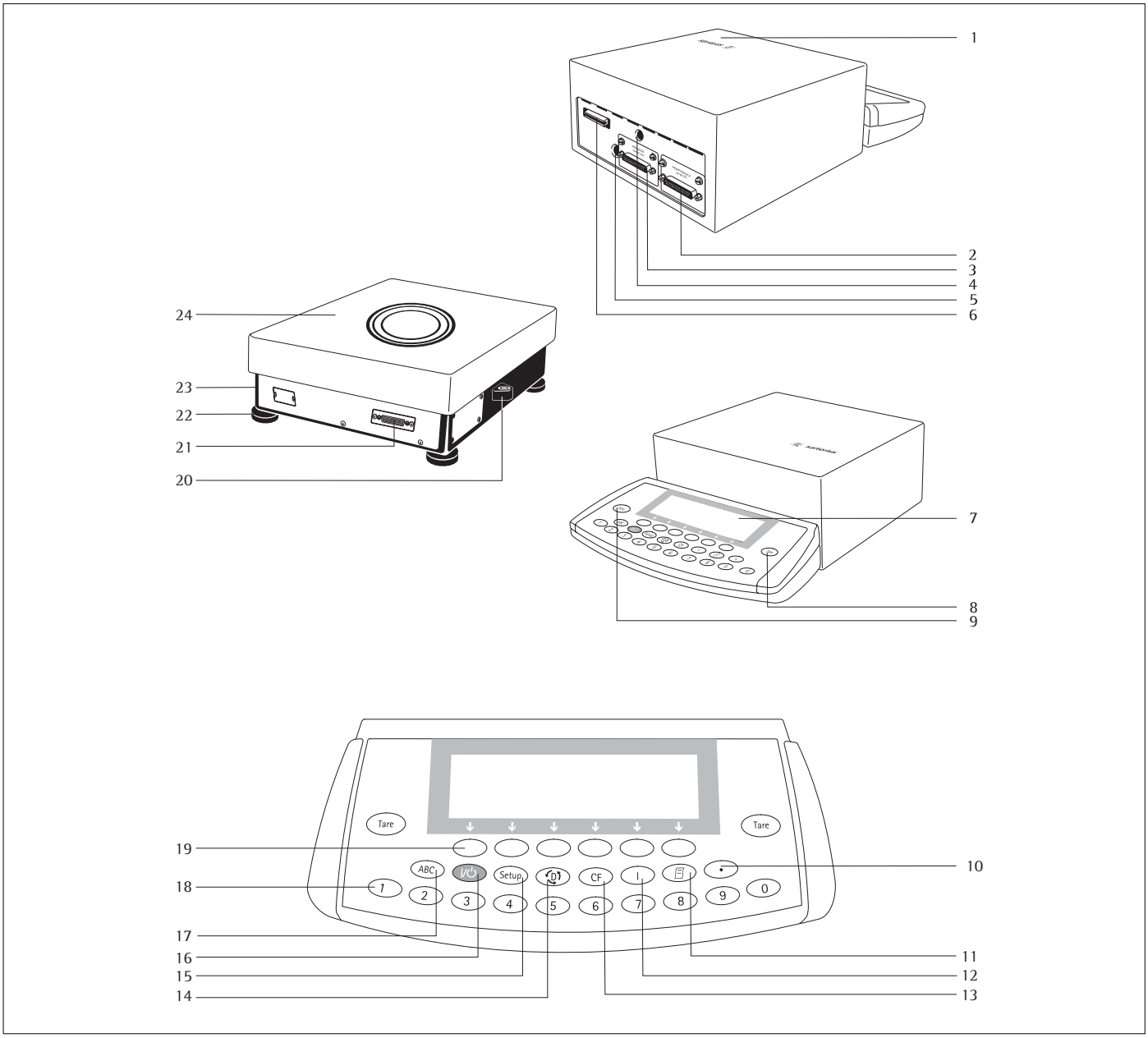


Pos.	Designation
1	Display and control unit
2	Serial communications port (PERIPHERALS)
3	Serial printer port (PRINTER)
4	Menu access switch
5	DC jack
6	Female connector for weigh cell
7	Display
8	Tare key
9	Decimal point key
10	Print key
11	Info key for displaying device information
12	CF key (clear function)

Pos.	Designation
13	Toggle key for changing to the next application program
14	Configuration
15	On/off key
16	Toggle key for alphabetic input
17	Numeric keys
18	Function keys
19	Lug for attaching antitheft locking device
20	Female connector for evaluation unit
21	Level indicator
22	Leveling foot
23	Weigh cell
24	Shield disk
25	Weighing pan

General Views of the Mass Comparator Models

CCE10K3, CCE40K3, CCE60K3, CCE60K2

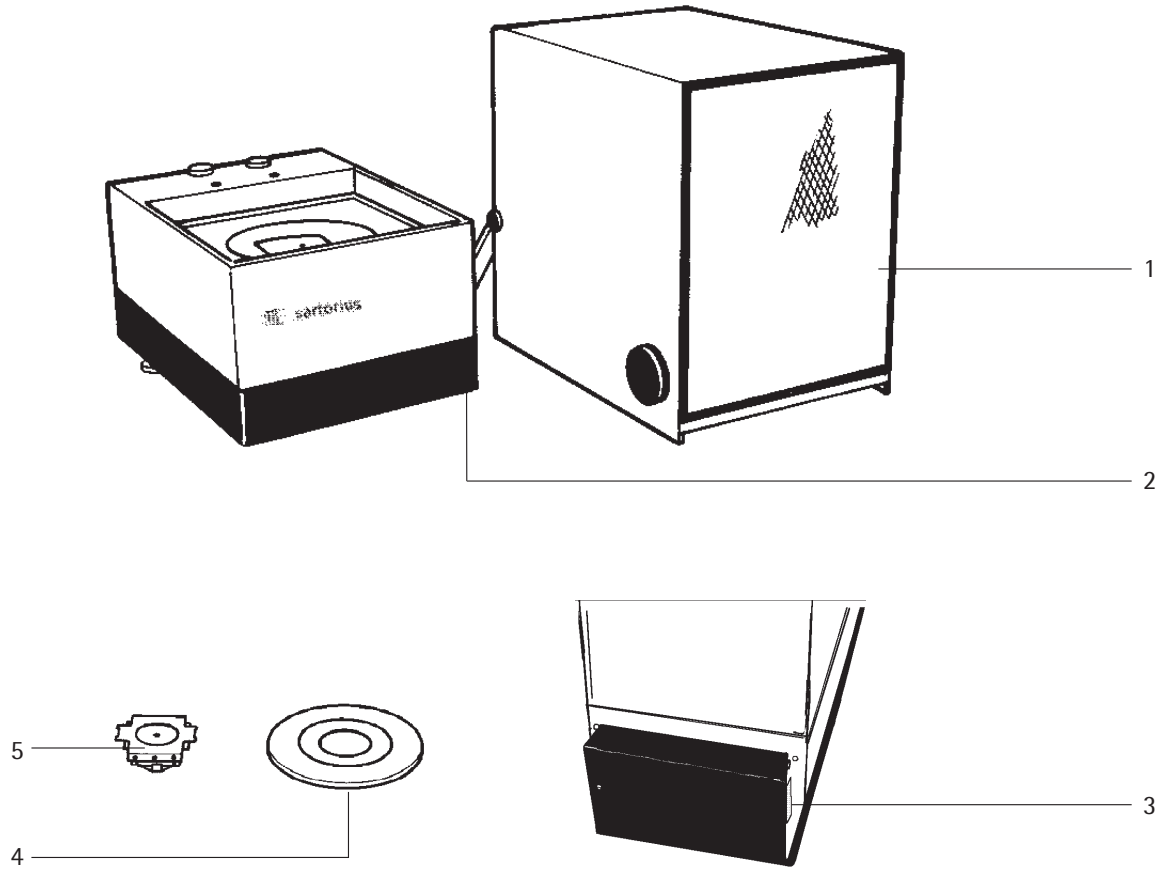


Pos.	Designation
1	Display and control unit
2	Serial communications port (PERIPHERALS)
3	Serial printer port (PRINTER)
4	Menu access switch
5	DC jack
6	Female connector for weigh cell
7	Display
8	Tare key
9	Decimal point key
10	Print key
11	Info key for displaying device information

Pos.	Designation
12	CF key (clear function)
13	Toggle key for changing to the next application program
14	Configuration
15	On/off key
16	Toggle key for alphabetic input
17	Numeric keys
18	Function keys
19	Level indicator
20	Female connector for evaluation unit
21	Leveling foot
22	Weigh cell
23	Weighing pan

General Views of the Mass Comparator Models

CCE10000, CCE10000S, CCE20000

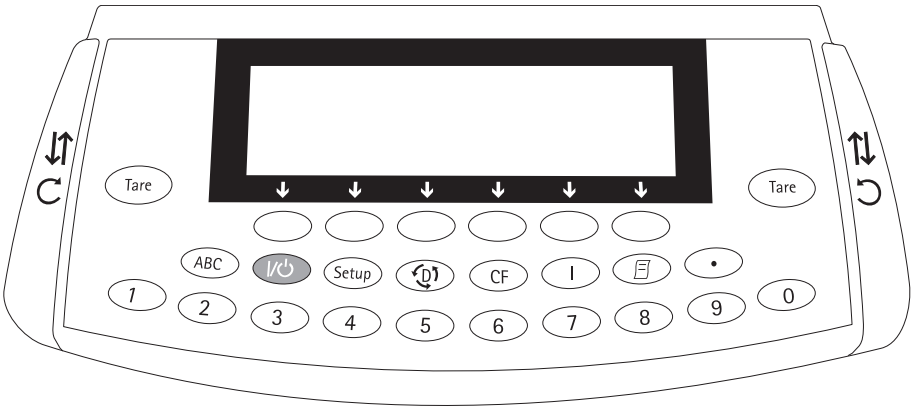


Pos.	Designation
1	Draft shield (hood)
2	Weigh cell
3	Female connector for evaluation unit
4	Weighing pan
5	Centermatic

Operating Design

The mass comparator consists of a weigh cell, draft shield and a display and control unit. In addition to its power supply via the AC adapter, your mass comparator is also equipped with interface ports for connecting peripheral devices such as a printer, computer, universal remote control switch, etc.

The display and control unit is connected to the weigh cell via a cable. Operation of the mass comparator follows a uniform "philosophy" which is described in this manual.



Keys

You can operate your mass comparator either by using the keys on the display and control unit, or from an online PC. This manual describes operation using the mass comparator keys.

Labeled Keys
These keys always have the function indicated by their label, but are not available at all times. Availability of their functions depends on the mass comparator's current operating status and the selected menu.

Meaning

(ABC) Alphabetic keys
Please see the section on "Text Input"

(I/⏻) On/Off key
Turns the mass comparator on and off, or switches it to the standby mode

(Setup) Menu settings
Accesses and exits the Setup menu

(⏻) Toggles to the next application program

(CF) Clear Function
Deletes keypad input
Interrupts a calibration and adjustment routine in progress.
Exits application programs

(I) Displays device information

(🖹) Print key
Outputs displayed values or data records to the serial communications and / or printer port

(·) Enters a decimal point

(1) ... (9) (0) Numeric input
Please refer to the paragraph on "Numeric Input"

(Tare) Tares the mass comparator

⇵, ⟃, ⟄ Opens / closes the draft shield

Numeric Input
To enter numbers:
Press (1) ... (9) (0) (·):

To store numbers entered:
Press the corresponding function key (soft key)

To delete either your entire numeric input, or digit by digit: Press the (CF) key

Text Input
- To enter numbers: Please refer to the paragraph on "Numeric Input"
- To enter letters or characters: Press the (ABC) key

> Letters are displayed in the bottom line for selection

- To make a preselection: Press the corresponding soft key
- To select the letter/character shown: Press the corresponding soft key

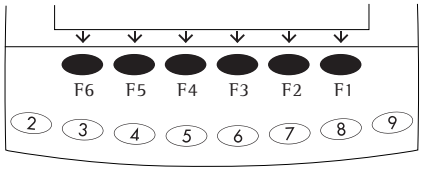
> The selected letter is shown on the display

○ Enter the next letter / character, if desired, as described above

○ To exit the letter input mode (e.g., if the last character entered is a letter): Press the (ABC) key

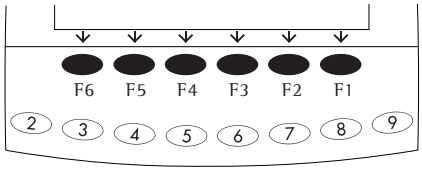
- To store a word: Press the corresponding function key (soft key) (e.g., I D)
- To delete input entirely or character by character: Press the (CF) key
- To delete user data: Enter (·) or a space and store

Function Keys (Soft Keys)
The current soft key function is indicated in the bottom line of the display (footer).



The function keys are numbered from right (F1) to left (F6).

Texts (abbreviations) or symbols are displayed.
Texts (Examples)
`Cal`: Start calibration/adjustment
`S-ID`: Store the ID



Symbols (Examples):
The bottom line may show the following symbols:

`<<` Back to the initial state (in the Setup menu: Exit Setup)

`<` Go to the higher selection level

`>` Show sub-items of the active item

`^` Scroll up in the input/output window

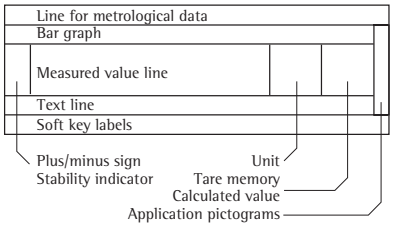
`v` Scroll down in the input/output window

`↵` Set the selected menu parameter

There are two fundamentally different types of displays:
- Display for weights and calculated values
- Display for menu parameters (Setup)

Operation

Display for Weights
This display is divided into 9 sections.



Line for Metrological Data:
The following metrological specifications of the mass comparator are shown here:

`Max` Maximum capacity (upper weighing range limit)

`Min` Minimum capacity (lower weighing range limit)

`d` Readability/Scale interval

Bar Graph:
The bar graph indicates the percent of the weighing range capacity already “used up” by the current load.

The following symbols may be displayed:

`0%` Lower load limit

`100%` Upper load limit

Bar graph showing 10% intervals

Plus / Minus Sign, Stability Symbol:
A plus or minus sign is shown here (**+** or **−**) for the weight value.

Line for Measured Values:
This area shows the weighed or calculated value and the alphanumeric input.

Unit and Stability:
When the mass comparator reaches stability, the weight unit is displayed here.

Pictograms:
The pictograms displayed here indicate the application(s) selected. The activated application is inversely displayed.

The following symbols, for example, may be displayed simultaneously:

Activated application:
"Mass Comparison"

Additional selections:

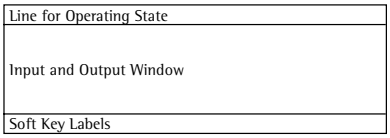
Print

Data record

Text Line:
Additional information is displayed in the text line (e.g., operator guidance prompts, name of the activated program, etc.)

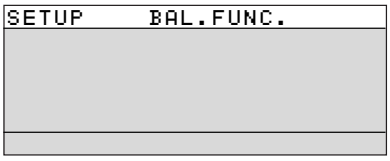
Soft Key Labels:
In this line, the abbreviated descriptions for the arrow keys (soft keys) are indicated and during calibration/adjustment the ^ and v symbols for selecting calibration/adjustment functions are displayed.

Display for Menu Parameter Settings (Setup)
This display is divided into three sections.



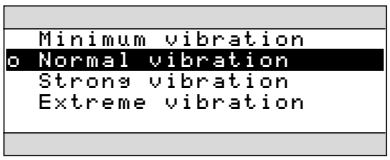
Status Line:
The status line shows the function of the display screen page. In the Setup menu, the "path" to the displayed information is shown on this line.

Example for Setup, Weighing Parameters:



Input and Output Window
This window contains either detailed information (e.g., on the active application) or a selection list. Selected items are displayed inversely (white letters on a black background). You can also enter information in an active field in this window, using the alphabetic and numeric keys.

Example for Setup, Weighing Parameters, Adapt Filter:



The following symbol can also appear in the input/output window:

This symbol marks the stored setting

Soft Key Labels:
See the description "Function Keys (Soft Keys)" on the previous page.

Configure Parameters:

- Press ^ or v soft keys repeatedly, if necessary, until the desired setting is selected (displayed inversely)l
- Confirm parameter: Press the ↵ soft key

To exit setup: Press the << soft key

To change the numeric value of a parameter:

- Press the ^ or v soft key repeatedly, if necessary, until the desired setting is selected (displayed inversely)l
- Enter new value or character: Press the 0 1 ... 9 . or the ABC key and enter further letters
- To confirm parameter: Press the ↵ soft key

This symbol marks the saved menu setting

To exit setup: Press the << soft key

Input

Foot or Hand Switch Input
You can connect a foot or hand switch to the mass comparator to have this device perform a keypad function (such as CF Tare).

PC Input
You can use a computer to control the mass comparator's functions and the display and control unit via the communications port (see the section "Data Output Functions" in the chapter entitled "Operating the Mass Comparator").

Data Output

The mass comparator provides two interface ports for outputting weight values, calculated values and parameter settings:

- Serial communications port (PERIPHERALS – Serial I/O)
- Serial printer port (PRINTER - Serial Out)

Serial Printer Port
In addition to Sartorius printers (e.g., YDP03-0CE), you can also connect an external checkweighing display to the printer port.

You can configure the data output functions in the Setup menu to meet your various requirements, including ISO/GLP requirements.

ISO: International Organization for Standardization

GLP: Good Laboratory Practice

You can have printouts generated automatically, or by pressing ⎙. Generation can be dependent on the current status (e.g., stability conditions and time parameters).
For a detailed description, see the "Data Output Functions" section in the "Operating the Mass Comparator" chapter.

Serial Communications Port

You can connect a PC, a second display, an external checkweighing display or a printer to this serial communications port.
Request messages are sent via the interface to initiate functions in the weigh cell and in the display and control unit. Some of the functions generate response messages.

For a detailed description, see the "Data Output Functions" section in the "Operating the Mass Comparator" chapter.

Error Codes and Messages
If you press a key that has no function, or which is blocked at a certain point in an application program, this error is indicated as follows:

- A double-beep is sounded as an acoustic signal if the key has no function
- A double beep is sounded and the message "No function" is displayed, if the key function is not available at that time

The response to an operator error is identical in all operating modes. For a detailed explanation of error messages, see the "Error Codes and Messages" chapter.

Storing Settings

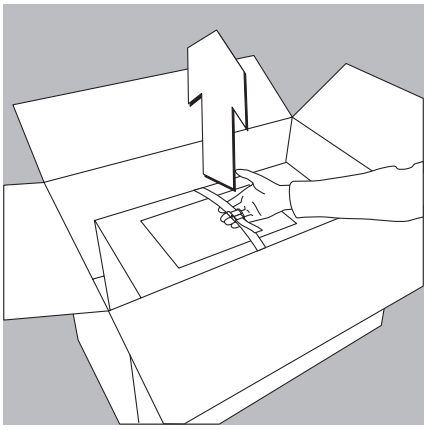
Saving Parameter Settings
The settings configured remain stored in the mass comparator's non-volatile memory. In addition, you can reload the factory settings.

Storing Settings
Under "Setup > Device parameters > Password," you can assign passwords in order to block access to:

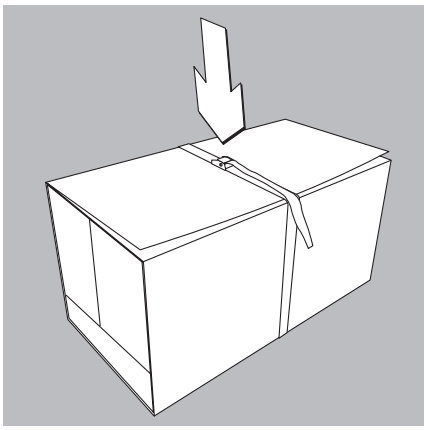
- Weighing parameters
- Device parameters
- Application parameters
- Printout
- Factory settings

Allowable storage temperature: +5 ...+40 °C
The packaging has been designed to ensure that the mass comparator will not be damaged even if it is dropped from a height of 80 cm (approx. 31 inches). Do not expose the mass comparator to extreme temperatures, moisture, shocks, blows or vibration.

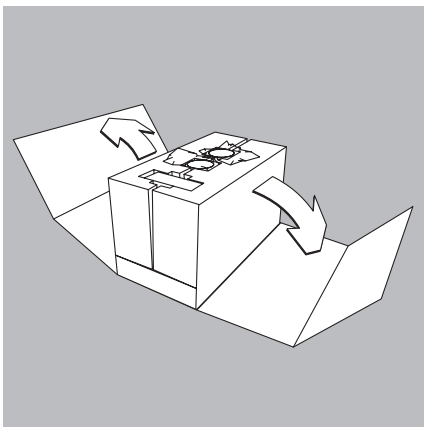
Unpacking the Mass Comparator



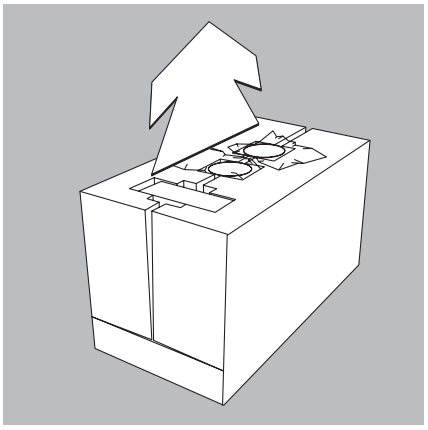
- Lift the inner package containing the mass comparator out of the outer packaging by the strap.



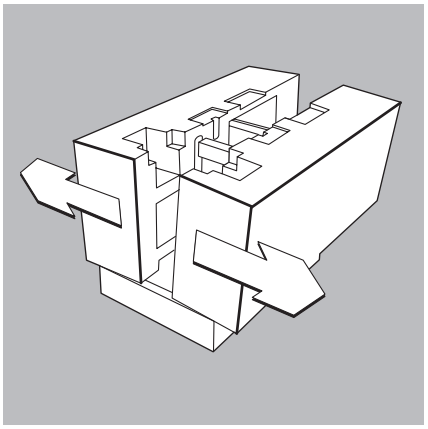
- Loosen and remove the strap.



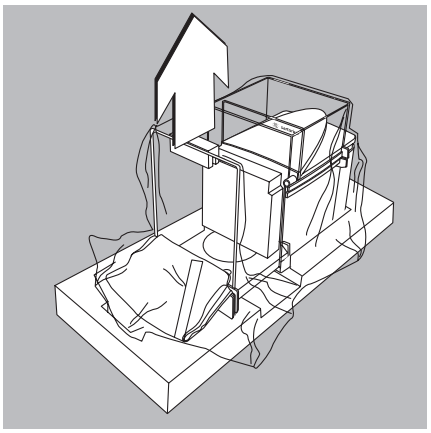
- Remove the cardboard sleeve.



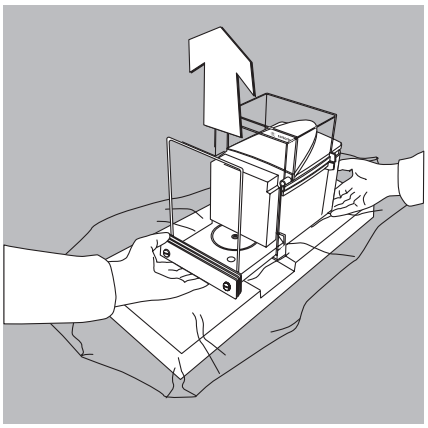
- Remove the following parts from the recessed spaces of the inner packaging:
  - Weighing pan
  - Shield plate



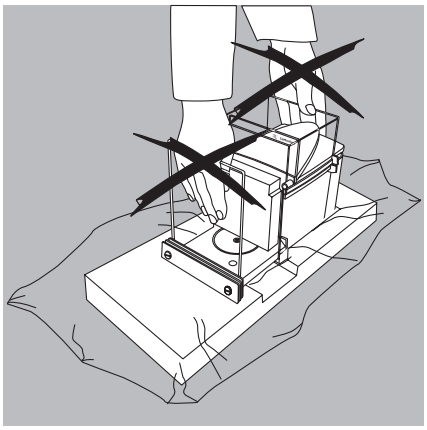
- Remove the two padding blocks that make up the inner packaging by pulling outward.



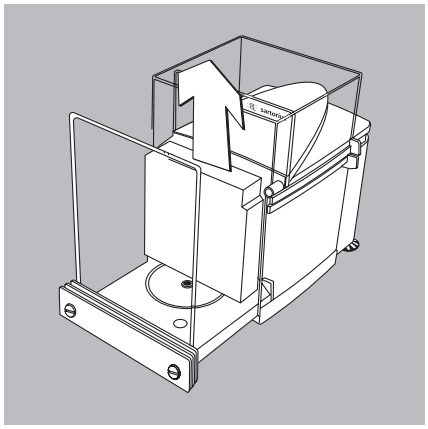
- Remove the retainer securing the front draft shield panel.
- Open the plastic wrapping.



- Place one hand under the front panel and the other under the back of the housing and lift the mass comparator out of the lower packaging.



⚠ **Do not lift the mass comparator by the draft shield or the front panel, as this can result in damage.**



- Set up the mass comparator at the place of installation.
- Open the draft shield doors.
- Remove the foam padding from the draft shield.

⚠ Save the box and all parts of the packaging in case it should become necessary to transport the mass comparator over a long distance. Only the original packaging provides the best protection for shipment (see also “Transporting the Mass Comparator” on page 24).
Before packing your mass comparator for shipping, unplug all connected cables to prevent unnecessary damage.

Equipment Supplied
The following individual components are supplied:

CCE36, CCE66, CCE106, CCE111, CCE605, CCE1005, CCE1004, CCE2004, CCE5004, CCE5003
- Weigh cell
- Electronic evaluation unit
- AC adapter with power cord
- Weighing pan with hanger for under-scale weighing (hanger only on models CCE36, CCE66, CCE106, CCE605, CCE1005)
- Shield disk
- Internal draft shield (only for models CCE36, CCE66)
- Dust cover for the weigh cell housing (only with models CCE1004, 2004, 5004, 5003)
- USB interface from July 2011 and later
- Operating manual

Additional equipment with models:
CCE111
- Substitution weight (external) 55 g

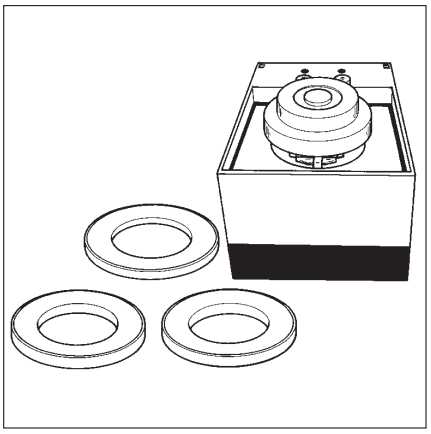
Additional equipment with models:
CCE1004, CCE2004, CCE5004, CCE5003
- Pan support
- Sealing ring
- Overload protection ring

CCE10K3, CCE40K3, CCE60K3, CCE60K2
- Weigh cell
- Electronic evaluation unit
- Operating manual

CCE10000, CCE10000S, CCE20000
- Draft shield (hood)
- Weigh cell
- Electronic evaluation unit
- AC adapter with power cord
- Weighing pan
- Centermatic
- Allen wrench
- System cable
- Operating manual
- Tare weights (4 pcs.) for models CCE10000, CCE10000S or
- Tare weight for model CCE20000
- USB interface from July 2011 and later

CCE6
- Weigh cell
- Draft shield
- Electronic evaluation unit
- Connection cable
- AC adapter with power cord
- USB interface from July 2011 and later
- Accessories kit

The accessories kit includes:
- Weighing pan
- Shield plate
- Internal draft shield
- Brush
- Forceps
- Cloth

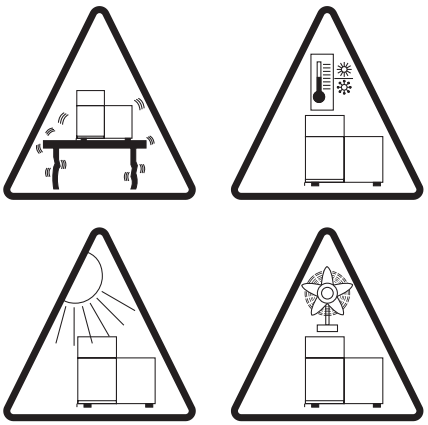


Tare weights
Tare weights for models CCE10000, CCE10000S:

- 1× 1 kg (Ring-shaped)
- 2× 2 kg (Ring-shaped)
- 1× 4 kg

Tare weights for model CCE20000:

- 1× 10 kg (Two-part)

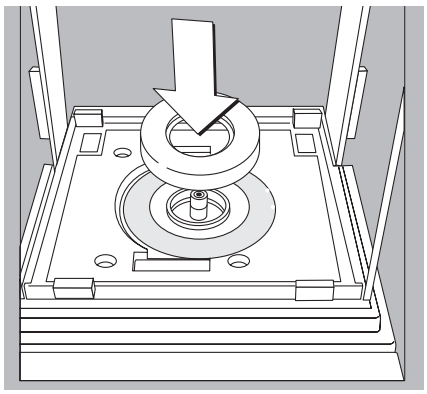


Installation Instructions
The mass comparator is designed to provide reliable weighing results under the ambient conditions normally prevailing in the laboratory and industry. Choose the right location to set up your mass comparator so that you can work with added speed and accuracy:

- Set up the mass comparator on a completely even surface, on a low-vibration table or wall console
- Avoid placing the mass comparator in close proximity to a heater or otherwise exposing it to heat or direct sunlight. This can considerably increase the temperature inside the weighing chamber (greenhouse effect), resulting in incorrect readouts due to convection currents, turbulence and buoyancy effects.
- Protect the mass comparator from drafts (open windows, doors or air-conditioner emissions).
- Avoid brief fluctuations in room temperature.
- Protect the mass comparator from aggressive chemical vapors.
- Do not expose the mass comparator to extreme moisture.

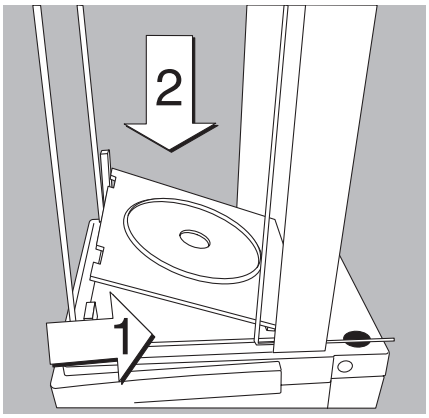
Conditioning the Mass Comparator
Moisture in the air can condense on the surfaces of a cold mass comparator whenever it is brought into a substantially warmer place. After transferring the mass comparator to a warmer area, make sure it is acclimatized for about 2 hours at room temperature (unplugged from power). Afterwards, always keep the mass comparator connected to AC power. The continuous positive temperature differential between the inside of the mass comparator and the ambient environment will practically prevent moisture condensation.

CCE1004, CCE2004, CCE5004, CCE5003:

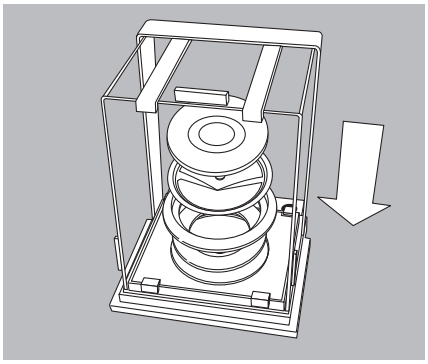


Setting up Mass Comparator Models CCE1004, CCE2004, CCE5004, CCE5003

- Open the weighing chamber doors.
- Insert the sealing ring.

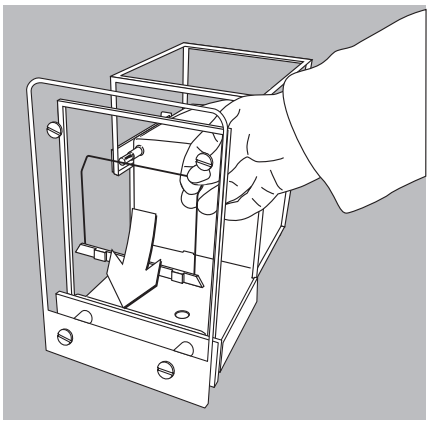


● Place the base plate inside the weighing chamber.



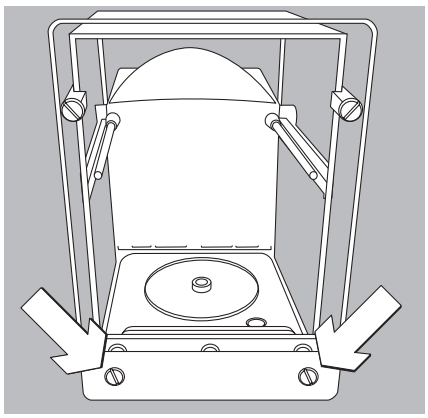
● Place the components listed below inside the weighing chamber in the order given:
– Overload protection ring
– Shield disk
– Turn the pan support until it clicks into place
– Place the weighing pan on the pan support

CCE36, CCE66, CCE605, CCE1005:

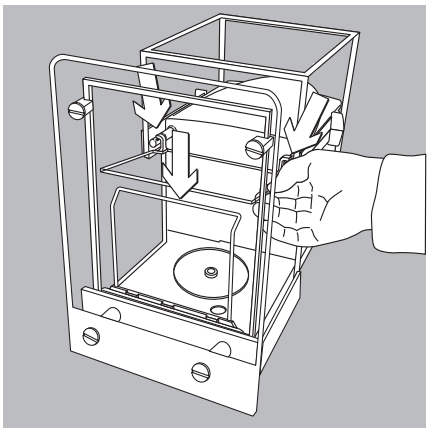


Installing Mass Comparator Models CCE36, CCE66, CCE106, CCE605, CCE1005:

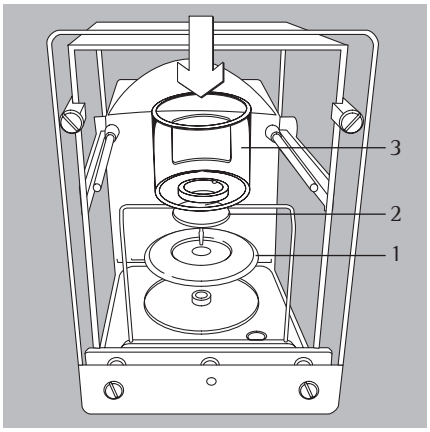
● Position the bracket directly behind the front panel.



