Reference Manual

Pipette Calibration Balances

XPR26PC
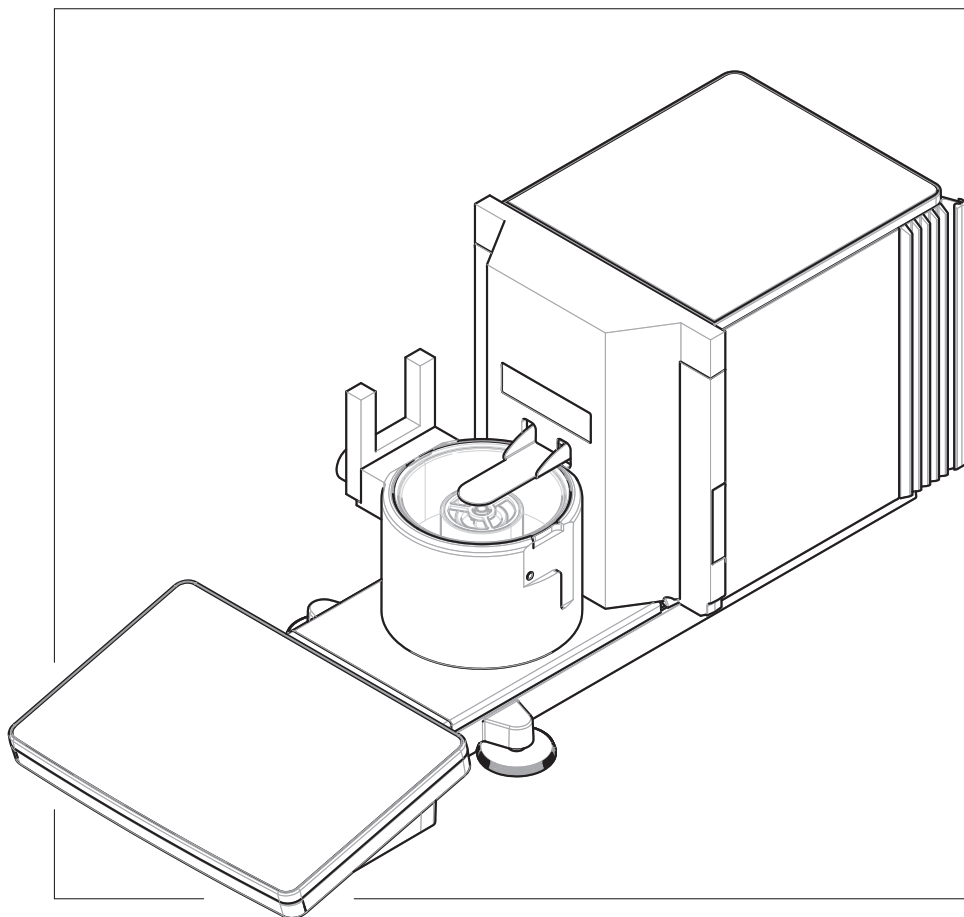
METTLER TOLEDO

Table of Contents

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 2.0.401.

EULA

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

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

1.1 Further documents and information

▶ www.mt.com/pipcal

This document is available in other languages online.

▶ www.mt.com/XPR26PC-RM

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

▶ www.mt.com/lab-cleaning-guide

Search for software downloads   ▶ 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

1.2 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., ✎, **Edit**.

📄 **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

1.3 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
HID	Human Interaction Device
ID	Identification
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)
RAM	Random Access Memory
RFID	Radio-frequency identification
RM	Reference Manual
sd	Standard deviation
SELV	Safety Extra Low Voltage
SOP	Standard Operating Procedure
SQC	Statistical Quality Control
UM	User Manual
USB	Universal Serial Bus
USP	United States Pharmacopeia

1.4 Product range

1.4.1 XPR26PC balance

Balance	Models designation
	Readability: **0.001 mg** • XPR26PC

1.5 Compliance information

National approval documents, e.g., the FCC Supplier Declaration of Conformity, are available online and/or included in the packaging.

▶ http://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.

2 Safety Information

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

- The User Manual is printed and delivered with the instrument.
- The electronic Reference 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 Definitions 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 information

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.

Safety notes

⚠ **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 Function description

The XPR line comprises a range of balances that differ from each other due to their weighing range and resolution. The balances of the XPR line combine a large number of weighing and adjustment possibilities with a simple operation handling.

For the XPR26PC model, the following features are available:

- fully automatic adjustment using internal weights
- built-in level sensor and leveling aid for fast and easy leveling
- 7-inch capacitive color TFT-touch screen
- various methods that can be defined individually
- various routine tests that can be defined individually
- functions to manage user groups and user rights
- history about performed tests and adjustments, as well as changes applied to the balance settings
- motor-driven evaporation trap door
- easily removable evaporation trap
- light barrier for touchless operation of the evaporation trap door

The XPR26PC model is designed to work in conjuction with Calibry, a pipette calibration software optimized for METTLER TOLEDO instruments, see [Accessories ▶ Page 115]. Calibry almost completely automates the handling of the XPR26PC balance and allows for easy, fast, and cost-efficient monitoring of single- and multi-channel pipettes according to ISO8655, manufacturer tolerances, or customer SOPs. The software guides you step by step through the calibration process and generates reports.

3.2 Overview balance
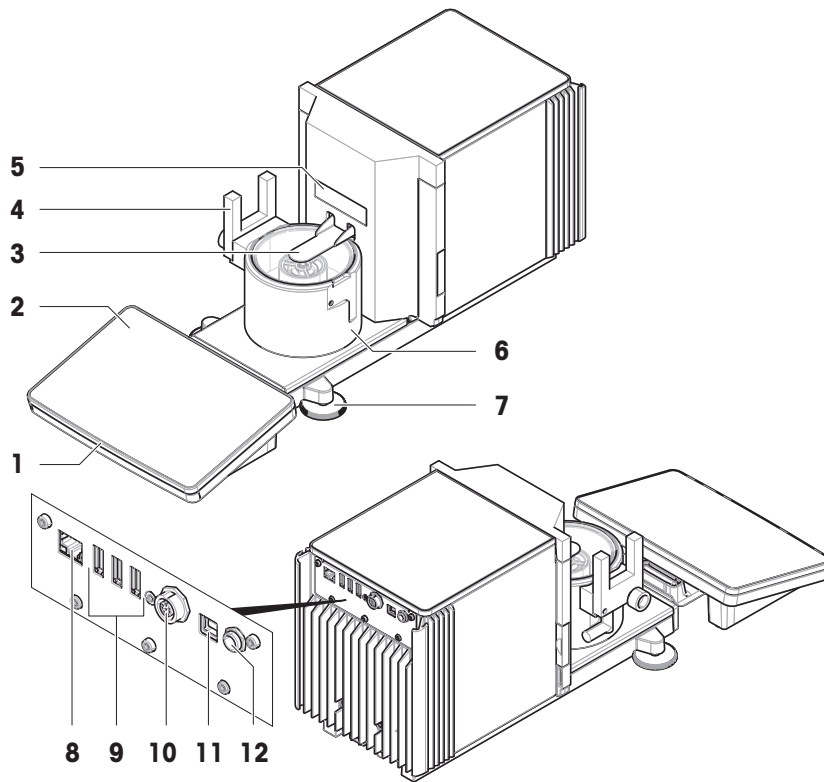
1	StatusLight	**7**	Leveling feet
2	Terminal	**8**	Ethernet port
3	Evaporation trap door	**9**	USB-A ports (to device)
4	Light barrier	**10**	Socket for terminal connection cable
5	Balance type plate	**11**	USB-B port (to host)
6	Pipetting base	**12**	Socket for AC/DC adapter

3.3 Components description

3.3.1 Pipetting container

The pipetting container is the load receptor into which the water is pipetted.
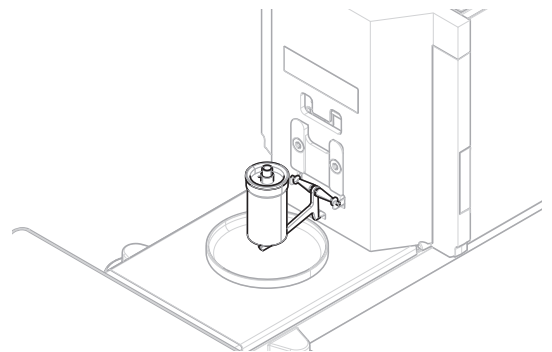
3.3.2 Drip tray

The drip tray is positioned below the pipetting container, on the base plate of the weighing unit. The primary purpose of the drip tray is to ensure quick cleaning of the balance.
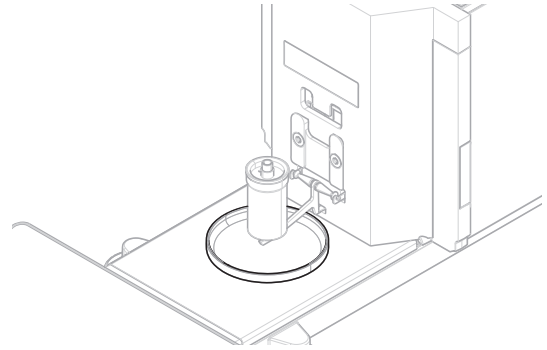
3.3.3 Evaporation trap

The evaporation trap includes a container that should be filled with water. When the evaporation trap is closed, the humidity inside increases until the air is saturated. This prevents evaporation of the liquid in the pipetting container and ensures accurate weighing results.
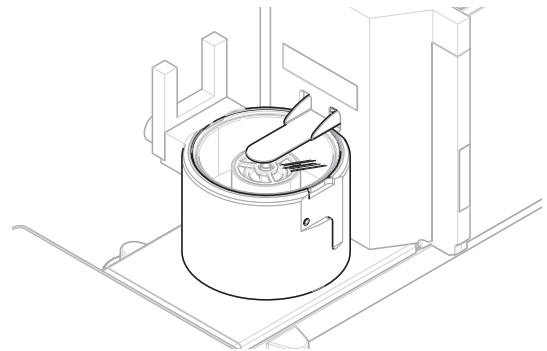
3.3.4 Light barrier

The light barrier is attached to the left side or the right side of the pipetting base. When the light barrier is activated, the evaporation trap door opens or closes.
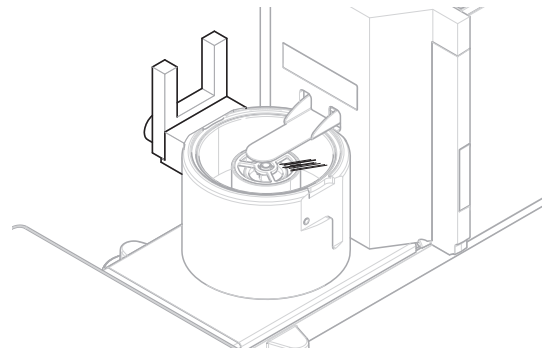
3.3.5 Leveling feet

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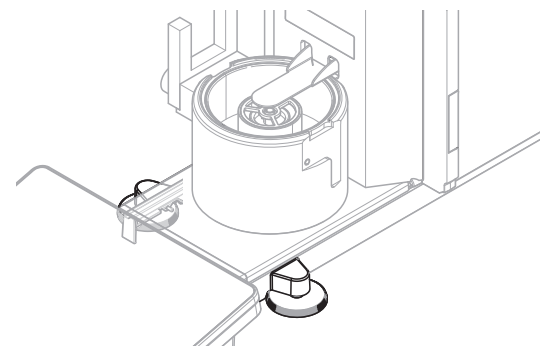
3.3.6 Terminal

The 7-inch balance terminal has a touch-sensitive display.
Further, on the front side of the terminal is a StatusLight
LED strip that indicates the current status of the balance.
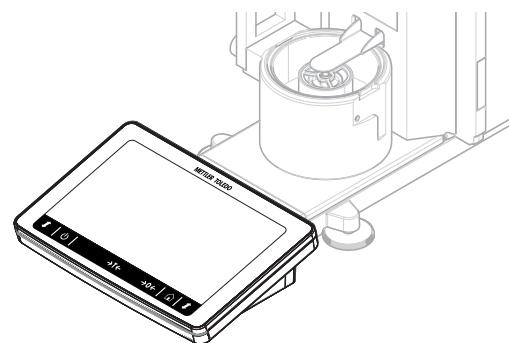
3.4 Overview terminal

	Name	Description
⏻	**Standby**	By tapping ⏻, the balance is not completely switched off but goes into standby 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 between subsequent measurements. 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.
↕	Open/close door	Opens or closes the evaporation trap door.

3.5 Overview type plate

The information on the type plate helps to identify the balance and terminal.

Terminal type plate

The terminal type plate is located on the terminal and contains the following information:
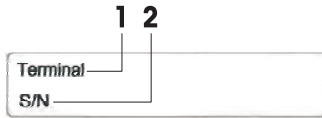
1. Terminal type
2. Terminal serial number

Weighing unit type plate

The balance type plate is located on the side of the weighing unit and contains the following information:
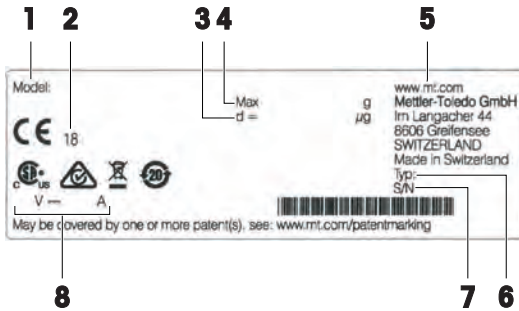
1. Designation of balance model
2. Year of manufacture
3. Readability
4. Maximum capacity
5. Manufacturer
6. Balance type
7. Serial number
8. Power supply

3.6 User interface

3.6.1 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 **Balance menu** (**2**), **Methods** (**3**) and **Results** (**4**) open when tapping the tabs along the sides of the main weighing screen.
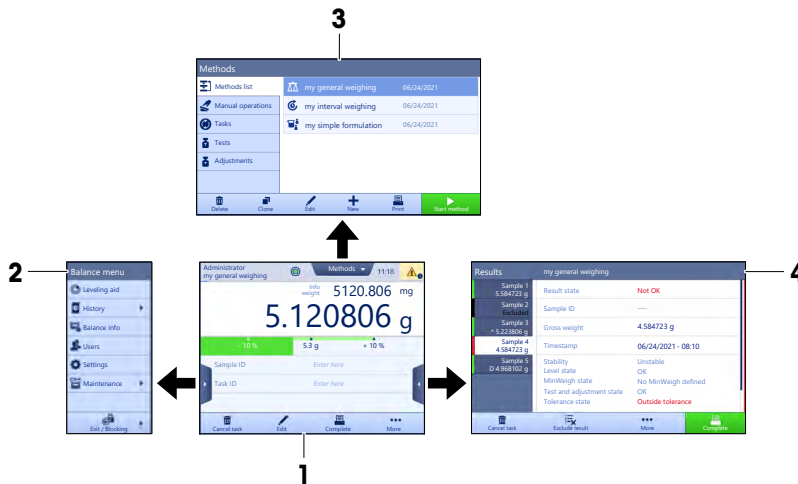
See also

- Main weighing screen ▸ Page 17
- Panel "Balance menu" ▸ Page 18
- Panel "Methods" ▸ Page 18
- Panel "Results" ▸ Page 19

3.6.2 Main weighing screen

	Name	Description
1	**User name**	Shows the name of the current user.
2	Weighing value field	Shows the current weighing value.
3	Level indicator	Indicates if the balance is leveled (green) or not (red).
4	**Methods** menu	Accesses the user-defined list of methods, tests, and alignments.
5	**Info weight**	Shows the current weighing value in another unit.
6	Warning and error message area	Shows current warning and/or error messages.
7	**Results list**	Shows the weighing results saved for this task.
8	Sample status **OK**	Result status indicator green: indicates that the result fulfills a set of criteria. For example: • The balance is in level. • The internal adjustment was performed and ok. • The weighing result is within the defined tolerance range (only if tolerance is defined).
9	Sample status **Excluded**	Result status indicator black: indicates that the result was excluded from the **Results list**.
10	Sample status **Not OK**	Result status indicator red: indicates that the result criteria are not fulfilled, e.g., "The weighing result was out of the defined tolerances".
11	Button **Add result**	Adds the result to the **Results list**. Depending on the selected method, the button can have different functions.
12	Action bar	Contains actions referring to the current task.
13	**Balance menu**	Accesses the balance properties.
14	Method information area	Contains information about the sample, method or task IDs.
15	SmartTrac	Used as a weighing aid to define a target weight with upper and lower tolerances.
16	Weighing value area	Shows the results of the current weighing process.
17	**Method name**	Shows the name of the current method.

3.6.3 Panel "Balance menu"
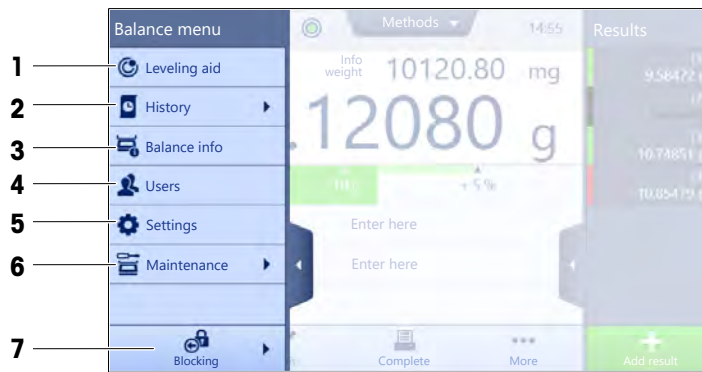
	Name	Description
1	**Leveling aid**	Opens the leveling dialog.
2	**History**	Opens the history dialog.
3	**Balance info**	Shows the balance information.
4	**Users**	Opens the user management.
5	**Settings**	Opens the complete settings dialog.
6	**Maintenance**	Opens the balance maintenance dialog.
7	**Exit / Block balance**	Opens the logout / block balance dialog.

3.6.4 Panel "Methods"

	Name	Description
1	**Methods list**	Lists the methods already defined by the user.
		Methods can be created, edited, cloned, started, or deleted.
2	**Manual operations**	For automated weighing, this menu shows operations that can be performed manually. Depending on the available hardware, this can include:
		• **Manage dosing head data**
3	**Tasks**	A method/task can be started and then a task is associated with this method. There can be up to one task for each method.
4	**Tests**	Lists the tests already defined by the user.
		• Sensitivity tests
		• Repeatability tests
		• Eccentricity tests
		Routine tests can be created, edited, started, or deleted.
		A list of the tests previously performed is available in the **History**.

	Name	Description
5	**Adjustments**	Shows the currently selected internal or external adjustment. The adjustment can be edited or started.
		A list of the adjustments previously performed is available in the **History**.

See also

3.6.5 Panel "Results"

	Name	Description
1	**Result state**	Shows the state of the weighing process.
2	**Sample ID**	Shows the **Sample ID** of the weighing.
3	**Gross weight**	Shows the gross weight.
		D: indicates that the value was unstable. This might occur when the **Weighing mode** is set to **Immediate**.
		*: indicates that the value was calculated. This might occur, for example, when the **Tare Mode** is set to **Preset tare**.
4	Timestamp	Shows the individual timestamp of each weighing item.
5	Balance status	Shows stability, level state of the balance, minimum weight, tolerance state and test and adjustment state.
6	**Complete**	Opens the dialog **Complete task**.
		• **Print task label manually**
		• **Print results manually**
		• **Export results manually**
7	**More**	Opens the dialog **More**.
		• **Start adjustment**
		• **Change display unit**
		• **Configure tare**
		• **Configure zero**
		• **Save as method (itemized)** (only available for methods with the option **Weighing items**)
8	**Exclude result**	Excludes the current result from the **Results list**. A comment can be added to the excluded result, e.g., to describe the reason of the exclusion.
		Depending on the format of the results printout, the excluded result can be printed or not.

	Name	Description
9	**Cancel task**	Cancels the current running task.

3.6.6 Icons and symbols

3.6.6.1 System status icons

System messages can appear due to a user action, a user input or a system process. Some messages leave it up to the user to choose upon acting, they will disappear after acknowledging. Other messages remain persistent, so the user can defer them but eventually has to handle them. These messages can be seen in the main status bar on the upper right-hand side of the display.

Icon	Name	Description
	Leveled	More details about the leveling status are displayed when tapping the level status.
	Out of level	The balance must be leveled. Information about leveling the balance can be found in the section Leveling the balance.
	Information	Information messages appear due to user actions or system processes and offer opportunities that are related to the current action or process.
	Warning	Warning messages appear due to user actions or system processes that could lead to a problem that can be prevented.
	Error	Error messages appear due to user actions or system processes that have failed. It is mostly still possible to handle such a problem.

3.6.6.2 Weighing status icons

Weighing status icons appear due to the weight value matching certain quality criteria. The information on the status can be looked by tapping on any of the visible weighing status icons.

Icon	Name	Description
	Stability indicator	When the stability indicator appears, the balance is not stable. Make sure that the balance is placed at an adequate location. Information about the adequate location can be found in the section Selecting the location.
Net	Net indicator	Appears when the tare key has been pressed and the tare weight has been subtracted.
*	Calculated value	The current weight value is calculated. This symbol only appears in the weighing value area when a container has been used with the function **Preset tare**.
	Minimum weight violation	The current weight value is smaller than the defined minimum weight. Make sure that the weight is larger than the minimum weight.
GWP	Balance invalid	The current balance configuration is invalid or quality criteria have not been fulfilled according to the GWP approved definition.
GWP	Weight not ready	The current weight measurement is not ready according to the GWP approved definition. This can be caused by an overload, an underload, or a minimum weight violation.

Icon		Name	Description
GWP ✓		Weight ready	The current weight measurement is ready according to the GWP approved definition. It can be added to the **Results list**.
⚡		External ionizer discharging	The external ionizer is currently discharging.

3.6.6.3 Process status icons

The status of the processes running on the balance is indicated by a small icon on the bottom right corner of the icon of the associated process. This applies to **Tasks**, **Tests**, and **Adjustments**.

Icon	Name	Description
▶	Running	The process is currently running.
⏸	Paused	The process is paused.
🕐	Scheduled	The process is scheduled.
ⓘ	Information	Information is available about the process, e.g., a reminder.
⚠	Overdue	The process is overdue.

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
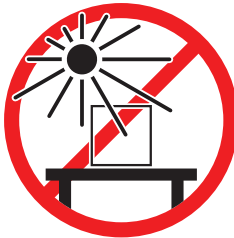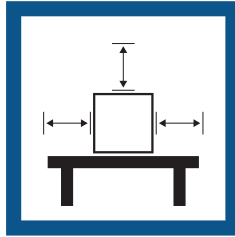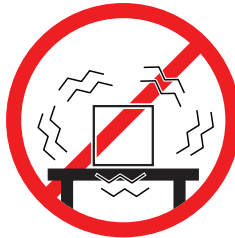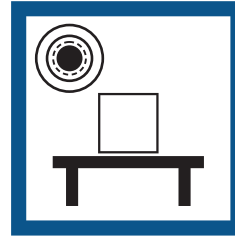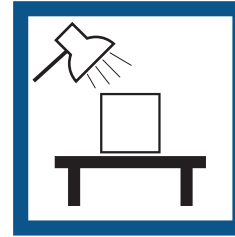
Avoid direct sunlight	Avoid vibrations	Avoid strong drafts	Avoid temperature fluctuations

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

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

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.

1   Open the box and lift the package out using the lifting strap (**1**).
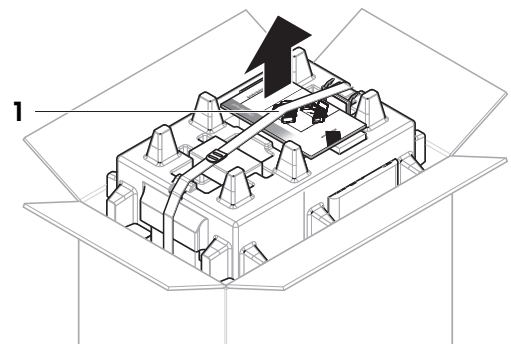
2   Open the lifting strap (**1**) and remove the User Manual
    (**2**).
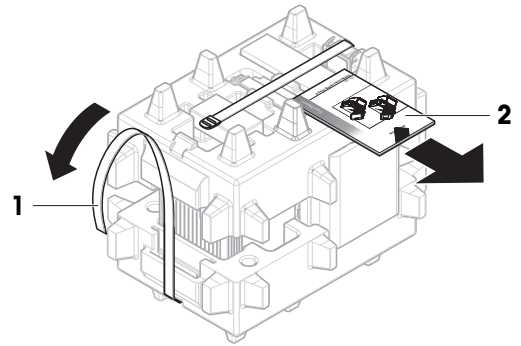
3   Remove the upper part of the package and remove the
    AC/DC adapters (**3**) and power cables, the pump (**4**),
    and the pipetting base with the evaporation trap
    container (**5**).
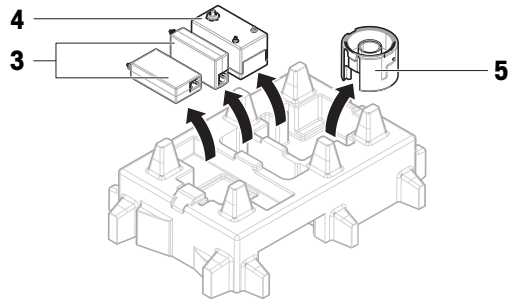
4   Carefully remove the terminal (**6**).
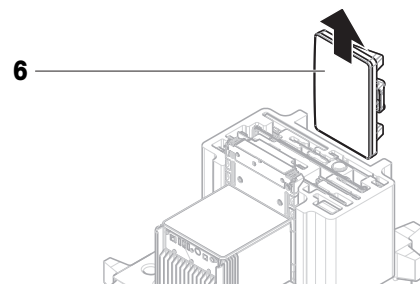
5   Carefully remove the package set with the calibration
    kit and other small items (**7**).
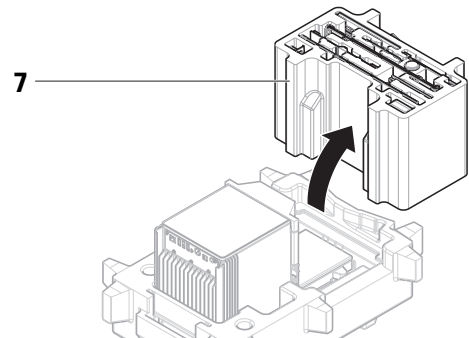
6   Carefully remove the weighing unit (**8**) from the bottom
    packaging.
7   Remove the protective bag.
8   Store all parts of the packaging in a safe place for
    future use.
➡   The weighing unit is ready for assembling.

