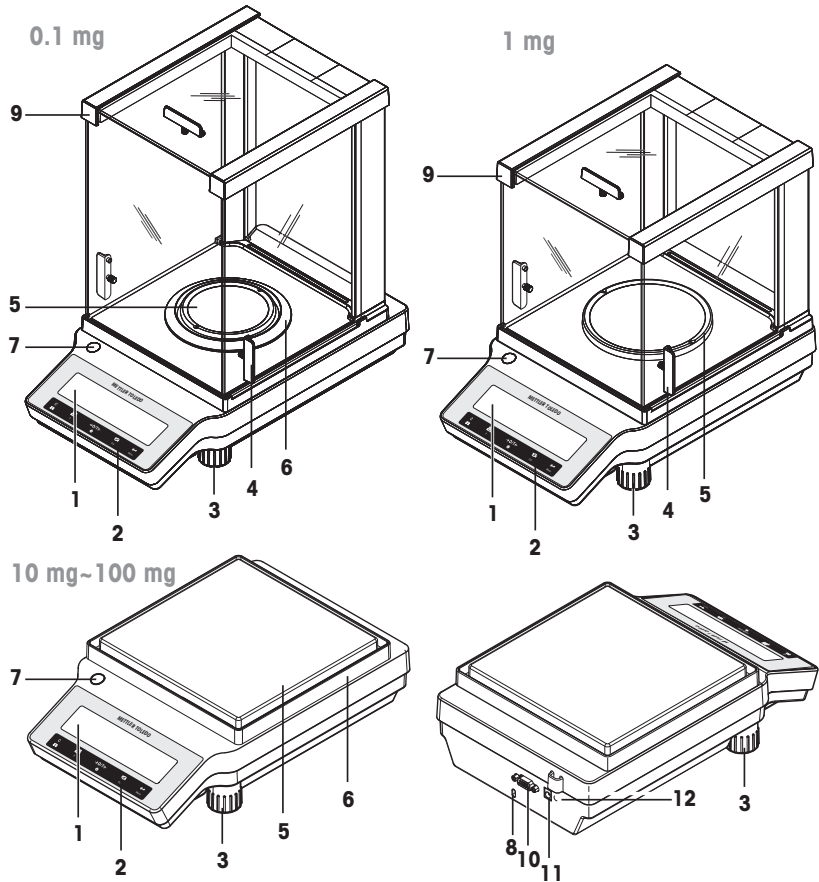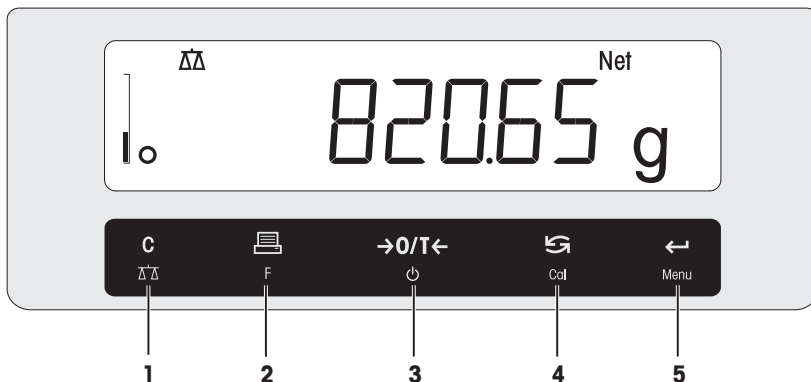User Manual

Precision and Analytical Balances
ME

METTLER TOLEDO

Overview components

0.1 mg

1 mg

10 mg~100 mg

1	Display	**2**	Operation keys
3	Leveling foot	**4**	Handle for operation of the draft shield door
5	Weighing pan	**6**	Draft shield element
7	Level indicator	**8**	Kensington slot for anti-theft purposes
9	Glass draft shield	**10**	RS232C serial interface
11	Socket for AC adapter	**12**	Legal for Trade (LFT) sealing

Overview operation keys

Legend key functions

No.	Key	Press briefly (less than 1.5 s)	Press and hold (longer than 1.5 s)
1	C ∆∆	• Cancel or leave menu without saving • One step back in the menu	• Select the simple weighing application • Exit application
2	🖨 F	• Print display value • Transmit data • To navigate backwards in the menu or menu selection • Decrease parameters in menu or applications	• Open the application list for selecting an application
3	→0/T← ⏻	• Zero/Tare • Switch on	• Switch off into standby mode

4	⟲ Cal	• With entries, scroll down
		• To navigate forward menu topics or menu selections
		• To toggle between unit 1, recall value (if selected), unit 2 (if different from unit 1) and the application unit (if any)
		• Increase parameters in menu or applications.
			• Select adjustment (calibration)
			  − with internal weight *
			  − with external weight
			  − Customer fine adjustment *
			* On models with internal weight only

5	↵ Menu	• Enter or leave menu selection • To enter application parameter digit and switch to next parameter digit • To accept parameter in menu selection.	• Enter or leave menu (parameter settings) • To store parameter • To accept numeric inputs in applications.