● Attach the second front panel: Connect to the 2 plastic retainers on the front panel of the draft shield and fasten it with the 2 screws provided.

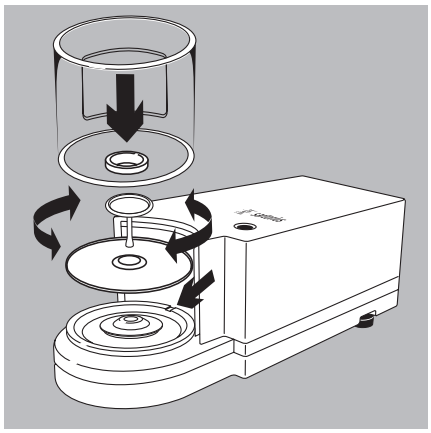


● Position the glass panel in the retainers and place it at the back of the draft shield



● Place the components listed below inside the weighing chamber in the order given:
– 1) Shield plate
– 2) Weighing pan
– 3) On models CCE36, CCE66: Internal draft shield

CCE6:



Setting up Mass Comparator Model CCE6

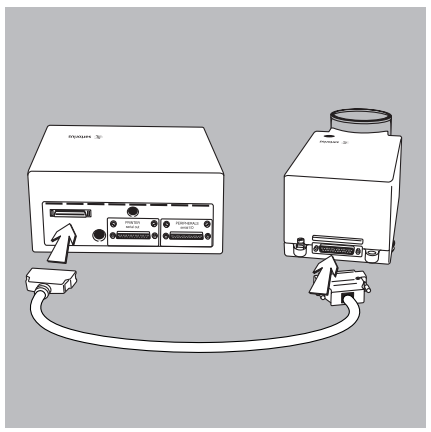
● Place the components listed below inside the weigh cell in the order given:

– Shield plate

– Weighing pan
Note: After inserting it, turn the weighing pan slightly to the left and right, while pressing down lightly on it.

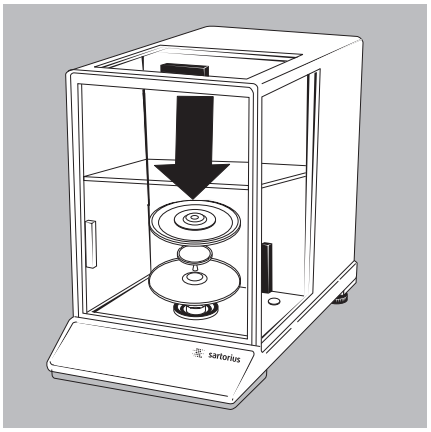
– Internal draft shield

– Draft shield: Center the hole over the pan (see arrows)



● **Connecting the Weigh Cell to the Evaluation Unit**
– Use a screwdriver to tighten the screws to the female connector on the weigh cell

CCE111



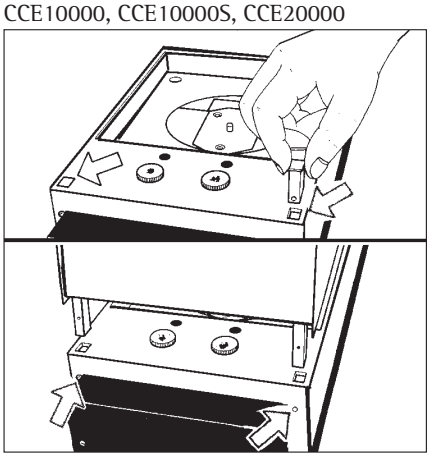
Installing Mass Comparator Model CCE111

- Place the components listed below inside the weighing chamber in the order given:
- 1) Shield plate
- 2) Weighing pan
- 3) Internal draft shield

- **Connecting a Data Cable to Weigh Cell with Evaluation Unit**

- Use a screwdriver to tighten the screws to the female connector on the weigh cell

CCE10000, CCE10000S, CCE20000



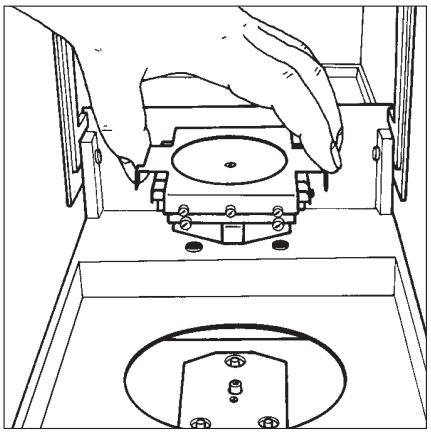
Installing Mass Comparator Models CCE10000, CCE10000S and CCE20000

- Unscrew the screws on the back panel of the mass comparator.

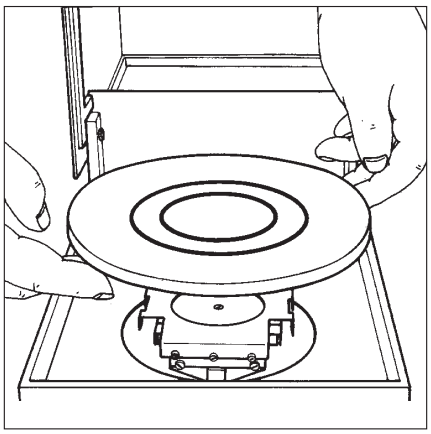
- Remove and save the square plugs.

- Attach the hood.

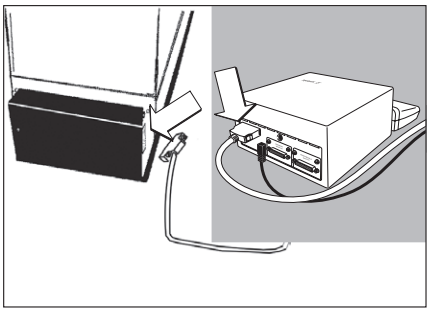
- Screw back in the screws on the back panel of the mass comparator.
  Fasten on the hood.



- Place Centermatic on the pins of the pan support.
  Observe the three-point bearings!

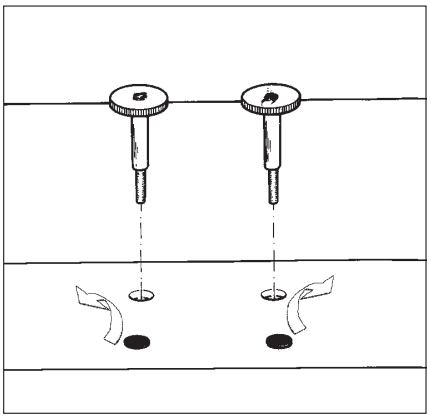


- Place the weighing pan in the center.
  The weighing pan should not touch the frame!



● **Connecting the Weigh Cell to the Evaluation Unit**

– Use a screwdriver to tighten the screws to the female connector on the weigh cell



Transport Lock on Models CCE10000, CCE10000S and CCE20000

The weighing system is locked on models CCE10000, CCE10000S and CCE20000.

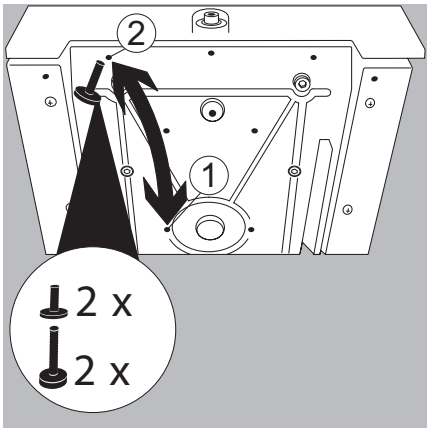
● Remove the black protective covers from the front.

● Use the Allen wrench to unscrew the back transport locking device screws

● Place the transport locking device screws in the front holes.

● Close the holes in the back with the black protective covers.

⚠ **Before ever transporting the mass comparator, secure the system with the transport lock!**



Transport Lock on Model CCE605/CCE1005

The weighing system is locked.

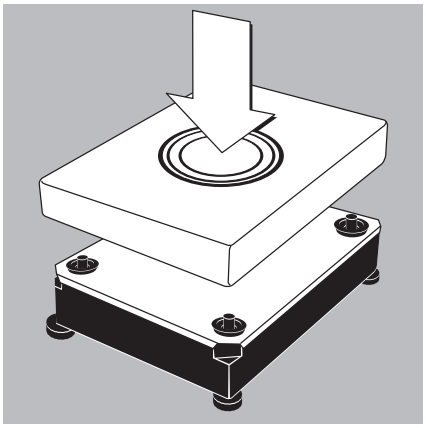
● Unscrew the short screws that secure the system (Step 1).

● Unscrew the long screws in the back as well (Step 2).

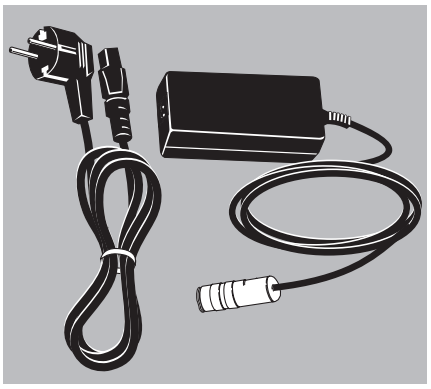
● Now exchange the screws and retighten.

⚠ **Before ever transporting the mass comparator, secure the system with the transport lock!**

○ To select substitution weights: See the chapter on “Operating the Mass Comparator,” section “Motorized Substitution Weights.



● **Place the weighing pan on model CCE10K3, CCE40K3, CCE60K3, CCE60K2**



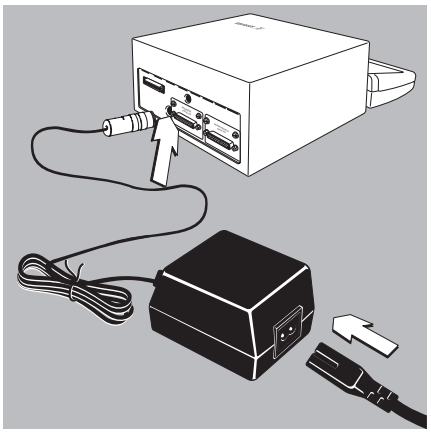
Connecting the Mass Comparator to AC Power
The wide-range AC adapter is designed for supply voltages of 100 V to 240 V.

- Check the plug design of the power cord.
– If it does not fit your wall outlet (mains supply), please contact your Sartorius office or dealer.

Use only
– Original Sartorius AC adapters and power cords

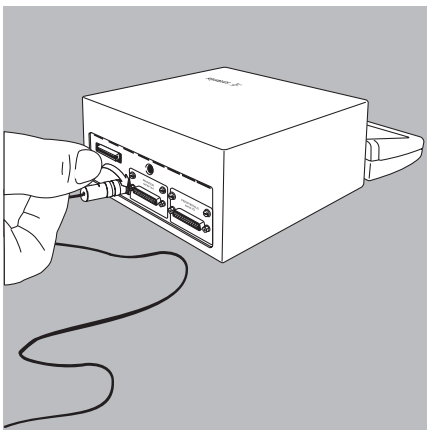
– AC adapters with approved by specialist technicians

○ If you use a main feeder cable from the ceiling or mount a CEE plug, have a certified electrician carry out installation.



- Plug the power cord into the AC adapter..

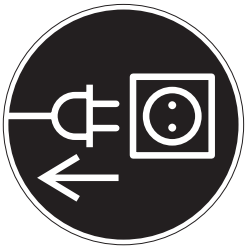
- Plug the DC supply cable into the socket on the scale.



- Secure the DC supply cable connector by tightening the screws.

- Connect the mass comparator to mains power:
Plug the AC adapter into the mains outlet.

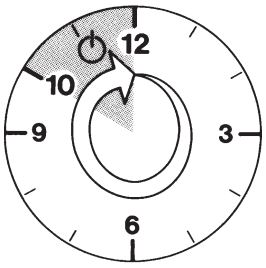
Rechargeable Battery for Saving Data:
All data is saved in the battery-backed memory. When initially operating the mass comparator, leave it connected to AC power for one day to charge the battery. When the comparator is disconnected from AC power, the data generated will remain stored for approximately three months. In the standby mode, data is retained in the memory via the power supply.
Be sure to print out data before storing your mass comparator for longer periods!



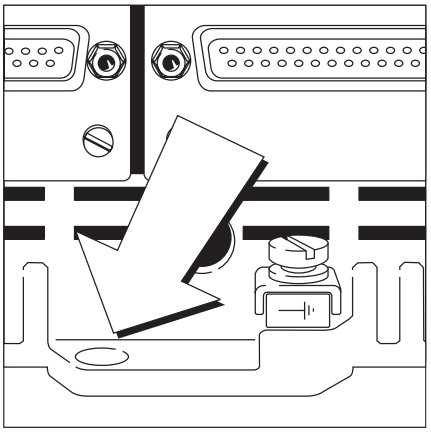
Safety Precautions
The Class 2-rated AC adapter can be plugged into any wall outlet without any additional precautions. A ground or earth terminal is connected to the housing. The housing can be additionally grounded, if required for certain functions.
The data interface is also electrically connected to the housing (mass).

Connecting Electronic Peripheral Devices

- Make absolutely sure to unplug the mass comparator from AC power before you connect or disconnect a peripheral device (printer, PC) to or from an interface port.



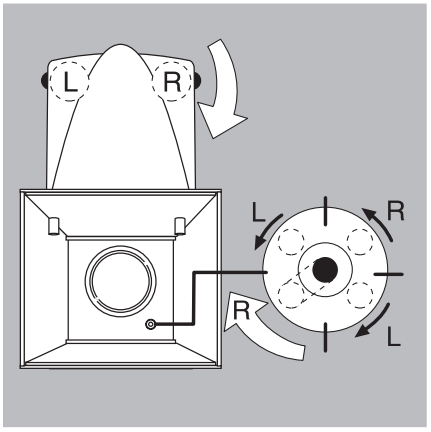
Warm-up Time
Whenever you move your mass comparator to another location, you must acclimatize it for at least 12 hours at the new location. To deliver exact results, the mass comparator must warm up for at least 12 hours after initial connection to AC power. Only after this time will the mass comparator have reached the required operating temperature.



Antitheft Locking Device
To fasten an antitheft locking device, use the lug located on the rear panel of the mass comparator.

- Secure the mass comparator at the place of location, e.g., with a chain or a lock.

CCE6, CCE36, CCE66, CCE106, CCE605, CCE1005:



Leveling the Mass Comparator
Purpose:

- To compensate for unevenness at the place of installation
- To achieve perfectly horizontal positioning of the mass comparator for consistent repeatability of the weighing results

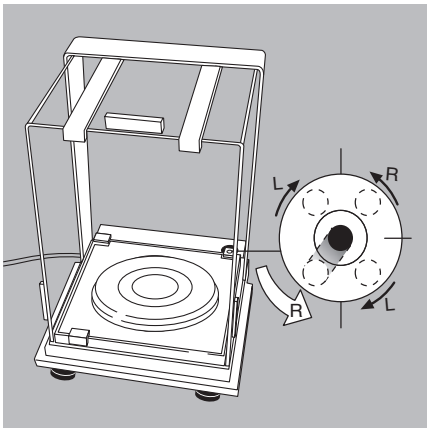
Always level the mass comparator again, any time it has been moved.

Only the two back feet are used for leveling.

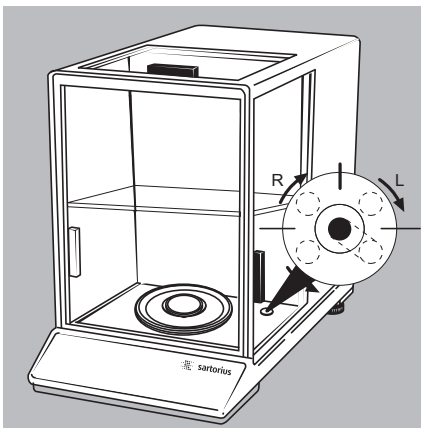
- Turn the leveling feet as shown in the diagram until the air bubble is centered within the circle of the level indicator.

> Several leveling steps are usually required.

CCE1004, CCE2004, CCE5004, CCE5003:



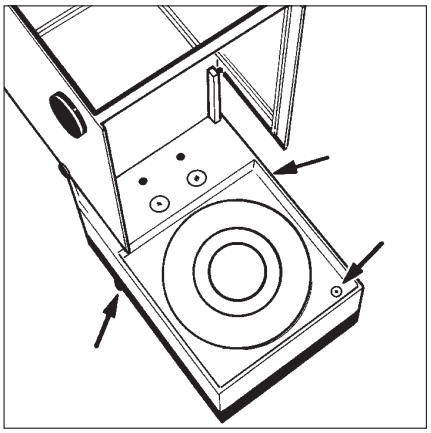
CCE111:



- Turn the leveling feet as shown in the diagram until the air bubble is centered within the circle of the level indicator.

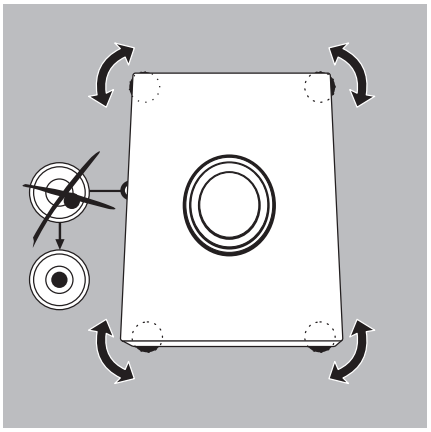
> Several leveling steps are usually required.

CCE10000, CCE20000:



Leveling Models CCE10000, CCE10000S, CCE20000:

CCE10K3, CCE40K3, CCE60K3, CCE60K2:



- Adjust the 4 leveling feet until the air bubble is centered within the circle of the level indicator.

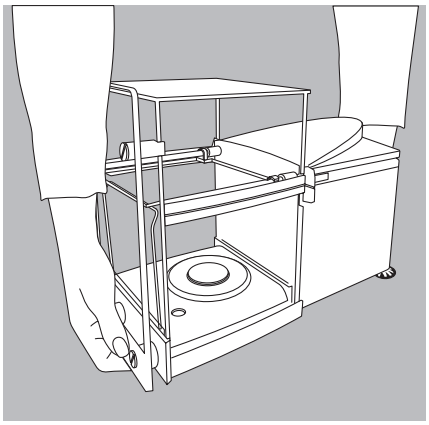
Setting the Language

> See the chapter on “Configuring the Mass Comparator,” section “Setting the Language”

Setting the Time and Date

> In the chapter on “Configuring the Mass Comparator,” see the example on page 28.

Transporting the Mass Comparator



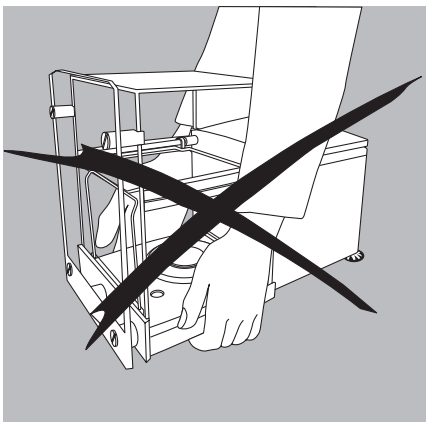
○ Always disconnect the mass comparator from the power first! Disconnect the AC adapter and all interface cables from the mass comparator.

Transport over Short Distances

Models: CCE6, CCE36, CCE66, CCE106, CCE605, CCE1004, CCE2004, CCE5003, CCE5004, CCE10K3, CCE40K3, CCE60K2:

● To lift the mass comparator or control unit, place one hand under the front display unit and one under the back housing.
Lift the mass comparator carefully and carry it to its new location.

○ Avoid shocks and vibrations!



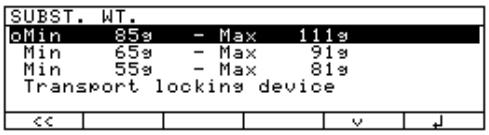
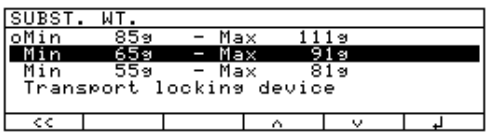
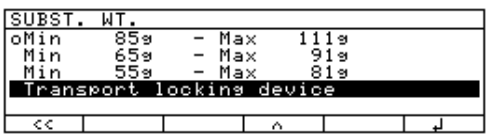
⚠ **Do not lift the mass comparator by the draft shield or the front panel, as this can result in damage. Wear safety shoes!**

Models from CCE10K3 and higher should be carried by 2 people!

Transporting Mass Comparator Model CCE111

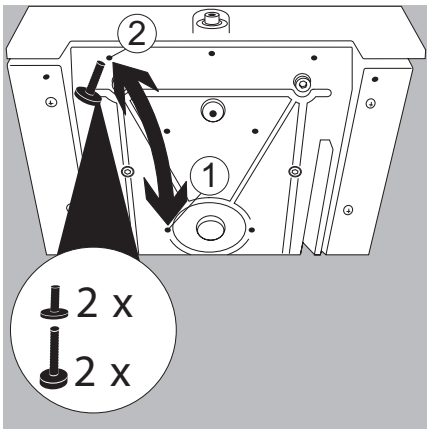
Before transporting the mass comparator, you must first lock the internal substitution weights.
For activating the substitution weights, See the chapter on “Operating the Mass Comparator,” the section “Selecting the Electronic Weighing Range (Model CCE111)”.

Securing Motorized Substitution Weights for Transport:

Step	Press key (or action)	Display/Printout
1. View substitution weights	SubWt soft key	
2. Select transport lock	Repeatedly press the ˅ soft key	
3. Confirm transport lock	↲ soft key	
4. Exit motorized substitution weights Set your local clock	<< soft key	

> Now, you can move your mass comparator to a new location.

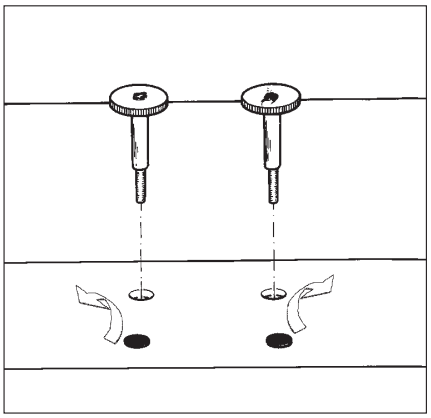
Transporting the Mass Comparator



Transport Lock on Model CCE605/CCE1005

The weighing system is not locked.

- Unscrew the short screws (Step 1).
- Unscrew the long screws as well (Step 2).
- Now exchange the screws and retighten.
- ○ The system is now locked.



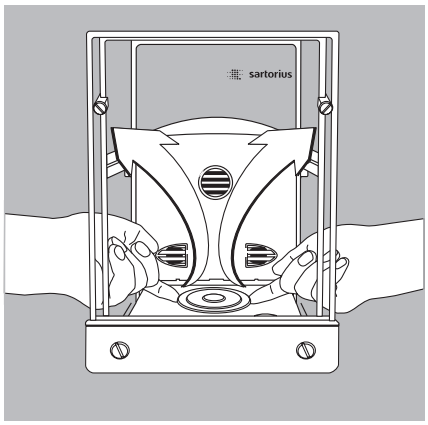
Transport Lock on Models CCE10000, CCE10000S and CCE20000

The weighing system is not locked on models CCE10000, CCE10000S and CCE20000.

- Remove the protective covers on the back.
- Remove the transport locking device screws from the front holes.
- Screw the transport locking device screws in the back holes.
- Close the holes in the front with the protective covers.
- ○ The system is now locked.

⚠ **Before ever transporting the mass comparator, secure the system with the transport lock!**

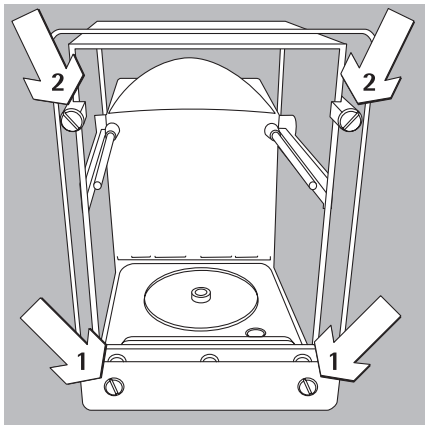
Transporting the Mass Comparator



Transport or Shipping Over Long Distances

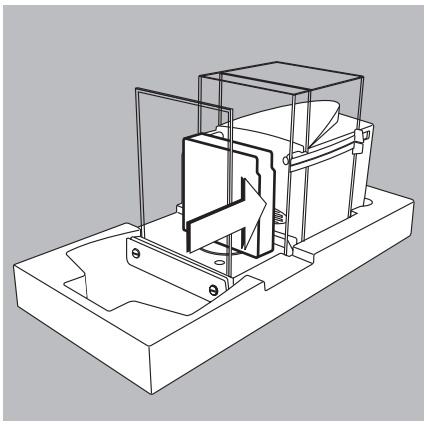
Always use the complete original packaging:
- For transporting or shipping the mass comparator over long distances.
- If it is not certain that the mass comparator will remain upright during transport or shipping.

● Remove the following parts:
On models CCE36, CCE66: Internal draft shield
- Shield disk
- Weighing pan and shield plate:
Reach beneath the shield plate and lift it up carefully together with the weighing pan to avoid damaging the weighing system.

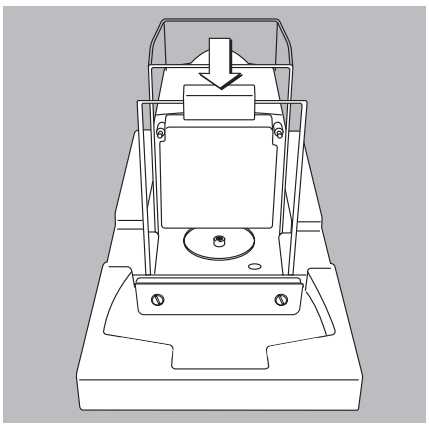


● 2. Remove the front panel as follows:
1) Remove the 2 screws at the bottom
2) Loosen the 2 screws at the top

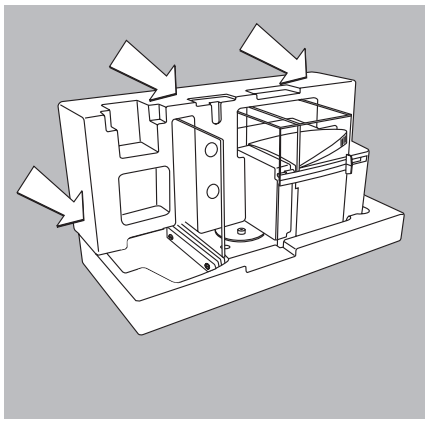
Transporting the Mass Comparator



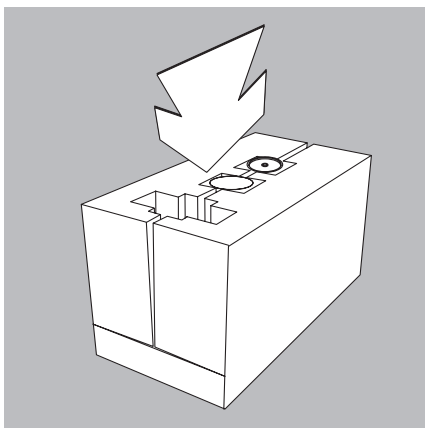
- Open the draft shield doors and carefully position the mass comparator in the lower packaging foam.
- Press the inner foam padding against the housing.



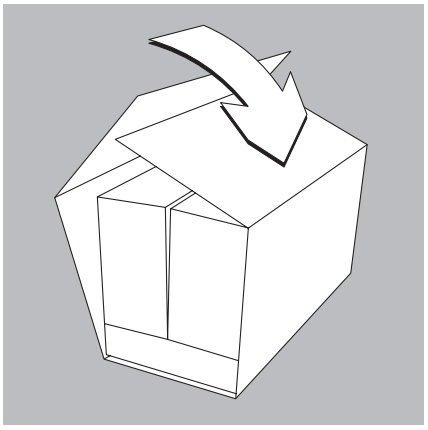
- Attach the retainers to the panel.
- Place the shield disk in a bag.



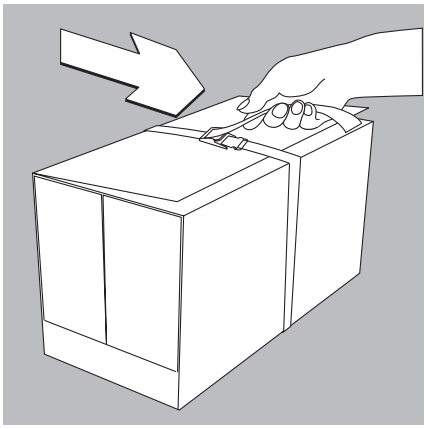
- Position the lateral padding blocks around the mass comparator and press inward.



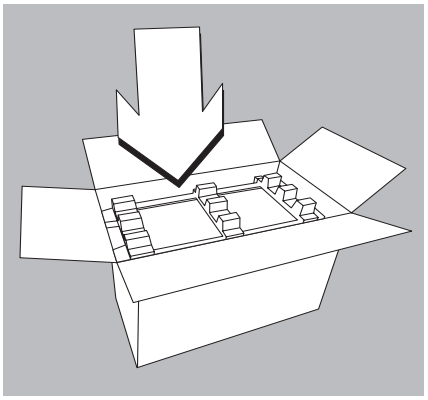
- Place the following parts in the recessed spaces:
  - Shield plate
  - Weighing pan



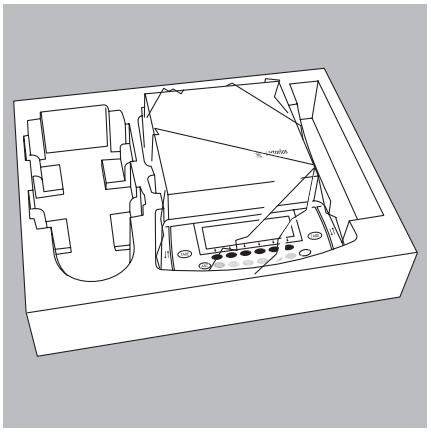
- Wrap the cardboard sleeve around the inner packaging.



- Place the holding strap around the cardboard sleeve and pull it tight.
- Lift the packaged mass comparator by the strap and place it in the bottommost padding in the shipping box.

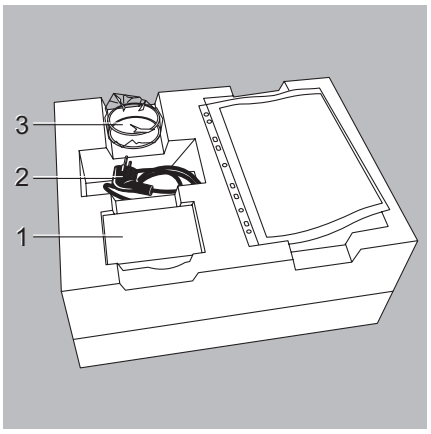


- Place the upper padding on top.
- Close the outer shipping box and seal it appropriately.

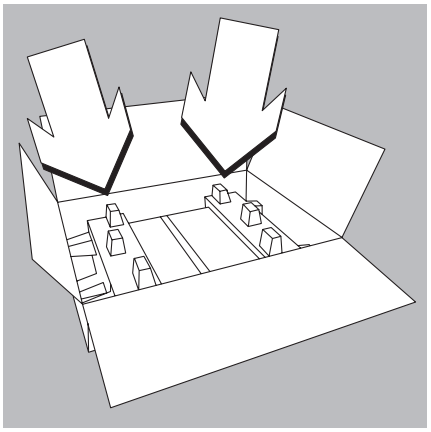


Second box:

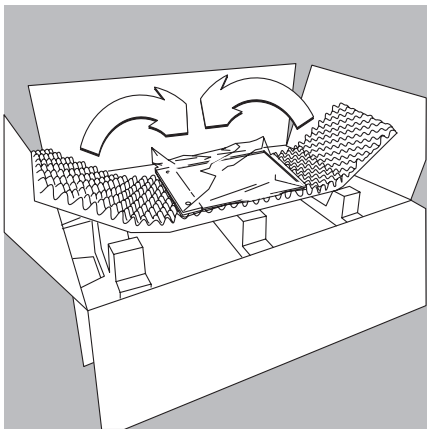
- Place the display and control unit in the lower padding block.
- Place the upper padding block on top.



- Place the following parts in the recessed spaces:
  - AC adapter (1)
  - Power cord (2)
  - For models CCE36, CCE66 only: internal draft shield



- Wrap the cardboard sleeve around the inner packaging.
- Place the holding strap around the cardboard sleeve and pull it tight.
- Lift the packaged display and control unit by the strap and place it in the bottommost padding in the shipping box.
- Place the two upper padding blocks on top.



- Wrap the foam rubber padding around the front glass panel.
- Close the outer shipping box and seal it appropriately.

