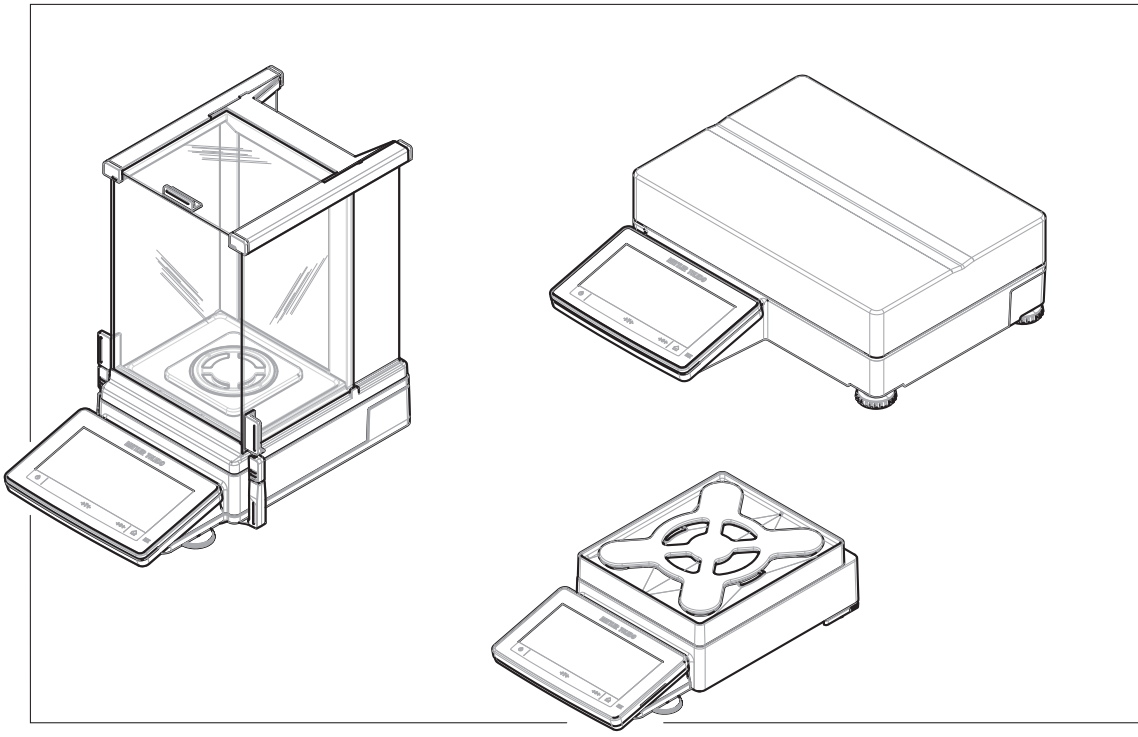
Reference Manual

Analytical and Precision Balances

MX



METTLER TOLEDO

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1 Introduction

Thank you for choosing a METTLER TOLEDO balance. The balance combines high performance with ease of use.

This document is based on the software version V 1.2.

EULA

The software in this product is licensed under the METTLER TOLEDO End User License Agreement (EULA) for Software.

When using this product you agree to the terms of the EULA.

www.mt.com/EULA

1.1 Document purpose

This Reference Manual provides detailed instructions on how to use the instrument.

1.2 Further documents and information

This document is available in other languages online.

www.mt.com/MX-RM

Product page:

www.mt.com/MX-balances

Instructions for cleaning a balance, "8 Steps to a Clean Balance":

www.mt.com/lab-cleaning-guide

Search for software:

www.mt.com/labweighing-software-download

Search for documents:

www.mt.com/library

For further questions, please contact your authorized METTLER TOLEDO dealer or service representative.

www.mt.com/contact

1.3 Explanation of conventions and symbols used

Conventions and symbols

Key and/or button designations and display texts are shown in graphic or bold text, e.g., **Publish**.

Note For useful information about the product.

Refers to an external document.

Elements of instructions

In this manual, step-by-step instructions are presented as follows. The action steps are numbered and can contain prerequisites, intermediate results and results, as shown in the example. Sequences with less than two steps are not numbered.

- Prerequisites that must be fulfilled before the individual steps can be executed.

1 Step 1

➡ Intermediate result

2 Step 2

➡ Result

1.4 Acronyms and abbreviations

Original term	Explanation
AC	Alternating Current
ASTM	American Society for Testing and Materials
DC	Direct Current
EMC	Electromagnetic Compatibility
FCC	Federal Communications Commission
GWP	Good Weighing Practice
ID	Identification
IP	Ingress Protection
LAN	Local Area Network
LED	Light-Emitting Diode
LPS	Limited Power Source
MAC	Media Access Control
MT-SICS	METTLER TOLEDO Standard Interface Command Set
NA	Not Applicable
OIML	Organisation Internationale de Métrologie Légale (International Organization of Legal Metrology)
RM	Reference Manual
SOP	Standard Operating Procedure
TDNR	Type Definition Number
UM	User Manual
USB	Universal Serial Bus
USP	United States Pharmacopeia

1.5 Product range

1.5.1 MX analytical balances

Balance	Models designation
	Readability: **0.01 mg** • MX105 • MX105DU • MX205DU

Balance	Models designation
	Readability: **0.1 mg** • MX104 • MX204 • MX304

1.5.2 MX precision balances

Balance	Models designation
 	Readability: **1 mg** With draft shield: • MX303 • MX603 • MX1203 Without draft shield: • MX303N • MX603N • MX1203N
	Readability: **0.01 g** • MX2002 • MX4002 • MX6002 • MX6002DR • MX12002
	Readability: **0.1 g** • MX6001 • MX8001

1.5.3 MX large balances

Balance	Models designation
	Readability: **0.1 g / 1 g** • MX12001L • MX16001L • MX32001L • MX32000L

2 Safety Information

Two documents named "User Manual" and "Reference Manual" are available for this instrument.

- The User Manual is available online in various languages.
- A printed version of the User Manual is delivered with the instrument.
- The Reference Manual is available online. This manual contains a full description of the instrument and its use.
- Keep both documents for future reference.
- Include both documents if you transfer the instrument to other parties.

Only use the instrument according to the User Manual and the Reference Manual. If you do not use the instrument according to these documents or if the instrument is modified, the safety of the instrument may be impaired and Mettler-Toledo GmbH assumes no liability.

2.1 Definition of signal words and warning symbols

Safety notes contain important information on safety issues. Ignoring the safety notes may lead to personal injury, damage to the instrument, malfunctions and false results. Safety notes are marked with the following signal words and warning symbols:

Signal words

DANGER	A hazardous situation with high risk, resulting in death or severe injury if not avoided.
WARNING	A hazardous situation with medium risk, possibly resulting in death or severe injury if not avoided.
CAUTION	A hazardous situation with low risk, resulting in minor or moderate injury if not avoided.
NOTICE	A hazardous situation with low risk, resulting in damage to the instrument, other material damage, malfunctions and erroneous results, or loss of data.

Warning symbols

General hazard

Notice

2.2 Product-specific safety notes

Intended use

This instrument is designed to be used by trained staff. The instrument is intended for weighing purposes.

Any other type of use and operation beyond the limits of use stated by Mettler-Toledo GmbH without consent from Mettler-Toledo GmbH is considered as not intended.

Responsibilities of the instrument owner

The instrument owner is the person holding the legal title to the instrument and who uses the instrument or authorizes any person to use it, or the person who is deemed by law to be the operator of the instrument. The instrument owner is responsible for the safety of all users of the instrument and third parties.

Mettler-Toledo GmbH assumes that the instrument owner trains users to safely use the instrument in their workplace and deal with potential hazards. Mettler-Toledo GmbH assumes that the instrument owner provides the necessary protective gear.

⚠ WARNING

Death or serious injury due to electric shock

Contact with parts that carry a live current can lead to death or injury.

1 Only use the METTLER TOLEDO power cable and AC/DC adapter designed for your instrument.
2 Connect the power cable to a grounded power outlet.
3 Keep all electrical cables and connections away from liquids and moisture.
4 Check the cables and the power plug for damage and replace them if damaged.

NOTICE

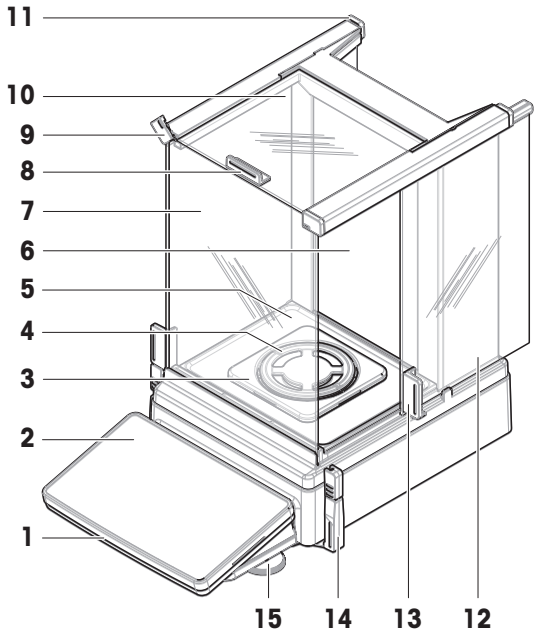
Damage to the instrument or malfunction due to the use of unsuitable parts

– Only use parts from METTLER TOLEDO that are intended to be used with your instrument.

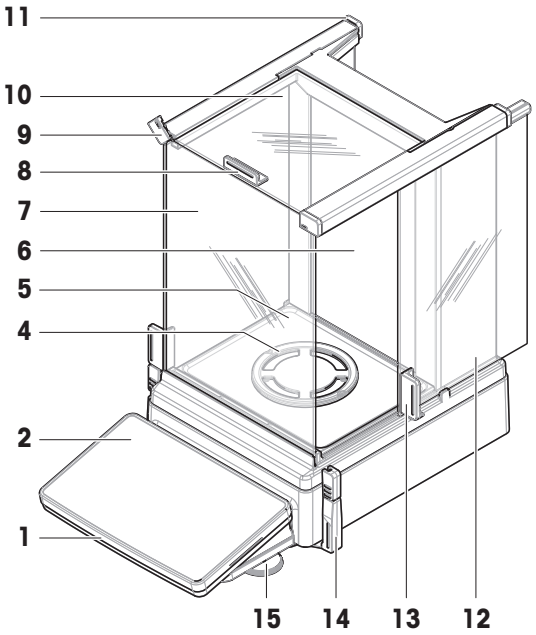
3 Design and Function

3.1 Overview analytical balances

0.01 mg



0.1 mg



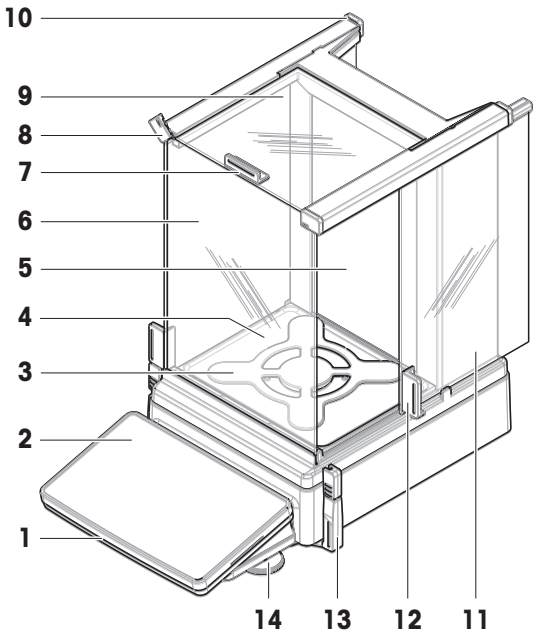
1	StatusLight	**9**	QuickLock, top door/panel
2	Terminal	**10**	Top door, draft shield
3	Draft-protection element	**11**	QuickLock, side door
4	Weighing pan	**12**	Side door, draft shield (right/left)
5	Drip tray	**13**	Handle, side door
6	Back panel *, draft shield	**14**	ErgoDoor handle
7	Front panel, draft shield	**15**	Leveling feet
8	Handle, top door		

* On balances with a readability of 0.01 mg, the back panel has a backlight.

3.2 Overview precision balances, small

3.2.1 Balances with draft shield

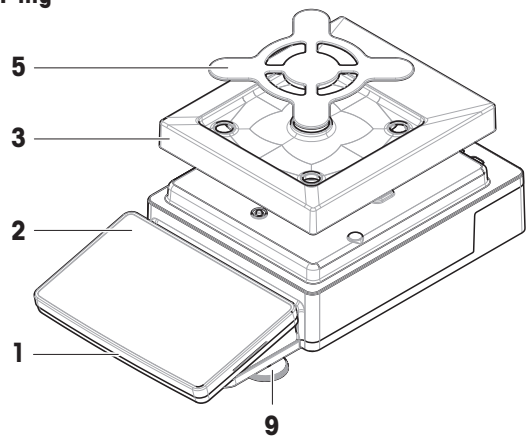
1 mg



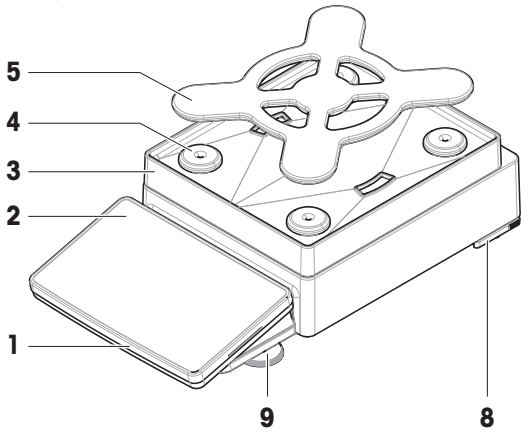
1	StatusLight	**8**	QuickLock, top door/panel
2	Terminal	**9**	Top door, draft shield
3	SmartPan weighing pan	**10**	QuickLock, side door
4	Drip tray	**11**	Side door, draft shield (right/left)
5	Back panel, draft shield	**12**	Handle, side door
6	Front panel, draft shield	**13**	ErgoDoor handle
7	Handle, top door	**14**	Leveling feet

3.2.2 Balances without draft shield

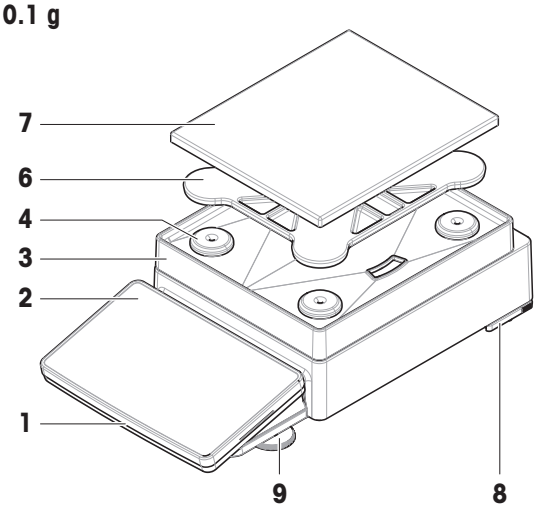
1 mg



0.01 g



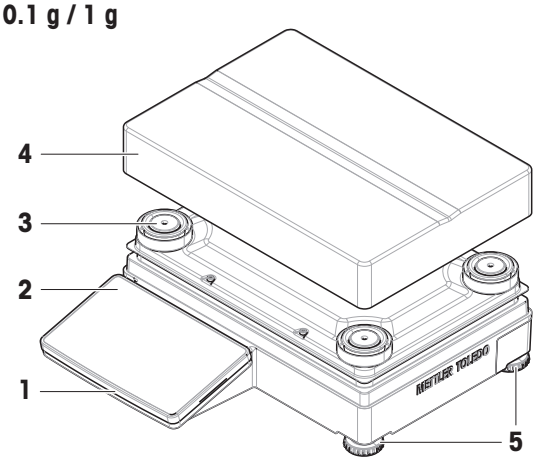
0.1 g



1	StatusLight	**6**	Weighing pan support
2	Terminal	**7**	Weighing pan
3	Drip tray	**8**	Safety feet
4	Weighing pan support cap	**9**	Leveling feet
5	SmartPan weighing pan		

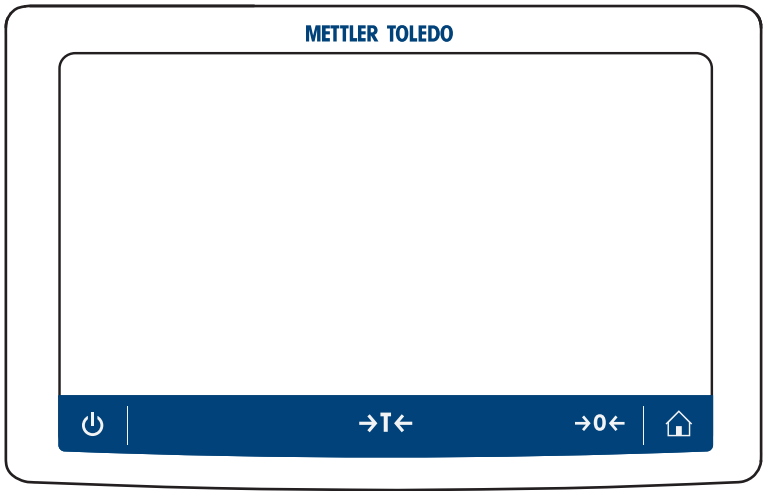
3.3 Overview precision balances, large

0.1 g / 1 g



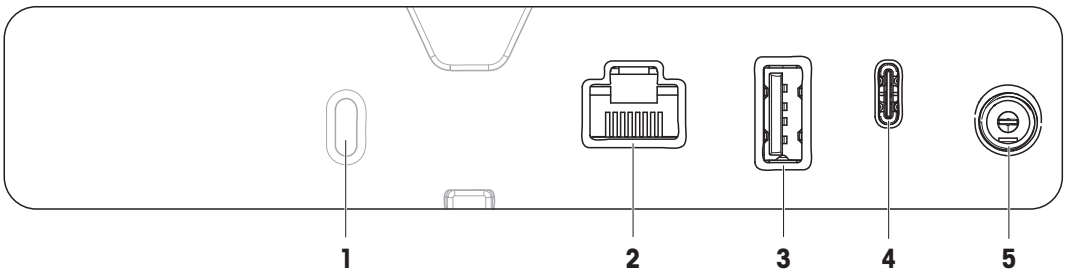
1	StatusLight	**4**	Weighing pan
2	Terminal	**5**	Leveling feet
3	Weighing pan support cap		

3.4 Overview terminal



	Name	Description
⏻	**Standby / Power-saving mode**	By tapping ⏻, the balance goes into standby mode. By tapping and holding ⏻, the balance goes into power-saving mode. To switch the balance completely off, it must be unplugged from the power supply. **Note** Do not disconnect the balance from the power supply unless the balance is not used for an extended period of time. After switching on the instrument, it must warm up before giving accurate results.
→T←	Tare	Tares the balance. This function is used when the weighing process involves containers. After taring the balance, the screen shows Net which indicates that all displayed weights are net.
→0←	Zero	Zeroes the balance. The balance must always be zeroed before starting the weighing process. After zeroing, the balance sets a new zero point.
⌂	Home	To return from any menu level to the main weighing screen.

3.5 Overview interface connections

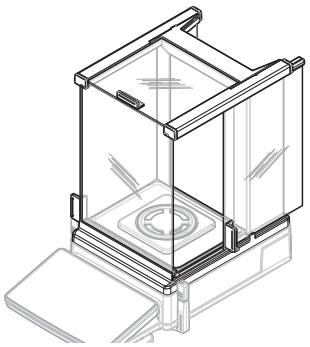


1	Slot for anti-theft cable	**4**	USB-C port
2	Ethernet port (LAN)	**5**	Socket for AC/DC adapter
3	USB-A port		

3.6 Components description

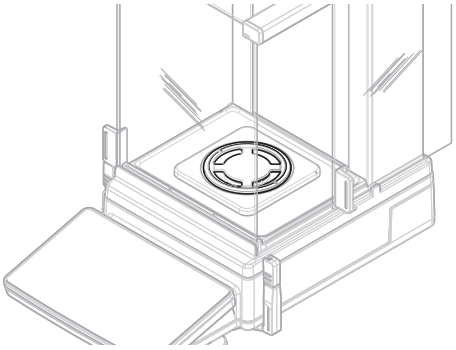
3.6.1 Draft shield

The draft shield protects the weighing area against environmental impacts like drafts or moisture. The side doors and the top door can be opened manually.



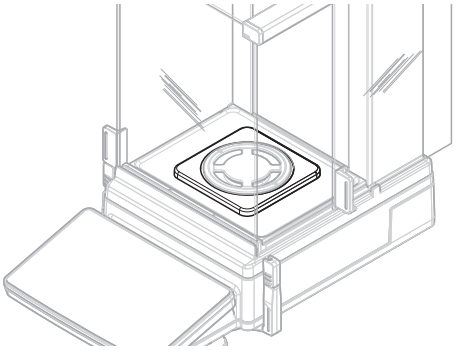
3.6.2 Weighing pan

The weighing pan is the load receptor that serves to accommodate the weighing item.



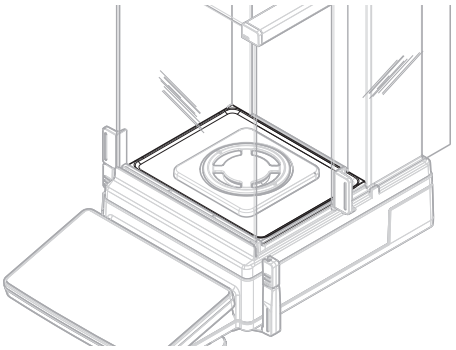
3.6.3 Draft-protection element

The draft-protection element protects the weighing pan against draft. This element is only available for balances with a readability of 0.01 mg.



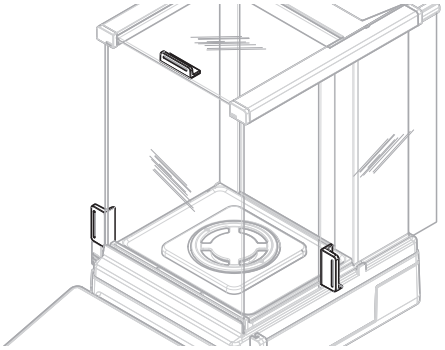
3.6.4 Drip tray

The drip tray is positioned below the weighing pan. The primary purpose of the drip tray is to ensure quick cleaning of the balance.



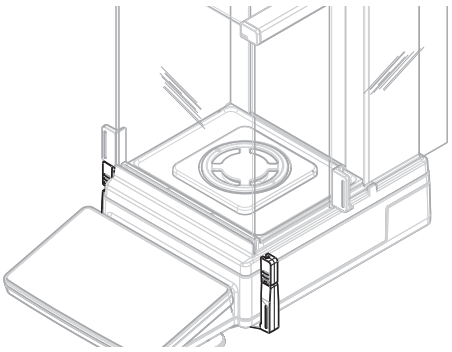
3.6.5 Door handle

The door handles are mounted on the draft shield doors. The handles are used to manually open the side doors and the top door of the draft shield.



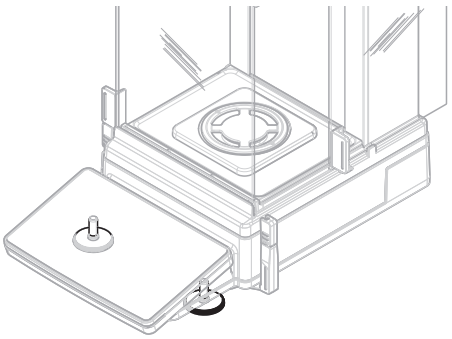
3.6.6 ErgoDoor handle

The ErgoDoor handle is mounted on the platform. The ErgoDoor handle can be engaged with the handle of the side door. This allows to customize opening/closing of the side doors according to your needs.



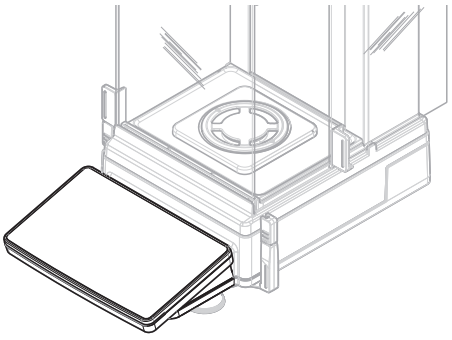
3.6.7 Leveling feet

The balance stands on height-adjustable feet. These feet are used to level the balance.



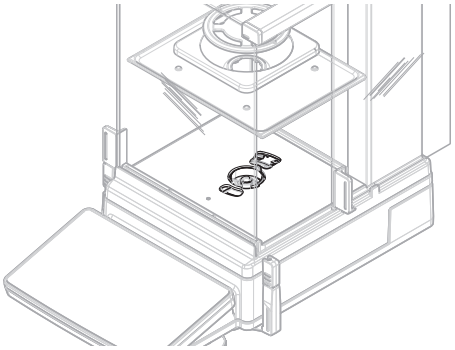
3.6.8 Terminal

The balance terminal has a 7-inch touch-sensitive display. A StatusLight LED strip on the front side of the terminal indicates the current status of the balance. The terminal is protected by a replaceable cover.



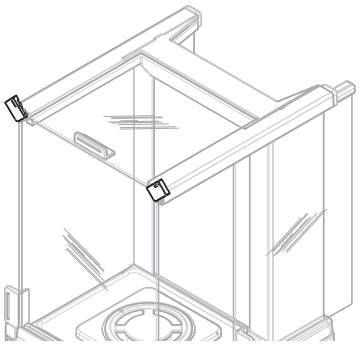
3.6.9 QuickLock for draft shield

The QuickLock for the draft shield is used to secure the draft shield to the platform.



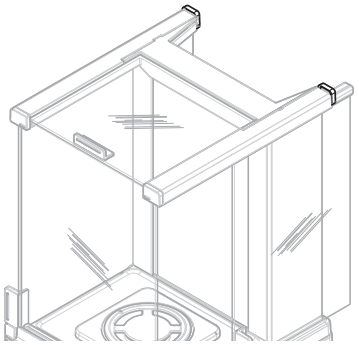
3.6.10 QuickLock for top door and front panel

Depending on the position, the QuickLock is used to lock/unlock the top door and the front panel of the draft shield.



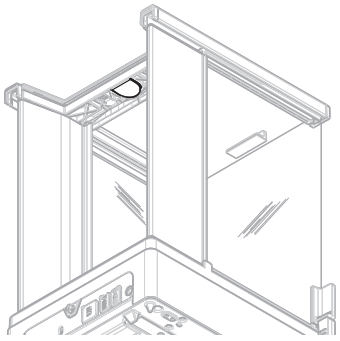
3.6.11 QuickLock for side door

The QuickLock is used to lock/unlock the side door of the draft shield.



3.6.12 Release button for back panel

The release button is used to lock/unlock the back panel of the draft shield. This feature is only available for the draft shield of balances with a readability of 0.1 mg and 1 mg.



3.7 Overview type label

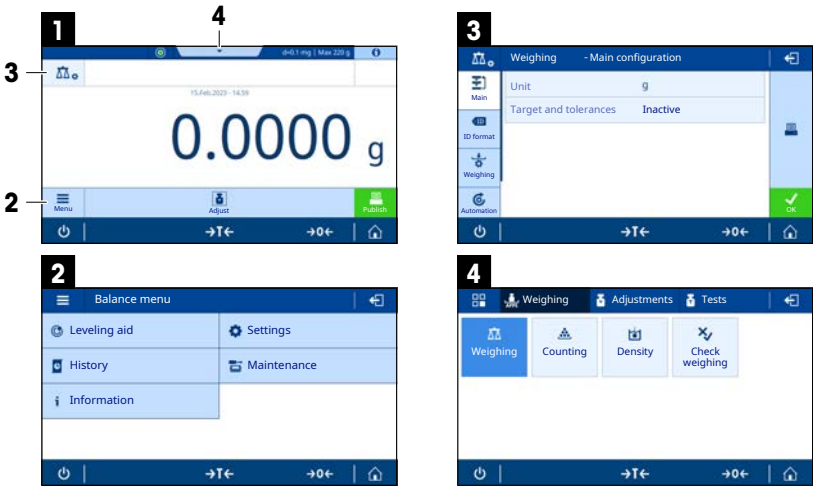
The information on the type label helps to identify the balance.

1	Balance model	**5**	Manufacturer
2	Year of manufacture	**6**	Balance serial number
3	Maximum capacity	**7**	Power consumption
4	Readability		

3.8 User interface

3.8.1 Main sections at a glance

The main weighing screen (**1**) is the central navigation point where all the menus and settings can be found. The sections **Balance menu** (**2**), **Main configuration** (**3**), and the applications section (**4**) open when tapping the corresponding icon or tab.



See also

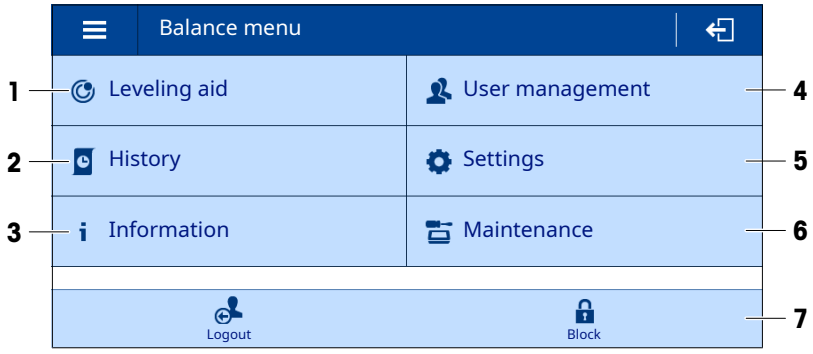
- Main weighing screen ▸ Page 20
- Balance menu ▸ Page 21
- Main configuration ▸ Page 22
- Applications ▸ Page 22

3.8.2 Main weighing screen

	Name	Description
1	Weighing results	Shows the results of the current weighing process.

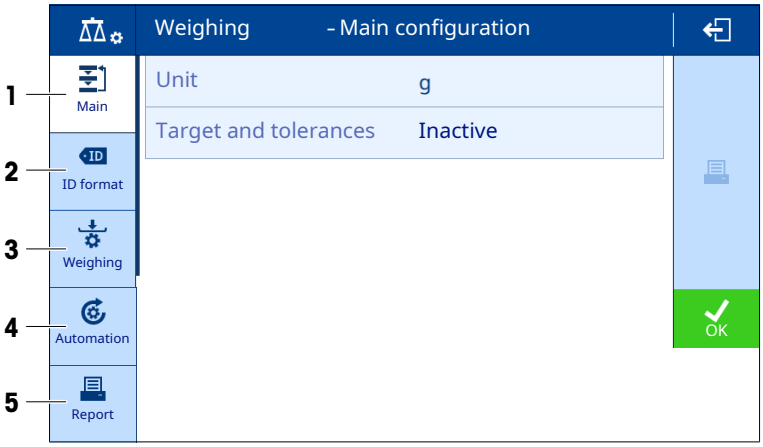
	Name	Description
2	Level indicator	Indicates if the balance is leveled (green) or not (red).
3	Applications	Accesses available applications: **Weighing**, **Adjustments**, **Tests**.
4	Readability and capacity	Shows the readability and the capacity of the balance.
5	Additional information	Shows additional information about the current activity. Example: current weighing value in another unit
6	Information and warnings	Shows current information, warnings, and error messages.
7	Functions area	Shows the active functions according to the settings of the current weighing application.
8	**Publish** button	Publishes the results according to the settings of the current weighing application. Depending on the selected weighing application, the button can have different functions.
9	Action bar	Contains actions referring to the current weighing application.
10	**Balance menu**	Accesses the balance properties.
11	SmartTrac	Used as a weighing aid to define a target weight with upper and lower tolerances.
12	**Main configuration**	Accesses the configuration options for the current weighing application.

3.8.3 Balance menu



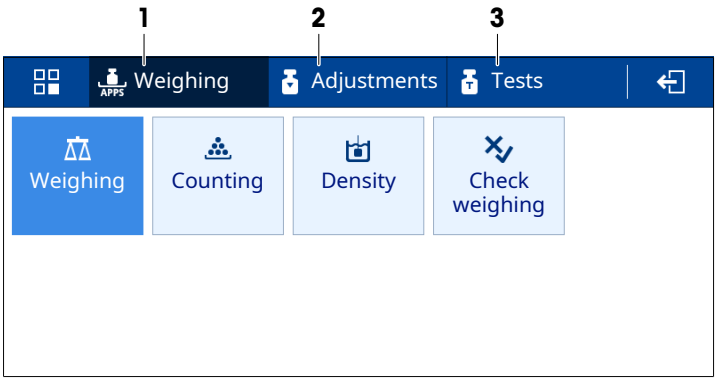
	Name	Description
1	**Leveling aid**	Opens the leveling dialog.
2	**History**	Opens the history dialog.
3	**Information**	Opens the balance information.
4	**User management**	Opens the user management dialog (only visible if activated).
5	**Settings**	Opens the settings dialog.
6	**Maintenance**	Opens the maintenance dialog.
7	**Logout**, **Block**	Functions related to the menu topic **User management**.

3.8.4 Main configuration



	Name	Description
1	**Main**	Opens the main configuration.
2	**ID format**	Opens the sample ID configuration.
3	**Weighing**	Opens the weighing configuration.
4	**Automation**	Opens the automation configuration.
5	**Report**	Opens the report configuration.

3.8.5 Applications



	Name	Description
1	**Weighing**	Contains available weighing applications.
2	**Adjustments**	Contains available adjustments.
3	**Tests**	Contains available tests.

3.8.6 Icons and symbols

3.8.6.1 System status icons

System messages appear due to a user action, a user input, or a system process. When tapping the icon, the corresponding system message is displayed.

Icon	Name	Description
	Leveled	Indicates that the balance is correctly leveled.
	Not leveled	Indicates that the balance is not leveled.
	**Information**	Provides information related to the current action or process.
	Warning	Provides information about an issue that requires attention.
	Error	Provides information about a failed action or process.

3.8.6.2 Weighing status icons

Icon	Name	Description
	Stability indicator	Indicates that the weighing process is ongoing. The weighing result is not yet stable.
Net	Net indicator	Appears when pressing the tare key, after the tare weight has been subtracted.
	Calculated value	The current weight value is calculated. This symbol also appears when the balance is tared using the function **Preset tare**.
	Minimum weight violation	The current weight value is smaller than the defined minimum weight. The weight must be larger than the minimum weight.

3.8.6.3 Process status icons

Icon	Name	Description
	**Start**	Starts the process.
	**Pause**	Pauses the process
	**Continue**	Continues a paused process.
	**Add**	Adds the displayed result to a measurement series.

Icon	Name	Description
	**Complete**	Completes the process.
	**Stop**	Stops the process.

4 Installation and Putting into Operation

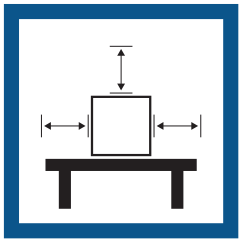
4.1 Selecting the location

A balance is a sensitive precision instrument. The location where it is placed will have a profound effect on the accuracy of the weighing results.

Requirements of the location

Place indoors on stable table

Ensure sufficient spacing

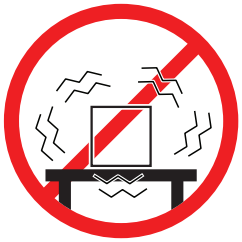


Level the instrument

Provide adequate lighting

Avoid direct sunlight

Avoid vibrations



Avoid strong drafts

Avoid temperature fluctuations

Take into account the environmental conditions. See "Technical Data".

Sufficient spacing for balances: > 15 cm all around the instrument

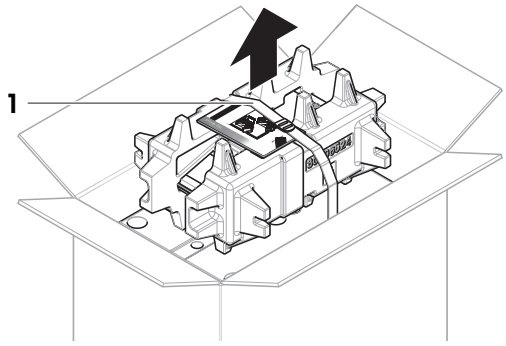
4.2 Unpacking the balance

Check the package, the packaging elements and the delivered components for damages. If any components are damaged, please contact your METTLER TOLEDO service representative.

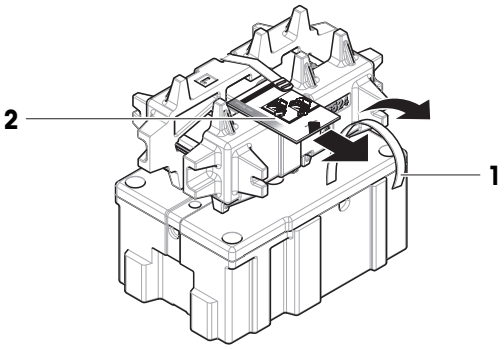
i Note

Depending on the balance model, the packaging elements and the components may look different.