1 Safety Information

1.1 Definition of signal warnings and symbols

Safety notes are marked with signal words and warning symbols. These show safety issues and warnings. Ignoring the safety notes may lead to personal injury, damage to the instrument, malfunctions and false results.

WARNING for a hazardous situation with medium risk, possibly resulting in death or severe injury if not avoided.

CAUTION for a hazardous situation with low risk, resulting in minor or moderate injury if not avoided.

NOTICE for a hazardous situation with low risk, resulting in damage to the balance, other material damage, malfunctions and erroneous results, or loss of data.

Note (no symbol)
for useful information about the product.

 General hazard   Electrical shock

 NOTICE

1.2 Product safety information

Intended use

Your balance is used for weighing. Use the balance exclusively for this purpose. Any other type of use and operation beyond the limits of technical specifications without written consent from Mettler-Toledo GmbH, is considered as not intended.

 It is not permitted to use the instrument in explosive atmosphere of gases, steam, fog, dust and flammable dust (hazardous environments).

General safety information

This balance complies with current industry standards and the recognized safety regulations; however, it can constitute a hazard in use. Do not open the balance housing: The balance contains no user-serviceable parts. In the event of problems, please contact a METTLER TOLEDO representative.

Always operate and use your instrument only in accordance with the instructions contained in this document. The instructions for setting up your new instrument must be strictly observed.

If the instrument is not used according to the Operating Instructions, protection of the instrument may be impaired and METTLER TOLEDO assumes no liability.

Staff safety

These printed document must be read and understood before using the balance. These printed document must be retained for future reference.

The balance must not be altered or modified in any way. Only use METTLER TOLEDO original spare parts and accessories.

Safety notes

⚠ **WARNING**

Risk of electric shock

Use only the original universal AC/DC adapter delivered with your balance, and check that the voltage printed on it is the same as your local power supply voltage. Only plug the adapter into a socket which is grounded.

⚠ **CAUTION**

Damage to the balance

1   Only use indoors in dry locations.
2   Do not use pointed objects to operate the keyboard!
    The balance is of a very sturdy design, but is still a precision instrument. It must be handled with care.
3   Do not open the balance:
    The balance contains no user-serviceable parts. In the event of problems, please contact a METTLER TOLEDO representative.
4   Only use METTLER TOLEDO original accessories and peripheral devices for the balance.
    These are specifically designed for the balance.
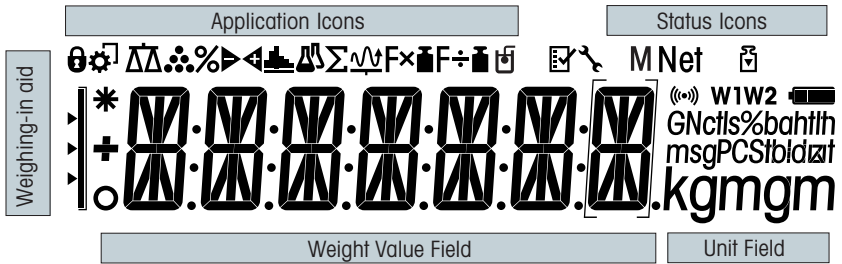
NOTICE

Damage of the balance or software

In some countries, excessive mains voltage fluctuations and strong glitches may occur. This may affect the balance functions or damage the software.

–   Use the PowerPac-M-12V for stabilizing.

2 Design and Function

2.1 Display

Application Icons			
△△	Application "Weighing"	Σ	Application "Totaling"
⁘	Application "Piece counting"	∿↯	Application "Dynamic weighing"
%	Application "Percent weighing"	F×∎	Application "Multiplication factor"
▶◁	Application "Check weighing"	F÷∎	Application "Division factor"
▥	Application "Statistics"	⬚	Application "Density"
⚗	Application "Formulation / Net-Total"	🔒	Menu locked

Note

While an application is running, the corresponding application icon appears at the top of the display.

| Status Icons			
M	Indicates stored value (Memory)	((•))	Feedback for pressed keys
Net	Indicates Net weight values	W1	Weighing range 1 (Dual Range models only)
⬚	Adjustments (calibration) started	W2	Weighing range 2 (Dual Range models only)
⚒	Service reminder		

Weight Value Field and Weighing-in aid			
▬	Indicates negative values	⸢ ⸣	Brackets to indicate uncertified digits (approved models only)
O	Indicates unstable values	▶	Marking of nominal or target weight
✳	Indicates calculated values	▶⁺	Marking of tolerance limit T+
		▶	Marking of tolerance limit T-

Unit Field							
GNctls%bahtlth msgPCStbldzt **kgmgm**	**g**	gram	**ozt**	troy ounce	**tls**	Singapore taels
	kg	kilogram	**GN**	grain	**tlt**	Taiwan taels
	mg	milligram	**dwt**	pennyweight	**tola**	tola
	ct	carat	**mom**	momme	**baht**	baht
	lb	pound	**msg**	mesghal		
	oz	ounce	**tlh**	Hong Kong taels		

2.2 Basic principles for operation

Selecting simple weighing or terminate application

– Press and hold «ΔΔ» until "**WEIGH**" appears on the display.
  ⇨ The balance returns to the simple weighing mode.
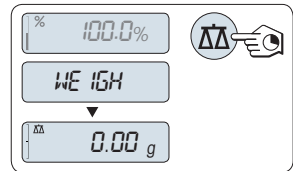
Note

How to perform simple weighing **see** [Performing a simple weighing ▶ 21].