Configuring the Mass Comparator

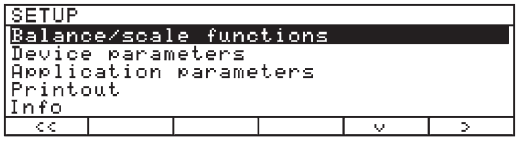
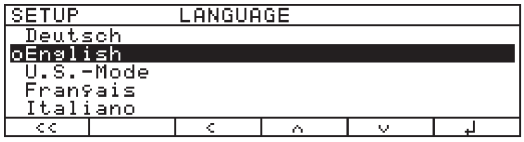
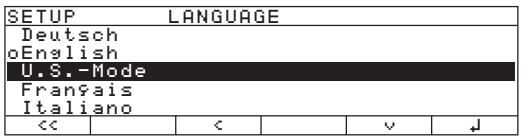
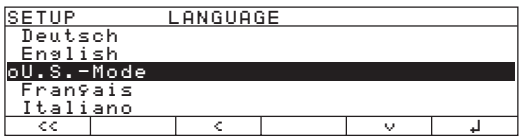
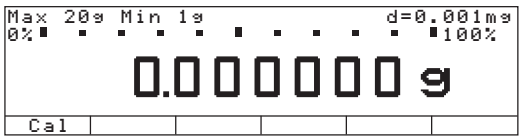
Purpose
In the Setup menu, you can configure your mass comparator to meet your individual requirements. User data can be entered and pre-set parameters selected from a menu.

The Setup menu is divided up into:
- Weighing parameters
- Device parameters
- Application parameters
- Printout
- Device information
- Language
- Factory settings

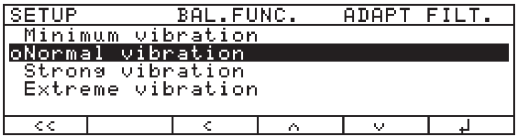
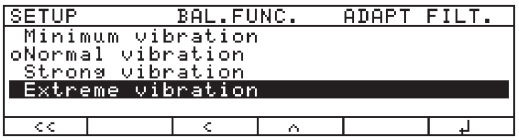
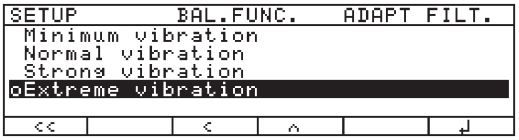
Setting the Language
You can choose from 5 languages for displaying information:

- German
- English (factory setting)
- English with U.S. date/time
- French
- Italian
- Spanish

Example: Selecting “German" as the language

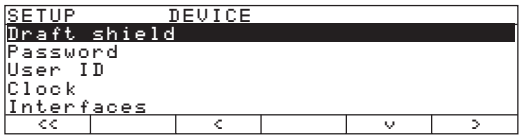
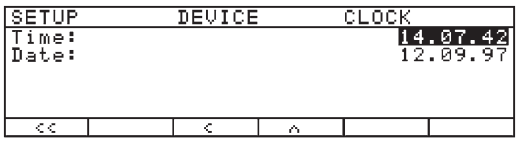
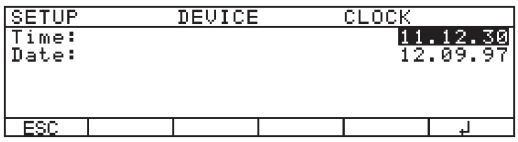
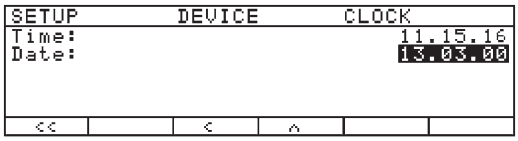
Step	Press key (or action)	Display/Printout
1. Select Setup menu:	Setup	
2. Select “Language” and confirm and then the	Repeatedly press the v, > soft key	
3. Selecting “German” as the language	^soft key	
4. Save language	↵ soft key	
5. Exit the Setup menu	<< soft key	

Navigating in the Setup Menu (Examples):
Example: Select the “Extreme vibration” setting to adapt the mass comparator to the place of installation.

Step	Press key (or action)	Display/Printout
1. Select Setup menu:	(Setup)	
2. Confirm weighing parameters	> soft key	
3. Select menu item “Adapt filter” and confirm	v soft key, then >	
4. Select menu item “Extreme vibration”	v soft key	
5. Confirm the menu item “Extreme vibration”	↵ soft key	
6. If required, select further menu items	v ^ soft keys	
7. Save settings and exit menu	<< soft key	

Exiting the Setup Menu
Use the soft key <<:
- To restart the software after changing the settings.
- The software will not be restarted if you have kept the same settings.
  In this case, the program will return to the status active before you pressed the (Setup) key.
  Use the (Setup) key:
- To exit Setup in general and restart the software.

Example: Setting the Time and Date

Step	Press key (or action)	Display/Printout
1. Select Setup menu: Select Device Parameters	Press (Setup), then ˅ and the ˃ soft key	
2. Select the clock	Repeatedly press ˅ and ˃ soft keys	
3. Enter the time	1 1 · 1 2 · 3 0	
4. Set the time according to your local clock	↵ soft key	
5. Enter the date	1 3 · 0 3 · 0 5	
6. Store the date	↵ soft key	
7. Enter other data, if desired	Use the ˅ ˄ soft keys	
8. Exit the Setup menu	<< soft key	

Setting the Weighing Parameters (WEIGH. PARAM.)

Purpose
This menu item enables you to configure the weighing parameters on the mass comparator, i.e., to meet individual requirements by selecting predefined parameters in a menu. You can block access to this menu by assigning passwords.

Features
The weighing parameters are combined into the following groups (menu level 1):

- Calibration/adjustment
- Adapt filter
- Application filter
- Stability range
- Taring
- Auto zero
- Weight unit 1
- Display accuracy 1
- Tare/zero with power on
- Factory settings:
  Weighing parameters, only

Factory Settings
Parameters: The factory settings are identified by the symbol “o” in the list starting on page 32.

Preparation
Display available weighing parameters:

● Select the Setup menu:
Press (Setup)

> SETUP is displayed

● Select “Weighing Parameters”:
Press the > soft key

If a password has already been entered:

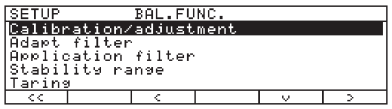
> The password prompt is displayed.

○ If access is password-protected:
Enter the password using the numeric / alphabetic keys

○ If the last character of the password is a letter: End alphabetic input by pressing (ABC)

● Confirm your password and have the weighing parameters displayed:
Press the ↵ soft key

> The weighing parameters are displayed:



○ To select the next group:
Press the v soft key (scroll down)

○ To select the previous item in a group:
Press the ^ soft key (scroll up)

○ To select the next sub-item within a group:
Press the > soft key (scroll to the right)

○ To select the previous group:
Press the > soft key (scroll to the left)

○ To confirm the menu item selected:
Press the ↵ soft key

Additional Functions

● To exit the Setup menu:
Press the << soft key
> Restart your application

● Print out parameter setting:
– When the weighing parameters are displayed: Press the (PRINT) key

> Printout (Example)

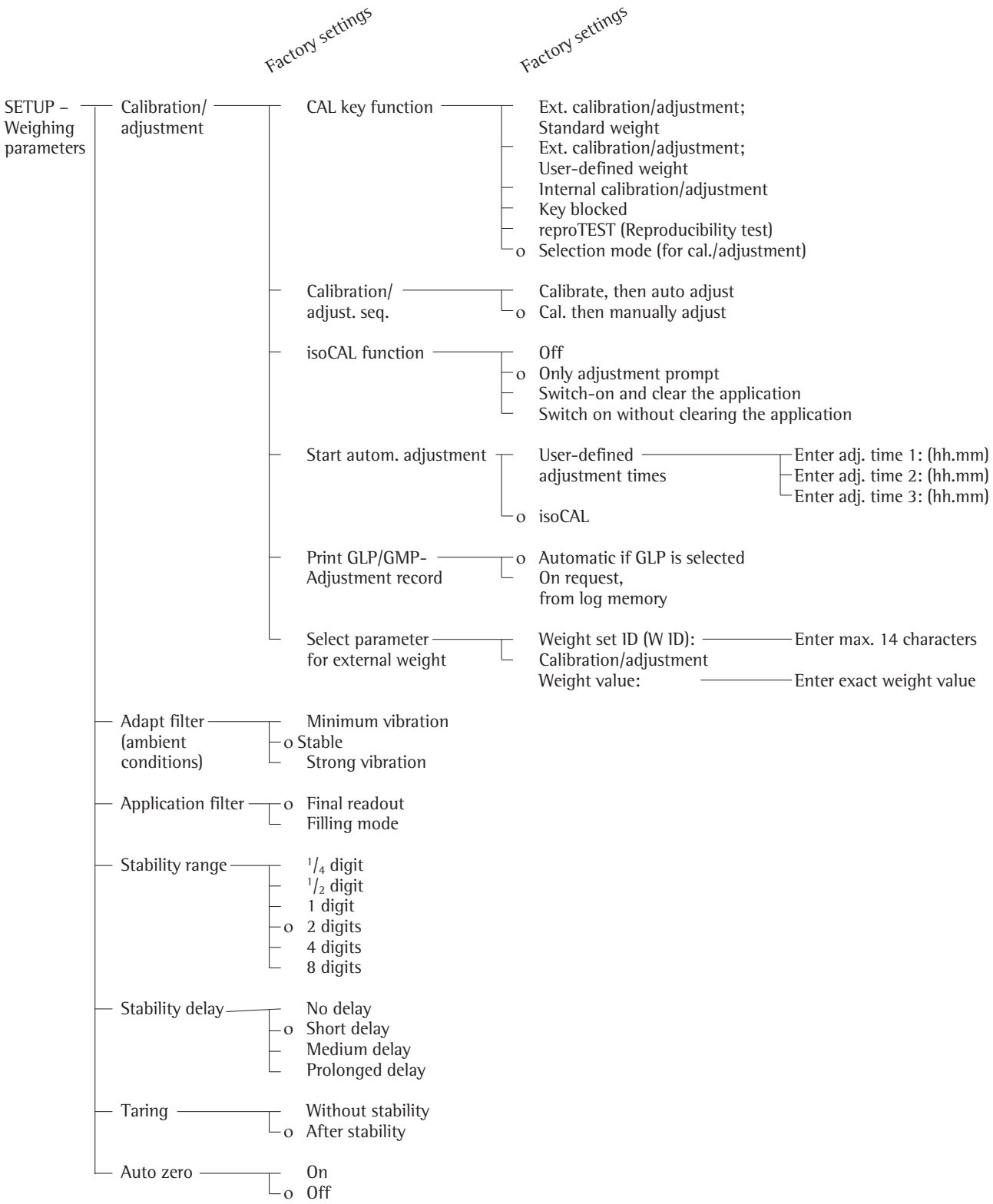
Lines with more than 20 characters are truncated.

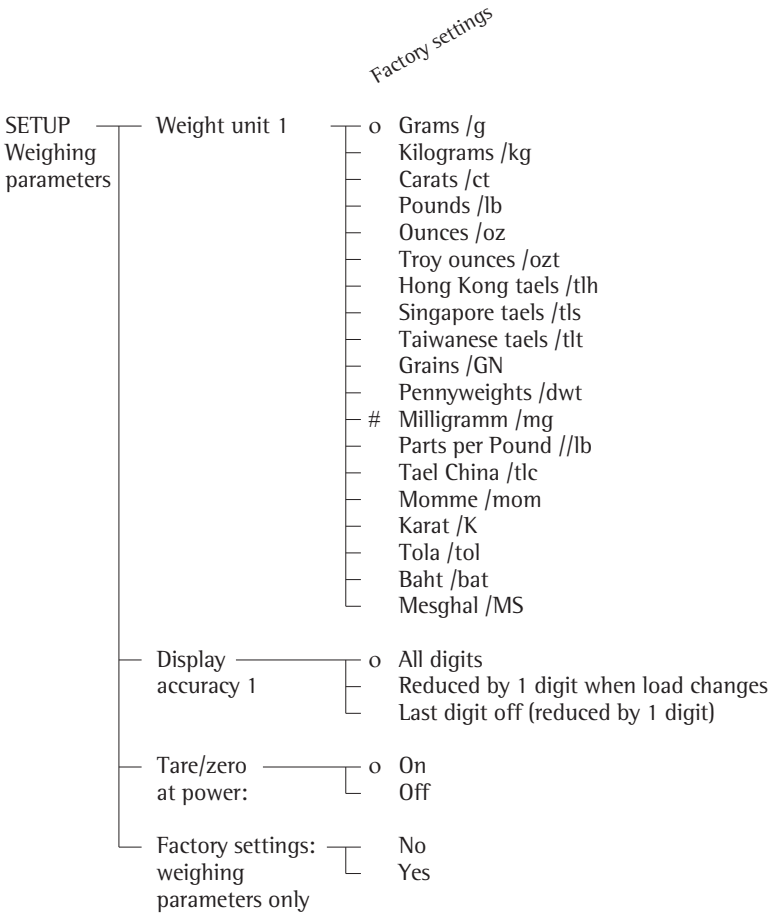
```
SETUP
    WEIGH. PARAM.
--------------------
 Calibration/adjustment
     function CAL key
            Selection
                mode
  Cal./adj. sequence
Cal. with adjust. autom.
  isoCAL function
On without  reset-
ting
 application
   Start autom. adjust
                isoCAL
    Print GLP/GMP adju
Start
automatic if GLP
selected
     Parameter for ext
   Weight set ID (W
ID):

   Cal./adj.wt:
       20.000000 g
 Adapt filter
                Stable
 Application filter
            Eval gen
 Stability range
            2 digits
 Tare
      After stability
 Auto zero
                 Off
 Weight unit 1
            Grams /g
```

etc.

Weighing Parameters (Overview)

o Factory settings
√ User-defined settings





= Factory setting only on Model CCE6

Setting the Device Parameters (DEVICE)

Purpose
This menu item enables you to configure the device, i.e., to meet individual requirements by selecting predefined parameters in a menu. You can block access to this menu by assigning passwords.

Features

The device parameters are combined into the following groups (menu level 1):

- Draft shield
- Password
- User ID
- Clock
- Interfaces
- Display
- Keypad
- Additional functions
- Factory settings: Only for device parameters

Factory Settings
Parameters: Factory settings are identified by the symbol “o” in the list starting on page 36.

Preparation
Display available device parameters

● Select the Setup menu:
Press (Setup)

> SETUP is displayed:

● Select Device Parameters:
Press the v and > soft keys
If no password has been assigned, anyone can access SETUP Device Parameters without a password.

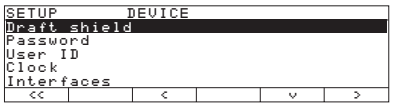
If a password has already been entered:
> The password prompt is displayed

○ If access is password-protected:
Enter the password using the numeric/alphabetic keys

○ If the last character of the password is a letter:
End input by pressing (ABC)

● Confirm password and display device parameters: Press the ↵ soft key

> Device parameters are displayed:



○ To select the next group:
Press the v soft key (scroll down)

○ To select the previous item in a group:
Press the ^ soft key (scroll up)

○ To select the next sub-item within a group:
Press the > soft key (scroll to the right)

○ To select the previous group:
Press the > soft key (scroll to the left)

○ To confirm the menu item selected:
Press the ↵ soft key

Entering or Changing a Password

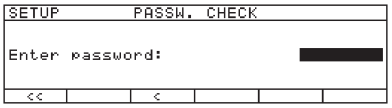
– Assuming a password with 8 characters max. has already been assigned to access the SETUP Device Parameters menu

● Select the Setup menu:
Press (Setup)

> SETUP is displayed

● Select Device Parameters: Press the v and > soft keys

> The password prompt is displayed:



○ Enter password

○ Confirm password and display device parameters: Press the ↵ soft key

● Record the entered password here: Password = ...
If password has been entered but forgotten:

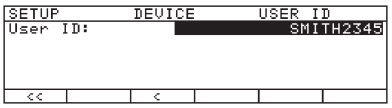
○ Enter general password (see Appendix)

○ Confirm password and display device parameters: Press the ↵ soft key

> Device parameters are displayed

● To set the device parameter ”Select the password function”: repeatedly press the v or ^ and then the > soft keys, until

> Password: is displayed together with the current password if applicable:



● To enter a new password: Enter the numbers and/or letters of the new password (8 characters max.)
Password “empty” means:
No password has been saved
To delete the current user password:
Press (·) or (CF) and confirm

● Confirm input:
Press the ↵ soft key

● Exit Setup menu:
Press the ≤≤ soft key

> Restart your application

Additional Functions

● Exit Setup menu:
Press the ≤≤ soft key

> Restart your application

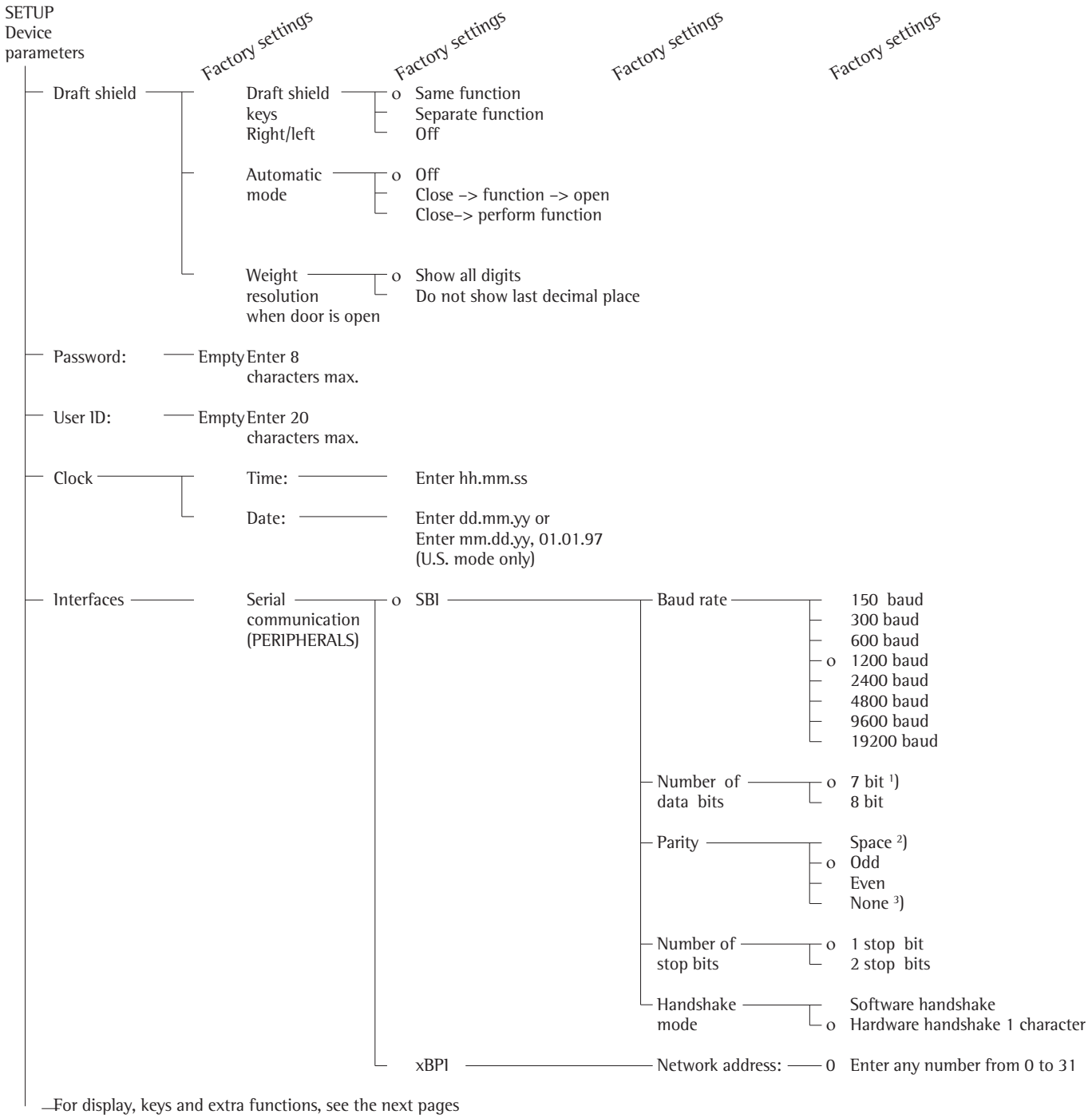
● Print out parameter settings:
– If device parameters are displayed:
Press the (⎙) key

> Printout (example)

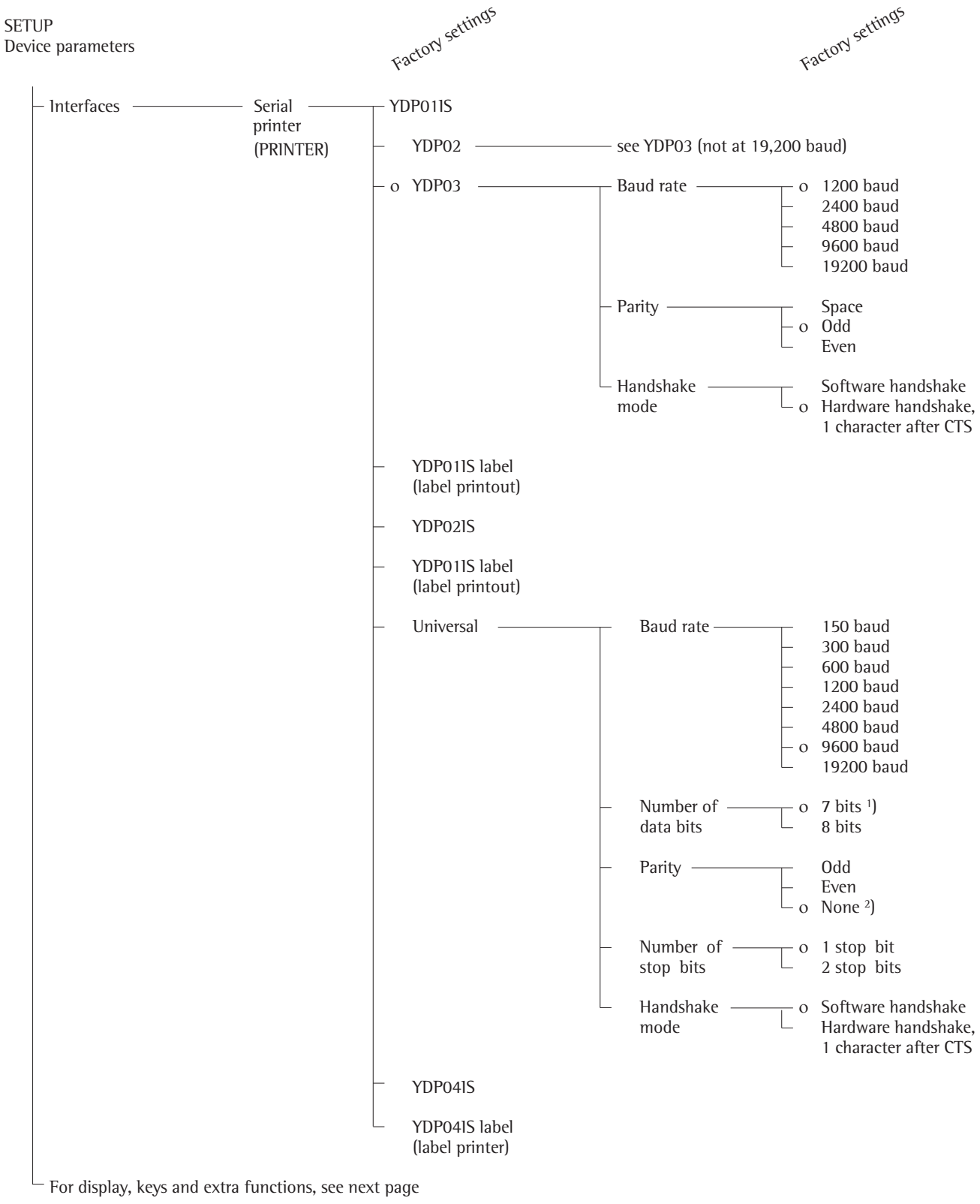
```
SETUP
       DEVICE
--------------------
 Draft shield
   Draft shield keys r
          Same function
  Automatic mode
                    Off
     Weight resolution
 All decimal places On
 User ID
  User ID:

 Interfaces
  Serial communica
   SBI
    Baud rate
              1200 baud
                    Num-
       ber of data bits
                 7 bit
    Parity
                  Odd
                   Num-
       ber of stop bits
            1 stop bit
         Handshake mode
         Hardware hand-
 shake after 1 charac-
                    ter
  Serial Printer
   YDP03
    Baud rate
              1200 baud
    Parity
                    Odd
    Handshake mode
        Hardware hand-
 shake after 1 charac-
                    ter
     External function
          Print button
      Function control
                 Output
 Display
  Contrast
                     2
```

etc.

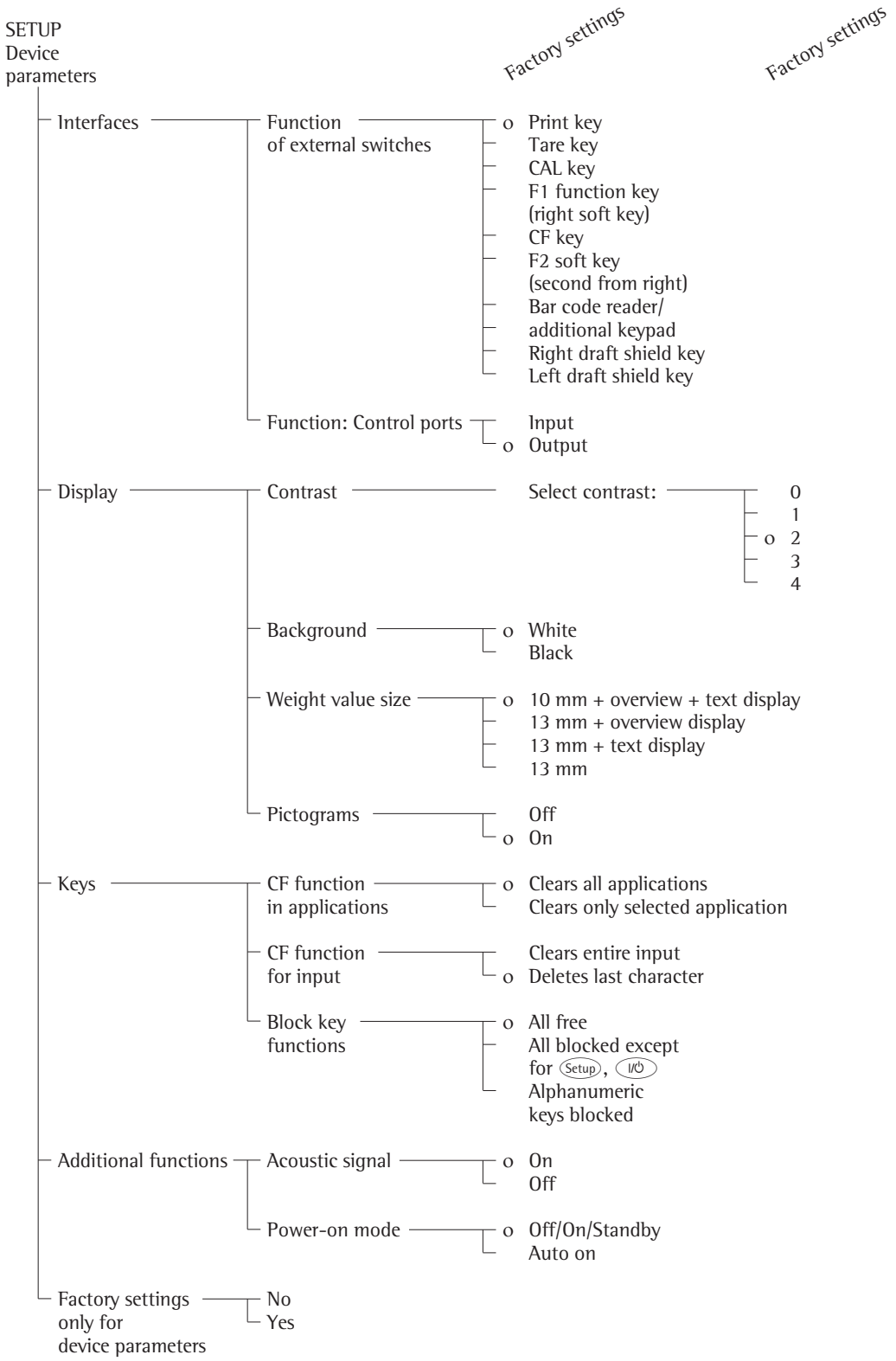
Device Parameters (Overview)
o Factory setting
√ User-defined settings



1) not if “None” parity is selected
2) only 7 data bits selected
3) only 8 data bits selected



1) not if “None” parity is selected
2) only if 8 data bits is selected


SETUP
Device
parameters
Factory settings
Factory settings
Interfaces
Function
of external switches
o Print key
Tare key
CAL key
F1 function key
(right soft key)
CF key
F2 soft key
(second from right)
Bar code reader/
additional keypad
Right draft shield key
Left draft shield key
Function: Control ports
Input
o Output
Display
Contrast
Select contrast:
0
1
o 2
3
4
Background
o White
Black
Weight value size
o 10 mm + overview + text display
13 mm + overview display
13 mm + text display
13 mm
Pictograms
Off
o On
Keys
CF function
in applications
o Clears all applications
Clears only selected application
CF function
for input
Clears entire input
o Deletes last character
Block key
functions
o All free
All blocked except
for Setup, I/⏻
Alphanumeric
keys blocked
Additional functions
Acoustic signal
o On
Off
Power-on mode
o Off/On/Standby
Auto on
Factory settings
only for
device parameters
No
Yes

Setting the Application Parameters (Application)

Purpose
This menu item enables you to configure the comparator's application programs, i.e., adapt them to your individual requirements by selecting from a list of parameter options in the Setup menu. You can block access to this Setup by assigning a password.

Features
The basic weighing function is available at all times. From each of the following groups, you can select one application for operation. This means that numerous combinations are possible.

Application 1 (Basic application)[1])
- Averaging
- Density determination
- Air buoyancy correction and air density determination
- Mass comparison

Application 2 (Control functions)[1])
- Checkweighing
- Time-controlled functions

Application 3 (data records)[1])
- Totalizing
- Formulating
- Statistics

Depending on the Setup configuration,[1]) you can additionally assign 2 extra functions to each soft key:
- Second tare memory
- Identifier (Identification codes)
- Manual storage (M+ key)
- Changing the resolution
- Product data memory
- On model CCE111: Motorized substitution weights
- If desired, SQmin function[2])
- If desired, DKD uncertainty of measurement[2])

Auto-start application when mass comparator is switched on

Factory settings: Application parameters only

Factory Settings for the Parameters
The factory settings are identified by the symbol "o" in the list starting on page 40.

[1]) In Application 1, Mass Comparison: Applications 2 and 3 are blocked, only the extra function "Motorized Substitution Weights" is possible
[2]) Must be activated by a service technician

Preparation
Display available application parameters:

● To select the Setup menu:
Press (Setup)

> SETUP is displayed

● To select Application parameters:
Repeatedly press the v and > soft key

If a password has already been entered:

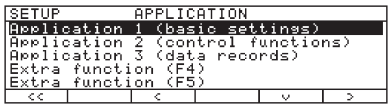
> The password prompt is displayed.