See also

📄   Transporting, packing and storing ▶ Page 32
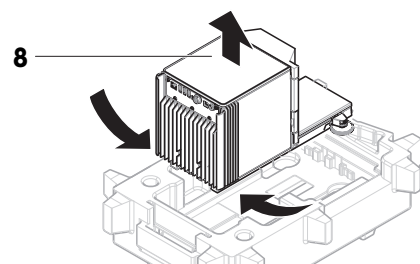
4.3 Scope of delivery

4.3.1 Balance
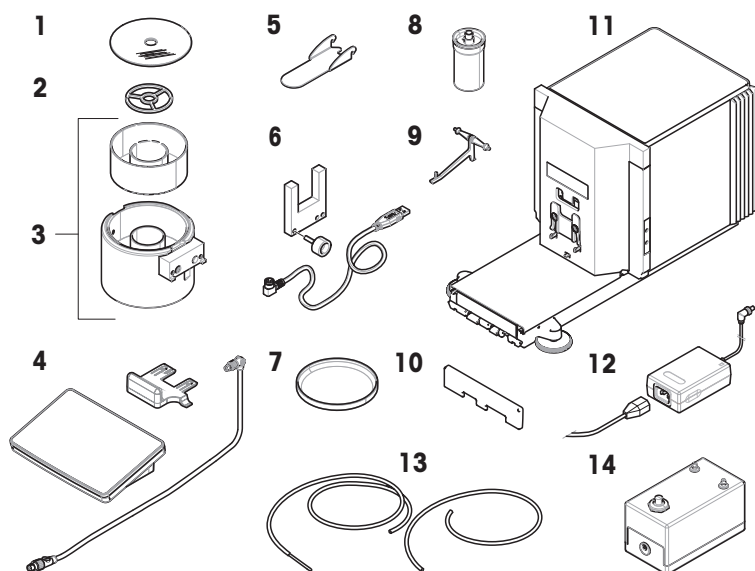
1	Evaporation trap cover	**8**	Pipetting container and tube
2	Centering ring	**9**	Support for pipetting container
3	Pipetting base with light barrier spacer and evaporation trap container	**10**	Front cover
4	Terminal with terminal holder and connection cable	**11**	Weighing unit
5	Evaporation trap door	**12**	AC/DC adapter with country-specific power cable, 2 pcs
6	Light barrier, fixing screw and cable	**13**	Pump tubing, 2 pcs (one tubing with metallic tube)
7	Drip tray	**14**	Pump

4.3.2 Documentation

- User Manual
- Production certificate
- Declaration of Conformity

4.3.3 Calibration kit
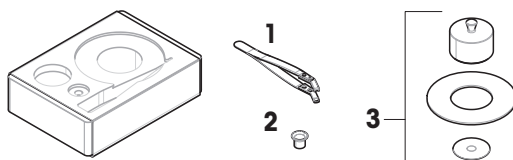
1	Tweezers	**3**	Weighing pan, large, with cover ring and draft shield
2	Weighing pan, small		

4.4 Installation

4.4.1 Attaching the terminal

> **NOTICE**
>
> **Damage to the cables due to careless handling**
>
> – Do not kink or twist the cables.

1 Insert the slides of the display holder (**1**) into the front of the weighing unit (**2**).
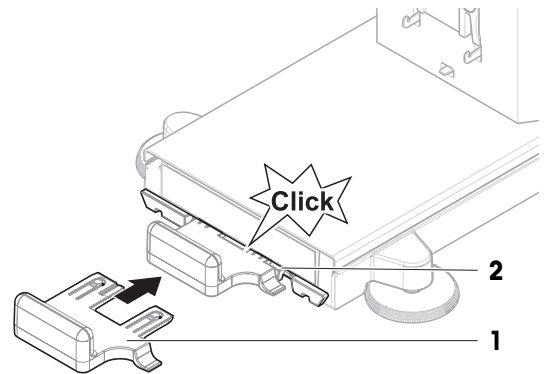
2 Connect the terminal cable (**3**) with the terminal (**4**). Consider the pin assignment.
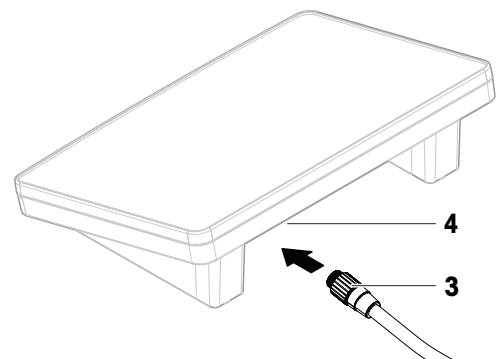
3 Place the terminal (**5**) onto the terminal holder (**6**).
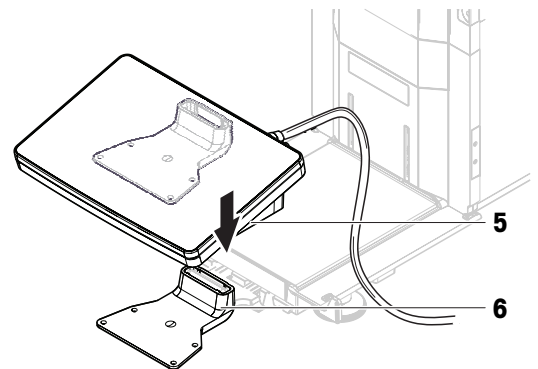
4   Carefully tilt the balance to its side.

5   Lead the cable (**7**) through the cable channel (**8**).

6   Carefully put the balance back on its feet.
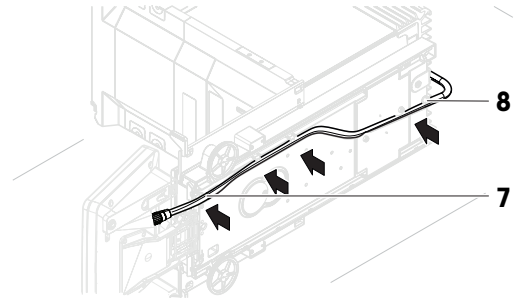
7   Insert the terminal cable (**9**) into the socket of the balance (**10**). Consider the pin assignment.

➡   The terminal is ready.
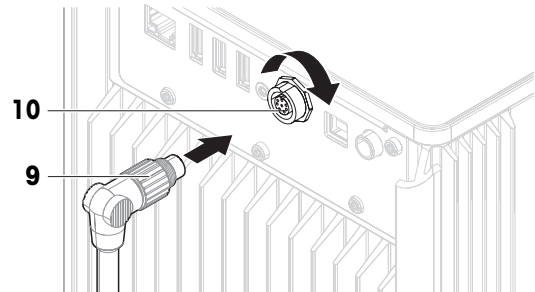
4.4.2 Assembling the balance

1   Install the front cover (**1**).

2   Carefully hang the pipetting container support (**2**) on the hooks (**3**).

   ➡   The pipetting container support (**2**) hangs freely.

3   Carefully place the pipetting container (**4**) onto the pipetting container support (**2**).

4   Center the drip tray (**5**) underneath the pipetting container (**4**).
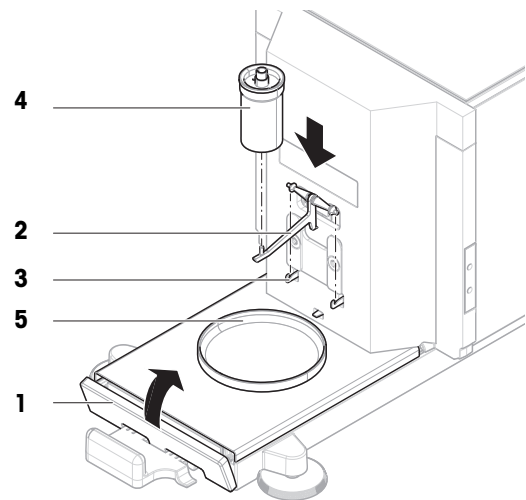
5   Carefully slide the pipetting base (**6**) with the evaporation trap container (**7**) vertically along the guiding rails and place it onto the drip tray.

   ➡   The pipetting base centers the drip tray. The pipetting base does not touch the pipetting container (**5**) or the pipetting container support (**3**).

6   Place the centering ring (**8**) onto the evaporation trap container (**7**).

7   Carefully place the evaporation trap cover (**9**) onto the evaporation trap container (**7**).
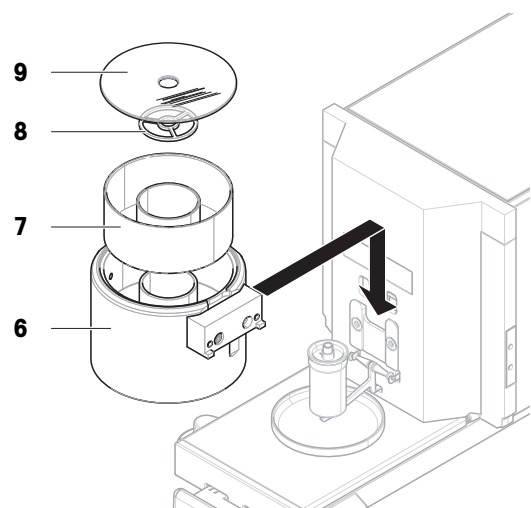
8   Slide the evaporation trap door (**10**) towards the back until it snaps in on the rod (**11**).
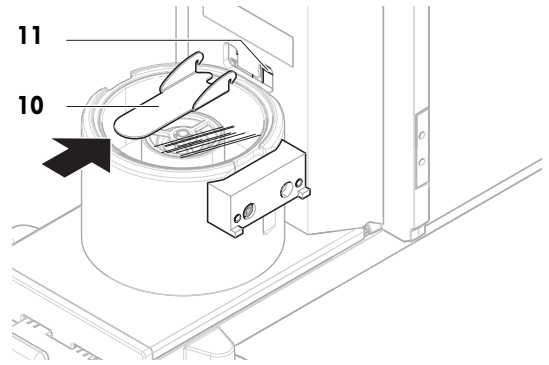
9   Connect the light barrier cable (**12**) to the light barrier (**13**).

10 Install the light barrier (**13**) on the light barrier spacer (**14**) using the fixing screw (**15**).

    📝 **Note**

    By default, the light barrier and the light barrier spacer are installed on the right side of the pipetting base. Alternatively, these items can be installed on the left side of the pipetting base.

11 Guide the light barrier cable (**12**) along the side of the balance, below the side cover.

12 Connect the light barrier cable (**12**) to one of the USB-A ports on the back side of the balance.

➡   The balance is assembled and ready to be put into operation.
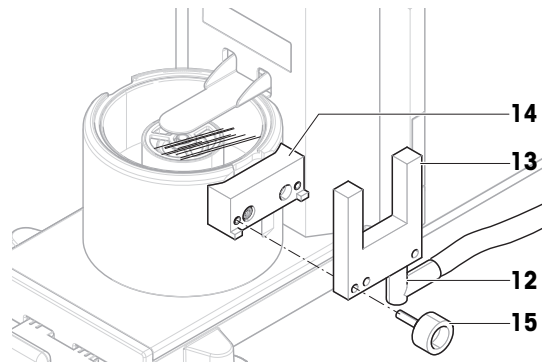
4.5 Putting into operation

4.5.1 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.
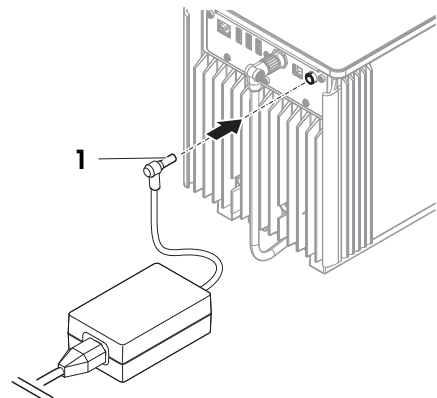
📝 **Note**

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 107

4.5.2 Switching on the balance

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**.

Warming up

Before the balance gives reliable results, it must warm up. This takes at least 120 minutes after connecting the balance. When the balance is switched on from standby, it is ready immediately.

▪ The balance has warmed up.

– Press ⏻.

➡ The main weighing screen appears.

When the balance is switched on, the main weighing screen appears. The display will always show the screen of the method last used before switching it off.

4.5.3 Logging in

If the user management is activated, you have to log in with your **User name** before performing a weighing. When the balance starts, the login dialog opens automatically.

1 Select a user or tap **User name**.

2 Tap **Password**.

➡ The input dialog opens.

3 Enter your password and tap ✔ **OK**.

4 Tap ⊕ **Login**.

➡ The login dialog closes and you are logged in. Your **User name** is shown on the main screen.

The user management can be activated through the balance menu:

Navigation: ▶ **Balance menu > ⚙ Settings > ⚖ > Balance > ⚙ General > User management**

See also

▤ Activating the user management ▸ Page 55

▤ Users ▸ Page 65

4.5.4 Leveling the balance

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

If the message **Balance is out of level** appears:

1   Tap ▶ **Level the balance**.
    → The **Leveling aid** opens.
2   Turn both leveling feet (**1**) as instructed on the display
    until the dot is in the center of the level indicator.

The leveling aid can also be accessed through the
Balance menu:

Navigation: ▶ **Balance menu > ◎ Leveling aid**
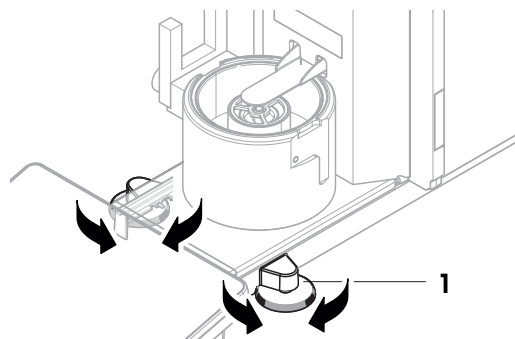
4.5.5 Performing an internal adjustment

Navigation: ▼ **Methods > 🔧 Adjustments**

- The adjustment **Strategy** is set to **Internal adjustment**.

1   Open the **Methods** section, tap 🔧 **Adjustments**, select the adjustment, and tap ▶ **Start**
    - or -
    from the main weighing screen, tap ••• **More** and tap **Start adjustment**.
    → **Internal adjustment** is being executed.
    → When the adjustment has been completed, an overview of the adjustment results appears.
2   Tap 🖨 **Print** if you want to print the results.
3   Tap ✓ **Finish adjustment**.
→   The balance is ready.

4.5.6 Performing a function check

To perform a function check, use the calibration kit delivered with the balance.

The small weighing pan is used with test weights that have a maximum diameter of 6 mm, for example, a 1 g OIML weight.

The large weighing pan is used with test weights that have a maximum weight of 20 g and a maximum diameter of 35 mm, for example, a 20 g OIML weight.

4.5.6.1 Using the small weighing pan

- The small weighing pan and the evaporation trap door are installed, see [Installing the small weighing pan ▶ Page 46].
- The balance is switched on.

1   Activate the light barrier (1), or press ↕.

→ The evaporation trap door (2) opens.

2 Use the tweezers to place the test weight (3) onto the weighing pan (4).

3 Activate the light barrier (1), or press ↕.

   → The evaporation trap door (2) closes.

   → The weighing result is displayed.

4 Tap ✚ **Add result** if you want to report the weighing result.

→ The result is added to the **Results list**.
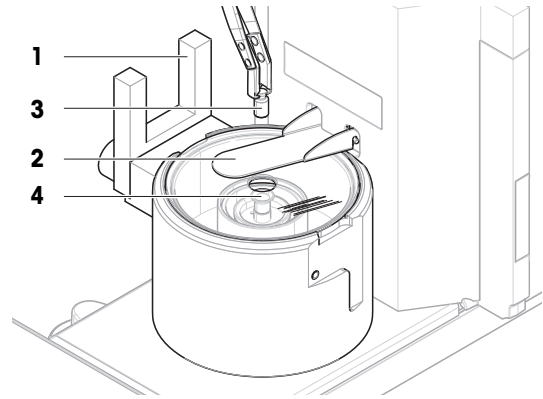
4.5.6.2 Using the large weighing pan

▪ The large weighing pan, the ring cover, and the draft shield are installed, see [Installing the large weighing pan ▶ Page 46].

▪ The balance is switched on.

1 Remove the draft shield (**1**) from the cover ring (**2**).
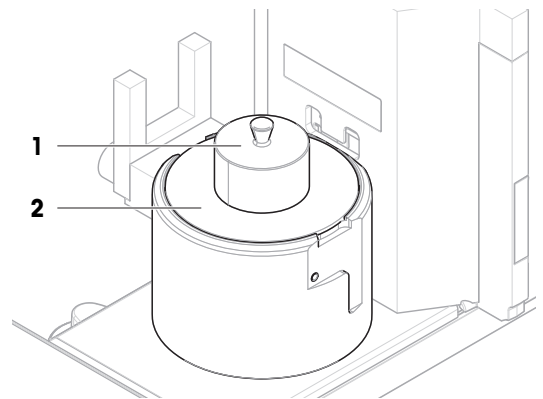
2 Use the tweezers to place the test weight (**3**) onto the weighing pan (**4**).

3 Place the draft shield (**1**) on the cover ring (**2**).

   → The weighing result is displayed.

4 Tap ✚ **Add result** if you want to report the weighing result.

→ The result is added to the **Results list**.
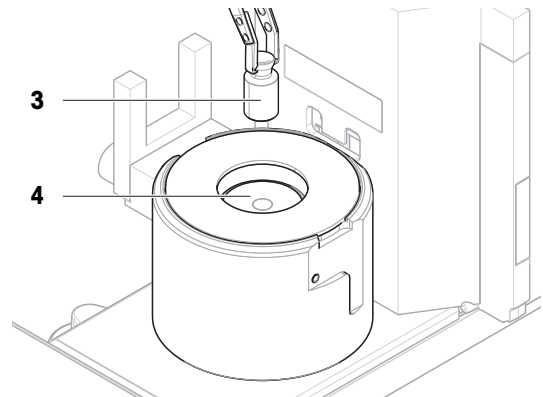
4.5.7 Setting the balance to standby mode

The balance can be set to standby mode by holding ⏻. Exit the standby mode by holding ⏻ again.

4.5.8 Switching off the balance

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

📝 **Note**

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

4.6 Performing a pipetting cycle

To calibrate the pipette, distilled water must be used. The volume of the liquid is checked by gravimetric testing.

4.6.1 Filling the evaporation trap container

The evaporation trap includes a container that should be filled with water. When the evaporation trap is closed, the humidity inside increases until the air is saturated. This prevents evaporation of the liquid in the pipetting container and ensures accurate weighing results.

1 Remove the evaporation trap door (**1**).

2 Carefully remove the evaporation trap cover (**2**).
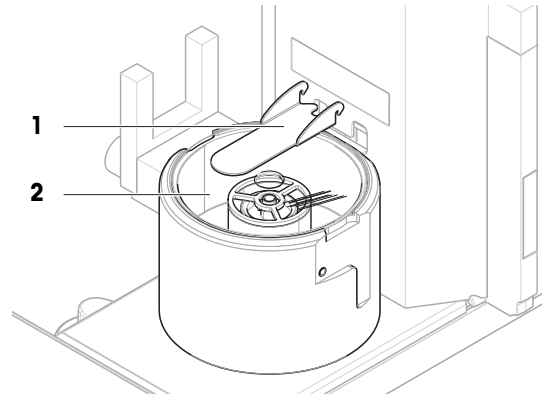
3 Fill the evaporation trap container (**3**) with distilled water.

→ The evaporation trap container is at least half full (maximum 70 ml).

4 Reassemble the balance.

→ The evaporation trap door (**1**) is closed.

5 Wait at least **120 minutes** to allow the air in the evaporation trap to reach saturation.
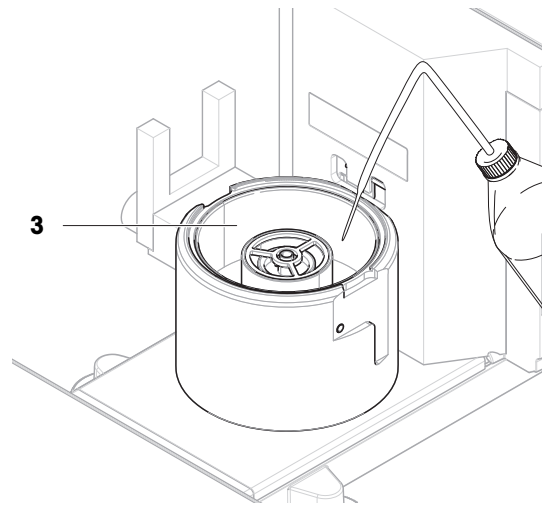
4.6.2 Zeroing the balance

− Press →**0**← to zero the balance.

→ The balance is zeroed.

4.6.3 Taring the balance

Before a subsequent measurement, the balance must be tared.

− Press →**T**← to tare the balance.

→ The balance is tared. The icon Net appears.

4.6.4 Perfoming a pipetting cycle

- ■ The pipette to be calibrated is prepared and set to the target volume.
1 Use the pipette to aspirate the target volume of distilled water.
2 Activate the light barrier (**1**), or press ↕.
  → The evaporation trap door (**2**) opens.
3 Dispense the liquid into the pipetting container (**3**).
4 Activate the light barrier (**1**), or press ↕.
  → The evaporation trap door (**2**) closes.
  → The weighing result is displayed.
5 Tap ✚ **Add result** if you want to report the weighing result.
→ The result is added to the **Results list**.
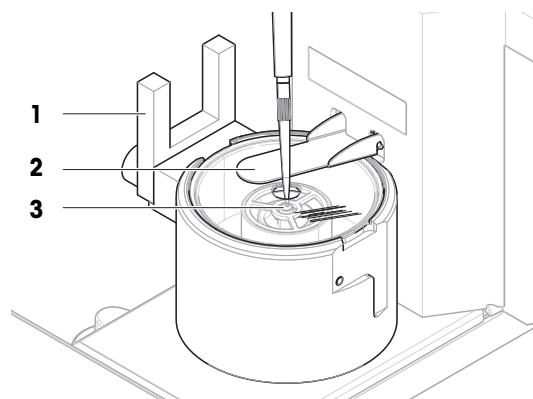
4.6.5 Completing the weighing

1 To save the **Results list**, tap 🖳 **Complete**.
  → The window **Complete task** opens.
2 Select an option to save or print the **Results list**.
  → The respective dialog opens.
3 Follow the instructions from the wizard.
4 Tap ✓ **Complete**.
→ The **Results list** is saved/printed and then cleared.

4.6.6 Emptying the pipetting container

Regularly empty the pipetting container to prevent an overflow.

See also

- 📄 Emptying the pipetting container ▸ Page 98
- 📄 Cleaning after an overflow ▸ Page 102

4.7 Transporting, packing and storing

4.7.1 Transporting the balance over short distances

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

If you want 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.
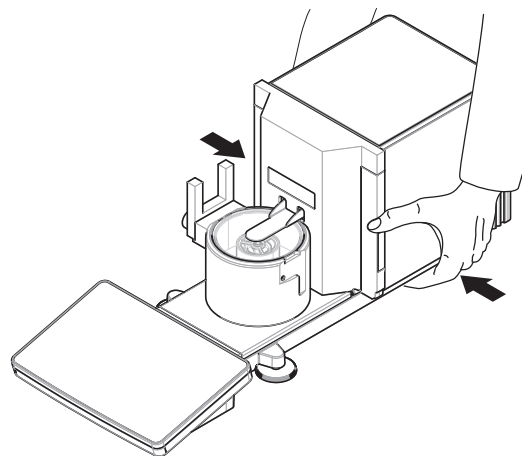
See also

4.7.2 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

4.7.3 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

4.8 Installing devices

4.8.1 Connecting a printer via USB

> **! NOTICE**
>
> **Damage to the device from not following the instructions of the printer's manual.**
> − To use the printer, consult its User Manual.