Selecting an application

1 Press and hold «**F**» until "**APP.LIST**" (application list).
  ⇨ Last active application e.g. "**COUNT**" appears on the display.
2 Select an application by multiple pressing «⟲».
3 To execute selected application press «↵».
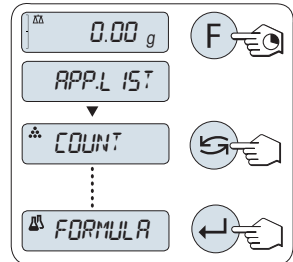
Available applications

Display	Remark	Description
COUNT	Piece counting	**see** Application "Piece Counting"
PERCENT	Percent weighing	**see** Application "Percent Weighing"
CHECK	Checkweighing	**see** Application "Check Weighing"
STAT	Statistics	**see** Application "Statistics"
FORMULA	Formulation / Net-Total	**see** Application "Formulation" (Net Total Formulation)
TOTAL	Totaling	**see** Application "Totaling"
DYNAMIC	Dynamic weighing	**see** Application "Dynamic Weighing"
FACTOR.M	Multiplication factor	**see** Application "Multiplication Factor Weighing"
FACTOR.D	Division factor	**see** Application "Division Factor Weighing"
DENSITY	Density	**see** Application "Density"

Entering the menu

1 Press and hold «**Menu**» to enter main menu. The first menu "**BASIC**" is displayed (except menu protection is active).
2 Press «⟲» repeatedly to change menu.
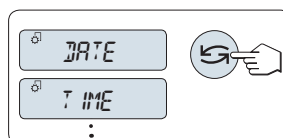3 Press «↵» to confirm the selection.
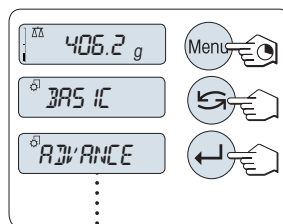
Note

Detailed description of the menu **see** The Menu.

Selecting menu topics

– Press «⟲». The next menu topic appears in the display. Each time «⟲» is pressed, the balance switches to the next menu topic.

Changing settings in selected menu topic

1 Press «↵».The display shows the current setting in the selected menu topic. Each time «⟲» is pressed, the balance switches to the next selection. After the last selection, the first is shown again.
2 Press «↵» to confirm the setting. For store the setting see section **Saving Settings and Closing the Menu**.
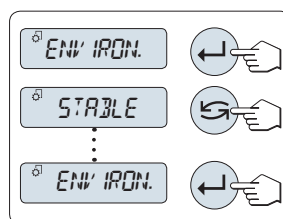
Changing settings in a submenu selection

The same procedure as for menu topics.

Input principle of numerical values

1 Press «↵» to select a digit (cyclically from left to right) or a value (depending on the application). The selected digit or the selected value is blinking.
2 For changing blinking digits or values, press «⟲» to increase or «**F**» to decrease.
3 Press and hold «↵» to accept the value.
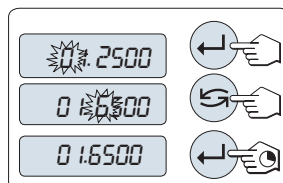
Saving settings and closing the menu

1 Press and hold «**Menu**» to leave menu topic.
    ⇨ "**SAVE:YES**" appears on the display.
2 Press «⟲» to toggle between "**SAVE:YES**" and "**SAVE:NO**".
3 Press «↵» to execute "**SAVE:YES**". Changes are saved.
4 Press «↵» to execute "**SAVE:NO**". Changes are not saved.
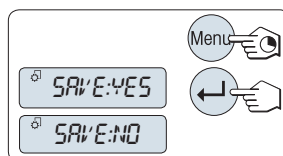
Cancel

- During menu operation
- To leave menu topic or menu selection without saving press
  «**C**» (one step back in the menu).

- During application operation
- To cancel settings press «**C**».
    - ⇨ The balance returns to the previous active application.
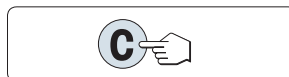
Note: If no entry is made within 30 seconds, the balance reverts to last active application mode. Changes are not saved. If changes are made, the balance asks "**SAVE:NO**".

3 Installation and Putting into Operation

Finding more information

▶ www.mt.com/me-analytical

▶ www.mt.com/me-precision

⚠ **WARNING**

Electrical shock

The balance must be disconnected from the power supply when carrying out all setup and mounting work.