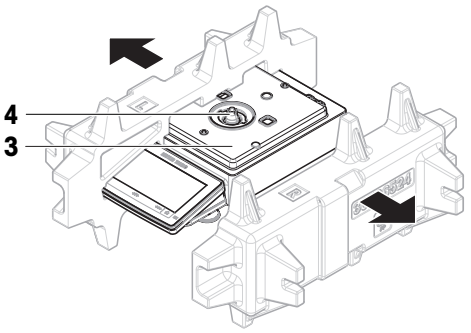
1 Open the box and lift the package out using the lifting strap (**1**).



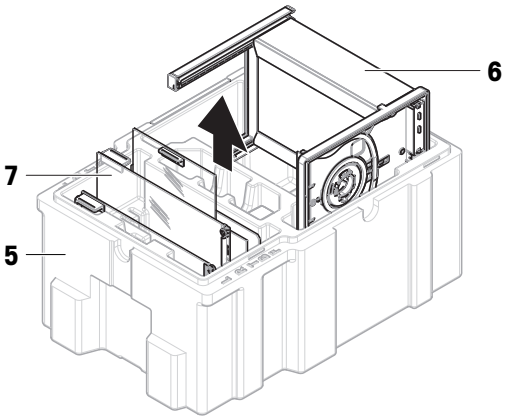
2 Open the lifting strap (**1**) and remove the User Manual (**2**).



3 Remove the upper part of the package and carefully unpack the platform (**3**).
NOTICE: Damage to the instrument
Do not touch the cone (**4**) protruding from the platform.
4 Remove the protective bag.
5 Keep the protective covers installed on the platform and on the terminal.



6 Open the lower part of the package (**5**).
7 Carefully lift out the draft shield (**6**), the draft shield doors (**7**), and all other items.
8 Store all parts of the packaging in a safe place for future use.
➡ The balance is ready for assembling.



4.3 Installation

Note

Depending on the balance model, the components may look different.

4.3.1 Balances with draft shield

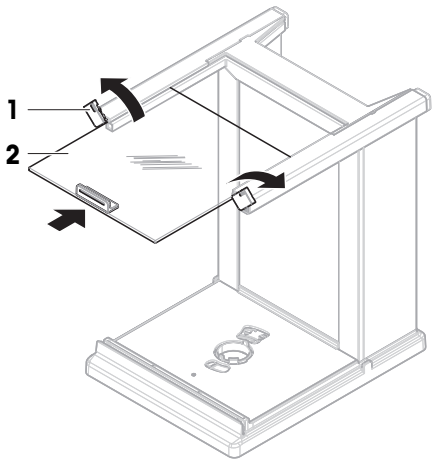
⚠ CAUTION

Injury due to sharp objects or broken glass

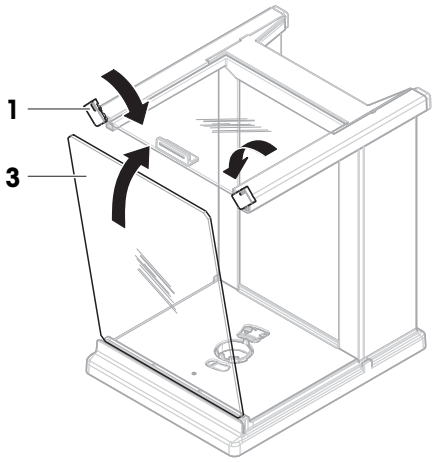
Instrument components, e.g., glass, can break and lead to injuries.

– Always proceed with focus and care.

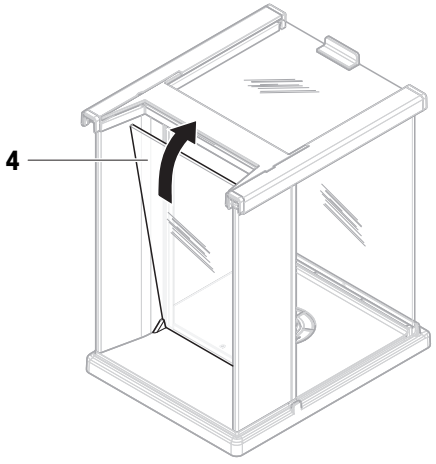
1 Assemble the draft shield: Turn the QuickLock (**1**, right, left) and slide in the top door (**2**).



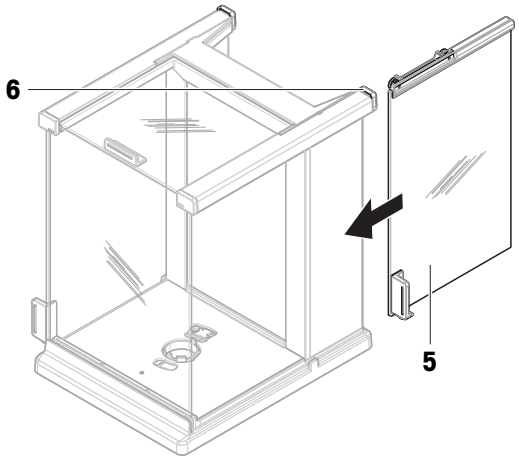
2 Attach the front panel (**3**), then turn the QuickLock (**1**, right, left) to hold the panel in place.



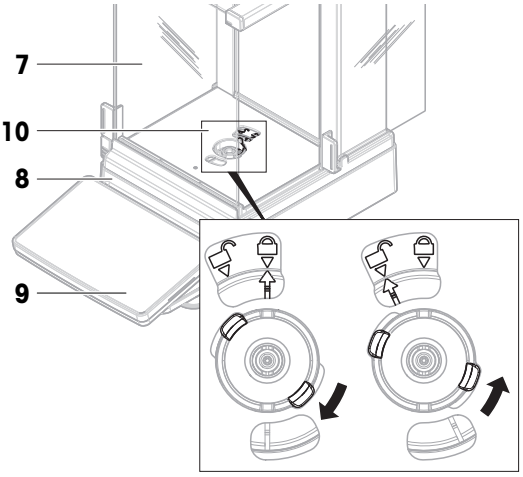
3 For balances without backlight: Attach the back panel (**4**) with the smooth side facing towards the front.



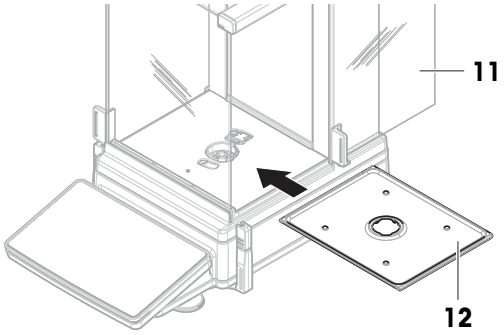
4 Slide in the side door (**5**) until the QuickLock (**6**) snaps in (right, left).
   ➡ The draft shield is assembled.



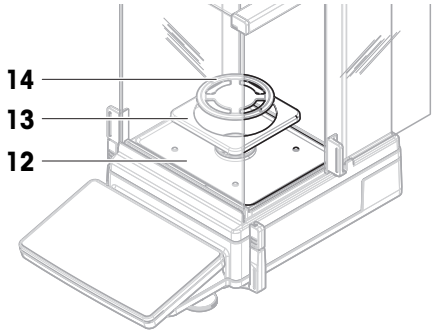
5 Place the draft shield (**7**) on top of the platform (**8**).
   Note
   To protect your balance, keep the protective covers installed on the platform (**8**) and on the terminal (**9**).
6 Secure the draft shield (**7**) to the platform (**8**) by turning the QuickLock (**10**).



7 Fully open the side door (**11**).
8 Insert the drip tray (**12**).
   Note
   If you cannot install the drip tray properly, make sure the QuickLock (**10**) is correctly locked.



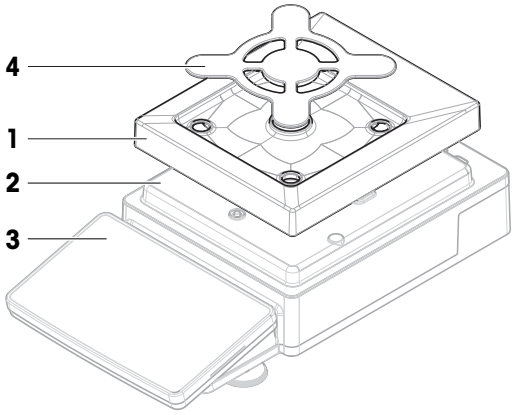
9 Only for balances with a readability of 0.01 mg: Place the draft-protection element (**13**) on top of the drip tray (**12**).
10 Install the weighing pan (**14**).
   ➡ The balance is ready for use.



4.3.2 Balances without draft shield

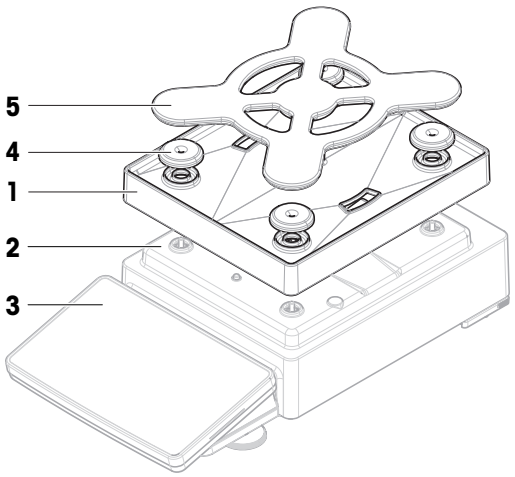
4.3.2.1 Assembling balances 1 mg

1 Place the drip tray (**1**) on top of the platform (**2**).
Note
To protect your balance, keep the protective covers installed on the platform (**2**) and on the terminal (**3**).
2 Place the weighing pan (**4**) on top of the drip tray (**1**).
➡ The balance is ready for use.



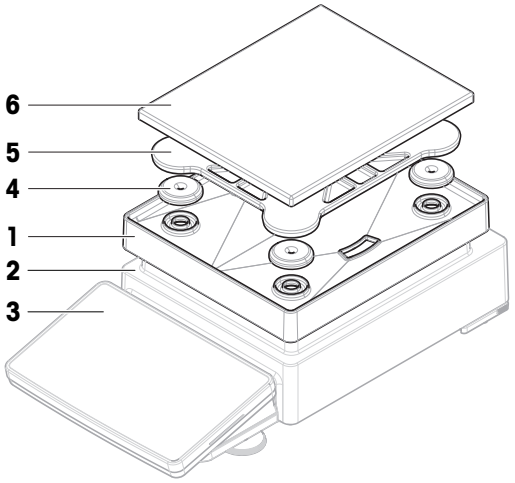
4.3.2.2 Assembling balances 0.01 g

1 Place the drip tray (**1**) on top of the platform (**2**).
Note
To protect your balance, keep the protective covers installed on the platform (**2**) and on the terminal (**3**).
2 Attach the support caps (**4**).
3 Place the weighing pan (**5**) on top of the support caps (**4**).
➡ The balance is ready for use.



4.3.2.3 Assembling balances 0.1 g

1 Place the drip tray (**1**) on top of the platform (**2**).
Note
To protect your balance, keep the protective covers installed on the platform (**2**) and on the terminal (**3**).
2 Attach the support caps (**4**).
3 Place the weighing pan support (**5**) on top of the support caps (**4**).
4 Place the weighing pan (**6**) on top of the weighing pan support (**5**).
➡ The balance is ready for use.



4.3.3 Balances, large

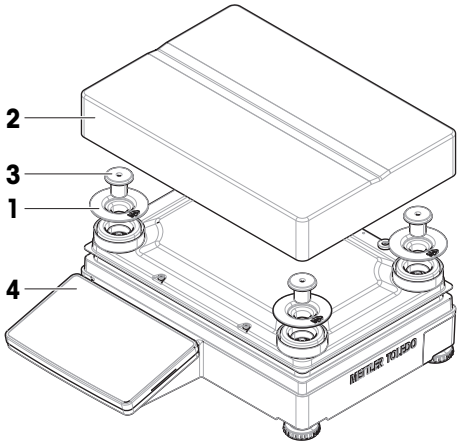
1 Remove the transport locks (**1**).

2 Place the weighing pan (**2**) on top of the support caps (**3**).

Note

To protect your balance, keep the protective cover installed on the terminal (**4**).

➡ The balance is ready for use.



4.4 Putting into operation

4.4.1 Connecting the balance

⚠ WARNING

Death or serious injury due to electric shock

Contact with parts that carry a live current can lead to death or injury.

1 Only use the METTLER TOLEDO power cable and AC/DC adapter designed for your instrument.

2 Connect the power cable to a grounded power outlet.

3 Keep all electrical cables and connections away from liquids and moisture.

4 Check the cables and the power plug for damage and replace them if damaged.

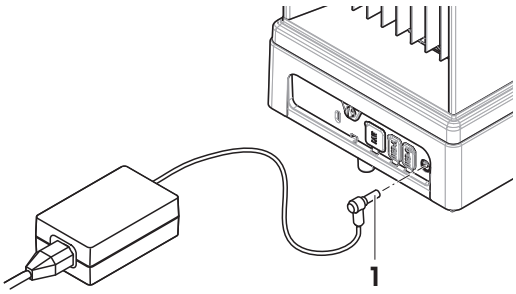
1 Install the cables in such a way that they cannot be damaged or interfere with operation.

2 Insert the plug of the AC/DC adapter (**1**) into the power socket of the instrument.

3 Secure the plug by firmly tightening the knurled nut.

4 Insert the plug of the power cable into a grounded power outlet that is easily accessible.

➡ The balance automatically switches on.



Note

Do not connect the instrument to a power outlet controlled by a switch. After switching on the instrument, it must warm up before giving accurate results.

See also

General data ▸ Page 125

4.4.2 Switching on the balance

When connected to the power supply, the balance automatically switches on.

EULA (End User License Agreement)

When the balance is switched on the first time, the EULA (End User License Agreement) appears on the screen.

1 Read the conditions.
2 Tap **I accept the terms in the license agreement** and confirm with ✓ **OK**.
   ➡ The main weighing screen appears.

Acclimatization and warm up

Before the balance gives reliable results, it must:
- acclimatize to the room temperature
- warm up by being connected to the power supply

The acclimatization time and warm-up time for balances are available in "General data".

Note

When the balance is exiting standby, it is ready immediately.

See also

- General data ▸ Page 125
- Entering / Exiting standby mode ▸ Page 32
- Entering / Exiting power-saving mode ▸ Page 32
- Switching off the balance ▸ Page 32

4.4.3 Leveling the balance

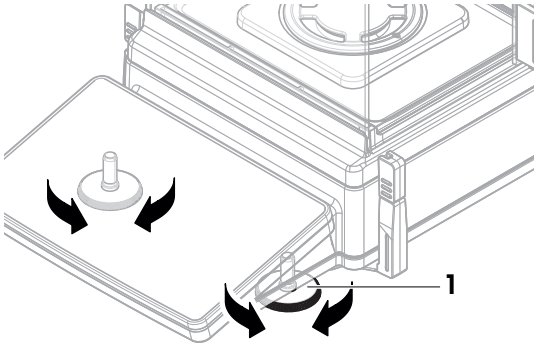
Exact horizontal and stable positioning are essential for repeatable and accurate weighing results.

If the balance is out of level, the level indicator on the main screen turns red.

1 On the main weighing screen, tap ◎.
   ➡ The dialog **Leveling aid** opens.
2 Turn the leveling feet (**1**) as instructed on the display until the dot is in the center of the level indicator.

Alternative access to the dialog **Leveling aid**:

Navigation: ☰ Balance menu > ◎ Leveling aid



4.4.4 Performing an internal adjustment

Navigation: ▼ > Applications > Adjustments

- **Adjustments** is set to **Internal**.

1 Option 1: On the main weighing screen, tap **Adjust**.
  Option 2: Open the applications section, tap **Adjustments**, select the adjustment, and tap ▶ **Start**.
   ➡ The adjustment is executed.
   ➡ The adjustment results appear.
2 Tap ✓ **Finish**.
   ➡ The balance is ready.

4.4.5 Entering / Exiting standby mode

1 To enter standby mode, short press ⏻.
   ➡ The display is blue. A QR code for more information about the balance is shown.
2 To exit standby mode, short press ⏻.
   ➡ The display is turned on.

4.4.6 Entering / Exiting power-saving mode

1 To enter power-saving mode, long press ⏻ (more than two seconds).
   ➡ The display is dark. The balance is in power-saving mode.
2 To exit power-saving mode, long press ⏻.
   ➡ The balance is switched on.

Note

We recommend configuring power-saving times. When the balance exits power-saving mode automatically at the defined time, the balance is ready for use immediately.

If the power-saving mode is terminated manually, the balance must warm up before it can be used.

See also

- General data ▸ Page 125
- Standby, Power-saving mode ▸ Page 38

4.4.7 Switching off the balance

To completely switch off the balance, it must be disconnected from the power supply. By pressing ⏻, the balance goes only into standby mode or into power-saving mode.

Note

When the balance has been completely switched off for some time, it must warm up before it can be used.

See also

- Switching on the balance ▸ Page 31
- Entering / Exiting standby mode ▸ Page 32
- Entering / Exiting power-saving mode ▸ Page 32

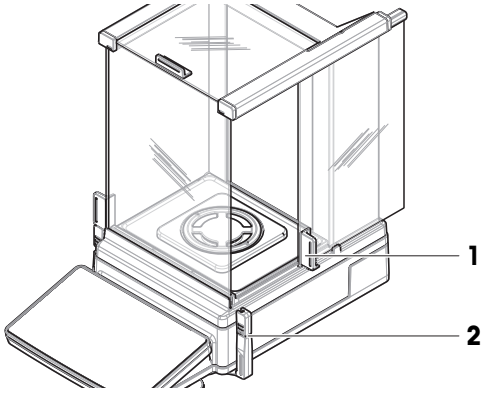
4.5 Performing a simple weighing

Note

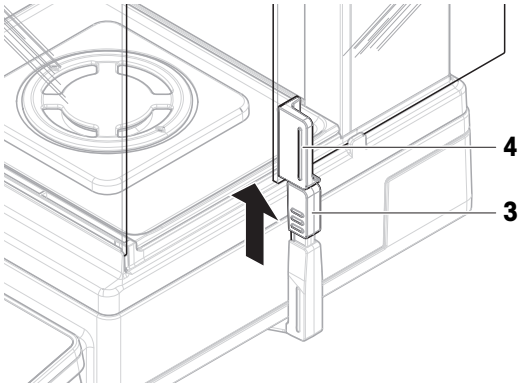
A balance with draft shield is used to explain the procedure. For balances without a draft shield, skip the instructions steps concerning the draft shield.

4.5.1 Opening and closing draft shield doors

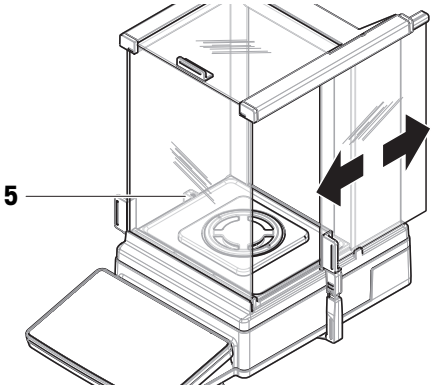
1 Open the door manually with the door handle (**1**).
2 Alternatively, use the ErgoDoor handle (**2**) to open the side door.
   Note
   The following instructions describe one use case for weighing in the sample from the right side.



3 Connect the ErgoDoor handle (**3**) to the door handle on the right side (**4**).



4 Move the ErgoDoor handle on the left side (**5**) to open and close the door on the right side.



See also

ErgoDoor handle ▸ Page 18

4.5.2 Zeroing the balance

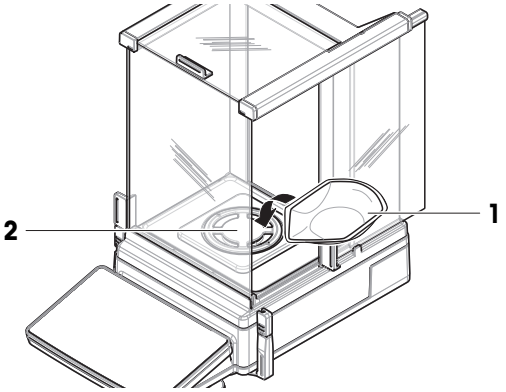
1 Open the draft shield.
2 Clear the weighing pan.
3 Close the draft shield.
4 Press →0← to zero the balance.
   ➡ The balance is zeroed.

4.5.3 Taring the balance

If a sample vessel is used, the balance must be tared.

- The balance is zeroed.

1 Place the sample vessel (**1**) on the weighing pan (**2**).
2 Press →T← to tare the balance.
   ➡ The balance is tared. The icon Net appears.



4.5.4 Performing a weighing

1 Open the draft shield.
2 Place the weighing object into the sample vessel.
3 Close the draft shield.
➡ The result is displayed.
4 Optional, if a printer is connected: Tap to print the weighing result.

4.6 Transporting, packing, and storing

4.6.1 Transporting the balance over short distances

NOTICE

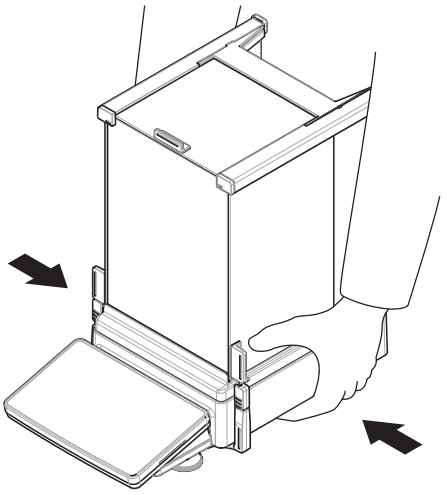
Flickering backlight due to disconnection of the draft shield (balances with readability of 0.01 mg)

Hold the balance by the platform. Never lift the balance by the draft shield.

1 Disconnect the AC/DC adapter and unplug all interface cables.
2 Hold the balance with both hands and carry it in horizontal position to the target location. Consider the requirements of the location.

If you want to put the balance into operation, proceed as follows:

1 Connect in reverse order.
2 Give the balance sufficient time to warm up.
3 Level the balance.
4 Perform an internal adjustment.



See also

- Selecting the location ▸ Page 25
- Switching on the balance ▸ Page 31
- Leveling the balance ▸ Page 31
- Performing an internal adjustment ▸ Page 31

4.6.2 Transporting the balance over long distances

METTLER TOLEDO recommends using the original packaging for transportation or shipment of the balance or balance components over long distances. The elements of the original packaging are developed specifically for the balance and its components and ensure maximum protection during transportation.

See also

- Unpacking the balance ▸ Page 25

4.6.3 Packing and storing

Packing the balance

Store all parts of packaging in a safe place. The elements of the original packaging are developed specifically for the balance and its components, and ensures maximum protection during transportation and storage.

Storing the balance

Only store the balance under the following conditions:

- Indoor and in the original packaging
- According to the environmental conditions, see "Technical Data"

Note

When storing for longer than 6 months, the rechargeable battery may become empty (only date and time get lost).

See also

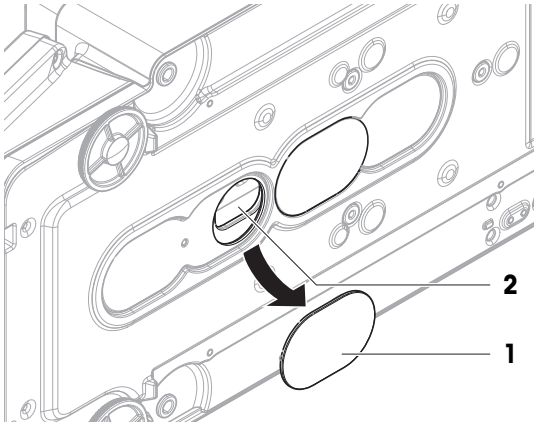
Technical Data ▸ Page 125

4.7 Weighing below the balance

Your balance is equipped with a weighing hook for performing weighing operations below the work surface (weighing below the balance).

- A weighing table or workbench is available, through which the weighing hook can be accessed.

1 Disconnect the balance from the AC/DC adapter.
2 Disconnect all interface cables.
3 Carefully tilt the balance to its side.
4 Remove the weighing hook cover (**1**).
Note
The location of the weighing hook depends on the balance model.
➡ The hook (**2**) is accessible.
5 Carefully put the balance back on its feet.
6 Reconnect the AC/DC adapter and the interface cables.



➡ The weighing hook is accessible and can be used for below-the-balance weighing.

See also

Dimensions ▸ Page 136

5 Operation

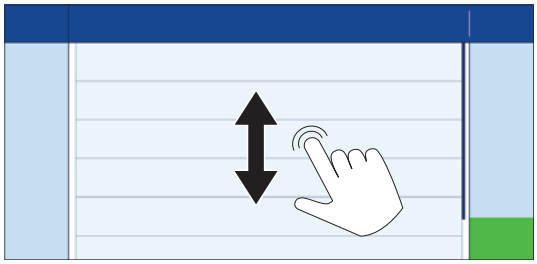
5.1 Touchscreen

5.1.1 Selecting or activating an item

1. Tap the item or function you want to select or activate.

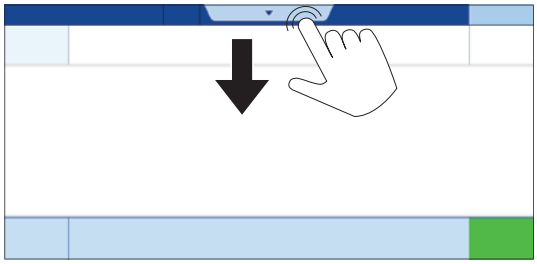
5.1.2 Scrolling

1. Scroll up or down to view all items.



5.1.3 Opening the fly-in panel

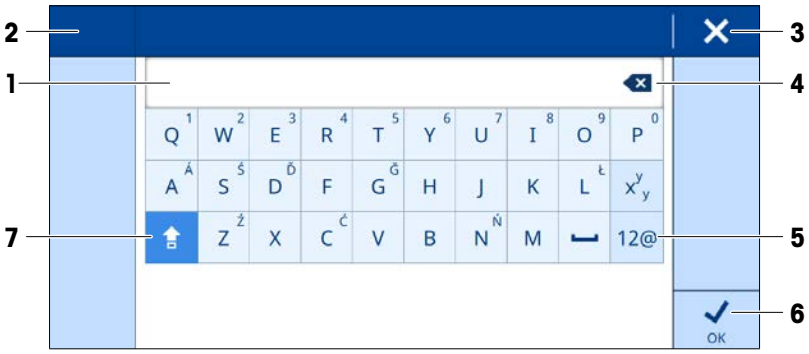
1. Tap the tab, or pull the tab down, to open the fly-in panel.



5.1.4 Entering characters and numbers

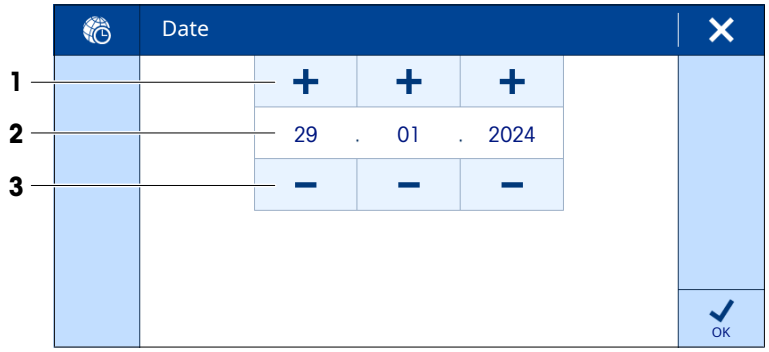
Note

Tapping and holding a character gives access to special characters.



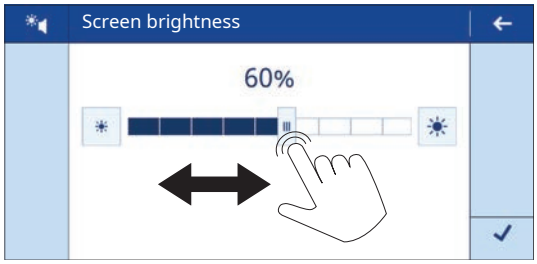
	Name	Description
1	Input field	Shows the entered characters and numbers.
2	Section title	Shows the icon and the title of the current section.
3	Discard	Closes the keyboard dialog.
4	Backspace	Tapping the backspace icon deletes the last character of the entry. Tapping and holding the backspace icon deletes the whole entry.
5	Numbers and special characters	Allows to enter special characters.
6	Confirm	Confirms the entered data.
7	Shift	Switches between lowercase and uppercase.

5.1.5 Changing values



	Name	Description
1	Plus button	Increases the value.
2	Value field	Shows the defined value.
3	Minus button	Decreases the value.

5.1.6 Sliding



– Move the slider left or right to change the value.

5.2 General balance settings

5.2.1 Date / Time / Language

Navigation: ☰ Balance menu > ⚙ Settings > Balance > Date / Time / Language

- The setting **Date / Time / Language** is open.

1 Optional: Tap the settings **Date format** and **Time format** to define how date and time are displayed.

2 Tap the setting **Date** to adjust the date.

3 Tap ✓ **OK**.

4 Tap the setting **Time** to adjust the time.

5 Tap ✓ **OK**.

6 Tap the setting **System language** and select the language of your choice.

7 Tap ✓ **OK**.

8 Tap ✓ **Save**.

Note

The internal clock can show a time deviation. Adjust the time if necessary.

Note

The system language applies to all users if the function **User management** is inactive. If the function **User management** is activated, users can set the system language individually under the menu topic **User management**.

See also

Setting the user language ▸ Page 70

Settings: Date / Time / Language ▸ Page 80

5.2.2 Screen / StatusLight / Sound

Navigation: ☰ Balance menu > ⚙ Settings > Balance > Screen / StatusLight / Sound

- The setting **Screen / StatusLight / Sound** is open.

1 Tap the setting **Screen brightness** to adjust the brightness of the display.

2 Tap ✓ **OK**.

3 For balances with a backlit draft shield: Tap the setting **Draft shield backlight brightness** to adjust the brightness.
Note
This function can be deactivated.

4 Tap ✓ **OK**.

5 Tap the setting **Sound volume** to adjust the volume level.

6 Tap ✓ **OK**.

7 Tap the setting StatusLight to adjust the light strip on the terminal.
Note
This function can be deactivated.

8 Tap ✓ **OK**.

9 If available: Tap the setting **StatusLight brightness** to adjust the brightness.

10 Tap ✓ **OK**.

11 Tap ✓ **Save**.

See also

Settings: Screen / StatusLight / Sound ▸ Page 81

5.2.3 Standby, Power-saving mode

The function **Standby** helps to save power consumption during the working hours. Outside of the working hours, the function **Power-saving mode** serves to hibernate the balance.

When the balance is switched on from status **Standby**, it is ready for use immediately. When switched on from status **Power-saving mode**, the balance must warm up before use.

Navigation: Balance menu > Settings > Balance > General

- The setting **General** is open.

1 Tap the setting **Standby**.
Note
This function can be activated or deactivated.
2 Enter the time after which the balance goes into standby.
3 Tap **OK**.
4 Tap the setting **Power-saving mode**.
Note
This function can be activated or deactivated.
5 Define the settings **Start work** and **End work**.
Note
When the balance exits power-saving mode automatically at the defined time, the balance is ready for use immediately.
6 Select the working days.
Note
Between the defined settings **Start work** and **End work**, the balance does not go into power-saving mode.
7 Tap **OK**.
8 Tap **Save**.

See also

Settings: General ▸ Page 82

5.2.4 Weighing / Quality

5.2.4.1 Warnings and reminders

Navigation: Balance menu > Settings > Balance > Weighing / Quality

Leveling warning

Typically, the leveling is done when required. If the option **Forced leveling** is selected, the balance must be leveled before it can be used.

- The setting **Weighing / Quality** is open.

1 Tap the setting **Leveling warning**.
Note
This function can be activated or deactivated.
2 Select the option of your choice.
3 Tap **OK**.

Calibration reminder

If this function is activated, the balance reminds you when the balance or the test weights need to be calibrated.

– Tap the setting **Calibration reminder** to activate or deactivate the function.

Calibration expired

If this function is activated, the balance cannot be used when the calibration has expired.

– Tap the setting **Calibration expired** to activate or deactivate the function.

Service reminder

If this function is activated, the balance reminds you when a service is due.

– Tap the setting **Service reminder** to activate or deactivate the function.

See also

Settings: Weighing / Quality ▸ Page 77

5.2.4.2 Weighing profiles

Navigation: Balance menu > Settings > Balance > Weighing / Quality > Weighing profiles

A weighing profile serves to adapt the balance to specific requirements. Up to three weighing profiles can be defined.

See also

Settings: Weighing / Quality ▸ Page 77

5.2.4.2.1 Environment

This setting serves to adapt the balance to the ambient conditions of a specific location.

- The setting **Weighing profiles** is open.

1 Enter a name for the profile.
2 Tap the setting **Environment**.
3 Select the option that fits the environmental condition.
4 Tap ✓ **OK**.

See also

Settings: Weighing / Quality ▸ Page 77

5.2.4.2.2 Weighing mode

This setting defines how weighing signals are filtered. For standard weighing applications, the option **Universal** is appropriate.

- The setting **Weighing profiles** is open.

1 Tap the setting **Weighing mode**.
2 Select the option that fits your needs.
3 Tap ✓ **OK**.

5.2.4.2.3 Value release

This setting defines how quickly a weighing result is considered stable.

- The setting **Weighing profiles** is open.

1 Tap the setting **Value release**.
2 Select the option that fits your needs.
3 Tap ✓ **OK**.

See also

Settings: Weighing / Quality ▸ Page 77

5.2.4.3 Test weights

See also

Settings: Weighing / Quality ▸ Page 77

5.2.4.3.1 Defining an individual test weight

The user should enter data related to each test weight based on the corresponding certificate. This enables each test weight to be clearly assigned to a specific certificate. Up to 10 test weights can be configured. These test weights can be used to carry out tests and adjustments.

Navigation: Balance menu > Settings > Balance > Weighing / Quality > Test weights

Note

For each test weight, the actual weight has to be defined. Ideally, a test weight for an external adjustment corresponds to the balance capacity. Alternatively, use the maximum OIML weight recommended for the balance model.

- The section **Test weights** is open.

1 Tap +.
2 Select the option **Test weight**.
3 Tap → **Next**.
4 Enter a name for the test weight.
5 Tap → **Next**.
6 Enter the nominal weight of the test weight.
7 Tap → **Next**.
8 Enter the actual weight of the test weight.
9 Tap ✓ **OK**.
10 Tap ✓ **Save**.
   ➧ The new test weight is added to the list of available test weights.

5.2.4.3.2 Defining a combined test weight

The user can combine test weights to achieve a test weight capacity that is not available as a single standard weight. For example, a weight of 10 g and a weight of 20 g can be combined and used as a test weight of 30 g. Each combined test weight can include two or three test weights. The class of a specific combined weight can only be as good as the worst class of the individual test weights it contains. As for any other test weight, combined test weight can be used to carry out external tests and adjustments.

Navigation: Balance menu > Settings > Balance > Weighing / Quality > Test weights

- The section **Test weights** is open.

1 Tap +.
2 Select the option **Combined weight**.
3 Tap → **Next**.
4 Enter a name for the combined weight.
5 Tap → **Next**.
6 Select an appropriate weight class.
7 Tap → **Next**.
8 Select the weights you want to combine.
9 Tap ✓ **OK**.
   ➧ The new test weight is added to the list of available test weights.
   ➧ The nominal weight of the combined weight is calculated automatically.
10 Tap ✓ **Save**.

5.2.4.3.3 Deleting a test weight

Navigation: Balance menu > Settings > Balance > Weighing / Quality > Test weights

- The section **Test weights** is open.

1 Tap 🗑.

2 Select the weight you want to delete.
3 Tap ✓ **OK**.
➡ The test weight is removed from the list.
4 Tap ✓ **Save**.

5.3 Weighing applications

A weighing application serves to carry out specific weighing tasks. The balance offers various weighing applications with default parameters.

5.3.1 Weighing applications overview

The section **Weighing** provides an overview of weighing applications available on the balance. This section serves to select a weighing application for a specific weighing procedure.

Navigation: ▼ > Applications > APPS

The following weighing applications are available:

- **Weighing**
- **Counting**
- **Check weighing**
- **Dynamic weighing**
- **Formulation**
- **Totaling**
- **Back weighing**
- **Density**
- **Differential weighing**

5.3.2 General settings for weighing applications

5.3.2.1 Defining target weight and tolerances

Some weighing applications provide the option to define a target weight. You can also define a tolerance range for the weighing result. Instead of a ± tolerance range, you can define an upper (+) and/or a lower (-) tolerance limit. If the weighing result is out of range, this is indicated on the main weighing screen.