- The USB cable is connected to the printer.
- The printer is connected to the power outlet and switched on.
- The main weighing screen is shown on the balance terminal.

1 Connect the USB cable (**1**) to one of the USB-A ports (**2**) of the balance.
   → The balance detects the printer automatically and the dialog **Add device** appears.
   → A message, e.g., "System has found a device of type: Printer P-XX" appears.
2 Set a name for the printer, then tap **→ Next**.
   → A message appears, informing the user that the device is ready to use.
3 Tap **✔ OK** to close the dialog.
   → The printer is connected and saved to the system.
   → The dialog **Printer settings** opens.
4 If needed, configure the printer or print a test page.
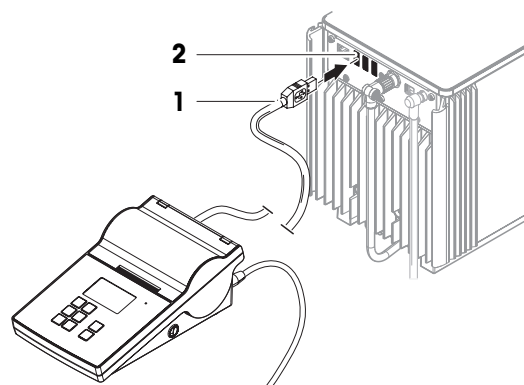
Adding a printer via the balance settings

Another way to add a printer is through the balance settings.

Navigation: ▶ Balance menu > ✿ Settings > ▤ Devices / Printers

- The USB cable is connected to the printer.
- The printer is connected to the power outlet and switched on.

1 Tap **✚ Add device**.
   → The message "**Connect the device via USB.**" appears.
2 Connect the device to one of the USB-A ports of the balance.
3 Follow the instructions from the wizard.

See also

▤ Devices / Printers ▶ Page 76

4.8.2 Connecting a printer via Bluetooth

Navigation: ▶ Balance menu > ✿ Settings > ▤ Devices / Printers

- The printer is connected to the power outlet and switched on.
1 Connect the Bluetooth USB adapter (**1**) to one of the USB-A ports (**2**) of the balance.
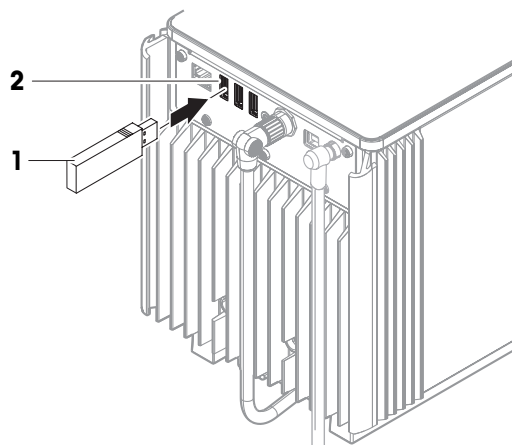
2 Connect the Bluetooth RS adaptor (**3**) to the printer (**4**).

3 Tap **➕Add device**.
  ➡ The dialog **Add device** opens.
4 Select **Bluetooth connection** and tap **➔Next**.
  ➡ The dialog "**Searching for devices...**" opens and a list of possible Bluetooth devices is displayed.
5 Check the bottom of the Bluetooth RS adapter (**3**) at the printer for the MAC address (unique device address), select this one in the list and tap **➔Next**.
6 The dialog **Authentication activated** opens and the **PIN Code** is displayed.
7 Tap **➔Next** to confirm the Bluetooth connection.
  ➡ The dialog closes, the printer is connected to the balance via Bluetooth.
  ➡ The dialog **Printer settings** opens.
8 If needed, configure the printer or print a test page.
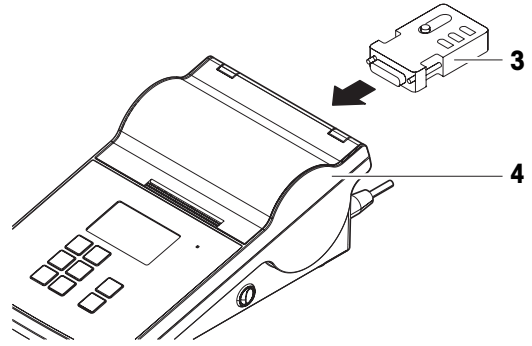
📝 **Note**

If the USB adapter is removed from the balance and plugged in again, the Bluetooth connection will be detected automatically. This may take up to 30 seconds.

📝 **Note**

The balance always pairs with the Bluetooth RS adaptor, but not with the printer that is attached to it. As soon as the user re-uses a Bluetooth RS adaptor for another printer, the user must remove the configured printer in the balance software and add the new one.

See also

📄 Devices / Printers ▶ Page 76
📄 Bluetooth ▶ Page 76

4.8.3 Connecting a USB device

This section describes how to connect USB devices without an own power adapter, e.g., an EasyScan USB (RFID reader), a foot switch or an ErgoSens. The connection procedure is the same for all USB devices.

> **NOTICE**
>
> **Damage to the device from not following the instructions of the USB device's manual.**
> – To use the USB device, consult its User Manual.

- The USB cable is connected to the USB device.
- The main weighing screen is shown on the balance terminal.

1 Connect the USB cable (**1**) to one of the USB-A ports (**2**) of the balance.

→ The balance detects the USB device automatically. The dialog **Add device** appears, informing the user that the system has found a specific device.

2 Set a name for the USB device, then tap → **Next**.

→ A message appears, informing the user that the device is ready to use.

3 Tap ✓ **OK** to close the dialog.

→ The USB device is connected and saved to the system.
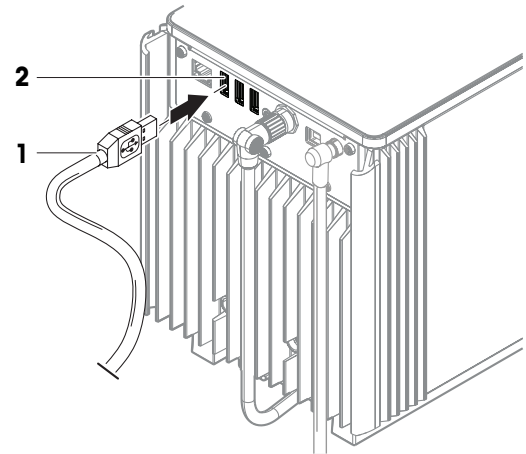
See also

☐ Devices / Printers ▶ Page 76

5 Operation

5.1 Touch screen

5.1.1 Selecting or activating an item

– Tap the item or function to be selected or activated.

5.1.2 Scrolling

– Move the list up/down.
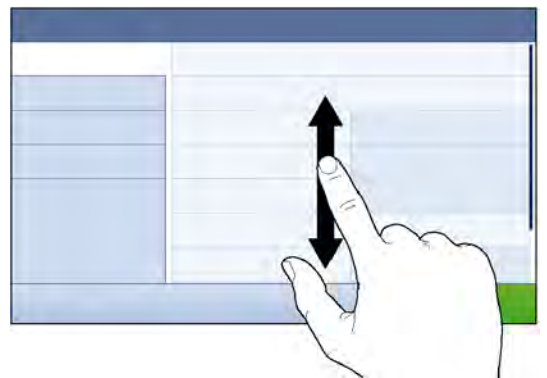
5.1.3 Using the fly-in panels

Three fly-in panels are placed along the sides of the main weighing screen.

1 Place the finger on one tab along one side of the screen, e.g., ◀.
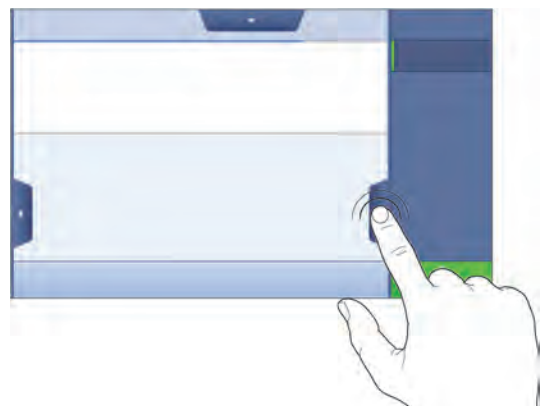
2 Keep the finger on the tab and slide it in the direction towards which the arrow is pointing.
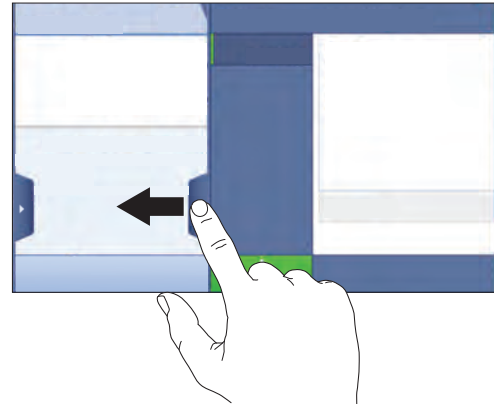
Note

The fly-in panels can also be opened or closed by tapping the associated tab.

5.1.4 Entering characters and numbers

	Name	Description
1	Input field	Shows the data that has been entered.
2	Delete	Deletes the character left of the current curser position. The curser can be positioned by using the touch screen.
3	Discard	Closes the keyboard dialog.
4	Confirm	Confirms the entered data.
5	Numbers and special characters	Switches into the special character mode.
6	Shift	Switches between lower or upper case letters.
7	Menu section title	Shows the title of the current setting section.

5.1.5 Changing the date and time
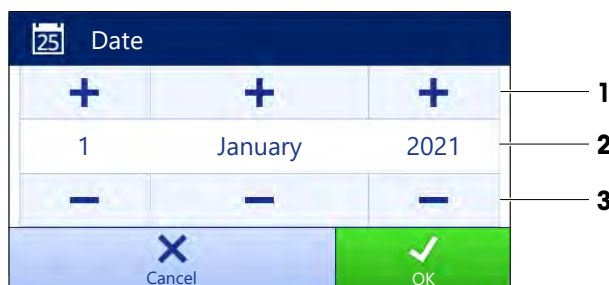
	Name	Explanation
1	Plus button	Increment
2	Display field	Shows the defined time or date.
3	Minus button	Decrement

📝 **Note**

The format of date and time can be defined in the settings via the options **Date format** and **Time format**.

See also

📄 Date / Time / Language / Format ▶ Page 72

5.2 Methods

A weighing method is an application for carrying out specific weighing tasks. The balance offers the method "General Weighing" with default parameters. You have the possibility to create a maximum of 50 methods and edit the methods. You can use these methods for your weighing task or edit them according to your requirements. Methods can also be deleted or cloned.

To support you while configuring new methods, a configuration wizard leads you through the whole process. The changes performed to a method are recorded in the change history (if activated).

5.2.1 Methods overview

The section **Methods list** provides an overview of all methods already created on the balance. In this section, new methods can be defined and existing methods can be edited, cloned or deleted. It is also the starting point for using any method in a weighing procedure.

Navigation: ▼ Methods > ☰ Methods list

The following method is used for pipette calibration:

- ⚖ **General weighing**

The following methods are available, but do not apply to pipette calibration balances:

- 🧪 **Simple formulation**
- 🕑 **Interval weighing**
- 📉 **Titration**
- 🗂 **Density determination**

5.2.2 Method "General weighing"

The method **General weighing** offers the basic weighing functions (zeroing, taring, weighing). The method is used for pipette calibration, simple weighing tasks, and routine tests.

The settings of the weighing item, e.g., target weight and tolerances, can be specified for one or multiple weighing items. Two different methods exist:

- **General weighing**:
  - Select this method if you want to work with a single set of parameters.
- **General weighing (itemized)**:
  - Select this method if you want to define the parameters for multiple weighing items. A method with multiple weighing items is particularly useful when the weighing task consists of a series of weighings, each with its own individual parameters, such as target weight, tolerances, etc. For further information, see [Using methods with multiple weighing items (itemized) ▶ Page 43].

Methods		
⊒] Methods list	⚖ my general weighing	06/24/2021
✎ Manual operations	⟳ my interval weighing	06/24/2021
⊙ Tasks	⊑ my simple formulation	06/24/2021
ⓗ Tests		
ⓗ Adjustments		

🗑 Delete	⬛ Clone	✎ Edit	➕ New	🖷 Print	▶ Start method

You have the possibility to start with method factory setting parameter or to create a new method with changed method parameter.

For details about method settings:

See also

▤ Settings: method "General weighing" ▸ Page 79

▤ Using methods with multiple weighing items (itemized) ▸ Page 43

5.2.2.1 Creating a method "General weighing"

Navigation: ▼ Methods > ⊒] Methods list

1 Tap ➕ **New** in the action bar.
   ⇒ The method wizard opens, starting at **1. Method type**.
2 Tap **Method type** and select the method type **General weighing** or **General weighing (itemized)**.
3 Tap ➙ **Next**.
   ⇒ The method wizard opens the section **2. Identification**.
4 Define the **Method name** and **Result description** and tap ➙ **Next**.
   ⇒ The method wizard opens the section **3. Configuration**.
5 Select a **Tolerance profile** and tap ➙ **Next**.
   ⇒ The method wizard opens the section **4. Save**.
   ⇒ If setting up a method with multiple weighing items, the wizard opens the section **4. Weighing items**.
6 Select a weighing item from the list and define the **Sample ID**, **Unit**, **Target weight**, **-Tolerance**, and **+Tolerance**.
7 To add a weighing item, tap ➕ **Item** or ⬛ **Clone**.
8 Tap ➙ **Next**.
   ⇒ The method wizard opens the section **5. Save**.
9 Tap ✓ **Finish** to save the new method.
⇒ The method has been created and appears in the list.

5.2.2.2 Performing a "General weighing"

This section describes a **General weighing** example step by step. Depending on the defined settings and weighing objects, the procedure can be different from this example.

▪ The large weighing pan, the ring cover, and the draft shield are installed, see [Installing the large weighing pan ▸ Page 46].
▪ The balance is switched on.
1 Open the **Methods** section.
2 Select a method from the **Methods list** or define a new method.

3 Tap ▶ **Start method**.

 ⇒ The main weighing screen appears with the selected method.

4 Press →**0**← to zero the balance.

5 Remove the draft shield (1).
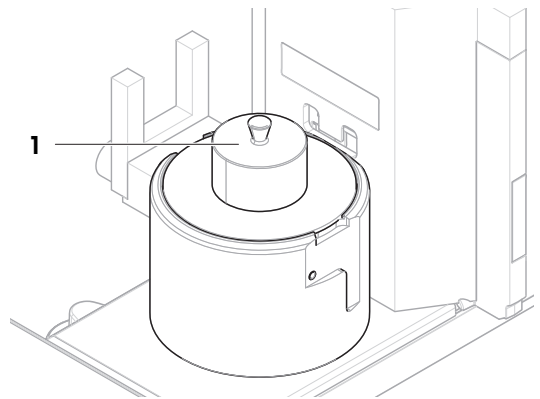
6 Place the weighing object (2) on the weighing pan (3).

7 Place the draft shield (1) on the cover ring (4).

 ⇒ The weighing starts with **Capturing weight…**.

8 Tap ✚ **Add result**.

 ⇒ The weighing result is saved to the **Results list**.

9 When the weighing process is finished, tap 🖺 **Complete** in the action bar.

 ⇒ The window **Complete task** opens. The task-specific information can be printed on a label printer, the **Results list** can be printed manually or automatically (depending on the method settings), and the result can be exported to an external storage device.

⇒ The task **General weighing** was successfully completed.
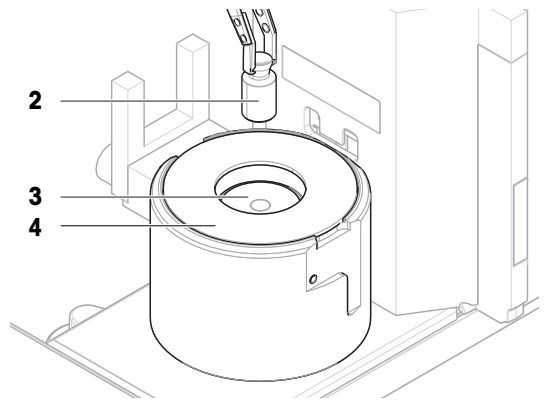
📝 **Note**

It is possible to exclude a weighing result from the **Results list**. Open the **Results list**, select a result to exclude, and tap **Exclude result**.

The window **Complete task** always appears after completing the task, even if the results are saved automatically.

5.2.3 Editing a method

To clone a method proceed as follows:

1 Open the **Methods** section.

2 Select the method that you want to edit.

 ⇒ The line color of the selected method becomes blue.

3 Tap ✎ **Edit**.

For details about method settings:

See also

📄 Weighing methods settings ▶ Page 79

5.2.4 Cloning a method

To simplify the process to create a method, an existing method can be cloned one or several times. The cloned method will have the same parameter values as the original one. If multiple weighing items exist in the original method, those will be cloned as well.

1 Open the **Methods** section.

2 Tap the method that you want to clone.

➡ The line color of the selected method becomes blue.

3 Tap ◼ **Clone**.

➡ A copy of the selected method appears in the list. The cloned method has the same settings as the original method.

📝 **Note**

A method can be cloned several times. The name of the cloned method is always based on its original name, to which is appended a number.

5.2.5 Deleting a method

Both factory defined methods and user defined methods can be deleted if they are not needed. For this purpose proceed as follows:

1 Open the **Methods** section.

2 Tap the method that you want to delete.

➡ The line color of the selected method becomes blue.

3 Tap 🗑 **Delete**.

➡ The message **Delete method and cancel tasks?** appears on the screen.

4 Tap ✓ **OK** to delete the selected method.

➡ The system returns to the method list. The method has been deleted and does not appear on the list anymore.

📝 **Note**

There is always a method activated in the background. This method can not be directly deleted. To delete the method, another method must be started instead. Now the method is not activated anymore and can be deleted.

5.2.6 Deleting a task

A method will be held as a task in the task section of the methods menu. It will be paused as a task if any other method is launched without the current method being completed. The method can be paused if it contains one or more weighing results, or has had certain method settings changed.

Navigation: ▼ Methods > 🕑 Tasks

A task can only be deleted when not in use. The method that is currently used in the background is labeled with the symbol ⊙ in the tasks lists. To cancel the task, another task must be activated.

1 Select the task to be deleted and tap 🗑 **Cancel**.

➡ The dialog 🗑 **Cancel task?** opens.

2 To delete the task tap ✓ **OK**, to cancel the delete procedure tap ✕ **Cancel**.

5.2.7 Using methods with multiple weighing items (itemized)

Working with itemized methods can simplify the workflow, especially when several weighings with different predefined target weights have to be carried out one after the other. Information such as a target weight and tolerances can be defined for each weighing item within a single task. This may save time and increase quality of weighing processes consisting of multiple steps.

Before multiple weighing items can be used in the weighing process, they must be defined. The two ways of creating a weighing method that includes several weighing items are:

- Directly define the multiple weighing items during the method creating process.
- Use the **Results list** of a running method to define a new method with multiple weighing items.

The following methods use multiple weighing items:

- **General weighing (itemized)**

5.2.7.1 Creating a new method with multiple weighing items (itemized)

This example describes how to define multiple weighing items for the method **General weighing (itemized)**.

1 Open the **Methods** section.
2 Tap ✚ **New** in the action bar.
3 Tap **Method type** and select **General weighing (itemized)**.
4 Step through the method wizard until step **4. Weighing items**.
   ➡ The dialog **4. Weighing items** appears.
5 Select a weighing item from the list and define the **Sample ID**, **Unit**, **Target weight**, **-Tolerance**, and **+Tolerance**.
6 Tap → **Next**.
7 Tap ✓ **Finish**.
➡ The method has been created and appears in the list.

5.2.7.2 Creating an itemized method from a completed task

It is possible to create a method with multiple items while performing a method that includes a single item, providing that the method type allows it. This example describes how to create a method **General weighing (itemized)** based on a method **General weighing**.

1 Start a method **General weighing**.
2 Perform three weighings and add the results to the **Results list** by tapping ✚ **Add result**.
   ➡ The results are saved to the **Results list**.
3 Tap ••• **More**.
4 Tap 🖫 **Save as method (itemized)**.
5 Define a **Method name**.
6 Tap ✓ **OK**.
➡ A method **General weighing (itemized)** including three items is created and added to the **Methods list** with the name defined by the user.

5.2.7.3 Performing an itemized method

After creating a method with multiple items, it can be started.

1 Open the **Methods** section.
2 Select an itemized method from the **Methods list**.
3 Tap ▶ **Start method**.
   ➡ The main weighing screen opens. The target weight and the tolerance limits defined in the method appear.

5.3 Test weights

5.3.1 Defining an individual test weight

The user should enter data related to each test weight based on the corresponding certificate. This enables each external test weight to be clearly assigned to a specific certificate. Up to 12 external test weights can be configured. These test weights can be used to carry out external tests and adjustments.

📝 **Note**

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.

- ▪ The dialog **Test weights** is open.
1 Tap ➕ **Test weight**.
2 Define the test weight settings and confirm with ✔ **Finish**.
➡ The test weight is defined and will be available later in the test procedure.

5.3.2 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 1 g and a weight of 20 g can be combined and used as a test weight of 21 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.

- ▪ The dialog **Test weights** is open.
- ▪ At least two individual test weights are defined.
1 Tap 🝙 **Combined weight**.
2 Enter a **Test weight name**.
3 Select the **Minimum weight class** for the combined weight.
4 Tap **Weights**.
   ➡ The individual weights of at least **Minimum weight class** are shown.
5 Select the weights to include in the combined weight.
6 Tap ✔ **OK**.
   ➡ The **Nominal weight** is calculated as the sum of the selected individual weights.
7 Tap ✔ **Save**.
➡ The combined test weight is defined and will be available later in the test procedure.

5.4 Tests

Routine tests can be performed to ensure accurate weighing results according to GWP® or other QM systems. Therefore the tests should be performed in fixed, regular intervals depending on your QM system and the results should be documented in a traceable way.

5.4.1 Overview routine tests

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.

The calibration kit delivered with the balance is required to perform these tests.

5.4.1.1 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 a measure of the ability of a balance to supply the same result in repetitive weighings with one and the same load under the same measurement conditions. During the test, a load is placed and measured at the same location on the weighing pan several times. Afterwards, the difference between the measured weight values is calculated. The spread of the measured results leads to the repeatability.

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.

The following test type is available:

- **Repeatab. - 1 TP**: To test the repeatability of the balance at one test point, without tare weight.

5.4.1.2 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.

The following test types are available:

- **Sensitivity - 1 TP**: To test the sensitivity of the balance at one test point, without tare weight.
- **Sensitivity - 2 TP**: To test the sensitivity of the balance at two test points, without tare weight.

5.4.2 Creating a new test

Before a test can be performed, the test settings have to be defined. A test wizard is leading you step-by-step through the process.

1 Open the **Methods** section.
2 Tap **🔒 Tests**.
3 Tap **+ New**.
   ⇥ The wizard **Create new test** starts.
4 Select the test type.
5 Work through the process by using the button **➔ Next** to go to the next step or the button **← Back** to go back to the previous step.

For details about test settings:

See also

5.4.3 Preparing the balance for a test

5.4.3.1 Preparing the balance

1 Remove the evaporation trap door (**1**).
2 Carefully remove the evaporation trap cover (**2**).
3 Remove the centering ring (**3**).
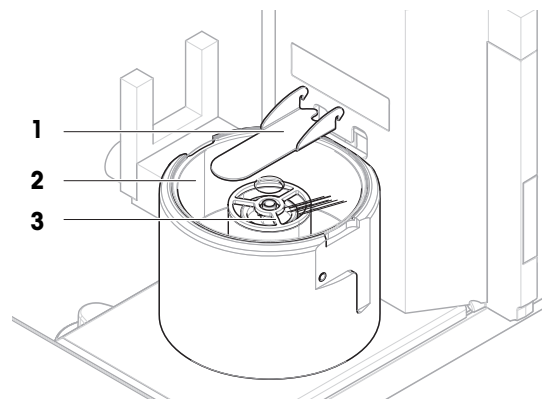
5.4.3.2 Installing the small weighing pan

The small weighing pan is used with test weights that have a maximum diameter of 6 mm, for example, a 1 g OIML weight.

- ■ The balance is prepared, see [Preparing the balance ▶ Page 45].
- ■ The calibration kit is available.