3.1 Unpacking and delivery inspection

1 Open the packaging and carefully remove all components.

2 Check the delivered items.

The standard scope of delivery contains the following items:

| Components		Model		
		0.1 mg	1 mg	10 mg / 100 mg
Draft shield	high, 235 mm	✓	–	–
	low, 170 mm	–	✓	–
Weighing pan with pan support	ø 90 mm	✓	–	–
	ø 120 mm	–	✓	–
	180 × 180 mm	–	–	✓
Draft shield element		✓	–	✓
Pan support		–	–	✓
Protective cover		✓	✓	✓
Universal AC adapter		✓	✓	✓
EC declaration of conformity		✓	✓	✓
Operating instructions or User Manual; printed or on CD-ROM, depending on country of use		✓	✓	✓

3.2 Installing components

Balances with readability of 0.1 mg

Place the following components on the balance in the specified order:

1   Push the side glass doors back as far as will go.
2   Place draft shield element (1).
3   Place weighing pan (2).

Note
Cleaning the draft shield **see** Cleaning the draft shield.
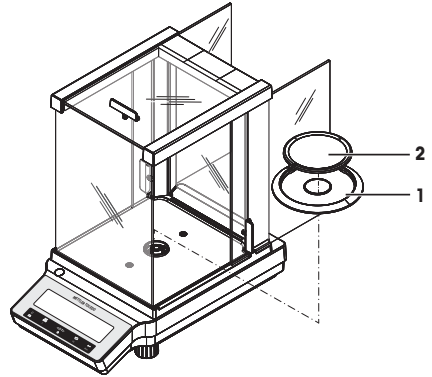
Balances with readability of 1 mg

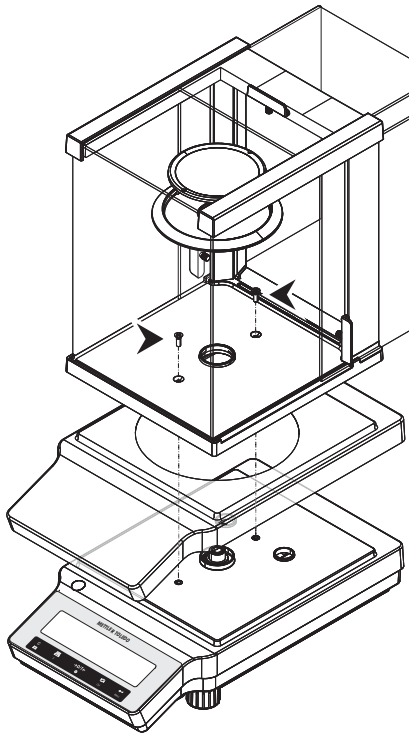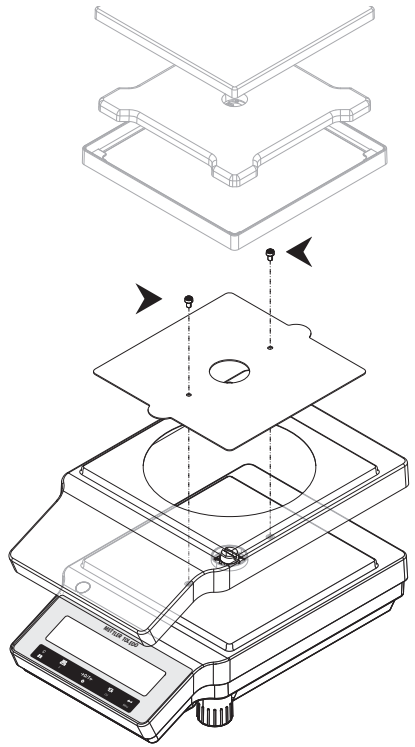Place the following components on the balance in the specified order:

1   Push the side glass doors back as far as will go.
2   Place weighing pan (1).

Note
Cleaning the draft shield **see** Cleaning the draft shield.
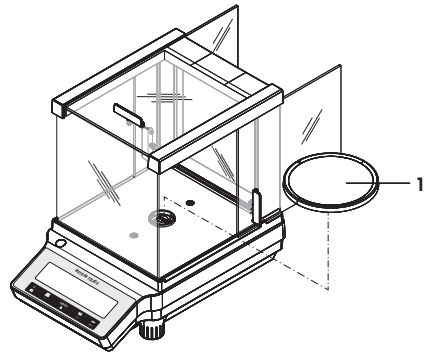
Balances with readability of 10 mg / 100 mg

Place the following components on the balance in the specified order:

1   Place draft shield element (1): carefully pull apart the draft shield element to fix it under the retaining plate.

2   Insert pan support (2).

3   Place weighing pan (3).
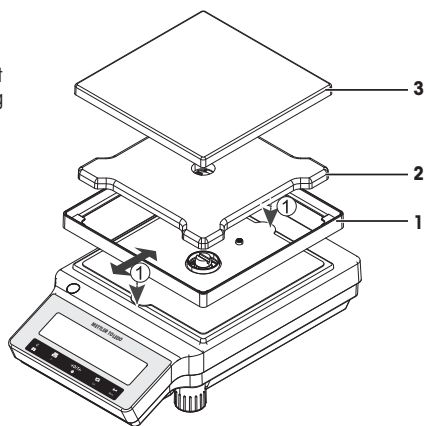
3.3 Installing protective cover

Note

Make sure using the correct protective cover, **see** Accessories and Spare Parts

Balances with readability of 0.1 mg / 1 mg	Balances with readability of 10 mg / 100 mg
Install the protective cover according to the illustrations below, using a screwdriver Philips No. 2.	Install the protective cover according to the illustrations below, using a screwdriver Torx TX20.