Navigation: ▼ > APPS > Weighing > Weighing settings

This example shows how to define a target weight and a tolerance range for the application **Weighing**. The procedure for other weighing applications is similar.

■ The section **Main** is open.
1 Tap the setting **Target and tolerances**.
Note
This function can be activated or deactivated.
➡ The section **Target** is open.
2 Enter a target weight.
Alternatively, tap to define the target value with an actual weight.
3 Tap **± Tol.**.
Note
This function can be activated or deactivated.
4 Enter a tolerance range [% or g].
Note
Tap on the corresponding icon to switch between % and gram.
5 Tap ✓ **OK**.
6 Tap ✓ **Save**.

➡ The target weight and the tolerance range are shown on the main weighing screen.

See also

Main ▸ Page 86

5.3.2.2 Defining a sample ID

Navigation: ▼ > APPS > Weighing > ⚙

This example shows how to define a sample ID for the application **Weighing**. The procedure for other weighing applications is similar.

- The settings section of the weighing application is open.

1 Tap **ID format**.
2 Tap **Sample ID**.
   Note
   This function can be activated or deactivated.
3 Tap **Default value** and enter a value.
4 Tap ✓ **OK**.

Adding a description

You can add up to three descriptions to a sample.

- The section **ID format** is open.

1 Tap **Description 1**.
   Note
   This function can be activated or deactivated.
2 Tap **Type** and select the option **Sample**.
3 Tap **Label** to enter a description.
4 Tap ✓ **OK**.
5 Tap **Default value** to enter a value.
6 Tap ✓ **OK**.
7 Tap **Input prompt**. If this option is activated, you are prompted to enter a value for the sample ID.
8 Tap ✓ **OK**.
9 Tap ✓ **Save**.

See also

ID format ▸ Page 86

5.3.2.3 Configuring a weighing application

Navigation: ▼ > APPS > Weighing > ⚙

This example shows how to configure the application **Weighing**. The procedure for other weighing applications is similar.

- The settings section of the weighing application is open.

1 Tap **Weighing**.
2 Tap **Info weight** and select a unit for the secondary weight to be displayed on the main weighing screen.
   Note
   This function can be activated or deactivated.
3 Tap **Weighing profile** and select the option of your choice.
4 Tap ✓ **OK**.
5 Tap **Weight capture mode** and select the option of your choice.
6 Tap ✓ **Save**.

See also

Weighing ▸ Page 89

5.3.2.4 Configuring a weighing series

Some weighing applications provide the option to define a weighing series. If this option is activated, the balance can also provide statistical calculations.

Navigation: ▼ > APPS > Weighing > ⚙

This example shows how to configure a weighing series for the application **Weighing**. The procedure for other weighing applications is similar.

- The settings section of the weighing application is open.

1 Optional, if activated: Tap **ID format**, then tap **Description**.
2 Tap **Type** and select the option **Series**.
3 Tap ✓ **OK**.
4 Tap Automatic value if you want to activate an automatic timestamp.
   Note
   If activated, this setting deactivates the options **Default value** and **Input prompt**.
5 Tap ✓ **OK**.
6 Tap **Weighing**.
7 Tap **Measurement series** to activate this function.
8 Optional: Tap **Statistical calculations** to activate this function.
9 Optional: Tap **Acceptance range** and enter a value.
   Note
   This function can be activated or deactivated.
10 Tap ✓ **OK**.
11 Tap ✓ **Save**.

See also

Weighing ▸ Page 89

5.3.2.5 Using automated functions

Most weighing applications provide the option to automate specific functions. For example, with the option **Automatic tare**, the balance automatically stores the first stable weight as the tare weight.

Navigation: ▼ > APPS > Weighing > ⚙

This example shows how to select automated functions for the application **Weighing**. All functions can be activated or deactivated individually. The procedure for other weighing applications is similar.

- The section **Automation** is open.

1 Tap **Automatic zero** and enter a threshold below which the balance is automatically zeroed.
   Note
   Select the unit of your choice.
2 Tap ✓ **OK**.
3 Tap **Automatic tare** to activate or deactivate this function.
4 Tap **Preset tare** and enter a fixed tare weight.
   Alternatively, tap to define the value using an actual tare container.
   Note
   Select the unit of your choice.
5 Tap ✓ **OK**.
6 Tap **Recall weight** and select the option of your choice.
7 Tap ✓ **OK**.

8 Tap ✓ **Save**.
   ➡ The main weighing screen opens.
9 Tap →**PT**← to set a pretare value.
10 Enter a preset tare weight.
11 Tap ✓ **Apply**.
   ➡ The preset tare weight is shown on the main weighing screen.

See also

Automation ▸ Page 88

5.3.2.6 Configuring a report

By default, only the weighing result and the weight unit are published. The report can be configured to show more information. The report defines the content for the following publishing strategies:

- printing data on a printer
- exporting data to a file on a USB storage device
- transferring data to the software **EasyDirect Balance**

Navigation: ▼ > APPS > Weighing > ⚙

This example shows how to configure a report for the application **Weighing**. The procedure for other weighing applications is similar.

- The settings section of the weighing application is open.

1 Tap **Report**.
2 Tap **Header and Footer**.
3 Tap the items you want to have in the report.
4 Tap **Title** to enter a title name.
5 Tap ✓ **OK**.
6 Tap **Empty lines** and enter a number.
7 Tap ✓ **OK**.
8 Tap › to get to the next section of the report configuration.
9 Tap the items you want to have in the report.
10 Continue until you have reached the last section of the report configuration.
11 Tap ✓ **Save**.

See also

Report ▸ Page 88

5.3.3 Application "Weighing"

The application **Weighing** offers basic weighing functions. This application is used for simple weighing tasks, or to perform a measurement series.

The settings of the weighing item, such as target weight and tolerances, can be specified.

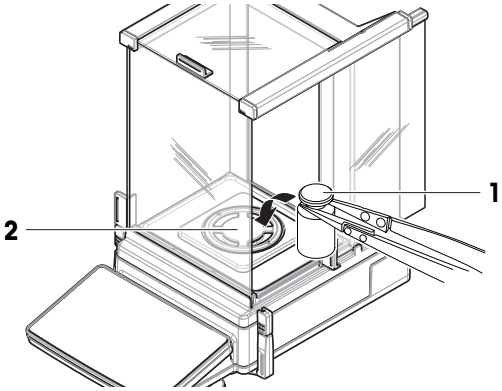
Navigation: ▼ > APPS > Weighing

Example procedure

This example shows how to weigh a sample. We use a balance with a draft shield.

1 Open the applications section.
   ➡ The section APPS is selected.
2 Tap **Weighing**.
   ➡ The corresponding weighing application opens.
3 Press →**0**← to zero the balance.

4 Open the draft shield door (if applicable).
5 Place the weighing object (**1**) on the weighing pan (**2**).
6 Close the draft shield door (if applicable).
7 Wait until the weight stabilizes.
   ➡ The result is displayed.
8 Optional, depending on the settings: Tap **Publish** to print or export the weighing result.



See also

Settings: application "Weighing" ▸ Page 85

5.3.4 Application "Counting"

The application **Counting** is used to determine the number of pieces put on the weighing pan. It is advantageous if all pieces are of approximately equal weight, since the unit quantity is determined on the basis of the average weight of a defined number of reference pieces.

Navigation: ▼ > APPS > Counting

Example procedure

This example shows how to weigh pieces in a sample vessel.

1 Open the applications section.
   ➡ The section APPS is selected.
2 Tap **Counting**.
   ➡ The corresponding weighing application opens.
3 Tap the title section **Reference**.
   Alternatively, tap ⚙ to access this setting.
   ➡ The screen to define the reference weight opens.
4 Tap on the left title section to define the number of reference pieces. For example, enter 5.
5 Tap ✓ **OK**.
6 Place an empty sample vessel on the weighing pan.
7 Press →T← to tare the balance.
8 Put the five reference pieces into the sample vessel.
   ➡ The total weight of the reference pieces is displayed.
9 Tap ✓ **OK**.
   ➡ The number of reference pieces is indicated.
   ➡ The weight of one reference piece is displayed in the left title section.
10 Add pieces to the sample vessel.
   ➡ The total number of pieces in the sample vessel is displayed.

See also

Settings: application "Counting" ▸ Page 88

5.3.5 Application "Check weighing"

The application **Check weighing** checks the deviation of a sample weight within a tolerance limit against a reference target weight.

Navigation: ▼ > APPS > Check weighing

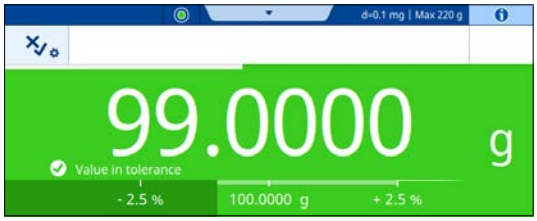
Example procedure

This example shows how to check a sample against a target weight. We use a ± tolerance range.

1 Open the applications section.
   ➡ The section APPS is selected.
2 Tap **Check weighing**.
   ➡ The corresponding weighing application opens.
3 Tap ⚙.
   ➡ The section **Main configuration** opens.
4 Tap **Target weight** and enter a value for the reference sample.
   Note
   Alternatively, tap to weigh the reference sample.
5 Tap and enter a value for the tolerances.
6 Tap **OK**.
   ➡ The section **Main configuration** opens.
7 Tap **Check threshold** and enter a value.
8 Tap **OK**.
   ➡ The section **Main configuration** opens.
9 Tap **Save**.
   ➡ The main weighing screen opens.
10 Place the sample on the weighing pan.
   ➡ The result is displayed.

Note

If the result is within the tolerance range, the background appears green.



If the result is outside the tolerance range, the background appears red.

See also

Settings: application "Check weighing" ▸ Page 91

5.3.6 Application "Dynamic weighing"

The application **Dynamic weighing** determines the weight of unstable samples. It also allows weighing under unstable ambient conditions. The calculated weight is an average of several weighings over a defined time.

Navigation: ▼ > APPS > Dynamic weighing

Example procedure

This example shows how to manually start a dynamic weighing in a sample vessel.

1 Open the applications section.
   ➡ The section APPS is selected.
2 Tap **Dynamic weighing**.
   ➡ The corresponding weighing application opens.
3 Tap the title section to define the measuring duration in seconds. For example, enter 5.
   Note
   Alternatively, tap ⚙ to access this setting.
4 Tap ✓ **OK**.
5 Tap **Start mode**.
6 Select **Manual**.
7 Tap ✓ **OK**.
8 Tap ✓ **Save**.
   ➡ The main weighing screen opens.
9 Place an empty sample vessel on the weighing pan.
10 Press →T← to tare the balance.
   ➡ Net is displayed.
11 Place the sample into the sample vessel.
   ➡ The result is displayed.
12 Tap ▶ **Start**.
   ➡ The balance is capturing the dynamic weight for the defined measuring duration.
   ➡ The result is displayed on a blue background.
13 Tap ✓ **Finish**.

See also

Settings: application "Dynamic weighing" ▸ Page 93

5.3.7 Application "Formulation"

The application **Formulation** is used to weigh in multiple components one after the other. The balance displays the total weight of the added components. The function **Fill up** serves to add a component to reach a defined target weight.

Navigation: ▼ > APPS > Formulation

Example procedure Formulation

This example shows how to add components to a sample vessel.

1 Open the applications section.
   ➡ The section APPS is selected.
2 Tap **Formulation**.
   ➡ The corresponding weighing application opens.
3 Press →0← to zero the balance.
4 Tap ▶ **Start**.
5 Place an empty sample vessel on the weighing pan.
6 Press →T← to tare the balance.
   ➡ Net is displayed.
7 Add the first component to the sample vessel.

8 Tap + **Add**.
9 Add the second component to the sample vessel.
10 Tap + **Add**.
11 Tap **Complete**.
➡ The result is displayed.

Example procedure Fill up

This example shows how to add a liquid to samples to reach a defined target weight.

1 Open the applications section.
➡ The section is selected.
2 Tap **Formulation**.
➡ The corresponding weighing application opens.
3 Press →0← to zero the balance.
4 Tap ▶ **Start**.
5 Place an empty sample vessel on the weighing pan.
6 Press →T← to tare the balance.
➡ Net is displayed.
7 Place the sample into the sample vessel.
8 Tap + **Add**.
9 Place another sample into the sample vessel.
10 Tap + **Add**.
➡ The total weight of the samples is displayed in the title bar.
11 Repeat the procedure with all samples.
12 Tap **Fill up**.
➡ The total weight of the samples is displayed.
13 Add liquid to the sample vessel until the desired target weight is displayed.
➡ The weight of the added liquid is displayed in the title section.
14 Tap ✓ **OK**.
15 Tap **Complete**.
➡ The number of samples and the total weight of the samples is displayed.

See also

Settings: application "Formulation" ▸ Page 95

5.3.8 Application "Totaling"

The application **Totaling** is used to separately weigh different samples. The balance automatically calculates the sum of the weighings.

Navigation: ▼ > > Σ Totaling

Example procedure

This example shows how to automatically calculate the total weight of separately weighed samples.

1 Open the applications section.
➡ The section is selected.
2 Tap Σ **Totaling**.
➡ The corresponding weighing application opens.
3 Press →0← to zero the balance.
4 Tap ▶ **Start**.
5 Place the first sample on the weighing pan.

6 Wait until the weight stabilizes.
7 Tap + **Add**.
8 Remove the sample from the weighing pan.
9 Place another sample on the weighing pan.
10 Wait until the weight stabilizes.
11 Tap + **Add**.
➡ The total weight of both samples is displayed in the title section.
12 Remove the sample from the weighing pan.
13 Repeat the procedure for all samples.
14 Tap **Complete**.
➡ The number of samples and their total weight is displayed.
15 Tap ✓ **Complete**.

See also

Settings: application "Totaling" ▸ Page 97

5.3.9 Application "Back weighing"

The application **Back weighing** is used to calculate the difference of two weighing values.

Navigation: ▼ > APPS > Back weighing

Example procedure

This example shows how to calculate how much sample remains in a sample vessel after the sample vessel has been emptied.

1 Open the applications section.
➡ The section APPS is selected.
2 Tap **Back weighing**.
➡ The corresponding weighing application opens.
3 Tap ▶ **Start**.
4 Place an empty sample vessel on the weighing pan.
➡ The balance is taring.
5 Place the sample into the sample vessel.
➡ **Initial weight**: The weight of the sample is displayed.
6 Remove the sample vessel from the weighing pan and remove the sample.
7 Place the sample vessel on the weighing pan.
➡ **Final weight**: The weight of the remaining sample is displayed.
➡ δ: The weight of the removed sample is displayed in the title section.
8 Tap **Complete**.
➡ The result is displayed.
9 Tap ✓ **Finish**.

See also

Settings: application "Back weighing" ▸ Page 99

5.3.10 Application "Density"

The application **Density** is used to determine the density of solids. Density determination is carried out based on **Archimedes' principle**: A body immersed in a fluid undergoes an apparent loss in weight that is equal to the weight of the fluid it displaces.

Navigation: ▼ > APPS > Density

Example procedure

This example describes how to determine the density of a solid with the help of a density kit. Distilled water is used as auxiliary liquid.

- A density kit is available for the balance.

1 Open the applications section.
   - The section APPS is selected.
2 Tap **Density**.
   - The corresponding weighing application opens.
   - The title section shows the auxiliary liquid **Distilled water**.
     Note
     For custom auxiliary liquids, tap the title section and select the option **Custom**. Then define the density of the custom auxiliary liquid.
     Alternatively, tap ⚙ to access these settings.
3 Tap ▶ **Start**.
4 Place the density kit with the auxiliary liquid on the weighing pan.
5 Tap ✓ **OK**.
   - Net is displayed.
6 Place the sample on the weighing pan.
7 Tap ✓ **OK**.
8 Place the sample into the auxiliary liquid.
9 Tap ✓ **OK**.
   - The result is displayed.
10 Tap ✓ **Finish**.

See also

Settings: application "Density" ▸ Page 101

5.3.11 Application "Differential weighing"

The application **Differential weighing** is used to calculate the difference of two or more weighing values. It is similar to the application **Back weighing**, but it provides more options.

Navigation: ▼ > APPS > Differential weighing

Example procedure

This example uses the weighing sequence **Initial weights first**.

1 Open the applications section.
   - The section APPS is selected.
2 Tap **Differential weighing**
   - The corresponding weighing application opens.
3 Tap the title section to define the number of samples and the weighing sequence.
   Note
   Alternatively, tap ⚙ to access these settings.
4 Tap ✓ **Save**.
5 Tap ▶ **Start**.
6 Place an empty sample vessel on the weighing pan.
   - The balance is taring.
   - Net is displayed.
7 Place the sample into the sample vessel.

➡ **Initial weight**: The weight of the sample is displayed.

8 Tap ✓ **OK**.

9 Remove the sample vessel from the weighing pan.

10 Tap ➜ **Next**.

11 Repeat steps 6 - 10 for each sample.

12 Place the sample vessel with the treated sample 1 on the weighing pan.

➡ **Final weight**: The weight of the sample is displayed.

13 Tap ✓ **OK**.

➡ δ: The weight difference is displayed in the title section.

14 Remove the sample vessel from the weighing pan.

15 Tap ➜ **Next**.

16 Repeat steps 12 - 15 for each sample.

17 Tap ✓ **OK**.

18 Tap **Complete**.

➡ The result is published.

See also

Settings: application "Differential weighing" ▸ Page 103

5.4 Adjustments

This section describes how to set up and perform an internal or an external adjustment.

The internal adjustment uses the built-in weights to adjust the balance. Typically, the balance is set to automatically perform an internal adjustment after a certain event.

The external adjustment requires separate weights to adjust the balance. Typically, an external adjustement is only performed when required by the customer's SOP.

Navigation: ▼ > Applications > Adjustments

5.4.1 Adjustment strategy

This setting defines which adjustment type is performed whenever you start an adjustment.

Example procedure

This example shows how the change the adjustment type **Internal** to the adjustment type **External**.

1 Open the applications section.

2 Tap **Adjustments**.

3 Tap **External (OFF)**.

➡ The section **Adjustment strategy** opens.

4 Select the option **External adjustment**.

5 Tap ✓ **Save**.

6 Tap to return to the main weighing screen.

See also

Settings: Adjustment strategy ▸ Page 106

5.4.2 Editing an adjustment

This example shows how to edit the adjustment type **Internal**. The procedure to edit the adjustment type **External** is similar.

1 Open the applications section.

2 Tap **Adjustments**.

3 Tap **Internal**.
   ➡ The main weighing screen opens.
4 Tap .
   ➡ The section with the settings opens.
5 Change the settings according to your needs.
6 Tap ✓ **Save**.
   ➡ The main weighing screen opens.

See also

Adjustment settings ▸ Page 106

5.4.3 Performing an internal adjustment

Navigation: ▼ > Applications > Adjustments

- **Adjustments** is set to **Internal**.

1 Option 1: On the main weighing screen, tap **Adjust**.
Option 2: Open the applications section, tap **Adjustments**, select the adjustment, and tap ▶ **Start**.
   ➡ The adjustment is executed.
   ➡ The adjustment results appear.
2 Tap ✓ **Finish**.
   ➡ The balance is ready.

5.4.4 Performing an external adjustment

An external test weight for an external adjustment has to weigh at least 10% of the balance capacity. External test weights under 10% of the balance capacity are not displayed on the balance.

Navigation: ▼ > Applications > Adjustments

This example shows how to define a test weight and how to perform an external adjustment.

- **Adjustments** is set to **External**.

1 On the main weighing screen, tap **Adjust**.
   ➡ If no suitable test weight has been defined, you are prompted to define a test weight.
2 Tap .
   ➡ The section **Test weights** opens.
3 Tap the weight of your choice.
4 Tap **Actual weight** and enter a value.
5 Tap ✓ **OK** twice.
6 Tap ✓ **Save**.
   ➡ The main weighing screen opens.
7 Tap **Adjust**.
8 Place the test weight on the weighing pan.
   ➡ The adjustment is executed.
9 When prompted, remove the weight from the weighing pan.
   ➡ The adjustment results appear.
10 Tap ✓ **Finish**.
   ➡ The balance is ready.

See also

Settings: External adjustment ▸ Page 108

5.5 Tests

Routine tests ensure accurate weighing results according to GWP® or other quality-management systems. The tests should be performed in regular intervals, and the results should be documented in a traceable way.

METTLER TOLEDO can help you to define the routine tests to be performed based on your process requirements. Please contact your local METTLER TOLEDO representative for additional information.

Navigation: ▼ > Applications > Tests

5.5.1 Editing a test

This example shows how to edit the sensitivity test. The procedure to edit other routine tests is similar.

1 Open the applications section.
2 Tap **Tests**.
3 Tap **Sensitivity**.
➡ The main weighing screen opens.
4 Tap .
➡ The section with the settings opens.
5 Change the settings according to your needs.
6 If required: Tap to access the list of available test weights.
7 Tap ✓ **OK**.
8 Tap ✓ **Save**.
➡ The main weighing screen opens.

See also

Settings: Sensitivity test ▸ Page 108
Settings: Repeatability test ▸ Page 110
Settings: Eccentricity test ▸ Page 111

5.5.2 Performing a test

NOTICE

Incorrect weighing results due to wrong handling of the test weights.

– Only handle test weights with gloves, tweezers, weight forks, or weight handles.

5.5.2.1 Sensitivity test

The sensitivity of the balance defines the deviation between the balance reading and the actual load. The sensitivity test allows you to measure the sensitivity using one or two test points.

Navigation: ▼ > Applications > Tests > Sensitivity

This example shows how to perform a sensitivity test with one test point. The procedure with two test points or a tare container is similar, but additional test weights and test containers are required.

- **Test point 1** is defined.
- A test weight and an appropriate tool to handle the test weight are available.

1 Open the application **Sensitivity test**.
2 Tap ▶ **Start**.
➡ The balance is zeroing.
3 Place the test weight on the weighing pan.
4 When prompted, remove the test weight from the weighing pan.

➡ The result is displayed.

5 Tap ✓ **Finish**.

See also

Settings: Sensitivity test ▸ Page 108

5.5.2.2 Repeatability test

The repeatability test calculates the standard deviation of a series of measurements with a single test weight in order to determine the repeatability of the balance.

Repeatability is highly affected by the ambient conditions (drafts, temperature fluctuations and vibrations) and also by the skill of the person performing the weighing. Therefore, the series of measurements must be carried out by the same operator, in the same location, under constant ambient conditions, and without interruption.

Navigation: ▼ > Applications > Tests > Repeatability

This example shows how to perform a repeatability test.

- A test weight and an appropriate tool to handle the test weight are available.

1 Open the application **Repeatability test**.

2 If required: Tap the left title section to define the nominal weight of the test weight.

3 Tap ✓ **OK**.

4 If required, tap the right title section to define the number of repetitions.
Note
Alternatively, tap to access these settings.

5 Tap ✓ **Save**.

➡ The main weighing screen opens.

6 Tap ▶ **Start**.

7 Place the test weight on the weighing pan.

8 When prompted, remove the test weight.

➡ The balance is zeroing.

9 Repeat this procedure as many times as defined.

10 When prompted, remove the test weight.

➡ The result is displayed.

11 Tap ✓ **Finish**.

See also

Settings: Repeatability test ▸ Page 110

5.5.2.3 Eccentricity test

The eccentricity test checks if every eccentric load deviation (corner load deviation) is within the user SOP tolerances. The corner load is the deviation of the measurement value through off-center (eccentric) loading. The corner load increases with the weight of the load and its distance from the center of the weighing pan (1). If the display remains consistent, even when the same load is placed on different parts of the weighing pan, the balance does not have corner load deviation.

The result corresponds to the highest of the four determined eccentric load deviations (2 to 5).

Navigation: ▼ > Applications > Tests > Eccentricity

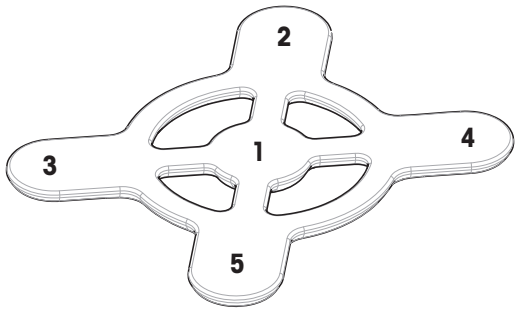
This example shows how to perform an eccentricity test.

- A test weight and an appropriate tool to handle the test weight are available.

1 Open the application **Eccentricity test**.

2 If required: Tap the titel section to define the nominal weight of the test weight.
Note
Alternatively, tap to access this setting.

3 Tap ▶ **Start**.
4 When prompted, place the test weight on the appropriate positions of the weighing pan.
5 When prompted, remove the test weight.
➡ The result is displayed.
6 Tap ✓ **Finish**.



See also

Settings: Eccentricity test ▸ Page 111

5.6 Interfaces

5.6.1 Ethernet

Navigation: ☰ Balance menu > ⚙ Settings > Interfaces

This example shows how to configure the balance such that it can communicate with a peripheral device or a service through Ethernet.

NOTICE

Possible electromagnetic interference with other devices

If the Ethernet cable is longer than 30 meters, electromagnetic interference with other devices may be possible.

– Use an Ethernet cable that is shorter than 30 meters.

■ The section **Interfaces** is open.
1 Tap the function **Ethernet**.
Note
This function can be activated or deactivated.
2 Tap the parameter **Host name** to change the name.
3 Tap ✓ **OK**.
4 Tap the parameter **Network configuration**.
5 Select the option of your choice.
6 Tap ✓ **OK**.
7 If you selected the option **Manual**: Change the other parameters if needed, for example, **IP address**.
8 Tap ✓ **OK**.
9 Tap ✓ **Save**.

See also

Settings: Interfaces ▸ Page 82

5.6.2 Bluetooth

Navigation: ☰ Balance menu > ⚙ Settings > Interfaces

This example shows how to configure the balance such that it can communicate with a printer through Bluetooth.

Note

This function is only available if a Bluetooth adapter is connected to the balance.

- A Bluetooth adapter is connected to the balance.
- The section **Interfaces** is open.

1 Tap the function **Bluetooth**.
Note
This function can be activated or deactivated.
2 Tap the parameter **Bluetooth identification** to change the name.
3 Tap ✓ **OK**.
4 Tap ✓ **Save**.

See also

Settings: Interfaces ▸ Page 82

5.7 Devices / Printers

Navigation: ☰ Balance menu > ⚙ Settings > Devices / Printers

See also

Settings: Devices / Printers ▸ Page 83
Accessories ▸ Page 143

5.7.1 Printer

Printers serve to document your processes and results. Each weighing application offers the possibility to trigger the printing process manually. The balance can also be configured such that the results are automatically printed.

NOTICE

Damage to the device due to inappropriate use

– Consult the User Manual of the device before using it.

5.7.1.1 Installing a USB printer

Installing and connecting the printer

This example describes how to install a USB printer and connect it to the balance with a USB cable.

Note

A suitable cable from METTLER TOLEDO must be used to ensure proper function.

Navigation: ☰ Balance menu > ⚙ Settings > Devices / Printers

- The USB printer is switched on.
- A suitable cable to connect the printer to the balance is available.
- On the balance, the main weighing screen is open.

1 Connect the cable to the USB printer.
2 Connect the cable to the USB-A port of the balance.
➡ The printer appears on the list **Devices / Printers**.
➡ The printer is ready for use.

Printing a test page

Navigation: Balance menu > Settings > Devices / Printers

- The printer is connected to the balance.
- The main weighing screen is open.

1 Navigate to the section **Devices / Printers**.
2 Tap the appropriate printer.
3 Tap .
   ➡ The printer prints a short text.
4 Tap **OK**.

5.7.1.2 Installing an RS232 printer

Installing and connecting the printer

This example describes how to install an RS232 printer and connect it to the balance with a USB cable.

Note

A suitable cable from METTLER TOLEDO must be used to ensure proper function.

Navigation: Balance menu > Settings > Devices / Printers

- The RS232 printer is switched on.
- A suitable cable to connect the printer to the balance is available.
- On the balance, the main weighing screen is open.

1 Connect the cable to the RS232 printer.
2 Connect the cable to the USB-A port of the balance.
3 Navigate to the section **Devices / Printers**.
4 Tap .
5 Select the option **USB-RS232 converter**.
6 Tap **Next**.
7 Configure the printer.
8 Tap **Save**.
   ➡ The printer appears on the list **Devices / Printers**.
   ➡ The printer is ready for use.

Printing a test page

Navigation: Balance menu > Settings > Devices / Printers

- The printer is connected to the balance.
- The main weighing screen is open.

1 Navigate to the section **Devices / Printers**.
2 Tap the appropriate printer.
3 Tap .
   ➡ The printer prints a short text.
4 Tap **OK**.

5.7.1.3 Installing a printer through Bluetooth

This example describes how to install a printer and connect it to the balance through Bluetooth.

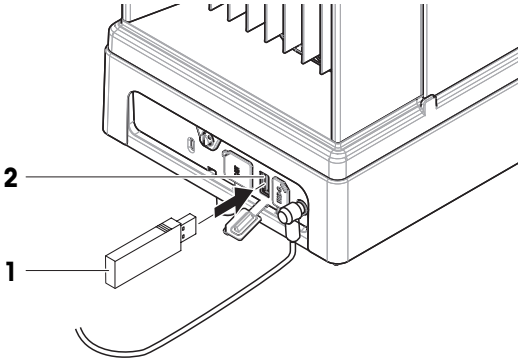
For more information about how to install your Bluetooth adapter, consult the Installation Instructions provided with it.

Connecting the printer to the balance

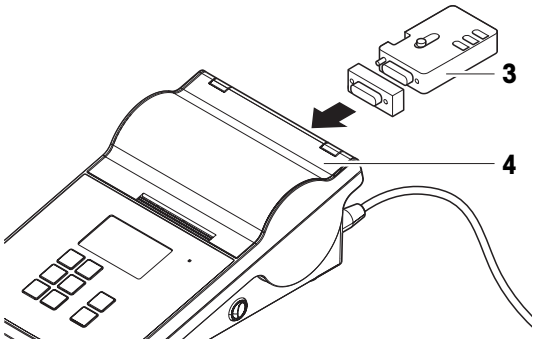
Navigation: Balance menu > Settings > Interfaces > Bluetooth

Navigation: Balance menu > Settings > Devices / Printers

- The printer is switched on.
- A Bluetooth RS adapter (to connect to the printer) and a Bluetooth USB adapter (to connect to the balance) are available.
- The switch on the Bluetooth RS adapter is in the position DCE.
- You have identified the MAC address (unique device address) on the Bluetooth RS adapter.
- The main weighing screen is open.



1 Connect the Bluetooth USB adapter (**1**) to the USB-A port (**2**) of the balance.



2 Connect the Bluetooth RS adapter (**3**) to the printer (**4**).
   ➡ The light on the Bluetooth RS adapter starts blinking.
3 Navigate to the section **Bluetooth** and activate the function.
4 Tap ✓ **Save**.
5 Tap **Devices / Printers**.
6 Tap +.
7 Select the option **Bluetooth**.
8 Tap → **Next**.
   ➡ The balance is searching for devices.
9 Select the MAC address of the Bluetooth RS adapter (**3**).
10 Tap → **Next**.
   ➡ The balance is pairing the Bluetooth USB adapter (**1**) with the Bluetooth RS adapter (**3**) from the printer.
11 Tap → **Next**.
   ➡ The balance is connecting to the printer.
12 Tap ✓ **Finish**.

Printing a test page

Navigation: Balance menu > Settings > Devices / Printers

- The printer is connected to the balance.
- The main weighing screen is open.

1 Navigate to the section **Devices / Printers**.
2 Tap the appropriate printer.
3 Tap .
   ➡ The printer prints a short text.
4 Tap ✓ **OK**.

See also

Settings: Bluetooth ▸ Page 83

5.7.2 Barcode reader

The barcode reader can be used to enter text or numbers in any character-input field on the display. The format of the field must be compatible with the scanned code.

NOTICE

Damage to the device due to inappropriate use

– Consult the User Manual of the device before using it.

5.7.2.1 Scanning a sample ID with a barcode reader

This example shows how to scan a sample ID with a barcode reader in the application **Weighing**.

Installing the barcode reader

- A barcode reader is available.
- The main weighing screen is open.

– Connect the USB cable of the barcode reader to the appropriate USB port of the balance.

➡ The balance automatically detects the barcode reader.

➡ The barcode reader appears on the list **Devices / Printers**.

➡ The barcode reader is ready for use.

Scanning a sample ID with the barcode reader

- The barcode reader is configured: **End of line character** is set to "Enter".
- The barcode reader is connected to the balance.
- The application **Weighing** is open.

1 Tap to open the settings.
2 Tap **ID format**.
3 Tap **Sample ID**.
4 Tap **Default value**.
5 Scan the code of the sample ID with the barcode reader.

➡ The scanned sample ID appears in the corresponding field.

6 Optional: Tap **Default value** again to manually change the scanned sample ID.
7 Tap ✓ **OK**.
8 Tap ✓ **Save**.

5.7.3 Foot switch

The foot switch can be used to perform certain operations on your balance without having to use the terminal.

NOTICE

Damage to the device due to inappropriate use

– Consult the User Manual of the device before using it.

This example shows how to install and use a foot switch through USB.

Installing and configuring the foot switch

- A foot switch is available.
- The main weighing screen is open.

1 Connect the USB cable of the foot switch to the appropriate USB port of the balance.

➡ The balance automatically detects the foot switch.
➡ The foot switch appears on the list **Devices / Printers**.

2 Tap on the foot switch.
3 Tap **Function** and configure how the foot switch is to be used.
4 Tap ✓ **OK**.
5 Tap ✓ **Save**.
➡ The foot switch is ready for use.

5.7.4 Keyboard

A keyboard can be used to perform certain operations on your balance without having to use the terminal.

NOTICE

Damage to the device due to inappropriate use

– Consult the User Manual of the device before using it.

This example shows how to install and use a keyboard through USB.

Installing and configuring the keyboard

- A keyboard with USB cable is available.
- The main weighing screen is open.

1 Connect the USB cable of the keyboard to the appropriate USB port of the balance.
➡ The balance automatically detects the keyboard.
➡ The keyboard appears on the list **Devices / Printers**.
2 Tap ✓ **OK**.
➡ The keyboard is ready for use.

5.7.5 Adding and deleting a device

Navigation: ☰ Balance menu > ⚙ Settings > Devices / Printers

This example shows how to add and delete a printer with a USB interface.

Adding a device

1 Open the settings section **Devices / Printers**.
2 Tap +.
3 Select the option **USB**.
4 Tap → **Next**.
5 When prompted, connect the device to the balance.
➡ The device is automatically detected.
6 Tap ✓ **Save**.
➡ The device appears on the list **Devices / Printers**.

Deleting a device

1 Open the settings section **Devices / Printers**.
2 Select the device you want to delete.
3 Tap 🗑.
4 Tap ✓ **OK**.

5.7.6 Editing the settings of a device

Navigation: Balance menu > Settings > Devices / Printers

1 Open the settings section **Devices / Printers**.
   ➡ A list of available devices is displayed.
2 Adjust the settings if needed.

5.8 Services

The balance offers several ways to control the balance remotely or to manage data.

Navigation: Balance menu > Settings > Services

See also

Settings: Services ▸ Page 83

5.8.1 Setting up services

5.8.1.1 MT-SICS service

MT-SICS is a service that allows you to operate the balance by sending commands from a computer. This enables you to integrate your balances into your systems.

The full documentation related to MT-SICS for MX and MR balances is available online.

www.mt.com/labweighing-software-download

This example shows how to establish a connection between your balance and a computer through USB. Other connection options work in a similar way. The computer can then be used to control the balance and receive data using the commands of MT-SICS.

Configuring the balance

Navigation: Balance menu > Settings > Services

- The section **Services** is open.

1 Tap the function **MT-SICS service**.
   Note
   This function can be activated or deactivated.
2 Tap the setting **Interface**.
3 Select the option **USB**.
4 Tap **OK**.
5 Tap the setting **Command set**.
6 Select the option **MT-SICS**.
7 Tap **OK**.
8 Tap **Save**.

Connecting the balance to the computer

When connecting MT-SICS through USB, a USB driver must be installed on your computer. This creates a COM port for communication with the balance.

The USB driver is available online:

www.mt.com/labweighing-software-download

- The USB driver is installed on the computer.
- A terminal program is installed and running on the computer.
- A suitable cable from METTLER TOLEDO is available.

1 Provide the necessary connection settings to the terminal program.

2 Test the connection by sending a command to the balance, for example, `S` to retrieve the stable weight from the balance.
   - ➡ If a string is received by the terminal program with the weight, date, and time, the connection has been successfully established.
   - ➡ If no response is received by the terminal program, check the connection settings.

See also

- Settings: MT-SICS service ▸ Page 84
- Transferring data: MT-SICS service ▸ Page 64

5.8.1.2 EasyDirect Balance

This example shows how to establish a connection between your balance and a computer through USB. The computer can then be used to control the balance and receive data using the software **EasyDirect Balance**.