1 Place the small weighing pan (**1**) onto the pipetting container (**2**).
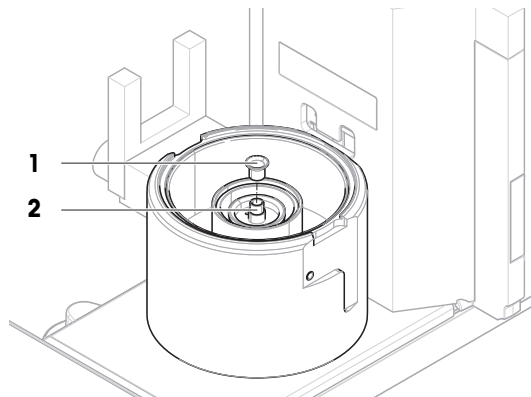
2 Carefully place the evaporation trap cover (**3**) onto the pipetting base (**4**).
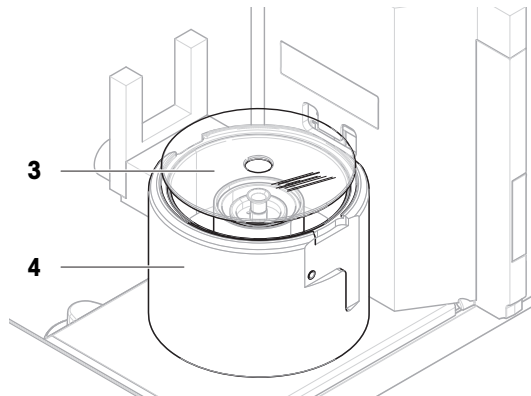
3 Slide the evaporation trap door (**5**) towards the back until it snaps in.
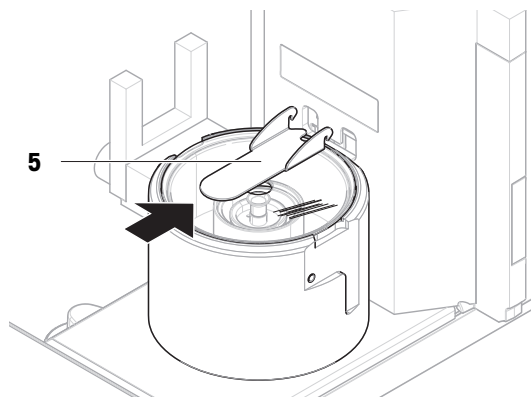
5.4.3.3 Installing the large weighing pan

The large weighing pan is used with test weights that have a maximum weight of 20 g and a maximum diameter of 35 mm, for example, a 20 g OIML weight.

- ■ The balance is prepared, see [Preparing the balance ▶ Page 45].
- ■ The calibration kit is available.

1 Place the large weighing pan (**1**) onto the pipetting container (**2**).
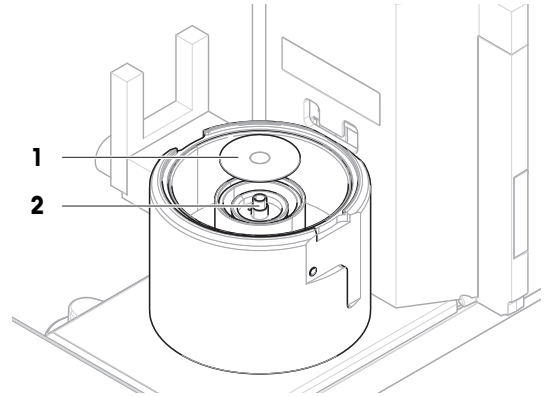
2 Place the cover ring (**3**) onto the pipetting base (**4**).
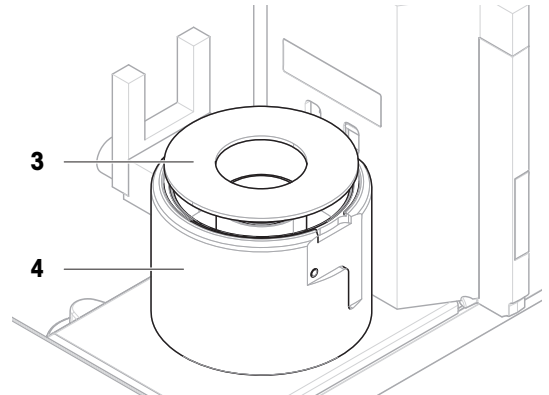
3 Place the draft shield (**5**) onto the cover ring (**3**).
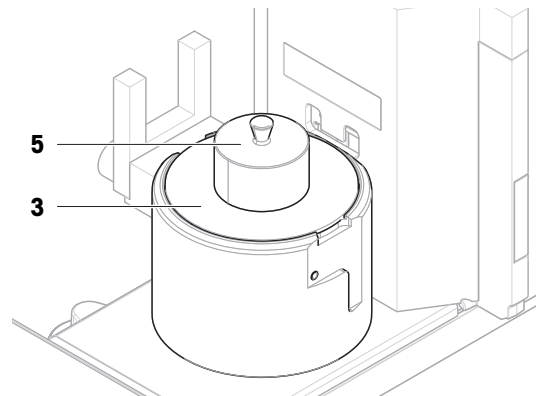
5.4.4 Performing a test

> **NOTICE**
>
> **Incorrect weighing results due to wrong handling of the test weights.**
> − Only handle test weights with gloves, tweezers, weight forks, or weight handles.

You can perform a repeatability test, or a sensitivity test. Which test you have to perform and when depends on the respective weighing processes. Mettler-Toledo GmbH 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.

Moments when tests could be performed:

- After cleaning
- After a software update
- Daily before putting into operation

- Depending on own SOP

Requirements:

- At least one test weight is defined.
- At least one sensitivity test, or one repeatability test is created.

See also

📄 Defining an individual test weight ▸ Page 43

📄 Tests settings ▸ Page 90

5.4.4.1 Performing a "Repeatability test"

In this section, the repeatability test for one test point is described. Which test you use depends on the respective test target.

To perform a test, use the calibration kit delivered with the balance.

- ▪ The small weighing pan and the evaporation trap door are installed, see [Installing the small weighing pan ▸ Page 46].
- ▪ The balance is switched on.
1 Open the **Methods** section.
2 Tap 🗲 **Tests**.
   ➡ The test(s) previously defined appear on the list.
3 Select the repeatability test you wish to perform and tap ▶ **Start**.
   ➡ The test sequence starts.
4 Ensure that the weighing pan is empty and clean. Have at hand: the test weight, gloves, and the appropriate tools to handle the test weight.
5 When all requirements are fulfilled tap ✓ **OK**.
6 Make sure that the weighing pan is empty and the evaporation trap is closed, then tap ✓**OK**.
   ➡ The balance starts an automatic zeroing.
7 Choose an available test weight
   - or -
   add a new test weight and tap ✓**OK**.
8 Activate the light barrier (1), or press ↕.
   ➡ The evaporation trap door (2) opens.
9 Use the tweezers to place the test weight (3) onto the weighing pan (4).
10 Activate the light barrier (1), or press ↕.
    ➡ The evaporation trap door (2) closes.
    ➡ The measurement starts with **Capturing weight…**.
    ➡ The result of the measurement is added to the **Results list**.
11 Activate the light barrier (1), or press ↕.
    ➡ The evaporation trap door (2) opens.
12 Remove the test weight carefully and tap ✓ **OK**.
    ➡ The balance starts an automatic zeroing.
    ➡ Depending on the specified **Number of repetitions** you have to repeat the last four steps a certain number of times.
13 When the test procedure is finished, tap 🖫 **Finish**.
    ➡ The result dialog opens.
14 To print the results tap 🖶 **Print**, to finish the test tap ✓ **Finish**.
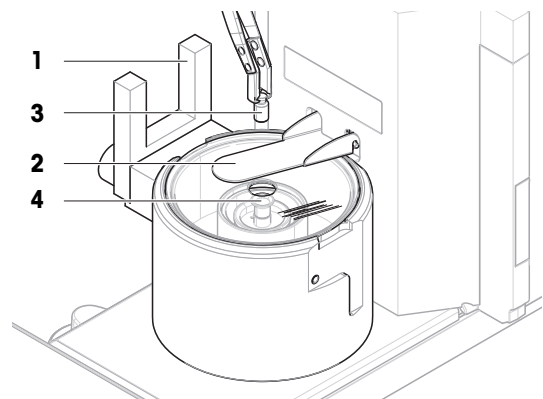
Test result

If the test failed, see "Troubleshooting", search the error, remedy it and test again. If the test fails again, contact a METTLER TOLEDO representative.

See also

📄 Settings: Repeatability test ▸ Page 90

📄 Troubleshooting ▸ Page 104

5.4.4.2 Performing a "Sensitivity test"

In this section, the sensitivity test for one test point is described. Which test you use depends on the respective test target.

To perform a test, use the calibration kit delivered with the balance.

- The large weighing pan, the ring cover, and the draft shield are installed, see [Installing the large weighing pan ▸ Page 46].
- The balance is switched on.

1 Open the **Methods** section.

2 Tap 🝊 **Tests**.

⇒ The test(s) previously defined appear on the list.

3 Select the sensitivity test you wish to perform and tap ▶ **Start**.

⇒ The test sequence starts.

4 Ensure that the weighing pan is empty and clean. Have at hand: the test weight, gloves, and the appropriate tools to handle the test weight.

5 When all requirements are fulfilled tap ✔ **OK**.

6 Make sure that the weighing pan is empty and the draft shield is installed, then tap ✔**OK**.

⇒ The balance starts an automatic zeroing.

7 Choose an available test weight
- or -
add a new test weight and tap ✔**OK**.

8 Remove the draft shield (1).
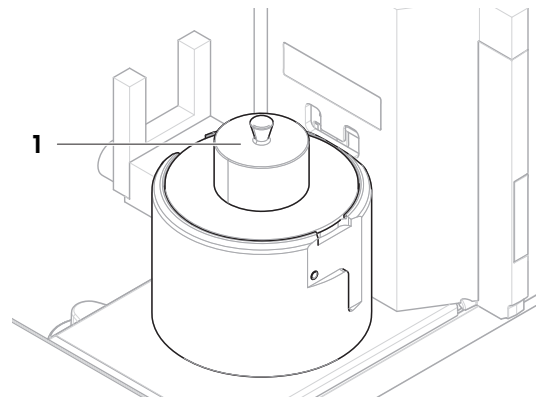
9 Use the tweezers to place the test weight (2) onto the weighing pan (3).
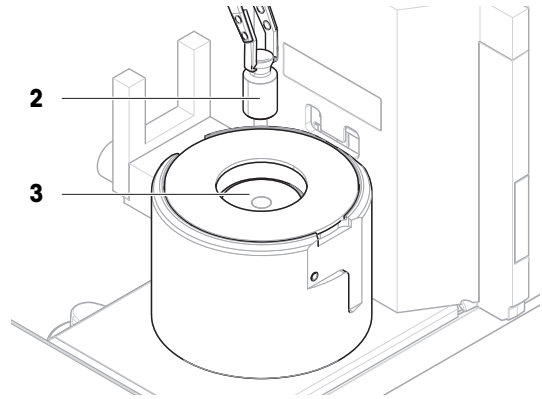
10 Place the draft shield (1) onto the cover ring (4).
   → The measurement starts with **Capturing weight…**.
   → The result of the measurement is added to the **Results list**.
11 When the test procedure is finished, tap 🖫 **Finish**.
   → The result dialog opens.
12 To print the results tap 🖳 **Print**, to finish the test tap ✔ **Finish**.
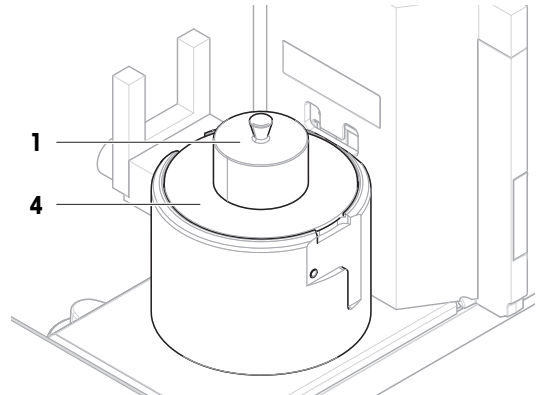
Test result

If the test failed, see "Troubleshooting", search the error, remedy it and test again. If the test fails again, contact a METTLER TOLEDO representative.

See also

📄 Settings: Sensitivity test ▶ Page 92
📄 Troubleshooting ▶ Page 104

5.4.5 Editing a test

A test can only be edited when it is not running.

Navigation: ▼ Methods > 🔒 Tests

1 Select the test to be edited from the list and tap ✏ **Edit**.
   → The test settings open.
2 Edit the test settings.

5.4.6 Printing test results

You can print a test manually, whether the parameter **Automatic print** in the test settings is activated or deactivated. For this purpose proceed as follows:

1 Open the **Methods** section.
2 Tap 🔒 **Tests**.
   → The test list opens.
3 Select the test to print and tap 🖳 **Print all**.
→ The test is printed.

5.4.7 Deleting a test

1 Open the **Methods** section.

2 Tap ♟ **Tests**.

⇒ The test list opens.

3 Select the test to delete.

4 Tap 🗑 **Delete**.

⇒ The section **Delete routine test** opens. The message **Do you really want to delete the selected routine test?** appears.

5 Tap ✓ **Yes** to delete the test. Tap ✗ **No** to cancel the deleting process.

⇒ After deleting the test, the system returns to the test list. The test has been deleted and does not appear on the list anymore.

Running tests are labeled with the symbol ⊙ and cannot be deleted. To delete a test, it must be finished or another test must be activated. To delete a test, proceed as follows:

5.4.8 Consulting the test history

Navigation: ▶ Balance menu > 🕒 History > 🔟 Tests

– Select a test.

⇒ The test history opens. Specific data are displayed for each test, such as the date and time, type of test, temperature, level state, test weight ID, and weight deviation.

See also

📄 History ▶ Page 63

5.5 Adjustments

This section describes how internal and external adjustments can be defined and performed. Which type of adjustment is performed depends on the defined adjustment **Strategy**.

Navigation: ▼ Methods > ♟ Adjustments

5.5.1 Internal adjustment

5.5.1.1 Editing an "Internal adjustment"

1 Open the **Methods** section.

2 Tap ♟ **Adjustments**.

3 Tap ✏ **Edit**.

4 Set the **Strategy** to **Internal adjustment**.

5 Define the adjustment parameters.

6 Tap ✓ **Save**.

⇒ Your internal adjustment has been edited.

For details about adjustment settings:

See also

📄 Adjustments settings ▶ Page 95

5.5.1.2 Performing an "Internal adjustment"

▪ The adjustment **Strategy** is set to **Internal adjustment**.

1 Open the **Methods** section, tap ♟ **Adjustments**, select the adjustment, and tap ▶ **Start**
- or -
from the main weighing screen, tap ••• **More** and tap **Start adjustment**.

→ **Internal adjustment** is being executed.

→ When the adjustment has been completed, an overview of the adjustment results appears.

2 Tap 🖶 **Print** if you want to print the results.

3 Tap ✔ **Finish adjustment**.

→ The balance is ready.

5.5.2 External adjustment

5.5.2.1 Editing an "External adjustment"

1 Open the **Methods** section.

2 Tap 🝆 **Adjustments**.

3 Tap ✎ **Edit**.

4 Set the **Strategy** to **External adjustment**.

5 Tap 🝆 **Test weights - Edit test weight**.

→ The dialog **Test weights - Edit test weight** opens.

6 Select a test weight from the list and tap ✔ **OK**
- or -
tap ➕ **Test weight** to define a new test weight.

7 Define the test weight settings and confirm with ✔ **OK**.

8 Tap ✔ **Save**.

→ Your external adjustment has been edited.

For details about adjustment settings:

See also

▤ Adjustments settings ▸ Page 95

5.5.2.2 Performing an "External adjustment"

After the external weights have been defined, the function **External adjustment** can be performed.

To perform an adjustment, use the calibration kit delivered with the balance. Choose the small or the large weighing pan, depending on the size of the external weights. The example describes the procedure with the small weighing pan.

■ The small weighing pan and the evaporation trap door are installed, see [Installing the small weighing pan ▸ Page 46].

■ The balance is switched on.

■ The adjustment **Strategy** is set to **External adjustment**.

1 Open the **Methods** section, tap 🝆 **Adjustments**, select the adjustment, and tap ▶ **Start**
- or -
from the main weighing screen, tap ••• **More** and tap **Start adjustment**.

→ The adjustment process starts.

2 Ensure that the weighing pan is empty and clean. Have at hand: the test weight, gloves, and the appropriate tools to handle the test weight.

3 When all requirements are fulfilled tap ✔ **OK**.

4 Make sure that the weighing pan is empty and the evaporation trap is closed, then tap ✔**OK**.

5 Choose an available test weight
- or -
add a new test weight and tap ✔**OK**.

6 Activate the light barrier (1), or press $\updownarrow$.
  ➡ The evaporation trap door (2) opens.
7 Use the tweezers to place the test weight (3) onto the weighing pan (4).
8 Activate the light barrier (1), or press $\updownarrow$.
  ➡ The evaporation trap door (2) closes and the adjustment starts.
9 Activate the light barrier (1), or press $\updownarrow$.
  ➡ The evaporation trap door (2) opens.
10 Remove the test weight carefully and tap ✔ **OK**.
  ➡ The adjustment is finishing and the adjustment results appear.
11 To print the results tap 🖫 **Print**, to finish the adjustment tap ✔ **Finish**.
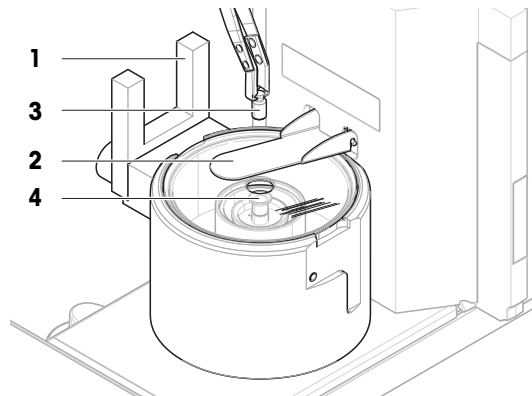
See also
▤ Defining an individual test weight ▸ Page 43

5.5.3 Consulting the adjustment history

Navigation: ▸ **Balance menu >** 🕘 **History >** ▽ **Adjustments**

– Select an adjustment.
➡ The adjustment history opens. Specific data are displayed for each adjustment such as the date and time, type of adjustment, temperature, level state, adjustment trigger, and correction.

See also
▤ History ▸ Page 63

5.6 External devices

Navigation: ▸ **Balance menu >** ⚙ **Settings >** 🗎 **Devices / Printers**

5.6.1 Adding a device

1 To add a new device, tap ➕ **Add device**.
  ➡ The **Add device** dialog opens.
2 Connect the device to one of the USB-A ports of the balance.
3 Follow the instructions from the wizard.

📝 **Note**
A label printer and a strip printer can be connected simultaneously to the balance. However, only one printer of a specific type can be active at any given time. When connecting a new printer or the same type, the printer of the same type that was previously active is deactivated automatically. After connecting a new printer, verify the status of all other printers.

Example: adding a barcode reader

1 To add a new device, tap ➕ **Add device**.
  ➡ The **Add device** dialog opens.
2 Connect the device to one of the USB-A ports of the balance.
3 If you are installing a barcode reader you can scan the barcode displayed on the balance terminal. Tap ▥▥ **Tools** and tap → **Next**.
  ➡ The barcode of the device is shown.
4 Scan the barcode from the device.
  ➡ The barcode is identified from the balance and the new device is connected.

5 To cancel the dialog, tap ✕ **Cancel**.

See also

📄 Installing devices ▸ Page 33

5.6.2 Deleting a device

1 Select the device from the list of devices and printers.
2 Tap 🗑 **Delete device**.
   ⇒ The message of the type "Are you sure you would like to delete the selected device?" is shown.
3 To delete, tap ✔ **OK**. To cancel the delete dialog, tap ✕ **Cancel**.
⇒ The device is deleted.

5.6.3 Editing device settings

1 Select the device from the list of devices and printers.
   ⇒ Device type, name, status and settings are shown.
2 To change the name of the device, tap **Name**, enter the name and tap ✔.
3 Some devices, e.g., printers, have additional editable settings. To edit those settings, tap ▶ **Printer settings**.
   ⇒ The dialog printer settings opens.

5.6.4 Printing a test page

If you have installed a printer, a test page can be printed.
1 Select the printer in the list of devices.
2 Tap 🖨 **Print test page**

5.6.5 Using an RFID reader

5.6.5.1 Testing an RFID reader

1 Select the device from the list of devices and printers.
2 Tap 📶 **Test device**.
   ⇒ The dialog **Test device** opens.
3 Place an RFID tag on the RFID reader.
   ⇒ If the RFID reader works correctly, the message
      "**RFID reader has successfully read the RFID tag.**"
      is shown.
   ⇒ The RFID reader has been tested.
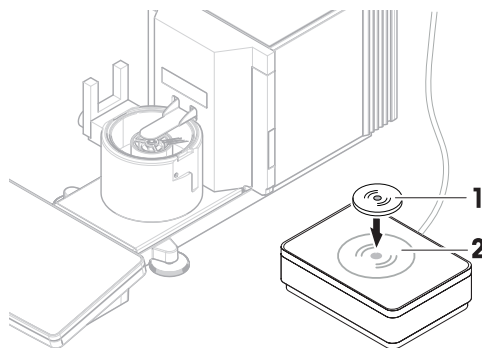
5.6.5.2 Formatting an RFID tag

Navigation: ▶ **Balance menu** > 🗄 **Maintenance** > 📶 **Format RFID**

1 Tap 📶 **Format RFID**.
   ⇒ The dialog **Format RFID tag** opens.
2 Place the RFID tag on the RFID reader.
   ⇒ The dialog **Do you want to format the RFID tag and delete all data?** opens.
3 To format the RFID tag, tap → **Format**.

⇒ The RFID tag was formatted.

5.6.5.3 Reading data from an RFID tag

Navigation: ▶ **Balance menu > 🗐 Maintenance > ⑴ Format RFID**

1 Tap ⑴ **Format RFID**.
⇒ The dialog **Format RFID tag** opens.
2 Place the RFID tag on the RFID reader.
⇒ The dialog **Do you want to format the RFID tag and delete all data?** opens.
⇒ In the dialog, you can read all the stored data.
3 To format the RFID tag, tap ➔ **Format**. To close the dialog, tap ✕ **Cancel**.

5.7 User management

> ### NOTICE
> **Loss of data due to missing password or User name**
> Protected menu areas cannot be accessed without **User name** or password.
> − Note **User name** and password and keep them in a safe place.

5.7.1 Activating the user management

Navigation: ▶ **Balance menu > ⚙ Settings > 🖵 > Balance > ⚗ General > User management**

The user management is disabled in the factory settings. To activate the user management follow:

1 Tap ⋮ and select **Active**.
⇒ The dialog **Activate user management** opens.
2 Tap ➔ **Next**.
⇒ The dialog 🔑 **Set administrator password (optional)** opens.
3 Tap **New password** and enter the new password.
4 Confirm the new password again and tap ✔ **OK**.
⇒ The dialog closes.
5 Confirm the activated user management in the section **General**, tap ✔ **OK**.
⇒ The **User management** is active. The login dialog opens at every system start.

5.7.2 Disabling the user management

Navigation: ▶ **Balance menu > ⚙ Settings > 🖵 > Balance > ⚗ General > User management**

1 Tap ⋮ and select **Inactive**.
⇒ The dialog **Deactivate user management** opens.
2 Tap ➔ **Next**.
⇒ The dialog 🔑 **Set unblocking password** opens.
3 Tap **New password** and enter the new password.
4 Confirm the new password again and tap ✔.
⇒ The dialog closes.
5 Tap ✔ **OK** to confirm.
⇒ The user management is inactive.

5.7.3 Managing users and user groups

The **Users** settings are only visible when the **User management** is set to **Active**.

Navigation: ▶ **Balance menu > 🙎 Users**

Printing user list

An overview of all users and user groups can be printed by tapping 🖨 **Print all**.

See also

📄 Activating the user management ▶ Page 55

5.7.3.1 Creating a new user

Navigation: ▶ **Balance menu > 🙎 Users > 👤 Users**

1 Tap ➕ **New user** in the action bar.
2 Define the values for the new user.
3 To define a user profile password, tap 🔑 **Change password** in the action bar.
4 Tap **New password**.
   ➡ The keyboard dialogue opens.
5 Define the password.
6 Tap **Confirm new password** and fill in the defined password.
7 Tap ✔ to close the keyboard dialogue.
8 Tap ✔ **OK** to confirm the defined password.
   ➡ The dialogue **User name** opens.
9 Tap ✔ **OK** to confirm the defined user profile.
➡ The user has been created. The new user profile appears in the list.

5.7.3.2 Creating a new group

Navigation: ▶ **Balance menu > 🙎 Users > 🙎 Groups**

📝 **Note**

This area is only accessible for users with the appropriate rights.

1 Tap ➕ **New group**.
   ➡ The dialog opens.
2 Define the group properties.
3 Tap ✔ **OK**.
➡ The group has been created, the system returns to the list of defined groups.

5.7.3.3 Deleting users or user groups

Requirements for deleting:

- You logged in as administrator.

Navigation: ▶ **Balance menu > 🙎 Users > 👤 Users**

1 Select the **User name** of the user to delete.
   ➡ The user management dialog opens.
2 Tap 🗑 **Delete** in the action bar.
   ➡ The dialog **Delete user** opens.
3 To delete the user tap ✔ **OK**.
➡ The user is deleted irreversibly.

5.8 Tolerance profiles

Navigation: ▶ **Balance menu > ⚙ Settings > ⚖ Balance > Q Weighing / Quality > Tolerance profiles**

Creating a Tolerance profile

1 Tap **+ New** to create a new profile.
2 Define the profile settings.
3 When all the settings have been defined, tap ✓ **OK**.
 ⇒ The system returns to the profile list and the new profile appears on the list.

By tapping an existing profile, its settings can be changed, the profile can be deleted or it can be set as default value. Several profiles can be created. A default profile must be selected.