3.4 Selecting a location

Your balance is a precision instrument and will thank you for an optimum location with high accuracy and dependability. Select a stable, vibration-free position that is as horizontal as possible. The surface must be able to safely carry the weight of a fully loaded balance.

Observe ambient conditions see Technical Data.

Avoid the following:

- Vibrations
- Excessive temperature fluctuations
- Direct sunlight
- Powerful drafts (e.g. from fans or air conditioners)
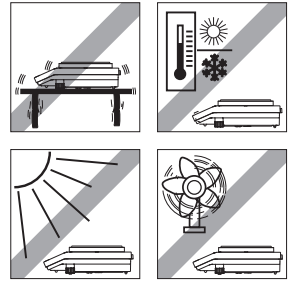
3.5 Connecting the balance

⚠️ **WARNING**

Risk of electric shock

1 Only connect the balance to a three-pin power socket with earthing contact.
2 Only standardized extension cable with equipment grounding conductor must be used for operation of the balance.
3 Intentional disconnection of the equipment grounding conductor is forbidden.

The balance is supplied with an universal AC adapter and a country-specific plug. The AC adapter is suitable for use with the following voltage range:

100 – 240 V AC, 50/60 Hz.

NOTICE

**Danger of damage to the AC adapter due to overheating or incorrect voltage range!**

If the AC adapter is covered or in a container, it is not sufficiently cooled and overheats.

If the voltage is too high for the device in use, the device might be damaged or the cable might start to burn.

If the voltage is too low, use of the device might be restricted or the device might not function at all.

1 Do not cover the AC adapter.
2 Do not put the AC adapter in a container.
3 Check whether your local power supply falls within this range. If this is not the case, under no circumstances connect the AC adapter to the power supply, but contact a METTLER TOLEDO representative.
4 The power plug must be accessible at all times.
5 Prior to use, check the power cable for damage.
6 Route the cable in such a way that it cannot be damaged or cause a hindrance when working.
7 Ensure that no liquid comes into contact with the AC adapter.

– Connect the AC adapter to the connection socket on the back of your balance (see figure) and to the power line.
  ⇨ The balance performs a display test (all segments in the display light up briefly), "**WELCOME**", **Software version**, **Maximum load** and **Readability** appears briefly.
The balance is ready for use.
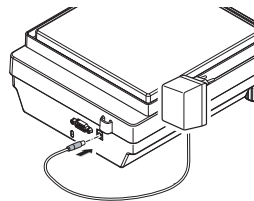
3.6 Setting up the balance

3.6.1 Switching on the balance

Before working with the balance, it must be warmed up in order to obtain accurate weighing results. To reach operating temperature, the balance must be connected to the power supply for at least 30 minutes (0.1 mg models 60 minutes).

Switching on

- The Balance is in "**STANDBY**" mode. "**MT.GREEN**" appears on the display.
– Press «⏻» or remove any load from weighing pan or tap on the weighing pan.

The balance is ready for weighing or for operation with the last active application.

Note

Approved balances can only be switched on by pressing «⏻» in selected countries.
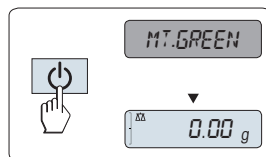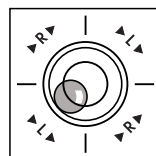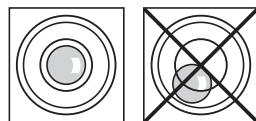
3.6.2 Leveling the balance

Note

The balance must be leveled and adjusted each time it is moved to a new location.

1 Align the balance horizontally.
2 Turning the two front leveling screws of the housing until the air bubble is in the inner circle of the level indicator.
  ⇨ The position of the air bubble illustrates which leveling screw you need to turn (L = left leveling screw, R = right leveling screw) and in which direction so that the air bubble moves to the center.

Example

In this example, turn the left leveling screw counterclockwise.

3.6.3 Adjusting the balance

To obtain accurate weighing results, the balance must be adjusted to match the gravitational acceleration at its location and depending on the ambient conditions. After reaching the operation temperature, adjusting is necessary

- before the balance is used for the first time.
- after a change of the location.
- at regular intervals during weighing service.

3.7 Setting date and time

When you put your new instrument into operation for the first time, you should enter the current date and time.

Note

- These settings are retained even if you disconnect your instrument from the power supply.
- A reset of the instrument will not change these settings.
- Set the current date according to the date format "**DATE.FRM**" in the menu "**ADVANCE.**".
- Set the current time according to the time format "**TIME.FRM**" in the menu "**ADVANCE.**".

1 Press and hold «**Menu**» until menu "**BASIC**" appears on the display.

2 Press «⏎» to open menu "**BASIC**".
   ⇨ "**DATE**" appears.

3 Press «⏎» to confirm.

4 **Set current date**. Press «⏎» to select day, month or year; press «↩» to set current day, month or year.

5 Press and hold «⏎» to confirm the settings.
   ⇨ "**DATE**" appears..

6 **Set current time**. Press «↩» to select "**TIME**".