○ If access is password protected: Enter the password using the numeric/alphabetic keys

○ If the last character of the password is a letter: End alphabetic input by pressing (ABC)

● To confirm your password and have the weighing parameters displayed:
Press the ↵ soft key

> The application parameters are displayed:



○ To select the next group:
Press the v soft key (scroll down)

○ To select the previous item in a group:
Press the ^ soft key (scroll up)

○ To select the next sub-item within a group:
Press the > soft key (scroll to the right)

○ To select the previous group:
Press the < soft key (scroll to the left)

○ To confirm the menu item selected:
Press the ↵ soft key

Additional Functions

● To exit Setup menu:
Press the << soft key

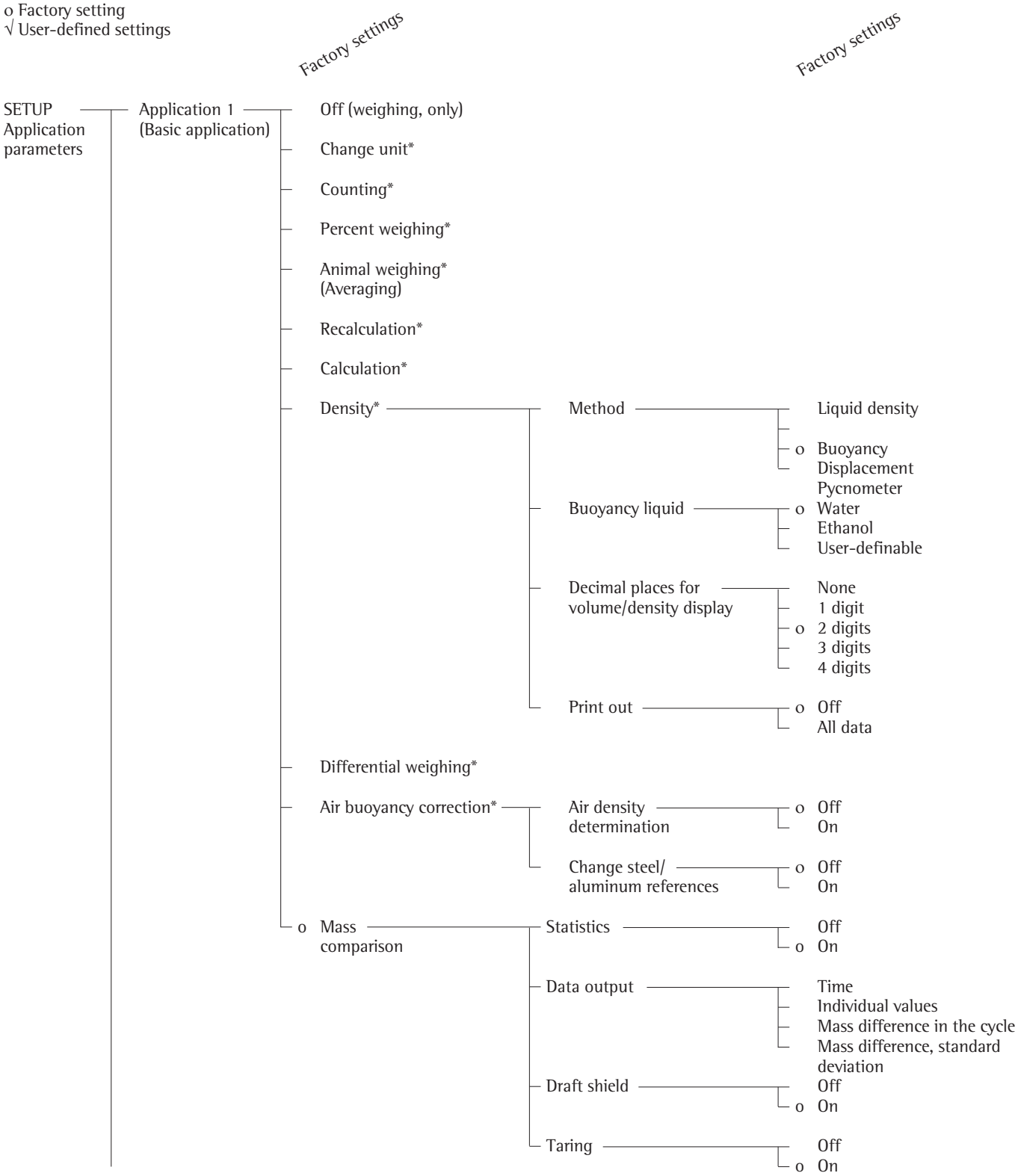
> To restart your application

● To print out parameter settings:
– When the weighing parameters are displayed: Press the (P) key

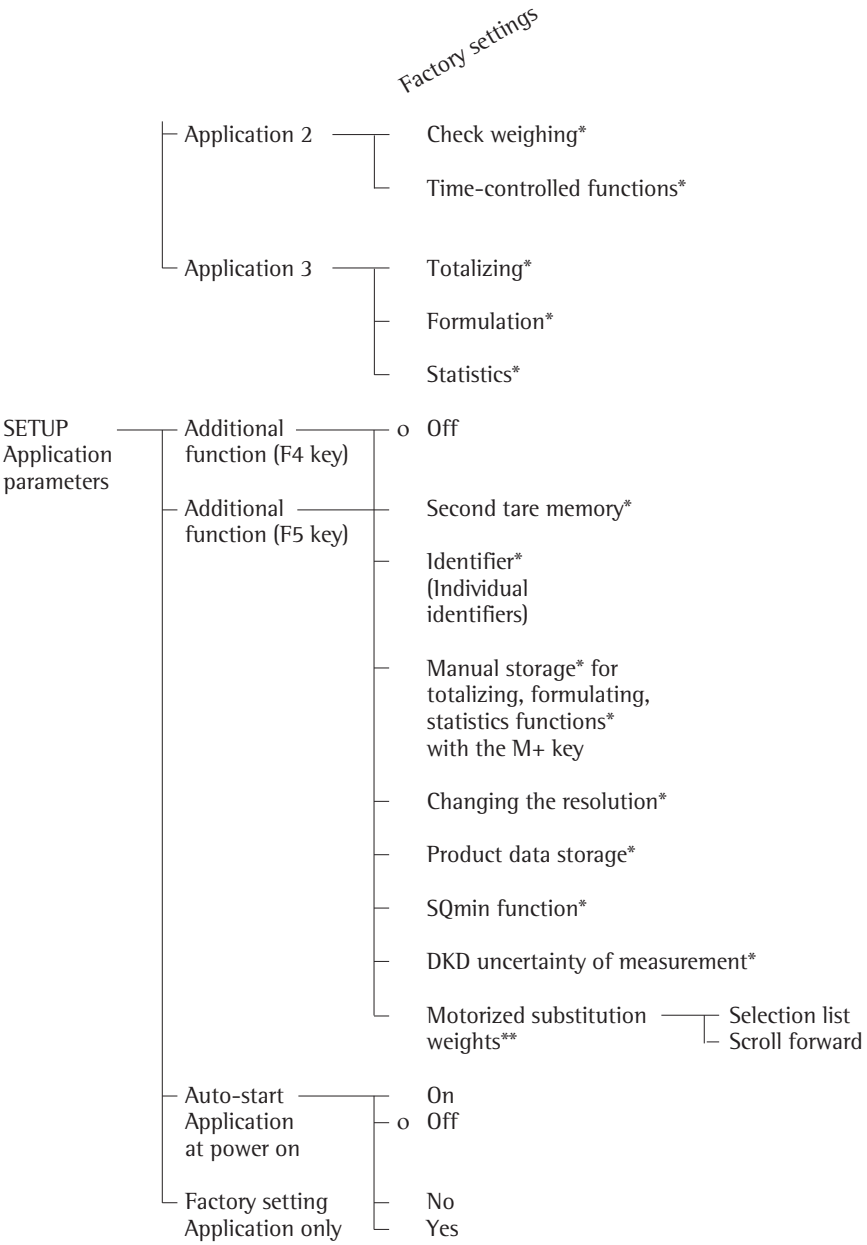
> Printout (example)
Lines with more than 20 characters are truncated

```
SETUP
     APPLICATION
--------------------
 Application 1 (Basis
                  Off
 Application 2 (con-
tro
                  Off
 Application 3 (data
rec
                  Off
 Additional function
(F4)
                  Off
 Additional function
(F5)
                  Off
 Auto-start applica-
tion
                  Off
--------------------
```

Application Parameters (Overview)
o Factory setting
√ User-defined settings



* = How to run this application is described in detail in our “ME and SE” Installation and Operating Instructions.
Request your copy directly from Sartorius or download it from the Internet (www.sartorius.com; see “downloads”).



* = How to run this application is described in detail in our "ME and SE" Installation and Operating Instructions.
Request your copy directly from Sartorius or download it from the Internet (www.sartorius.com; see "downloads").
**= Not on models CCE10000/CCE10000S/CCE20000; factory setting on model CCE111

Selecting the Printout Function (PRINTOUT)

Purpose
This menu item enables you to configure the printout to meet the user's requirements by selecting predefined menu parameters in the Setup menu. Printouts of weights and other measured or calculated values and IDs enable you to document your data and can be adapted to meet different requirements. You can block access to this menu by a assigning password.

Features
The printout parameters are divided into the following groups (menu level 1):

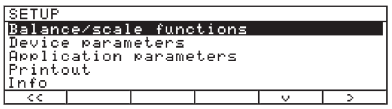
- Application-defined output
- Auto output of displayed values
- Output to interface ports
- Line format
- ISO/GLP/GMP printout
- Identifiers
- Factory setting – printout only

Factory Settings
Parameters: The factory settings are identified on the following pages by the symbol "o".

Preparation
Display available printout parameters

● Select the Setup menu:
Press (Setup)

> SETUP is displayed:



● Select "Printout Parameters":
Repeatedly press the v and > soft keys

If no password has been assigned, anyone can access the printout parameters in the Setup menu without a password.

If a password has already been entered:

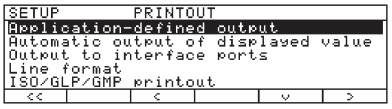
> The password prompt is displayed.

○ If access is password protected: Enter the password using the numeric/alphabetic keys

○ If the last character of the password is a letter: End alphabetic input by pressing (ABC)

● Confirm the password and display the parameters: Press the ↵ soft key

> The parameters are displayed:



○ To select the next group:
Press the v soft key (scroll down)

○ To select the previous item in a group:
Press the ^ soft key (scroll up)

○ To select the next sub-item within a group:
Press the > soft key (scroll to the right)

○ To select the previous group:
Press the < soft key (scroll to the left)

○ To confirm the menu item selected:
Press the ↵ soft key

Additional Functions

● To exit the Setup menu:
Press the << soft key

> To restart your application

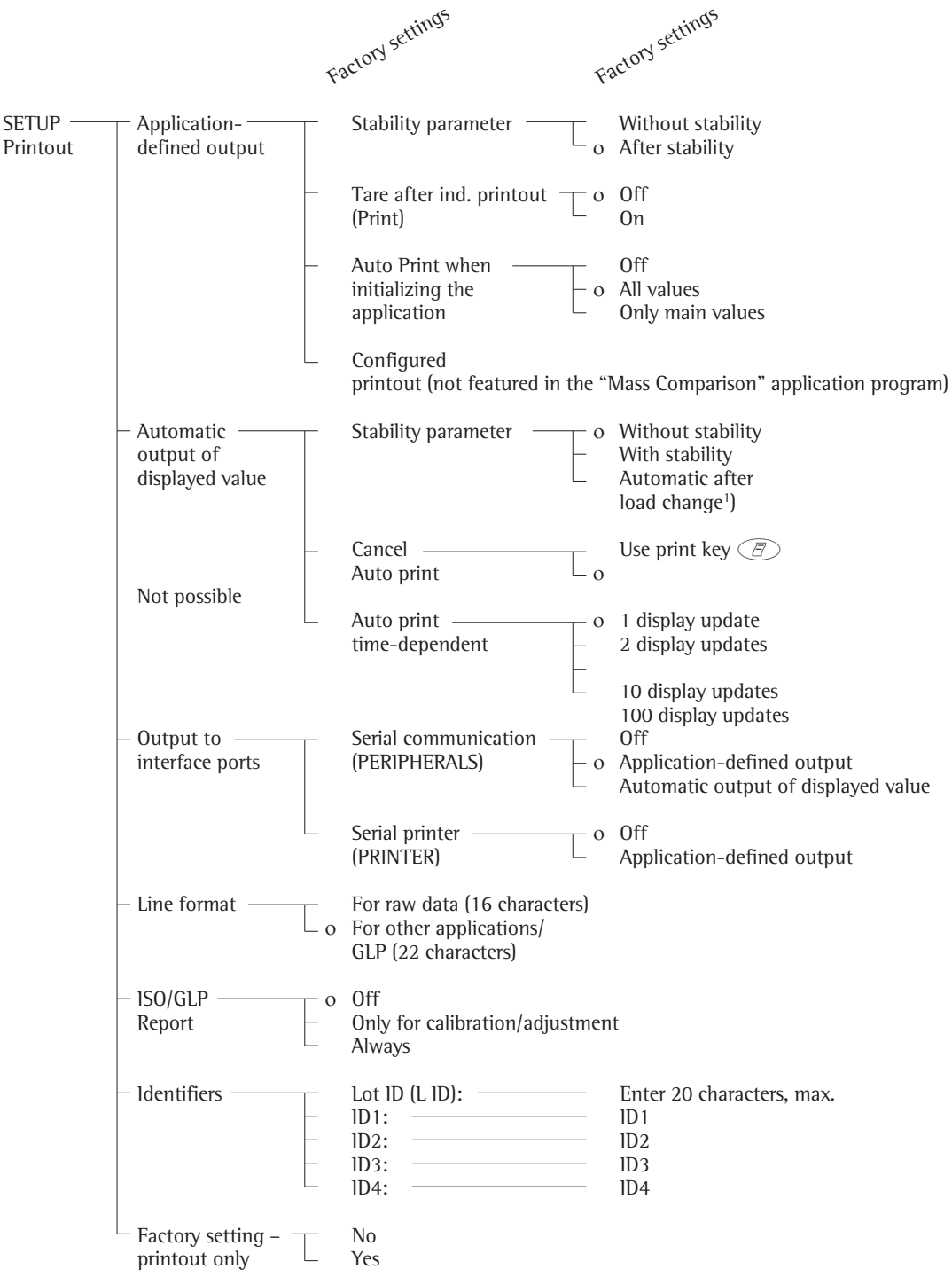
● To print out parameter settings:
– If device parameters are displayed:
Press the (P) key

> Printout (example)

```
SETUP
      PRINTOUT
--------------------
   User defined output
       Stability para.
       After stability
    Tare after ind. pr
                   Off
     Autom. print when
      All decimal plac
                    es
       Configured print
       Indiv.: printout
        Comp.: printout
        Total: printout
     Automatic display
       Stability para.
       Without stabil-
                   ity
     Cancel auto print
          Not possible
      Auto print time-
                  dep.
             1  display
                update
   Output to interface
      Serial communica
   User defined output

         Serial printer
   User defined output

  Line format
 For other applic./GLP
            (22 charac-
                ters)
  ISO/GLP/GMP printout
                   Off
 Identifiers
  Lot ID  (L ID):

  ID1:
                   ID1
```

etc.

Printout Parameters (Overview)
o Factory setting
√ User-defined settings



[1]) = Auto print when load change is > 10 d and stability: Deactivated < 5 d

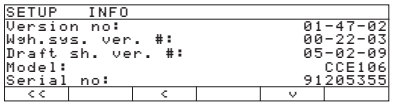
Device Information

Purpose
This menu item enables you to have information displayed about the specific mass comparator.

Display Device Information

- Select “Device Information”:
  Press the (i) key

> Device Information is displayed:



- Print device information:
  Press the (🖹) key

> Printout (example)

```
--------------------
23.09.2010      13:02
Model           CCE106
Ser. No.     91205355
Vers. No.    01-47-02
```
(Operating program version)
```
ID           BECKER123
```
(User ID)
```
--------------------
L ID       LOT NO. 23
```
(Lot ID)
```
SETUP
         INFO
--------------------
 Version No.:
             01-47-02
```
(Operating program version)
```
 Ver. No. scale:
             00-22-03
```
(Progr. vers. of weigh cell)

```
> V. No.
> Dr.shield: 05-02-09
```
(Program version no. of draft shield)

```
 Model:
                CCE106

 Serial no.:
             91205355
Next servicing:
          01.01.2012
 Service hotline:
       +49.551.308.0
 ------------------
```

- To return to SETUP Overview:
  Press the < soft key

- To exit the Setup menu:
  Press the << soft key

> Previous status is restored

Factory Settings

Each parameter has a factory setting. You can configure the Setup menu, to have it restore all factory settings by confirming the selection with YES.
The following settings are not restored:

- Language
- Password
- Display contrast
- Clock

Basic Weighing Function

Purpose
The basic weighing function is always accessible and can be used alone or in combination with the "Mass Comparison" application program.

Features
- Taring the mass comparator
- Assigning IDs to weights
- Printing weight value
- Printing ID codes for weight values

Soft Key Functions

Cal	Start calibration/ adjustment
isoCAL	Press when necessary to start calibration/adjustment routines.
S ID	Store ID entered

Working with the Mass Comparator

Practical Handling
Working with the mass comparator requires a steady hand and a smooth, uninterrupted technique.

- Perform a few trial weighing procedures before you begin the actual weighing to get a feel for the handling method.

- The weights should be conditioned to the temperature inside the weigh cell. This is the only way to avoid errors caused by air buoyancy and deviations caused by convection currents on the surface of the sample.

- Bare hands can generate moisture or warmth, which can result in weighing errors! Always wear gloves or use forceps or similar utensils.

- Always center the weight on the pan. If the weight is off-center, this can cause systematic errors in the weighing results that can adversely and unnecessarily affect the accuracy of your weight measurement.

Handling
Weighing with a mass comparator is a method of measurement by comparison, known as comparative weighing. The known mass of a reference weight is compared to the mass of the test weight in a two-part weighing procedure.
The difference in mass is shown on the weight display along with the respective plus or minus sign.
With all of our full-range mass comparators, you can perform comparative weighing at any load up to the mass comparator's maximum capacity.
The effects described above increase proportionally to the volume and surface of the sample. Therefore, always make sure that the size of the tare vessel selected is appropriate for the initial sample.
Never use your bare hands to touch weighing vessels or samples to be weighed. In addition to the effect of temperature, the extremely hygroscopic behavior of fingerprints left on the sample can cause considerable interference with weight measurements.
Weights must be carefully placed on the pan, e.g., either manually using forceps, or automatically via a robot or filling system.
When designing a draft shield, appropriate measures must be taken to minimize any interior temperature increases (e.g., bypass).

Weighing Electrostatically Charged Samples and Containers
Significant measuring errors can occur when electrostatically charged objects are weighed. This problem particularly involves samples that have extremely poor conductivity (glass, plastic, filters) since they can discharge electrostatic – i.e., friction-induced – charges through the weighing pan over a relatively long period of time.

The result is an interaction of forces among the charges adhering to the sample and the stationary components of the weigh cell. This is noticeable when the weight readout drifts.

Ionizing the air surrounding the sample to be weighed will ensure its conductivity. Electrostatic charges can thus be neutralized by dissipation through the air or to the ground, as the case may be.

Apart from taking purely mechanical counteractive measures (shielding the sample using a special antistatic weighing pan), you can neutralize the surface charges by bombarding them with ions of the opposite polarity. This is a highly effective method for eliminating static electricity. We supply the appropriate components for installation in the systems.

The electrostatic charges of the weigh cell's environment can considerably interfere with the weighing results. If you design your own draft shield, please ensure that the proper counteractive measures are taken.

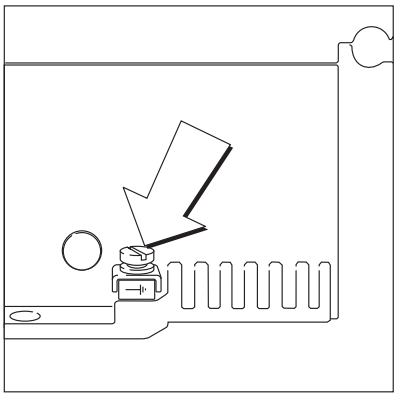
The rear panel of the weigh cell is equipped with a terminal for connecting an equipotential grounding conductor (e.g., for spatula). This clamp pin is designed for single grounding wires of up to 6 mm^2 or 4 mm^2 stranded wires. It must be ensured that the frame is grounded.

Weighing Magnetic or Magnetizable Samples
It is technically impossible to avoid using magnetizable materials for the production of weigh cells. Ultimately, the operating principle of high-resolution weigh cells is based on magnetic force compensation of the load.

When magnetic or magnetizable sample or containers are weighed, interaction among the above-mentioned components of the weigh cell may occur and distort the weighing results.

To reduce the effect described above, we recommend increasing the distance between the sample and the weighing pan by inserting a non-magnetizable material between them. The reduction in force is proportional to the square of the distance.

Magnetizable and magnetized samples and the weigh cell interact with magnetic fields and with magnetizable or magnetized parts in the environment. To a limited degree, (soft-magnetic) plates can be used to shield against external magnetic fields.



Selecting the Electronic Weighing Range (Model CCE111)

Purpose
Substitution weights expand the mass comparator's electronic weighing range up to the maximum load.

Features
- Internal substitution weights are motorized internally
- When lifting or transporting your mass comparator:
- Always secure the internal substitution weights with the transport locking mechanism!

Weighing Ranges
The following weighing ranges are possible:
- Min: 85 g to max. 111 g
- Min: 65 g to max. 91 g
- Min: 55 g to max. 81 g

With the 55 g extra weight in the equipment supplied:
- Min: 30 g to max. 56 g
- Min: 10 g to max. 36 g
- Min: 1 mg to max. 26 g

- The function for triggering the substitution weights can be assigned to the 4th or 5th soft key (from the right) (F4 or F5).
  Soft key label:
  Sub Wei.
- The selectable options for substitution weights can be activated in the Setup menu:
  – Selection list
  or – Scroll forward to the next motorized weight position
- Substitution weight after the mass comparator is switched on:
  The substitution weight activated before the system was switched off will automatically be used again at switch-on. This weight will be displayed in the selection list.

Preparation

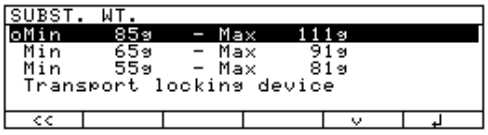
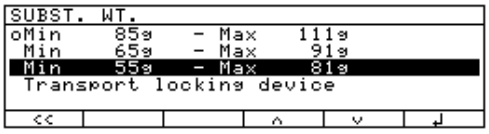
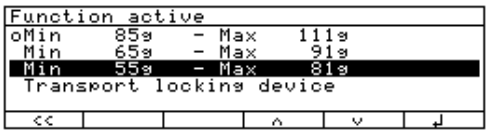
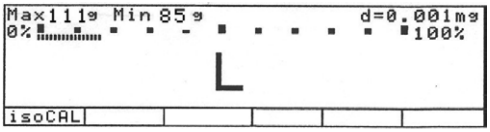
- Switch on the mass comparator: Press (I/⏻)
  – The Sartorius logo is displayed
- To set additional functions (F4) or (F5) in the Setup menu, press (Setup)
- To select application parameters: Press the ˅ soft key twice and then ˃
- To select additional functions (F4) or (F5) (Sub Wei), repeatedly press the ˅ soft key twice, then ˃
- To select motorized substitution weight: Repeatedly press the ˅ soft key
- To activate the motorized substitution weight: Press the ˃ soft key

○ Motorized substitution weight o Selection list
Scroll forward
o Factory setting, see also the chapter on "Configuring the Mass Comparator," section "Application Parameters (Overview)"

- To save settings and exit the Setup menu: Press the ˂˂ soft key

Select the desired electronic weighing range using the appropriate substitution weight

Example:

Step	Press key (or action)	Display/Printout
1. Display selectable electronic weighing capacity	Soft key (SubWei)	
2. Select the electronic weighing range	Press the ˅ or ˄ soft key	
3. Confirm the electronic weighing range	Press the ↲ soft key	
4. Exit motorized substitution weights	Press the ˂˂ soft key	

- After the substitution weight has been changed, the current electronic weighing range is displayed in the line for metrological data along with the respective Min and Max values.

Raising and Lowering the Weighing Pan

Models: CCE10000, CCE10000S and CCE20000

Purpose
To protect the weighing system, only place weights on the Centermatic of your mass comparator when it is in the "Load Pan" position.

Features
– The Centermatic is not connected to the weighing system when it is in the uppermost "Load Pan" position!

The Centermatic (weighing pan) on your mass comparator has a motorized raising and lowering feature (raise, lower). The current position is displayed: "Load Pan" or the weight value is displayed.
After the measurement has finished, always return your mass comparator to the upper standby position "Load".

⚠ **Do not place heavy loads on the Centermatic when lowered, as this can damage the weighing system!**

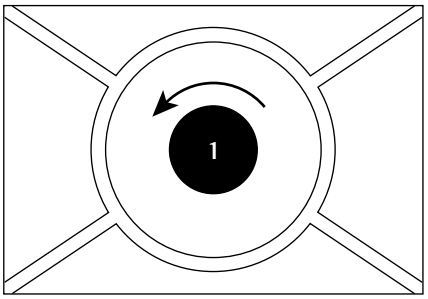
Navigating in the Setup Menu (Examples): CCE10000

● Open the hood

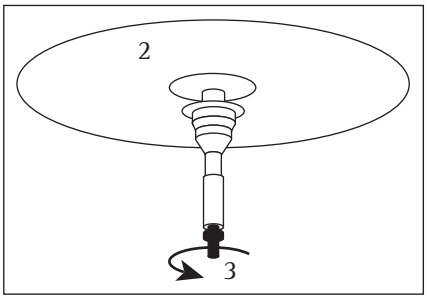
Step	Press key (or action)	Display/Printout
1. Move Centermatic into the upper position	"Lift" soft key	
● Place the 10 kg weight on Centermatic, "Load Pan" the scale.		
● Close the hood 2. Move Centermatic into the upper position	Press the "Load" soft key	
3. A weight value is displayed, start the comparative weighing routine.		
● Open the hood, place the desired weight for the mass comparison on the 10 kg weight.		
● Close the hood		

Under-scale Weighing
A port for an under-scale weighing hanger is located on the bottom of the mass comparator.

CCE36, CCE66, CCE106, CCE605, CCE1005:

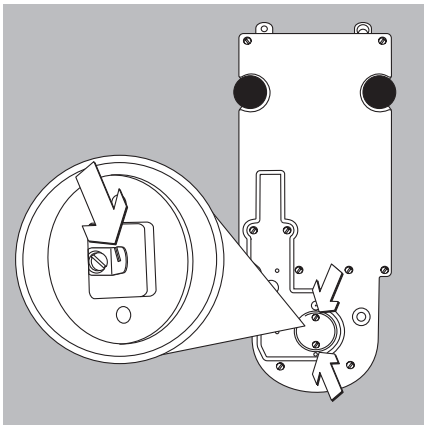


- Unscrew cover plate **1** from the bottom of the mass comparator



- Lift up weighing pan **2**
- Unscrew hanger **3**
- Insert opposite end of hanger **3** into port and refasten
- Place weighing pan **2** back on the mass comparator
- Hang container with sample on the notched hook
- ○ Install a draft shield if necessary

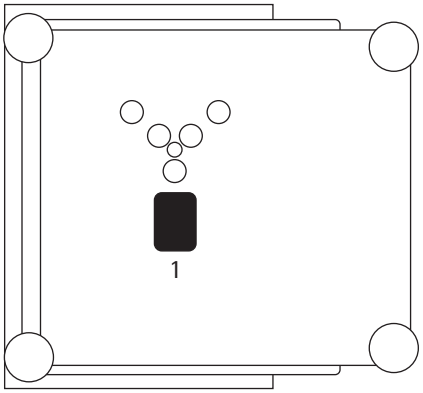
CCE6:



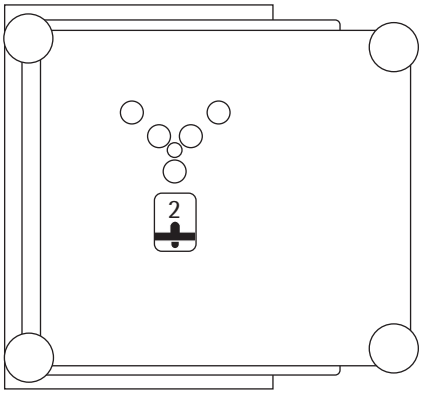
- Remove both screws from beneath the weigh cell and detach the cover plate
- Attach a wire or the likes to the sample and hang it on the notched hook

Under-scale Weighing on models CCE1004, CCE2004, CCE5004, CCE5003:

● Lift cover plate **1** out from the bottom of the mass comparator



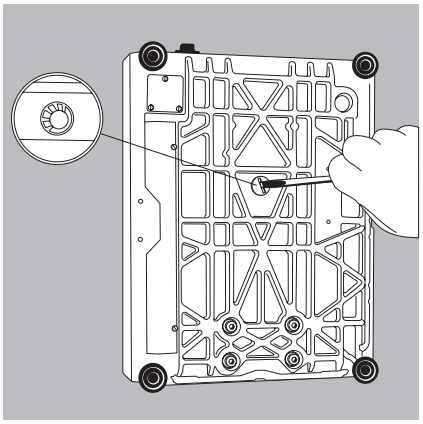
● Use a wire, for example, to suspend the sample on hook **2**



Install a draft shield if necessary

Under-scale Weighing on Models CCE40K3, CCE60K3, CCE60K2:

● Use a suitable screwdriver to unscrew the cover plate from the bottom of the mass comparator

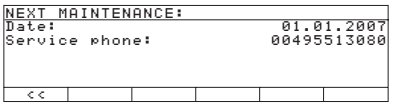


Preparing for Operation

● To switch on the mass comparator: Press (I/⏻)

> The Sartorius logo is displayed

○ When it is time for the next maintenance, the following appears:



To exit this screen: Press the << soft key

○ Call your nearest Sartorius Service Center to schedule a maintenance appointment

○ To tare the mass comparator, if necessary: Press (Tare)

Model CCE106, CCE1005: Automatic Weighing Range Setting

Purpose

Substitution weights expand the mass comparator's electronic weighing range up to the maximum load.

Features

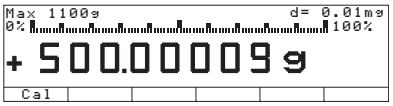
– Internal substitution weights are motorized.

The mass comparator automatically selects one of two weighing ranges:
CCE106:

– 0 mg to 61 g	– 0 mg to 610 g
or	or
– 49 g to 111 g	– 499 g to 1,110 g

Example with CCE1005:
With a reference weight or test weight of approximately 1000 g, the readout shows the following (500 g electrical weighing range + 500 g internal substitution weight):

– Bar graph display: up to approx. 90%
– Main readout: approximately 500 g



Additional Functions
In addition to:

- Alphanumeric input
- Tare (not possible with alphanumeric input)
- Print

You can also access the following functions in this application program:

- Calibration/adjustment (not possible with alphanumeric input)
- Setup
- Mass comparator switch-off

Calibration

● Press the **Cal** soft key

> Continue as described in section “Calibration/Adjustment”

Setup (Configuring the Mass Comparator)

● Press (Setup)

> Continue as described in section “Configuring the Mass Comparator”

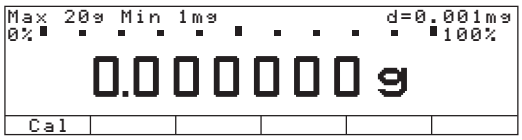
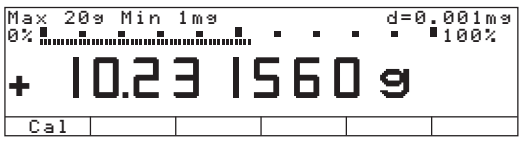
Mass comparator switch-off

● Press (I/⏻)

> The mass comparator switches off

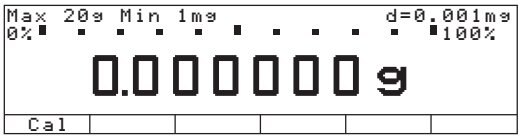
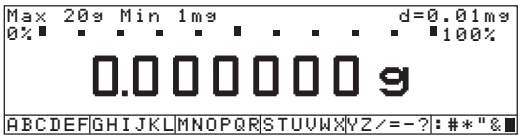
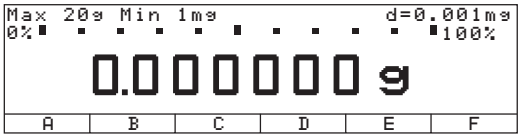
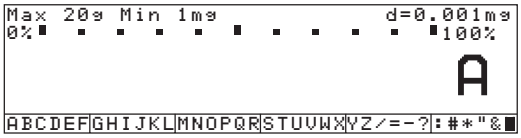
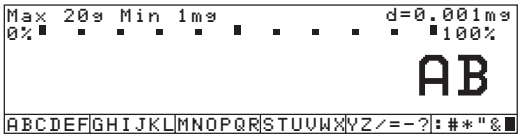
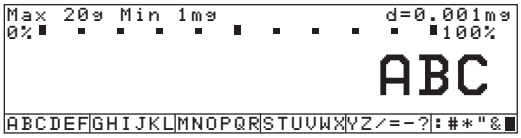
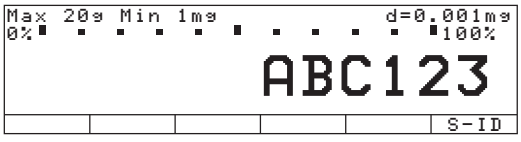
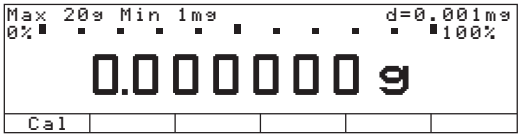
> Display OFF “Standby” with backlighting

Examples:
Example W1: Determine a weight value

Step	Press key (or action)	Display/Printout
1. If necessary, tare the mass comparator	(Tare)	
2. Enter sample ID	See example W2	
3. Determine weight (Example)	Place sample on mass comparator	
4. Print weight value	(⎙)	S-ID ABC123 N +10.231560 g

Example W2
Enter “ABC123” as the sample ID

Note:
- The sample ID generally applies to one weighing operation only
- The ID is deleted after data output

Step	Press key (or action)	Display/Printout
Initial state (mass comparator unloaded) (ID can also be entered while mass comparator is loaded)		
1. Select alphabetic input	(ABC)	
2. Select the letter group “A”	**ABCDEF** soft key	
3. Enter the letter “A” (To delete a letter:	**A** soft key (CF))	
4. Select the letter group “B” and input	**ABCDEF** soft key **B** soft key	
5. Select the letter group “C” and input (If you have only entered letters, conclude input	**ABCDEF** soft key **C** soft key (ABC))	
6. Enter the numbers 1, 2 and 3	(1) (2) (3)	
7. Store the ID (20 characters, max.) – The next printout will include the imprint	**S-ID** soft key	

Opening and Closing the Draft Shield on Models CCE106/66/36/6/1005/605

Purpose
The mass comparator is equipped with a draft shield so that convection currents cannot affect the weighing results. To load a sample on and remove it from the weighing pan, the draft shield doors must be opened and closed. You can do this in various ways, depending on the menu setting the user has selected.

Features
- The draft shield can be opened and closed at any time, regardless of the application program used.

- The draft shield can be opened and closed by pressing the keys, by activating an external switch or by sending a command to the interface port

- The draft shield doors can be programmed for mass comparator functions such as taring so that they:
- Close automatically
- Close automatically and then open again.

  This function can be deactivated. If it is not deactivated, the draft shield will close automatically when the mass comparator has not been used for 2 minutes (dust protection).