Configuring the balance

Navigation: ☰ Balance menu > ⚙ Settings > Services

- The section **Services** is open.

1 Tap the function **EasyDirect Balance**.
   Note
   This function can be activated or deactivated.
2 Tap the setting **Interface**.
3 Select the option **USB**.
4 Tap ✓ **OK**.
5 Tap ✓ **Save**.

Connecting the balance to the computer

The software **EasyDirect Balance** must be installed on your computer. A trial version of the software is available online:

www.mt.com/EasyDirectBalance

- A suitable cable from METTLER TOLEDO to connect the balance to the computer is available.

1 Install the software **EasyDirect Balance** on your computer.
2 Follow the instructions to establish a connection with the balance.

See also

- Settings: EasyDirect Balance ▸ Page 84
- Transferring data: EasyDirect Balance ▸ Page 65

5.8.1.3 Drop to cursor

This example shows how to configure the balance such that data can be transferred to a computer using the service **Drop to cursor**.

Note

The use of special characters is limited when using the service **Drop to cursor**.

Configuring the balance

Navigation: ☰ Balance menu > ⚙ Settings > Services

- The section **Services** is open.

1 Tap the service **Drop to cursor**.
   Note
   This function can be activated or deactivated.
2 Tap the setting **Interface**.

3 Select the option **USB**.

4 Tap ✓ **OK**.

Connecting the balance to the computer

- A suitable cable from METTLER TOLEDO is available.

– Connect the balance to the computer.

See also

Settings: Drop to cursor ▸ Page 84

Transferring data: Drop to cursor ▸ Page 66

5.8.1.4 File server

This example shows how to configure the balance such that data can be transferred using the service **File server**.

Configuring the balance

Navigation: ☰ Balance menu > ⚙ Settings > ⚙ Services

- The interface **Ethernet** is activated.
- The section **Services** is open.

1 Tap the service **File server**.
Note
This function can be activated or deactivated.

2 Enter the name of the target server.

3 Tap ✓ **OK**.

4 Enter the name of the shared folder.

5 Tap ✓ **OK**.

6 Optional: Activate the option **Credentials** to define a user name and a password.

7 Tap ✓ **Save**.
➡ The connection to the file server is verified.

See also

Ethernet ▸ Page 56

Settings: File server ▸ Page 85

Transferring data: File server ▸ Page 66

5.8.2 Transferring data to services

This setting serves to define what kind of data is transferred to a target service.

See also

Settings: Publishing ▸ Page 79

5.8.2.1 Transferring data: MT-SICS service

All MX balances can be integrated into a network. The balance can be configured to communicate with a computer. The service MT-SICS (METTLER TOLEDO Standard Interface Command Set) serves to send commands to operate the balance.

For further information, contact your METTLER TOLEDO representative.

The full documentation related to MT-SICS for MX and MR balances is available online.

▸ www.mt.com/labweighing-software-download

Configuring the balance

Navigation: Balance menu > Settings > Balance > Publishing

- A computer is connected to the balance.
- The service **MT-SICS** is activated and configured.
- The section **Publishing** is open.

1 Tap the function **Transfer data**.
Note
This function can be activated or deactivated.
2 Tap the setting **Transfer to**.
3 Select the option **MT-SICS service**.
4 Tap **OK**.
5 Tap the setting **Output mode** and select the option of your choice.
6 Tap **OK**.
7 Tap **Save**.

Transferring data

In this example, weighing data is transferred to the service **MT-SICS**. The data format is defined in **MT-SICS**.

- A computer with **MT-SICS** is connected to the balance.
- The balance is configured as described above.

– Perform a weighing and tap **Publish**.
➡ The weighing data is sent to the **MT-SICS** client.

See also

MT-SICS service ▸ Page 62

5.8.2.2 Transferring data: EasyDirect Balance

EasyDirect Balance is a software to collect, analyze, store, and export measurement results and balance details from up to ten balances.

Configuring the balance

Navigation: Balance menu > Settings > Balance > Publishing

- A computer with the software **EasyDirect Balance** is connected to the balance.
- The service **EasyDirect Balance** is activated and configured.
- The section **Publishing** is open.

1 Tap the function **Transfer data**.
Note
This function can be activated or deactivated.
2 Tap the setting **Transfer to**.
3 Select the option **EasyDirect Balance**.
4 Tap **OK**.
5 Tap **Save**.

Transferring data

In this example, weighing data is transferred to the software **EasyDirect Balance**. Which data is transferred is defined in the application-specific section **Report**.

- A computer with the software **EasyDirect Balance** is connected to the balance.
- The balance is configured as described above.

1 On the computer, open the software **EasyDirect Balance** and select the balance.

2 Perform a weighing and tap **Publish**.
➡ The weighing data is sent to the software **EasyDirect Balance**.

See also

EasyDirect Balance ▸ Page 63
Configuring a report ▸ Page 45

5.8.2.3 Transferring data: Drop to cursor

The balance offers the option to send weighing results to a computer. This feature can be used, for example, to send results to an Excel sheet or to a text file. With the service **Drop to cursor**, the result is sent to the computer where the cursor is located, as if it were a keyboard input.

Configuring the balance

Navigation: ☰ Balance menu > ⚙ Settings > Balance > Publishing

- A computer is connected to the balance.
- The service **Drop to cursor** is activated and configured.
- The section **Publishing** is open.

1 Tap the function **Transfer data**.
Note
This function can be activated or deactivated.
2 Tap the setting **Transfer to**.
3 Select the option **Drop to cursor**.
4 Tap ✓ **OK**.
5 In the section **Type of data**, select the type of data you want to transfer.
6 In the section **Field configuration**, define the layout of the transferred data.
7 Tap ✓ **OK**.
8 Tap ✓ **Save**.

Transferring data

In this example, weighing data is transferred to Excel through the service **Drop to cursor**. Which data is transferred is defined here:

Navigation: ☰ Balance menu > ⚙ Settings > Services > Drop to cursor

- A computer is connected to the balance.
- The balance is configured as described above.

1 On the computer, open Excel and select a target cell.
2 Perform a weighing and tap **Publish**.
➡ The weighing data is added to the target cell in Excel.
3 The next cell is automatically selected for the next weighing data.

See also

Drop to cursor ▸ Page 63

5.8.2.4 Transferring data: File server

This setting serves to define a storage location and a file format for exported data.

Navigation: Balance menu > Settings > Balance > Publishing

- A file server is connected to the balance.
- The section **Report** of the weighing application is configured.
- The section **Publishing** is open.

1 Tap **Export file**.
Note
This function can be activated or deactivated.
2 Tap the option **Export to** and select the option **File server**.
3 Tap **OK**.
4 Tap the option **File type** and select a format.
5 Tap **OK**.
6 Tap **Save**.

See also

File server ▸ Page 64

5.9 Publishing

The balance offers various ways to publish results or transfer data to another device or service. The settings in this section apply to the devices that are defined for the balance. For publishing to services, refer to [Transferring data to services ▸ Page 64].

5.9.1 Printing data

This setting serves to define a target printer and a print format for printed data.

Navigation: Balance menu > Settings > Balance > Publishing

- A printer is connected to the balance.
- The section **Publishing** is open.

1 Tap the function **Printout**.
Note
This function can be activated or deactivated.
2 Tap **OK**.
3 Tap **Save**.

See also

Settings: Publishing ▸ Page 79

5.9.1.1 Printing results manually through USB

This example shows how to manually print results on a printer that is connected to the balance through USB.

Note

A suitable cable from METTLER TOLEDO must be used to ensure proper function.

- A printer is connected to the balance through USB.
- A weighing application of your choice is open.
- The section **Report** of the weighing application is configured.

1 Place the sample on the weighing pan.
➡ The result is displayed.
2 Tap **Publish**.
➡ The result is printed according to the report configuration.

See also

- Installing an RS232 printer ▸ Page 58
- Configuring a report ▸ Page 45

5.9.1.2 Printing results automatically through Bluetooth

This example shows how to automatically print results on a printer that is connected to the balance through Bluetooth.

- A printer is connected to the balance through Bluetooth.
- A weighing application of your choice is open, for example, **Weighing**.
- The section **Report** of the weighing application is configured.

1. Navigate to the settings section of the weighing application, for example, ⚖.
2. Tap **Weighing**.
3. Tap **Weight capture mode**.
4. Select the option **Automatic, stable (zero excluded)** or **Automatic, stable (zero included)**.
5. Tap ✓ **OK**.
6. Tap ✓ **Save**.
   ➡ The main weighing screen is open.
7. Place a sample on the weighing pan.
   ➡ The result is printed automatically.

See also

- Installing a printer through Bluetooth ▸ Page 58
- Configuring a report ▸ Page 45

5.9.2 Exporting data to a USB storage device

This setting serves to define a storage location and a file format for exported data.

Note

The export takes at least 15 seconds. Do not remove remove the USB storage device during data export.

Navigation: Balance menu > Settings > Balance > Publishing

- A USB storage device is connected to the balance.
- The section **Report** of the weighing application is configured.
- The section **Publishing** is open.

1. Tap **Export file**.
   Note
   This function can be activated or deactivated.
2. Tap the option **Export to** and select a USB storage device.
3. Tap ✓ **OK**.
4. Tap the option **File type** and select a format.
5. Tap ✓ **OK**.
6. Tap ✓ **Save**.

See also

- Settings: Publishing ▸ Page 79
- Configuring a report ▸ Page 45

5.9.3 Publishing options

These settings serve to define how a specific type of result is published. A result type can be, for example, test results.

Navigation: Balance menu > Settings > Balance > Publishing

- The section **Publishing** is open.

1 Tap **Single results**.
   - The information is shown that the behavior is defined in the application-specific setting **Weight capture mode**.
2 Tap **OK**.
3 Tap **Workflow results**, **Adjustment results**, and/or **Test results**.
4 Select an option.
5 Tap **OK**.
6 Tap **Save**.

See also

Settings: Publishing ▸ Page 79

5.9.4 Indicators for weighing results

When published, weighing results might be marked with indicators.

Indicator	Main weighing screen	Published
Net weight	Net	**N**
Tare weight	–	**T**
Preset tare weight	–	**PT**
Gross weight	–	**G**
Calculated weight	*	*
Unstable weight	o	**D**

5.10 User management

5.10.1 Activating / deactivating the user management

Navigation: Balance menu > Settings > Balance > General

- The setting **General** is open.

1 Tap the setting **User management**.
2 Select the option **Active** or **Inactive**.
3 Tap **OK**.
   - The current user is logged in as administrator.
   - When the setting **User management** is deactivated, the current user is logged out automatically.

5.10.2 Managing users and user groups

Navigation: ☰ Balance menu > User management

5.10.2.1 Automatic logout

Navigation: ☰ Balance menu > User management > User management – General

- The section **User management** – **General** is open.

1 Tap the setting **Automatic logout**.
   Note
   This function can be activated or deactivated.
2 Define a waiting time before automatic logout.
   ➡ When the balance is not used, the current user is automatically logged out after the defined waiting time.
3 Tap ✓ **Save**.

See also

User management – General ▸ Page 76

5.10.2.2 Creating a new user

Navigation: ☰ Balance menu > User management > User management – Users

- The section **User management** – **Users** is open.

1 Tap +.
2 Enter a user name.
3 Tap → **Next**.
4 Assign a group.
5 Tap → **Next**.
6 Optional: Enter the user's first name and last name.
7 Select whether the user is currently active or not active.
8 Select a language.
9 Optional: Set a password.
10 Tap ✓ **Save**.
   ➡ The new user appears on the list of users.

See also

User management – Users ▸ Page 76

5.10.2.3 Setting the user language

If the function **User management** is activated, users can set their preferred system language individually.

Navigation: ☰ Balance menu > User management > User management – Users

- The user is logged in.
- The section **User management** – **Users** is open.

1 Tap the user name.
2 Tap **User language**.
3 Select a system language.
   ➡ The system language for this specific user changes to the selected language.
4 Tap ✓ **Save**.
5 Tap ✓ **OK**.

See also

Date / Time / Language ▸ Page 37
User management – Users ▸ Page 76

5.10.2.4 Deleting a user

Navigation: ☰ Balance menu > User management > User management – Users

- The section **User management** – **Users** is open.

1 Tap the user you want to delete.
   ➡ The user details open.
2 Tap 🗑.
3 Tap ✓ **OK**.
   ➡ The user is removed from the list of users.

5.10.2.5 Managing groups

This example shows how to manage permissions for a user group. Whether you are allowed to change these settings depends on your permissions.

Navigation: ☰ Balance menu > User management > User management – Groups

- The section **User management** – **Groups** is open.

1 Tap a group.
2 Tap **Group name** to change the name.
3 Tap **Run applications** to select the applications this group is allowed to run.
4 Tap ✓ **OK**.
5 Tap the other settings to activate or deactivate the corresponding permission.
6 Tap ✓ **Save**.

See also

User management – Groups ▸ Page 76

5.11 Password protection

If the function **User management** is activated, each user has an individual password.

- Users can define and change their own password.
- Users with the permission to configure user management can change the password of any user.
- If users forgot their password, they can request a reset.

5.11.1 Logging in and logging out

If the function **User management** is activated, users need to log in to use the balance.

Logging in

- The login dialog is open.

1 Select a user and enter the password.
2 Tap ✓ **OK**.
3 Tap ⊕ **Login**.

Logging out

- The user is logged in.

1 Tap ☰ **Menu**.
2 Tap **Logout**.

5.11.2 Changing a password

Navigation: ☰ Balance menu > User management > User management – Users

- The user is logged in.
- The section **User management** – **Users** is open.

1 Tap the appropriate user.
2 Tap **Password**.
3 Enter the old password.
4 Tap ✓ **OK**.
5 Enter the new password twice.
6 Tap ✓ **OK**.
7 Tap ✓ **Save**.

5.11.3 Resetting a password

If users with the permission to configure the function **User management** have forgotten their password, a password reset can be requested.

- The login dialog is open.

1 Tap ••• **More**.
2 Tap **Request reset password**.
3 Enter the user name.
4 Tap ✓ **OK**.
5 Note the service code and tap **Service request**.
   ➡ Information about your METTLER TOLEDO service representative appears.
6 Contact your METTLER TOLEDO service representative via phone or email.
   ➡ You get a temporary password with which you can log in once.
7 Log in with your temporary password and select a new password.

5.11.4 Blocking and unblocking the balance

If the function **User management** is activated, the balance can be blocked and unblocked. The balance can only be blocked/unblocked by users with corresponding rights.

Blocking the balance

- A user with access right **Quality management** is present.

1 Tap ☰ **Menu**.
2 Tap **Block**.
3 Tap ▶ **Block** to confirm.

Unblocking the balance

- The balance is blocked.
- A user with access right **Quality management** is present.

1 Log in to the balance.
   ➡ The dialog to unblock the balance appears.
2 Tap ▶ **Unblock**.
   ➡ The balance is ready for use.

6 Software Description

6.1 Balance menu settings

The section **Balance menu** contains general settings and information. To open the section **Balance menu**, tap the symbol ☰ on the main screen.

The section **Balance menu** is divided into the following topics:

- **Leveling aid**
- **History**
- **Information**
- **User management**
- **Settings**
- **Maintenance**

6.1.1 Leveling aid

Exact horizontal positioning and stable installation is essential for repeatable and accurate weighing results. The menu topic **Leveling aid** serves to level the balance.

Navigation: ☰ Balance menu > Leveling aid

Note

After leveling the balance, an internal adjustment must be performed.

See also

Leveling the balance ▸ Page 31

6.1.2 History

The balance records the tests and adjustments that are performed in the menu topic **History**.

Navigation: ☰ Balance menu > History

The menu topic **History** is divided into the following sections.

- **Adjustments history**
- **Tests history**
- **Service history**
- **Activity log**
- **Software update history**
- **Error log**

6.1.2.1 Adjustments history

Navigation: ☰ Balance menu > History > Adjustments history

A maximum of 500 entries can be stored. If this value is exceeded, the oldest entry is overwritten.

Button	Name	Description
	**Filter**	Tap to filter the list: • **Filter by date** • **Filter by user**
	**Publish**	Tap to publish or print the displayed entries.

6.1.2.2 Tests history

Navigation: Balance menu > History > Tests history

A maximum of 500 entries can be stored. If this value is exceeded, the oldest entry is overwritten.

Button	Name	Description
	**Filter**	Tap to filter the list: • **Filter by date** • **Filter by user**
	**Publish**	Tap to publish or print the displayed entries.

6.1.2.3 Service history

Navigation: Balance menu > History > Service history

A maximum of 100 entries can be stored. If this value is exceeded, the oldest entry is overwritten.

Button	Name	Description
	**Filter**	Tap to filter the list: • **Filter by date** • **Filter by user**
	**Publish**	Tap to publish or print the displayed entries.

6.1.2.4 Activity log

Navigation: Balance menu > History > Activity log

A maximum of 500 entries can be stored. If this value is exceeded, the oldest entry is overwritten.

Button	Name	Description
	**Filter**	Tap to filter the list: • **Filter by date** • **Filter by user**
	**Publish**	Tap to publish or print the displayed entries.

6.1.2.5 Software update history

Navigation: Balance menu > History > Software update history

A maximum of 100 entries can be stored. If this value is exceeded, the oldest entry is overwritten.

Button	Name	Description
	**Filter**	Tap to filter the list: • **Filter by date** • **Filter by user**

6.1.2.6 Error log

Navigation: Balance menu > History > Error log

A maximum of 500 entries can be stored. If this value is exceeded, the oldest entry is overwritten.

Button	Name	Description
	**Filter**	Tap to filter the list: • **Filter by date** • **Filter by user**
	**Publish**	Tap to publish or print the displayed entries.

6.1.3 Information

Navigation: Balance menu > Information

The menu topic **Information** is divided into the following sections:

- **Balance information**
- **Service and support information**

6.1.3.1 Balance information

Navigation: Balance menu > Information > Balance information

The section **Balance information** provides information about the following topics:

- **Balance identification**
- **Logged in user** (if **User management** activated)
- **Software**
- **Hardware**
- **Network**
- **End user license agreement**

6.1.3.2 Service and support information

Navigation: Balance menu > Information > Service and support information

The section **Service and support information** provides information about the following topics:

- **Service information**
- **Service support contact**

6.1.4 User management

In the menu topic **User management**, rights for users and user groups can be defined. Users can be assigned to user groups.

The menu topic **User management** is only visible if it is activated under the menu topic **Settings**. As a consequence, a login dialog opens at every system start.

A maximum of 20 users can be created. A user is always part of a user group and has the permissions of the corresponding group. Which user has which permissions can be defined or changed by users with the appropriate permission rights.

Note

The settings related to screen brightness and sound can be edited by all users and changes are applied to all users. Any user can set a user-specific language for the balance interface without influencing the settings of other users.

Navigation: Balance menu > User management

The menu topic **User management** is divided into the following sections:

- **User management – General**: settings for all users
- **User management – Users**: settings for individual users
- **User management – Groups**: settings for user groups

See also

User management ▸ Page 69

6.1.4.1 User management – General

Navigation: Balance menu > User management > User management – General

Parameter	Description	Values
Automatic logout	Defines whether the user is automatically logged out after a predefined waiting time.	Active I Inactive* Numeric

* Factory setting

6.1.4.2 User management – Users

Navigation: Balance menu > User management > User management – Users

Parameter	Description	Values
User name	Defines a unique identifier for the user. Once the user profile is defined, the value **User name** cannot be changed anymore.	Text
First name	Defines the first name of the user.	Text
Last name	Defines the last name of the user.	Text
Active	Activates or deactivates the current user.	Active* I Inactive
Assigned group	Assigns the user to user groups.	Defined groups
User language	Defines the language of the user profile.	Available languages
Password	Allows the user to set a password.	Active I Inactive*

* Factory setting

6.1.4.3 User management – Groups

Navigation: Balance menu > User management > User management – Groups

Note

This section is only accessible to users with corresponding rights.

Parameter	Description	Values
Group name	Defines the name of the group.	Text (1…22 characters)

Activity permissions

Parameter	Description	Values
Run applications	Defines which applications the group is allowed to run.	Active (All)* I Active (number/total number)
Run adjustments	Defines whether the group is allowed to perform adjustments.	Active (All)* I Inactive
Run tests	Defines whether the group is allowed to perform routine tests.	Active (All)* I Inactive
Configure applications	Defines whether the group is allowed to configure applications.	Active I Inactive
Cancel results	Defines whether the group is allowed to cancel results.	Active* I Inactive

Show history	Defines whether the group is allowed to view the menu topic **History**.	Active I Inactive

* Factory setting

General configuration permissions

Parameter	Description	Values
Quality management	Defines whether the group is allowed to configure the balance settings **Weighing / Quality**.	Active I Inactive
User management	Defines whether the group is allowed to configure settings of the menu topic **User management**.	Active I Inactive
General	Defines whether the group is allowed to configure the balance settings **General**.	Active I Inactive

6.1.5 Settings

This section describes the settings of the balance that can be changed to suit specific requirements. The balance settings apply to the entire weighing system and to all users.

Navigation: Balance menu > Settings

The menu topic **Settings** is divided into the following sections:

- **Balance**
- **Interfaces**
- **Devices / Printers**
- **Services**

6.1.5.1 Settings: Balance

Navigation: Balance menu > Settings > Balance

The section **Balance** is devided into the following subsections:

- **Weighing / Quality**
- **Publishing**
- **Date / Time / Language**
- **Screen / StatusLight / Sound**
- **General**

6.1.5.1.1 Settings: Weighing / Quality

Navigation: Balance menu > Settings > Balance > Weighing / Quality

Parameter	Description	Values
Leveling warning	Defines the action when the balance is out of level. For approved balances, the default setting is **Forced leveling**.	Active* I Inactive Optional leveling* I Forced leveling
Weighing profiles	A weighing profile stores the balance settings needed for a certain weighing application. It is possible to create separate weighing profiles for different weighing applications. Detailed settings are described in the table **Weighing profiles** below.	Weighing profile 2, Weighing profile 3: Active I Inactive
Test weights	Allows to define test weights. Detailed settings are described in the table **Test weights** below.	–
Calibration reminder	Defines whether the user is reminded about the upcoming expiry date of the calibration.	Active* I Inactive

Calibration expired	Defines whether the balance is blocked if the calibration has expired.	Active I Inactive*
Service reminder	Defines whether the user is reminded about the upcoming due date of the service.	Active* I Inactive

* Factory setting

Weighing profiles

Settings related to weighing performance and data from balance calibration can be stored in a weighing profile.

Parameter	Description	Values
Profile name	Defines the name of the profile.	Text (1…22 characters)
Indicator	Defines the color and the text of the indicator icon.	Active I Inactive* Color I Text (1…3 characters)
Calibration certificate	Defines the ID, the creation date, and the expiry date of the certificate. New certificates can only be created by a service technician based on a performed balance calibration.	Active I Inactive* ID (1…32 characters) I Date I Next date
Environment	Defines the environmental conditions of the balance. **Stable**: For a working environment that is practically free from drafts and vibrations. **Standard**: For an average working environment subject to moderate variations in the ambient conditions. **Unstable**: For a working environment subject to variations in the ambient conditions. **Very unstable**: For a working environment subject to strong variations in the ambient conditions.	Stable I Standard* I Unstable I Very unstable
Weighing mode	Defines the filter settings of the balance. **Universal**: For all standard weighing applications. **Sensor mode**: Depending on the setting of the ambient conditions, this setting delivers a filtered weighing signal of varying strength. The filter has a linear characteristic in relation to time (not adaptive) and is suitable for continuous measured value processing.	Universal* I Sensor mode
Value release	Defines the speed at which the balance regards the measured value as stable and available for capture. **Very fast**: Recommended if you require fast results and repeatability is not very important. **Very reliable**: Provides very good repeatability of measurement results, but increases stabilization time.	Very fast I Fast I Fast and reliable* I Reliable I Very reliable
Display readability	Determines the readability d of the balance display. 1d: maximum resolution 2d: 2 times smaller resolution 5d: 5 times smaller resolution 10d: 10 times smaller resolution 100d: 100 times smaller resolution 1000d: 1000 times smaller resolution For approved balances, the values available for this setting depend on the balance model.	1d* I 2d I 5d I 10d I 100d I 1000d
Zero drift compensation	Performs ongoing corrections of deviations from zero. This setting is not available for approved balances.	Active* I Inactive

Smallest net weight	Defines the smallest net weight [g].	Active I Inactive* Numeric

* Factory setting

Test weights

Parameter	Description	Values
Test weight name	Defines the name of the test weight.	Text (1…22 characters)
Test weight ID	Defines the ID of the test weight.	Text (0…22 characters)
Nominal weight	Defines the approximate, rounded value of the test weight.	Numeric The available units depend on the balance model.
Weight class	Defines the weight class according to OIML or ASTM. Alternatively, create a customized tolerance class with the parameter **Own**.	E1 I E2 I F1 I F2* I M1 I M2 I M3 I ASTM000 I ASTM00 I ASTM0 I ASTM1 I ASTM2 I ASTM3 I ASTM4 I ASTM5 I ASTM6 I ASTM7 I Own
Actual weight	Defines the actual weight. The actual weight is a specific weight with a specific Conventional Mass Value (CMV) from the weight calibration certificate.	Numeric
Next calibration date	Defines the next calibration date.	Active I Inactive* Date
Weight set ID	Defines the ID of the weight set.	Text (0…22 characters)

* Factory setting

6.1.5.1.2 Settings: Publishing

Navigation: Balance menu > Settings > Balance > Publishing

Parameter	Description	Values
Printout	**Print to**: Defines on which printer the results are printed. **Printout type**: Defines how the results are printed.	Active* I Inactive
Export file	**Export to**: Defines where the results are exported to. **File type**: Defines the type of the export file. • **USB storage**: csv, txt, xml, pdf • **File server**: xml, pdf	Active I Inactive* USB storage I File server
Transfer data	**Transfer to**: Defines where the results are transferred to when being published. Detailed settings are described in the tables **Type of data** and **Field configuration** below.	Active I Inactive* Drop to cursor I MT-SICS service I EasyDirect Balance

* Factory setting

Publishing options

These settings apply to all available publishing options.

Parameter	Description	Values
Single results	Single results are published as defined in the setting **Weight capture mode**.	Application specific
Workflow results	Defines whether the workflow results are published immediately after the result is calculated.	Automatic* I Manual

Adjustment results	Defines whether the adjustment results are published immediately after the result is calculated.	Automatic I Manual*
Test results	Defines whether the test results are published immediately after the result is calculated.	Automatic I Manual*
Approval brackets	Indicates uncertified digits. Relevant for approved balances only.	Active I Inactive* • [ ]: first decimal place • [ ]: first decimal place for dual range balances

* Factory setting

Type of data

Parameter	Description	Values
Sample ID, Description ID 1, Description ID 2, Description ID 3, Date, Time	Defines whether the corresponding field is included in the output.	Active I Inactive*

* Factory setting

Field configuration

Parameter	Description	Values
Weight status	Defines whether the weight status is included in the output.	Active I Inactive*
Sign	Defines whether the weighing results are published with a plus sign or a minus sign to indicate positive or negative values.	Always I Only negative values*
Decimal delimiter	Defines the character used to separate decimal values.	, (comma) I . (full stop)*
Net indicator	Defines whether the net weights are specially marked in the output.	Active I Inactive*
Unit	Defines whether the weighing results are published with a unit.	Active* I Inactive
Field delimiter	Defines the character used to separate data fields.	None I TAB* I , (comma) I ; (semicolon) I SPACE
End of line character	Defines the character used at the end of a line.	TAB I Enter* I None

* Factory setting

See also

Publishing ▸ Page 67

6.1.5.1.3 Settings: Date / Time / Language

Navigation: Balance menu > Settings > Balance > Date / Time / Language

Parameter	Description	Values
Date	Defines the current date.	Date
Time	Defines the current time.	Time

System language	Defines the language of the interface navigation. This applies to all users if the function **User management** is inactive.	English* I Deutsch I Français I Español I Italiano I Polski I Česky I Magyar I Nederlands I Português I Türkçe I 中文 I 日本語 I 한국어
Show date / time	Shows the current date and time on the screen, in the defined format.	Active* I Inactive
Time zone	Selects a time zone. When the time zone is set, the balance changes automatically between summer and winter time.	Active I Inactive*
Time synchro-nization	Enables synchronization with an NTP server in the network. This setting is only available if the parameter **Time zone** is activated.	Active I Inactive* Text (1…32 characters)
Date format	Defines the date format.	DD.MM.YYYY* I MM/DD/YYYY I YYYY-MM-DD I YYYY/MM/DD
Time format	Defines the time format.	24:MM* I 12:MM I 24.MM I 12.MM

* Factory setting

6.1.5.1.4 Settings: Screen / StatusLight / Sound

Navigation: Balance menu > Settings > Balance > Screen / StatusLight / Sound

Parameter	Description	Values
Screen brightness	Defines the brightness of the display.	10% … 100% 60%*
Draft shield backlight brightness	Defines the brightness of the draft shield backlight (if applicable).	Active I Inactive* 10% … 100%
Sound volume	Defines the volume of the sound.	Inactive I Low I Medium* I High
Sound on key press	Defines whether a sound is audible when a key is pressed.	Active* I Inactive
Sound on feedback	Defines whether a sound is audible when an information appears on the display.	Active* I Inactive
Sound on stability	Defines whether a sound is audible when the weight value becomes stable.	Active* I Inactive
StatusLight	Defines whether the light strip on the terminal is used to indicate the status of the balance. **Active (without green light)**: The status of the balance is monitored, but the light strip only glows in red or yellow. The green light is not used. • Red light: Error. The balance must not be used until the error is corrected. • Yellow light: Warning. The balance can still be used. Example: The yellow light glows if you are operating the balance between the date of the calibration reminder and the scheduled date of the next calibration. • Green light / no light: No issues detected. The balance is ready for use.	Active* I Inactive Active* I Active (without green light)

StatusLight brightness	Defines the brightness of the light bar on the terminal (**StatusLight**). This setting is only available if the parameter **StatusLight** is activated.	10% ... 100%

* Factory setting

6.1.5.1.5 Settings: General

Navigation: Balance menu > Settings > Balance > General

Parameter	Description	Values
Balance ID	Defines the ID of the balance. This name can be used to communicate with the balance over a network. No space or special characters are allowed.	Text (1…24 characters)
Standby	Defines the time before the balance goes into standby mode when it is not in use.	Active* I Inactive Numeric
Power-saving mode	Defines the working hours and working days. Outside of the defined times, the balance goes into power-saving mode. The setting **Start work** defines when the balance is ready for use.	Active I Inactive*
Communication	Defines whether the balance interfaces are open or blocked for communication with connected devices.	Active* I Blocked
User management	Activates or deactivates the menu topic **User management**.	Active* I Inactive

* Factory setting

6.1.5.2 Settings: Interfaces

Navigation: Balance menu > Settings > Interfaces

The section **Interfaces** is devided into the following subsections:

- **Ethernet**
- **Bluetooth**

Parameter	Description	Values
Ethernet	With the option **Ethernet**, the balance can communicate with peripheral devices, such as a printer.	Active I Inactive*
Bluetooth	With the option **Bluetooth**, the balance can communicate with peripheral devices, such as a printer.	Active I Inactive*

* Factory setting

See also

Interfaces ▸ Page 56

6.1.5.2.1 Settings: Ethernet

The interface **Ethernet** allows to connect the balance to a network and perform the following actions:

- store weighing results as XML or PDF files
- communicate remotely with the balance using the MT-SICS communication protocol

Navigation: Balance menu > Settings > Interfaces > Ethernet

Parameter	Description	Values
Host name	Defines the host name of the balance.	Text (1…24 characters)
MAC address	Information on the MAC address that is used to uniquely identify the balance in the network.	not editable

Network configuration	**DHCP**: The settings of the Ethernet connection will be automatically set. **Manual**: The settings of the Ethernet connection must be set manually by the user. If this option is selected, the following parameters are editable.	DHCP* I Manual
IP address	Defines the IP address of the balance.	000.000.000.000... 255.255.255.255
Subnet mask	Defines the subnet mask that is used by the TCP/IP protocol to determine whether a host is on the local subnet or on a remote network.	000.000.000.000... 255.255.255.255
DNS server	Defines the address of the DNS (domain name system) server.	000.000.000.000... 255.255.255.255
Standard gateway	Defines the address of the standard gateway that links the subnet of the host to other networks.	000.000.000.000... 255.255.255.255

* Factory setting

6.1.5.2.2 Settings: Bluetooth

Navigation: Balance menu > Settings > Interfaces > Bluetooth

Parameter	Description	Values
Bluetooth identification	Serves to identify the balance when the option **Bluetooth** is used.	Text (1...24 characters)

6.1.5.3 Settings: Devices / Printers

Navigation: Balance menu > Settings > Devices / Printers

Parameter	Description	Values
Physical connection	Defines the type of physical connection between the balance and a peripheral device.	USB* I USB-RS232 converter I Network I Bluetooth

* Factory setting

6.1.5.4 Settings: Services

Several services are available to communicate with the balance. Note that only one service can be enabled at any given time.

Navigation: Balance menu > Settings > Services

The section **Services** is devided into the following subsections:

- **MT-SICS service**
- **EasyDirect Balance**
- **Drop to cursor**
- **File server**

See also

Services ▸ Page 62

6.1.5.4.1 Settings: MT-SICS service

Navigation: Balance menu > Settings > Services > MT-SICS service

Parameter	Description	Values
Interface	If the option **MT-SICS service** is activated, a corresponding port is opened.	USB-C I USB-RS232 converter* I Network I Bluetooth
Command set	Available set of commands to communicate with the balance.	MT-SICS* I Sartorius commands 22 I Sartorius commands 16
Baudrate	Defines the speed of data transmission.	600 bps I 1200 bps I 2400 bps I 4800 bps I 9600 bps *I 19200 bps I 38400 bps I 57600 bps I 115200 bps
Bits/Parity	Number of data bits / Checksum for error detection during data transmission	8/No* I 7/No I 7/Even I 7/Odd
Data flow	Also known as "handshake". Defines the synchronization for data transmission.	Xon/Xoff* I RTS/CTS I None
Stop bit	Marks the end of data transmission.	1 bit* I 2 bit
Line end	Defines the character at the end of a line.	<CR><LF>* I <CR> I <LF> I <TAB>

* Factory setting

See also

MT-SICS service ▸ Page 62

6.1.5.4.2 Settings: EasyDirect Balance

Navigation: Balance menu > Settings > Services > EasyDirect Balance

Parameter	Description	Values
Interface	Defines how the service **EasyDirect Balance** communicates with the balance. If the option **Network** is selected, the parameter **Port** can be defined.	USB-C* I Network Port: 1024...65535

* Factory setting

See also

EasyDirect Balance ▸ Page 63

6.1.5.4.3 Settings: Drop to cursor

Navigation: Balance menu > Settings > Services > Drop to cursor

Parameter	Description	Values
Interface	The option **Drop to cursor** can only be used through USB.	USB-C*

* Factory setting

See also

Drop to cursor ▸ Page 63

6.1.5.4.4 Settings: File server

Navigation: Balance menu > Settings > Services > File server

Parameter	Description	Values
Server name	Defines the name of the target server.	Text (1…63 characters)
Share name	Defines the name of the shared folder.	Text (1…140 characters)

Credentials

Parameter	Description	Values
Domain name	Defines the name of the user domain.	Text (1…15 characters)
User name	Defines a user name to access the file server.	Text (1…22 characters)
Password	Defines a password to access the file server.	Text (1…22 characters)

See also

File server ▸ Page 64

6.1.6 Maintenance

Navigation: Balance menu > Maintenance

Note

This section is only accessible to users with corresponding rights.

The menu topic **Maintenance** is divided into the following sections:

- **Import / Export**
- **Software update**
- **Reset**
- **Save support file**
- **Level center adjustment**
- **Service tool connection**

See also

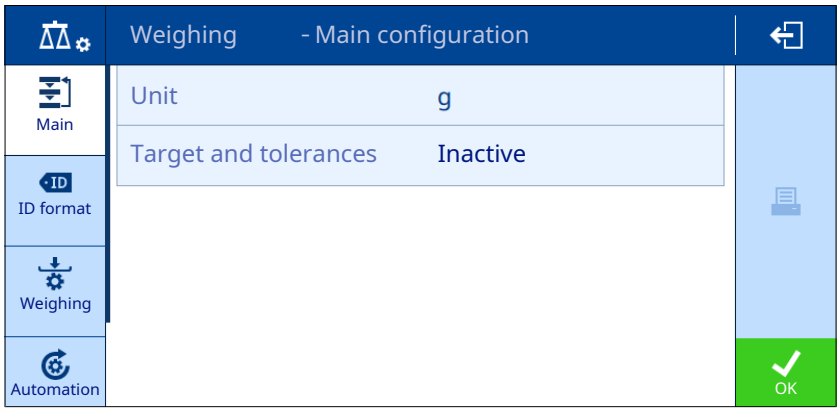
Exporting data to a USB storage device ▸ Page 68
Updating the software ▸ Page 119
Resetting the balance ▸ Page 119
Saving a support file ▸ Page 124

6.2 Weighing applications settings

6.2.1 Settings: application "Weighing"

This section describes the settings of the application **Weighing**.