7 Press «⏎» to confirm.
   ⇨ "**+1H**" appears.

8 Select "**SET.TIME**" by pressing «↩».

9 Press «⏎» to confirm.

10 Press «⏎» to select hours or minutes; press «↩» to set current hours or minutes.

11 Press and hold «⏎» to confirm the settings.
   ⇨ "**TIME**" appears.

12 Press and hold «⏎» to store the settings.
   ⇨ "**SAVE:YES**" appears.

13 Press «⏎» to confirm.
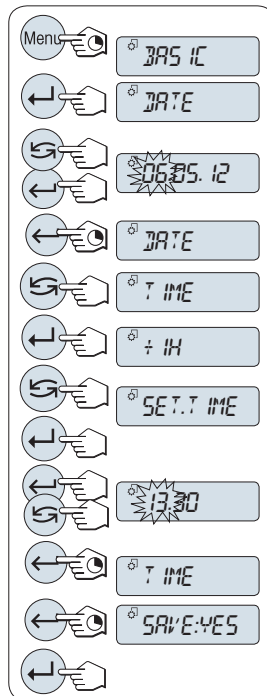
3.8 Adjustment (calibration)

> **NOTICE**
>
> Before adjusting the balance, it must be warmed up.

3.8.1 Adjustment with internal weight

Note: On models with internal weight only (see technical data).

- Weighing pan is unloaded.

1 To carry out this operation press and hold «**CAL**» until "**ADJUST**" appears.

2 Select "**ADJ.INT**" by pressing «↩».
   ⇨ "**ADJ.INT**" appears on the display.

3 Press «↩» to execute "Internal Adjustment".

The balance adjusts itself automatically. The adjusting is finished when the message "**ADJ.DONE**" appears briefly on the display. The balance returns to the last active application and is ready for operation.
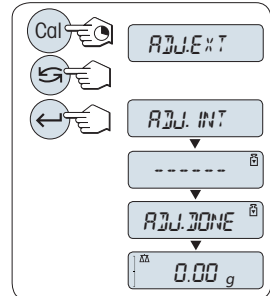
Sample adjustment printout using internal weight:

```
- Internal Adjustment --
21.Jan 2012        12:56


METTLER TOLEDO

Balance Type     ME4002
SNR          1234567890


Temperature      22.5 °C
Diff              3 ppm

Adjustment done
----------------------
```
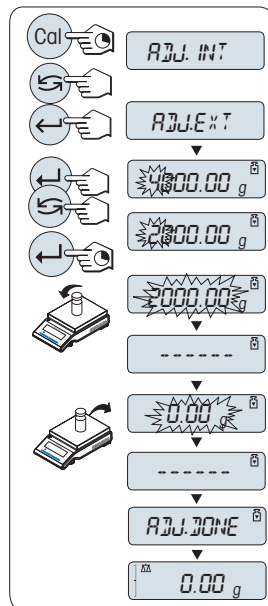
3.8.2 Adjustment with external weight

Note: Because of certification legislation, the approved models cannot be adjusted with an external weight * (depend on selected countries' certification legislation).
* except OIML accuracy class I approved models.

1 Have required adjustment weight ready.
2 To carry out this operation press and hold «**CAL**» until "**ADJUST**" appears.
3 Select "**ADJ.EXT**" by pressing «↩⟲».
   ⇨ "**ADJ.EXT**" appears on the display.
4 Unload weighing pan.
5 Optional: If necessary, you can define a different weight value. Press «↵» to change a digit (cyclically from left to right); press «↩⟲» to change the blinking digit.
6 Press and hold «↵» to execute "External Adjustment".
   ⇨ The required adjustment weight value flashes in the display.
7 Place adjustment weight in center of pan.
   ⇨ The balance adjusts itself automatically.
8 When zero is flashing, remove adjustment weight.
⇨ The adjusting is finished when the message "**ADJ.DONE**" appears briefly on the display. The balance returns to the last active application and is ready for operation

Sample adjustment printout using external weight:

```
- External Adjustment --
21.Jan 2012          12:56


METTLER TOLEDO


Balance Type      ME4002
SNR           1234567890


Temperature       22.5 °C
Nominal        2000.00 g
Actual         1999.99 g
Diff              5 ppm


Adjustment done


Signature


.......................
-----------------------
```

3.8.3 Customer fine adjustment

NOTICE

This function should be executed only by trained personnel.

The function customer fine adjustment "**ADJ.CF**" allows you to adjust the value of the internal adjustment weight with your own adjustment weight. The adjustable range of the adjustment weight is possible only in a very small range. Customer fine adjustment impacts the function of internal adjustment. The customer fine adjustment can be deactivated at any time.

Note

- This feature is available on models with internal weight only.
- Because of certification legislation, approved models cannot be adjusted with customer fine adjustment (depending on selected countries' certification legislation).
- Use certificated weights.
- Balance and test weight have to be on operating temperature.
- Observe the correct environmental conditions.