- The function "Close draft shield automatically when function is activated" can be combined with functions and applications that require the "with stability" parameter for weights to be accepted:
- Switch on the mass comparator (Tare at power)
- Tare after stability
- Individual print out after stability
- Start all adjustment functions
- 2nd Tare memory

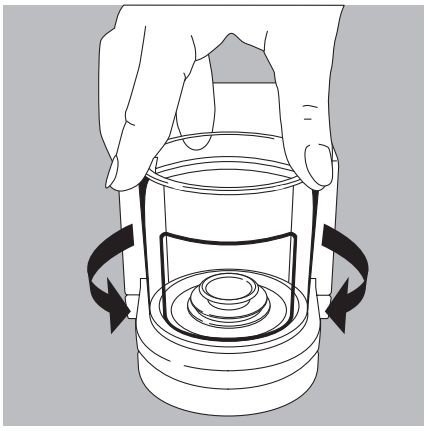
- A lower weight resolution is possible when the draft shield doors are open

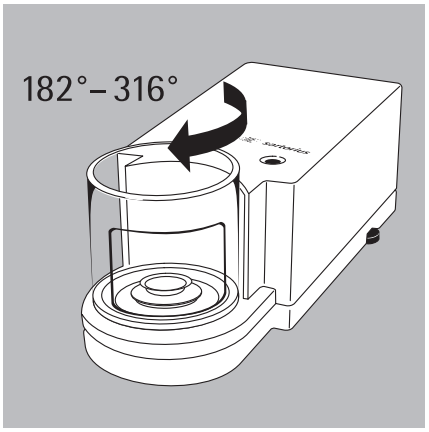
- The left ↓↑/↻ key and the right key ↓↑/↺ key for operating the draft shield doors can:
- Have the same function
- Have separate functions
- Be switched off.

Draft Shield on Models CCE36, CCE66, CCE106, CCE605, CCE1005
- You can define which draft shield door(s) will open and close when you press the left or right ↓↑ key.

- If a door encounters an obstacle while moving, the following will happen:
- While opening: The door will stop moving
- While closing: The door will re-open

Factory setting of the left/right draft shield keys: `Same function`
Automatic mode: `Off`
Weight resolution when door is open: `Show all decimal places`





Draft Shield on Model CCE6

- You can define the function of the draft shield:

Keys	Set up, draft shield keys: Same function	Separate function
↻, ↺ key	– Open according the pre-set opening position or – Numeric input of the opening angle – Close	– Open 100° clockwise – Close
Numeric keys + ↻, ↺ key	– Enter and save opening angle – 44°–181°: Opens counter-clockwise – 182°-316°: Opens clockwise – 0°–43°: Deletes stored position	No function
Learning mode	– Yes: Manually select the desired opening angle	No

Preparation

- To switch on the mass comparator: Press (I/⏻)

> The Sartorius logo is displayed

- To configure the draft shield function in the Setup menu: Press (Setup)
- To select device parameters: ˅ soft key, press the ˃ soft key
- To select draft shield: Press the ˃ soft key

Draft shield
- Draft shield keys
  - o Same function
  - Right/left key — Separate function
  - Off
- Automatic
  - o Off
  - Close–> Function –> Open
  - Close–> Perform function
- Weight resolution when door is open:
  - o Show all decimal places
  - Do not show last decimal place

o = Factory setting

See also the chapter on “Configuring the Mass Comparator: Device Parameters (Overview)”

- To save settings and exit the Setup menu: Press the ˂˂ soft key

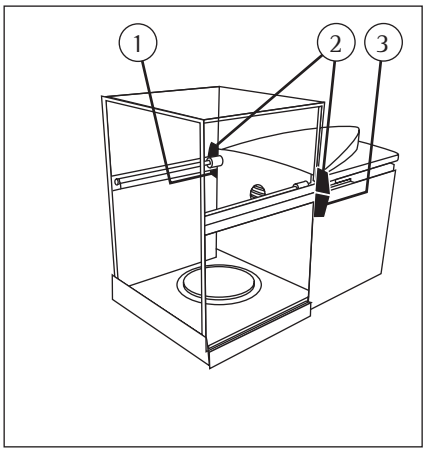
Assigning the Open Door Function to the Models CCE36, CCE66, CCE106, CCE605, CCE1005:

Example 1: Open and close the top and right-hand draft shield doors using the ↓↑ key

Change in the factory settings:
No

○ If open, close all draft shield doors

- Apply moderate pressure to the door grips for top and right-hand draft shield doors (2 and 3) to move them simultaneously or consecutively towards the back. This is done to motorize the door opening function.
- Press ↓↑ on the right to save this door-opening mode; the doors will close. The next time you press the right-hand ↓↑ key the top and right-hand doors will operate.



Example 2: Open and close the right draft shield door using the left ↓↑ key. Open and close the left draft shield door using the right ↓↑ key.

In deviation from the factory setting:
Separate function

○ If open, close all draft shield doors

- Apply moderate pressure to the right draft shield door grip (3) to slide it towards the back to motorize the door opening function.
- Press the left ↓↑ key to save this door-opening mode; the door will now close. The next time you press the left ↓↑ key, the right-hand door will open and close.
- Apply moderate pressure to the left draft shield door grip (1) to slide it towards the back to motorize the door opening function.
- Press the right ↓↑ key to save this door-opening mode; the door will now close. The next time you press the right ↓↑ key, the left-hand door will open and close.

Password
You can enter a password to block access to the menu parameter settings and for inputting ID codes, as well as exact calibration weights.
See the detailed description in the chapter on “Configuring the Mass Comparator: Setting the Device Parameters.”

User ID
You can enter your own personal password (max. 20 characters).

Clock
ISO/GLP/GMP printouts in particular must be generated with the date and time of the weighing result. This date and time is optional on other printouts.
See the chapter on “Configuring the Mass Comparator: Setting the Device Parameters” for a detailed description and example.

Interfaces

Purpose
This item enables you to set the parameters for the following interfaces:
- Serial communications port
- Serial printer port
- External switch function
- Control port function

Serial communications port
You can set the serial communications port to use the following modes:
- SBI
- XBPI

Serial printer port
You can set the serial printer port to use the following printers:
- YDP01IS
- YDP02
- YDP03
- YDP01IS Label
- YDP02IS
- YDP02IS Label
- Universal
- YDP04IS
- YDP04IS Label

Universal Remote Control Switch
You can connect an universal remote control switch (foot switch or bar code scanner/keyboard) to one of the two serial ports. Then you can assign one of the following functions to be performed when the switch is activated:
- Print key
- Tare key
- Cal key
- F1 function key
- CF key
- F2 function key
- Bar code scanner/extra keyboards (requires a special connecting cable)
- Right draft shield key
- Left draft shield key

Control Port Function
You can connect a checkweighing display and an universal remote control switch to the mass comparator via the serial communications or serial printer port (factory setting).

To do so, you need to configure the interface for `input` or `output`.

Pin Assignment Chart of the Female Interface Connector

Pin	"Input" Function
15	(⊟) key See external universal remote switch
16	Left ⇵ key
17	Soft key 6 (Cal) (Cal)
18	Soft key 1 (F1)
19	(Tare) key

Pin	"Output" Function
15	"Universal Remote Control Switch" (see above)
16	Control port 1: lighter
17	Control port 2: equal
18	Control port 3: heavier
19	Control port 4: "set"

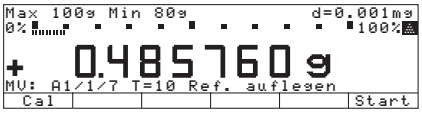
For further information on the pin assignment chart, see the section on "Pin Assignment Charts" in the chapter entitled "Overview".

Display
You can configure the display for your individual needs.

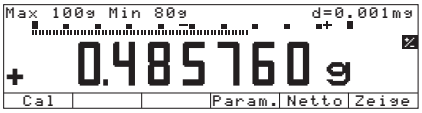
The contrast can be adjusted to 5 levels.
`Contrast`

Characters can be displayed in black on white or vice versa. `Background`

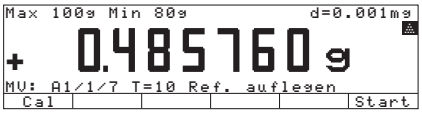
You can either individually blank out the bar graph and the text line, or both.
`Weighed value size`



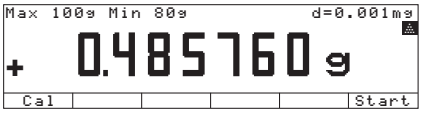
`10 mm + overview + Text display`



`13 mm+ overview display`



`13 mm + text display`



`13 mm`

You can blank out pictograms.
`Pictograms`

Keypad
You can assign different functions to the (CF) key for deleting entries and applications.

When you clear applications, you can delete either the data stored for all applications or just selected data stored for the active application.
`CF function in applications`

When you delete input, you can either delete all the data input in a field, or only the last character entered.
`CF function for input`

To block key functions, you can choose whether to block all keys (except (I/⏻), (Setup), draft shield right/left) or just the alphanumeric keys.
`Block key functions`

Additional Functions

Acoustic Signal
An acoustic signal is emitted when you press a key. When the key pressed is allowed in the current operation mode, the signal emits a single beep. If the key is not allowed, then a double-beep sounds. (The key does not activate a function). In the Setup menu, you can choose the settings:
- The acoustic signal should sound (`On`)
- The acoustic signal should not sound (`Off`)

Power-On Mode
You can configure your mass comparator so that when a power supply is connected:
- The mass comparator is switched off (Off)
  (`Off/On/Standby`)
- The mass comparator switches on automatically (`Auto on`)

You can also set the configuration so that when the mass comparator is turned off (after use), it switches to standby
(`Off/On/Standby`)

After you turn the mass comparator on, a self-test of the functions is run
`TEST` is displayed in the text line; the bar graph is shown)

Calibration, Adjustment

Purpose
Calibration is the determination of the difference between the weight readout and the true weight of a sample. Calibration does not entail making any changes within the mass comparator.

Adjustment is the correction of this difference between the weight readout and the true weight (mass) of the sample, or the reduction of the difference to an allowable level within maximum permissible error limits.

Features
You can configure whether the calibration mode:
- Is activated according to the specific setting (external/internal)
- Can be selected by the user after pressing the `Cal` soft key `Selection mode`.

Calibration can be performed externally (Weighing parameters: Calibration/Adjustment: CAL key function; menu item `Ext.cal./adj.: Default weight` or `Ext. cal./adjust.: User-defined weight` or internally with `Int. cal./adjust.:`.

Adjustment can be performed:
- Automatically following calibration: `Cal., then auto adjust` or
- If desired, the adjustment operation can be started manually after calibration: `Cal. with manual adjust.`

You can have the mass comparator automatically display an adjustment prompt when the ambient temperature has changed since the last time calibration/adjustment was performed, or if a preset time interval has been exceeded. You can also configure the mass comparator to perform calibration/adjustment automatically (isoCAL), when the preset time and/or temperature limit has been exceeded `Switch on and clear the application` and `Switch on without clearing the application` (see next page for more details).

You can have the calibration and adjustment results documented on an ISO/GLP-compliant printout, see page 76.

Factory Settings of the Parameters
Calibration/adjustment mode: `Selection Mode`

Calibration and adjustment sequence: `Cal., with manual adjust.`

isoCAL function: `Only adjustment prompt`

Start automatic adjustment: `isoCAL`

Print GLP/GMP-compliant adjustment record: `Automatically, if GLP is selected`

Internal Calibration/Adjustment
In the Setup menu (Weighing Parameters: Calibration/Adjustment: CAL key function), you must either set the item `Internal cal./adjustment` or make your selection via the `Selection Mode` (factory setting). The calibration/adjustment weights built into the mass comparator housing can be applied by a servomotor.
The calibration/adjustment procedure is performed as follows:

● Unload mass comparator

● To select calibration: Press `Cal`, then `Start`

> The internal calibration weight is automatically loaded

> The mass comparator is calibrated

> If the Setup menu is configured to `Cal. with auto. adjust.` (factory setting), the mass comparator will then be adjusted automatically

> If the Setup menu is configured to `Cal. with manual adjust`, the “Internal Calibration/Adjustment” sequence can now be concluded without adjusting the mass comparator (see “Calibration and Adjustment Sequence,” on the next page).

> The internal calibration weight is unloaded from the mass comparator

> ISO/GLP-compliant record: see page 76

isoCAL:
Automatic Calibration, Adjustment and Linearization
In the Setup menu (Weighing Parameters: Calibration/Adjustment: CAL key function) you must either set the item
`Switch on and clear the application`

or

`Switch on without clearing the applica-tion` (factory setting).

The "isoCAL" display automatically begins flashing whenever the ambient temperature changes in relation to the temperature of the last calibration/adjustment, or after a preset time interval has been exceeded. The mass comparator should now run a self-adjustment routine.

The automatic internal calibration and adjustment prompt is activated when the following conditions have been met
- The change in temperature is greater than 1.5° or the elapsed time interval is greater than 24 hours.
- The mass comparator Setup mode is not activated
- The number or letter input is not activated
- The load has not changed within the last 2 minutes
- The mass comparator has not been operated within the last 2 minutes
- The load may not exceed 2% of the maximum capacity.

When these requirements are met, `C` is displayed in the line for measured values.

If the mass comparator is not operated and the load is not changed, internal calibration and adjustment will start after 15 seconds.

Automatic Calibration and Adjustment at Set Times*
In the Setup menu, you can now enter up to 3 different times of day for the adjustment routine (see menu tree on page 50).
The "isoCAL" display automatically begins flashing, when the mass comparator has reached one of the set times. Adjustment is not performed at a set adjustment time if, at the adjustment time, the mass comparator is:
- Switched Off (standby) or
- was in the Setup mode.

The set-time adjustment sequence will not be performed later, if the mass comparator is constantly being operated at the set adjustment time.
The automatic internal calibration and adjustment is prompted at the set adjustment time when the following conditions have been met:
- The set adjustment time is reached
- The mass comparator Setup mode is not activated
- The number or letter input is not activated (e.g., equation input)
- The load has not changed within the last 2 minutes
- The mass comparator has not been operated within the last 2 minutes
- The load may not exceed 2% of the maximum capacity.

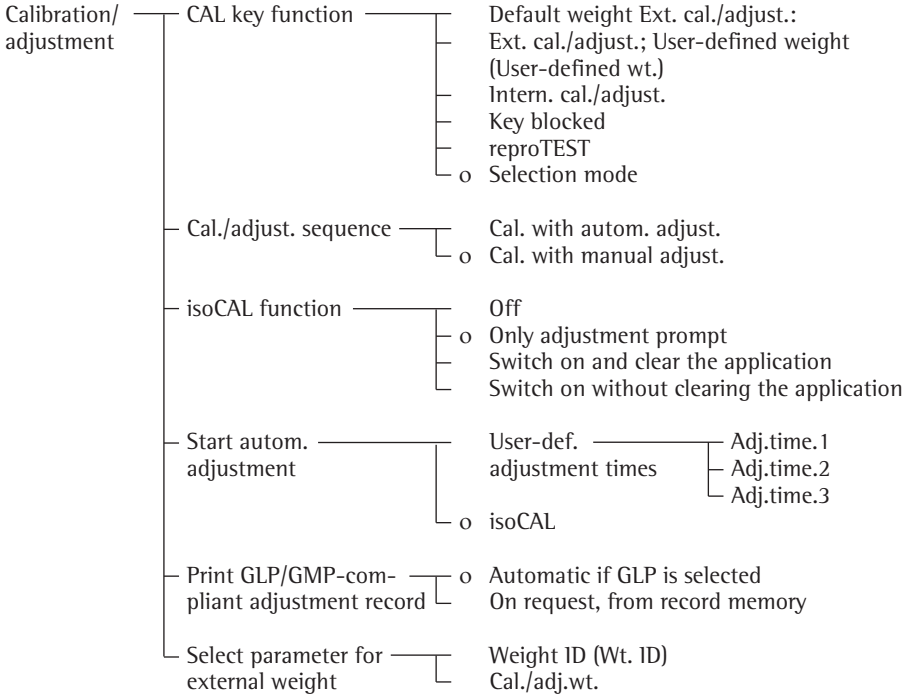
In the Setup menu, you can configure the mass comparator so that after calibration and adjustment:
- The application program is restarted
`Switches on and clears the application`

- The application program remains at its previous status
`Switches on and clears the application`

In the Setup menu, you can configure the mass comparator so that it displays an adjustment prompt, but does not perform the calibration and adjustment functions automatically.
`Only adjustment prompt`

Preparation

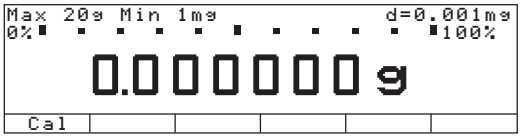
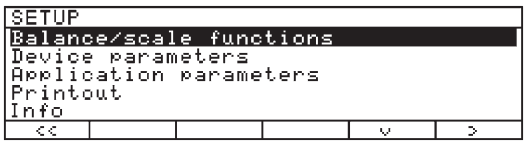
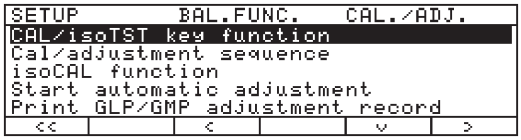
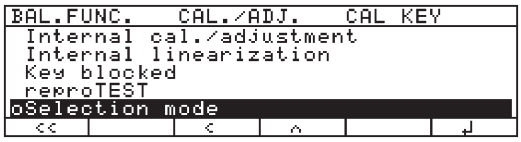
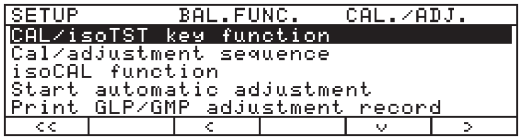
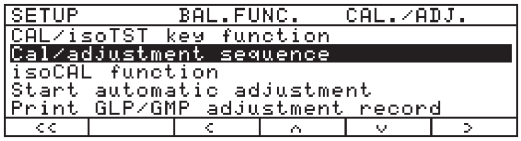
- Select the weighing parameters for calibration/adjustment: Press Setup
- Select weighing parameters: Press the > soft key
- Select "Calibration/Adjustment": Press the > soft key

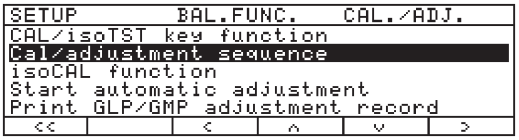
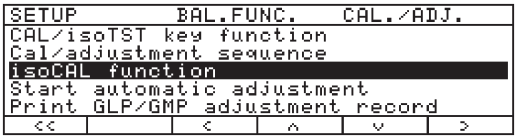
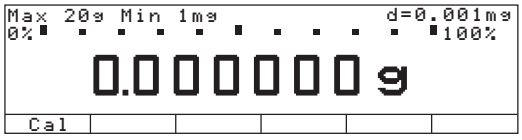


o = Factory settings
* This clears the application

- To save settings and exit the Setup menu: Press the << soft key

Preparation
Example:
Set the parameters for “Calibration and Adjustment”, e.g. calibration with manual adjustment, isoCAL off

Step	Press key (or action)	Display/Printout
1. Switch on the mass comparator,	I/⏻	Sartorius Logo
		
2. Select the Setup menu	Setup	
3. Select “Weighing Parameters”	> soft key	
4. Select “Calibration/adjustment”	> soft key	
5. Select “CAL key function”	> soft key	 o = Last settings selected
6. Select desired function and confirm (e.g., “Internal cal./adj.”)	Repeatedly press the ^ soft key, ↵ soft key	
7. Exit CAL key function	< soft key	
8. Select “Cal./adjustment sequence”	v soft key	

Step	Press key (or action)	Display/Printout
9. Confirm Cal./adjust.sequence	> soft key	 o = Last settings selected
10. Select desired function and confirm (here, e.g. calibrate with manual adjustment)	v and ↵	
11. Exit CAL key function	< soft key	
12. Select isoCAL function	v soft key	
and confirm	> soft key	 o = Last settings selected
13. Select desired function and confirm (here, e.g., turn off isoCAL function)	^ soft key, repeatedly ↵ soft key	
14. Save settings and exit the Setup menu:	<< soft key	

Selecting the Calibration/Adjustment Routine
In the Setup menu (Weighing Parameters: Calibration/Adjustment: CAL key function) you must select the item `Selection Mode` (factory setting). After pressing the `Cal` soft key, you can choose from among the following settings by pressing the `Selection` soft key:

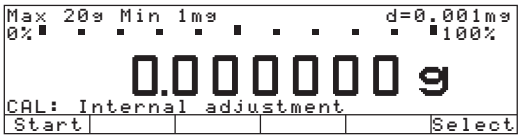
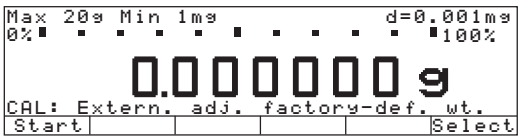
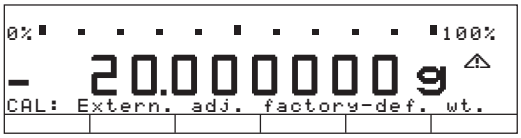
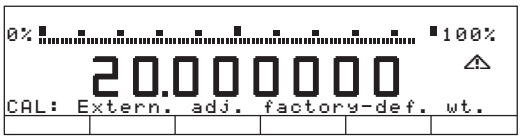
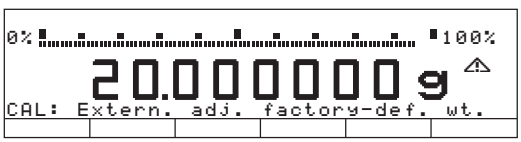
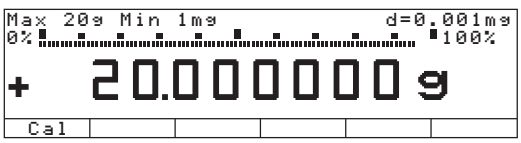
- Internal calibration/adjustment `Intern. cal./adjustment`
- Reproducibility test `reproTEST`
- External Calibration/ Adjustment with a Factory-Defined Weight `Default weight Ext. cal./adjust.`
- External calibration/adjustment with a user-defined calibration weight: `Ext cal./adj., user-defined wt.`

Configuring the Mass Comparator

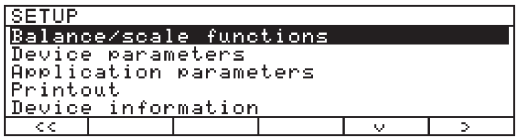
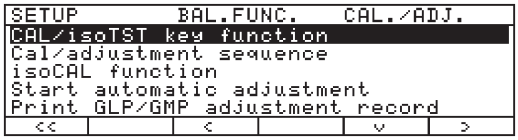
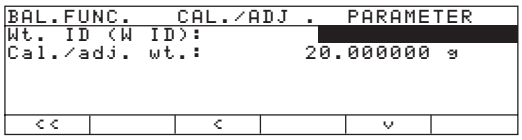
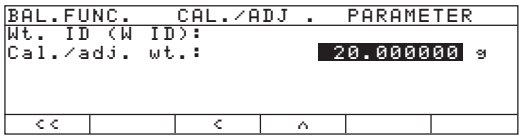
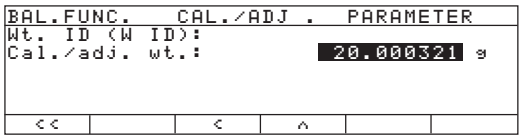
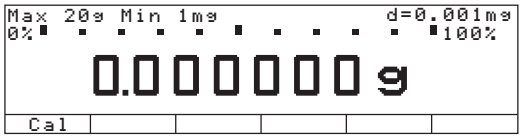
● Start the desired routine:
Press `Start` again

In the selection mode: Perform external calibration followed by automatic adjustment with default weight

Configuration:
Factory settings

Step	Press key (or action)	Display/Printout
1. Select calibration	`Cal` soft key	
2. Select External calibration/adjustment with default weight	3 × `Selection` soft key	
3. Start external calibration/adjustment	`Start`	
4. Place the default weight (e.g. 20.000000 g) on the mass comparator "–" sign: weight too low "+" sign: weight too high No +/- sign: weight ok At the end of calibration, the display shows	Load with default weight	
for approx. 10 seconds:		
After adjustment, the following is displayed		
5. Unload the mass comparator (ISO/GLP-compliant printout, see page 76)		

Enter calibration weight

Step	Press key (or action)	Display/Printout
1. Select Setup menu	(Setup)	
2. Select “Weighing Parameters”	> soft key	
3. Select “Calibration/adjustment”	> soft key	
4. Select parameter for external weight	5 × v soft key > soft key	
5. Select the Cal./adj.wt. line	v soft key	
6. Enter adjustment weight (e.g., 20.000321 g) and store	(2) (0) (.) (0) (0) (0) (3) (2) (1)	
7. Save the adjustment weight	↵ soft key	
8. Exit the Setup menu	<< soft key	

Externally Adjust Models CCE10000, CCE10000S or CCE20000

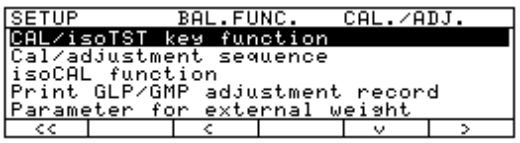
Note:
The mass comparator is adjusted with a 50 g weight!

Preparation
Example: CCE10000

- Open the hood

Step	Press key (or action)	Display/Printout
1. Move Centermatic into the upper position,	press the “Lift” soft key	
- Place the 10 kg weight on Centermatic, ”Load pan”.		
- Close the hood 2. Move Centermatic into the lower position,	press the “Load” soft key	
3. A weight value is displayed; the mass comparator can now be adjusted.		

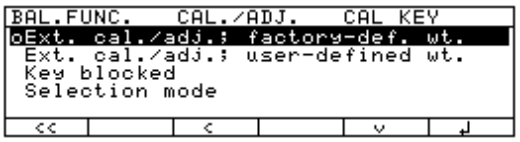
⚠ **Do not disconnect the mass comparator from power during the adjustment routine!**
Do not disconnect any connecting cables! Prevent unstable conditions in the weighing chamber and the ambient environment!

4. Select the Setup menu	(Setup).	
5. Select “Weighing Parameters”	> soft key.	
6. Select “Calibration/adjustment”	> soft key.	

5. Select the “CAL key function” > soft key.

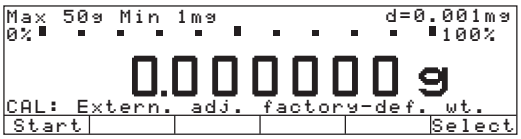
Last settings selected 0.

6. Select the desired function and press the ^ soft key, repeatedly, here: Ext. calibration/adjustment; ↵ soft key.



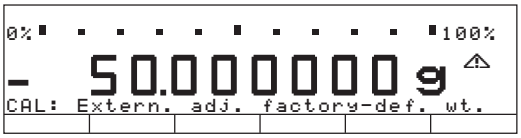
7. Exit CAL key function < soft key.

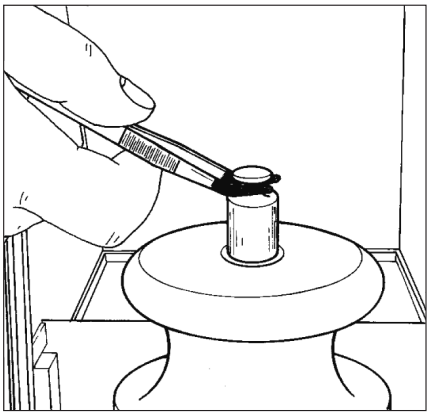
8. A weight value is displayed; the mass comparator can now be tared. The display reads 0.0000 g



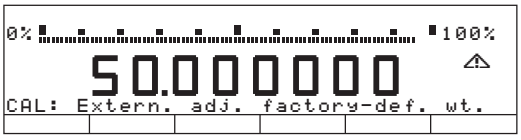
- Tare the mass comparator.

9. Activate the adjustment function, press “Start”

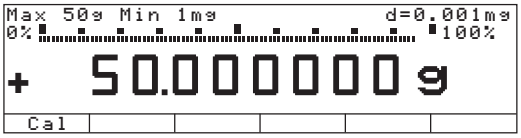




- Open the hood carefully; using the forceps, place the 50 g weight on the 10 kg weight.



- Close the hood.
- The weight value is stored when the “g” for grams appears in the display. After adjustment, the following is displayed:



- Open the hood; using the forceps, carefully remove the adjustment weight.
- Close the hood.

10. Move Centermatic into the upper position, press the “Lift” soft key

- Remove the 10 kg weight from the Centermatic, unload the scale.

This completes the adjustment procedure.

Calibration/Adjustment Printout

Data Block Printout

You can print out the results of a calibration/adjustment procedure. You can configure whether the printout is generated as soon as a calibration/adjustment procedure is completed, or whether a number of calibration/adjustment procedures (up to 50) are printed as a data block printout.

Data Block Printout of Calibration/Adjustment Results

With the following Setup menu configuration (Setup: Weighing Parameters: Calibration/Adjustment), up to 50 calibration/adjustment reports can be collected and printed on request.

– Print GLP/GMP-compliant adjustment record:

`On request, from record memory`

When the memory contains 50 data records:

– Additional records are output immediately.

If at least one data record is available, the following soft keys are available after you press the `Cal` soft key:

`Info`	The number of records accumulated is displayed in the text line
`PrtRec`	Print collected records
`DelRec`	Delete accumulated records from memory; records can only be deleted after a printout has been generated. If a password has been assigned in the Setup: Device Parameters menu, you must enter either this password or the General User Password before you can delete the records.

After internal adjustment, the initialization mode of the calibration/adjustment procedure is printed in the line: `Start`.

```
--------------------
13.05.2005      09:17
        SARTORIUS
Model            CCE36
Ser. No.     60419914
Vers. No.    01-47-01
ID
--------------------
24.04.2005      12:03
Start:         manual
Diff. +  0.000001 g
External calibration
             completed

25.04.2005      12:10
Start:    isoCAL/Temp
Diff. +  0.000001 g
Internal adjustment
             completed
Diff. +  0.000000 g

25.04.2005      18:30
Start:      Time
Diff. +  0.000001 g
Internal adjustment
             completed
Diff. +  0.000000 g

26.04.2005       9:37
Start:         manual
Diff. +  0.000001 g
Internal adjustment
             completed
Diff. +  0.000000 g

27.04.2005      11:53
Start:       ext.cal.
W-ID
Target  + 20.000000 g
Diff. +  0.000001 g
External adjustment
             completed
Diff. +  0.000000 g
--------------------
13.05.2005      09:17
Name:

--------------------
```

GLP Header

List of Calibration/Adjustment Procedures:

Example 1:
Internal calibration

Example 2:
isoCAL activated by difference in temperature

Example 3:
isoCAL at pre-defined adjustment time

Example 4:
Internal calibration/adjustment activated manually

Example 5:
External calibration/adjustment

GLP footer

Mass Comparison

Purpose

For accurate results in determining the mass of a given test weight, we recommend using the Mass Comparison application program in conjunction with the ABBA or ABA measuring method. With these methods, the difference in mass between a reference weight (A) and the test weight (B) is determined repeatedly. The mean value is calculated from all results (all differences in mass) to determine the final weighing result.

Features

ABA or ABBA Method:
In the "Mass Comparison" application program, the reference weight (A) and a test weight (B) are alternately weighed and the difference in mass is calculated from the individual values determined. The standard deviation calculated from all measurements yields the accuracy of the mass of a test weight. This standard deviation is dependent on the number of measurements performed.

Example ABBA:

```
ABBA method: ABBAABBAABBAABBAABBAABBA
6 cycles:      1   2   3   4   5   6
```

The ABBA method requires 24 weighing steps over 6 measuring cycles.
The measurements are strictly sequential.

Example ABA:

```
ABBA method: ABABABABABABA
6 cycles:     1 2 3 4 5 6
```

The ABA method requires 13 weighing steps over 6 measuring cycles. As shown in the illustration above, the measuring cycles overlap. The last measurement of cycle 1 is the first measurement of cycle 2.

SETUP Parameters
Parameters for the Procedure:
- Select method: ABBA, ABA
- Enter cycles ABBA/ABA:
  1–12/24, factory setting: 3
- Enter weighing timer measuring time:
  1–100 sec.
- Enter weighing timer interval for weight handling:
  0.5-100 sec.
- Data record ×3*ABBA: Process is not editable, factory settings:
  3 cycles, measuring time: 10 sec.
  Weight handling timer: 10 sec.
- Setting for mass comparators with motorized substitution weight (e.g., CCE111):
  Input: Select the "with tare on A1" procedure
  Function: Taring is performed the first time the procedure is initiated.
- Switchs statistics On or Off.
  Statistics off: If a PC is connected, the program can then only be used to store measured values
- Data output:
  Only a standard printout is generated. In the Setup menu, select "On" "*" under "Data output" to have the results pages printed automatically for individual values, first difference, second difference and statistics. If "Off" is selected, the data will be printed only if you press the ⎙ key when the particular results page is displayed.

Procedure
- Values determined for reference weight and test weight can be stored according to timer settings or program configurations or manually. For manual data storage, set the "Weight handling" timer to 0 (zero).
- The timer setting is displayed above the text line after you press the Start soft key. Enter the following settings separately under "Parameters: Mass Comparison .... Procedure => ABBA/ABA...":
  – Measuring time: 1 – 100 sec.
  – Handling (positioning/removing weight): 0.5 – 100 sec.
  The timer counts down to zero starting from the number of seconds entered. The function indicated is executed when the timer reaches "zero".
- One timer cycle includes:
  – Positioning weight on mass comparator
  – Storing weight value
  – Removing weight from comparator
- Positioning and removing of weights is performed manually when the timer starts. The weight value is stored automatically when the measuring time runs out.
- Timer pulse:
  If the user fails to position or remove a weight in accordance with the automatic or time-controlled program, the display prompts "Cancel?".
  To continue storing the weight value: Press the No soft key
  Cancel: Press the Yes or the CF soft key
- To switch off automatic storage of weight values: Set the "Weight handling" timer to zero. This enables the manual data storage function. To store a weight value manually, press the Sto soft key.

Results at the Conclusion of a Measurement Series
- When a weighing series is completed, "Complete" is shown in the text line. Press the Results soft key to view the results page. If the "Statistics" item is set to "On" in the Setup menu, the display jumps to the "Statistics" results page, which shows the mass difference and standard deviation.
  When the "Statistics" page is active, you can activate further results pages showing individual values, first difference, and second difference.
- After the data from the completed series is stored, the results pages are available in the following order:

  1. Statistics
  2. Individual values
  3. First difference for the cycle

- You can output all results over the data port to a computer or a printer, depending on your settings in the Setup menu.