Navigation: ▼ > APPS > **Weighing** > ⚖⚙



The settings for this weighing application are grouped as follows:

- **Main**
- **ID format**
- **Weighing**
- **Automation**
- **Report**

See also

Application "Weighing" ▸ Page 45

6.2.1.1 Main

Parameter	Description	Values
Unit	Defines the unit of the weighing result.	The available units depend on the balance model.
Target and tolerances	The target weight can be added manually or by weighing. The definition of tolerances is optional. Depending on the settings, the target weight and the tolerance limits appear on the main weighing screen. The section SmartTrac indicates whether the current weighing result is within the tolerance limits.	Active I Inactive* Numeric Tolerances: % I g

* Factory setting

6.2.1.2 ID format

Sample ID

Parameter	Description	Values
Sample ID	Defines a sample identification.	Active I Inactive*
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	not editable
Input prompt	Defines whether you are prompted to enter a value. If a default value is defined, this parameter is not editable.	Active I Inactive*

* Factory setting

Description

Parameter	Description	Values
Description	Allows to define a sample description.	Active I Inactive*
Type	Defines the sample type.	Sample* I Series
Label	Describes the sample.	Text (1…25 characters)
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	Active I Inactive*
Input prompt	Defines whether you are prompted to enter a value.	Active I Inactive*

* Factory setting

6.2.1.3 Weighing

Parameter	Description	Values
Info weight	A secondary weight is displayed on the main weighing screen.	Active I Inactive* The available units depend on the balance model.
Weighing profile	Defines the weighing profile.	General* I 10d
Weight capture mode	Defines the behavior when the button to add the result was tapped, or when the add result was triggered by the automatic weighing result creation. **Stable**: The balance waits for a stable weight. **Immediate**: The balance does not wait for a stable weight. **Automatic, stable (zero excluded)**: The results are published as soon as the weight is stable. Values of 0 g are not published. **Automatic, stable (zero included)**: The results are published as soon as the weight is stable. Values of 0 g are also published. **Continuous**: The results are published at the defined interval.	Stable* I Immediate I Automatic, stable (zero excluded) I Automatic, stable (zero included) I Continuous

* Factory setting

Series / Statistics

Parameter	Description	Values
Measurement series	A measurement series can be performed.	Active I Inactive*
Statistical calculations	Statistical information is provided. This setting is only available if the parameter **Measurement series** is activated.	Active I Inactive*
Acceptance range	Defines the acceptance range for the statistical calculations. This setting is only available if the parameter Statistical calculations is activated.	Active I Inactive* Numeric (%)

* Factory setting

See also

Weighing profiles ▸ Page 40

6.2.1.4 Automation

Parameter	Description	Values
Automatic zero	The balance is automatically zeroed when the weight falls below a predefined threshold. This setting is not available for approved balances.	Active I Inactive* Numeric The available units depend on the balance model.
Automatic tare	The balance automatically stores the first stable weight as the tare weight.	Active I Inactive*
Preset tare	A fixed tare weight can be defined manually or by weighing.	Active I Inactive* Numeric The available units depend on the balance model.
Recall weight	Displays the last weighing result.	Active I Inactive* Automatic I Manual*

* Factory setting

6.2.1.5 Report

Parameter	Description	Values
Header and Footer	Defines the header and/or the footer to be published.	Title I Date/time I User I Signature I Empty lines
Balance information	Defines which information about the balance is published.	Balance type I Balance ID I Balance serial number I Software version
Quality information	Defines which quality information is published.	Weighing profile I Adjustment date/time I Routine test information I Result state I Level state I MinWeigh state I Tolerance state
Task information	Defines which information about the task is published.	Application settings
Result detail information	Defines which information related to the measurement result is published.	Tare / Gross weight I Info weight I Date/time

6.2.2 Settings: application "Counting"

This section describes the settings of the application **Counting**.

Navigation: ▼ > APPS > Counting > ⚙

The settings for this weighing application are grouped as follows:

- **Main**
- **ID format**
- **Weighing**
- **Automation**
- **Report**

See also

Application "Counting" ▸ Page 46

6.2.2.1 Main

Parameter	Description	Values
Reference PCS	Defines the number of items used to determine the average weight per item.	Numeric
Reference average weight	Defines the average weight for one piece. The average weight of one piece serves as the basis for piece counting. During task execution, the balance calculates the actual number of pieces on the weighing pan based on the measured weight and the average weight of one piece.	Numeric
Target and tolerances	The target weight can be added manually or by weighing. The definition of tolerances is optional. Depending on the settings, the target weight and the tolerance limits appear on the main weighing screen. The section SmartTrac indicates whether the current weighing result is within the tolerance limits.	Active I Inactive* Numeric Tolerances: PCS I %

* Factory setting

6.2.2.2 ID format

Sample ID

Parameter	Description	Values
Sample ID	Defines a sample identification.	Active I Inactive*
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	not editable
Input prompt	Defines whether you are prompted to enter a value. If a default value is defined, this parameter is not editable.	Active I Inactive*

* Factory setting

Description

Parameter	Description	Values
Description	Allows to define a sample description.	Active I Inactive*
Type	Defines the sample type.	Sample* I Series
Label	Describes the sample.	Text (1…25 characters)
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	Active I Inactive*
Input prompt	Defines whether you are prompted to enter a value.	Active I Inactive*

* Factory setting

6.2.2.3 Weighing

Parameter	Description	Values
Info weight	A secondary weight is displayed on the main weighing screen.	Active I Inactive* The available units depend on the balance model.
Weighing profile	Defines the weighing profile.	General* I 10d

Weight capture mode	Defines the behavior when the button to add the result was tapped, or when the add result was triggered by the automatic weighing result creation. **Stable**: The balance waits for a stable weight. **Immediate**: The balance does not wait for a stable weight. **Automatic, stable (zero excluded)**: The results are published as soon as the weight is stable. Values of 0 g are not published. **Automatic, stable (zero included)**: The results are published as soon as the weight is stable. Values of 0 g are also published.	Stable* I Immediate I Automatic, stable (zero excluded) I Automatic, stable (zero included)

* Factory setting

Series / Statistics

Parameter	Description	Values
Measurement series	A measurement series can be performed.	Active I Inactive*
Statistical calculations	Statistical information is provided. This setting is only available if the parameter **Measurement series** is activated.	Active I Inactive*
Acceptance range	Defines the acceptance range for the statistical calculations. This setting is only available if the parameter Statistical calculations is activated.	Active I Inactive* Numeric (%)

* Factory setting

See also

Weighing profiles ▸ Page 40

6.2.2.4 Automation

Parameter	Description	Values
Automatic zero	The balance is automatically zeroed when the weight falls below a predefined threshold. This setting is not available for approved balances.	Active I Inactive* Numeric The available units depend on the balance model.
Automatic tare	The balance automatically stores the first stable weight as the tare weight.	Active I Inactive*
Preset tare	A fixed tare weight can be defined manually or by weighing.	Active I Inactive* Numeric The available units depend on the balance model.
Recall weight	Displays the last weighing result.	Active I Inactive* Automatic I Manual*

* Factory setting

6.2.2.5 Report

Parameter	Description	Values
Header and Footer	Defines the header and/or the footer to be published.	Title I Date/time I User I Signature I Empty lines

Balance information	Defines which information about the balance is published.	Balance type I Balance ID I Balance serial number I Software version
Quality information	Defines which quality information is published.	Weighing profile I Adjustment date/time I Routine test information I Result state I Level state I MinWeigh state I Tolerance state
Task information	Defines which information about the task is published.	Application settings
Result detail information	Defines which information related to the measurement result is published.	Tare / Gross weight I Info weight I Date/time

6.2.3 Settings: application "Check weighing"

This section describes the settings of the application **Check weighing**.

Navigation: ▼ > APPS > Check weighing > Check weighing settings

The settings for this weighing application are grouped as follows:

- **Main**
- **ID format**
- **Weighing**
- **Automation**
- **Report**

See also

Application "Check weighing" ▸ Page 46

6.2.3.1 Main

Parameter	Description	Values
Unit	Defines the unit of the weighing result.	The available units depend on the balance model.
Target weight ± Tolerances	The target weight can be added manually or by weighing. The definition of tolerances is optional. Depending on the settings, the target weight and the tolerance limits appear on the main weighing screen. The section SmartTrac indicates whether the current weighing result is within the tolerance limits.	Numeric Tolerances: Active* I Inactive % I g
Check threshold	Defines the target threshold. Values below the defined threshold are not checked.	Active* I Inactive Numeric (%)

* Factory setting

6.2.3.2 ID format

Sample ID

Parameter	Description	Values
Sample ID	Defines a sample identification.	Active I Inactive*
Default value	Defines a default value for the sample description.	Text (1…200 characters)

Automatic value	Defines whether an automatic value is generated for the sample description.	not editable
Input prompt	Defines whether you are prompted to enter a value. If a default value is defined, this parameter is not editable.	Active I Inactive*

* Factory setting

Description

Parameter	Description	Values
Description	Allows to define a sample description.	Active I Inactive*
Type	Defines the sample type.	Sample* I Series
Label	Describes the sample.	Text (1…25 characters)
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	Active I Inactive*
Input prompt	Defines whether you are prompted to enter a value.	Active I Inactive*

* Factory setting

6.2.3.3 Weighing

Parameter	Description	Values
Info weight	A secondary weight is displayed on the main weighing screen.	Active I Inactive* The available units depend on the balance model.
Weighing profile	Defines the weighing profile.	General* I 10d
Weight capture mode	Defines the behavior when the button to add the result was tapped, or when the add result was triggered by the automatic weighing result creation. **Stable**: The balance waits for a stable weight. **Immediate**: The balance does not wait for a stable weight. **Automatic, stable (zero excluded)**: The results are published as soon as the weight is stable. Values of 0 g are not published. **Automatic, stable (zero included)**: The results are published as soon as the weight is stable. Values of 0 g are also published.	Stable* I Immediate I Automatic, stable (zero excluded) I Automatic, stable (zero included)

* Factory setting

Series / Statistics

Parameter	Description	Values
Measurement series	A measurement series can be performed.	Active I Inactive*
Statistical calculations	Statistical information is provided. This setting is only available if the parameter **Measurement series** is activated.	Active I Inactive*
Acceptance range	Defines the acceptance range for the statistical calculations. This setting is only available if the parameter Statistical calculations is activated.	Active I Inactive* Numeric (%)

* Factory setting

See also

Weighing profiles ▸ Page 40

6.2.3.4 Automation

Parameter	Description	Values
Automatic zero	The balance is automatically zeroed when the weight falls below a predefined threshold. This setting is not available for approved balances.	Active I Inactive* Numeric The available units depend on the balance model.
Automatic tare	The balance automatically stores the first stable weight as the tare weight.	Active I Inactive*
Preset tare	A fixed tare weight can be defined manually or by weighing.	Active I Inactive* Numeric The available units depend on the balance model.
Recall weight	Displays the last weighing result.	Active I Inactive* Automatic I Manual*

* Factory setting

6.2.3.5 Report

Parameter	Description	Values
Header and Footer	Defines the header and/or the footer to be published.	Title I Date/time I User I Signature I Empty lines
Balance information	Defines which information about the balance is published.	Balance type I Balance ID I Balance serial number I Software version
Quality information	Defines which quality information is published.	Weighing profile I Adjustment date/time I Routine test information I Result state I Level state I MinWeigh state I Tolerance state
Task information	Defines which information about the task is published.	Application settings
Result detail information	Defines which information related to the measurement result is published.	Tare / Gross weight I Info weight I Date/time

6.2.4 Settings: application "Dynamic weighing"

This section describes the settings of the application **Dynamic weighing**.

Navigation: ▼ > APPS > Dynamic weighing >

The settings for this weighing application are grouped as follows:

- **Main**
- **ID format**
- **Weighing**
- **Automation**
- **Report**

See also

Application "Dynamic weighing" ▸ Page 47

6.2.4.1 Main

Parameter	Description	Values
Measurement duration	Defines the measuring duration in seconds.	Numeric
Start mode	Defines how the measurement is started.	Manual I Automatic - After 3 seconds*
Unit	Defines the unit of the weighing result.	The available units depend on the balance model.

* Factory setting

6.2.4.2 ID format

Sample ID

Parameter	Description	Values
Sample ID	Defines a sample identification.	Active I Inactive*
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	not editable
Input prompt	Defines whether you are prompted to enter a value. If a default value is defined, this parameter is not editable.	Active I Inactive*

* Factory setting

Description

Parameter	Description	Values
Description	Allows to define a sample description.	Active I Inactive*
Type	Defines the sample type.	Sample* I Series
Label	Describes the sample.	Text (1…25 characters)
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	Active I Inactive*
Input prompt	Defines whether you are prompted to enter a value.	Active I Inactive*

* Factory setting

6.2.4.3 Weighing

Parameter	Description	Values
Info weight	A secondary weight is displayed on the main weighing screen.	Active I Inactive* The available units depend on the balance model.
Weighing profile	Defines the weighing profile.	General* I 10d

* Factory setting

Series / Statistics

Parameter	Description	Values
Measurement series	A measurement series can be performed.	Active I Inactive*

Statistical calculations	Statistical information is provided. This setting is only available if the parameter **Measurement series** is activated.	Active I Inactive*
Acceptance range	Defines the acceptance range for the statistical calculations. This setting is only available if the parameter Statistical calculations is activated.	Active I Inactive* Numeric (%)

* Factory setting

6.2.4.4 Automation

Parameter	Description	Values
Sample tare	After the result has been calculated, the balance is automatically tared when the sample is removed from the weighing pan.	Active I Inactive
Automatic zero	The balance is automatically zeroed when the weight falls below a predefined threshold. This setting is not available for approved balances.	Active I Inactive* Numeric The available units depend on the balance model.
Automatic tare	The balance automatically stores the first stable weight as the tare weight.	Active I Inactive*
Preset tare	A fixed tare weight can be defined manually or by weighing.	Active I Inactive* Numeric The available units depend on the balance model.

* Factory setting

6.2.4.5 Report

Parameter	Description	Values
Header and Footer	Defines the header and/or the footer to be published.	Title I Date/time I User I Signature I Empty lines
Balance information	Defines which information about the balance is published.	Balance type I Balance ID I Balance serial number I Software version
Quality information	Defines which quality information is published.	Weighing profile I Adjustment date/time I Routine test information I Result state I Level state I MinWeigh state
Task information	Defines which information about the task is published.	Application settings
Result detail information	Defines which information related to the measurement result is published.	Tare / Gross weight I Info weight I Date/time

6.2.5 Settings: application "Formulation"

This section describes the settings of the application **Formulation**.

Navigation: ▼ > APPS > Formulation > ⚙

The settings for this weighing application are grouped as follows:

- **Main**

- **ID format**
- **Weighing**
- **Automation**
- **Report**

See also

Application "Formulation" ▸ Page 48

6.2.5.1 Main

Parameter	Description	Values
Unit	Defines the unit of the weighing result.	The available units depend on the balance model.

6.2.5.2 ID format

Sample ID

Parameter	Description	Values
Sample ID	Defines a sample identification.	Active I Inactive*
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	not editable
Input prompt	Defines whether you are prompted to enter a value. If a default value is defined, this parameter is not editable.	Active I Inactive*

* Factory setting

Description

Parameter	Description	Values
Description	Allows to define a sample description.	Active I Inactive*
Type	Defines the sample type.	Sample* I Series
Label	Describes the sample.	Text (1…25 characters)
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	Active I Inactive*
Input prompt	Defines whether you are prompted to enter a value.	Active I Inactive*

* Factory setting

6.2.5.3 Weighing

Parameter	Description	Values
Weighing profile	Defines the weighing profile.	General* I 10d
Weight capture mode	Defines the behavior when the button to add the result was tapped, or when the add result was triggered by the automatic weighing result creation. **Stable**: The balance waits for a stable weight. **Immediate**: The balance does not wait for a stable weight.	Stable* I Immediate

* Factory setting

6.2.5.4 Automation

Parameter	Description	Values
Automatic zero	The balance is automatically zeroed when the weight falls below a predefined threshold. This setting is not available for approved balances.	Active I Inactive* Numeric The available units depend on the balance model.

* Factory setting

6.2.5.5 Report

Parameter	Description	Values
Header and Footer	Defines the header and/or the footer to be published.	Title I Date/time I User I Signature I Empty lines
Balance information	Defines which information about the balance is published.	Balance type I Balance ID I Balance serial number I Software version
Quality information	Defines which quality information is published.	Weighing profile I Adjustment date/time I Routine test information I Result state I Level state I MinWeigh state
Result detail information	Defines which information related to the measurement result is published.	Tare / Gross weight I Date/time

6.2.6 Settings: application "Totaling"

This section describes the settings of the application **Totaling**.

Navigation: ▼ > APPS > Σ Totaling > Σ⚙

The settings for this weighing application are grouped as follows:

- **Main**
- **ID format**
- **Weighing**
- **Automation**
- **Report**

See also

Application "Totaling" ▸ Page 49

6.2.6.1 Main

Parameter	Description	Values
Unit	Defines the unit of the weighing result.	The available units depend on the balance model.

6.2.6.2 ID format

Sample ID

Parameter	Description	Values
Sample ID	Defines a sample identification.	Active I Inactive*
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	not editable
Input prompt	Defines whether you are prompted to enter a value. If a default value is defined, this parameter is not editable.	Active I Inactive*

* Factory setting

Description

Parameter	Description	Values
Description	Allows to define a sample description.	Active I Inactive*
Type	Defines the sample type.	Sample* I Series
Label	Describes the sample.	Text (1…25 characters)
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	Active I Inactive*
Input prompt	Defines whether you are prompted to enter a value.	Active I Inactive*

* Factory setting

6.2.6.3 Weighing

Parameter	Description	Values
Weighing profile	Defines the weighing profile.	General* I 10d
Weight capture mode	Defines the behavior when the button to add the result was tapped, or when the add result was triggered by the automatic weighing result creation. **Stable**: The balance waits for a stable weight. **Immediate**: The balance does not wait for a stable weight. **Automatic, stable (zero excluded)**: The results are published as soon as the weight is stable. Values of 0 g are not published. **Automatic, stable (zero included)**: The results are published as soon as the weight is stable. Values of 0 g are also published.	Stable* I Immediate I Automatic, stable (zero excluded) I Automatic, stable (zero included)

* Factory setting

6.2.6.4 Automation

Parameter	Description	Values
Automatic zero	The balance is automatically zeroed when the weight falls below a predefined threshold. This setting is not available for approved balances.	Active I Inactive* Numeric The available units depend on the balance model.
Automatic tare	The balance automatically stores the first stable weight as the tare weight.	Active I Inactive*

Preset tare	A fixed tare weight can be defined manually or by weighing.	Active I Inactive* Numeric The available units depend on the balance model.

* Factory setting

6.2.6.5 Report

Parameter	Description	Values
Header and Footer	Defines the header and/or the footer to be published.	Title I Date/time I User I Signature I Empty lines
Balance information	Defines which information about the balance is published.	Balance type I Balance ID I Balance serial number I Software version
Quality information	Defines which quality information is published.	Weighing profile I Adjustment date/time I Routine test information I Result state I Level state I MinWeigh state
Result detail information	Defines which information related to the measurement result is published.	Tare / Gross weight I Date/time

6.2.7 Settings: application "Back weighing"

This section describes the settings of the application **Back weighing**.

Navigation: ▼ > APPS > Back weighing > ⚙

The settings for this weighing application are grouped as follows:

- **Main**
- **ID format**
- **Weighing**
- **Automation**
- **Report**

See also

Application "Back weighing" ▸ Page 50

6.2.7.1 Main

Parameter	Description	Values
Tare container	Defines whether a tare container is used.	Active* I Inactive
Difference unit	Selects the result view for the calculated difference. **Percentage (%)**: Reports the difference between back-weighing and initial weighing as a percentage of the initial weight. **Absolute percentage (% Abs.)**: Reports back-weighing as a percentage of the initial weight. **ATRO moisture content (%AM)**: Reports the moisture content of the sample as a percentage of the dry weight. **ATRO dry content (%AD)**: Reports the wet weight of the sample as a percentage of the dry weight.	Weight* I Percentage (%) I Absolute percentage (% Abs.) I ATRO moisture content (%AM) I ATRO dry content (%AD)

Difference value	Displays the calculated difference in work area and result view. **Unsigned (absolute value)**: Displays the absolute value. **Signed**: Displays the value by means of algebraic sign.	Unsigned (absolute value)* I Signed

* Factory setting

Initial values for weighing

Parameter	Description	Values
Unit	Defines the unit of the weighing result.	The available units depend on the balance model.

* Factory setting

6.2.7.2 ID format

Sample ID

Parameter	Description	Values
Sample ID	Defines a sample identification.	Active I Inactive*
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	not editable
Input prompt	Defines whether you are prompted to enter a value. If a default value is defined, this parameter is not editable.	Active I Inactive*

* Factory setting

Description

Parameter	Description	Values
Description	Allows to define a sample description.	Active I Inactive*
Type	Defines the sample type.	Sample* I Series
Label	Describes the sample.	Text (1…25 characters)
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	Active I Inactive*
Input prompt	Defines whether you are prompted to enter a value.	Active I Inactive*

* Factory setting

6.2.7.3 Weighing

Parameter	Description	Values
Weighing profile	Defines the weighing profile.	General* I 10d
Weight capture mode	Defines the behavior when the button to add the result was tapped, or when the add result was triggered by the automatic weighing result creation. **Stable**: The balance waits for a stable weight. **Immediate**: The balance does not wait for a stable weight. **Automatic, stable (zero excluded)**: The results are published as soon as the weight is stable. Values of 0 g are not published. **Automatic, stable (zero included)**: The results are published as soon as the weight is stable. Values of 0 g are also published.	Stable I Immediate I Automatic, stable (zero excluded)* I Automatic, stable (zero included)

* Factory setting

Series / Statistics

Parameter	Description	Values
Measurement series	A measurement series can be performed.	Active I Inactive*
Statistical calculations	Statistical information is provided. This setting is only available if the parameter **Measurement series** is activated.	Active I Inactive*
Acceptance range	Defines the acceptance range for the statistical calculations. This setting is only available if the parameter Statistical calculations is activated.	Active I Inactive* Numeric (%)

* Factory setting

6.2.7.4 Automation

Parameter	Description	Values
Automatic zero	The balance is automatically zeroed when the weight falls below a predefined threshold. This setting is not available for approved balances.	Active I Inactive* Numeric The available units depend on the balance model.
Preset tare	A fixed tare weight can be defined manually or by weighing.	Active I Inactive* Numeric The available units depend on the balance model.

* Factory setting

6.2.7.5 Report

Parameter	Description	Values
Header and Footer	Defines the header and/or the footer to be published.	Title I Date/time I User I Signature I Empty lines
Balance information	Defines which information about the balance is published.	Balance type I Balance ID I Balance serial number I Software version
Quality information	Defines which quality information is published.	Weighing profile I Adjustment date/time I Routine test information I Result state I Level state I MinWeigh state
Task information	Defines which information about the task is published.	Application settings I Measurement details
Result detail information	Defines which information related to the measurement result is published.	Tare / Gross weight I Date/time

6.2.8 Settings: application "Density"

This section describes the settings of the application **Density**.

Navigation: ▼ > APPS > Density > ⚙

The settings for this weighing application are grouped as follows:

- **Main**
- **ID format**
- **Weighing**
- **Report**

See also

Application "Density" ▸ Page 50

6.2.8.1 Main

Parameter	Description	Values
Determination type	Defines the type of density measurement.	Solid*
Density result	Defines the number of decimal places of the result value.	1 decimal place I 2 decimal places I 3 decimal places I 4 decimal places I 5 decimal places

* Factory setting

Initial values for weighing

Parameter	Description	Values
Unit	Defines the unit of the weighing result.	The available units depend on the balance model.
Auxiliary liquid	Defines the type of auxiliary liquid used.	Distilled water* I Custom
Temperature	Defines the temperature of the auxiliary liquid.	Numeric (°C)
Auxiliary liquid density	Defines the density of the auxiliary liquid. For distilled water, the value is predefined.	Numeric (g/cm^3)

* Factory setting

6.2.8.2 ID format

Sample ID

Parameter	Description	Values
Sample ID	Defines a sample identification.	Active I Inactive*
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	not editable
Input prompt	Defines whether you are prompted to enter a value. If a default value is defined, this parameter is not editable.	Active I Inactive*

* Factory setting

Description

Parameter	Description	Values
Description	Allows to define a sample description.	Active I Inactive*
Type	Defines the sample type.	Sample* I Series
Label	Describes the sample.	Text (1…25 characters)

Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	Active I Inactive*
Input prompt	Defines whether you are prompted to enter a value.	Active I Inactive*

* Factory setting

6.2.8.3 Weighing

Parameter	Description	Values
Weighing profile	Defines the weighing profile.	General* I 10d
Weight capture mode	Defines the behavior when the button to add the result was tapped, or when the add result was triggered by the automatic weighing result creation. **Stable**: The balance waits for a stable weight. **Immediate**: The balance does not wait for a stable weight.	Stable* I Immediate

* Factory setting

Series / Statistics

Parameter	Description	Values
Measurement series	A measurement series can be performed.	Active I Inactive*
Statistical calculations	Statistical information is provided. This setting is only available if the parameter **Measurement series** is activated.	Active I Inactive*
Acceptance range	Defines the acceptance range for the statistical calculations. This setting is only available if the parameter Statistical calculations is activated.	Active I Inactive* Numeric (%)

* Factory setting

6.2.8.4 Report

Parameter	Description	Values
Header and Footer	Defines the header and/or the footer to be published.	Title I Date/time I User I Signature I Empty lines
Balance information	Defines which information about the balance is published.	Balance type I Balance ID I Balance serial number I Software version
Quality information	Defines which quality information is published.	Weighing profile I Adjustment date/time I Routine test information I Result state I Level state I MinWeigh state
Task information	Defines which information about the task is published.	Application settings I Measurement details
Result detail information	Defines which information related to the measurement result is published.	Tare / Gross weight I Date/time

6.2.9 Settings: application "Differential weighing"

This section describes the settings of the application **Differential weighing**.

Navigation: ▼ > APPS > Differential weighing > ⚙

The settings for this weighing application are grouped as follows:

- **Main**
- **ID format**
- **Weighing**
- **Automation**
- **Report**

See also

Application "Differential weighing" ▸ Page 51

6.2.9.1 Main

Parameter	Description	Values
Samples	Defines the number of samples.	Numeric (10* I 1…200)
Back-weighings	Defines the number of back-weighings per sample.	1 per sample* I 2 per sample I 3 per sample
Weighing sequence	Defines the sequence of the weighings.	Initial weights first* I Sample by sample
Spill correction	Corrects the weighing result if sample was spilled.	Active I Inactive*
Tare container	Defines whether a tare container is used.	Active* I Inactive
Difference unit	Selects the result view for the calculated difference. **Percentage (%)**: Reports the difference between back-weighing and initial weighing as a percentage of the initial weight. **Absolute percentage (% Abs.)**: Reports back-weighing as a percentage of the initial weight. **ATRO moisture content (%AM)**: Reports the moisture content of the sample as a percentage of the dry weight. **ATRO dry content (%AD)**: Reports the wet weight of the sample as a percentage of the dry weight.	Weight* I Percentage (%) I Absolute percentage (% Abs.) I ATRO moisture content (%AM) I ATRO dry content (%AD)
Difference value	Displays the calculated difference in work area and result view. **Unsigned (absolute value)**: Displays the absolute value. **Signed**: Displays the value by means of algebraic sign.	Unsigned (absolute value)* I Signed

* Factory setting

Initial values for weighing

Parameter	Description	Values
Unit	Defines the unit of the weighing result.	The available units depend on the balance model.

6.2.9.2 ID format

Sample ID

Parameter	Description	Values
Sample ID	Defines a sample identification.	Active I Inactive*
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	not editable

Input prompt	Defines whether you are prompted to enter a value. If a default value is defined, this parameter is not editable.	Active I Inactive*

* Factory setting

Description

Parameter	Description	Values
Description	Allows to define a sample description.	Active I Inactive*
Type	Defines the sample type.	Sample* I Series
Label	Describes the sample.	Text (1…25 characters)
Default value	Defines a default value for the sample description.	Text (1…200 characters)
Automatic value	Defines whether an automatic value is generated for the sample description.	Active I Inactive*
Input prompt	Defines whether you are prompted to enter a value.	Active I Inactive*

* Factory setting

6.2.9.3 Weighing

Parameter	Description	Values
Weighing profile	Defines the weighing profile.	General* I 10d
Weight capture mode	Defines the behavior when the button to add the result was tapped, or when the add result was triggered by the automatic weighing result creation. **Stable**: The balance waits for a stable weight. **Immediate**: The balance does not wait for a stable weight. **Automatic, stable (zero excluded)**: The results are published as soon as the weight is stable. Values of 0 g are not published. **Automatic, stable (zero included)**: The results are published as soon as the weight is stable. Values of 0 g are also published.	Stable I Immediate I Automatic, stable (zero excluded)* I Automatic, stable (zero included)

* Factory setting

Series / Statistics

Parameter	Description	Values
Statistical calculations	Statistical information is provided. This setting is only available if the parameter **Measurement series** is activated.	Active I Inactive*
Acceptance range	Defines the acceptance range for the statistical calculations. This setting is only available if the parameter Statistical calculations is activated.	Active I Inactive* Numeric (%)

* Factory setting

6.2.9.4 Automation

Parameter	Description	Values
Automatic zero	The balance is automatically zeroed when the weight falls below a predefined threshold. This setting is not available for approved balances.	Active I Inactive* Numeric The available units depend on the balance model.

Preset tare	A fixed tare weight can be defined manually or by weighing.	Active I Inactive* Numeric The available units depend on the balance model.

* Factory setting

6.2.9.5 Report

Parameter	Description	Values
Header and Footer	Defines the header and/or the footer to be published.	Title I Date/time I User I Signature I Empty lines
Balance information	Defines which information about the balance is published.	Balance type I Balance ID I Balance serial number I Software version
Quality information	Defines which quality information is published.	Weighing profile I Adjustment date/time I Routine test information I Result state I Level state I MinWeigh state
Task information	Defines which information about the task is published.	Application settings I Measurement details
Result detail information	Defines which information related to the measurement result is published.	Tare / Gross weight I Date/time

6.3 Adjustment settings

See also

Editing an adjustment ▸ Page 52

6.3.1 Settings: Adjustment strategy

Navigation: ▼ > Applications > Adjustments > inactive adjustment

Parameter	Description	Values
Adjustment strategy	Defines the type of adjustment to be performed. For approved balances, this setting is not available.	No adjustment I Internal adjustment* I External adjustment

* Factory setting

See also

Adjustment strategy ▸ Page 52

6.3.2 Settings: Internal adjustment

Navigation: ▼ > Applications > Adjustments > Internal >

The settings are divided into the following subsections:

- **Specification**
- **Management**
- **Report**

Specification

Parameter	Description	Values
Weighing profile	Defines the weighing profile.	General* I 10d
'As found' test	At the start of the adjustment sequence, an internal sensitivity test is automatically performed to evaluate the current status. The test results are displayed.	Active I Inactive*
'As left' test	When the adjustment is complete, an internal sensitivity test is automatically performed. The test results are displayed.	Active I Inactive*
Control limit	Defines the error tolerance of a process with respect to its set value. Exceeding the value**Control limit** is a violation of quality requirements and therefore requires a correction of the process. If the value**Control limit** is exceeded: The adjustment failed, the balance is out of specification. This setting is only available if the settings **'As found' test** or **'As left' test** are active.	Numeric (0.1%* I 0.001...100%)
Warning limit	Defines the upper or lower limit that, if exceeded or not reached, makes more stringent process monitoring necessary. The value **Warning limit** must be smaller than the value **Control limit**. Result if the value **Warning limit** is exceeded: The adjustment is passed, but the difference is higher than expected. This setting is only available if the settings **'As found' test** or **'As left' test** are active.	Active I Inactive* Numeric (0.001...100%)

* Factory setting

Management

Parameter	Description	Values
Error management	Blocks the balance automatically when the adjustment fails.	Active I Inactive*
Planning - Start events	Serves to plan after which event an adjustment is automatically executed. Multiple selections are allowed.	Active* I Inactive • Start after temperature change • Start after leveling • Start after power-on
Planning - Schedule	Serves to plan at what time and on which weekday an adjustment is automatically executed. • **Start time**: Up to three start times can be defined. • **Preferred days**: Monday, Tuesday, ... Sunday	Active* I Inactive Numeric

* Factory setting

Report

Parameter	Description	Values
Header and Footer	Defines the header and/or the footer to be published.	Title I Date/time I User I Signature I Empty lines
Balance information	Defines which information about the balance is published.	Balance type I Balance ID I Balance serial number I Software version
Quality information	Defines whether the leveling status of the balance is published.	Level state

6.3.3 Settings: External adjustment

Navigation: ▼ > Applications > Adjustments > External >

The settings are divided into the following subsections:

- **Specification**
- **Report**

Specification

Parameter	Description	Values
Weighing profile	Defines the weighing profile.	General* I 10d

* Factory setting

Report

Parameter	Description	Values
Header and Footer	Defines the header and/or the footer to be published.	Title I Date/time I User I Signature I Empty lines
Balance information	Defines which information about the balance is published.	Balance type I Balance ID I Balance serial number I Software version
Quality information	Defines whether the leveling status of the balance is published.	Level state

6.4 Test settings

Navigation: ▼ > Applications > Tests

The section **Tests** is divided into the following subsections:

- **Sensitivity**
- **Repeatability**
- **Eccentricity**

6.4.1 Settings: Sensitivity test

Navigation: ▼ > Applications > Tests > Sensitivity >

The settings are divided into the following subsections:

- **Specification**
- **Management**
- **Report**

Specification

Parameter	Description	Values
Weighing profile	Defines the weighing profile.	General* I 10d
Tare container	Defines whether a tare container is used.	Active I Inactive*

* Factory setting

Test Point

Up to two test points can be defined.

Parameter	Description	Values
Nominal weight	Defines the nominal value of the weight that is used for the test.	Numeric The available units depend on the balance model.
Weight class	Defines the weight class according to OIML or ASTM. Alternatively, create a customized tolerance class with the parameter **Own**.	E1 I E2 I F1 I F2* I M1 I M2 I M3 I ASTM000 I ASTM00 I ASTM0 I ASTM1 I ASTM2 I ASTM3 I ASTM4 I ASTM5 I ASTM6 I ASTM7 I Own
Control limit	Defines the error tolerance of a process with respect to its set value. Exceeding the value **Control limit** is a violation of quality requirements and therefore requires a correction of the process. If the value **Control limit** is exceeded: The test failed, the balance is out of specification.	Numeric The available units depend on the balance model.
Warning limit	Defines the upper or lower limit that, if exceeded or not reached, makes more stringent process monitoring necessary. The value **Warning limit** must be smaller than the value **Control limit**. Result if the value **Warning limit** is exceeded: The test is passed, but the difference is higher than expected.	Active I Inactive* Numeric

* Factory setting

Management

Parameter	Description	Values
Error management	Blocks the balance automatically when the adjustment fails.	Active I Inactive*
Planning	Serves to plan when a test is automatically executed.	Active I Inactive*

If the parameter **Planning** is activated, the following options are available.

Parameter	Description	Values
Frequency	Serves to plan how often a test is automatically executed.	Daily* I Weekly I Biweekly I Monthly I Bimonthly I Quarterly I Twice a year I Yearly
Time	Serves to plan at what time a test is automatically executed.	Numeric
Notification	Defines how early you will be notified about a planned test (in hours).	Numeric

* Factory setting

Report

Parameter	Description	Values
Header and Footer	Defines the header and/or the footer to be published.	Title I Date/time I User I Signature I Empty lines
Balance information	Defines which information about the balance is published.	Balance type I Balance ID I Balance serial number I Software version

Quality information	Defines whether the leveling status of the balance is published.	Level state

See also

Sensitivity test ▸ Page 54

6.4.2 Settings: Repeatability test

Navigation: ▼ > Applications > Tests > Repeatability >

The settings are divided into the following subsections:

- **Specification**
- **Management**
- **Report**

Specification

Parameter	Description	Values
Weighing profile	Defines the weighing profile.	General* I 10d
Number of repetitions	Defines the number of weight measurements of a series.	Numeric (10* I 4...20)
Tare container	Defines whether a tare container is used.	Active I Inactive*

* Factory setting

Test Point

Parameter	Description	Values
Nominal weight	Defines the nominal value of the weight that is used for the test.	Numeric The available units depend on the balance model.
Weight class	Defines the weight class according to OIML or ASTM. Alternatively, create a customized tolerance class with the parameter **Own**.	E1 I E2 I F1 I F2* I M1 I M2 I M3 I ASTM000 I ASTM00 I ASTM0 I ASTM1 I ASTM2 I ASTM3 I ASTM4 I ASTM5 I ASTM6 I ASTM7 I Own
Control limit	Defines the error tolerance of a process with respect to its set value. Exceeding the value **Control limit** is a violation of quality requirements and therefore requires a correction of the process. If the value **Control limit** is exceeded: The test failed, the balance is out of specification.	Numeric The available units depend on the balance model.
Warning limit	Defines the upper or lower limit that, if exceeded or not reached, makes more stringent process monitoring necessary. The value **Warning limit** must be smaller than the value **Control limit**. Result if the value **Warning limit** is exceeded: The test is passed, but the difference is higher than expected.	Active I Inactive* Numeric

* Factory setting

Management

Parameter	Description	Values
Error management	Blocks the balance automatically when the adjustment fails.	Active I Inactive*

Planning	Serves to plan when a test is automatically executed.	Active I Inactive*

If the parameter **Planning** is activated, the following options are available.