If changes are made to the default tolerance profile, the status of the routine tests will be set to **Never executed**.

5.9 Data management

Navigation: ▶ **Balance menu > 🗄 Maintenance > 💾 Import / Export**

The import or export of data can be used to save or transfer configurations/settings from one balance to another.

The following data can be imported or exported:

- **Balance settings**
- **User management**
- **Methods**
- **Tests and weights**

5.9.1 Exporting data and settings

1 Select 💾 **Export data and settings**.
 ⇒ The dialog **Export data and settings** opens.
2 Select **Export** and tap → **Next**.
 ⇒ The window **Export data and settings** appears.
3 Select the data type(s) you want to export.
4 Plug in the USB storage device to one of the USB-A ports of the balance.
5 Tap ✓ **Export**.
 ⇒ A list of available USB storage devices opens.
6 Select the target USB storage device to store the data.
7 Tap → **Next**.
 ⇒ The system exports the data to the USB storage device. If the export was successful, the screen shows ✅ with the file name and its target folder.
8 Tap ✕ **Close** to finish the process.

5.9.2 Importing data and settings

With the function **Import data and settings**, settings from other balances can be imported to this balance. It is also possible to re-import settings that have been exported.

1 Select 💾 **Import data and settings**.
2 Plug in the USB storage device with the data to import.
3 Tap → **Next**.
 ⇒ A list of available USB storage devices opens.
4 Select the USB storage device with the data to import.
5 Tap → **Next**.

6 Select the data file you want to import.

7 Tap → **Next**.

8 Select the data type(s) you want to import.

   ⇒ When importing methods, you can select if all methods or a selection of methods will be imported. Methods of the same name will be overwritten.

9 Tap ✓ **Import**.

⇒ The message **Import of data and settings has been executed.** appears. The import was successful. Tap ✕ **Close** to return to the main weighing screen.

5.10 Password protection and balance reset

5.10.1 Password protection

If user management is active, each user has an individual password.

- Any logged in user can change his own password. See [Changing a password ▶ Page 58].
- Users with permission to configure user management can change the password of any user. See [Changing a password ▶ Page 58].
- If a user with permission to configure user management has forgotten his password (and no other user can change it), a password reset can be requested. See [Requesting a reset password ▶ Page 58]

  📝 **Note**

  If the parameter **Password reset** is set to **Not allowed**, the balance needs to be reset by a service technician.

If user management is inactive, a password can be generated to block the whole balance. See [Creating an unblocking password ▶ Page 59].

5.10.1.1 Changing a password

Any user can change its own password. Additionally, users with permission to configure user management can change the password of other users.

Navigation: ▶ Balance menu > 🧑 Users > 👤 Users

1 Select the **User name** for which the password should be changed.

   ⇒ The user management dialog opens.

2 Tap 🔑 **Change password** in the action bar.

   ⇒ The dialog **Change password** opens.

3 Enter a new password and confirm it.

   📝 **Note**

   Any password is valid.

4 Tap ✓ **OK**.

⇒ The password has been changed.

5.10.1.2 Requesting a reset password

If a user with the permission to configure user management has forgotten his password, a reset password can be requested.

- ▪ The balance login dialog is open.

1 Select the user who needs a password reset. That user needs to have the permission to configure user management.

2 Tap ••• **More**.

   ⇒ The dialog **More** opens.

3 Tap ↻ **Request reset password**.

4 The dialog **Request reset password** opens.

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 an 8-character reset password with which you can log in once.

7 Log in with your reset password and select a new password.

5.10.1.3 Creating an unblocking password

If the user management is inactive, the balance can still be blocked with a unique password, called the unblocking password. This password first need to be generated and needs to be provided to block and unblock the balance.

Navigation: ▶ **Balance menu >** ⚙ **Settings >** 📖 **Balance >** ⚙ **General**

1 To create an unblocking password, tap 🔑 **Unblocking password** in the action bar.

→ The dialog **Set unblocking password** opens.

2 Set a new password, confirm it, and tap ✔ **OK**.

3 In the dialog ⚙ **General**, tap ✔ **Save** and ✔ **OK**.

→ The unblocking password is created.

5.10.2 Logging in and logging out

If the user management is active, users need to log in to use the balance.

5.10.2.1 Logging in

■ The balance login dialog is open.

1 Select a user and enter the password.

2 Tap ➔ **Login**.

→ You are logged in and your user name is displayed on the main weighing screen.

5.10.2.2 Logging out

Navigation: ▶ **Balance menu** > 🔓 **Exit/ Block balance**

− Tap 🔓 **Logout**.

→ You are logged out.

5.10.3 Blocking and unblocking the balance

A blocking means closedown of the balance. A reason for such "full blocking" can have a serious background. If the balance has a defect or a loss of the weighing quality, the user can block the balance completely.

If user management is active, users can block the balance if they have the related permission.

If user management is inactive, the balance can still be blocked to prevent any further usage of the balance. If no unblocking password has been set, the balance can get blocked and unblocked without a password. If an unblocking password has been set, the balance can only get blocked and unblocked using this password. See [Creating an unblocking password ▶ Page 59].

5.10.3.1 Blocking the balance

Navigation: ▶ **Balance menu** > 🔓 **Blocking**

1 To block the balance, tap 🔒 **Block balance**.

→ The dialog **Block balance** opens.

2 Tap ➔ **Next**.

3 Enter your unblocking password and tap ✔ **Block balance**.

→ The balance is blocked and the blocking screen appears.

5.10.3.2 Unblocking the balance

- The balance is blocked and the blocking screen is open.
1 Tap 🔓 **Unblock balance**.
2 Type in the unblocking password, if applicable.
3 Tap ✔ **Unblock balance** to confirm.
   By tapping ✘ **Cancel** instead, the main weighing screen appears, but the balance is still blocked and only a limited number of settings can be edited.
→ The balance is unblocked and the main weighing screen appears.

5.10.4 Resetting the balance

When user management is active, only users with the appropriate permissions can reset the balance.

Navigation: ▶ **Balance menu >** 🗄 **Maintenance >** ↺ **Reset**

> **!** **NOTICE**
>
> **Reset causes data loss**
>
> Resetting the balance will delete user application data and set the user configuration back to factory state.

1 To delete the change history data and the data for test history and adjustment history, activate the option **Also delete change, test and adjustment history**.
2 Tap → **Next**.
   → The window **Reset balance** opens and warns that some data will be lost by resetting the balance.
3 Tap ↺ **Reset balance**.
   → The balance software restarts in factory state. The alibi memory settings and alibi entries remain unchanged.

5.11 Automated dosing

Automated dosing methods, namely **Automated dosing** and **Automated solution prep.**, can only be performed on XPR analytical automatic balances. However, any XPR balance connected to an RFID reader can be used to read/edit the data from any dosing head.

5.11.1 Managing the dosing head data

Each dosing head includes an RFID tag that can exchange data with the instrument. You can remove the dosing head and insert it into another dosing module or liquid module, where the data is immediately available.

📝 **Note**
The data on RFID tag of the dosing head can also be accessed any XPR balance equipped by an external RFID reader.

Navigation: ▼ **Methods >** 📎 **Manual operations >** 🖊 **Manage dosing head data**

Editing the dosing head data

1 Tap 🖊 **Manage dosing head data**.
   → The dialog box opens in which the dosing head data is displayed.
2 Tap ✏ **Edit** to edit the data of the attached dosing head.
3 Tap ✔ **OK** to save the data.

Copying the dosing head data

The data stored on a dosing head can be copied to another dosing head with this function. Re-entering all the required data on a new dosing head with the same or similar substances is not necessary.

- A first dosing head, from which data will be copied, is attached to the dosing or liquid module.
- A second dosing head, on which the data will be saved, is available.

1 Tap **Manage dosing head data**.
   → The dialog box opens in which the dosing head data is displayed.
2 Tap **Copy** to copy the data of the attached dosing head.
3 Follow the instructions from the wizard.

Available fields for dosing head data

Depending on the type of dosing head, the following data is stored on the RFID tag.

Parameter	Description	Values
Substance	Specifies the name of the substance.	Text (0…20 characters)
Lot ID	Defines the batch identification.	Text (1…15 characters)
Verify expiry date before dosing	Defines whether the expiry date is verified before dosing.	Active	Inactive*
Expiry date	Specifies the expiry date of the substance.	Date
Set the filling date	Defines whether the filling date must be specified.	Active	Inactive*
Filling date	Specifies the date when the dosing head was filled.	Date
ID 1 field label… ID 3 field label	Defines the label of the user-defined fields.	Text (0…10 characters)
ID 1 value…ID 3 value	Defines the values of the user-defined fields.	Text (0…15 characters)
Molar mass	Defines the molar mass of the substance.	Numeric (1…10000 g/mol)
Purity	Defines the purity of the substance.	Numeric (0.001…100%)
Density	Defines the liquid density. This field is only available for liquid dosing heads.	Numeric (1 g/ml* | 0.01…10 g/ml)
Verify quantity before dosing	Defines whether the remaining quantity in the dosing head is verified before dosing.	Active	Inactive*
Remaining quantity	Residual quantity of substance in the dosing head. When filling the dosing head, insert the weight of the substance in this field. To use the weight on the weighing pan, tap .	Numeric (0.01…999999 mg)
Verify dose limit before dosing	Defines whether the dose limit of the dosing head is verified before dosing. This field is only available for powder dosing heads.	Active*	Inactive
Remaining doses	Shows the number of dosing operations still available with this dosing head, before reaching the **Dose limit**. The **Remaining doses** is calculated based on the **Dose limit** and the **Number of total dosages**. This field is only available for powder dosing heads. It is only available when **Verify dose limit before dosing** is set to **Active**	Numeric
Dose limit	Specifies the maximum number of dosing operations with this dosing head. This field is only available for powder dosing heads.	Numeric (250* | 0…50000)
Number of total dosages	Shows the number of dosing operations performed with this dosing head until now. This field is only available for powder dosing heads. It is only available when **Verify dose limit before dosing** is set to **Active**.	Numeric

Tapping while dosing	Activates the automatic start of the tapper during dosing.	Active*	Inactive
	Note that tapping can lead to compacting effects with some powders.	
	This field is only available for powder dosing heads.	
Tapping before dosing	Activates the automatic start of the tapper before each dosing.	Active	Inactive*
	Note that tapping can lead to compacting effects with some powders.	
	This field is only available for powder dosing heads.	
Pump pressure	Defines the pump pressure for the liquid dosing operation.	0.3	0.4	0.5 bar*
	This field is only available for liquid dosing heads.	
Dosing head type	Shows the type of the dosing head.	Text
Dosing head ID	Shows the unique ID of the dosing head.	Text

* Factory setting

5.11.2 Changing the pump pressure

The pump pressure can be adjusted, depending on the liquid and dosing head used. The pump pressure is saved as a setting on the dosing head, see [Managing the dosing head data ▶ Page 60].

6 Software Description

6.1 Balance menu settings

The **Balance menu** contains general settings and information. To open the section **Balance menu** tap the tab with the symbol ▶ on the left side of the screen.

The section **Balance menu** is divided into the following subsections.

- ⊙ **Leveling aid**, see [Leveling aid ▶ Page 63]
- 🕒 **History**, see [History ▶ Page 63]
- 🖥 **Balance info**, see [Balance info ▶ Page 65]
- 👤 **Users** (only appears when user management is activated), see [Users ▶ Page 65]
- ⚙ **Settings**, see [Settings ▶ Page 67]
- 🗄 **Maintenance**, see Maintenance

6.1.1 Leveling aid

Exact horizontal positioning and stable installation is essential for repeatable and accurate weighing results. With the **Leveling aid** the balance can be leveled.

Navigation: ▶ **Balance menu >** ⊙ **Leveling aid**

📝 **Note**

After leveling the balance an internal adjustment must be performed.

See also

📄 Leveling the balance ▶ Page 29

6.1.2 History

The balance permanently records the tests and adjustments that are performed in the section **History**

Navigation: ▶ **Balance menu >** 🕒 **History**

The section **History** is divided into the following subsections.

- ▽ **Adjustments**
- **Tests**
- ✎ **Service**
- 👁 **Changes** (only appears when change history is activated)

6.1.2.1 Adjustments

Navigation: ▶ **Balance menu >** 🕒 **History >** ▽ **Adjustments**

A maximum of 500 entries can be stored in the adjustments history.

Button	Name	Description
▽	**Filter**	Tap to filter the list: • **By date range** • **By user ID**
🖨	**Print**	Tap to print the displayed entries.
⏻	**Close**	Tap to return to the section **History**.

6.1.2.2 Tests

Navigation: ▶ **Balance menu > 🕒 History > 🔳 Tests**

A maximum of 500 entries can be stored in the test history.

Button	Name	Description
🔽	**Filter**	Tap to filter the list: • **By date range** • **By user ID**
🖶	**Print**	Tap to print the displayed entries.
↤	**Close**	Tap to return to the section **History**.

6.1.2.3 Service

Navigation: ▶ **Balance menu > 🕒 History > 🔧 Service**

A maximum of 500 entries can be stored in the service history.

Button	Name	Description
🔽	**Filter**	Tap to filter the list: • **By date range** • **By technician**
🖶	**Print**	Tap to print the displayed entries.
↤	**Close**	Tap to return to the section **History**.

6.1.2.4 Changes

The function **Change history** is an administration tool to improve the traceability of the weighing process. Information such as added methods or settings changes are being listed. Tap into the list to display detailed information about the data.

Navigation: ▶ **Balance menu > 🕒 History > 👁 Changes**

Change history is deactivated in the factory settings. To activate **Change history**, see [Weighing / Quality ▶ Page 68].

A maximum of 5000 entries can be stored in the change history.

Button	Name	Description
🔽	**Filter**	Tap to filter the list: • **By date range** • **By user ID**
🖶	**Print**	Tap to print the displayed entries.
↤	**Close**	Tap to return to the section **History**.

6.1.3 Balance info

The section **Balance info** shows information about the specific balance about:

- **Identification**
- **Hardware**
- **Software**
- **Maintenance**

Button	Name	Description
(i)	**License agreement**	Tap to open the licence agreement.
◁	**Close**	Tap to return to the **Balance menu**.

6.1.4 Users

In the section **Users**, rights for users and user groups can be defined. Users can be assigned to user groups. When the user management is active, the login dialog opens at every system start.

The **Users** settings are only visible when the **User management** is set to **Active**.

The section **User management** is divided into the following subsections:

- 👤 **General**: settings for all users
- 👤 **Users**: settings for individual users
- 👥 **Groups**: settings for user groups

An unlimited number of users can be created. A user is always a part of a user group and has the permissions of the group in which he is. Which user has which permissions can be defined or changed by users with the appropriate permission rights.

See also

6.1.4.1 General

Parameter	Description	Values
Automatic logout	Defines if the user is automatically logged out after a predefined **Wait time**.	Active* | Inactive
Wait time	Defines after how long the user automatically gets logged out when no activity is recorded on the balance. This setting is only available if **Automatic logout** is set to **Active**.	Numeric (15 minutes* | 1…60 minutes)
User proposals	Defines if a list of users appears on the login screen. **Active**: A list of all users appears, from which a **User name** can be selected. **Inactive**: The user needs to type in his **User name** by hand at login.	Active* | Inactive

Password reset	Defines if the password can be reset from the login screen.	Allowed* I Not allowed
	If set to **Not allowed** and the password is lost, a new password cannot be requested. The balance needs to be reset and all data and settings will be lost.	

* Factory setting

6.1.4.2 Users

Navigation: ▶ **Balance menu > 👥 Users > 👤 Users**

Parameter	Description	Values
User name	Defines a unique identifier for the user. When the user profile has been defined, the value for **User name** will be fixed and cannot be changed afterwards.	Text (1…22 characters)
Last name	Defines the last name of the user.	Text (0…22 characters)
First name	Defines the first name of the user.	Text (0…22 characters)
Active	Activates or deactivates the current user.	Active* I Inactive
Assigned groups	Assigns user to user groups.	List of defined groups
User language	Defines the language of the user profile.	Available languages

* Factory setting

An unlimited number of users can be created. A user is always a part of a user group and has the permissions of the group in which he is. Which user has which permissions can be defined or changed by users with the appropriate permission rights.

6.1.4.3 Groups

Navigation: ▶ **Balance menu > 👥 Users > 👥 Groups**

📝 **Note**

This area is only accessible for users with the appropriate rights.

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

General permissions

Block / unblock balance	Defines if the group is allowed to block or unblock the balance.	Active I Inactive
Configure methods	Defines if the group is allowed to: • create new methods • edit methods • delete methods • lock or unlock methods • import or export methods	Active I Inactive
Execute service commands	Defines if the group is allowed to: • access service function • block/unblock the balance • view adjustment state • generate support files	Active I Inactive

Configure system	Defines if the group is allowed to:	Active l Inactive
	• modify system settings	
	• import system settings	
	• configure peripherals	
	• perform software updates	
	• perform application or factory settings	
Configure user management	Defines if the group is allowed to:	Active l Inactive
	• print or export/import user management settings	
	• modify user management settings	
	• enable or disable user management	
Cancel task	Defines if the group is allowed to cancel a task during the execution of a method.	Active l Inactive
Exclude / Overwrite result	Defines if the group is allowed to exclude or overwrite results in the **Results list**.	Active l Inactive
Reset the time span statistics	Defines if the group is allowed to:	Active l Inactive
	• reset the time span statistics when using the method **SQC**	

Quality management permissions

Parameter	Description	Values
Start external adjustment	Defines if the group is allowed to perform external adjustments.	Active l Inactive
Show change history	Defines if the group is allowed to see the **Change history**.	Active l Inactive
Configure routine tests / GWP	Defines if the group is allowed to:	Active l Inactive
	• configure routine tests	
	• import or export routine tests	
	• configure and import test weights	
	• configure tolerance profiles	
	• activate/deactivate the GWP approval mode	
Start routine tests	Defines if the group is allowed to perform routine tests.	Active l Inactive

The settings related to the screen brightness and the 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.

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 section **Settings** is divided into the following subsections:

- 📏 **Balance**
- ⸬ **Modules / Dosing**
- ⚡ **Interfaces**
- 🖨 **Devices / Printers**
- ⚙ **LabX / Services**

6.1.5.1 Balance

Navigation: ▶ Balance menu > ⚙ Settings > ⚖ Balance

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

- **Q⚙ Weighing / Quality**
- **🕒 Date / Time / Language / Format**
- **✻◀ Screen / StatusLight / Sound**
- **⚙ General**

Weighing / Quality

Navigation: ▶ Balance menu > ⚙ Settings > ⚖ Balance > Q⚙ Weighing / Quality

Parameter	Description	Values
Leveling warning	Defines the action when the balance is out of level When **Forced leveling** is selected and the balance is out of level, no weighing value can be added to the **Results list** (green button disabled).	Inactive I Optional leveling* I Forced leveling
Electrostatic detection	Defines the condition of the environment for the electrostatic detection. **Standard environment**: Choose this option if operating in a stable environment. **Unstable environment**: Choose this option if operating in an unstable environment, i.e. where **Standard environment** setting is not enough for the balance to determine the electrostatic weighing error.	Standard environment* I Unstable environment
Tolerance profiles	A tolerance profile stores all the necessary balance settings needed for a certain weighing method. It is possible to create different tolerance profiles for different weighing methods. This section contains several settings that are described in the table **Tolerance profiles** below.	
Automatic weight value output	Defines if and in which manner (MT-SICS and/or HID) the weighing values should be exported. This section contains several settings that are described in the table **Automatic weight value output** below.	
GWP Approved mode	Good Weighing Practice (GWP®) is a program started by METTLER TOLEDO to help customers operate their weighing equipment in a safe and efficient way. It covers every relevant step in the life cycle of the instrument and provides clear guidance on how to specify, calibrate and operate weighing instruments. The GWP Approved mode observes if the following conditions are given: • Use of an appropriate tolerance profile. • The internal adjustment was successful. • Required tests were successful. • Setting up of enforced leveling. • No MinWeigh violation. If all conditions are given, the balance adds the GWP Approved sign behind every weighing result. The **GWP Approved mode** can only be enabled by a METTLER TOLEDO service technician.	Active I Inactive*

Change history	The change history is used to log changes to system settings, user management and methods as well as other settings and configurations. The following information is stored: • User ID and timestamp • Object identifier • Old values and new values of attributes A maximum of 5000 entries can be stored in the change history. For more information see [Changes ▶ Page 64].	Active I Inactive*
Balance recalib. reminder	Defines whether the user is reminded about the upcoming expiry date of the calibration.	Active* I Inactive
Days in advance	Defines the number of days before the due date the recalibration reminder is shown. This setting is only available if **Balance recalib. reminder** is set to **Active**.	Numeric (30 days* I 0...400 days)
Action when calib. expired	Defines the action when the calibration has expired. **Block**: The balance will be blocked. In this case, the balance cannot be used anymore until a user unblocks the balance. If **User management** is **Active**, only users with the appropriate rights can unblock the balance.	None* I Block
Days before blocking	Defines the number of days before the reminder informs about the upcoming expiry date.	Numeric (30 days* I 0...400 days)
Weight recalib. reminder	Defines whether the user is reminded about the upcoming expiry date of the test weight calibration.	Active I Inactive*
Days in advance	Defines the number of days before the due date the recalibration reminder is shown. This setting is only available if **Weight recalib. reminder** is set to **Active**.	Numeric (30 days* I 0...400 days)
Service reminder	Defines whether the user is reminded about the upcoming due date of the service.	Active I Inactive*
Days in advance	Defines the number of days before the due date the service reminder is shown. This setting is only available if **Service reminder** is set to **Active**.	Numeric (30 days* I 0...400 days)

* Factory setting

Tolerance profiles

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

For more information about creating tolerance profiles, see [Tolerance profiles ▶ Page 57]

Parameter	Description	Values
Name	Defines the name of the profile.	Text (0...22 characters)
Indicator	Defines the color of the indicator icon for the tolerance profile. The icon will appear above the weighing value unit. When a color is selected, a description of maximum 3 characters can be added.	None* I Neutral I White I Yellow I Red I Blue I Green I Black
Indicator text	Defines the text of the indicator icon.	Text (0...3 characters)
Calibration certificate	Selects a calibration certificate from a drop-down list of certificates available on the balance. New certificates can only be created by a service technician based on a performed balance calibration.	Calibration certificate I None*

Environment	Defines the environmental conditions of the balance.	Very stable | Stable |
	Very stable: For an environment that is free from any drafts and vibrations.	Standard* | Unstable | Very unstable
	Stable: For an 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 an environment where the conditions are from time to time changing.	
	Very unstable: For an environment where the conditions are continuously changing.	
Weighing mode	Defines the filter settings of the balance.	Universal* | Sensor mode
	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.	
Value release	Defines the speed at which the balance regards the measured value as stable and available for capture.	Very fast | Fast | Fast and reliable* | Reliable | Very reliable
	Very fast: recommended if you require fast results and repeatability is not very important.	
	Very reliable: provides very good repeatability of the measured results but prolongs the stabilization time.	
	Some intermediate settings can also be chosen from.	
Display readability	Determines the readability [d] of the balance display.	1d* | 2d | 5d | 10d | 100d | 1000d
	1d: Shows the maximum resolution	
	2d: Shows the final digit in increments of 2	
	5d: Shows the final digit in increments of 5	
	10d: 10 times smaller resolution	
	100d: 100 times smaller resolution	
	1000d: 1000 times smaller resolution	
Zero drift compensation	The function **Zero drift compensation** performs ongoing corrections of deviations from zero which may occur, for example, as a result of small amounts of dirt on the weighing pan.	Active* | Inactive
Allowed units	Defines the units that are allowed in this tolerance profile.	The available values are model-specific.

* Factory setting

Automatic weight value output

The balance can be connected to a computer with a USB cable. Weighing results can then be directly transferred to a target application, e.g., Microsoft Excel.