Preparation

● To switch on your mass comparator: Press (I/⏻)

> The Sartorius logo is displayed

● In the Setup menu, select the "Mass Comparison" application program:
Press (Setup)

● To select application parameters:
Press the v soft key 2x and the < soft key

● To select Application 1 (Basic application):
Press the > soft key

● To select Mass Comparison:
Press the ^ or v soft key, if necessary, repeatedly

● To confirm Mass Comparison: Press the > soft key

- Mass comparison
  - Statistics
    - Off
    - o On
  - Data output
    - * Time
    - * Individual values
    - * Mass difference in the cycle
    - * Mass difference, standard deviation
  - Draft shield
    - Off
    - o On

o = Factory setting
* = On

See also the chapter on "Configuring the Mass Comparator: Application Parameters (Overview)"

● To save settings and exit the Setup menu: Press the << soft key

Mass Determination of Small Weights on Models CCE10000, CCE10000S and CCE20000

The mass of small weights can be determined, if a preload (tare weights) are placed on Centermatic.

Tare weights for models CCE10000 or CCE10000S

– 1× 1 kg (ring-shaped), 2× 2 kg (ring-shaped), 1 × 4 kg

Tare weight for model CCE20000

– 1× 10 kg (two-part)
Example:
The comparator scale is adjusted. The aim is to test a 5 kg weight.

● Move Centermatic into the upper position, "Load Pan".
● Remove the weighing pan.
● Place the staggered 4 kg weight on Centermatic.
● Place the ring weight 1 kg (1× 1 kg) on the 4 kg weight.
● Place the weighing pan on the 4 kg weight.
● Place the test piece (5 kg) on the weighing pan
● Close the hood.
● Move the weighing pan into the lower position. The "weight value" appears in the display.
> Read the weight value

○ The sum of the test piece and tare weights must always add up to 10 kg (CCE10000 or CCE10000S) or 20 kg (CCE20000)!

Soft Key Functions

Param.	Display mass comparison parameters and reference data
Start	Start new measurement
Results	Display results
Sto	Manually store the weighed values

Additional Functions
In addition to the functions:

– Alphanumeric input

– Tare (not possible with alphanumeric input)

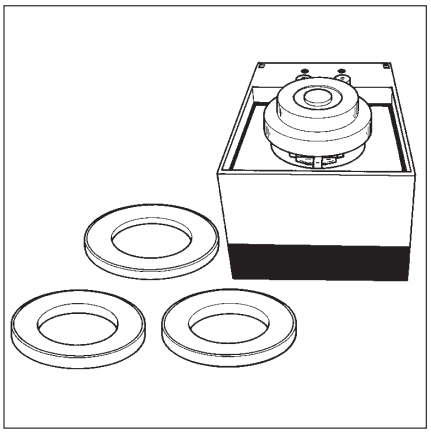
– Print

you can also access the following functions in this application program:

Calibration/adjustment
● Press the CAL soft key
> Continue as described in section "Calibration/Adjustment"

Setup (Setting Parameters)
● Press (Setup)
> Continue as described in section "Configuring the Mass Comparator"

Switch off the mass comparator
● Press (I/⏻)
> The mass comparator switches off



"Changing Process Parameters"

- You can view parameter settings before and after measurement. Using this function, parameters can be changed up to the time data from the first weighing routine is stored. After this point, input of all parameters is blocked until the measurement is completed.
  If you find you need to change parameters after you have already started measurement, press (CF) to stop the measurement operation.
- Comparison of reference and test weights is performed in accordance with the parameters set under "Input > PROCEDURE ...".
- Up to a max. of 100 data sets can be stored for each procedure. Each data set describes the permissible procedures.
- It may be necessary to change the settings for weighing procedure, cycles and timers.
- If the "Weight handling" timer is set to 0 seconds, automatic data storage is deactivated and manual storage is activated.

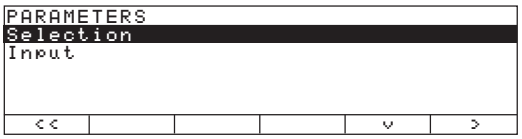
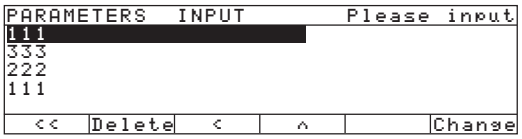
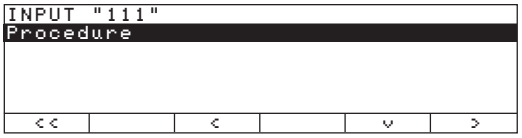
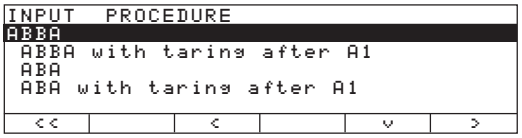
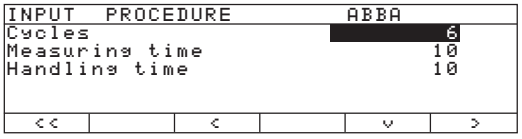
● To edit the mass comparison parameters:
Press the `Param.` soft key

- Parameter Mass comparison
  - Select
    - Procedure
      - `×3*ABBA` (procedure is not editable)
      - Select existing data set
    - Header texts
      - Lines 1 to 5: Max. 20 char./line
    - Factory settings (only for Sartorius Service)
      - No
      - Yes
  - Input (Create or Edit)
    - Procedure
      - o ABBA
        - Cycles: 1 ... 12, factory setting 6
        - Meas. time: 1 ... 100 sec
        - Weight handling timer: 5 ... 100 sec., 0 sec: Manual data storage
      - ABBA with tare in A1
        - Cycles: 1 ... 12, factory setting 6
        - Meas. time: 1 ... 100 sec, factory setting: 10
        - Weight handling timer: 5 ... 100 sec, factory setting 10
        - 0 sec: Manual data storage
      - ABA
        - Cycles: 1 ... 24, factory setting 21
        - Meas. time: 1 ... 100 sec, factory setting: 10
        - Weight handling timer: 5 ... 100 sec, factory setting 10
        - 0 sec: Manual data storage
      - ABA with tare in A1
        - Cycles: 1 ... 24, factory setting 21
        - Meas. time: 1 ... 100 sec, factory setting: 10
        - Weight handling timer: 5 ... 100 sec, factory setting 10
        - 0 sec: Manual data storage

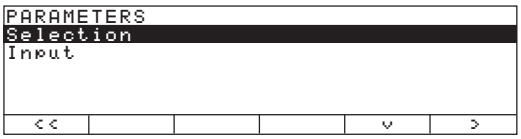
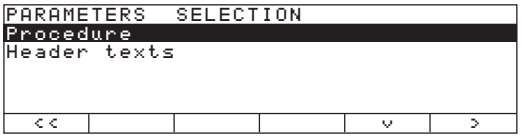
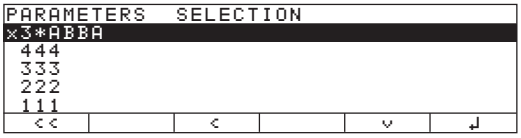
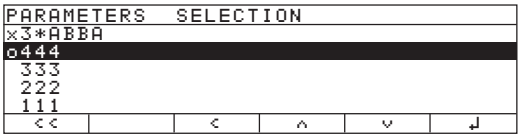
o = Factory settings

● To save settings and exit the Setup menu: Press the `<<` soft key

Example: Create and edit a procedure

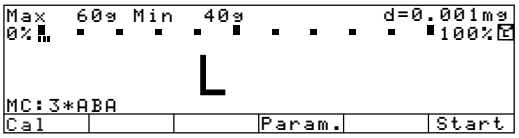
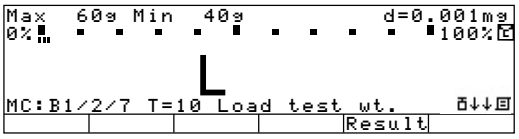
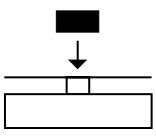
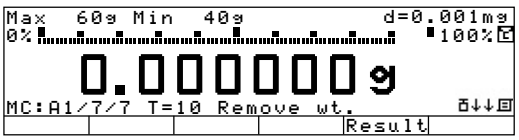
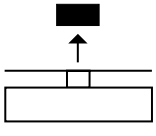
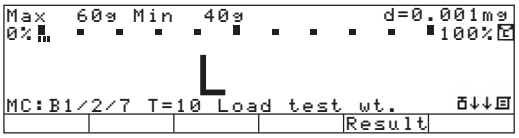
Step	Press key (or action)	Display
1. Activate parameter input	**Param.** soft key	
2. Select and confirm **Input**	v soft key, > soft key	
3. Input date record name (0), (1) ... (9) and confirm	(ABC), ... see also page 49 (ABC), ↵ soft key	 
4. Edit data set	**Change** soft key	
5. Activate “Procedure” and confirm	v soft key, > soft key	
6. Select Procedure 7. Set “cycles” and timer values; e.g.	v soft key and > soft key (6), soft key ↵ , ...	
8. Save entry and exit parameter input menu	<< soft key	

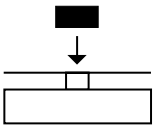
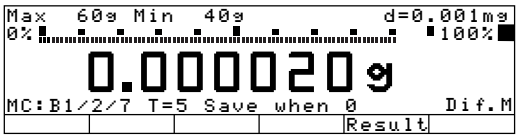
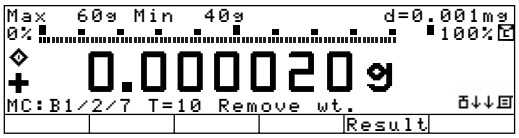
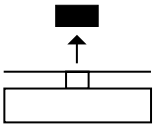
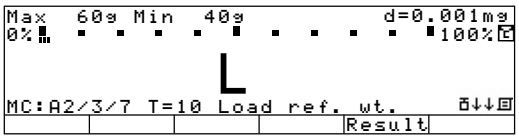
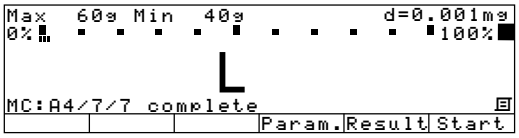
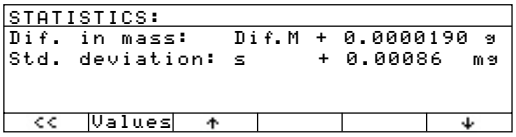
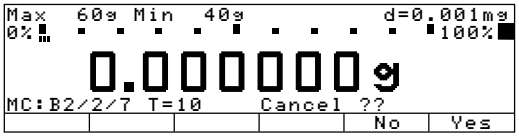
Example: Open an existing procedure

Step	Press key (or action)	Display
1. Activate parameter input	**Param.** soft key	
2. Confirm **selection**	> soft key	
3. Select and confirm **Procedure**	> soft key	
4. Select and activate data record	v or ^ soft key, ↵ soft key	
5. Exit parameter settings	<< soft key	

Example: Configuring an ABA procedure with 3 cycles and 7 steps (on a Model CCE66 in this example: 50 g weights)

Parameter settings:
Param.: Edit reference data: Change: Procedure: ABA with tare in A1

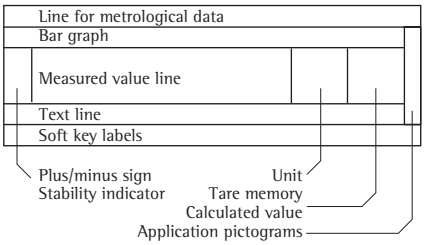
Step	Press key (or action)	Display/Printout
1. Switch on the mass comparator and enter parameter settings as above	⏻	
2. Start mass comparison	**Start**	
3. Place reference weight on mass comparator: Weight value is stored automatically		
After the preset time has elapsed, the mass comparator is tared and this value is stored as “zero”.		
4. Remove the reference weight		

Step	Press key (or action)	Display/Printout
5. Place test piece on the mass comparator		
After the preset time has elapsed, the value is stored		
6. Continue the measurement series as prompted on the display of the mass comparator.		
7. The measuring series is complete		
8. View results	**Result** soft key	
9. Print results The results are stored until the next measurement series is started.		---------- Time 10:48:54 A1 + 0.000000 g Time 10:49:25 B1 + 0.000020 g Time 10:49:55 A2 + 0.000004 g Time 10:50:25 B2 + 0.000024 g Time 10:50:56 A3 + 0.000005 g Time 10:51:26 B3 + 0.000025 g Time 10:51:57 A4 + 0.000006 g x1 + 0.0000180 g x2 + 0.0000195 g x3 + 0.0000195 g MDiff + 0.0000190 g s 0.00086 mg ----------
○ **Cancel??**: Cancel measurement if necessary 1) The running measurement can be stopped if needed e.g., if the weighing is no longer synchronous or if the wrong parameters are set. 2) If you cancel the running measurement after the preset time as been exceeded, you are prompted to confirm this action: Cancel “Yes”: The series is stopped Cancel “No”: The measurement series continues	**Yes** soft key , **No** soft key or 	

Data Output

There are 3 options available for data output:

- Output to the display and control unit
- Output to a printer port (generate a printout)
- Output to a peripheral device (e.g., PC) via the communications serial port



Output to the display and control unit
The display is divided into 9 sections. Information about the mass comparator, the application being used and the sample weighed is output in the following sections:

- Line for metrological data
- Bar graph
- Plus/Minus sign, stability symbol
- Line for measured values
- Weight unit display
- Tare memory, calculated values
- Pictograms
- Text line
- Soft key labels

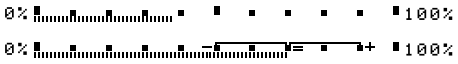
Metrology line (for use in legal metrology)
This line shows:

Max 100 g – Maximum weighing capacity (e.g., 100 g)

Min 80 g – Minimum weighing capacity (e.g., 80 g)

d=0.001mg – Readability: Indicates the mass comparator's display increment in digits (e.g., 0.001 mg)

Bar graph (overview display)
In the bar graph, weighing results are displayed either



- As a percentage of the maximum of the mass comparator's capacity, or
- In relation to a target value, with tolerance limits indicated.

You can turn off (blank) the bar graph display (Setup: Device Parameters: Display: Weight value size: 13 mm + text display or 13 mm)

Plus/Minus sign, stability symbol
This section shows:

– Busy symbol

\+ − – Plus/Minus sign

– Zero symbol (indicating the mass comparator has been zeroed)

125.030
35
=W* 18.3*0.9

Line for measured values
This line shows:
- The current weight value
- Calculated values (such as “pcs” with unit for piece counts)
- User input (such as a lot number or equations)

g
pcs

Weight unit display
This section shows:
- The current weight unit (e.g., g)
- Designation of other values (such as “pcs” for piece counts)

⚠
NET1 NET2

Tare memory, calculated values
This section shows:
- Indication that a value has been calculated
- Indication that the tare memory contains application data

Pictograms
This column shows:
- Symbol for Application 1 (Mass Comparison)
- Symbol for current print job
- Symbol for ISO/GLP-compliant printout

MV: A1/1/7 T= Load ref. wt.

Ref. wt. too light

Text line
This line shows:
- Explanatory text about the application program (for example, on “Mass Comparison”)
- Explanation of error codes and messages

Cal PT1/T1 S-ID M+

<< < ^ v > ↵

Soft key labels
This line shows:
- Texts (abbreviated) to describe the function assigned to each arrow key
- Symbols for selecting and confirming parameter settings (see also the chapter on “Operating Design”).

Mass Comparator Information
In the Setup menu, you can view information about your mass comparator in
Setup: Info: Device Information:

SETUP INFO	
Version no:	01-47-02
Wsh.sys. ver. #:	00-22-03
Draft sh. ver. #:	05-02-09
Model:	CCE106
Serial no:	91205355
<< < v	

- Software version number
- Mass comparator version number
- Draft shield version number
- Mass comparator model
- Mass comparator serial number
- Date: Next maintenance
- Service hotline
- Minimum sample quantity SQmin

Interfaces

Purpose

The mass comparators have two data interfaces that allow weight values, calculated values and parameter settings to be output to a printer, PC or control display.
Control commands (e.g., for foot switch functions) and alphanumeric inputs (such as those from an online bar code scanner) can also be input in the mass comparator via the two interfaces.

Features

- The mass comparator has two serial interfaces:
- Serial printer port (PRINTER Serial Out)
- Serial communications port

- You can set the serial printer port to use the following printers:
- YDP02
- YDP03
- YDP01IS
- YDP01IS Label
- YDP02IS
- YDP02IS Label
- Universal
- YDP04IS
- YDP04IS label

⚠ You may need to use an external power supply to operate peripheral devices.

- The following devices can be connected to the printer port:
- Hand switch
- Foot switch
- External checkweighing display
- Bar code scanner*
- Keyboard*

* with YCC01-0024M01 adapter (“Accessories”)

- The serial communications port has a 25-contact D-SUB female connector as a standard feature. This connector can be exchanged for:
- 12-pin round connector (RS-485 for XBPI; RS-232 for SBI, XBPI)
- 9-contact D-SUB connector for direct connection to a PC

- Both the 12-contact and the 9-contact female interface connectors are additionally equipped with a 5-pin male connector to directly interface an external bar code scanner or a keyboard.

- You can set the serial communications port to use the following operating modes:
- SBI
- XBPI (BPI)

- You can connect the following devices to the serial communications port:
- Non-verifiable printer
- PC
- 2nd display
- Hand switch
- Foot switch
- External checkweighing display
- T-connector
- Bar code scanner*
- Keyboard*

* If the 25-contact D-SUB female connector is installed, you will need the YCC01-0024M01 adapter (Accessory)

- Printouts generated from application programs or by the configurable print function can be output to the serial printer port, the serial communications port, or to both.

- If you have selected the auto print mode, data will be output to the serial communications port; printouts generated by application programs will then only be output to the serial printer port.

- In the xBPI mode, the serial communications port can operate independently of the serial printer port. That means you can transfer data to a PC and use the PC to control your mass comparator, while generating printouts via the serial printer port.

- In the SBI mode, you can use ESC commands from your PC to control the mass comparator via the serial communications port.

  For printing individual printouts, a menu item decides which data output will be used when ESC P or the  key is pressed.

Factory Settings of the Parameters
Device parameters: Interfaces:
Serial communication: SBI

Serial printer: YDP03

Printout: Output to interface ports:
Serial communication (PERIPHERALS):
Application-defined output

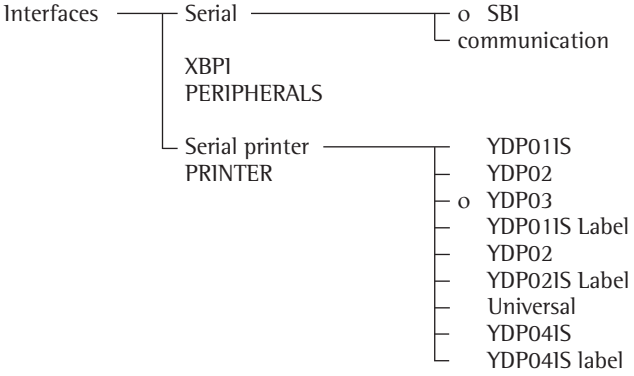
Printout: Output to interface ports:
Serial printer (PRINTER):
Application-defined output

Preparation
Configure the interfaces

- Switch on your mass comparator: Press (I/⏻)

> The Sartorius logo is displayed, a self-test is performed

- Configure the interfaces: Press (Setup)
- Select Device parameters: Press the v soft key, then the > soft key
- Select interfaces: Press the v > soft keys 5×



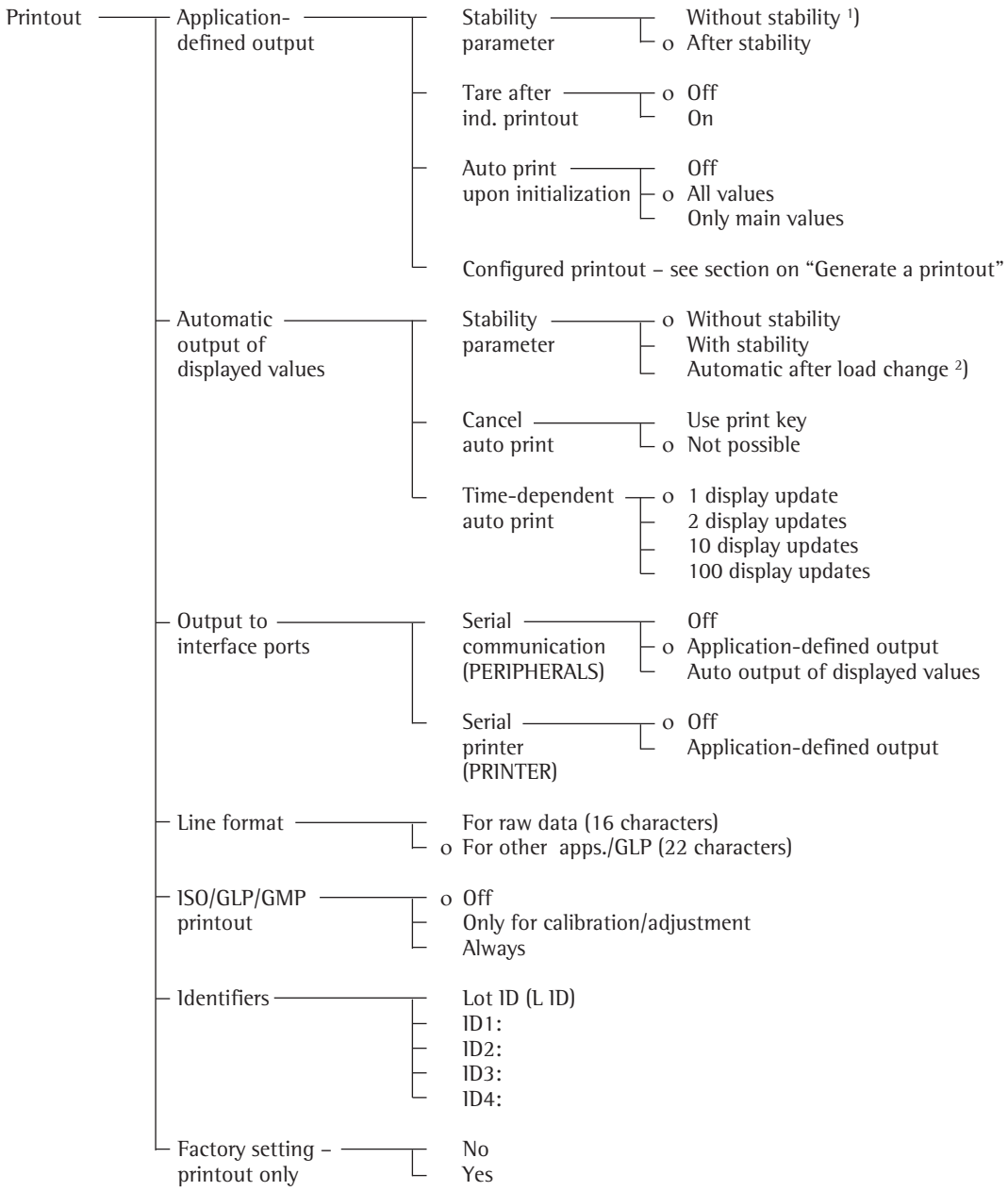
o = Factory setting

See also the chapter on “Configuring the Mass Comparator: Application Parameters (Overview)”

- To save settings and exit the Setup menu: Press the << soft key

Configuring a Printout

- Select Setup menu: Press (Setup)
- Select Printout: Press the v > soft keys 3×



o= Factory settings
1) = Information on use in legal metrology: Only permitted for control purposes; printouts are not allowed
2) = Auto print, when load change > 10 d and stability is reached: Deactivated < 5 d

Printout

Purpose
This function enables you to print out weights, other measured values and IDs. You can format the printout to meet different requirements.

Features
Line format: You can configure data ID code with up to 6 characters at the beginning of each line

Weight ID:
You can configure an extra line for identification of each weighed or calculated value using the code S ID

Print Application Parameters:
You can generate a printout of the initialization values before printing out the weighing results

I**SO/GLP-compliant Printout:** You can print out parameters relating to the weighing environment

Printout Animal Weights: pplication-defined printout of animal weights or of animal weights plus calculated weights after averaging

Optimizing Interfaces:
- Use the highest possible baud rate
- Turn off interfaces that are not in use
- Optimize the amount of data to be transferred

Output to the Interface Ports

Print Mode	Triggers	Operating mode: PERIPHERALS	
PERIPHERALS		SBI	BPI
	ESC P (PERIPHERALS)		Not possible
Applications	Print key on the mass comparator	Prints individual printout and or configured printout to	
(Indiv.) print:	Print key on the printer or ESC P (PRINTER)	PRINTER, PERIPHERALS or both according to menu settings	Prints individual printout and/or configured printout to PRINTER when this function is “ON” in the menu
	Application		
Auto print	ESC P (PERIPHERALS)	Toggles auto print ON/OFF, if this function can be switched off individually, otherwise prints individual printout and/or configured printout to PRINTER. Cyclical output to PERIPHERALS Print to PRINTER.	Not possible
	Print key on the mass comparator		Toggles auto print ON/OFF, if this function can be switched off individually, otherwise prints individual printout and/or configured printout.
	Print key on the printer or ESC P (PRINTER)	Prints individual printout and/or configured printout to PRINTER.	Prints individual printout and/or configured printout
	Application		

Serial Printer Port

Type of interface:	Serial interface
Interface operating mode:	Full duplex
Level:	RS-232
Interface connector:	D-SUB female connector, 25-contact
Transmission rate:	150, 300, 600, 1200, 2400, 4800, 9600 and 19200 baud
Parity:	Space, uneven, even
Character transmission:	Start bit, 7/8-bit ASCII, parity, 1 or 2 stop bits
Handshake:	For 2-wire interface: Software (XON/XOFF) for 4-wire interface: Hardware (CTS/DTR)
Operating mode:	YDP02, YDP03, YDP01IS, YDP02IS, YDP01IS Label, YDP02IS Label, universal printers, YDP04IS, YDP04IS Label
Manual print mode	Without stability, after stability
Print appl.	Only application-defined output
Data output format of the mass comparator:	16 or 22 characters

Configuring Printout Formats
For a number of application programs, you need to set initialization values. All values upon initialization or only the main values can be automatically printed as soon as you have configured this in the Setup menu:
`Auto print upon initialization`

Weights and calculated values can be printed as numeric values either with a preceding data ID code (22 characters) or without one (16 characters). See also the chapter “Data Output Functions.”
`Line format`

You can always generate an ISO/GLP printout, or only after calibration/adjustment, or you can deactivate this option. See also page 83.

Generating an ISO/GLP Printout:
In the Setup menu, you can choose the settings:

– No ISO/GLP printout generated (`Off`)

– ISO/GLP printout generated only for calibration/adjustment
(`Only for calibration/adjustment`

– Every printout is an ISO/GLP-compliant report (`Always`)

Auto print checkweighing results: Printout of a weight when it lies within the preset limits at stability.

Auto print with time-controlled functions: Automatic printout of weighed values after a preset time intervals has elapsed, or at a defined time.

Printout of intermediate or final evaluation from totalizing, formulation and statistics by pressing the `MR` soft key.

(⊟) key
Pressing this key causes the current value displayed to be printed out (weight with unit, calculated value, alphanumeric readout).
Setting:
Printout: Application-defined output or automatic output of displayed value

Examples

```
+50.000000 g
+ 5.562340 ozt
+     253 pcs
+   88.23 %
+  105.78 o
```

Weight value in grams
Weight value Troy ounces
Piece count
Percentage
Calculated value

Line format
The current value displayed can additionally be printed with a data ID code. This ID appears at the beginning of the line and has up to 6 characters. You can use this data ID code to designate a weight readout as a net weight (N) or a calculated value as a piece count (QNT).
Setting:
Setup: Printout: Line format:
For other apps./GLP (22 characters)

```
ID     ABC123DEF456GH
L ID   ABC123DEF456GH
W ID   ABC123DEF456GH
N      +50.000000 g
Qnt    +       253 pcs
Prc    +     88.23 %
```

Identification number*
Lot number (weighing series)*
Weight set number*
Net value
Piece count
Percentage

*= only for ISO/GLP-compliant records/ printouts

Weight ID
You can have each weight or calculated value that you print preceded by a text line containing numbers and/or letters. You can either print this ID immediately as alphanumeric input (press (⊟)) or store it as the sample ID (S ID soft key) to be included on the next printout, if the line format is set: For other apps./GLP (22 characters).

```
S ID   ABC123DEF456GH

ABC123DEF456GHI789JK

NUM           12345678
```

Weight ID
(with less than 14 characters)
Weight ID
(with up to 22 characters)
Numeric key output when (⊟) is pressed

Auto print
You can have the weight readout printed automatically[1]. This printout can be generated after a certain number of display updates[2]. You can also configure whether or not the auto-print function is dependent on the stability parameter[3]. The display update frequency depends on both the mass comparator model and the operating status.

```
N      +50.000000 g
S-ID   12345678901234
Stat
Stat          L
Stat          H
```

Net weight
Weight ID
Display blank
Display underload
Display overload

Setting:
[1]Setup: Printout: Automatic output of displayed value
[2]Setup: Printout: Automatic output of displayed value: Time-dependent auto print
[3]Setup: Printout: Automatic output of displayed value: Stability parameter

ISO/GLP printout

You can have the device information, ID and the current date printed before (GLP header) and after (GLP footer) the values from the weighing series (Setup: Printout: ISO/GLP/GMP printout: always).
These parameters are:

GLP Header:
- Date
- Time at the start of a weighing series
- Mass comparator manufacturer
- Mass comparator model
- Model serial number
- Software version number
- ID number (of weighing series)

GLP Footer:
- Date
- Time at the end of a weighing series
- Field for signature

Operating the Mass Comparator with an ISO/GLP-Compliant Logging Device

ISO/GLP-compliant documentation requires a computer with special software. Contact Sartorius for details.

Setting:
Setup: Printout: ISO/GLP/GMP printout: Always

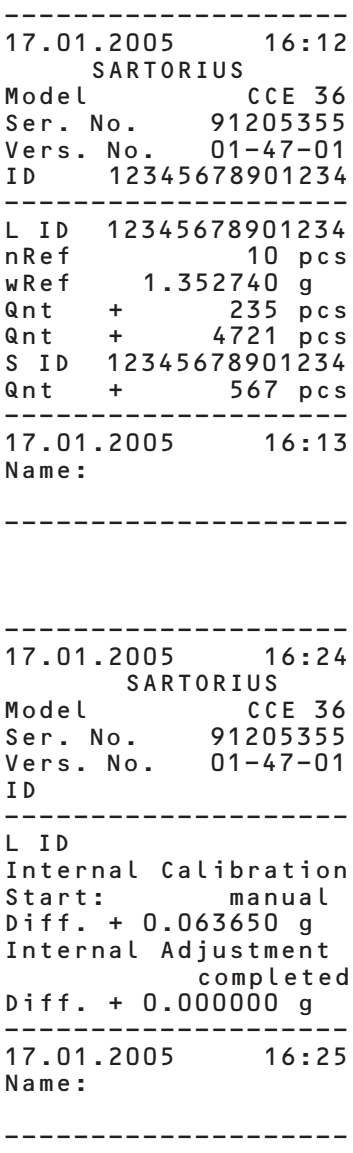
The record is output to a Sartorius YDP03-0CE data printer or a PC.

End GLP printout:
● Press the CF key

To end GLP printout during an active application:
GLP-compliant records and application programs then require the following settings
Setup: Device Parameters: Keys: CF function in Applications: Clear only selected applications

● Press the CF key
> Text line: CF selected: Clear application

● Press GLP soft key



Dotted line
Date/Time
Mass comparator manufacturer
Mass comparator model
Mass comparator serial number
Software version (display and control unit)
ID no.
Dotted line
Weighing series no. (Lot ID)
Application initialization value
Application initialization value
Counting results
Counting results
ID for counting results
Counting results
Dotted line
Date/Time
Field for signature
Empty line
Dotted line

Record for
Internal calibration/adjustment:
Dotted line
Date/Time
Mass comparator manufacturer
Mass comparator model
Mass comparator serial number
Software version (display and control unit)
ID no.
Dotted line
Weighing series no. (Lot ID)
Calibration/adjustment mode
Start mode for calibration
Difference after calibration
Confirmation of completed adjustment procedure
Difference between current and target values after adjustment
Dotted line
Date/Time
Field for signature
Empty line
Dotted line

Serial Communications Port

Purpose
The mass comparator is equipped with a serial communications port, labeled PERIPHERALS, to which you can connect a PC, a second display or an external checkweighing display.

You can use an online PC to change, start and/or monitor the mass comparator's functions.

The communications and the printer ports also provide data output port lines for the "Checkweighing" program. This port can also be used to connect a hand or foot switch.

⚠ **Warning When Using Pre-wired RS-232 Connecting Cables:**

RS-232 cables purchased from other manufacturers often have incorrect pin assignments for use with Sartorius mass comparators! Be sure to check the pin assignments against the chart before connecting the cable and disconnect any lines marked differently (such as pin 6). Noncompliance may lead to malfunctions or even completely destroy your mass comparator and/or any ported peripheral devices.