Parameter	Description	Values
Frequency	Serves to plan how often a test is automatically executed.	Daily* I Weekly I Biweekly I Monthly I Bimonthly I Quarterly I Twice a year I Yearly
Time	Serves to plan at what time a test is automatically executed.	Numeric
Notification	Defines how early you will be notified about a planned test (in hours).	Numeric

* Factory setting

Report

Parameter	Description	Values
Header and Footer	Defines the header and/or the footer to be published.	Title I Date/time I User I Signature I Empty lines
Balance information	Defines which information about the balance is published.	Balance type I Balance ID I Balance serial number I Software version
Quality information	Defines whether the leveling status of the balance is published.	Level state

See also

Repeatability test ▸ Page 55

6.4.3 Settings: Eccentricity test

Navigation: ▼ > Applications > Tests > Eccentricity >

The settings are divided into the following subsections:

- **Specification**
- **Management**
- **Report**

Specification

Parameter	Description	Values
Weighing profile	Defines the weighing profile.	General* I 10d

* Factory setting

Test Point

Parameter	Description	Values
Nominal weight	Defines the nominal value of the weight that is used for the test.	Numeric The available units depend on the balance model.

Weight class	Defines the weight class according to OIML or ASTM. Alternatively, create a customized tolerance class with the parameter **Own**.	E1 I E2 I F1 I F2* I M1 I M2 I M3 I ASTM000 I ASTM00 I ASTM0 I ASTM1 I ASTM2 I ASTM3 I ASTM4 I ASTM5 I ASTM6 I ASTM7 I Own
Control limit	Defines the error tolerance of a process with respect to its set value. Exceeding the value **Control limit** is a violation of quality requirements and therefore requires a correction of the process. If the value **Control limit** is exceeded: The test failed, the balance is out of specification.	Numeric The available units depend on the balance model.
Warning limit	Defines the upper or lower limit that, if exceeded or not reached, makes more stringent process monitoring necessary. The value **Warning limit** must be smaller than the value **Control limit**. Result if the value **Warning limit** is exceeded: The test is passed, but the difference is higher than expected.	Active I Inactive* Numeric

* Factory setting

Management

Parameter	Description	Values
Error management	Blocks the balance automatically when the adjustment fails.	Active I Inactive*
Planning	Serves to plan when a test is automatically executed.	Active I Inactive*

If the parameter **Planning** is activated, the following options are available.

Parameter	Description	Values
Frequency	Serves to plan how often a test is automatically executed.	Daily* I Weekly I Biweekly I Monthly I Bimonthly I Quarterly I Twice a year I Yearly
Time	Serves to plan at what time a test is automatically executed.	Numeric
Notification	Defines how early you will be notified about a planned test (in hours).	Numeric

* Factory setting

Report

Parameter	Description	Values
Header and Footer	Defines the header and/or the footer to be published.	Title I Date/time I User I Signature I Empty lines
Balance information	Defines which information about the balance is published.	Balance type I Balance ID I Balance serial number I Software version
Quality information	Defines whether the leveling status of the balance is published.	Level state

See also

Eccentricity test ▸ Page 55

7 Maintenance

To guarantee the functionality of the balance and the accuracy of the weighing results, a number of maintenance actions must be performed by the user.

7.1 Maintenance tasks

Maintenance action	Recommended interval	Remarks
Performing an adjustment	• Daily • After cleaning • After leveling • After changing the location	see "Adjustments"
Performing routine tests (eccentricity test, repeatability test, sensitivity test). METTLER TOLEDO recommends to at least perform a sensitivity test.	• After cleaning • After assembling the balance • After a software update • Depending on your internal regulations (SOP)	see "Tests"
Cleaning	• After every use • Depending on the degree of pollution • Depending on your internal regulations (SOP)	see "Cleaning"
Updating the software	• Depending on your internal regulations (SOP). • After a new software release.	see "Software update"

See also

- Adjustments ▸ Page 52
- Tests ▸ Page 54
- Cleaning ▸ Page 113
- Software update ▸ Page 118

7.2 Cleaning

7.2.1 Disassembling for cleaning

Note

Depending on the balance model, the components may look different.

Note

In most cases, it is not necessary to remove the protective covers to clean the balance.

7.2.1.1 Balances with draft shield

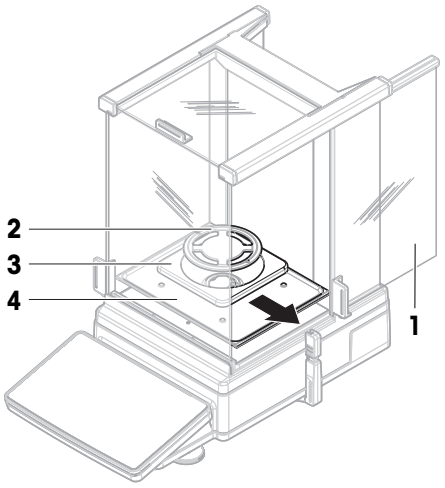
⚠ CAUTION

Injury due to sharp objects or broken glass

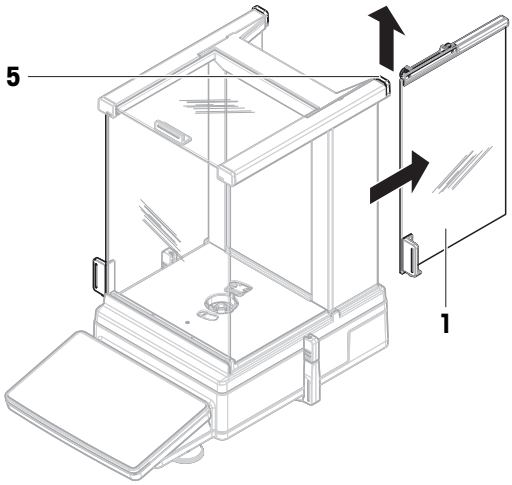
Instrument components, e.g., glass, can break and lead to injuries.

– Always proceed with focus and care.

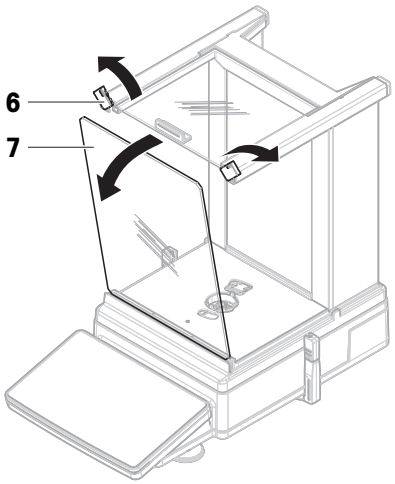
1 Fully open the side door (**1**).
2 Remove the weighing pan (**2**).
3 Only for balances with a readability of 0.01 mg: Remove the draft-protection element (**3**).
4 Remove the drip tray (**4**).



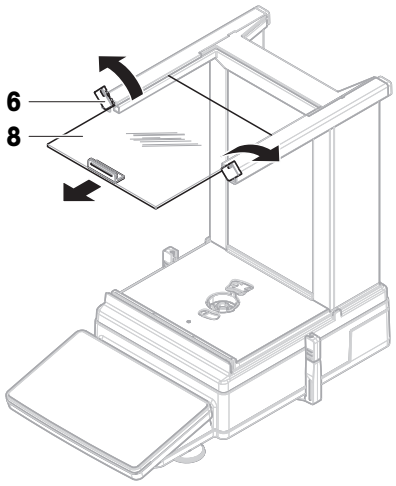
5 Lift up the QuickLock (**5**) and pull the side door (**1**) towards the back to remove it (right, left).
NOTICE: Damage to the instrument
Hold the side door (**1**) tightly when removing it.



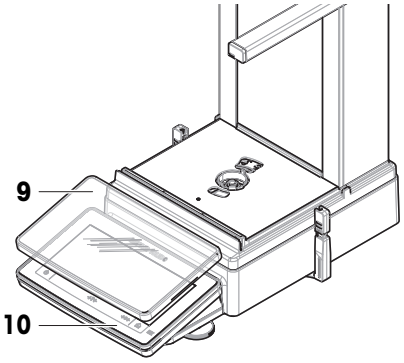
6 Turn the QuickLock (**6**, right, left), tilt the front panel (**7**) towards the front and lift it upwards to remove it.



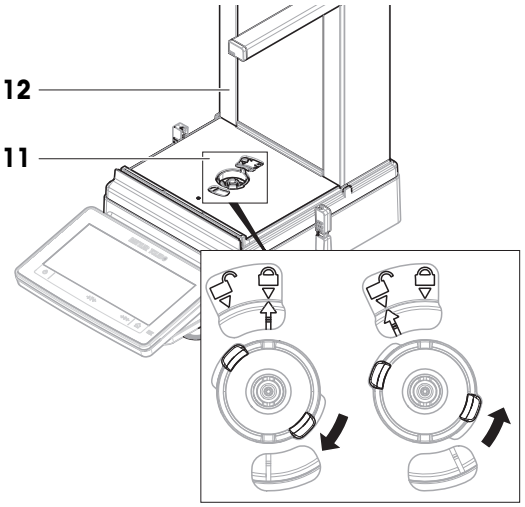
7 Pull the top door (**8**) towards the front to remove it.
Note
Optional, if required: Remove the protective covers for cleaning as described below.



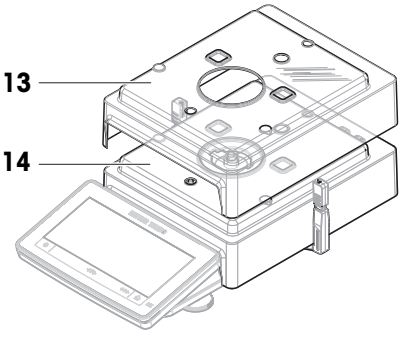
8 Remove the protective cover (**9**) from the terminal (**10**).



9 Open the QuickLock (**11**) and remove the draft shield (**12**).

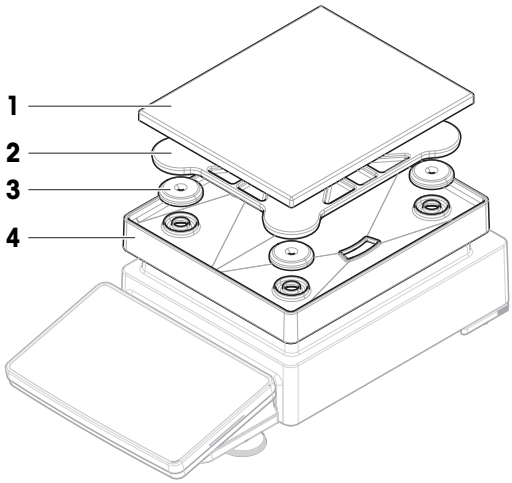


10 Remove the protective cover (**13**) from the platform (**14**).

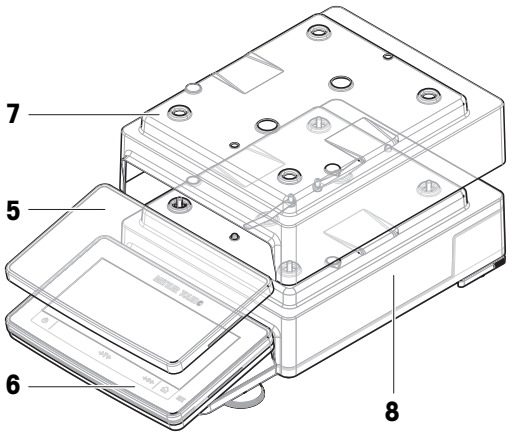


7.2.1.2 Balances without draft shield

1 Remove the weighing pan (**1**).
2 Remove the weighing pan support (**2**) and/or the support caps (**3**) (if applicable).
3 Remove the drip tray (**4**).

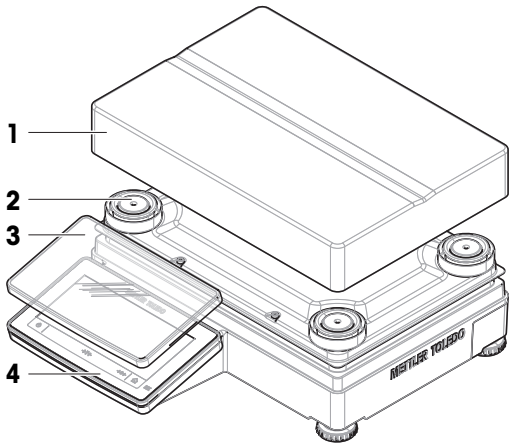


4 Optional, if required: Remove the protective cover (**5**) from the terminal (**6**).
5 Optional, if required: Remove the protective cover (**7**) from the platform (**8**).



7.2.1.3 Balances, large

1 Remove the weighing pan (**1**).
2 Remove the support caps (**2**).
3 Optional, if required: Remove the protective cover (**3**) from the terminal (**4**).



7.2.2 Cleaning agents

In the following table, cleaning tools and cleaning agents recommended by METTLER TOLEDO are listed. Pay attention to the concentration of the agents specified in the table.

		Tools			Cleaning agents						
		Paper tissue	Brush	Dishwasher	Water	Acetone	Ethanol (70%)	Isopropanol (70%)	Hydrochloric acid (3-10%)	Sodium hydroxide (1-4%)	Peracetic acid (2-3%)
Around the balance	Balance housing	✓	✓	–	✓	–	✓	✓	✓	✓	✓
	Feet	✓	✓	–	✓	–	✓	✓	✓	✓	✓
Balance terminal	Terminal	✓	✓	–	✓	PR	✓	✓	✓	✓	✓
	Display	✓	✓	–	✓	PR	✓	✓	✓	✓	✓
	Terminal cover	✓	✓	–	✓	–	✓	✓	✓	PR	PR
Balance draft shield	Glass panels	✓	✓	✓	✓	PR	✓	✓	✓	✓	✓
	Non-removable handles and frames	✓	✓	–	✓	–	✓	✓	✓	✓	✓
Weighing area	Weighing pan	✓	✓	✓	✓	PR	✓	✓	✓	✓	✓
	Drip tray	✓	✓	✓	✓	PR	✓	✓	–	–	✓
Accessories	Dust cover	✓	✓	–	✓	–	✓	✓	–	–	PR
	Antistatic kit	✓	✓	–	–	–	–	–	–	–	–

Legend

✓ Recommended by METTLER TOLEDO; can be used without limitation.

PR Partially recommended by METTLER TOLEDO: individual resistance to acid and alkali must be evaluated, including dependence to the time exposure.

— Not recommend. High risk for damage.

7.2.3 Cleaning the balance

NOTICE

Damage to the instrument due to inappropriate cleaning methods

If liquid enters the housing, it can damage the instrument. The surface of the instrument can be damaged by certain cleaning agents, solvents, or abrasives.

1 Do not spray or pour liquid on the instrument.
2 Only use the cleaning agents specified in the Reference Manual (RM) of the instrument or the guide "8 Steps to a Clean Balance".
3 Only use a lightly moistened, lint-free cloth or a tissue to clean the instrument.
4 Wipe off any spills immediately.

For further information on cleaning a balance, consult "8 Steps to a Clean Balance".

www.mt.com/lab-cleaning-guide

Cleaning around the balance

– Remove any dirt or dust around the balance and avoid further contaminations.

Cleaning the terminal

– Clean the terminal with a damp cloth or a tissue and a mild cleaning agent.

Cleaning the removable parts

– Clean the removed part with a damp cloth or a tissue and a mild cleaning agent or clean in a dishwasher up to 80 °C.

Cleaning the balance

1 Disconnect the balance from the AC/DC adapter.
2 Use a lint-free cloth moistened with a mild cleaning agent to clean the surface of the balance.
3 Remove powder or dust with a disposable tissue first.
4 Remove sticky substances with a damp lint-free cloth and a mild solvent, e.g., isopropanol or ethanol 70%.

7.2.4 Putting into operation after cleaning

1 Reassemble the balance.
2 Check that the draft shield doors (top, sides) open and close normally (if applicable).
3 Reconnect the balance to the AC/DC adapter.
4 Check the level status, level the balance if necessary.
5 Respect the warm-up time specified in the "Technical Data".
6 Perform an internal adjustment.
7 Perform a routine test according to the internal regulations of your company. METTLER TOLEDO recommends performing a sensitivity test after cleaning the balance.
8 Press →0← to zero the balance.
➡ The balance is ready for use.

See also

Leveling the balance ▸ Page 31
Technical Data ▸ Page 125
Performing an internal adjustment ▸ Page 53

7.3 Service

Regular servicing by an authorized service technician ensures reliability for years to come. Contact your METTLER TOLEDO representative for details about the available service options.

7.4 Software update

Search for software:

www.mt.com/labweighing-software-download

Contact a METTLER TOLEDO service representative if you need support updating the software.

METTLER TOLEDO recommends saving the data on a storage device before updating the software.

7.4.1 Updating the software

Navigation: Balance menu > Maintenance > Software update

The function **Software update** is only available to users with the corresponding rights.

NOTICE

Removing USB storage device during software update

Do not remove the USB storage device during the software update procedure. This can lead to an incomplete or faulty installation of the balance software.

- A USB storage device containing the software installer is connected to the balance.

1 Tap **Software update**.
2 Select **Software update**.
3 Tap **Next**.
   ➡ An update wizard opens and leads you step-by-step through the procedure.
4 When prompted, tap **I accept the terms in the license agreement** and confirm with **OK**.

7.4.2 Putting into operation after software update

1 Press to switch on the balance.
2 Check the level status. Level the balance if required.
3 Perform an internal adjustment.
4 Perform a routine test according to the internal regulations of your company.
5 Press →0← to zero the balance.
   ➡ The balance is ready for use.

See also

Leveling the balance ▸ Page 31
Performing an internal adjustment ▸ Page 53

7.5 Resetting the balance

A reset puts the balance back to factory state. All user data are deleted.

If the setting **User management** is inactive, any user can reset the balance. If the setting **User management** is active, resetting the balance requires corresponding permission.

NOTICE

Reset causes data loss

Resetting the balance will delete user application data and set the user configuration back to factory state.

- **User management** > **General**: The user's configuration permission is activated.

1 Tap **Menu**.
2 Tap **Maintenance**.
3 Tap **Reset**.
4 Tap **Reset** to confirm.
   ➡ The balance restarts with factory settings.

8 Troubleshooting

Possible errors with their cause and remedy are described in the following chapter. If there are errors that cannot be corrected through these instructions, contact METTLER TOLEDO.

8.1 Error messages

Error message	Possible cause	Diagnostic	Remedy
The balance shows an error code.	Software or hardware error.	–	Restart the balance. If that does not help, perform a balance reset. If the issue persists, contact your METTLER TOLEDO service representative.
Date and time lost	The battery is low. The battery backup is lost.	Check the settings for date and time.	Connect the balance to the power outlet and let the battery charge for two to three days. Set date and time. If the issue persists, contact your METTLER TOLEDO service representative.
Communication with draft shield is not possible. Only applies to balances with a backlit draft shield.	The contact pins are dirty or do not fit together.	Check the contact pins between the balance and the draft shield.	Clean or adjust the contact pins.
	The draft shield is defective.	–	Contact your METTLER TOLEDO service representative.
Communication with weighing module is not possible.	The internal communication does not work properly.	–	Perform a balance reset. Reinstall the balance software. If the issue persists, contact your METTLER TOLEDO service representative.
Data memory defect.	EEPROM is corrupt.	–	Perform a balance reset. If the issue persists, contact your METTLER TOLEDO service representative.
Memory full.	The memory storage is full.	–	Perform a balance reset.
No standard adjustment.	The standard adjustment is missing or invalid.	–	Contact your METTLER TOLEDO service representative.
Program memory defect.	The checksum for the stored program is not correct anymore.	–	Reinstall the balance software. If the issue persists, contact your METTLER TOLEDO service representative.

Error message	Possible cause	Diagnostic	Remedy
Temperature sensor defect.	The temperature sensor that measures the cell temperature is defective.	–	Contact your METTLER TOLEDO service representative.
Type data damaged.	The TDNR is corrupt.	–	Perform a balance reset. If the issue persists, contact your METTLER TOLEDO service representative.
Unexpected startup problem	A problem occurred while starting up the balance. Some data could not be read correctly from the memory.	–	Restart the balance. If the issue persists, contact your METTLER TOLEDO service representative.
Unknown error	General error for an unspecific issue.	–	Restart the balance. Perform a balance reset. If the issue persists, contact your METTLER TOLEDO service representative.
User data damaged.	The user data is damaged or its context is incorrect.	–	Perform a balance reset. If the issue persists, contact your METTLER TOLEDO service representative.
Wrong cell data.	The cell data is damaged or its checksum is incorrect.	–	Contact your METTLER TOLEDO service representative.
Wrong legally relevant authentication. Only applies to approved balances.	–	–	Contact your METTLER TOLEDO service representative.

8.2 Error symptoms

Error symptom	Possible cause	Diagnostic	Remedy
The balance shows no valid date and time.	The battery is low. The battery backup is lost.	Check the settings for date and time.	Connect the balance to the power outlet and let the battery charge for two to three days. Set date and time. If the issue persists, contact your METTLER TOLEDO service representative.
The display is dark.	The balance is on standby or in power-saving mode.	–	Switch on the balance.
	There is no power.	Check the connection to the AC/DC adapter and the power outlet.	Connect the balance to the power outlet. See "Connecting the balance".

Error symptom	Possible cause	Diagnostic	Remedy
	The wrong AC/DC adapter is connected to the balance.	Check the AC/DC adapter, see "Technical Data".	Use the correct AC/DC adapter.
	The AC/DC adapter is defective.	–	Replace the AC/DC adapter.
	The display is defective.	–	Contact your METTLER TOLEDO service representative.
The balance does not react to any input.	Software freeze.	–	Disconnect the power cable from the balance and reconnect it after a few seconds. Perform a balance reset. If the issue persists, contact your METTLER TOLEDO service representative.
The balance does not start up properly.	The balance has no power.	Check if the AC/DC adapter is plugged in.	Connect the AC/DC adapter.
	The AC/DC adapter is defective.	Check with another AC/DC adapter if available.	Replace the AC/DC adapter. See "Accessories".
The balance does not return to zero when the weight is removed.	Something is touching the weighing pan. Dirt or dust on the weighing pan.	Remove the weighing pan and check it for dirt or dust.	Clean the weighing pan. If the issue persists, contact your METTLER TOLEDO service representative.
Taring fails.	The weighing bench is vibrating.	Tab →T← and check if the value on the display is still unstable.	Place the balance on a weighing bench free of vibrations.
	The weighing sample is electrostatically charged.	Place a test weight on the weighing pan. Check if the weighing result is stable.	For balances with a draft shield: place a water container into the weighing chamber to increase the humidity. Use an antistatic device. See "Accessories".
	The balance is exposed to drafts.	Check the location for sources of draft.	Place the balance in a location without draft.
The internal adjustment fails.	A weight is on the weighing pan.	–	Remove the weight from the weighing pan.
	Repeatability is poor.	–	Perform a repeatability test.
	The internal weight does not function properly.	–	Contact your METTLER TOLEDO service representative.
The sensitivity test fails.	A weight is on the weighing pan.	–	Remove the weight from the weighing pan.
	The internal weight does not work properly.	–	Contact your METTLER TOLEDO service representative.

Error symptom	Possible cause	Diagnostic	Remedy
The repeatability test fails.	Eccentricity is out of tolerance.	Perform an eccentricity test.	If the eccentricity test fails, contact your METTLER TOLEDO service representative.
	The environment is unstable.	–	Place the balance in a location with suitable environmental conditions.
The display shows overload or underload.	The wrong weighing pan is installed.	Slightly lift or press the weighing pan to see if the weight appears on the display.	Install a proper weighing pan.
	No weighing pan is installed.	–	Install a proper weighing pan.
	Incorrect zero point when the balance is switched on.	–	Disconnect the power cable and reconnect it after a few seconds.
	The balance is not adjusted.	–	Perform an internal adjustment. See "Performing an internal adjustment".
The value on the display oscillates.	Vibrations on the weighing bench, for example, building vibrations, foot traffic.	Place a beaker with water on the weighing bench. Vibrations cause ripples on the water surface.	Protect the weighing location against vibrations, for example, with an absorber. Find a different weighing location.
	Draft due to untight draft shield and/or open window.	Check the draft shield for gaps.	Fix the draft shield. Close the window.
	The weighing sample is electrostatically charged.	Check if the weighing result is stable when using a test weight.	Increase the air humidity in the weighing chamber. Use an ionizer. See "Accessories".
	The location is not suitable for weighing.	–	Follow the requirements for the location. See "Selecting the location".
	Something is touching the weighing pan.	Check for touching parts or dirt.	Remove touching parts. Clean the balance.
The value on the display is drifting towards plus or minus.	The location is not suitable for weighing.	–	Place the balance in a location with suitable environmental conditions.
	The weighing sample absorbs moisture or evaporates moisture.	Check if the weighing result is stable when using a test weight.	Cover the weighing sample.
	The weighing sample is electrostatically charged.	Use a test weight to check if the weighing result is stable.	Increase the humidity in the weighing chamber. Use an ionizer. See "Accessories".

Error symptom	Possible cause	Diagnostic	Remedy
	The weighing sample is warmer or colder than the air in the weighing chamber.	Check if the weighing result is stable when using an acclimatized test weight.	Bring the sample to room temperature.
	The balance has not yet warmed up.	–	Let the balance warm up. Adequate warm-up time is specified in the section "General data".
Drop to cursor: data transfer does not work properly	The lock of the number pad on the keyboard is activated.	The format of the transferred data is wrong.	Switch off the lock of the number pad.
	Asian IME (input method editor) is running.	The format of the transferred data is wrong.	Switch off IME.

8.3 Saving a support file

When requesting help from your METTLER TOLEDO service representative, you may be asked to send a support file. This file is analyzed and can help to solve issues with the balance.

Navigation: ☰ Balance menu > Maintenance

- The section **Maintenance** is open.
- A USB storage device is available.

1 Tap **Save support file**.
2 Connect a USB storage device to the balance.
3 Tap ✓ **OK**.
   ➡ The support file is saved to the USB storage device.

8.4 Putting into operation after fixing an error

After troubleshooting, perform the following steps to put the balance into operation:

- Ensure that the balance is completely reassembled and cleaned.
- Reconnect the balance to the AC/DC adapter.

9 Technical Data

9.1 General data

Power supply for balances with a readability of 0.01 mg and 0.1 mg

AC/DC adapter:	Input: 100 – 240 V AC ± 10%, 50 – 60 Hz, 0.8 A, 61 – 80 VA Output: 12 V DC, 2.5 A, LPS
Cable for AC/DC adapter:	3-core, with country-specific plug
Balance power consumption:	12 V DC, 1.0 A
Polarity:	

Power supply for balances with a readability of 1 mg or higher

AC/DC adapter:	Input: 100 – 240 V AC ± 10%, 50 – 60 Hz, 0.5 A Output: 12 V DC, 1.5 A, LPS
Balance power consumption:	12 V DC, 1.0 A
Polarity:	

Protection and standards

Overvoltage category:	II
Degree of pollution:	2
Ingress protection code:	IP41 (balances with readability of 0.1 mg or 1 mg) IP54 (balances with readability of 0.01 g or higher) **Note** Stated IP is only achieved when the balance is ready for operation. The protective covers must be installed, and the caps must cover the interface connections.
Standards for safety and EMC:	See Declaration of Conformity
Range of application:	Use only indoors in dry locations

Environmental conditions

The limit values apply when the balance is used under the following environmental conditions:

Height above mean sea level:	Up to 5000 m
Ambient temperature:	+10 – +30 °C
Temperature change, max.:	5 °C/h
Relative humidity:	30 – 70%, non-condensing
Acclimatization time:	Recommendation: Up to **4 hours** for precision balances, or up to **8 hours** for analytical balances. These values apply after placing the balance in the same location where it will be put into operation. **Note** The acclimatization time depends on the readability of the balance, and on the environmental conditions.
Warm-up time:	At least **30 minutes** for precision balances, **60 minutes** for analytical balances, or **120 minutes** for balances with a readability of 0.01 mg. These values apply after connecting the balance to the power supply, or after exiting power-saving mode. When switched on from standby, the balance is ready for operation immediately.

The balance can be used under the following environmental conditions. However, the weighing performances of the balance may be outside the limit values:

Ambient temperature:	+5 °C – +40 °C
Relative humidity:	20% to max. 80% at 31 °C, decreasing linearly to 50% at 40 °C, non-condensing

The balance can be disconnected and stored in its packaging under the following conditions:

Ambient temperature:	-25 – +70 °C
Relative humidity:	10 – 90%, non-condensing

9.2 Materials

Housing regular balances:	Bottom housing: die-cast aluminum
	Top housing: die-cast aluminum, powder-coated
	Housing frame: POM
	Terminal frame: chrome-plated aluminum
Housing large balances:	Die-cast aluminum, powder-coated
	Housing frame: POM
	Terminal frame: chrome-plated aluminum
Draft shield:	POM (U-shaped top frame, rear QuickLock), PBT (bottom plate), glass (doors, front panel), powder-coated aluminum (posts), PA 12 (handles, front QuickLock)
Weighing pan:	Balances with readability of 0.01 mg or 0.1 mg: stainless steel X2CrNiMo17-12-2 (1.4404)
	Balances with readability of 1 mg: die-cast zinc, chrome-plated
	Balances with readability of 0.01 g: die-cast aluminum, chrome-plated
	Balances with readability of 0.1 g: stainless steel X2CrNiMo17-12-2 (1.4404)
	Large balances: stainless steel X5CrNi18-10 (1.4301)
Draft-protection element:	Balances with readability of 0.01 mg: stainless steel X2CrNiMo17-12-2 (1.4404)
Drip tray:	Die-cast aluminum, powder-coated
Touchscreen:	Glass
Protective cover:	PET
Feet:	TPE, stainless steel X5CrNi18-10 (1.4301)
Battery:	ML2032

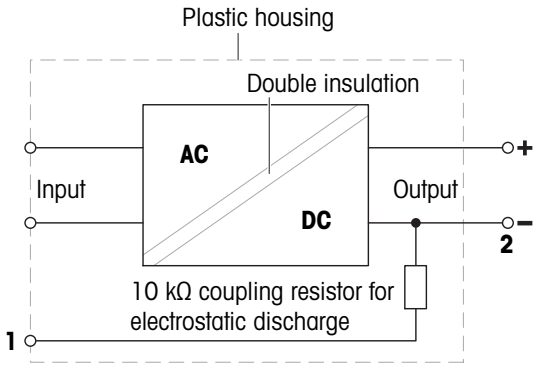
9.3 Explanatory notes for the METTLER TOLEDO AC/DC adapter

The certified external AC/DC adapter complies to the requirements for Class II double insulated equipment. It is not provided with a protective earth connection but with a functional earth connection for EMC purposes. This earth connection **is not** a safety feature. Further information about the compliance of our products can be found in the "Declaration of Conformity" delivered with every product.

In case of testing with regard to the European Directive 2001/95/EC, the AC/DC adapter and the instrument have to be handled as Class II double insulated equipment.

Consequently, a grounding test is not required. It is not necessary to carry out a grounding test between the earth connector of the power plug and any exposed part of the metallic housing of the instrument.

Because the instrument is sensitive to static charges, a leakage resistor of 10 kΩ is connected between the earth connector (**1**) and the negative pole (**2**) of the AC/DC adapter. The arrangement is shown in the equivalent circuit diagram. This resistor is not part of the electrical safety arrangement and does not require testing at regular intervals.