Parameter	Description	Values
Output mode	Defines which weighing values are transferred via the communication interface, e.g., USB, Ethernet. **Results**: The weighing values are transferred only when they are added to the **Results list**. **Continuous**: The weighing values are transferred continuously via the interface defined under **LabX / Services** > **MT-SICS**. Additional fields are available, depending on the chosen option.	Results* I Continuous
Target	Defines the way the weighing values are transferred. **HID** (Human Interaction Device): Transfers simple character streams (e.g. weight values) to a desktop computer without installing additional drivers (comparable to a keyboard). The format of a transferred weighing value can be configured. **MT-SICS**: The data is transferred in MT-SICS format (METTLER TOLEDO Standard Interface Command Set). MT-SICS operates bidirectional, i.e. usually balance sends the confirmations to the host and receives commands. A separate reference manual is available for MT-SICS. **HID / MT-SICS**: The data is transferred in HID and MT-SICS format in parallel. **MT-SICS configurable**: The data is transferred in a user-defined MT-SICS format. This setting is only available if **Output mode** is set to **Results**.	HID* I HID / MT-SICS I MT-SICS I MT-SICS configurable
Weight field length	Defines the number of digits that will be transferred into the application on the computer, e.g., into an Excel field. This setting is only available if **Output mode** is set to **Results**.	Numeric (1* I 0…20)
Sign	Defines if the weighing result is displayed with an algebraic sign. **For all values**: Each weighing result is preceded by a plus or minus sign. **For negative values**: Only negative values are preceded by a minus sign. Positive values are transferred without algebraic sign. This setting is only available if **Output mode** is set to **Results**.	For all values I For negative values*
Sign position	Defines if the algebraic sign is positioned at the first place of the weight field or directly in front of the weight digits. This setting is only available if **Output mode** is set to **Results**.	Left of weight field I Left of weight digits*
Decimal delimiter	Defines the character used to separate the whole and fractional part of a numeric value. This setting is only available if **Output mode** is set to **Results**.	, I .*
Net indicator	In the standard output format, net weights are not specially marked. To place an N in front of net weights, this function can be activated. The net symbol is left-justified in the field. This setting is only available if **Output mode** is set to **Results**.	Active I Inactive*
Net indicator field length	Defines the field length of the Net indicator. This setting is only available if **Output mode** is set to **Results** and **Net indicator** is set to **Active**.	Numeric (2* I 1…2)

Unit	Defines if a weighing unit is being shown in the weighing field.	Active* | Inactive
	This setting is only available if **Output mode** is set to **Results**.	
Unit field length	Defines the field length of the weighing unit.	Numeric (1* | 1…6)
	This setting is only available if **Output mode** is set to **Results** and **Unit** is set to **Active**.	
Field delimiter	Defines a character or sequence of characters to separate data fields.	None | Space* | TAB | , | ;
	This setting is only available if **Output mode** is set to **Results**.	
End of line character	Defines a character or sequence of characters signifying the end of a line.	CRLF | CR | LF | TAB | None | Enter*
	This setting is only available if **Output mode** is set to **Results**.	
Updates/sec.	Defines the rate at which data is transferred.	2 | 5 | 6* | 10
	This setting is only available if **Output mode** is set to **Continuous**.	
Format	Defines the format of the transferred data.	MT-SICS* | PM | AT/MT
	This setting is only available if **Output mode** is set to **Continuous**.	

* Factory setting

Date / Time / Language / Format

Navigation: ▶ Balance menu > ⚙ Settings > 🔱 Balance > 🌐 Date / Time / Language / Format

Parameter	Description	Values
Date	Defines the current date.	Date
Time	Defines the current time.	Time
	Use the plus/minus buttons to define the time.	
Language	Defines the language of the interface navigation.	English | Deutsch | Français | 日本語 | 中文 | Español | Italiano | Русский | Português | Polski | Magyar | Čeština
Time zone	Selects a time zone. When the time zone is set, the balance changes automatically between summer and winter time.	see list on the screen
Date format	Selects the date format.	D.MMM.YYYY* | MMM D YYYY | DD.MM.YYYY | MM/DD/YYYY | YYYY-MM-DD | YYYY/MM/DD | YYYY年M月D日
Time format	Selects the time format.	24:MM* | 12:MM | 24.MM | 12.MM
Keyboard layout	Defines the language of the keyboard layout.	English | German | French | Spanish | Japanese | Simplified Chinese | Russian | Czech | Polish | Hungarian
System defaults	Defines the default settings that are applied for newly created users.	
	This setting is only available if **User management** is set to **Active**.	

* Factory setting

Screen / StatusLight / Sound

Navigation: ▶ **Balance menu > ⚙ Settings > ⚖ Balance > ✲ᵢ Screen / StatusLight / Sound**

Parameter	Description	Values
Screen brightness	Defines the brightness of the display.	20 % | 40 % | 60 % | 80 %* | 100 %
Sound volume	Defines the volume of the terminal sound.	Inactive | 20 % | 40 % | 60 %* | 80 % | 100 %
Sound on key press	Defines if there is a sound when a key is pressed.	Active* | Inactive
Sound on info	Defines if there is a sound when an information appears on the screen.	Active* | Inactive
Sound on warning	Defines is there is a sound when a warning appears on the screen.	Active* | Inactive
Sound on error	Defines is there is a sound in case of an error.	Active* | Inactive
StatusLight	Activates/deactivates the **StatusLight**. **Active (without green light)**: All current status of the balance are monitored, the red/yellow lights will turn on if needed, but the green light will stay turned off. • **StatusLight** is red: Error. The balance must not be used until the error is corrected. • **StatusLight** is yellow: Warning. For example, the test manager has pushed a test to the balance or you are operating the balance between the date of the calibration reminder and the scheduled date of the next calibration. The balance can still be used. • **StatusLight** is green or off: Ok. No problems detected and the balance is ready to weigh.	Active* | Active (without green light) | Inactive
StatusLight brightness	Defines the brightness of the activated **StatusLight**. This setting is only available if **StatusLight** is set to **Active** or **Active (without green light)**.	20 % | 40 % | 60 %* | 80 % | 100 %

* Factory setting

General

Navigation: ▶ **Balance menu > ⚙ Settings > ⚖ Balance > ✤ General**

Parameter	Description	Values
Balance ID	Defines the ID of the balance. This name could be used to communicate with the balance over a network. No space or special characters are allowed.	Text (0...22 characters)
Standby	Defines if the balance automatically enters standby mode after not being used for a predefined **Wait time**. If **User management** is active, the user will be automatically logged out when the balance switches to standby mode. The standby mode can always be started manually by pressing ⏻.	Active* | Inactive
Wait time	Defines after how long the balance automatically switches to standby mode when not used. This setting is only available if **Standby** is set to **Active**.	Numeric (10 minutes* | 0...60 minutes)

Software update on system start-up	With this option activated, software update can be performed from a USB storage device on startup.	Active* I Inactive
Automatic export directory	Defines the target directory for the automatic export. The possibility to export to **File server** is only available if a **File server** is configured (see [LabX / Services ▸ Page 77]).	USB storage device* I File server
User management	Activates/Deactivates the **User management**.	Active I Inactive*

* Factory setting

6.1.5.2 Modules / Dosing

Navigation: ▶ **Balance menu > ⚙ Settings > ⠿ Modules / Dosing**

Dosing module / Dosing head

Parameter	Description	Values
Dosing head label	Defines the template of the dosing head label to be printed, i.e., which data is included on the label and in which format. This section contains several settings that are described in the table **Dosing head label** below.	

Dosing head label

Parameter	Description	Values
Copies	Defines how many copies of the label are printed.	Numeric
Used template	Chooses the label template.	Available labels are shown below.
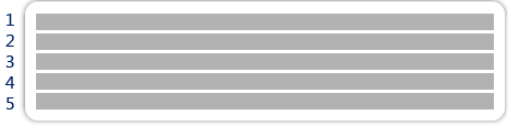
Field settings

The content of each label field can be defined individually.

Parameter	Description	Values
Label field 1	Defines which information appears in each label field. The number of label fields depends on the selected template.	Available entries depend on the method settings.

Available labels

The following label layouts can be selected:

5 large fields

5 small fields

10 small fields

1D barcode with 3 large fields

1D barcode with 3 small fields	1D barcode with 6 small fields
2D barcode with 5 large fields	2D barcode with 5 small fields
2D barcode with 2 large fields and 6 small fields	2D barcode with 8 small fields

6.1.5.3 Interfaces

Navigation: ▶ **Balance menu > ⚙ Settings > 🖧 Interfaces**

The section **Interfaces** has the following subsection:

- 🖧 **Ethernet**
-))) **Bluetooth**

Ethernet

The **Ethernet** interface allows to connect the balance to a network in order to:

- store weighing results as XML files on a share folder
- communicate remotely with the balance using the MT-SICS communication protocol or LabX

Navigation: ▶ **Balance menu > ⚙ Settings > 🖧 Interfaces > 🖧 Ethernet**

Parameter	Description	Values
Host name	Defines the balance host name.	Text (1…22 characters)
MAC address	Information on the MAC address (Media Access Control) that is used to uniquely identify the balance in the network.	
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.	DHCP*	Manual
IP address	If the IP is not to be automatically obtained, you can enter it here.	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 (primary)	Defines the address of the primary DNS (domain name system) server.	000.000.000.000… 255.255.255.255
DNS server (secondary)	Defines the address of the secondary DNS server.	000.000.000.000… 255.255.255.255

Default gateway	Defines the address of the default gateway that links the host's subnet to other networks.	000.000.000.000... 255.255.255.255

Bluetooth

Navigation: ▶ Balance menu > ✿ Settings > ⚗ Interfaces > ⁙ Bluetooth

Bluetooth identification

Parameter	Description	Values
Activation	With the option **Bluetooth** you have the possibility to communicate with a printer via Bluetooth.	Inactive* I Active

6.1.5.4 Devices / Printers

In this section optional external devices such as printers, barcode scanners, etc. can be added and configured.

Navigation: ▶ Balance menu > ✿ Settings > ▤ Devices / Printers

This section is divided into the following subsections:

- ⎁ **Light barrier**
- ▤ **Label printer**
- ▤ **Strip printer**
- ▤ **Barcode reader**
- ◍ **RFID reader**
- ◉ **ErgoSens**
- ▤ **Foot switch**

Some types of devices are associated with specific settings:

Light barrier

Navigation: ▶ Balance menu > ✿ Settings > ▤ Devices / Printers > ⎁ Light barrier

Once connected to a USB port of the balance, the light barrier is automatically recognized. The settings can be consulted here.

Label printer

Label printers allow printing weighing results on label stickers.

Navigation: ▶ Balance menu > ✿ Settings > ▤ Devices / Printers > ▤ Label printer

Parameter	Description	Values
Printer category	Defines the type of the printer. **Strip printer**: to print weighing results on strip paper **Label printer**: to print weighing results on labels	Strip printer I Label printer*
Device	Allows to activate or deactivate the device.	Activated* I Deactivated

Strip printer

Navigation: ▶ Balance menu > ✿ Settings > ▤ Devices / Printers > ▤ Strip printer

Parameter	Description	Values
Printer category	Defines the type of the printer. **Strip printer**: to print weighing results on strip paper **Label printer**: to print weighing results on labels	Strip printer I Label printer*

Device	Allows to activate or deactivate the device.	Activated*	Deactivated
Line end	Defines the line end character for printing. The values set here have to match the printer settings.	<CR> <LF>*	<CR>	<LF>
Character set	Defines the communication specific character code. The values set here have to match the printer settings.	ANSI/WIN	IBM/DOS	UTF8*

* Factory setting

ErgoSens

Navigation: ▶ Balance menu > ⚙ Settings > 📠 Devices / Printers > ⊚ ErgoSens

Parameter	Description	Values
Function	Defines which function is to be executed when triggering the device. If set to **Door**, the setting **Balance** > **Doors** > **Devices** needs to be specified.	None*	Door	Zero	Tare	Add result

* Factory setting

Foot switch

Navigation: ▶ Balance menu > ⚙ Settings > 📠 Devices / Printers > 📳 Foot switch

Parameter	Description	Values
Function	Defines which function is to be executed when triggering the device. If set to **Door**, the setting **Balance** > **Doors** > **Devices** needs to be specified.	None*	Door	Zero	Tare	Add result

* Factory setting

6.1.5.5 LabX / Services

Several services are available to communicate with the balance: **LabX service**, **MT-SICS service**, or **Web service**. Note that only one service can be enabled at any given time.

To enable communication between LabX and instruments, the appropriate settings in the instruments must correspond with the settings in LabX. LabX synchronizes the date and time on the instruments with the LabX Server each time a connection is made and each time a task is started. When an instrument is connected, the user interface language on the connected instrument is changed to the language currently installed on the LabX installation.

Navigation: ▶ Balance menu > ⚙ Settings > 🐾 LabX / Services

Parameter	Description	Values
LabX service	**Inactive**: No connection to LabX will be established. **Network**: A network connection to LabX will be established on startup. The **Port** must be specified. **USB**: A USB connection to LabX will be established on startup.	Inactive*	Network	USB
MT-SICS service	**Inactive**: No MT-SICS port will be opened. **Network**: An MT-SICS network port will be opened on startup. The **Port** must be specified. **USB**: An MT-SICS USB port will be opened on startup.	Inactive*	Network	USB
Web service	If set to **Active**, a network port will be opened on startup. Use the menu **Web service configuration** to configure the service. The complete **Web service** documentation is available online (www.mt.com/labweighing-software-download).	Inactive*	Active

| File server | Allows to define a file server to import/export data. | Active l Inactive* |
| | If set to **Active**, use the menu **File server configuration** to configure the server. | |

* Factory setting

6.1.5.6 Printing the settings

Navigation: ▶ **Balance menu** > ⚙ **Settings**

When all the balance settings are configured, you can print the complete list to archive the information.

– To print the balance settings, tap 🖳 **Print the settings**.

   ➡ The complete balance settings are printed.

6.1.6 Maintenance

Navigation: ▶ **Balance menu** > 🗄 **Maintenance**

The option **Maintenance** only appears if the user has the appropriate user rights.

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

- 🖫 **Import / Export**
- ⑴⑴ **Format RFID**
- ⚌ **Software update**
- ↺ **Reset**
- 🔧 **Service menu**

See also

6.1.6.1 Service menu

Navigation: ▶ **Balance menu** > 🗄 **Maintenance** > 🔧 **Service menu**

Button	Name	Description
🏋	**Show adjustment state**	Tap to open information about: • **Prescaler** • **Temperature compensation** • **Production linearization** • **Standard calibration** • **Production calibration** • **User linearization** • **User calibration**
💾	**Save support file**	Tap to save support file (all relevant information to an error) on a USB storage device to send it to a METTLER TOLEDO representative.
💾	**Import log configuration**	A log configuration file can be provided by METTLER TOLEDO to allow a more comprehensive collection of balance parameters to be stored in the support file. This is only used for troubleshooting purposes. Tap to import the log configuration from a USB storage device so that the enhanced list of parameters can be exported and sent to a METTLER TOLEDO representative.

6.2 Weighing methods settings

For the balance model described in this manual, only the method **General weighing** is relevant.

6.2.1 Settings: method "General weighing"

In this section, the settings of the methods **General weighing** and **General weighing (itemized)** are described. Settings can be edited for a newly created method or an already existing method.

Navigation: ▼ Methods > ⅀] Methods list > ⚖ my general weighing > ✎ Edit

Edit method - my general weighing		
General	Method type	General weighing
ID format	Method name	my general weighing
Weighing	Comment	*Enter here*
Weighing item		
Automation	Lock method	
Print / Export		
Close		Save

The settings of the method **General weighing** are grouped as follows:

- ⅀] **General**
- ⅏ **ID format**
- ⚖ **Weighing**
- ⚗ **Weighing item**, only available for the method **General weighing**
- ⚗ **Weighing items**, only available for the method **General weighing (itemized)**
- ⟳ **Automation**
- 🖳 **Print / Export**

See also

6.2.1.1 General

The **Method type** is defined in the wizard while creating the method and cannot be changed.

Parameter	Description	Values
Method name	Defines the name of the method.	Text (1…22 characters)
Comment	The method can be described with a comment.	Text (0…128 characters)
Lock method	Locks the method to prevent further editing.	Active l Inactive*

* Factory setting

6.2.1.2 ID format

Task IDs

Parameter	Description	Values
Number of task IDs	Defines the number of task IDs. If the **Number of task IDs** is larger than 0, the settings **Task ID**, **Task description** and **Prefix/Default value** are available for every single task ID.	0 | 1* | 2 | 3
Task ID 1	Defines the naming type of the task ID. **Manual with default**: The value of the task ID can be entered manually at method execution time. **Automatic timestamp**: The system provides a value created from a prefix with the current date and time appended.	Manual with default* | Automatic timestamp
Task description	Allows to define a label for each task ID field.	Text (0...32 characters)
Default value	Defines a default value for the task ID. The value of the task ID can be changed manually while executing the method. This setting is only available when the corresponding **Task ID** is set to **Manual with default**.	Text (0...32 characters)
Prefix	Defines a prefix for the task ID. This setting is only available is the corresponding **Task ID** is set to **Automatic timestamp**.	Text (0...32 characters)

* Factory setting

Result IDs

Parameter	Description	Values
Number of result IDs	Defines the number of result IDs. If the **Number of result IDs** is larger than 0, the settings **Result ID**, **Result description** and **Prefix/Default value** are available for every single result ID.	0 | 1* | 2 | 3
Result ID 1	Defines the naming type of the result ID. **Manual with default**: The value of the result ID can be entered manually at method execution time. **Automatic counter**: The system provides a value created from a **Prefix** to which is appended a unique number (counter).	Manual with default* | Automatic counter
Result description	Allows to define a label for each result ID.	Text (0...32 characters)
Default value	Defines a default value for the result ID. The value of the result ID can be changed manually while executing the method. This setting is only available when the corresponding **Result ID** is set to **Manual with default**.	Text (0...32 characters)
Prefix	Defines a prefix for the result ID. This setting is only available if the corresponding **Result ID** is set to **Automatic counter**.	Text (0...32 characters)

* Factory setting

6.2.1.3 Weighing

Parameter	Description	Values
Show info weight	When set to **Active**, a secondary weight is displayed on the weighing screen.	Active | Inactive*

Info unit	Defines the unit of the **Info weight**.	The available units depend on the balance model.
	This setting is only available if **Show info weight** is set to **Active**.	

* Factory setting

Weighing settings

Parameter	Description	Values
Tolerance profile	A tolerance profile stores all the necessary balance settings needed for a certain weighing method. It is possible to create different tolerance profiles for different weighing methods.	Tolerance profiles are created by the user for specific balances and applications.
Weight capture mode	Defines the behavior when the button to add the result was tapped or the add result was triggered by the automatic weighing result creation. **Stable**: The system waits for a stable weight. **Immediate**: The system doesn't wait for a stable weight. The system waits for the defined amount of seconds (**Weight capture delay**). After the weight capture delay, the weight value from the weight stream is captured.	Stable* I Immediate
Weight capture delay	Defines the time in seconds the balance waits for capturing the weight after the button to add the result was tapped or the add result was triggered by the automatic weighing result creation. This setting is only available if **Weight capture mode** is set to **Immediate**.	Numeric (5 seconds* I 0…60 seconds)

* Factory setting

Statistics

Parameter	Description	Values
Activate statistics	If **Activate statistics** is set to **Active**, the following statistics will be calculated: **Count**: Number of items used for the statistics **Sum**: sum of all value (decimal places and unit according to the method settings) **Minimum**: smallest value (decimal places and unit according to the method settings) **Maximum**: largest value (decimal places and unit according to the method setting) **Range**: difference between the largest and smallest values (decimal places and unit according to the method settings) **Average**: The values are summed up and divided by the number of values, rounded to 1 digit more than the configured decimal places in the associated tolerance profile (unit according to the method settings). **Standard deviation**: standard deviation rounded to 1 digit more than the configured decimal places in the associated tolerance profile (unit according to the method settings) **Relative standard deviation**: relative standard deviation (rounded to 2 decimal places, in %) The statistical values are calculated and displayed as soon as a result is added or updated.	Active I Inactive*

* Factory setting

Electrostatic

Parameter	Description	Values
Ionizer	Defines whether the ionizer is activated/deactivated.	Active | Inactive*

* Factory setting

See also

  📄 Creating a method "General weighing" ▸ Page 40

6.2.1.4 Weighing item / Weighing items

A target weight with tolerance limits can be defined for the method. The method **General weighing** includes a single item in **Weighing item**, whereas several items can be defined for the method **General weighing (itemized)** in **Weighing items**.

Parameter	Description	Values
Sample ID	Defines the name of the sample. This setting is only available for methods containing several weighing items (itemized).	Text (0…32 characters)
Unit	Defines the unit of the weighing result.	The available units depend on the balance model.
Target weight	Defines the target weight. The target weight will be shown in the weighing-in aid of the balance (SmartTrac). When a target weight including tolerances is defined, the SmartTrac indicates if the current display weight is in tolerance or not.	Numeric
-Tolerance	Defines the lower tolerance limit. This setting is only available if a **Target weight** is defined.	Numeric
+Tolerance	Defines the upper tolerance limit. This setting is only available if a **Target weight** is defined.	Numeric

See also

  📄 Creating a method "General weighing" ▸ Page 40

6.2.1.5 Automation

Parameter	Description	Values
Barcode data target	If a barcode reader is connected to the balance, this option defines how the data is to be processed. **Keyboard Input**: The data is written in the currently open input window. If no input window is open, the data is ignored. **Target weight value**: The barcode data is interpreted as a value for the target weight. **Task ID 1**: The received barcode data is treated as identification text for this task ID. **Result ID 1**: The received barcode data is treated as identification text for this result ID. The available items in the drop-down menu depend on the **Number of task IDs** and **Number of result IDs** specified for the method. Make sure that the characters of the scanned barcode are compatible with the format of the field where they should be inserted.	Keyboard Input* | Target weight value | Task ID 1 | Result ID 1 | …

* Factory setting

Automatic feeder support

This feature is not supported for the balance type described in this manual.

Parameter	Description	Values
Automatic feeder support	Enables or disables the automatic feeder support. To use the automatic feeder support, the automatic feeder has to be connected to the balance by USB and has to be configured correctly.	Active I Inactive*
Number of weighing items	Defines the number of items that the automatic feeder will deliver to the balance.	Numeric (20* I 1…100)
Plausibility limits	Defines the plausibility limit for measured values. The plausibility limit relates to the defined target weight. Example: With a plausibility limit of 30%, all weight values that are within ±30% of the target weight are regarded as plausible and are transferred into the statistics. All other weight values are being ignored and excluded from the statistics.	Numeric (30%* I 0…100%)
Discharge feeder at the end	Specifies if the automatic feeder is emptied of all objects after the task. **Active**: The automatic feeder feeds at the configured discharge feed rate and stops 90 seconds after the last object has passed the light barrier. **Inactive**: No automatic emptying.	Active I Inactive*
Feed rate	Defines the rate at which the automatic feeder delivers the items to the balance.	Slow I Normal* I Fast I Very fast

* Factory setting

Weighing automation

Parameter	Description	Values
Automatic zero	**Active**: the balance is automatically zeroed when the weight falls below a predefined threshold.	Active I Inactive*
Automatic zero threshold	Defines the threshold of the **Automatic zero**. This setting is only available if **Automatic zero** is set to **Active**.	Numeric
Tare Mode	Defines the tare mode. **None**: No automatic tare. **Automatic tare**: The balance stores automatically the first stable weight as the tare weight. **Preset tare**: Allows you to enter manually a numerical entry of a fixed tare weight.	None* I Automatic tare I Preset tare
Automatic tare threshold	Defines the threshold of the option **Tare Mode**. This value defines the minimum weight that must be applied to the weighing pan so that it is automatically stored as the tare weight. If the weight is below the limits, it is not automatically transferred to the tare memory. Instead of entering the weight, the lightest tare container can be placed on the weighing pan and the button ⬚ subsequently pressed. The applied weight is directly taken over as a limit. This setting is only available if **Tare Mode** is set to **Automatic tare**.	Numeric

Preset tare value	Defines a weight value for the pretare function.	Numeric
	Instead of entering the value, the respective tare container can be placed on the weighing pan and the button ⚖ subsequently pressed. The weight is directly taken over as pretare value.	
	This setting is only available if **Tare Mode** is set to **Preset tare**.	
Automatic result	Automatically generates a weighing result after a threshold is reached.	None	With sample tare*	Without sample tare
	None: No automatic result will be generated.	
	With sample tare: After a weight value that reached the threshold is being removed from the weighing pan, the balance is being tared.	
	Without sample tare: After a weight value that reached the threshold is being removed from the weighing pan, the balance is not being tared.	
	If **Automatic feeder support** is activated, the setting **Automatic result** is automatically set to **Without sample tare** and cannot be edited.	
Automatic result threshold	Defines the threshold of the **Automatic result**.	Numeric
	The result is automatically added to the **Results list** only if the weight of the sample is larger than the defined threshold.	
	This setting is only available if **Automatic result** is set to **Active**.	
Weight trigger	Defines the behaviour of the option **Automatic result threshold**.	Exceeding*	Falling below
	Exceeding: The weighing result is generated when the weight exceeds the defined threshold.	
	Falling below: The weighing result is generated when the weight falls below the defined threshold.	
	This setting is only available if **Automatic result** is set to **Without sample tare**.	
	If **Automatic feeder support** is activated, the setting **Weight trigger** is automatically set to **Exceeding** and cannot be edited.	
Automatic tare after result	If set to **Active**, the balance is automatically tared when a result is added to the **Results list**.	Active	Inactive*
Automatic task completion	**Active**: the balance automatically completes a running task after the result of the last weighing item has been added to the **Results list**.	Active	Inactive*
	This setting is only available if the method is using multiple weighing items.	

* Factory setting

See also

▤ Creating a method "General weighing" ▸ Page 40

6.2.1.6 Print / Export

Parameter	Description	Values
Strip printout and data export	Defines the content of the printout and/or export, as well as which printing/exporting actions are performed automatically when the task is complete.	
	This section contains several settings that are described in the table **Strip printout and data export** below.	