Features

Type of interface:	Serial interface
Interface operating mode:	Full duplex
Level:	RS-232 (optional: RS-485)
Interface connector:	D-SUB female connector, 25-contact Optional: Round female connector 12-contact Optional: D-SUB female connector, 9-contact (Each of the optional connectors comes with a DIN 5-contact female connector)
Transmission rate:	150, 300, 600, 1200, 2400, 4800, 9600 and 19,200 baud
Parity:	Odd, even, none
Character transmission:	Start bit, 7/8-bit ASCII, parity, 1 or 2 stop bits
Handshake:	For 2-wire interface: Software (XON/XOFF) For 4-wire interface: Hardware (CTS/DTR)
Operating mode:	SBI, XBPI*
Network address**:	1, 2, ..., 31, 32
Manual print mode	Without stability, after stability
Auto print mode	Without stability, at stability, after load change
Data output format of comparator:	16 or 22 characters

* XBPI communication mode: Always 9600 baud, 8-bit, odd parity, 1 stop bit
** Network address is only relevant for the XBPI mode

Factory Setting of the Parameters:

Transmission rate:	1200 baud
Parity:	Odd
Stop bits:	1 stop bit
Handshake:	Hardware handshake, 1 character after CTS
Operating mode:	SBI
Network address:	0
Manual print mode:	After stability
Auto print mode:	Without stability
Cancel Auto print:	Not possible
Time-dependent automatic printout:	After 1 display update
Tare after individual printout:	Off
Basic values, application:	Off
Line format:	For other apps./GLP (22 characters)

Preparation
● See page 83 for the pin assignment chart and cabling diagram.

Data Output Format

You can output the values displayed in the line for measured values and weight units with or without an ID code.

Example: Without ID code
```
+      253 pcs
```

Example: With ID code
```
Qnt    +      253 pcs
```

Configure this output parameter in the Setup menu (Setup: Printout: Line Format).

Output without an ID code has 16 characters and with an ID code, 22 characters.

Data Output Format with 16 Characters
Display segments that are blank are output as spaces.
Characters displayed without a decimal point are output without a decimal point.

The following characters can be output, depending on the output position:

Normal Operation

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	+	A	A	A	A	A	A	A	A	A	*	E	E	E	CR	LF
or	–	.	.	.	.	.	.	.	.	.		*	*	*		
or	*	*	*	*	*	*	*	*	*	*						

*: Spaces
A: Displayed characters
E: Unit symbol
CR: Carriage return
LF: Line feed

Special Output Codes

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	*	*	*	*	*	*	–	–	*	*	*	*	*	*	CR	LF
or	*	*	*	*	*	*	A	*	*	*	*	*	*	*	CR	LF
or	*	*	*	*	*	*	A	B	*	*	*	*	*	*	CR	LF

and only upon request with ESC w0 or ESC m3 (no print command):

	*	*	*	*	*	*	W	*	X	X	X	Y	Y	Y	CR	LF
or	*	*	*	*	*	*	S	*	X	X	X	Z	Z	Z	CR	LF

*:	Spaces	A = C:	Adjustment
AB = – –:	Final readout	W:	Draft shield status
A = H:	Overload	S:	Substitution weight status
AB = H H:	Overload in checkweighing	Y,Y,Y =	Draft shield doors
A = L:	Underweight	ZZZ =	Position: Substitution weight
AB = L L:	Underweight in checkweighing	XXX =	Decimal value calculated from binary data:

Draft Shield Status (XXX):

Decimal value	Binary value	Control information
1	Bit0 = 0:	No error/ionizer off
	Bit0 = 1:	Draft shield error/ionizer on
2	Bit1 = 0:	Draft shield motor off
	Bit1 = 1:	Draft shield in motion
8	Bit3 = 0:	”Learning function” off
	Bit3 = 1:	”Learning function” on
16	Bit4 = 0:	At least one draft shield door open
	Bit4 = 1:	All draft shield doors closed
64	Bit6 = 0:	Motorized draft shield operation
	Bit6 = 1:	Manual draft shield operation

Examples for Models CCE36, CCE66, CCE605, CCE1005:
R,M,L = COO: Right door closed (**C**losed), middle and left doors open (**O**pen)
R,M,L = OCC: Right door open (**O**pen), middle and left doors closed (**C**losed)

Example for Model CCE6:
W >008210

Angle of aperture
The draft shield has turned itself to the absolute position of 210°.

Control information
0 → Bit 6 – Motorized draft shield operation
\+ 0 → Bit 4 – Open draft shield
\+ 8 → Bit 3 – “Learning function” on
\+ 0 → Bit 1 – Draft shield motor “Off”
\+ 0 → Bit 0 – No error
= 08

Substitution Weight Status: XXX = Current State

Decimal value	Binary value	Control information
0 ... 5	Bit0 ... 3:	Position: Substitution weight 0 to 5 5
15		Position: Substitution weight in motion
	Bit4 = 0:	Linear draft shield
16	Bit4 = 1:	Rotation draft shield
	Bit5 = 0:	No motor malfunction
32	Bit5 = 1:	Motor malfunction
	Bit6 = 0:	Motorized substitution weight: None
64	Bit6 = 1:	Motorized substitution weight: Initialized
	Bit7 = 0:	Motorized substitution weight: Motionless
128	Bit7 = 1:	Motorized substitution weight: In motion

Load Substitution Weight: ZZZ = Permissible Positions

Decimal value	Binary value	Control information
	Bit0 = 0:	Substitution weight position 0: Not available
1	Bit0 = 1:	Substitution weight position 0: Available
	Bit1 = 0:	Substitution weight position 1: Not available
2	Bit1 = 1:	Substitution weight position 1: Available
	Bit2 = 0:	Substitution weight position 2: Not available
4	Bit2 = 1:	Substitution weight position 2: Available
	Bit3 = 0:	Substitution weight position 3: Not available
8	Bit3 = 1:	Substitution weight position 3: Available
	Bit4 = 0:	Substitution weight position 4: Not available
16	Bit4 = 1:	Substitution weight position 4: Available
	Bit5 = 0:	Substitution weight position 5: Not available
32	Bit5 = 1:	Substitution weight position 5: Available

Commands for substitution weights: See page after next

Example:

S 068031

- 031: Substitution weight positions 0 to 4 available
- 068: Substitution weight position 4
  Linear draft shield
  No motor malfunction
  Motorized substitution weight initialized
  Motorized substitution weight motionless

Error message

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	*	*	*	E	r	r	*	*/#	#	#	*	*	*	*	CR	LF

*: Spaces
#: Error code number

Example: Output weight value of +111.25507 mg

Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	+	1	1	1	.	2	5	5	0	7	*	m	g	*	CR	LF

Position 1: Plus +, or minus – or space
Position 2: Space or weight value
Position 3 – 10: Weight value with decimal point and leading zeros are output as spaces
Position 11: Spaces
Position 12 – 14: Characters for unit of measure or space
Position 15: Carriage return
Position 16: Line feed

Data Output Format with 22 Characters
When data is output in this format, ID codes with 6 characters will precede data with a 16-character format. These six characters identify the subsequent value.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
K	K	K	K	K	K	+	A	A	A	A	A	A	A	A	A	*	E	E	E	CR	LF
	*	*	*	*	*	–	.	.	.	.	.	.	.	.	.		*	*	*		
						*	*	*	*	*	*	*	*	*	*						

K: ID code character[1)]
*: Spaces
A: Displayed characters
E: Unit symbol
See chapter “Toggle between Weight Units”
CR: Carriage return
LF: Line feed

Special Output Codes

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
S	t	a	t	*	*	*	*	*	*	*	*	–	–	*	*	*	*	*	*	CR	LF
												H	H								
												L	L								
												C									

*: Spaces
– –: Final readout
H: Overload
H H: Overload in checkweighing
L: Underweight
L L: Underweight in checkweighing
C: Calibration/Adjustment
Draft shield and substitution weight status are similar to the data output format with 16 characters

Error message

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
S	t	a	t	*	*	*	*	*	E	r	r	*	#	#	#	*	*	*	*	CR	LF

*: Spaces
#: Error code number

ID Code Characters K

`Stat`	Status
`ID`	ID Code (Identifier)
`L ID`	Weighing series number
`W ID`	Weight set number
`Target`	Exact calibration weight value
`S ID`	Weight ID
`NUM`	Numeric input
`T1`	Application tare memory 1
`N`	Net weight (T1 = 0)
`N1`	Net weight (T1≠ 0)
`Qnt`	Piece count
`Prc`	Percent
`nRef`	Reference sample quantity
`pRef`	Reference percentage
`wRef`	Reference piece weight
`Wxx%`	Reference percentage weight
`mDef`	Target value for animal weighing
`Mul`	Calculation factor in animal weighing
`x–Net`	Result in animal weighing
`x–Res`	Calculated results of animal weighing
`Res`	Results using equations (Calculation)
`Setp`	Target value for checkweighing
`Min`	Min. tolerance for checkw.
`Max`	Upper tolerance for checkw.
`Time`	Time that a value was stored
`n`	Transaction counter
`Total`	Sum of all values
`Average`	Average in statistics
`s`	Standard deviation
`srel`	Variation coefficient
`Diff`	Difference between maximum and minimum

Commands (Data Input Format)

You can connect a PC to your mass comparator to send commands via the interface port to control mass comparator functions and application programs.

These commands are control commands and can take on different formats. Control commands have up to 26 characters. Each of these characters must be sent based on the setup configuration for data transmission.

Formats for Control Commands

Format 1:	Esc	!	CR	LF						
Format 2:	Esc	!	#	_	CR	LF				
Format 3:	Esc	!	#	&t	(max. 20 &t) &t		_	CR	LF	
Format 4:	Esc	!	#	&t	(max. 20 &t) &t		_	CR	LF	
Format 5:	Esc	!	#	#	#	_ > CR	LF	Exc	!	#	_CR LF

Esc: Escape
!: Command character
#: Number
&t: Number or letter
_: Underline (ASCII: 95)
CR: Carriage return (optional)
LF: Line feed (optional)
max: Depends on command character, i.e., parameters:
The entry is truncated after the max. length, and not rejected as when entered via the keyboard

Format 1 (e.g.: ESC K)

!	Meaning
K	Weighing mode 1
L	Weighing mode 2
M	Weighing mode 3
N	Weighing mode 4
O	Block keys
P	Print
Q	Beep (acoustic signal)
R	Unblock keys
S	Restart
T	Tare and zero
Z	Internal adjustment

Format 2 (e.g.: ESC f3_)

!#	Meaning
f3	Zero
f4	Tare (without zeroing)
f5	Left draft shield key (closing and opening as learned or default)
f6	Right draft shield key (closing and opening as learned or default)
f9	Function key (I)
kF1 ... kF6	Soft key 1* ... Soft key 6* Function depends on application program
kF7	(Setup) function key
kF8	(⏻) function key
s3	(CF) function key
x0	Perform internal calibration
x1	Print mass comparator model
x2	Print serial no. of weighing platform
x3	Software version of weighing platform
x4	Software version of display and control unit
x5	Print (GLP) ID no.
x6	Print “Inventory” no.
x7	Print weighing series no.

Control Commands for Substitution Weights:

m3	Status: Substitution weight
m4 ... m9	Load substitution weights: 0...5

Control Commands for the Draft Shield in Models CCE36, CCE66, CCE605, CCE1005:

w0	Draft shield status
w1	Open left draft shield door
w2	Close all draft shield doors
w3	Open upper draft shield door
w4	Open right draft shield door
w5	Open left and upper draft shield doors
w6	Open left and right draft shield doors
w7	Open right and upper draft shield doors
w8	Open all draft shield doors

Control Commands for the Draft Shield in Model CCE6:

w0	Draft shield status
w1	Open draft shield 100° to the left (stored position is deleted)
w2	Close draft shield
w3	Open draft shield up to position saved
w4	Open draft shield door 100° to the right (stored position is deleted)

Format 3 (not allowed in the Setup menu; e.g., ESC z5 1234567_)

!#	Meaning
z5	Input (GLP) ID no.
z6	Input “Inventory” no.
z7	Input weighing series no.

Format 4:

!	Meaning
t	Text input in display

Format 5:
(only for CCE6: e.g., ESC t120_f5_)

ESC txxx_CR LF ESC f5 _ CR LF:
Save opening position xxx in degrees

ESC txxx_CR LF ESC f6 _ CR LF:
Save opening position xxx in degrees

* counted from right to left

Synchronization
During data exchange between mass comparator and PC, messages consisting of ASCII characters are transmitted via the interface. For error-free data exchange, parameters for baud rate, parity, handshake mode and character format must be identical for both units.

You can configure these parameters accordingly in the Setup menu of your mass comparator. In addition to these settings, you can also define parameters to make data output from your mass comparator dependent on various conditions. These conditions are described under each of the application program descriptions.

No errors are generated just because no peripheral device is connected to an interface port (open data port).

Handshake
The mass comparator's Sartorius balance interface (SBI) is equipped with transmit and receive buffers. You can define the different handshake parameters in the Setup menu of your mass comparator:
- Hardware handshake (CTS/DTR)
- Software handshake (XON, XOFF)

Hardware Handshake
When hardware handshake is configured on a 4-wire interface, 1 more character can be transmitted after CTS.

Software Handshake
Software handshake is controlled by XON and XOFF. When a device is switched on, XON must be transmitted to enable any ported device to communicate.

When software handshake is configured in the Setup menu, hardware handshake becomes active after software handshake.

The data transmission sequence is as follows:

```
Mass comp. --- byte --->          PC
(transmitt- --- byte --->    (receiving
 ing device)--- byte --->       device)
            --- byte --->
          <--- XOFF ---
            --- byte --->
            --- byte --->
                 ...
              (Pause)
                 ...
          <--- XON ---
            --- byte --->
            --- byte --->
            --- byte --->
            --- byte --->
```

Sending Device:
Once XOFF has been received, it prevents further transmission of characters.
Once XON has been received, it re-enables the transmitting device to send data.

Receiving Device:
To prevent too many control commands from being received at one time, XON is not transmitted until the buffer is almost empty.

Activating Data Output
You can define the data output parameters so that output is activated either when a print command is received or automatically and synchronously with the display or at defined intervals (see application program descriptions and auto print settings).

Data Output by Print Command
The print command can be transmitted by pressing  or by a software command (Esc P).

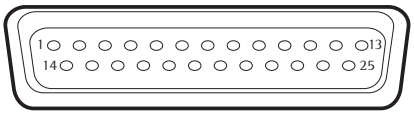
Automatic Data Output
In the "Auto print" mode, data is output to the data interface port without an extra print command. You can choose to have data output automatically and synchronously with the display at defined intervals, with or without the stability parameter on your mass comparator.
The display update frequency depends on the mass comparator model and its current operating status.

If you select the auto print setting in Setup, data will be transmitted the moment you turn on your mass comparator. You can also specify in Setup whether the automatic data output can be stopped and started by pressing the  key.

Pin Assignment Chart

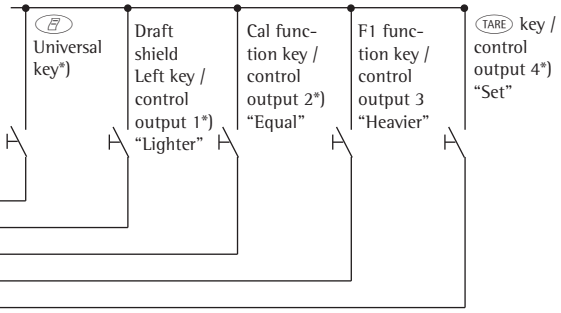
Female Interface Connector:
25-contact D-Submini, DB25S, with screw lock hardware for cable gland

Required Male Connector (Recommended):
25-pin D-Submini, DB25S, with integrated shielded cable clamp and shield plate assembly (Amp type 826 985-1C) and fastening screws
(Amp type 164 868-1)

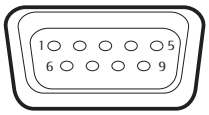


Pin Assignment Chart, 25-contact Female Connector, RS-232:

Pin 1: Signal Ground
Pin 2: Data output (TxD)
Pin 3: Data input (RxD)
Pin 4: Signal GND
Pin 5: Clear to Send (CTS)
Pin 6: Internally Connected
Pin 7: Internal Ground (GND)
Pin 8: Internal Ground (GND)
Pin 9: Reset _ In[1])
Pin 10: – 12 V Output
Pin 11: + 12 V Output
Pin 12: Reset _ Out[2])
Pin 13: + 5 V Output
Pin 14: Internal Ground (GND)
Pin 15:
Pin 16:
Pin 17:
Pin 18:
Pin 19:
Pin 20: Data Terminal Ready (DTR)
Pin 21: Supply Voltage Ground (GND)
Pin 22: Not Connected
Pin 23: Not Connected
Pin 24: Supply Voltage Input + 15 ... 25 V
Pin 25: +5 V Output

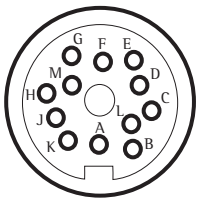


*) = See the section "Additional Functions" for information on changing pin assignments
[1]) = Hardware restart
[2]) = Peripherals restart



Pin Assignment Chart, 9-contact Female Connector, RS-232 (optional):

Pin 1: Not Connected
Pin 2: Data Output (TxD)
Pin 3: Data Input (RxD)
Pin 4: Clear to Send (CTS)
Pin 5: Signal GND
Pin 6: Not Connected
Pin 7: Not Connected
Pin 8: Data Terminal Ready (DTR)
Pin 9: Not Used

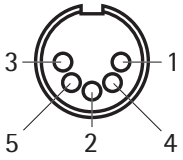


Pin Assignment Chart, 12-contact Round Female Connector, RS-485 (Optional):

Pin A: F2 Function Key / Control Output 3 "Heavier"
Pin B: RS-485: TxD – N; RS-232: TxD
Pin C: RS-485: TxD – P; RS-232: RxD
Pin D: RS-485: Not Connected; RS-232: DTR
Pin E: Signal GND
Pin F: +5 V
Pin G: Left Draft Shield Key / Control Output 1 "Lighter"
Pin H: RS-485: Not Connected; RS-232: CTS
Pin J: Cal Function Key / Control Output 2 "Equal"
Pin K: universal switch key
Pin L: Tare Key / Control Output 4 "Set"
Pin M: + 12 V Output

Connecting a Bar Code Scanner/Additional Keyboard
You can connect a bar code scanner or an additional keyboard using the following female connectors:

- 25-contact D-Submini female connector (using an adapter)
- 12-contact round female connector (using an adapter)
- 5-contact direct DIN female connector

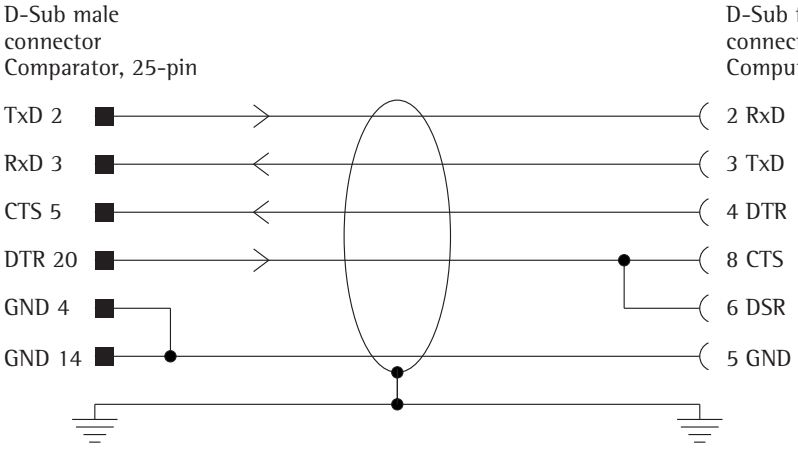


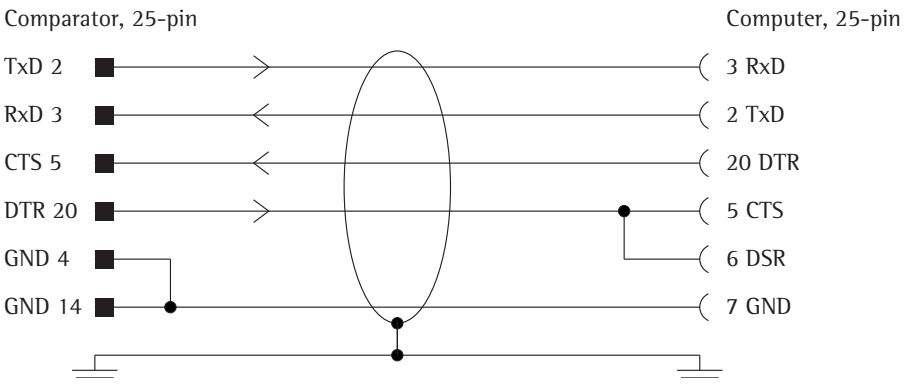
Pin Assignment for the 5-contact DIN Female Connector (Optional):
Pin 1: Keyboard Clock
Pin 2: Keyboard Data
Pin 3: Not Connected
Pin 4: Signal GND
Pin 5: +5 V

⚠ The YRB02FC bar code scanner requires an external power supply, if you have connected a printer and a second display.
The PC keyboard also requires an external source of power.

Cabling Diagram
Diagram for interfacing a PC or different peripheral device to the mass comparator using the RS-232C/V24 standard and cables up to 15 m (~ 50 ft.) long

No other pins may be assigned in the mass comparator!





Cable type: AWG 24 specification

Error Codes and Messages

Error codes and messages are displayed for approx. 2 seconds in the main display or text line.
The program then returns automatically to the weighing status.

Display	Cause	Remedy
No segments appear on the weight display	No power present	Check power supply
	The AC adapter is not plugged in	Plug in the AC adapter
	Automatic shutoff selected in Setup	Press (I/⏻) to switch on your mass comparator or select “Automatic Shutoff - Off” in the Setup menu
H	Load exceeds weighing capacity	Unload mass comparator
L or Err 54	Weighing pan is not in place	Place weighing pan on mass comparator
Err 01 > Display range	Data output format not compatible with data output	Set output format correctly
Err 02 Cal. not possible	Adjustment condition was not met, e.g., – Not tared – Weighing pan loaded	Do not carry out adjustment until after 0 display Press (Tare) to tare Unload mass comparator
Err 03 Cal/adj. cancel	Calibration/adjustment could not be completed within a certain time	Allow the mass comparator to warm up again and repeat the adjustment process
Err 06 Int. wt. defective	Built-in calibration weight is defective	Contact your local Sartorius Service Center
Err 08* <>Zero range	The load on the mass comparator is too heavy to zero the readout	Check whether “Tare/zero at power on” was complied with If you are using the extra function to change the resolution: Unload mass comparator
Err 09* < 0 not allowed	When the gross weight is ≤ zero, taring is not possible	Zero your mass comparator
Err 10 Tare blocked	Tare key and second tare memory are blocked when formulation program memory is assigned	The data stored for the “Formulation” program must be cleared by pressing (CF). This releases tare key and second tare memory
Err 11 Tare2 blocked	Taring not allowed: – Cannot reload sample tare weight – Total weight in tare memory exceeds weighing capacity	Unload mass comparator and tare
Err 12 Tare2 > Max.	Total weight in tare memory exceeds weighing capacity or range limit	Unload mass comparator or change sample
Err 17 Adj.wt: >Max.	Internal adjustment not possible, preload too high	Reduce preload or select another configuration
Err 30 Print fct. blocked	Interface port for printer output blocked	Contact your local Sartorius Service Center
Err 31 Print blocked	Interface handshake interrupted (XOFF, CTS)	Send XON, unblock CTS

* = Occurs only when the SBI interface (ESC f3_/f4_) is in operation

Display	Cause	Remedy
Not a numeric value <x too small <x too large	Incorrect input (possible with all application programs), e.g., alphabetic input not permitted	Adhere to operating procedure
Too many characters	Input text too long	Allowable text lengths incl. decimal point: – S ID, NUM, L ID, ID max. 20 characters – W ID max. 14 characters
Wrong line format	Configured printout, printout memory and 16-character line format selected	Printout: Line format: Select 22-character format
Limits unequal to unit:	Unit entered for tolerance limits during checkweighing are different to the application used	Adjust tolerance limits to fit the application
Equation too long	Equation longer than 28 characters for calculation	Limit equation to 28 characters
Cancel, enter ref. param. reference parameters	 for air density determination	No reference parameters entered Enter missing
Function active	Function is currently being performed	–
Fewer than 999 samples can be stored in up to 100 lots	Product memory is full	Delete some of the data in product memory
Err 10x x = 1 : x = 2 : x = 3 : x = 4 : "Checkerboard" pattern is displayed constantly	Key is stuck Key pressed when switching on the device: (F1, F2, F5, F6), CF , (F3), 0, 3, 4, 9 2, 5, 6, ·, , Tare right 1, 7, 8, (F4), ABC, Tare left Setup key was pressed when switching on the mass comparator, or is stuck	Release key or Contact your local Sartorius Service Center
Err 320	Operating program memory faulty	Contact your local Sartorius Service Center
Err 340	Incorrect operating parameter (EEPROM) RAM has lost data Factory settings loaded	Turn mass comparator off, then back on again. If this Err 340 remains displayed, contact your local Sartorius Service Center
Err 341	Built-in rechargeable battery needs recharging	Leave you mass comparator connected to power for at least 10 hrs.
No WP	Weigh cell is defective	Contact your local Sartorius Service Center
blocked	Function blocked	None
The special code ◆ remains displayed	After you switch on your mass comparator, no key was pressed	Press a key
Weight readout changes constantly	Unstable ambient conditions Too much vibration or a draft Foreign object is caught between weighing pan and comparator housing	Set up device in another area Change Setup configurations Remove the foreign object
Weight readout is obviously wrong	The comparator has not been calibrated/adjusted The comparator was not tared before weighing Your mass comparator is not level	Perform calibration/adjustment Tare Level your mass comparator

Should any other errors occur, please contact your Sartorius Service Center!

Care and Maintenance

Service
Regular maintenance servicing by a Sartorius Customer Service will extend the service life of your mass comparator and ensure its continued weighing accuracy. Sartorius offers its customers service contracts with regular maintenance intervals ranging from 1 month to 2 years.

The frequency of the maintenance intervals depends on the operating conditions and user's tolerance requirements.

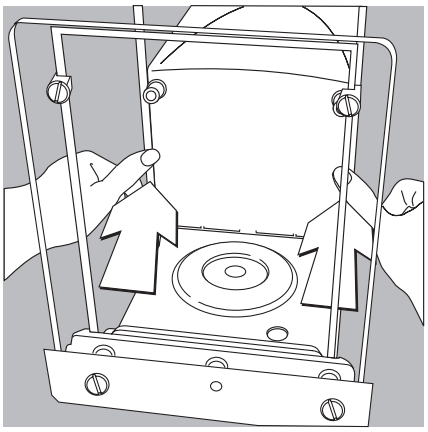
Repairs
Repair work must only be performed by trained service technicians. Repairs performed by untrained persons may result in considerable hazards for the user.

Cleaning the Housing

⚠ Ensure that no dust or liquid enters the mass comparator

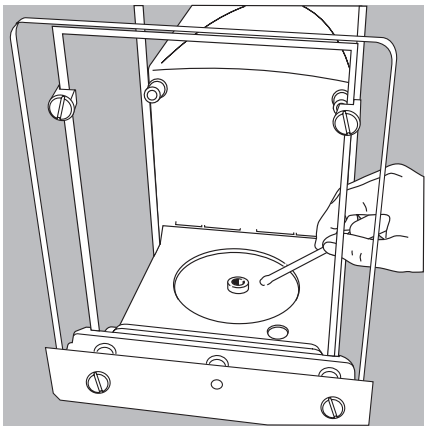
⚠ Do not use aggressive cleaning agents (solvents or similar).

- Disconnect from the supply voltage: Unplug the power cord from the outlet.
- If necessary, disconnect the data cable from the display and control unit
- Carefully remove residue/dirt using a brush or a hand-held vacuum cleaner
- Clean your mass comparator with a piece of cloth which has been wet with a mild detergent (soap)
- Use a commercially available glass cleaning agent to clean the draft shield doors
- After cleaning, wipe down the mass comparator with a soft, dry cloth

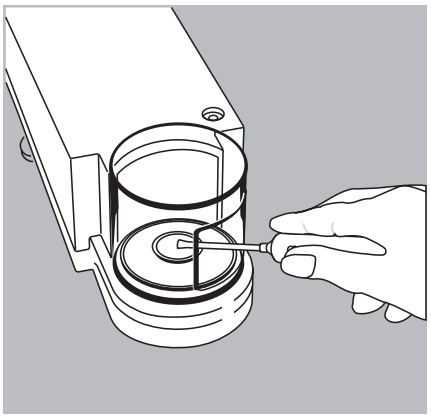


Cleaning the Weighing Chamber (Models CCE36, CCE66, CCE106, CCE605, CCE1005, CCE1004, CCE2004, CCE5004, CCE5003)

- Slide the draft shield doors back as far as they will go

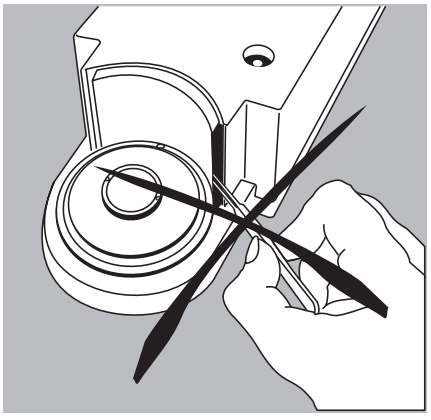


- Carefully remove any dirt or particles of dust from the weighing chamber using a small car vacuum cleaner with a mini-hose attached
- To remove liquid spills, use blotting paper



Cleaning the Weighing Chamber on Model CCE6

- Carefully remove any dirt or particles of dust from beneath the shield disk using a small car vacuum cleaner with an mini-hose attached
- To remove liquid spills, use blotting paper



⚠ Do not insert forceps or similar utensils behind the draft shield plate.

Note: The weighing system is hermetically separated from the area of the draft shield plate. This prevents spillage or other impurities from entering.

Safety Inspection
If there is any indication that safe operation of the mass comparator is no longer ensured:

● Disconnect it from the supply voltage: Unplug the power cord from the outlet.

> Secure the AC adapter and cord so that they cannot be used.

Safe operation of the mass comparator with the AC adapter is no longer ensured when:

– There is visible damage to the AC adapter and power cord

– The AC adapter no longer functions properly

– Following extended storage in adverse conditions

In this case, notify your nearest Sartorius Service Center. Maintenance and repair work may be performed only by authorized service technicians

– Who have access to the required maintenance documents and manuals

– Who have attended the appropriate training workshops

It is recommended that you periodically have an authorized service technician inspect the AC adapter for the following:

– Discharge current < 0.05 mA with a specified measuring device

– Insulation resistance > 7 megaohms with a direct current (DC voltage) of at least 500 V at 500 kilo-ohm load

The length of intervals between inspections should be determined by an authorized technician on site, in accordance with the ambient conditions in which the AC adapter is used. The maximum recommend interval is one year.

Disposal

The packaging is to be taken to a local waste disposal site if no longer required. The packaging is made of environmentally friendly materials that can be used as secondary raw materials.

The device, including accessories and batteries, is not to be thrown into the household waste. EU legislation requires its Member States to collect electrical and electronic equipment and disposed of it separately from other unsorted municipal waste with the aim of recycling it.

In Germany and many other countries, Sartorius takes care of the return and legally compliant disposal of its electrical and electronic equipment. These products may not be placed with household waste or brought to collection centers run by local public disposal operations – not even by small commercial operators.

For disposal in Germany and in the other member nations of the European Economic Area (EEA), please contact our local service technicians or our Service Center in Goettingen, Germany:

Sartorius
Service Center
Weender Landstrasse 94-108
37075 Goettingen, Germany

In countries that are not members of the European Economic Area (EEA) or where no Sartorius subsidiaries or dealerships are located, please contact your local authorities or a commercial disposal operator.

Prior to disposal and/or scrapping of the equipment, any batteries should be removed and disposed of in local collection boxes.

Sartorius will not take back equipment contaminated with hazardous materials (ABC contamination) – either for repair or disposal. Please visit our website (www.sartorius.com) for comprehensive information that includes our service addresses to contact if you plan to send your equipment in for repairs or proper disposal.

Specifications

Model			CCE36	CCE66	CCE605	CCE1005
Accuracy class	E1	g	0.1 – 20	0.1 – 50	200 – 500	200 – 1000
	E2	g	0.001 – 20	0.001 – 50	10 – 500	10 – 1000
	F1	g	0.001 – 20	0.001 – 50	0.2 – 500	0.2 – 1000
	F2	g	0.001 – 20	0.001 – 50	0.001 – 500	0.001 – 1000
Max. weighing capacity		g	31	61	610	1110
Electrical weighing range		g	31	61	610	610
Readability		mg	0.001	0.001	0.01	0.01
Tare range (subtractive)		g	31	61	605	605
Repeatability, s*		µg	0–2 g: ≤ 1 ≤ 2	0–2 g: ≤ 1 ≤ 2	0–10 g: ≤ 10 ≤ 20	0–50 g: ≤ 15 ≤ 20
Repeatability, typical (s*)		µg	≤ 1	≤ 1	≤ 10	≤ 10
External adjustment weight		g	20 (E2)	50 (E2)	500 (E2)	500 (E2)
Stabilization time (average)		s	< 15	< 15	< 15	< 20
Adaptation to ambient conditions and installation requirements			By selection of an optimized filter			
Display update (depends on filter level selected)		s	0.2 to 0.4			
Allowable operating temperature range		°C	+15 °C...+30 °C			
Power requirements, voltage			Using wide-range AC adapter for voltage ratings of 100 V to 240 V			
Voltage frequency		Hz	50 – 60			
Power consumption (average)		VA	max.: 35			
Selectable weight units			g, kg, ct, lb, oz, ozt, tlh, tls, tlt, GN, dwt, mg, /lb, tlc, mom, K, tol, bat, MS			
Weighing pan diameter		mm	30	30	130	130
Max. sample size (D × H)		mm	30 × 120	30 × 120	130 × 200	130 × 200
Net weight: Weigh cell housing approx.		(kg)	11			
Dimensions: Weigh cell housing (W × D × H)		mm	222 × 399 × 302			
Net weight: Evaluation unit approx.		(kg)	3.5			
Dimensions: Evaluation unit (W × D × H)		mm	254 × 320 × 106			
Integrated interface			RS-232 C-S/V24-V28, RS-423/V10; 7-bit; even, odd; mark, space Transmission rate: 150...19200 baud, 1 or 2 stop bits Handshake: Software/hardware			
Under-scale weighing port			Standard feature			
Selectable application program			Mass Comparison			

s* Repeatability is the standard deviation “s”; it is calculated from 6 ABA cycles, after eliminating drift.
Prerequisites for the standard deviation are good climatic conditions in accordance with the OIML R111 Recommendation for an E1 mass standards laboratory.