9.4 Model-specific data

9.4.1 Analytical balances, readability 0.01 mg or 0.1 mg

	MX105	MX105DU	MX205DU
Limit values			
Capacity	120 g	120 g	220 g
Nominal load	100 g	100 g	200 g
Readability	0.01 mg	0.1 mg	0.1 mg
Capacity of fine range	–	42 g	82 g
Readability in fine range	–	0.01 mg	0.01 mg
Repeatability (at 5% load)	0.02 mg	0.02 mg	0.02 mg
Linearity deviation	0.1 mg	0.2 mg	0.2 mg
Eccentricity deviation (at test load)	0.3 mg (50 g)	0.3 mg (50 g)	0.3 mg (100 g)
Sensitivity offset (at nominal load) ▲	0.4 mg	0.4 mg	0.8 mg
Sensitivity temperature drift	0.0002%/°C	0.0002%/°C	0.0002%/°C
Typical values			
Repeatability (at 5% load)	0.0125 mg	0.0125 mg	0.0125 mg
Linearity deviation	0.06 mg	0.06 mg	0.06 mg
Eccentricity deviation (at test load)	0.1 mg (50 g)	0.1 mg (50 g)	0.1 mg (100 g)
Sensitivity offset (at nominal load) ▲	0.25 mg	0.25 mg	0.5 mg
Minimum weight (USP, tolerance = 0.10%) ▼	25 mg	25 mg	25 mg
Minimum weight (tolerance = 1%) ▼	2.5 mg	2.5 mg	2.5 mg
Settling time	2 s	2 s	2 s
Dimensions and other specifications			
Balance dimensions (W × D × H)	222 × 379 × 353 mm	222 × 379 × 353 mm	222 × 379 × 353 mm
Weighing pan diameter	80 mm	80 mm	80 mm
Usable height of draft shield	235 mm	235 mm	235 mm
Balance weight	7.5 kg	7.5 kg	7.5 kg
Weights for routine testing			
Weights (OIML class)	100 g (F2) / 5 g (F2)	100 g (F2) / 5 g (F2)	200 g (F2) / 10 g (F2)
Weights (ASTM class)	100 g (ASTM 1) / 5 g (ASTM 1)	100 g (ASTM 1) / 5 g (ASTM 1)	200 g (ASTM 1) / 10 g (ASTM 1)

▲ after adjustment with internal weight

▼ determined at 5% load, k = 2

	MX104	MX204	MX304
Limit values			
Capacity	120 g	220 g	320 g
Nominal load	100 g	200 g	300 g
Readability	0.1 mg	0.1 mg	0.1 mg
Capacity of fine range	–	–	–
Readability in fine range	–	–	–
Repeatability (at 5% load)	0.1 mg	0.1 mg	0.1 mg
Linearity deviation	0.2 mg	0.2 mg	0.3 mg
Eccentricity deviation (at test load)	0.4 mg (50 g)	0.4 mg (100 g)	0.4 mg (100 g)
Sensitivity offset (at nominal load) ▲	0.5 mg	0.8 mg	1 mg
Sensitivity temperature drift	0.0002%/°C	0.0002%/°C	0.0002%/°C
Typical values			
Repeatability (at 5% load)	0.05 mg	0.05 mg	0.05 mg
Linearity deviation	0.06 mg	0.06 mg	0.06 mg
Eccentricity deviation (at test load)	0.1 mg (50 g)	0.1 mg (100 g)	0.1 mg (100 g)
Sensitivity offset (at nominal load) ▲	0.3 mg	0.5 mg	0.6 mg
Minimum weight (USP, tolerance = 0.10%) ▼	100 mg	100 mg	100 mg
Minimum weight (tolerance = 1%) ▼	10 mg	10 mg	10 mg
Settling time	2 s	2 s	2 s
Dimensions and other specifications			
Balance dimensions (W × D × H)	222 × 379 × 353 mm	222 × 379 × 353 mm	222 × 379 × 353 mm
Weighing pan diameter	90 mm	90 mm	90 mm
Usable height of draft shield	239 mm	239 mm	239 mm
Balance weight	6.2 kg	6.2 kg	6.2 kg
Weights for routine testing			
Weights (OIML class)	100 g (F2) / 5 g (F2)	200 g (F2) / 10 g (F2)	200 g (F2) / 10 g (F2)
Weights (ASTM class)	100 g (ASTM 1) / 5 g (ASTM 1)	200 g (ASTM 1) / 10 g (ASTM 1)	200 g (ASTM 1) / 10 g (ASTM 1)

▲ after adjustment with internal weight

▼ determined at 5% load, k = 2

9.4.2 Precision balances, readability 1 mg

	MX303	MX603	MX1203
Limit values			
Capacity	320 g	620 g	1.22 kg
Nominal load	300 g	600 g	1.2 kg
Readability	1 mg	1 mg	1 mg
Capacity of fine range	–	–	–
Readability in fine range	–	–	–
Repeatability (at 5% load)	0.9 mg	0.9 mg	0.9 mg
Linearity deviation	2 mg	2 mg	2 mg
Eccentricity deviation (at test load)	3 mg (100 g)	3 mg (200 g)	3 mg (500 g)
Sensitivity offset (at nominal load) ▲	6 mg	6 mg	7 mg
Sensitivity temperature drift	0.0002%/°C	0.0002%/°C	0.0002%/°C
Typical values			
Repeatability (at 5% load)	0.5 mg	0.5 mg	0.5 mg
Linearity deviation	0.6 mg	0.6 mg	0.6 mg
Eccentricity deviation (at test load)	1 mg (100 g)	1 mg (200 g)	1 mg (500 g)
Sensitivity offset (at nominal load) ▲	4 mg	4 mg	4 mg
Minimum weight (USP, tolerance = 0.10%) ▼	1 g	1 g	1 g
Minimum weight (tolerance = 1%) ▼	100 mg	100 mg	100 mg
Settling time	1.5 s	1.5 s	1.5 s
Dimensions and other specifications			
Balance dimensions (W × D × H)	222 × 379 × 353 mm	222 × 379 × 353 mm	222 × 379 × 353 mm
Weighing pan dimensions (W × D)	127 × 127 mm	127 × 127 mm	127 × 127 mm
Usable height of draft shield	238 mm	238 mm	238 mm
Balance weight	6.3 kg	6.3 kg	6.7 kg
Weights for routine testing			
Weights (OIML class)	200 g (F2) / 10 g (F2)	500 g (F2) / 20 g (F2)	1000 g (F2) / 50 g (F2)
Weights (ASTM class)	200 g (ASTM 1) / 10 g (ASTM 1)	500 g (ASTM 1) / 20 g (ASTM 1)	1000 g (ASTM 1) / 50 g (ASTM 1)

▲ after adjustment with internal weight

▼ determined at 5% load, k = 2

	MX303N	MX603N	MX1203N
Limit values			
Capacity	320 g	620 g	1.22 kg
Nominal load	300 g	600 g	1.2 kg
Readability	1 mg	1 mg	1 mg
Capacity of fine range	–	–	–
Readability in fine range	–	–	–
Repeatability (at 5% load)	0.9 mg	0.9 mg	0.9 mg
Linearity deviation	2 mg	2 mg	2 mg
Eccentricity deviation (at test load)	3 mg (100 g)	3 mg (200 g)	3 mg (500 g)
Sensitivity offset (at nominal load) ▲	6 mg	6 mg	7 mg
Sensitivity temperature drift	0.0002%/°C	0.0002%/°C	0.0002%/°C
Typical values			
Repeatability (at 5% load)	0.5 mg	0.5 mg	0.5 mg
Linearity deviation	0.6 mg	0.6 mg	0.6 mg
Eccentricity deviation (at test load)	1 mg (100 g)	1 mg (200 g)	1 mg (500 g)
Sensitivity offset (at nominal load) ▲	4 mg	4 mg	4 mg
Minimum weight (USP, tolerance = 0.10%) ▼	1 g	1 g	1 g
Minimum weight (tolerance = 1%) ▼	100 mg	100 mg	100 mg
Settling time	1.5 s	1.5 s	1.5 s
Dimensions and other specifications			
Balance dimensions (W × D × H)	194 × 379 × 100 mm	194 × 379 × 100 mm	194 × 379 × 100 mm
Weighing pan dimensions (W × D)	127 × 127 mm	127 × 127 mm	127 × 127 mm
Usable height of draft shield	–	–	–
Balance weight	4 kg	4 kg	4.4 kg
Weights for routine testing			
Weights (OIML class)	200 g (F2) / 10 g (F2)	500 g (F2) / 20 g (F2)	1000 g (F2) / 50 g (F2)
Weights (ASTM class)	200 g (ASTM 1) / 10 g (ASTM 1)	500 g (ASTM 1) / 20 g (ASTM 1)	1000 g (ASTM 1) / 50 g (ASTM 1)

▲ after adjustment with internal weight

▼ determined at 5% load, k = 2

9.4.3 Precision balances, readability 0.01 g or 0.1 g

	MX2002	MX4002	MX6002
Limit values			
Capacity	2.2 kg	4.2 kg	6.2 kg
Nominal load	2 kg	4 kg	6 kg
Readability	0.01 g	0.01 g	0.01 g
Capacity of fine range	–	–	–
Readability in fine range	–	–	–
Repeatability (at 5% load)	8 mg	8 mg	8 mg
Linearity deviation	20 mg	20 mg	20 mg
Eccentricity deviation (at test load)	30 mg (1 kg)	30 mg (2 kg)	30 mg (2 kg)
Sensitivity offset (at nominal load) ▲	80 mg	80 mg	80 mg
Sensitivity temperature drift	0.0003%/°C	0.0003%/°C	0.0003%/°C
Typical values			
Repeatability (at 5% load)	4 mg	4 mg	4 mg
Linearity deviation	6 mg	6 mg	6 mg
Eccentricity deviation (at test load)	10 mg (1 kg)	10 mg (2 kg)	10 mg (2 kg)
Sensitivity offset (at nominal load) ▲	50 mg	50 mg	50 mg
Minimum weight (USP, tolerance = 0.10%) ▼	8.2 g	8.2 g	8.2 g
Minimum weight (tolerance = 1%) ▼	820 mg	820 mg	820 mg
Settling time	1 s	1 s	1 s
Dimensions and other specifications			
Balance dimensions (W × D × H)	194 × 379 × 103 mm	194 × 379 × 103 mm	194 × 379 × 103 mm
Weighing pan dimensions (W × D)	170 × 203 mm	170 × 203 mm	170 × 203 mm
Usable height of draft shield	–	–	–
Balance weight	4.9 kg	4.9 kg	5.5 kg
Weights for routine testing			
Weights (OIML class)	2000 g (F2) / 100 g (F2)	2000 g (F2) / 200 g (F2)	5000 g (F2) / 200 g (F2)
Weights (ASTM class)	2000 g (ASTM 1) / 100 g (ASTM 1)	2000 g (ASTM 4) / 200 g (ASTM 4)	5000 g (ASTM 4) / 200 g (ASTM 4)

▲ after adjustment with internal weight

▼ determined at 5% load, k = 2

	MX6002DR	MX12002
Limit values		
Capacity	6.2 kg	12.2 kg
Nominal load	6 kg	12 kg
Readability	0.1 g	0.01 g
Capacity of fine range	1.2 kg	–
Readability in fine range	0.01 g	–
Repeatability (at 5% load)	8 mg	8 mg
Linearity deviation	30 mg	20 mg
Eccentricity deviation (at test load)	100 mg (2 kg)	40 mg (5 kg)
Sensitivity offset (at nominal load) ▲	120 mg	70 mg
Sensitivity temperature drift	0.0003%/°C	0.0003%/°C
Typical values		
Repeatability (at 5% load)	4 mg	4 mg
Linearity deviation	10 mg	6 mg
Eccentricity deviation (at test load)	32 mg (2 kg)	12 mg (5 kg)
Sensitivity offset (at nominal load) ▲	80 mg	40 mg
Minimum weight (USP, tolerance = 0.10%) ▼	8.2 g	8.2 g
Minimum weight (tolerance = 1%) ▼	820 mg	820 mg
Settling time	1 s	1 s
Dimensions and other specifications		
Balance dimensions (W × D × H)	194 × 379 × 103 mm	194 × 379 × 103 mm
Weighing pan dimensions (W × D)	170 × 203 mm	170 × 203 mm
Usable height of draft shield	–	–
Balance weight	5.5 kg	5.6 kg
Weights for routine testing		
Weights (OIML class)	5000 g (F2) / 200 g (F2)	10 kg (F2) / 500 g (F2)
Weights (ASTM class)	5000 g (ASTM 4) / 200 g (ASTM 4)	10 kg (ASTM 4) / 500 g (ASTM 4)

▲ after adjustment with internal weight

▼ determined at 5% load, k = 2

	MX6001	MX8001
Limit values		
Capacity	6.2 kg	8.2 kg
Nominal load	6 kg	8 kg
Readability	0.1 g	0.1 g
Capacity of fine range	–	–
Readability in fine range	–	–
Repeatability (at 5% load)	50 mg	50 mg
Linearity deviation	60 mg	100 mg
Eccentricity deviation (at test load)	200 mg (2 kg)	300 mg (5 kg)
Sensitivity offset (at nominal load) ▲	240 mg	400 mg
Sensitivity temperature drift	0.0005%/°C	0.0005%/°C
Typical values		
Repeatability (at 5% load)	40 mg	40 mg
Linearity deviation	20 mg	30 mg
Eccentricity deviation (at test load)	60 mg (2 kg)	100 mg (5 kg)
Sensitivity offset (at nominal load) ▲	150 mg	250 mg
Minimum weight (USP, tolerance = 0.10%) ▼	82 g	82 g
Minimum weight (tolerance = 1%) ▼	8.2 g	8.2 g
Settling time	0.8 s	1 s
Dimensions and other specifications		
Balance dimensions (W × D × H)	194 × 379 × 104 mm	194 × 379 × 104 mm
Weighing pan dimensions (W × D)	172 × 205 mm	172 × 205 mm
Usable height of draft shield	–	–
Balance weight	5.2 kg	5.2 kg
Weights for routine testing		
Weights (OIML class)	5000 g (F2) / 200 g (F2)	5000 g (F2) / 200 g (F2)
Weights (ASTM class)	5000 g (ASTM 4) / 200 g (ASTM 4)	5000 g (ASTM 4) / 200 g (ASTM 4)

▲ after adjustment with internal weight

▼ determined at 5% load, k = 2

9.4.4 Precision balances, large

	MX12001L	MX16001L	MX32001L	MX32000L
Limit values				
Capacity	12.2 kg	16.2 kg	32.2 kg	32.2 kg
Nominal load	12 kg	16 kg	30 kg	30 kg
Readability	0.1 g	0.1 g	0.1 g	1 g
Capacity of fine range	–	–	–	–
Readability in fine range	–	–	–	–
Repeatability (at 5% load)	80 mg	80 mg	80 mg	600 mg
Linearity deviation	200 mg	200 mg	250 mg	300 mg
Eccentricity deviation (at test load)	300 mg (5 kg)	300 mg (5 kg)	300 mg (10 kg)	1 g (10 kg)
Sensitivity offset (at nominal load) ▲	600 mg	600 mg	800 mg	1 g
Sensitivity temperature drift	0.0015%/°C	0.0015%/°C	0.0015%/°C	0.0015%/°C
Typical values				
Repeatability (at 5% load)	40 mg	40 mg	40 mg	400 mg
Linearity deviation	60 mg	60 mg	80 mg	100 mg
Eccentricity deviation (at test load)	100 mg (5 kg)	100 mg (5 kg)	100 mg (10 kg)	300 mg (10 kg)
Sensitivity offset (at nominal load) ▲	400 mg	400 mg	500 mg	600 mg
Minimum weight (USP, tolerance = 0.10%) ▼	82 g	82 g	82 g	820 g
Minimum weight (tolerance = 1%) ▼	8.2 g	8.2 g	8.2 g	82 g
Settling time	1.5 s	1.5 s	1.5 s	1.2 s
Dimensions and other specifications				
Balance dimensions (W × D × H)	354 × 380 × 126 mm	354 × 380 × 126 mm	354 × 380 × 126 mm	354 × 380 × 126 mm
Weighing pan dimensions (W × D)	352 × 246 mm	352 × 246 mm	352 × 246 mm	352 × 246 mm
Usable height of draft shield	–	–	–	–
Balance weight	11.7 kg	11.7 kg	11.7 kg	11.7 kg
Weights for routine testing				
Weights (OIML class)	10 kg (F2) / 500 g (F2)	10 kg (F2) / 500 g (F2)	20 kg (F2) / 1 kg (F2)	20 kg (F2) / 1 kg (F2)
Weights (ASTM class)	10 kg (ASTM 4) / 500 g (ASTM 4)	10 kg (ASTM 4) / 500 g (ASTM 4)	20 kg (ASTM 4) / 1 kg (ASTM 4)	20 kg (ASTM 4) / 1 kg (ASTM 4)

▲ after adjustment with internal weight

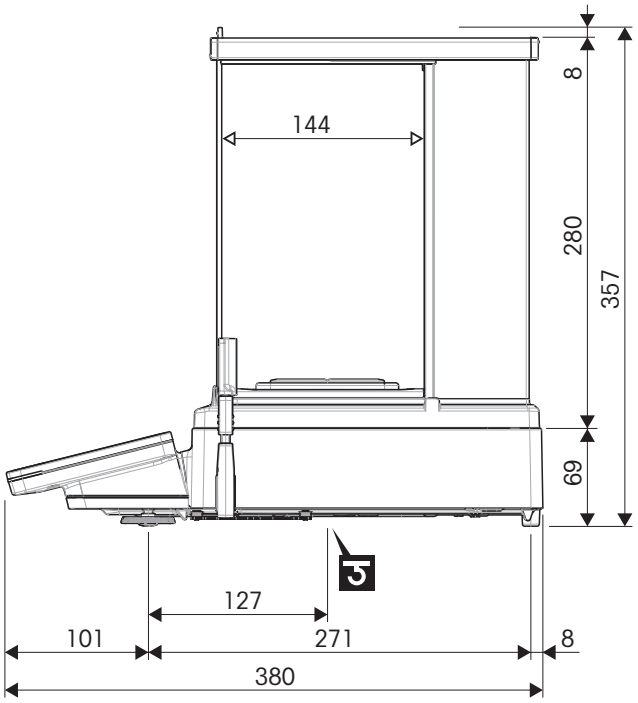
▼ determined at 5% load, k = 2

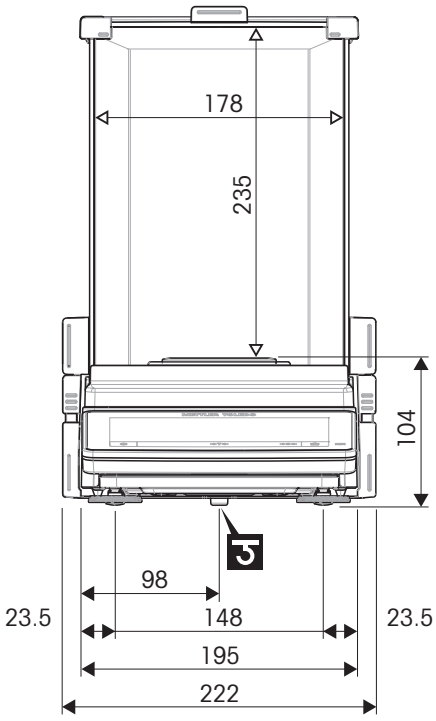
9.5 Dimensions

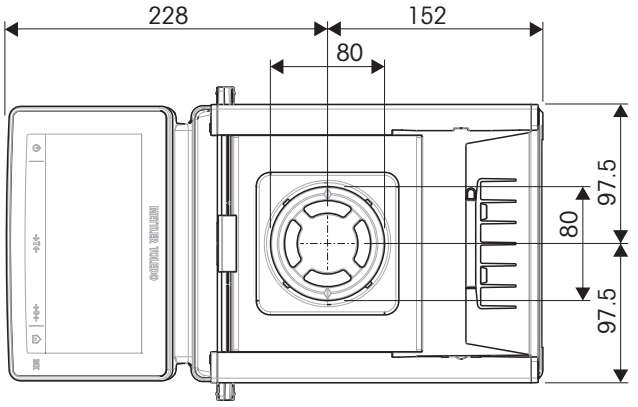
Dimensions in mm.

9.5.1 Analytical balances, readability 0.01 mg

Balance models: MX105, MX105DU, MX205DU



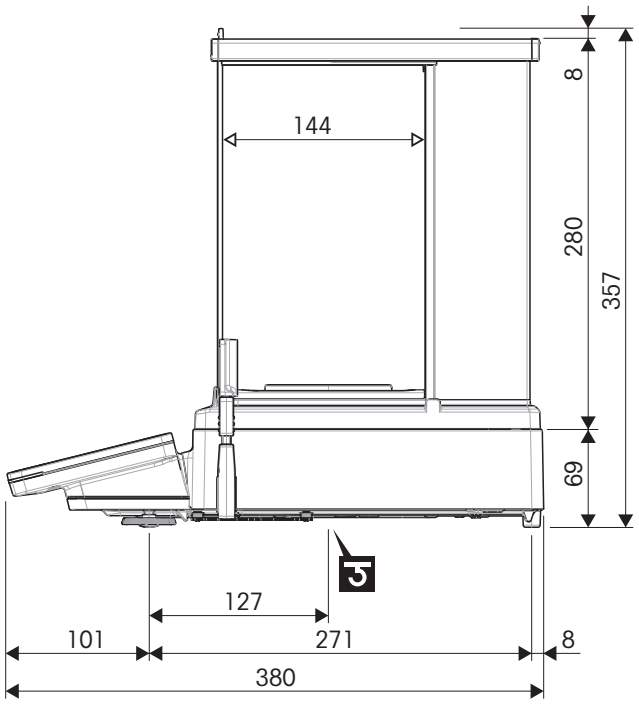


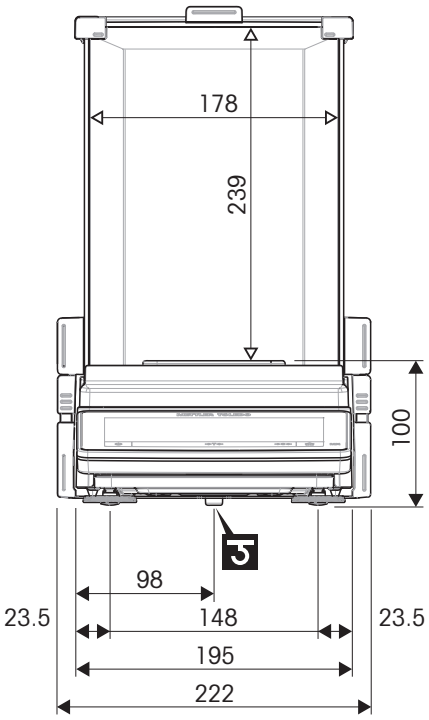


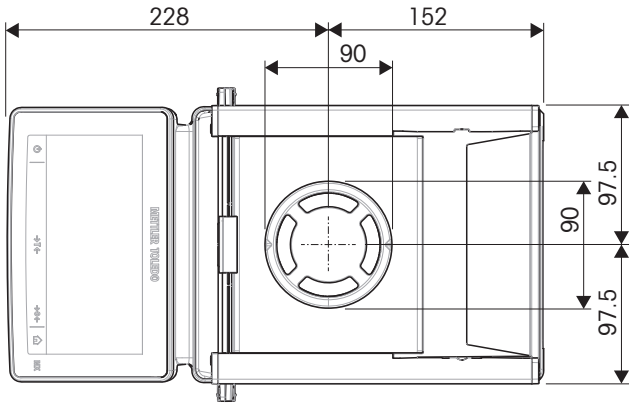
◄——►	Outer dimensions [mm]
◁——▷	Clear dimensions [mm]
⅁	Position of the weighing hook axle

9.5.2 MX analytical balances, readability 0.1 mg

Balance models: MX104, MX204, MX304



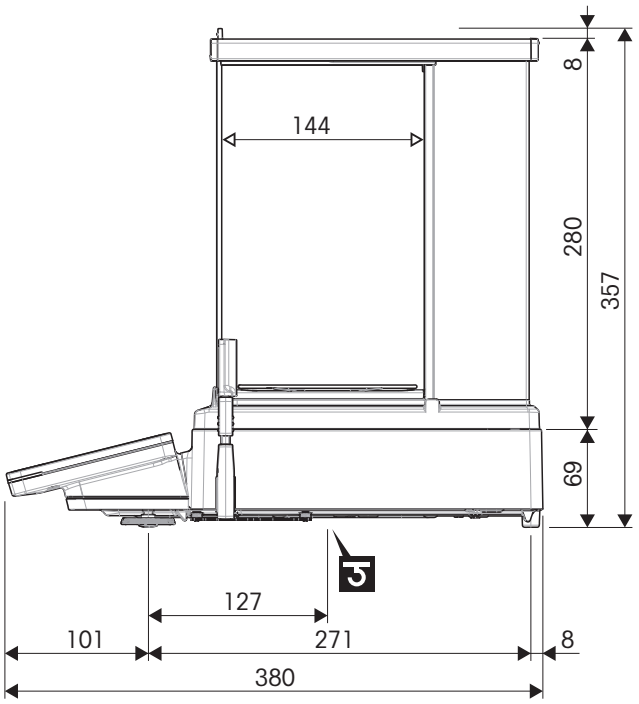


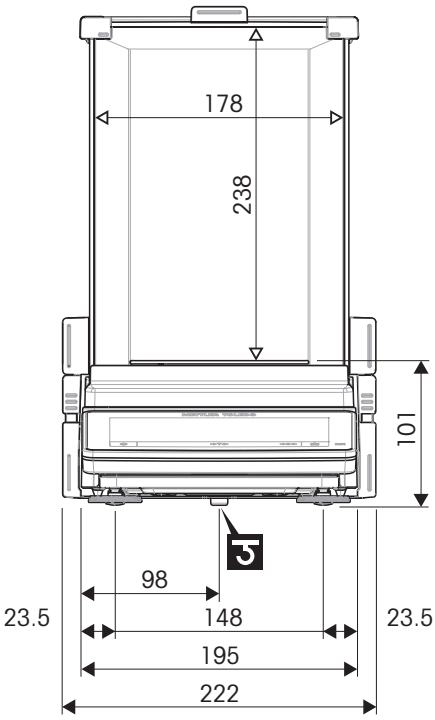


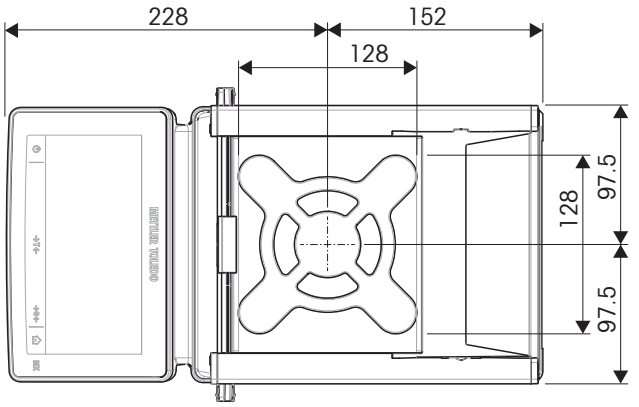
◄——►	Outer dimensions [mm]
◄——►	Clear dimensions [mm]
5	Position of the weighing hook axle

9.5.3 MX precision balances, readability 1 mg, with draft shield

Balance models: MX303, MX603, MX1203



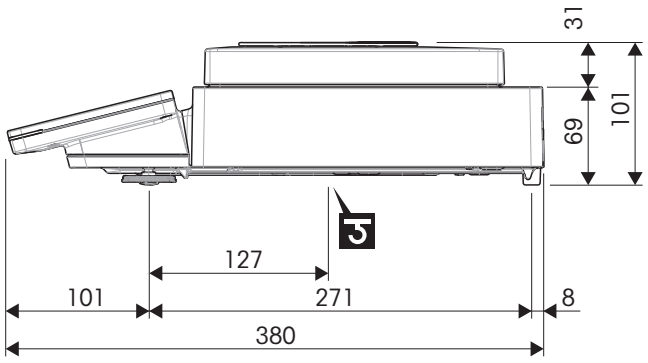


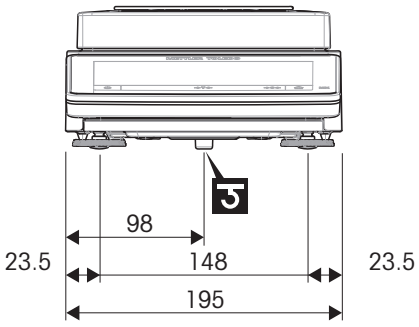


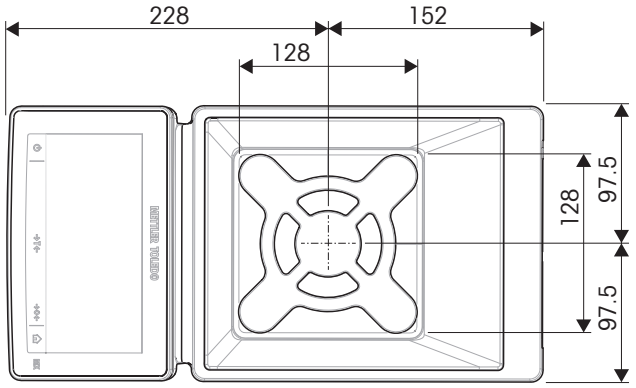
◄——►	Outer dimensions [mm]
◄——►	Clear dimensions [mm]
⅁	Position of the weighing hook axle

9.5.4 MX precision balances, readability 1 mg, without draft shield

Balance models: MX303N, MX603N, MX1203N



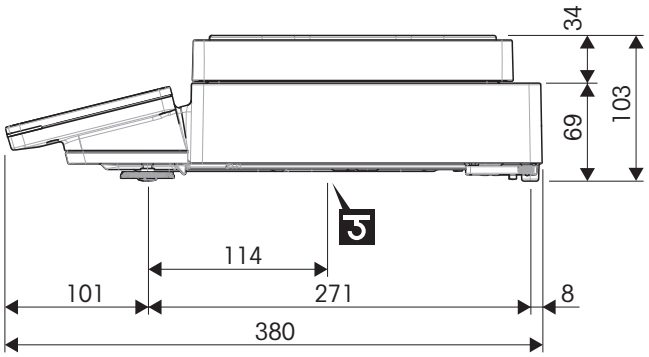


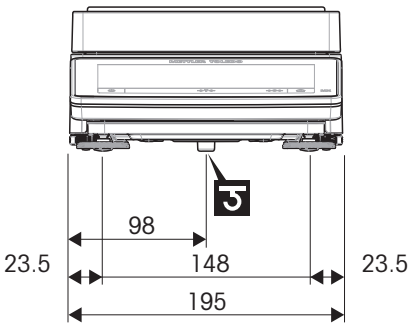


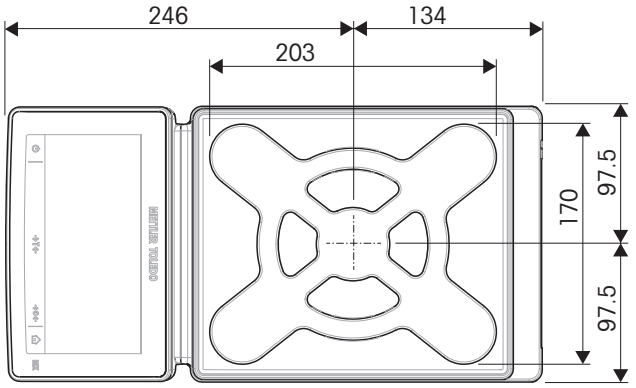
◄——►	Outer dimensions [mm]
◁——▷	Clear dimensions [mm]
5	Position of the weighing hook axle

9.5.5 MX precision balances, readability 0.01 g

Balance models: MX2002, MX4002, MX6002, MX6002DR, MX12002



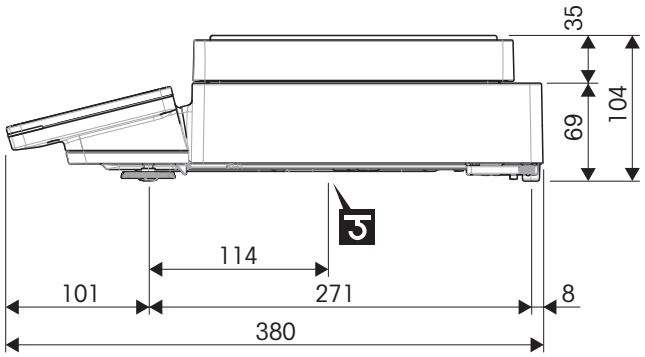


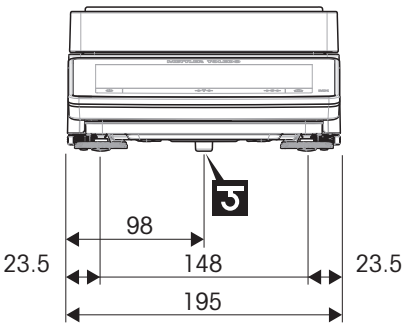


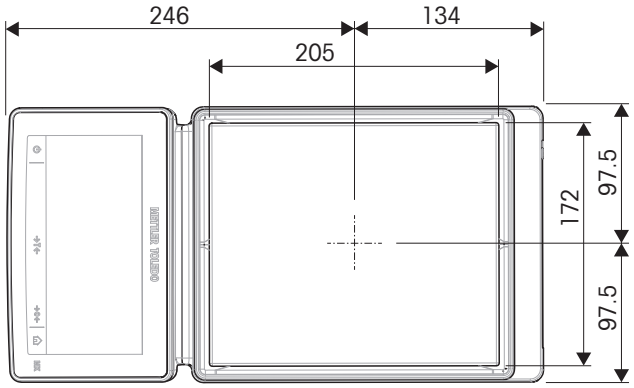
◄——►	Outer dimensions [mm]
◁——▷	Clear dimensions [mm]
⅁	Position of the weighing hook axle

9.5.6 MX precision balances, readability 0.1 g

Balance models: MX6001, MX8001



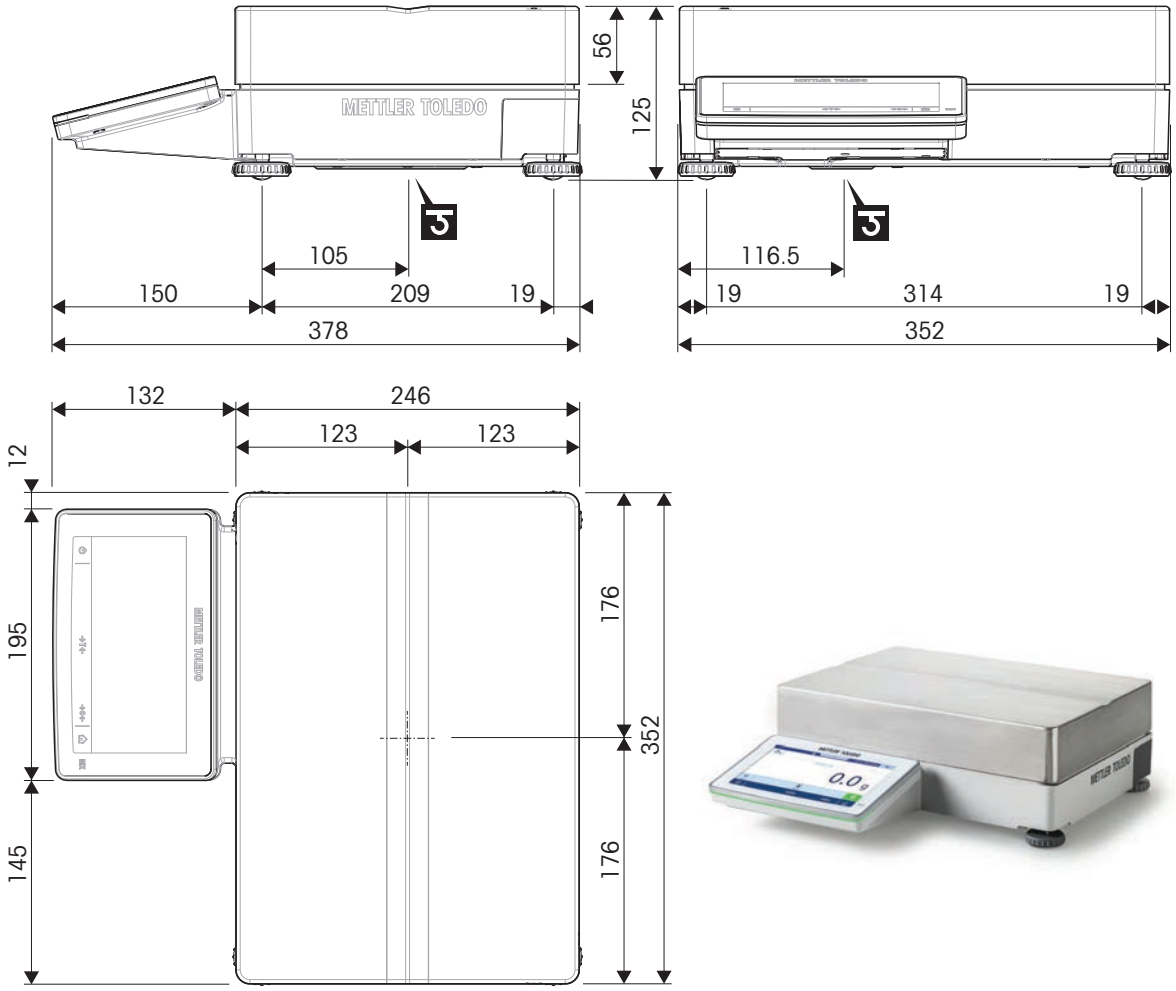




◄——►	Outer dimensions [mm]
◁——▷	Clear dimensions [mm]
⅁	Position of the weighing hook axle

9.5.7 MX large balances, readability 0.1 g / 1 g

Balance models: MX12001L, MX16001L, MX32001L, MX32000L



◄——►	Outer dimensions [mm]
◁——▷	Clear dimensions [mm]
5	Position of the weighing hook axle

10 Accessories and Spare Parts

10.1 Accessories

Accessories are additional components that could help you in your workflow.