Execute customer fine adjustment

- The balance is under measuring condition.
1. Have required adjustment weight ready.
2. Unload weighing pan
3. To carry out this operation press and hold «**CAL**» until "**ADJUST**" appears
4. Select "**ADJ.CF**" by pressing «⟲».
   ⇨ "**ADJ.CF**" appears on the display.
5. Select "**EXECUTE**"
6. Start Adjustment with «↵»
   ⇨ "**SET REF.**" appears briefly.
   ⇨ The last saved value flashes on the display.
7. Select the target adjustment weight. Press «↵» to change a digit (cyclically from left to right); press «⟲» to change the blinking digit.
8. Press and hold «↵» to confirm and execute "**ADJ.CF**".
   ⇨ The required adjustment weight value flashes in the display. This could take some time.
9. Place required adjustment weight in center of pan.
10. Remove adjustment weight when zero is flashing.
11. Wait until "**ADJ.DONE**" briefly appears.
⇨ The adjusting is finished when the message "**ADJ.DONE**" appears briefly on the display. The balance returns to the last active application and is ready for operation
⇨ If the error message "**WRONG ADJUSTMENT WEIGHT**" appears, the weight is not within the allowed value range and could not be accepted. "**ADJ.CF**" could not be executed.
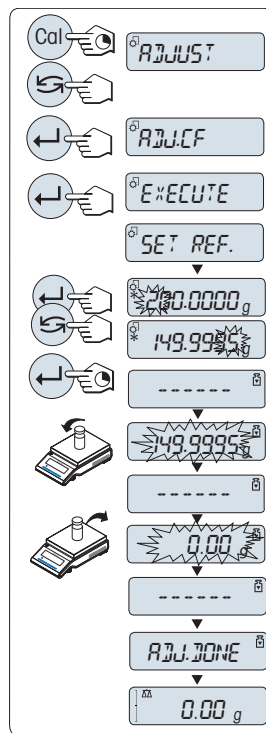
Note
Storing the adjustment is not required.

Deactivate customer fine adjustment

1 To carry out this operation press and hold «**CAL**» until "**ADJUST**" appears

2 Select "**ADJ.CF**" by pressing «⇆».
   ⇨ "**ADJ.CF**" appears on the display.

3 Select "**RESET**"

4 Start **RESET** by pressing «↵»
   ⇨ "**NO?**" appears.

5 Select "**YES?**" and confirm with«↵».

⇨ The adjusting is finished when the message "**ADJ.DONE**" appears briefly on the display. The balance returns to the last active application and is ready for operation with initial adjustment.

3.9 Performing a simple weighing

1 Press «→0/T←» to zero the balance.
   Note: If your balance is not in the weighing mode, press and hold the «ΔΔ» key down until ″**WEIGHING**″ appears in the display. Release the key. Your balance is in the weighing mode and set to zero.

2 Place weighing sample on the weighing pan.

3 Wait until the instability detector "O" disappears and the stability beep sounds.
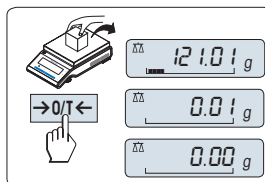
4 Read the result.
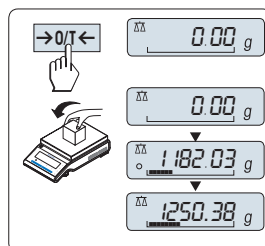
Zeroing

Zero setting

1 Unload the balance.

2 Press «→0/T←» to set the balance to zero. All weight values are measured in relation to this zero point (see menu topic "ZERO RNG").

Use the «→0/T←» zeroing key before you start with a weighing.

Taring

Taring

If you are working with a weighing container, first set the balance to zero.

1 Place empty container on the balance. The weight is displayed.

2 Press «→0/T←» to tare the balance.

"0.00 g" and "**Net**" appears in the display. "**Net**" indicates that all weight values displayed are net values.

Note

• If the container is removed from the balance, the tare weight will be shown as a negative value.

• The tare weight remains stored until the «→0/T←» key is pressed again or the balance is switched off.

• With METTLER TOLEDO DeltaRange balances, the fine range with its 10 times smaller display increments (depending on the model) is available again after every taring operation.
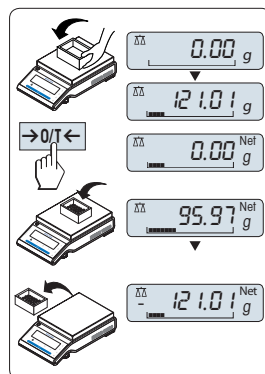
Switching weight units

The «⟳» key can be used at any time to toggle between weight unit "**UNIT 1**", "**RECALL**" value (if selected) and weight unit "**UNIT 2**" (if different from weight unit 1) and the application unit (if any).

Recall / Recall weight value

Recall stores stable weights with an absolute display value bigger than 10d.
Requirement: The function "**RECALL**" must be activated in the menu.

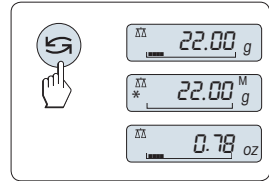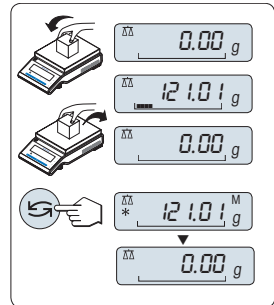1   Load weighing sample. The display shows weight value and stores stable value.