Specifications

Model			CCE6	CCE106	CCE111
Accuracy class	E1	g	0.001 – 5	1 – 100	1 – 100
	E2	g	0.001 – 5	0.01 – 100	0.01 – 100
	F1	g	0.001 – 5	0.001 – 100	0.001 – 100
	F2	g	0.001 – 5	0.001 – 100	0.001 – 100
Max. weighing capacity		g	6.1	111	111
Electrical weighing range		g	6.1	61	26
Readability		mg	0.0001	0.001	0.001
Tare range (subtractive)		g	6.1	61	26
Repeatability, s*		µg	0-2 g: ≤ 0.2 ≤ 0.3	0-2 g: ≤ 1 ≤ 2	0-2 g: ≤ 1 ≤ 3
Repeatability, typical (s*)		µg	≤ 0.15	≤ 1	≤ 1
External adjustment weight		g	5 (E2)	50 (E2)	20 (E2)
Stabilization time (average)		s	< 10	< 15	< 15
Adaptation to ambient conditions and installation requirements			By selection of an optimized filter		
Display update (depends on filter level selected)		s	0.1 to 0.4		
Allowable operating temperature range		°C	+15 °C...+30 °C		
Power requirements, voltage			Using wide-range AC adapter for voltage ratings of 100 V to 240 V		
Voltage frequency		Hz	50 – 60		
Power consumption (average)		VA	max.: 23	max.: 35	max.: 18,7
Selectable weight units			g, kg, ct, lb, oz, ozt, tlh, tls, tlt, GN, dwt, mg, /lb, tlc, mom, K, tol, bat, MS		
Weighing pan diameter		mm	16	130	50
Max. sample size (D × H)		mm	16 × 24.5	130 × 200	50 × 40
Net weight: Weigh cell housing approx.		(kg)	11		
Dimensions: Weigh cell housing (W × D × H)		mm	122 × 316 × 122	222 × 320 × 106	219 × 408 × 318
Net weight: Evaluation unit approx.		(kg)	3.5		
Dimensions: Evaluation unit (W × D × H)		mm	254 × 320 × 106		
Integrated interface			RS-232 C-S/V24-V28, RS-423/V10; 7-bit; even, odd, mark, space Transmission rate: 150...19200 baud, 1 or 2 stop bits Handshake: Software/hardware		
Under-scale weighing port			Standard feature		
Selectable application program			Mass Comparison		

s* Repeatability is the standard deviation “s”; it is calculated from 6 ABA cycles, after eliminating drift.
Prerequisites for the standard deviation are good climatic conditions in accordance with the OIML R111 Recommendation for an E1 mass standards laboratory.

Specifications

Model			CCE1004	CCE2004	CCE5004	CCE5003
Accuracy class	E1	kg	0.5	1-2	5	–
	E2	kg	0.1 – 1	0.2 – 2	1 – 5	5
	F1	kg	0.02 – 1	0.1 – 2	0.5 – 5	1 – 5
	F2	kg	0.0005 – 1	0.002 – 5	0.1 – 5	0.5 – 5
Max. weighing capacity		g	1200	2500	5100	5100
Readability		mg	0.1	0.1	0.2	1
Tare range (subtractive)		g	1200	2500	5100	5100
Repeatability, s*		mg	≤ 0.1	≤ 0.2	0–1 kg: ≤ 0.3 ≤ 0.5	≤ 1
Repeatability, typical		mg	≤ 0.05	≤ 0.1	≤ 0.3	≤ 0.5
External adjustment weight, accuracy class E2		g	1000	2000	5000	5000
Stabilization time (average)		s	< 10			
Adaptation to ambient conditions and installation requirements			By selection of an optimized filter			
Display update (depends on filter level selected)		s	0.2 to 0.4			
Allowable operating temperature range		°C	+15 °C...+30 °C			
Power requirements, voltage			Using wide-range AC adapter for voltage ratings of 100 V to 240 V			
Voltage frequency		Hz	50 – 60			
Power consumption (average)		VA	max.: 35			
Selectable weight units			g, kg, ct, lb, oz, ozt, tlh, tls, tlt, GN, dwt, mg, /lb, tlc, mom, K, tol, bat, MS			
Weighing pan diameter		mm	50			
Max. sample size (D × H)		mm	130 × 200			
Net weight: Weigh cell housing approx.		(kg)	8.9			
Dimensions: Weigh cell housing (W × D × H)		mm	240 × 260 × 355			
Net weight: Evaluation unit approx.		(kg)	3.5			
Dimensions: Evaluation unit (W × D × H)		mm	254 × 320 × 106			
Integrated interface			RS-232 C-S/V24-V28, RS-423/V10; 7-bit; even, odd, mark, space Transmission rate: 150...19200 baud, 1 or 2 stop bits Handshake: Software/hardware			
Under-scale weighing port			Standard feature			
Selectable application program			Mass Comparison			

s* Repeatability is the standard deviation “s”; it is calculated from 6 ABA cycles, after eliminating drift.
Prerequisites for the standard deviation are good climatic conditions in accordance with the OIML R111 Recommendation for an E1 mass standards laboratory.

Specifications

Model			CCE10000	CCE10000S	CCE20000
Accuracy class	E1	kg	10	2 – 10	20
	E2	kg	2 – 10	1 – 10	10 – 20
	F1	kg	1 – 10	1 – 10	10 – 20
	F2	kg	1 – 10	1 – 10	1 0 – 20
Max. weighing capacity		kg	10.06	10.06	20.06
Electrical weighing range		g	60	60	60
Readability		mg	1	0.1	1
Tare range (subtractive)		g	60	60	60
Repeatability, s*		mg	1 – 2 kg: ≤ 0.7 ≤ 1	≤ 0.25	≤ 2.5
Repeatability, typical		mg	≤ 0.5	≤ 0.1	≤ 1
External adjustment weight (minimum accuracy class)		g	50 (E2)	50 (E2)	50 (E2)
Stabilization time (average)		s	≤ 5	≤ 10	≤ 10
Adaptation to ambient conditions and installation requirements			By selection of an optimized filter		
Display update (depends on filter level selected)		s	0.4 to 0.8		
Allowable operating temperature range		°C	+15 °C...+30 °C		
Power requirements, voltage			Using wide-range AC adapter for voltage ratings of 100 V to 240 V		
Voltage frequency		Hz	50 – 60		
Power consumption (average)		VA	max.: 15		
Selectable weight units			g, kg, ct, lb, oz, ozt, tlh, tls, tlt, GN, dwt, mg, /lb, tlc, mom, K, tol, bat, MS		
Weighing pan size (W × D)		mm	200	400 × 300	400 × 300
Max. sample size (D × H)		mm	200 × 300	400 × 300	400 × 300
Net weight: Weigh cell housing approx.		(kg)	25.1	4.5	4.5
Dimensions: Weigh cell housing (W × D × H)		mm	230 × 365 × 470	400 × 300 × 120	400 × 300 × 120
Net weight: Evaluation unit approx.		(kg)	3.5		
Dimensions: Evaluation unit (W × D × H)		mm	254 × 320 × 106		
Integrated interface			RS-232 C-S/V24-V28, RS-423/V10; 7-bit; even, odd, mark, space Transmission rate: 150...19200 baud, 1 or 2 stop bits Handshake: Software/hardware		
Selectable application program			Mass Comparison		

s* Repeatability is the standard deviation “s”; it is calculated from 6 ABA cycles, after eliminating drift.
Prerequisites for the standard deviation are good climatic conditions in accordance with the OIML R111 Recommendation for an E1 mass standards laboratory.

Specifications

Model			CCE10K3	CCE40K3	CCE60K3	CCE60K2
Accuracy class	E1	kg	10	–	50	–
	E2	kg	5 – 10	20	10 – 50	50
	F1	kg	1 – 10	5 – 20	5 – 50	10 – 50
	F2	kg	0.5 – 10	1 – 20	1 – 50	5 – 50
	M1	kg	0.1 – 10	0.5 – 20	0.5 – 50	1 – 50
Max. weighing capacity		kg	11	41	61	61
Readability		mg	1	2	2	10
Tare range (subtractive)		kg	11	41	61	61
Repeatability, s*		mg	≤ 2	≤ 5	0–10 kg: ≤ 4 ≤ 7	0–10 kg: ≤10 ≤ 10
Repeatability, typical		mg	≤ 1	≤ 3	≤ 4	≤ 7
External adjustment weight (minimum accuracy class)		kg	10 (E2)	10 (E2)	20 (E2)	20 (E2)
Stabilization time (average)		s	< 10			
Adaptation to ambient conditions and installation requirements			By selection of an optimized filter			
Display update (depends on filter level selected)		s	0.2 to 0.4			
Allowable operating temperature range		°C	+15 °C...+30 °C			
Power requirements, voltage			Using wide-range AC adapter for voltage ratings of 100 V to 240 V			
Voltage frequency		Hz	50 – 60			
Power consumption (average)		VA	max.: 35			
Selectable weight units			g, kg, ct, lb, oz, ozt, tlh, tls, tlt, GN, dwt, mg, /lb, tlc, mom, K, tol, bat, MS			
Weighing pan size (W × D)		mm	350 × 240	400 × 300	400 × 300	400 × 300
Max. sample size (D × H)		mm	350 × 240	400 × 300	400 × 300	400 × 300
Net weight: Weigh cell housing approx.		(kg)	18.5	4.5	4.5	4.5
Dimensions: Weigh cell housing (W × D × H)		mm	350 × 240 × 140	400 × 300 × 120	400 × 300 × 120	400 × 300 × 120
Net weight: Evaluation unit approx.		(kg)	3.5			
Dimensions: Evaluation unit (W × D × H)		mm	254 × 320 × 106			
Integrated interface			RS-232 C-S/V24-V28, RS-423/V10; 7-bit; even, odd, mark, space Transmission rate: 150...19200 baud, 1 or 2 stop bits Handshake: Software/hardware			
Under-scale weighing port			Standard feature			
Selectable application program			Mass Comparison			

s* Repeatability is the standard deviation “s”; it is calculated from 6 ABA cycles, after eliminating drift.
Prerequisites for the standard deviation are good climatic conditions in accordance with the OIML R111 Recommendation for an E1 mass standards laboratory.

Accessories (Options)

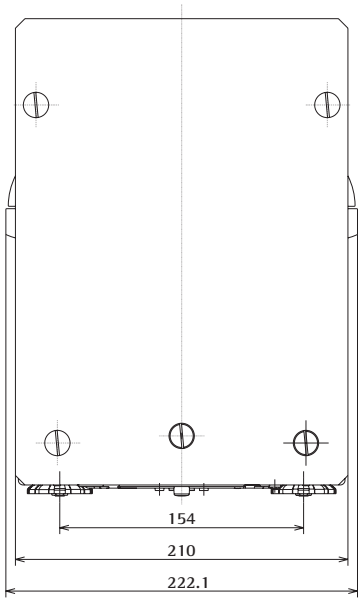
Product	Order No.
Antistatic weighing pan for electrostatically charged samples (CCE6)	YWP01MC
Foot switch, incl. T-connector	YPE01RC
Hand switch, incl. T-connector	YHS02
Data printer with date/time and statistics functions	YDP20-0CE
Paper rolls for YDP03-0CE, 5 units, 50 m each	6906937
Ink ribbon cassette for YDP03-0CE	6906918
ScalesNet with data logger converter, server software, printer driver, 2 licenses and connectivity to climate stations	YSN01C
ScalesNet: 3rd additional license	YSN01LC
ScalesNet: License for mass derivation (E1)	YSN01MC
ScalesNet: Additional data logger converter	YSN01DC
Application software for Sartorius mass comparators	YRP02C
SartoCollect, software for bi-directional porting to laboratory devices	YSC02
SartoConnect, data transfer software for direct import of weighing data into an application program (e.g., Excel)	
• with RS-232C cable, length 1 m	YSC01L
• with RS-232C cable, length 5 m	YSC01L5
• with RS-232C cable, length 15 m	YSC01L15
RS-232C Data logger converter	YCO-MS
T-connector for connecting 2 peripheral devices	YTC01
Carrying case for models CCE106|CCE36	YDB01ME
Weighing table for precise, reliable weighing	YWT01
Artificial stone slab weighing table with shock absorber	YWT03
Wall console	YWT04
Remote display	
• LCD, digit height 13 mm, reflective	YRD02Z
Cable equipped with T-connector for connecting a bar code scanner	YCC01-0024M01
Extension cords, weighing platform separate display and control unit (length, 2.70 m)	YCC01-MED27
PC-compatible data interface (9-pin) incl. 5-pin. DIN port for bar code scanner	YDO02ME
RS-485 data interface (12-pin, round) incl. 5-pin. DIN port for bar code scanner	YDO02ME
RS-232C connecting cable, for connecting to a PC with a 25-pin COM interface, length approx. 1.5 m	7357312
RS-232C connecting cable, for connecting to a PC with 9-pin COM interface, length approx. 1.5 m	7357314
Forceps with coated tips 230 mm,	
for weights from 1 g to 1 kg	YAW33
Gloves (cotton)	YAW21
Gloves (leather)	YAW22
Protective dust covers (set) for CCE36, CCE66, CCE106, CCE605, CCE1005	6960ME01
Draft shield	
– for CCE6 models	YDS20C
– for CCE36, CCE66, CCE106, CCE605, CCE1005 models	YDS22C
– for CCE1004, CCE2004, CCE5004, CCE5003 models	YDS24C
– for CCE10K3, CCE40K3, CCE60K3, CCE60K2 models	YDS24C
– for CCE10K3, CCE40K3, CCE60K3, CCE60K2 models	YDS05C
Climate stations	
• Parameter sensor system for an E2 laboratory	YCM03C
• Parameter sensor system for an E1 laboratory	YCM02C
• Precision climate station for an E1 laboratory	YCM05C

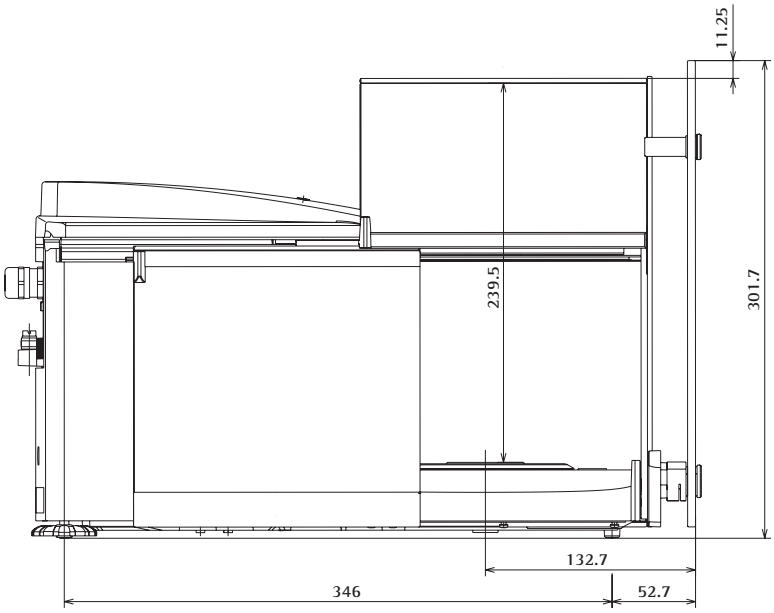
Accessories (Options)

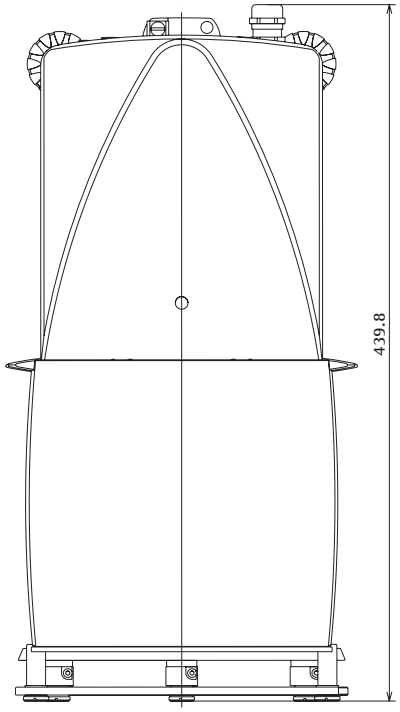
Product	Order No.
Crane for weights without gripper (max. 50 kg)	**YLD01CS02**
Gripper for crane	**YLD02C**
Centermatic for CCE40K3/CCE60K3/CCE60K2	**YWP03C**
Foot switch, incl. T-connector	**YFS01**

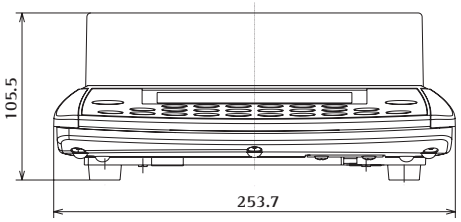
Dimensions (Scale Drawings)

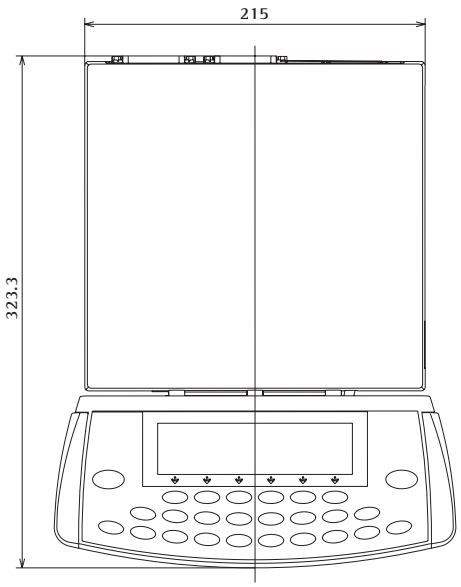
CCE36, CCE66, CCE106, CCE605, CCE1005







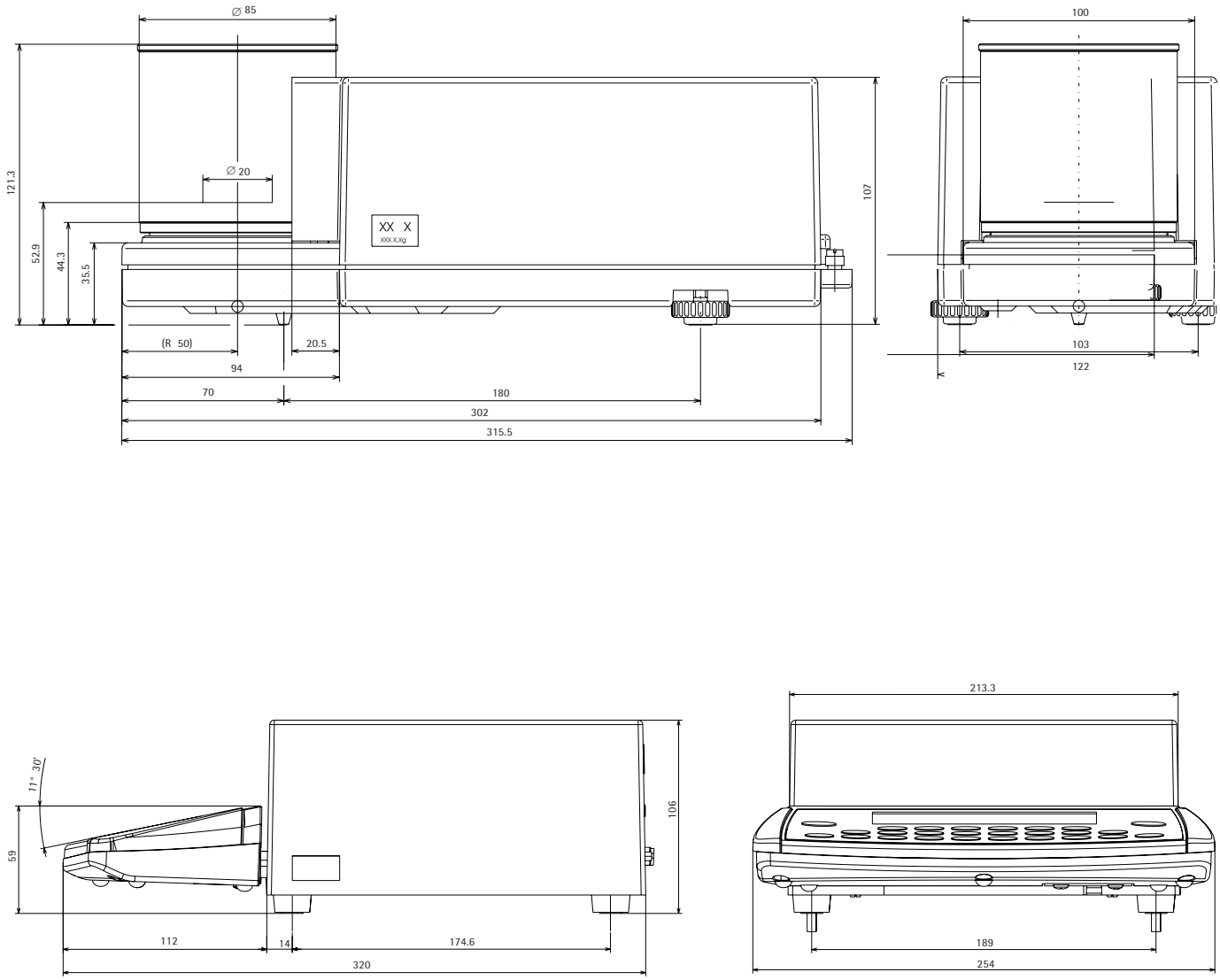




All dimensions are given in millimeters

Dimensions (Scale Drawings)

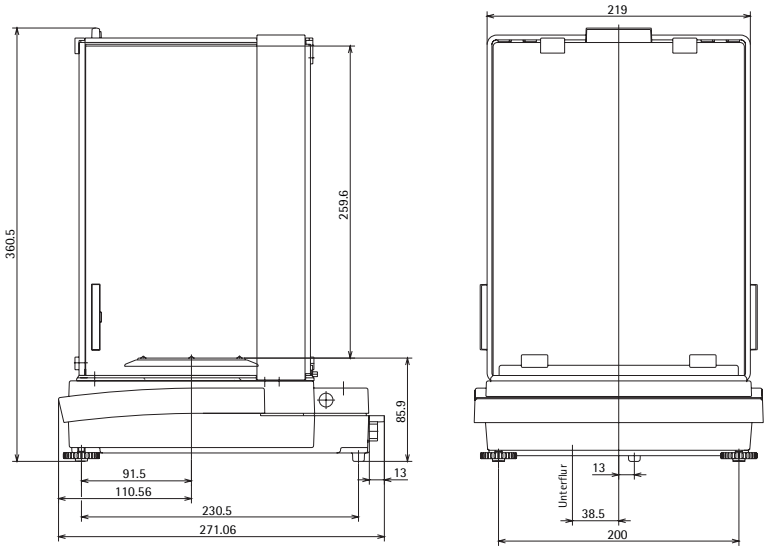
CCE6

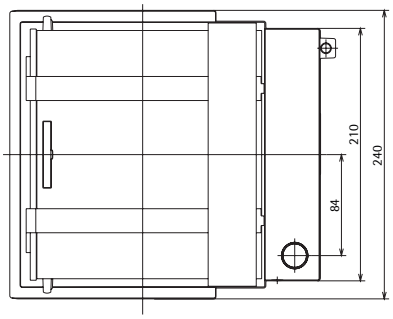


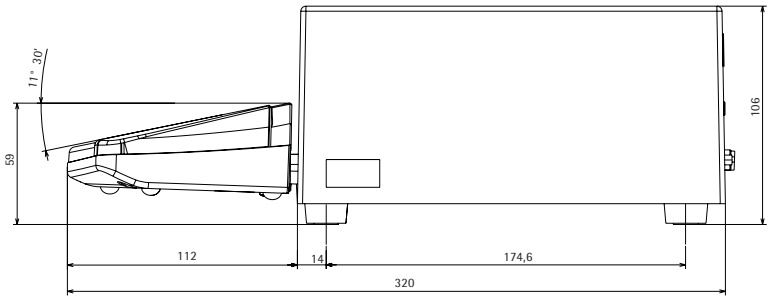
All dimensions are given in millimeters

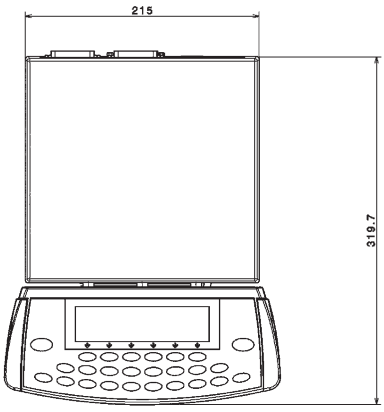
Dimensions (Scale Drawings)

CCE1004, CCE2004, CCE5004, CCE5003





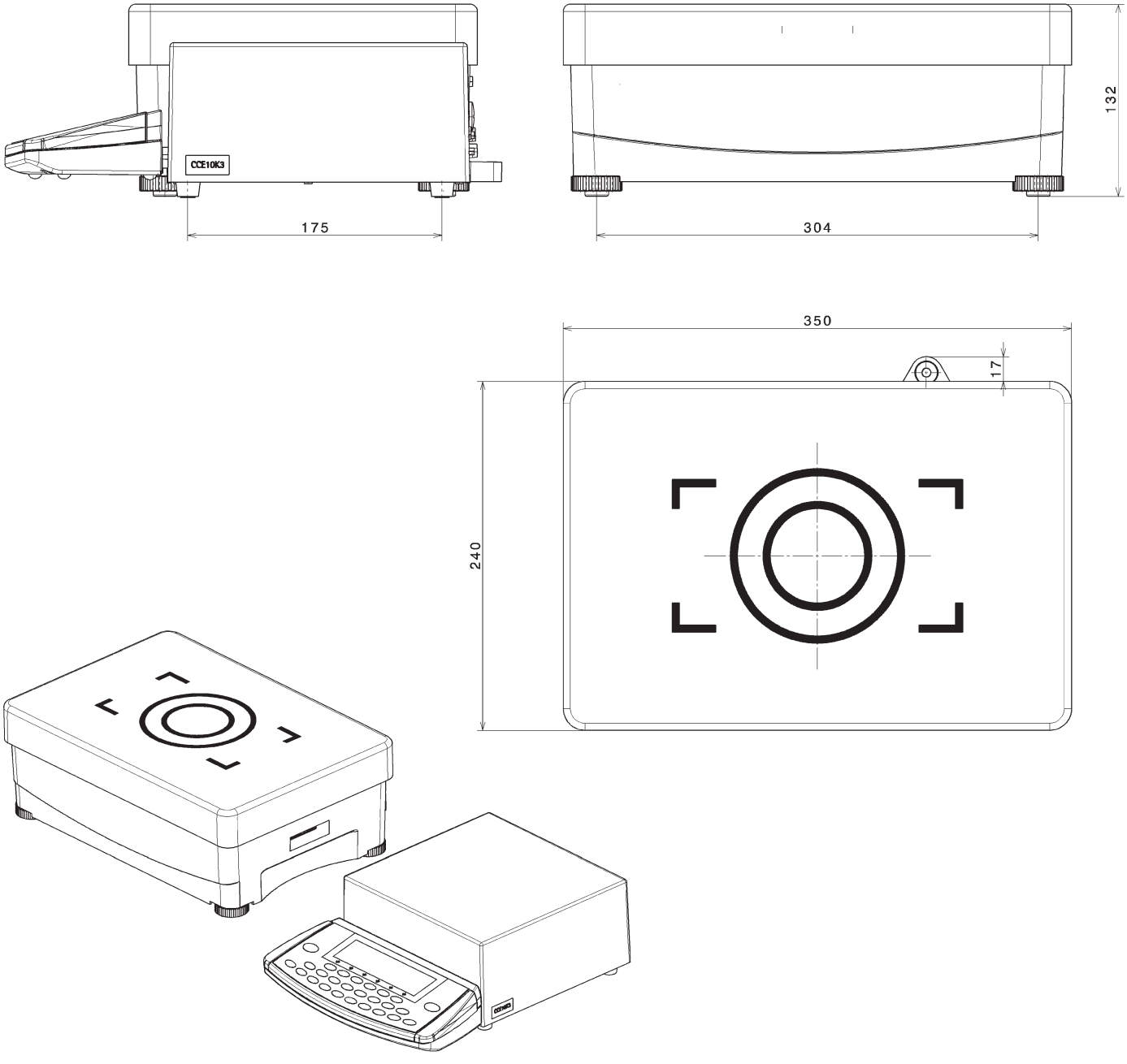




All dimensions are given in millimeters

Dimensions (Scale Drawings)

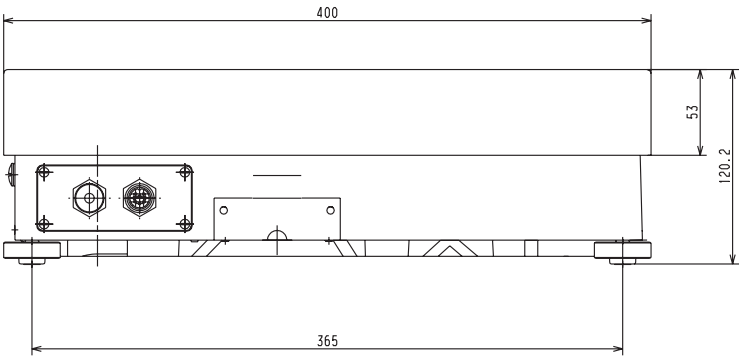
CCE10K3

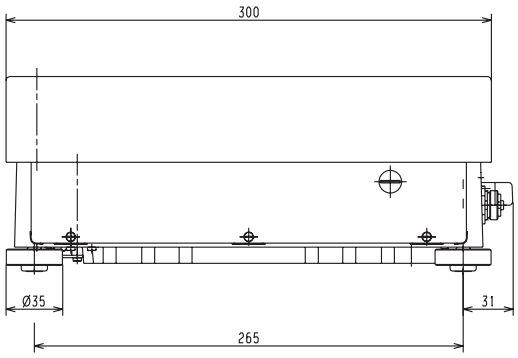


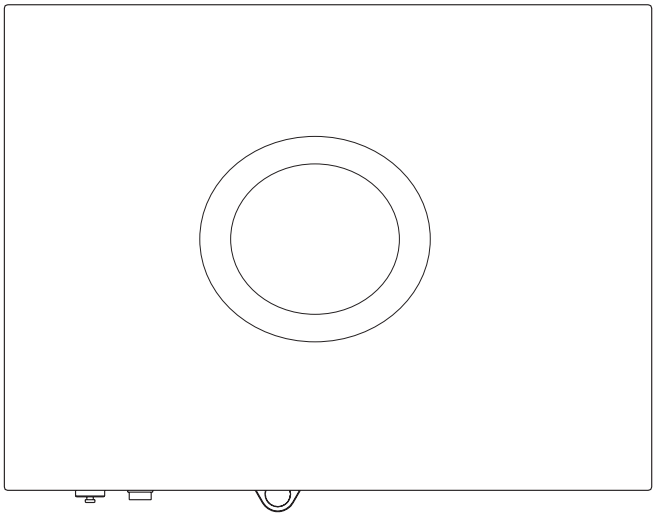
All dimensions are given in millimeters

Dimensions (Scale Drawings)

CCE40K3, CCE60K3, CCE60K2







All dimensions are given in millimeters

CE Marking

The device complies with EU Council Directives:

89/336/EEC: "Electromagnetic compatibility (EMC)"

References to 89/336/EEC:

Official Journal of the European Communities, No. 2001/C 105/03

EN 61326-1	Electrical equipment for measuring technology, control technology and laboratory use EMC Requirements
Part 1:	General requirements Defined immunity to interference: Industrial areas, continuous, unmonitored operation Limitation of emissions: Residential areas, Class B

Important Note!
The operator shall be responsible for any modifications to Sartorius equipment or connections of cables not supplied by Sartorius and must check and, if necessary, correct these modifications. Information on operational quality is available on request from Sartorius (in line with the above-mentioned norms pertaining to immunity).

Council Directive "Electrical equipment
73/23/EEC: designed for use within certain voltage limits"

Associated European Standards:

EN 60950	Safety of IT equipment, including electrical office machines
EN 61010	Safety requirements for electrical equipment for measurement, control, and laboratory use Part 1: General requirements

The requirements pertaining to applicable installation regulations must be followed when using electrical equipment in systems and environmental conditions with increased safety requirements.

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Entering the General Password

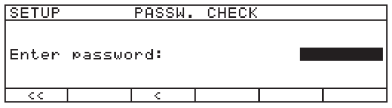
Enter the password

● Select the Setup menu: Press (Setup)

> SETUP is displayed

● Select the parameters: Press the ˅ and > soft keys

> The password prompt is displayed:



○ Enter the general password (see below)

○ Confirm the password:
Press the ↵ soft key

> Parameters are displayed

● Select the device parameter “Password function”:
Keep pressing the ˅ or ˄ and > soft keys, until

> Password: is displayed together with the current password:

● Define a new password: Enter the numbers and/or letters of the new password (8 characters max.)
Delete a user password:
Press (·) key and store

● Confirm input: Press the ↵ soft key

● Exit Setup menu:
Press the << soft key

> Restart your application

General password:
40414243

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