Weighing pans

Weighing pan **30938253**

- Compatible with 0.01 mg models
- ø 80 mm

Weighing pan **30938254**

- Compatible with 0.1 mg models
- ø 90 mm

Weighing pan **30215433**

- Compatible with SmartPan (pro) weighing pan 127 x 127 mm
- 128 x 128 mm

Weighing pan **30215056**

- Compatible with SmartPan (pro) weighing pan 170 x 203 mm
- 172 × 205 mm

Antistatic kits

Antistatic kit universal **11107767**

- Removes electrostatic charges from weighing samples and tare containers
- Including: U-electrode large (with installation instructions), high-voltage power supply (with user manual and country-specific power cable)

High-voltage power supply **11107766**

- Supplies up to 2 U-electrodes
- Including: country-specific power cable, user manual
- Compatible with: U-electrode large, U-electrode small

U-electrode large **11107764**

- Removes electrostatic charges from weighing samples and tare containers
- High-voltage cable with capacitively coupled connector

U-electrode small **11140161**

- Removes electrostatic charges from weighing samples and tare containers
- High-voltage cable with capacitively coupled connector

Ionizer ASK350 **30893023**

- Removes small electrostatic charges from weighing samples and tare containers

Density determination

Density kit **30706714**

- Gravimetric density determination of solids

Thermometer, calibrated **11132685**

- Including: holder, calibration certificate
- For usage in density determination

Printers

Printer USB-P25 **30702998**

- Printing technology: dot matrix

Printer P-52RUE **30237290**

- Printing technology: dot matrix

Printing paper roll, self-adhesive, dot matrix **11600388**

- Set of 3 rolls
- Compatible with: dot matrix printers

Printing paper roll, standard, dot matrix **72456**

- Set of 5 rolls
- Compatible with: dot matrix printers

Ribbon cartridge **65975**

- Including: 2 pcs
- Compatible with: dot matrix printers

Anti-theft devices

Anti-theft cable **11600361**

Hands-free accessories

Foot switch **30312558**

- Hands-free taring, zeroing, printing

Barcode readers

Barcode reader 1D Gryphon GD4220 **30417466**

- Scans barcodes and transmits the decoded information to a connected device
- Interface: USB-A

Cables

Cable USB-A (f) – USB-C (m) **30893021**

- Data transfer between instrument and USB-A peripheral
- Length: 0.16 m

USB-C (m) – USB-A (m) **30893022**

- Data transfer between instrument and PC
- Length: 1.5 m

Cable USB-A (m) – USB-B (m) **30241476**

- Data transfer between instrument and peripheral
- Length: 1 m

Cable RS232 (f) – USB-A (m) **30576241**

- Data transfer between balance and peripheral
- Length: 1.7 m

Cable RS232 (m) – USB-A (m) **64088427**

- Data transfer between balance and peripheral
- Length: 2 m

Wireless interfaces

Bluetooth adapter ADP-BT-S, single **30086494**

- Creates a bluetooth connection between instrument and peripheral

Bluetooth/Wi-Fi combi adapter LM842 **30893006**

- Creates a Bluetooth/Wi-Fi connection between instrument and peripheral

Bluetooth/Wi-Fi combi adapter LM842, US **30893005**

- Creates a Bluetooth/Wi-Fi connection between instrument and peripheral

Software

EasyDirect Balance

EasyDirect Balance, 10 licenses **30540473**

- Data management software for up to 10 balances
- Collection, analysis, storage and export of weighing data

EasyDirect Balance

EasyDirect Balance, 3 licenses **30539323**

- Data management software for up to 3 balances
- Collection, analysis, storage and export of weighing data

Adjustment weights

Weights

- For routine testing and calibration of weighing instruments
- Available in different accuracy classes
- With calibration certificate (OIML/ASTM)

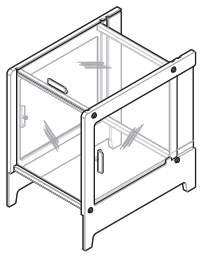
▶ www.mt.com/weights

Dust covers

Dust cover **30893018**

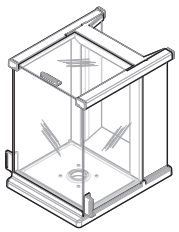
Dust cover **30893019**

Draft shields



External draft shield **30706715**

- Protects against air currents and dust to maintain measurement accuracy
- Doors: glass; frame: acrylic, aluminium



Draft shield **30938251**

- Protects against air currents and dust to maintain measurement accuracy
- Compatible with 1 mg MX balances

Various

EasyHub USB **30468768**

- Connects up to 4 peripherals
- Interface to host: USB-B

SmartPrep weighing funnel **30061260**

- For weighing powdery substances
- Including: 50 pcs

Protective cover **30106207**

- Protects the weighing pan
- Compatible with weighing pan 172 x 205 mm
- 172 x 205 mm

Pipetting container 50 ml **30215436**

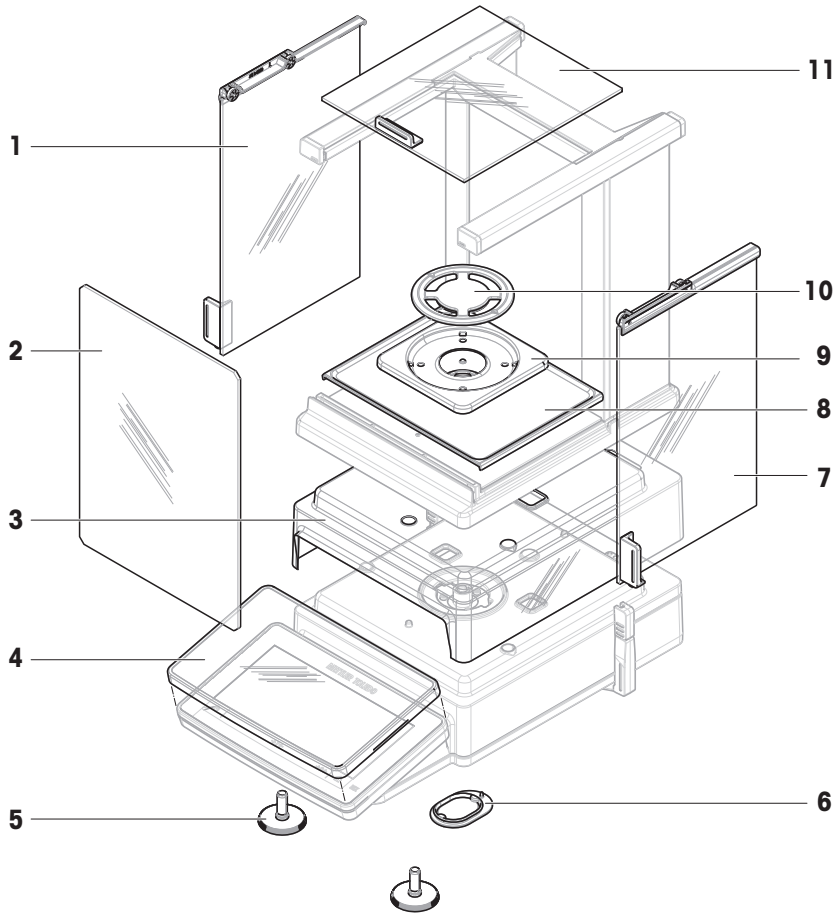
- Minimizes evaporation in pipette calibration

10.2 Spare parts

Spare parts are parts that are delivered with the original instrument but that can be replaced, if needed, without the help of a service technician.

10.2.1 MX analytical balances, readability 0.01 mg

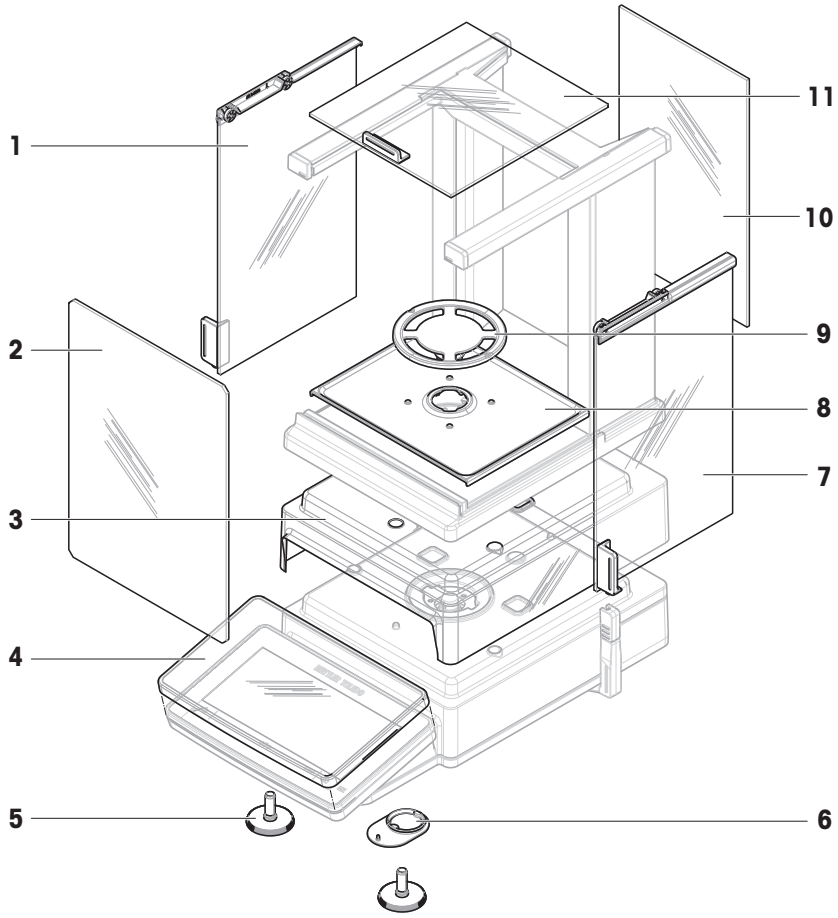
Balance models: MX105, MX105DU, MX205DU



	Order no.	Designation	Remarks
1	30706612	Door, left	Material: glass; including: door handle
2	30706614	Panel, front	Material: glass
3	30706654	Protective cover	For platform
4	30706652	Protective cover	For terminal
5	30104835	Leveling foot	Including: 2 pcs
6	30706724	Cover, weighing hook	Including: 1 round cover, 1 oval cover; material: silicone
7	30706613	Door, right	Material: glass; including: door handle
8	30706618	Drip tray	–
9	30706646	Draft-protection element	–
10	30706631	Weighing pan ø 80 mm	Including: pan support
11	30706611	Door, top	Material: glass; including: door handle

10.2.2 MX analytical balances, readability 0.1 mg

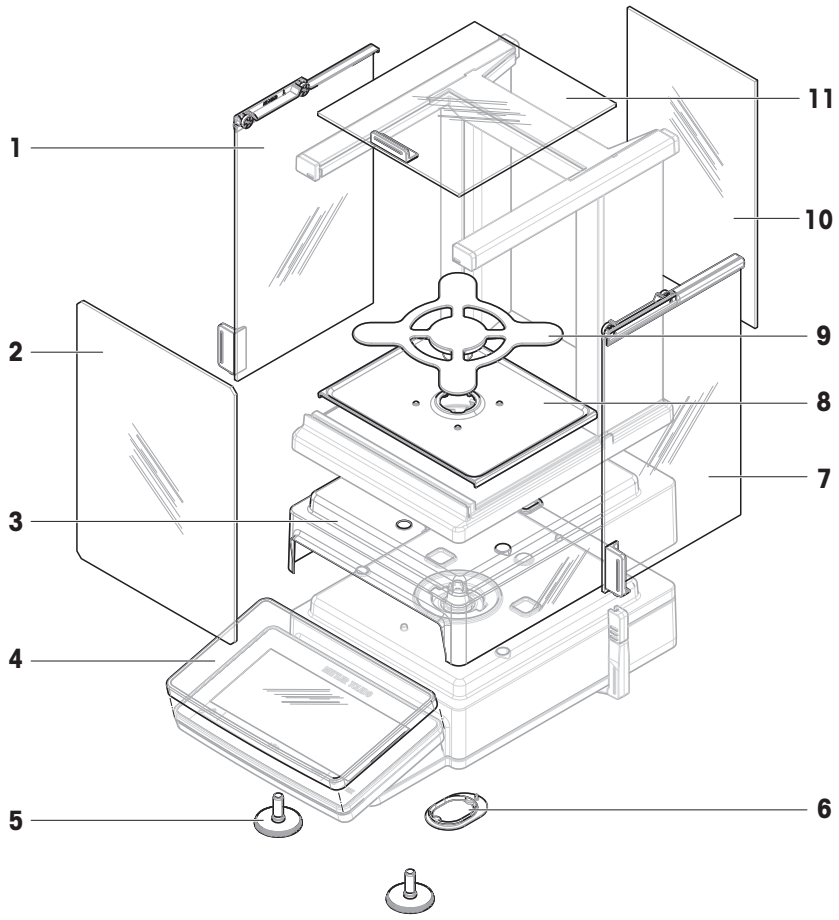
Balance models: MX104, MX204, MX304



	Order no.	Designation	Remarks
1	30706612	Door, left	Material: glass; including: door handle
2	30706614	Panel, front	Material: glass
3	30706655	Protective cover	For platform
4	30706652	Protective cover	For terminal
5	30104835	Leveling foot	Including: 2 pcs
6	30706724	Cover, weighing hook	Including: 1 round cover, 1 oval cover; material: silicone
7	30706613	Door, right	Material: glass; including: door handle
8	30706618	Drip tray	–
9	30706632	Weighing pan ø 90 mm	Including: pan support
10	30706615	Panel back	Material: blurred glass
11	30706611	Door, top	Material: glass; including: door handle

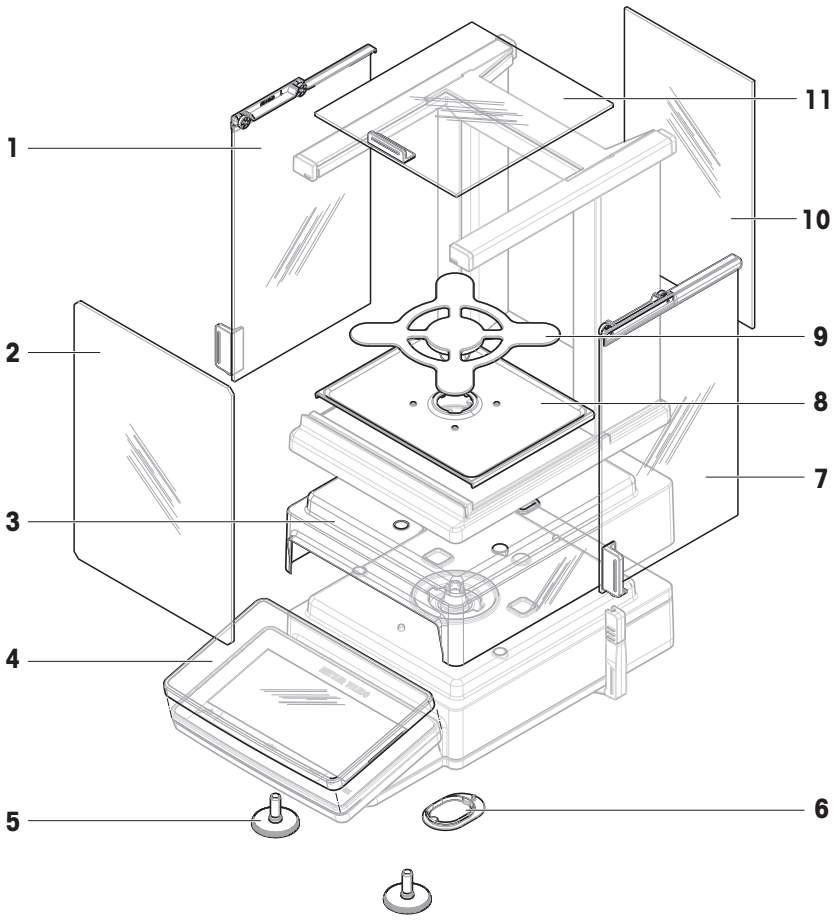
10.2.3 MX precision balances, readability 1 mg, with draft shield

Balance models: MX303, MX603



	Order no.	Designation	Remarks
1	30706612	Door, left	Material: glass; including: door handle
2	30706614	Panel, front	Material: glass
3	30706655	Protective cover	For platform
4	30706652	Protective cover	For terminal
5	30104835	Leveling foot	Including: 2 pcs
6	30706724	Cover, weighing hook	Including: 1 round cover, 1 oval cover; material: silicone
7	30706613	Door, right	Material: glass; including: door handle
8	30706618	Drip tray	–
9	30706633	SmartPan, weighing pan	128 × 128 mm
10	30706615	Panel back	Material: blurred glass
11	30706611	Door, top	Material: glass; including: door handle

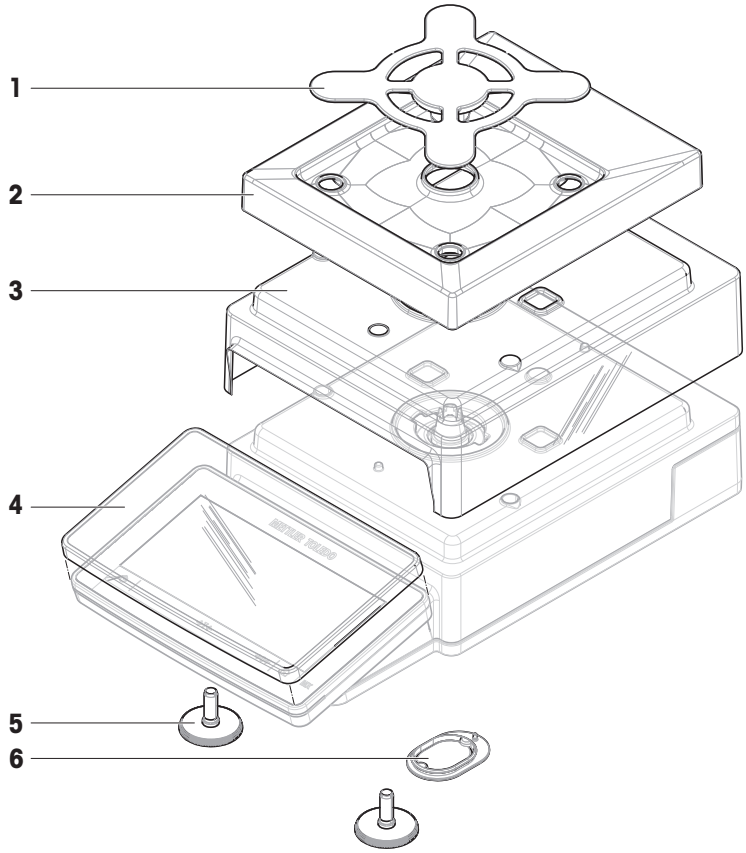
Balance model: MX1203



	Order no.	Designation	Remarks
1	30706612	Door, left	Material: glass; including: door handle
2	30706614	Panel, front	Material: glass
3	30706655	Protective cover	For platform
4	30706652	Protective cover	For terminal
5	30104835	Leveling foot	Including: 2 pcs
6	30706724	Cover, weighing hook	Including: 1 round cover, 1 oval cover; material: silicone
7	30706613	Door, right	Material: glass; including: door handle
8	30706618	Drip tray	–
9	30706634	SmartPan, weighing pan	128 × 128 mm
10	30706615	Panel back	Material: blurred glass
11	30706611	Door, top	Material: glass; including: door handle

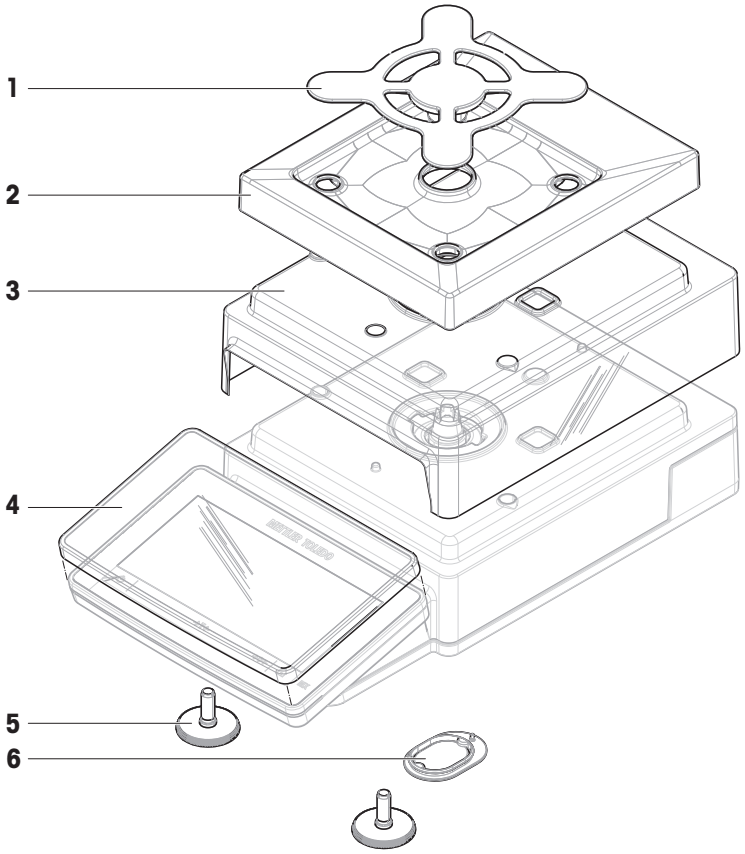
10.2.4 MX precision balances, readability 1 mg, without draft shield

Balance models: MX303N, MX603N



	Order no.	Designation	Remarks
1	30706633	SmartPan, weighing pan	128 × 128 mm
2	30706648	Drip tray	–
3	30706655	Protective cover	For platform
4	30706652	Protective cover	For terminal
5	30104835	Leveling foot	Including: 2 pcs
6	30706724	Cover, weighing hook	Including: 1 round cover, 1 oval cover; material: silicone

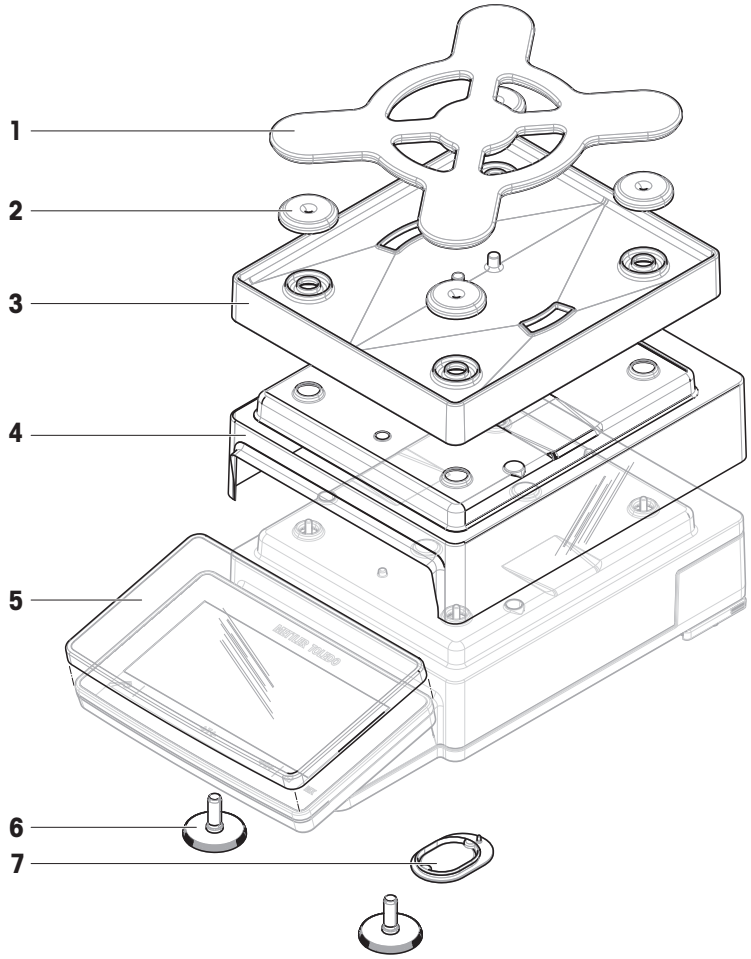
Balance model: MX1203N



	Order no.	Designation	Remarks
1	30706634	SmartPan, weighing pan	128 × 128 mm
2	30706648	Drip tray	–
3	30706655	Protective cover	For platform
4	30706652	Protective cover	For terminal
5	30104835	Leveling foot	Including: 2 pcs
6	30706724	Cover, weighing hook	Including: 1 round cover, 1 oval cover; material: silicone

10.2.5 MX precision balances, readability 0.01 g

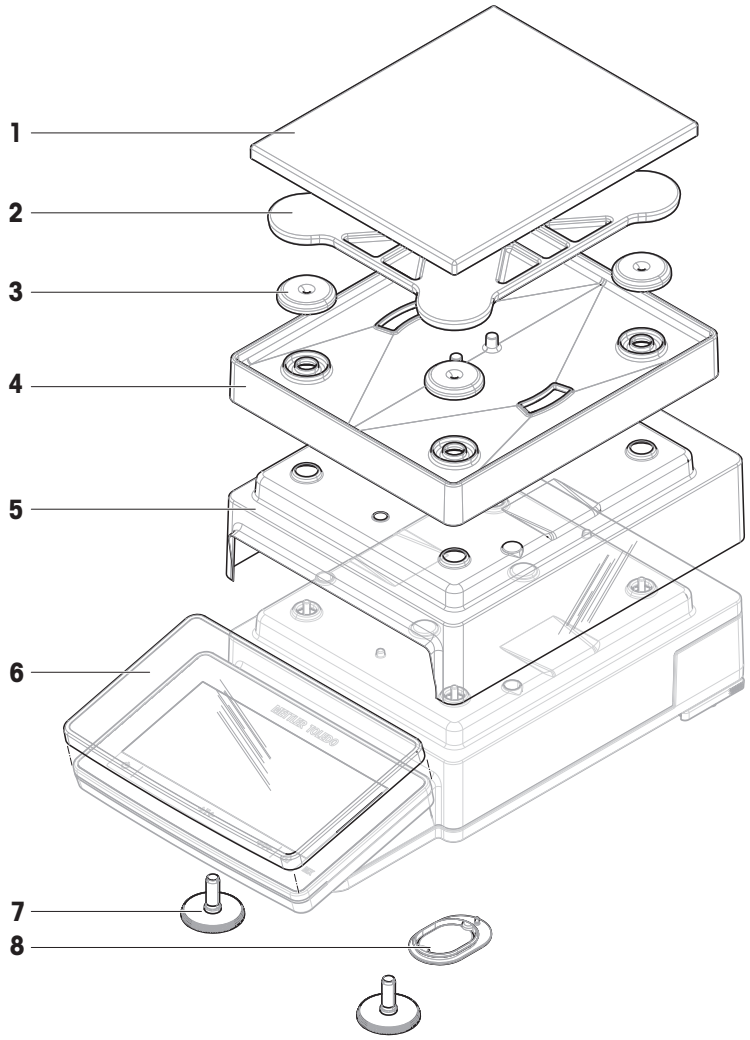
Balance models: MX2002, MX4002, MX6002, MX6002DR, MX12002



	Order no.	Designation	Remarks
1	30706635	SmartPan, weighing pan	170 × 203 mm
2	30706651	Cap, pan support	Including: 4 pcs
3	30706649	Drip tray	–
4	30706653	Protective cover	For platform
5	30706652	Protective cover	For terminal
6	30104835	Leveling foot	Including: 2 pcs
7	30706724	Cover, weighing hook	Including: 1 round cover, 1 oval cover; material: silicone

10.2.6 MX precision balances, readability 0.1 g

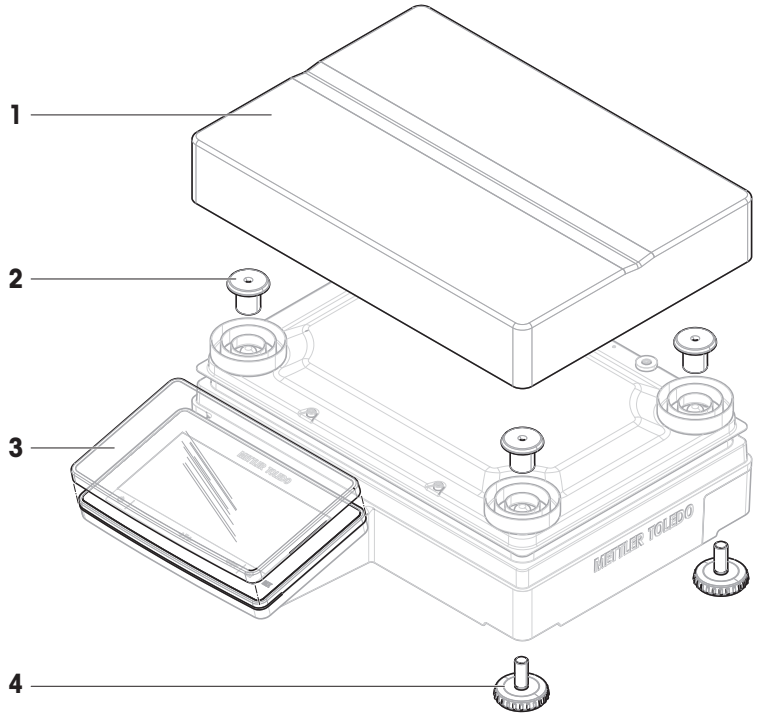
Balance models: MX6001, MX8001



	Order no.	Designation	Remarks
1	30215056	Weighing pan	172 × 205 mm
2	30706645	Pan support	–
3	30706651	Cap, pan support	Including: 4 pcs
4	30706649	Drip tray	–
5	30706653	Protective cover	For platform
6	30706652	Protective cover	For terminal
7	30104835	Leveling foot	Including: 2 pcs
8	30706724	Cover, weighing hook	Including: 1 round cover, 1 oval cover; material: silicone

10.2.7 MX large balances, readability 0.1 g / 1 g

Balance models: MX12001L, MX16001L, MX32001L, MX32000L

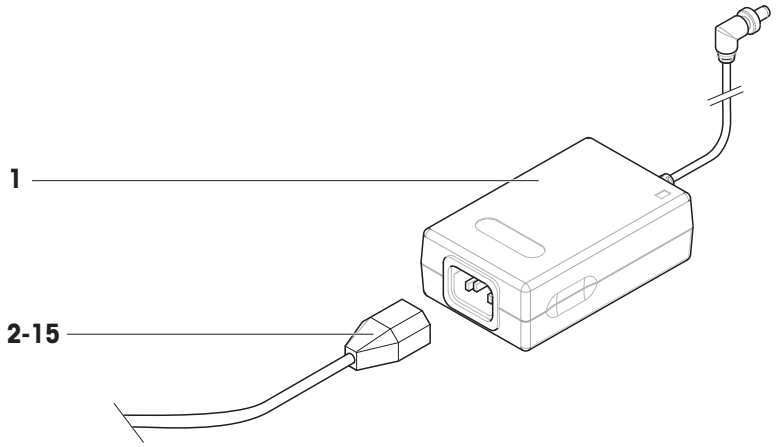


	Order no.	Designation	Remarks
1	30849994	Weighing pan	246 × 252 mm
2	30849993	Cap, pan support	Including: 4 pcs
3	30706652	Protective cover	For terminal
4	30850018	Leveling foot	Including: 4 pcs

10.2.8 AC/DC adapters

10.2.8.1 AC/DC adapter

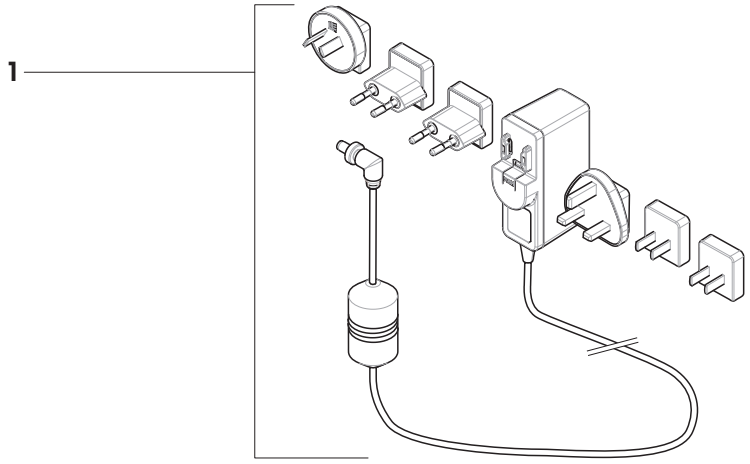
Compatible with all MX balance models.



	Order no.	Designation	Remarks
1	11107909	AC/DC adapter	Output: 12 V, 2.5 A
2	88751	Power cable AU	–
3	30015268	Power cable BR	–
4	87920	Power cable CH	–
5	30047293	Power cable CN	–
6	87452	Power cable DK	–
7	87925	Power cable EU	–
8	89405	Power cable GB	–
9	225297	Power cable IL	–
10	11600569	Power cable IN	–
11	87457	Power cable IT	–
12	11107881	Power cable JP	–
13	11107880	Power cable TH, PE	–
14	88668	Power cable US	–
15	89728	Power cable ZA	–

10.2.8.2 AC/DC adapter, universal

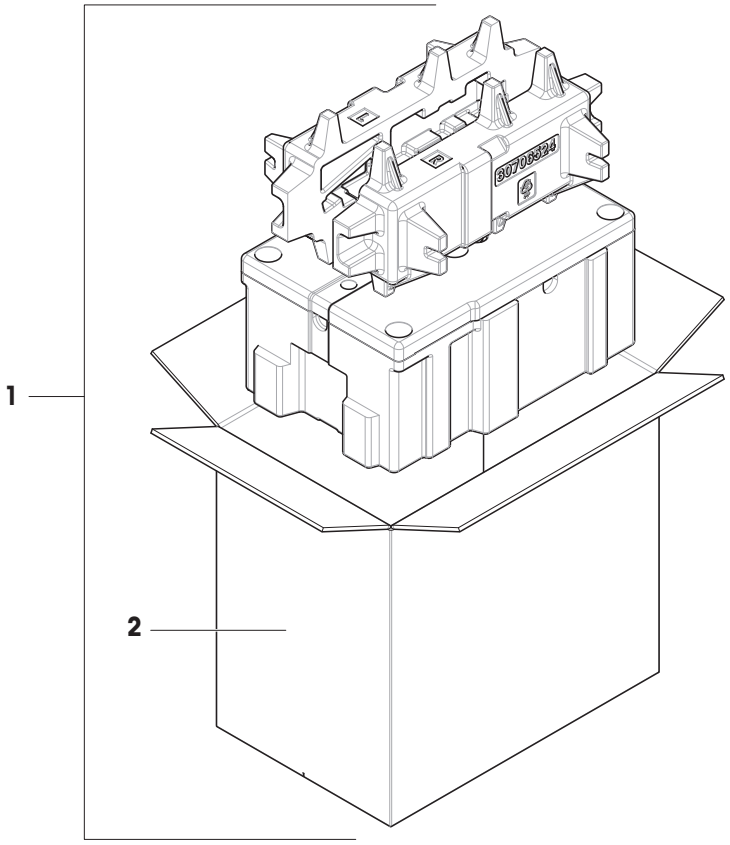
Compatible with most MX balance models. Not compatible with the following balance models: MX105, MX105DU, MX205DU, MX104, MX204, MX304



	Order no.	Designation	Remarks
1	30850039	AC/DC adapter universal	Output: 12 V, 1.5 A; including: 6 plugs (EU, UK, US, AU, CN, KR)

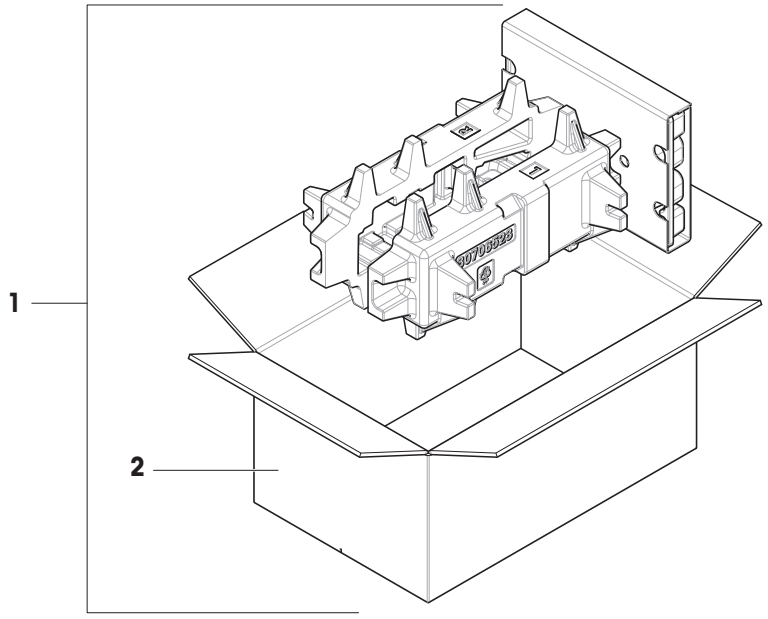
10.2.9 Packaging

10.2.9.1 Balances with draft shield



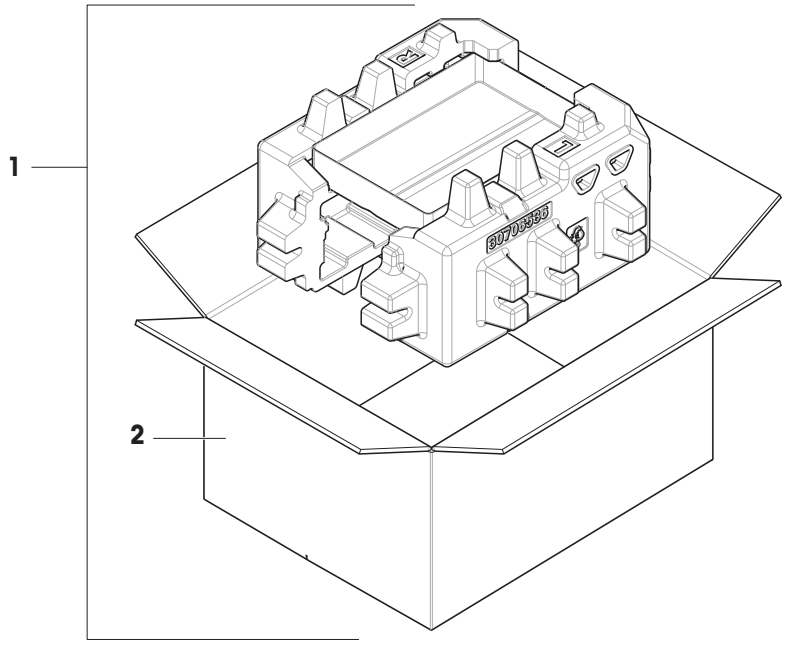
	Order no.	Designation	Remarks
1	30706728	Packaging	Including: export box, inner protection material
2	30706731	Export box	Excluding: inner protection material

10.2.9.2 Balances without draft shield



	Order no.	Designation	Remarks
1	30706729	Packaging	Including: export box, inner protection material
2	30706732	Export box	Excluding: inner protection material

10.2.9.3 Balances, large



	Order no.	Designation	Remarks
1	30706730	Packaging	Including: export box, inner protection material
2	30706733	Export box	Excluding: inner protection material

11 Disposal

In conformance with the European Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE), this equipment may not be disposed of in domestic waste. This also applies to countries outside the EU, per their specific requirements.

Please dispose of this equipment in accordance with local regulations at the collecting point specified for electrical and electronic equipment. If you have any questions, please contact the responsible authority or the distributor from which you purchased this equipment. Should this equipment be passed on to other parties, the content of this directive must also be passed on to the other party.

12 Compliance Information

National approval documents, e.g., the FCC Supplier Declaration of Conformity, are available online and/or included in the packaging.

▶ www.mt.com/ComplianceSearch

Contact METTLER TOLEDO for questions about the country-specific compliance of your instrument.

▶ www.mt.com/contact

United States of America

This equipment has been tested and found to comply with the limits for a **Class A** digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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