Label printout for task	Defines the template of the task label to be printed, i.e., which data is included on the label and in which format. This section contains several settings that are described in the table **Label printout for task** below.	
Label printout for weighing item	Defines the template of the weighing item label to be printed, i.e., which data is included on the label and in which format. This section contains several settings that are described in the table **Label printout for weighing item** below.	
Label cutting	Defines if the labels should be cut after printing. **Per label**: Each label is cut once printed. **Per task**: The labels are cut when the task is complete. This setting is only relevant if the connected label printer can cut labels.	Off* | Per label | Per task

* Factory setting

6.2.1.6.1 Strip printout and data export

Automatic data output

Parameter	Description	Values
Strip printer	Activates/Deactivates automatic printing of the **Results list** on a strip printer when the **Complete** button is tapped. The data to be transmitted to the printer can be defined in the section **Template settings**.	Active | Inactive*
Results export	Activates/Deactivates the automatic data export to a file server or USB storage device when the **Complete** button is tapped.	Active | Inactive*
Weight value	Activates/Deactivates the option to automatically send the weighing value over USB or Ethernet when tapping **Add result**.	Active | Inactive*

* Factory setting

Strip printout template

This menu item can be used to define which information is printed by the strip printer.

Each individual parameter can be set to **Inactive** or **Active** via the corresponding check box. To enable or disable all parameters at once, proceed as follows:

1 To disable all check boxes at once, tap ▢ **Deselect all**.

➞ All parameters are set to **Inactive**.

2 To enable all check boxes at once, tap ☑ **Select all**.

➞ All parameters are set to **Active**.

Template settings

Parameter	Description	Values
Header and Footer	Defines the header and/or footer to be printed.	Title* | Title text* | Date/time | User | Signature* | Separating lines* | Group titles
Balance information	Defines which information about the balance is being printed.	Balance type | Balance ID* | Balance serial number | Software version

Quality infor-mation	Defines which quality information is being printed.	Tolerance profile | Adjustment date/time | Routine test name | Routine test last execution date | Routine test result | GWP Approved state | Level state | MinWeigh state
Task information	Defines which information about the task is being printed.	Method name | Method comment | Task IDs | Custom unit settings | Automatic result settings | Count | Sum | Average | Minimum | Maximum | Range | Standard deviation | Relative standard deviation
Weighing item information	Defines which information about the weighing items is being printed.	Show excluded weighing items | Result state | Result IDs* | GWP Approved state | Electrostatic charge | Level state | MinWeigh state | Tolerance state | Target and tolerances state
Result detail information	Defines which information related to the result of the measurement is being printed.	Weight* | Tare weight | Gross weight | Info weight | Date/time* | Stability

* Factory setting

6.2.1.6.2 Label printout for task

Parameter	Description	Values
Automatic label printout for task	When set to **Active**, the task label is automatically printed when tapping **Complete**.	Active | Inactive*
Copies	Defines how many copies of the label are printed.	Numeric
Used template	Chooses the label template.	Available labels are shown below.

* Factory setting

Field settings

The content of each label field can be defined individually.

Parameter	Description	Values
Label field 1	Defines which information appears in each label field. The number of label fields depends on the selected template.	Available entries depend on the method settings.

Barcode settings

The content of each barcode field can be defined individually. This section is only available when the selected **Used template** contains at least one 2D code.

Parameter	Description	Values
Delimiter	Defines the delimiter between the barcode entries. This setting is only available when the selected **Used template** contains several 2D codes.	TAB* I Form feed I Carriage return I Space I User defined
Barcode field 1	Defines which information appears in each barcode. The number of the barcode fields depends on the selected template.	Available entries depend on the method settings.

* Factory setting

6.2.1.6.3 Label printout for weighing item

Parameter	Description	Values
Automatic label printout for weighing item	When set to **Active**, the weighing item label is automatically printed when tapping **Add result**.	Active I Inactive*
Copies	Defines how many copies of the label are printed.	Numeric
Used template	Chooses the label template.	Available labels are shown below.

* Factory setting

Field settings

The content of each label field can be defined individually.

Parameter	Description	Values
Label field 1	Defines which information appears in each label field. The number of label fields depends on the selected template.	Available entries depend on the method settings.

Barcode settings

The content of each barcode field can be defined individually. This section is only available when the selected **Used template** contains at least one 2D code.

Parameter	Description	Values
Delimiter	Defines the delimiter between the barcode entries. This setting is only available when the selected **Used template** contains several 2D codes.	TAB* I Form feed I Carriage return I Space I User defined
Barcode field 1	Defines which information appears in each barcode. The number of the barcode fields depends on the selected template.	Available entries depend on the method settings.

* Factory setting

6.2.1.6.4 Available labels

The following label layouts can be selected:

| 5 large fields | 5 small fields |

10 small fields	1D barcode with 3 large fields
1D barcode with 3 small fields	1D barcode with 6 small fields
2D barcode with 5 large fields	2D barcode with 5 small fields
2D barcode with 2 large fields and 6 small fields	2D barcode with 8 small fields

6.3 Test weights settings

6.3.1 Settings: individual test weight

Navigation: ▼ Methods > ᵇ Tests > ᵇᵇ Test weights > ᵇᵇ my weight 1 > ✐ Edit

Parameter	Description	Values
Test weight name	Defines the name of the test weight.	Text (1…22 characters)
Test weight ID	Defines the test weight ID.	Text (1…22 characters)
Nominal weight	Defines the approximate, rounded value of the **Actual weight**.	Numeric
Weight class	Defines the weight class according to OIML or ASTM. Alternatively, a customized tolerance class can be created with **Own**.	E1 I E2 I F1 I F2 I M1 I M2 I M3 I ASTM000 I ASTM00 I ASTM0 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 date for calibration.	Date
Certificate	If the certificate of the test weight is available, set to **Active** and fill in the additional information related to the certificate (see below).	Active I Inactive*
Certificate ID	Defines the certificate ID. This setting is only available if **Certificate ID** is set to **Active**.	Text (1…22 characters)
Certificate date	Defines the certificate date. This setting is only available if **Certificate ID** is set to **Active**.	Date
Weight set ID	Defines the weight set ID.	Text (1…22 characters)

* Factory setting

6.3.2 Settings: combined test weight

Navigation: ▼ Methods > ᵇ Tests > ᵇᵇ Test weights > ᵇᵇ my weight 1+2 > ✐ Edit

Parameter	Description	Values
Test weight name	Defines the name of the test weight.	Text (1…22 characters)
Nominal weight	Shows the sum of the nominal weights of all the individual weights included in this combined weight.	Numeric
Minimum weight class	Defines the minimum weight class according to OIML or ASTM. The customized tolerance class **Own** can also be selected. When choosing the weights that compose the combined weight, only the individual weights with a class better or equal to the selected **Minimum weight class** are shown.	E1 I E2 I F1 I F2 I M1 I M2 I M3 I ASTM000 I ASTM00 I ASTM0 I ASTM0 I ASTM1 I ASTM2 I ASTM3 I ASTM4 I ASTM5 I ASTM6 I ASTM7 I Own*
Weights	Displays a list of the available individual test weights. A total of two or three individual test weights can be selected. Only the individual weights with a class better or equal to the selected **Minimum weight class** are shown.	List of individual test weights

* Factory setting

6.4 Tests settings

6.4.1 Settings: Repeatability test

Navigation: ▼ **Methods >** 🔒 **Tests >** 🔒 **my repeatability test > ✎ Edit**

1. Name and type

Parameter	Description	Values
Test type	The test type has been pre-defined and cannot be changed in this menu.	Available test types
Name	Defines the name of the test.	Text (1…22 characters)
Test activated	Enables/disables the test.	Active* I Inactive
Show preparation instructions	If activated, a predefined preparatory instruction is displayed in the test sequence.	Active* I Inactive
Automatic print	When activated, the test results are immediately printed on the enabled strip printer after the test result has been calculated.	Active I Inactive*

* Factory setting

2. Test specification

Parameter	Description	Values
Result calculation	Select whether the nominal weight or the conventional mass value (CMV) is used for the result calculation. **On nominal weight**: Nominal value of a weight with a specific weight class. **On actual weight (CMV)**: Conventional mass value (CMV) of a weight from the weight calibration certificate.	On nominal weight* I On actual weight (CMV)
Number of repetitions	Defines the number of weight measurements of a series.	Numeric (10* I 2…15)

* Factory setting

Tare

This section only appears when **Test type** is set to **Repeatab. - Tare - 1 TP**.

Parameter	Description	Values
Tare name	Defines a name for the tare weight.	Text (1…22 characters)
Minimum tare weight	Defines the minimum weight for the tare container. The test is only continued if a tare container with at least this weight is placed on the balance.	Numeric

* Factory setting

Test point

Parameter	Description	Values
Nominal weight	Defines the nominal value of the weight that will be used for the test.	Numeric
Weight class	Defines the weight class according to OIML or ASTM. Alternatively, a customized tolerance class can be created with **Own**.	E1 I E2 I F1 I F2 I M1 I M2 I M3 I ASTM000 I ASTM00 I ASTM0 I ASTM0 I ASTM1 I ASTM2 I ASTM3 I ASTM4 I ASTM5 I ASTM6 I ASTM7 I Own*

* Factory setting

Test limits

Parameter	Description	Values
Control limit	Defines the error tolerance of a process with respect to its set value. Exceeding the **Control limit** is a violation of quality requirements and therefore requires a correction of the process. The minimum value is 40% of the balance readability. Result if the **Control limit** is exceeded: The test failed, the balance is out of specification.	Numeric
Warning limit	Defines the upper or lower limit that, if exceeded or not reached, makes more stringent process monitoring necessary. The **Warning limit** must be smaller than the **Control limit**. Result if the **Warning limit** is exceeded: The test is passed, but the difference is higher than expected.	Numeric

3. Test weights

A configured test weight can be selected. For information on test weights definition and settings, see Test weights and [Test weights settings ▸ Page 89].

4. Error management

Parameter	Description	Values
Block balance	Defines the behavior of the balance if a test has failed. **Active**: The balance will be blocked after a specified number of failed tests. In this case, the balance cannot be used anymore until a user with the appropriate right unblocks the balance. **Inactive**: Blocking is not activated.	Active | Inactive*
Allowed number of retries	Defines the maximum allowed retries until the balance will be blocked. This setting is only available if **Block balance** is set to **Active**.	Numeric (3* | 0…9)

* Factory setting

5. Test planning

Parameter	Description	Values
Planning type	Specifies the schedule for the test to be performed. **Manually**: The test is performed manually. **Daily**: A task is generated every day at the specified time. **Weekly**: A task is generated at least once a week. Additional days can be selected if required. **Monthly**: A task is generated every month at the specified day and time. **Quarterly**: A task is generated every three months at the specified time. **Annually**: A task is generated once a year at the specified time.	Manually* | Daily | Weekly | Monthly | Quarterly | Annually
Start time	Defines the time when the test is due. This setting is only available if **Planning type** is not set to **Manually**.	Time

* Factory setting

Notification

This section does not appear when **Planning type** is set to **Manually**.

Parameter	Description	Values
(x) hours before test	Defines the number of hours before a notification informs about the upcoming planned test.	Different values depending on the selected frequency (Planning type).
Notification every (x) hours	Defines the time interval before the next notification is issued.	Different values depending on the selected frequency (Planning type).

Preferred days

This section only appears when **Planning type** is set to **Weekly**.

Parameter	Description	Values
Preferred days	Defines the preferred weekday for the execution of the test.	Monday* | Tuesday* | Wednesday* | Thursday* | Friday* | Saturday | Sunday

* Factory setting

Preferred day for execution

This section only appears when **Planning type** is set to **Monthly**.

Parameter	Description	Values
Day of the week	Defines the preferred day for execution of the test. If **None** is selected, the test will be scheduled for a month after the last execution.	None* | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday
Week of the month	Defines the occurrence of a given day of week within a month. This setting is only available if **Day of the week** is not set to **None**.	First* | Second | Third | Fourth

* Factory setting

See also

- 📄 Defining an individual test weight ▸ Page 43
- 📄 Creating a new test ▸ Page 45

6.4.2 Settings: Sensitivity test

Navigation: ▼ Methods > 🔒 Tests > 🔒 my sensitivity test > ✏ Edit

1. Name and type

Parameter	Description	Values
Test type	The test type has been pre-defined and cannot be changed in this menu.	Available test types
Name	Defines the name of the test.	Text (1...22 characters)
Test activated	Enables/disables the test.	Active* | Inactive
Show preparation instructions	If activated, a predefined preparatory instruction is displayed in the test sequence.	Active* | Inactive

Automatic print	When activated, the test results are immediately printed on the enabled strip printer after the test result has been calculated.	Active I Inactive*

* Factory setting

2. Test specification

Parameter	Description	Values
Result calculation	Select whether the nominal weight or the conventional mass value (CMV) is used for the result calculation. **On nominal weight**: Nominal value of a weight with a specific weight class. **On actual weight (CMV)**: Conventional mass value (CMV) of a weight from the weight calibration certificate.	On nominal weight* I On actual weight (CMV)

* Factory setting

Tare

This section only appears when the option **Test type** is set to **Sensitivity - Tare - 1 TP** or **Sensitivity - Tare - 2 TP**.

Parameter	Description	Values
Tare name	Defines a name for the tare weight.	Text (1...22 characters)
Minimum tare weight	Defines the minimum weight for the tare container. The test is only continued if a tare container with at least this weight is placed on the balance.	Numeric

Test point

Depending on the selected test, the following options can be defined for one or two test points:

Parameter	Description	Values
Nominal weight	Defines the nominal value of the weight that will be used for the test.	Numeric
Weight class	Defines the weight class according to OIML or ASTM. Alternatively, a customized tolerance class can be created with **Own**.	E1 I E2 I F1 I F2 I M1 I M2 I M3 I ASTM000 I ASTM00 I ASTM0 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 **Control limit** is a violation of quality requirements and therefore requires a correction of the process. Result if the **Control limit** is exceeded: The test failed, the balance is out of specification.	Numeric
Warning limit	Defines the upper or lower limit that, if exceeded or not reached, makes more stringent process monitoring necessary. The **Warning limit** must be smaller than the **Control limit**. Result if the **Warning limit** is exceeded: The test is passed, but the difference is higher than expected.	Numeric

* Factory setting

3. Test weights

A configured test weight can be selected. For information on test weights definition and settings, see Test weights and [Test weights settings ▶ Page 89].

4. Error management

Parameter	Description	Values
Block balance	Defines the behavior of the balance if a test has failed. **Active**: The balance will be blocked after a specified number of failed tests. In this case, the balance cannot be used anymore until a user with the appropriate right unblocks the balance. **Inactive**: Blocking is not activated.	Active | Inactive*
Allowed number of retries	Defines the maximum allowed retries until the balance will be blocked. This setting is only available if **Block balance** is set to **Active**.	Numeric (3* | 0…9)

* Factory setting

5. Test planning

Parameter	Description	Values
Planning type	Specifies the schedule for the test to be performed. **Manually**: The test is performed manually. **Daily**: A task is generated every day at the specified time. **Weekly**: A task is generated at least once a week. Additional days can be selected if required. **Monthly**: A task is generated every month at the specified day and time. **Quarterly**: A task is generated every three months at the specified time. **Annually**: A task is generated once a year at the specified time.	Manually* | Daily | Weekly | Monthly | Quarterly | Annually
Start time	Defines the time when the test is due. This setting is only available if **Planning type** is not set to **Manually**.	Time

* Factory setting

Notification

This section does not appear when **Planning type** is set to **Manually**.

Parameter	Description	Values
(x) hours before test	Defines the number of hours before a notification informs about the upcoming planned test.	Different values depending on the selected frequency (Planning type).
Notification every (x) hours	Defines the time interval before the next notification is issued.	Different values depending on the selected frequency (Planning type).

Preferred days

This section only appears when **Planning type** is set to **Weekly**.

Parameter	Description	Values
Preferred days	Defines the preferred weekday for the execution of the test.	Monday* | Tuesday* | Wednesday* | Thursday* | Friday* | Saturday | Sunday

* Factory setting

Preferred day for execution

This section only appears when **Planning type** is set to **Monthly**.

Parameter	Description	Values
Day of the week	Defines the preferred day for execution of the test. If **None** is selected, the test will be scheduled for a month after the last execution.	None* | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday
Week of the month	Defines the occurrence of a given day of week within a month. This setting is only available if **Day of the week** is not set to **None**.	First* | Second | Third | Fourth

* Factory setting

See also

📄 Defining an individual test weight ▸ Page 43

📄 Creating a new test ▸ Page 45

6.5 Adjustments settings

Navigation: ▼ Methods > 🔧 Adjustments > 🔧 Internal adjustment > ✏ Edit

1. Strategy

Parameter	Description	Values
Strategy	Defines the type of adjustment to be performed. When **Strategy** is set to **No adjustment** or **External adjustment**, no other settings are available.	Internal adjustment* | External adjustment | No adjustment
Automatic print	When activated, the adjustment results are immediately printed on the enabled strip printer after the result has been calculated.	Active | Inactive*

* Factory setting

2. Specification

Parameter	Description	Values
'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 and recorded.	Active | Inactive*
'As left' test	When the adjustment is complete, an internal sensitivity test is automatically performed. The test results are displayed and recorded.	Active | Inactive*

* Factory setting

Limits

These settings only appear when one of the options **'As found' test** or **'As left' test** is activated.

Parameter	Description	Values
Control limit	Defines the error tolerance of a process with respect to its set value. Exceeding the **Control limit** is a violation of quality requirements and therefore requires a correction of the process. Result if the **Control limit** is exceeded: The adjustment failed, the balance is out of specification.	Numeric (0.1%* | 0.001…100%)

Warning limit	Defines the upper or lower limit that, if exceeded or not reached, makes more stringent process monitoring necessary. The **Warning limit** must be smaller than the **Control limit**. Result if the **Warning limit** is exceeded: The adjustment is passed, but the difference is higher than expected.	Numeric (0.001...100%)

* Factory setting

3. Error management

Parameter	Description	Values
Block balance	Defines the behavior of the balance if the adjustment has failed. **Active**: The balance will be blocked after the adjustment has failed. In this case, the balance can not be used anymore until a user with the appropriate right unblocks the balance. **Inactive**: The balance will not be blocked.	Active | Inactive*

* Factory setting

4. Planning

Parameter	Description	Values
Start after leveling	Defines if the internal adjustment starts after leveling.	Active | Inactive*
Start after temperature change	Defines if the internal adjustment starts automatically after a temperature change of 1°C.	Active | Inactive*
Schedule	Defines when the adjustment is being performed. It is possible to define between one and three start times per day. It can also be defined on which day(s) the adjustment is being performed.	Inactive | 1 start time | 2 start times* | 3 start times
Start time 1	Defines the start time for the execution of the task. The number of start times to be defined is specified by **Schedule**.	Time
Preferred days	Defines the days for the scheduled adjustments. This setting is only available if **Schedule** is not set to **Inactive**.	Monday | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday

* Factory setting

See also

- 📄 Defining an individual test weight ▸ Page 43
- 📄 Editing an "Internal adjustment" ▸ Page 51
- 📄 Editing an "External adjustment" ▸ Page 52

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 internal adjustment	• Daily • After cleaning • After leveling • After changing the location	see "Adjustments"
Performing routine tests (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"
Emptying the containers	• Depending on the frequency of usage of the instrument • Depending on your internal regulations (SOP)	see "Emptying the containers"
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

7.2 Emptying the containers

7.2.1 Assembling the pump

During normal usage, the pipetting container and the evaporation trap container contain water. The pump serves to remove the water in a safe and efficient manner, without having to disassemble the instrument. The inlet tubing has a metallic tube attached for easier handling. The outlet tubing serves to dispose of the aspirated liquid.

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.

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.

5 Connect the tubing with the metallic tube (**2**) to the nozzle IN (**3**).

6 Connect the other tubing to the nozzle OUT (**4**).

7 Place the free end of the tubing into a container suitable for liquid waste (**5**).
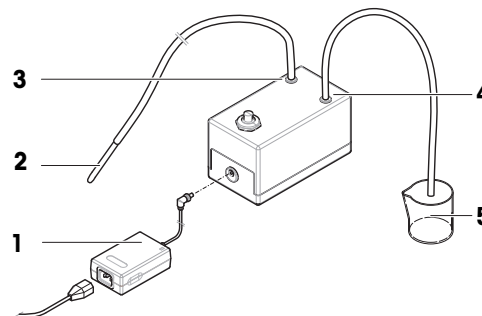
7.2.2 Emptying the pipetting container

The pipetting container must be regularly emptied to prevent an overflow.
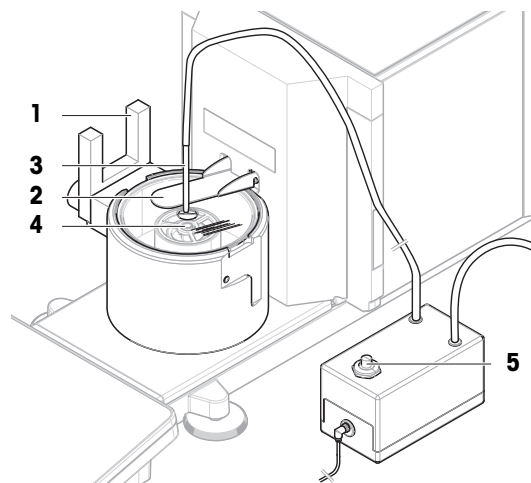

NOTICE

Damage to the pump due to inapropriate handling

If the pump is switched on when it is not in use, it can get damaged.

− Switch off the pump when it is not in use.

■ The pump is assembled.

■ The outlet tubing is placed in a container suitable for liquid waste.

1 Activate the light barrier (**1**), or press ↕.

➡ The evaporation trap door (**2**) opens.

2 Introduce the metallic tube (**3**) into the pipetting container (**4**).

3 Switch on the pump (**5**).

➡ The liquid is pumped out and collected in the container for liquid waste.

4 Switch off the pump (**5**).

5 Reassemble the balance.

➡ The balance is ready to be used.

See also

▤ Assembling the pump ▸ Page 97
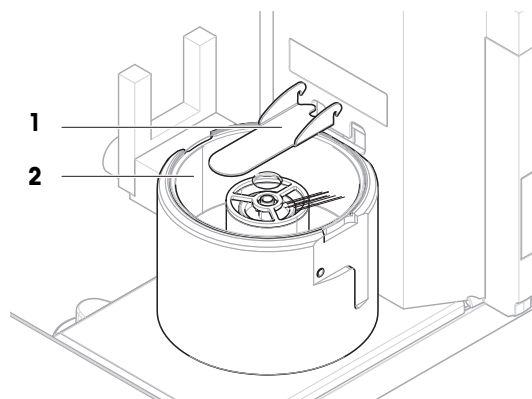
7.2.3 Emptying the evaporation trap container

NOTICE

**Damage to the pump due to inapropriate handling**

If the pump is switched on when it is not in use, it can get damaged.

− Switch off the pump when it is not in use.

- The pump is assembled.
- The outlet tubing is placed in a container suitable for liquid waste.
1 Remove the evaporation trap door (**1**).
2 Carefully remove the evaporation trap cover (**2**).

3 Introduce the metallic tube (**3**) into the evaporation trap container (**4**).
4 Switch on the pump (**5**).
  → The liquid is pumped out and collected in the container for liquid waste.
5 If required, use the pump to empty the pipetting container (**6**), see [Emptying the pipetting container ▶ Page 98].
6 Switch off the pump (**5**).
7 Altervatively, remove the evaporation trap container (**4**) to empty it.
8 Reassemble the balance.
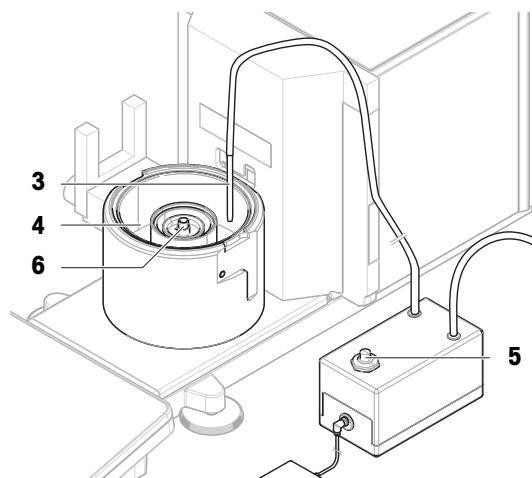
See also
▤ Assembling the pump ▶ Page 97
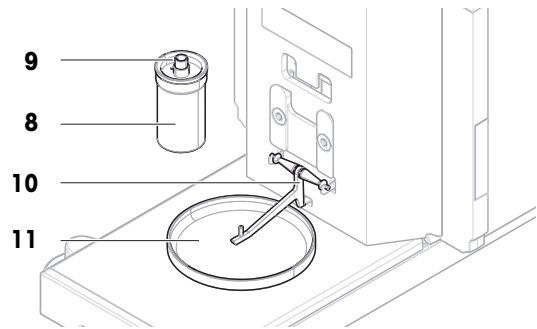
7.3 Cleaning

7.3.1 Disassembling for cleaning

- The containers are empty, see [Emptying the containers ▶ Page 97].
- The balance is switched off, see [Switching off the balance ▶ Page 30].
1 Remove the fixing screw (**1**) and put the light barrier (**2**) aside.
2 Remove the evaporation trap door (**3**).
3 Carefully remove the evaporation trap cover (**4**).
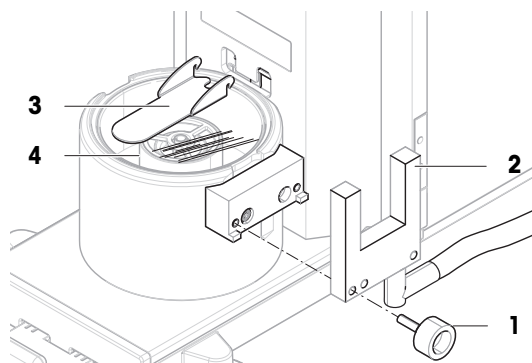
4   Remove the centering ring (**5**).