2   Remove weighing sample. When the weight is removed the Display shows zero.

3   Press «⟳». The display shows last stored stable weight value for 5 seconds together with asterisk (*) and Memory (M) symbols. After 5 seconds the display goes back to zero. This can be repeated unlimited times.

Delete last weight value

As soon a new stable weight value is displayed, the old recall value becomes replaced by the new weight value. When pressing «→0/T←», the recall value is set to 0.

Note: If the power is switched off, the recall value is lost. The recall value can not be printed.

Weighing with the weighing-in aid

The weighing-in aid is a dynamic graphic indicator which shows the used amount of the total weighing range. You can thus recognize at a glance when the load on the balance approaches the maximum load.

Print / Transmit data

Pressing the «🖨» key transmits the weighing results over the interface e.g. to a printer or a PC.

Switching off

–   Press and hold the «**Off**» key until "**SHUTOFF**" appears on the display. Release the key.

⇨   Mains operated balances switch into standby mode.

⇨   Battery operated balances switch off completely.
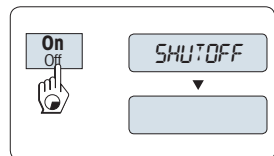
Note

• After switching on from standby mode, your balance needs no warm-up time and is immediately ready for weighing.

• Standby mode is not possible with approved balances (only available in selected countries).

• If your balance has been switched off after a preselected time, the display is dimly lit and shows date, time, maximum load and readability.

- If your balance has been switched off manually, the display is off.
- To completely switch off mains operated balances, they must be disconnected from the power supply.

4 Maintenance

4.1 Cleaning and service

Every now and then, clean the weighing pan, draft shield element, bottom plate, draft shield (depending on the model) and housing of your balance. Your balance is made from high-quality, durable materials and can therefore be cleaned using a damp cloth or with a standard cleaning agent.

To thoroughly clean the draft shield glass panels, remove the draft shield from the balance. When reinstalling the draft shield, ensure that it is in the correct position.

Please observe the following notes:

⚠ **WARNING**

Risk of electric shock

1   Disconnect the balance from the power supply prior to cleaning and maintenance.
2   Only use METTLER TOLEDO power adapter, if these need to be replaced.
3   Ensure that no liquid comes into contact with the balance, terminal or AC adapter.
4   Do not open the balance or AC adapter.
    These contain no user-serviceable parts.

⚠ **CAUTION**

Damage to balance

Under no circumstances use cleaning agents containing solvents or abrasive agents, as this can damage the operation panel overlay.

Do not clean the IP65 protected models using high-pressure or high-temperature water.

Note

Contact a METTLER TOLEDO representative to find about the service options available – regular maintenance by an authorized service engineer will ensure consistent weighing accuracy over the long term and extend the service life of the balance.

4.2 Disposal

In conformance with the European Directive 2002/96/EC 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 (for private or professional use), the content of this regulation must also be related.

Thank you for your contribution to environmental protection.

5 Technical Data

5.1 General data

⚠ **CAUTION**

Use only with a tested AC Adapter with SELV output current.
Ensure correct polarity ⊖─◉─⊕

Standard power supply

AC adapter:	Primary: 100 – 240 V, ±10%, 50/60Hz, 0.3 A Secondary: 12 V DC, 0.84 A (with electronic overload protection)
Balance power supply:	12 V DC, 0.84 A
	Can be used up to 2000 m height above mean sea level.

NOTICE

If the balance is used above 2000 m mean sea level, the optional power supply must be used.

Optional power supply

AC adapter:	Primary: 100 – 240 V, ±10%, 50/60Hz Secondary: 12 V DC ±3%, 2.5 A (with electronic overload protection)
Cable for AC adapter:	3-core, with country-specific plug
Balance power supply:	12 V DC ±3%, 2.25 A, maximum ripple: 80 mVpp
	Can be used up to 4000 m height above mean sea level.

Protection and standards

Overvoltage category:	II
Degree of pollution:	2
Protection:	Protected against dust and water
Standards for safety and EMC:	See Declaration of Conformity
Range of application:	For use only in closed interior rooms

Environmental conditions

Height above mean sea level:	Depending on the power adapter (2000 - 4000 m) Except for China: max. 2000 m
Ambient temperature:	Operating condition for ordinary lab application: +10 to 30 °C (operability guaranteed between +5 to 40 °C)
	Storage condition: -25 to 70 °C
Relative air humidity:	10% up to 80% at 31 °C, linearly decreasing to 50% at 40 °C, non-condensing
Warm-up time:	At least **30** minutes (0.1 mg models **60** minutes) after connecting the balance to the power supply

Materials

Housing:	Top housing: Plastic (ABS)
	Bottom housing: Die-cast aluminum, lacquered
Weighing pan:	Pan ø 90 mm: Stainless steel X2CrNiMo 17-12-2 (1.4404)
	All others: Stainless steel X5CrNi 18-10 (1.4301)
Draft shield element:	0.1 mg models: Stainless steel X5CrNi 18-10 (1.4301)
Draft shield:	Plastic (ABS), glass
In-use-cover:	Plastic (PET)

GWP®
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

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For more information

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