5   Carefully lift and remove the pipetting base (**6**) with the evaporation trap container (**7**).
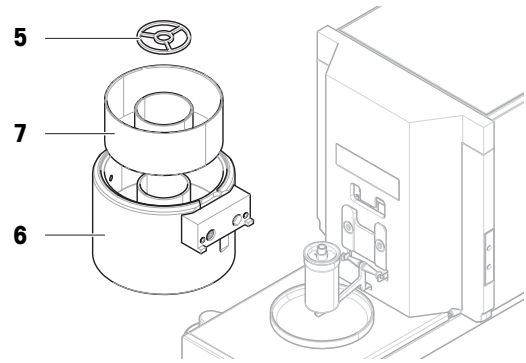
6   Remove the pipetting container (**8**) and unscrew the cover holding the pipetting tube (**9**).

7   Carefully remove the pipetting container support (**10**).

8   Remove the drip tray (**11**).

7.3.2 Cleaning agents

In the following table, cleaning tool 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 (0.2-1.0 M)	Peracetic acid (2-3%)
Around the balance	Balance housing	✓	R	—	R	—	R	✓	R	R	R
	Feet	✓	R	—	R	—	R	✓	R	R	R
Balance terminal	Terminal	✓	R	—	✓	PR	R	R	R	R	R
	Display	✓	—	—	✓	PR	R	R	R	R	R
	Terminal cover	✓	R	—	✓	—	R	R	R	PR	PR
Evaporation trap	Evaporation trap container	✓	—	—	✓	PR	R	R	R	R	—
	Evaporation trap cover (glass)	✓	R	R	R	PR	✓	✓	R	R	R
	Evaporation trap door	✓	R	R	✓	R	R	R	—	—	—

		Paper tissue	Brush	Dishwasher	Water	Acetone	Ethanol (70%)	Isopropanol (70%)	Hydrochloric acid (3-10%)	Sodium hydroxide (0.2-1.0 M)	Peracetic acid (2-3%)
Weighing area	Pipetting container	✓	—	—	✓	R	R	R	—	—	PR
	Pipetting container support	✓	—	—	✓	R	R	R	—	—	—
	Centering ring	✓	—	—	✓	R	R	R	—	—	—
	Pipetting base	✓	—	—	✓	R	R	R	—	—	PR
	Light barrier	✓	—	—	✓	PR	R	R	R	R	—
	Drip tray	✓	—	—	✓	R	R	R	—	—	PR
Calibration kit	Weighing pans	✓	—	—	✓	R	R	R	—	—	PR
	Cover ring	✓	—	—	✓	R	R	R	—	—	—
	Draft shield	✓	—	—	✓	R	R	R	—	—	—
Pump	Pump housing	✓	R	—	R	—	R	✓	R	PR	R

Legend

✓   Best recommendation by METTLER TOLEDO; can be used without limitation.

R   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.

7.3.3 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.

Cleaning the weighing unit

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%.

7.3.4 Cleaning after an overflow

In the event of an overflow, for example when overfilling the pipetting container, excess liquid must be removed immediately.

1 Use the pump to empty the evaporation trap container, see [Emptying the evaporation trap container ▶ Page 98].
2 Use the pump to empty the pipetting container, see [Emptying the pipetting container ▶ Page 98].
3 Disassemble the remaining items and clean them with a lint-free cloth or tissue, see [Disassembling for cleaning ▶ Page 99].
4 Reassemble the balance.

See also

▤ Assembling the pump ▶ Page 97

7.3.5 Putting into operation after cleaning

1 Reassemble the balance.
2 Check if the terminal is connected to the balance.
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 to be used.

See also

▤ Technical Data ▶ Page 107
▤ Performing an internal adjustment ▶ Page 29
▤ Leveling the balance ▶ Page 29
▤ Performing a "Sensitivity test" ▶ Page 49

7.4 Software update

Search for software downloads   ▶ www.mt.com/labweighing-software-download

Please 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.

Navigation: ▶ **Balance menu >** 🗄 **Maintenance >** ⚖ **Software update**

See also

▤ Exporting data and settings ▶ Page 57

7.4.1 Updating the software

- ■ A USB storage device containing the software installer (zip file format) is connected to the balance.
- 1 Tap ⚖ **Software update**.
- 2 Select **Update software** and tap →**Next**.
    - ➡ An update wizard opens and will lead you step-by-step through the procedure.

7.4.2 Restoring the software to the previous version

The current software version can be rolled back to the previous software version.

- 1 Tap ⚖ **Software update**.
- 2 Select **Restore the software to the previous version.** and tap → **Next**.
    - ➡ An update wizard opens and will lead you step-by-step through the procedure.

7.4.3 Putting into operation after software update

- 1 Press ⏻ to switch on the balance.
- 2 Check the level status, level the balance if necessary.
- 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 to be used.

See also

▤ Leveling the balance ▶ Page 29
▤ Performing an internal adjustment ▶ Page 29

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
Balance reset failed	Communication failure	–	Disconnect the power cable and reconnect after a few seconds.
The system has no valid date and time set	Low battery	–	Connect to the power outlet and let the battery charge for two to three days.
Weight cannot be determined	Data signal problems of electronics.	–	Disconnect the power cable and reconnect after a few seconds.
	Bad connection between the terminal and the weighing unit.	Check the cable for damage (kinked, twisted or broken pins).	Replace the terminal cable.
Cannot start adjustment	Initial zero was not reached when the balance was switched on.	–	Disconnect the power cable and reconnect after a few seconds.
Preventive performance optimization	The balance memory (RAM) is full.	–	Complete the current task. Disconnect the power cable and reconnect after a few seconds.

8.2 Error symptoms

Error symptom	Possible cause	Diagnostic	Remedy
The display is dark.	The instrument is on standby.	–	Switch on the instrument.
	There is no power.	Check the connection to the AC/DC adapter and the power outlet.	Connect the weighing unit to the power outlet. See "Connecting the balance".
	The terminal is not connected to the instrument.	Check the terminal cable connection.	Connect the terminal cable to the instrument.
	The terminal cable is defective.	Check the cable for damage (kinked, twisted or broken pins).	Replace the terminal cable.
	The wrong AC/DC adapter is connected to the instrument.	Check it, see "Technical Data".	Use the correct AC/DC adapter.
	The AC/DC adapter is defective.	–	Replace the AC/DC adapter.
The value on the display oscillates.	Vibrations on the weighing bench, e.g., 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, e.g. with an absorber. Find a different weighing location.

Error symptom	Possible cause	Diagnostic	Remedy
	Draft due to untight draft shield and/or open window.	Check the draft shield for gaps.	Fix the draft shield. Close the window.
	The location is not suitable for weighing.	–	Follow the requirements for the location. See "Selecting the location".
	Something is touching the pipetting container or 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 evaporation trap container is empty.	Check if the evaporation trap container is contains sufficient water.	Fill the evaporation trap container with water, see "Filling the evaporation trap container".
	There is a water drop on the outside of the pipetting container.	Check if the pipetting container is wet on the outside.	Clean the pipetting container on the outside.
	The pipetted water is warmer or colder than the air inside the evaporation trap.	Check if the weighing result is stable when using acclimatized water.	Bring the water to room temperature.
	The balance has not yet warmed up.	–	Let the balance warm up. Adequate warm-up time is specified in the "General data".
The display shows overload or underload.	The pipetting container is not properly installed.	Slightly lift or press down the pipetting container to see if the weight appears on the display. Check if the pipetting container moves freely.	Install the pipetting container properly, see "Assembling the balance".
	The wrong weighing pan is installed.	Slightly lift or press down the weighing pan to see if the weight appears on the display.	Install the proper weighing pan.
	No weighing pan is installed.	–	Install the proper weighing pan.
	Incorrect zero point at power on.	–	Disconnect the power cable and reconnect after a few seconds.
	The balance is not adjusted.	–	Perform an internal adjustment, see "Internal adjustment".
The evaporation trap door does not open/close when activating the light barrier.	The instrument is on standby.	–	Switch on the instrument.
	The light barrier is not connected to the balance.	Check if the cable is connected.	Connect the cable properly.
	The light barrier is not properly detected by the balance.	–	Disconnect the light barrier cable from the balance. Delete the light barrier from the devices list, see

Error symptom	Possible cause	Diagnostic	Remedy
			"Deleting a device". Connect the light barrier to the balance.
	The light barrier or the door motor is defective.	Check if the evaporation trap door opens/closes by tapping ↕ on the terminal. If this works, the light barrier is defective. If this does not work, either the light barrier or the door motor is defective.	Replace the light barrier. Contact a METTLER TOLEDO representative to replace the door motor.
The user interface responds slowly.	Too many results are included in the **Results list** of a task.	Check the **Results list** of every running and pending task.	Complete all tasks: For each task in the list of **Tasks**, select the task, tap **Continue task**, and tap **Complete**.

8.3 Putting into operation after fixing an error

After fixing an error, 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

AC/DC adapter (model no. FSP060-DHAN3):	Input: 100 – 240 V AC ± 10%, 50 – 60 Hz, 1.8 A Output: 12 V DC, 5 A, LPS, SELV
AC/DC adapter (model no. FSP060-DIBAN2):	Input: 100 – 240 V AC ± 10%, 50 – 60 Hz, 1.5 A Output: 12 V DC, 5 A, LPS, SELV
Cable for AC/DC adapter:	3-core, with country-specific plug
Balance power consumption:	12 V DC ± 10%, 2.25 A
Polarity:	◇—◉—◇

Protection and standards

Overvoltage category:	II
Degree of pollution:	2
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 air humidity:	30 – 70%, non-condensing
Acclimatization time:	At least **8 hours** after placing the instrument in the same location where it will be put into operation.
Warm-up time:	At least **120 minutes** after connecting the balance to the power supply. When switched on from standby, the instrument 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 – +40 °C
Relative air 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 air humidity:	10 – 90%, non-condensing

9.2 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.
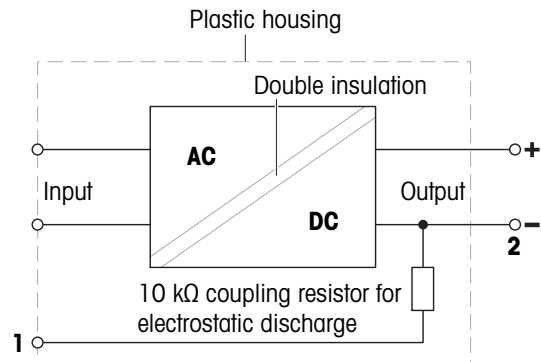
9.3 Model-specific data

	XPR26PC
Limit values	
Capacity	22 g
Nominal load	20 g
Readability	0.001 mg
Repeatability (at nominal load)	0.0025 mg
Repeatability (at 5% load)	0.0015 mg
Linearity deviation	0.01 mg
Sensitivity offset (at nominal load) ▲	0.08 mg
Sensitivity temperature drift	0.0001%/°C
Typical values	
Repeatability (at 5% load)	0.0007 mg
Linearity deviation	0.003 mg
Eccentricity deviation (at test load)	0.006 mg (10 g)
Sensitivity offset (at nominal load) ▲	0.05 mg
Minimum weight (USP, tolerance = 0.10%) ▼	1.4 mg
Minimum weight (tolerance = 1%) ▼	0.14 mg
Settling time	3.5 s
Dimensions and other specifications	
Balance dimensions (W × D × H)	195 × 485 × 292 mm
Balance weight	10.1 kg
Weights for routine testing	
Weights (OIML class)	20 g (F1) / 1 g (F1)
Weights (ASTM class)	20 g (ASTM 1) / 1 g (ASTM 1)

▲ after adjustment with internal weight

▼ determined at 5% load, k = 2

9.4 Dimensions

Models: XPR26PC
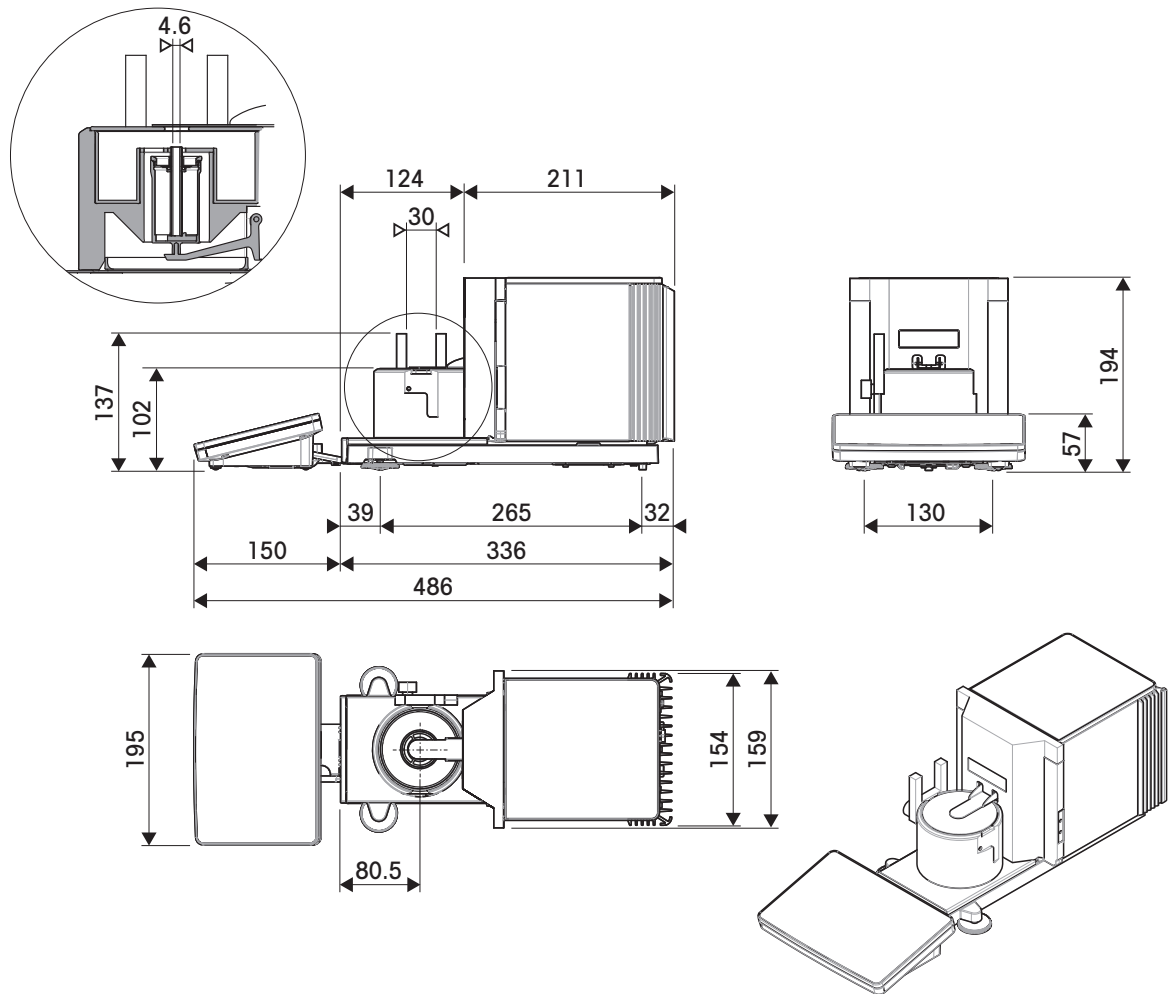
⟷	Outer dimensions [mm]
◁⟶▷	Clear dimensions [mm]

10 Disposal

In conformance with the European Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE) this device may not be disposed of in domestic waste. This also applies to countries outside the EU, per their specific requirements.

Please dispose of this product 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 device. Should this device be passed on to other parties, the content of this regulation must also be related.

11 Accessories and Spare Parts

11.1 Accessories

Accessories are additional components that could help you in your workflow.
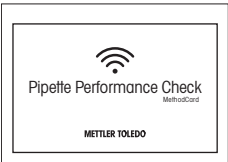
	Description	Order no.
Pipette calibration		
	Calibration kit (without adjustment/test weights)	11140044
	Reagent reservoirs, 5 pcs.	11600616
	Barometer	11600086
	Calibrated thermometer with certificate	11132685
Antistatic kits		
	Compact ionizer with stand (USB)	30499859
	Additional compact ionizer (USB) for Compact ionizer with stand (30499859)	30496446
Printers		
	CLS-631 label printer (RS232C/USB-A)	11141820
	Label and ink ribbon kit	30004309
	The NetCom Kit might be needed for this printer. Contact your local METTLER TOLEDO service representative.	

	P-52RUE dot matrix printer RS232C, USB and Ethernet connections, simple print-outs	30237290
	Paper roll (length: 20 m), set of 5 pcs	00072456
	Paper roll (length: 13 m), self-adhesive, set of 3 pcs	11600388
	Ribbon cartridge, black, set of 2 pcs	00065975
	P-56RUE thermal printer with RS232C, USB and Ethernet connections, simple print-outs, date and time	30094673
	Paper roll, white (length: 27 m), set of 10 pcs	30094723
	Paper roll, white, self-adhesive (length: 13 m), set of 10 pcs	30094724
	P-58RUE thermal printer with RS232C, USB and Ethernet connections, simple print-outs, date and time, label printing, balance applications, e.g., statistics, formulation, totaling	30094674
	Paper roll, white (length: 27 m), set of 10 pcs	30094723
	Paper roll, white, self-adhesive (length: 13 m), set of 10 pcs	30094724
	Paper roll, white, self-adhesive labels (550 labels), set of 6 pcs	30094725
	Dimension of the label 56×18 mm	

Anti-theft devices

	Anti-theft cable with lock	11600361

RFID readers / writers / cards

	EasyScan USB Reads and writes RFID tags.	30416173
	Smart Tag	
	Set of 50 pieces	30101517
	Set of 200 pieces	30101518
	MethodCard	
	Set of 5 pieces	30300929
	Set of 25 pieces	30300930

Hands-free accessories
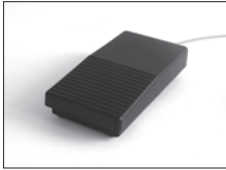
	Foot switch, optional switch for remote operation (USB connection)	30312558
	ErgoSens, optical sensor for remote operation (USB connection)	30300915

Barcode readers

	Corded USB barcode reader	30417466

Cables for RS232C interfaces

	USB-RS232 cable (to connect a balance via RS232C to a USB port)	64088427
	USB-RS232 cable with integrated null modem to connect peripherals and computers via RS232C to an XPR/XSR balance	30576241

Wireless interfaces

	Bluetooth RS232C serial adapter ADP-BT-S For wireless connection between: • instrument and computer (depending on the instrument model) • printer and instrument	30086494
	Bluetooth USB adapter for wireless connection to P-5x printer (additional Bluetooth RS232 serial adapter 30086494 required)	30416089

Weighing tables

	Weighing table	30404636

Software

Calibry PC Software

Calibry Express; for single channel pipettes — 11138423

Calibry Single workstation; for calibration with one system MPC — 11138419

Calibry Network; Installation on several PC of the network accessing the same database — 11138420

CarePacs

CarePac OIML — 11123006

CarePac ASTM — 11123106

Adjustment weights

OIML / ASTM Weights (with calibration certificate)
see www.mt.com/weights

Various

EasyHub USB — 30468768

Terminal cable, extended, length: 4.5 m — 30300920

11.2 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.

11.2.1 Balance
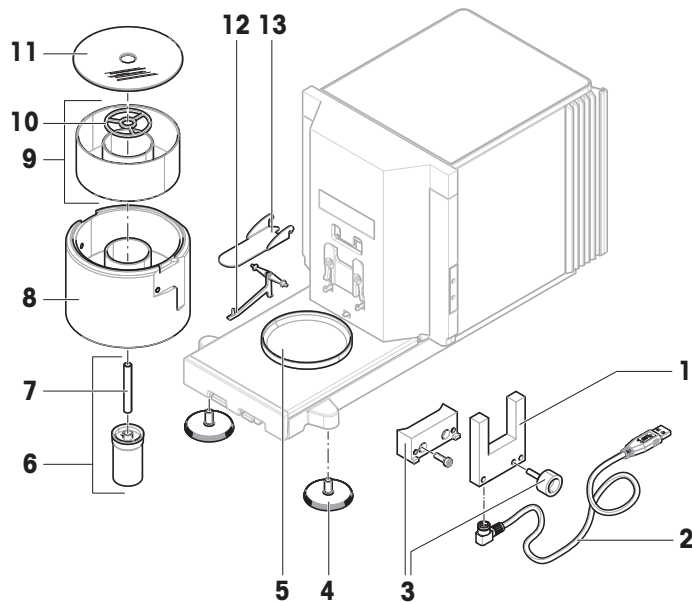
	Order no.	Designation	Remarks
1	30521637	Light barrier	–
2	30460312	Cable light barrier	–
3	30521728	Fixing screw and spacer light barrier	–
4	30460287	Leveling feet, set	Including: 2 leveling feet
5	30521632	Drip tray	–
6	11107917	Pipetting container	Including: Pipetting tube
7	30521634	Pipetting tube	Material: glass
8	30521729	Pipetting base	–
9	30521635	Evaporation trap container	–
10	30538437	Centering ring	–
11	30521636	Evaporation trap cover	Material: glass
12	30521633	Support pipetting container	–
13	30460313	Evaporation trap door	–

11.2.2 Pump
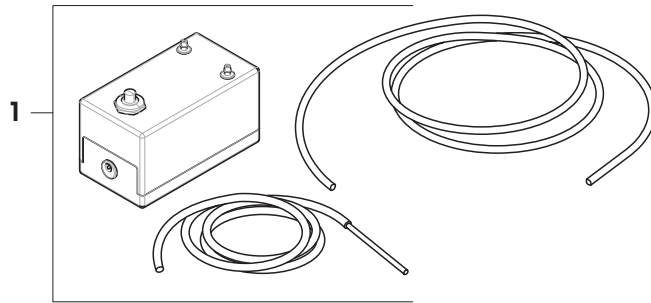
	Order no.	Designation	Remarks
1	30676828	Suction pump	Including: 1 tubing with metallic tube, 1 tubing without tube

11.2.3 Miscellaneous
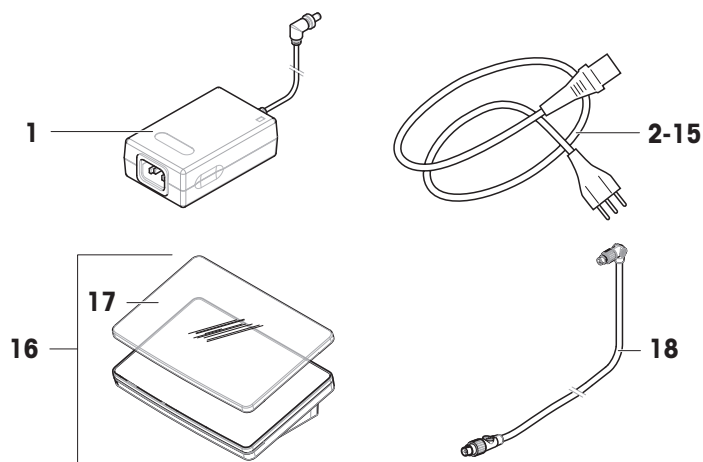
	Order no.	Designation	Remarks
1	30388323	AC/DC adapter	Output: 12 V DC, 5 A
2	88751	Power cable AU	–
3	30015268	Power cable BR	–
4	87920	Power cable CH	–
5	30047293	Power cable CN	–
6	87452	Power cable DK	–
7	87925	Power cable EU	–
8	89405	Power cable GB	–
9	225297	Power cable IL	–
10	11600569	Power 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	–
16	30134389	Terminal PRAT	Including: protective cover
17	30125377	Protective cover	For terminal (PRAT, PRPT)
18	30416123	Cable terminal	–

11.2.4 Packaging
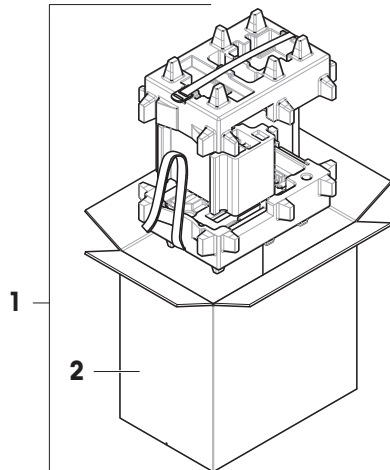
	Order no.	Designation	Remarks
1	30460297	Packaging	Including: Export box, inner protection material
2	30460298	Export box	Excluding: Inner protection material

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Good Weighing Practice™

GWP® is the global weighing standard, ensuring consistent accuracy
of weighing processes, applicable to all equipment from any manufacturer
It helps to:
• Choose the appropriate balance or scale
• Calibrate and operate your weighing equipment with security
• Comply with quality and compliance standards in laboratory and
  manufacturing

▶ **www.mt.com/GWP**

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For more information

30419865