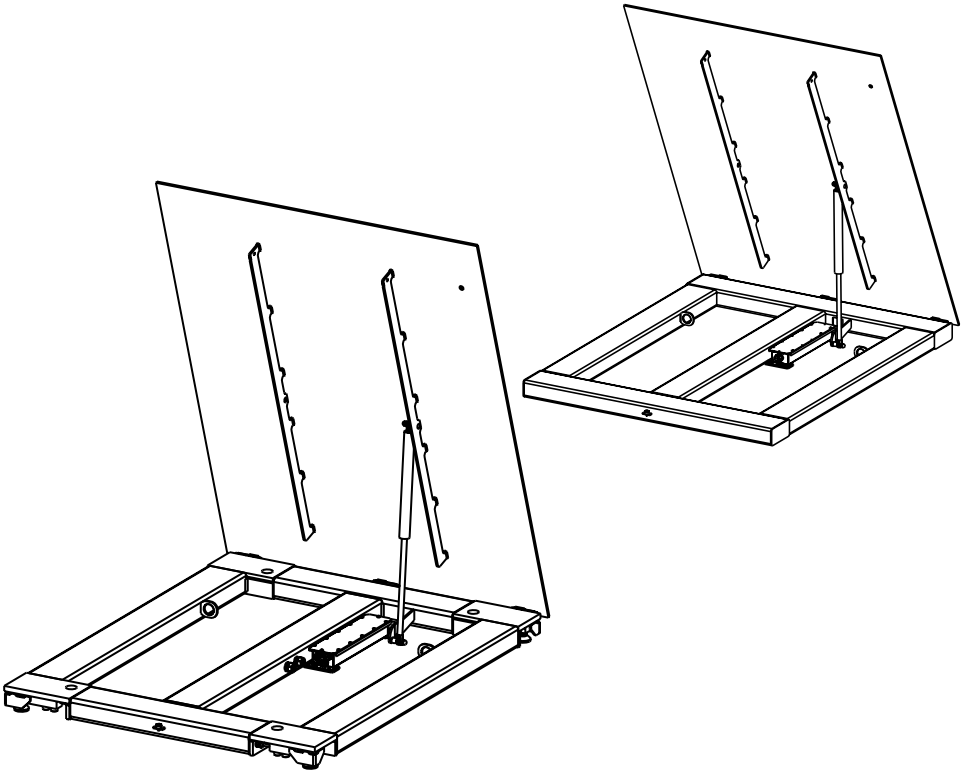
Operating Instructions
Installation Information

METTLER TOLEDO

METTLER TOLEDO MultiRange Weighing Platforms PFA579(x)lift / PFA779lift



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Content

1. General information

These operating instructions and installation information contain all the information on the installation, commissioning and operation of the following weighing platforms:

- **PFA579lift** / **PFA779lift** as a stainless version
  approved for use in safe areas and in hazardous areas of Zones 2/22
- **PFA579xlift** as a stainless version
  approved for use in hazardous areas of Zones 1/21

The weighing platforms are available with an analog scale interface or a digital IDNet scale interface.

Information about maintenance, troubleshooting and repairs are contained in the Service Manual ME-22020366.

2. Safety instructions

There is an increased risk of injury and damage when the weighing platforms are used in hazardous areas! Special care must be taken when working in such hazardous areas. The rules for behaviour are based on the concept of "Safe Distribution" established by METTLER TOLEDO.

Competence

▲ The weighing platforms may only be installed, maintained and repaired by authorised METTLER TOLEDO service personnel.

Ex approval

▲ No modifications may be made to the device and no repair work may be performed on the modules. Any weighing cells or system modules that are used must comply with the specifications contained in the installation instructions. Non-compliant equipment jeopardises the intrinsic safety of the system, cancels the "Ex" approval and renders any warranty or product liability claims null and void.

▲ The safety of the weighing system is only guaranteed when the weighing system is operated, installed and maintained in accordance with the respective instructions.

▲ Also comply with the following:
- the instructions for the system modules and weighing cells
- the regulations and standards in the respective country
- the applicable statutory requirements for electrical equipment installed in hazardous atmospheres in the respective country
- all instructions related to safety issued by the owner

▲ The explosion-protected weighing system must be checked to ensure compliance with the requirements for safety before being put into service for the first time, following any service work and every 3 years, at least.

▲ If a replacement part is used, mark the load cells 0745A permanently for the respective operating location (Category 2GD or Category 3GD)

Operation

▲ Prevent the build-up of static electricity. Always wear suitable working clothes when operating or performing service work in a hazardous area.

▲ Do not use protective coverings for the devices.

▲ Avoid damage to the system components.

Installation

▲ Only install and perform maintenance work on the weighing system in the hazardous areas if the following conditions are fulfilled:
- if the intrinsically safe characteristic values and zone approval of the individual components are in accord with one another
- the owner has issued a permit ("spark permit" or "fire permit")
- the area has been rendered safe and the owner's safety co-ordinator has confirmed that there is no danger
- the necessary tools and any required protective clothing are provided (danger of the build-up of static electricity)

▲ The certification papers (certificates, manufacturer's declarations) must be present.

▲ Lay cables in such a way that they are protected from damage.

▲ Only route cables into the housing of the system modules via the suitable cable coupler and ensure proper seating of the seals.

Additional requirements for Category 3 (Zone 2/22)

▲ The explosion-protected weighing platform **PFA579lift** / **PFA779lift** may only be operated in Zone 2 and 22 hazardous areas in conjunction with weighing terminals that have a corresponding approval and interface specification.

▲ The connection cable may not be separated from the weighing terminal while it is energised.

▲ Tighten the knurled nut of the IDNet connecting cable with 10 Nm.

Obligations of the operator

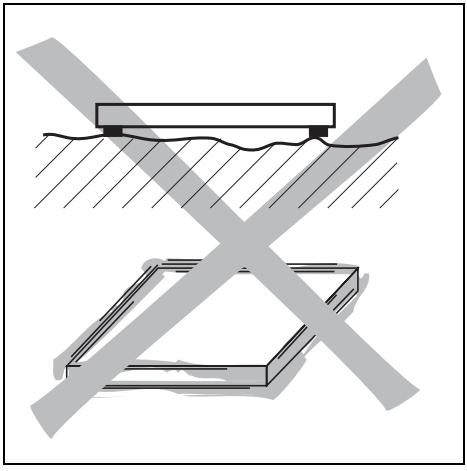
▲ Ensure that mounting and maintenance of the weighing platform, in particular of the gas pressure spring, is carried out exclusively by an authorised METTLER TOLEDO Service technician.

▲ Ensure that only the spare parts specified by METTLER TOLEDO are used.

▲ Ensure that the weighing platforms with foldable load plate are only operated within a temperature range of –10 °C to 40 °C. Otherwise, the safety of the gas pressure springs is not guaranteed.

▲ Ensure that the personnel has been instructed correspondingly before working on the weighing platforms with foldable load plate and has read and understood these operating instructions.

3. Preparation



3.1 Selecting installation location

▲ The underground at the installation location must be capable of safely supporting the weight of the weighing platform at its support points when it carries the maximum load. At the same time it should be so stable that no vibrations arise during weighing work. These requirements also apply when the weighing platform is integrated in conveying systems and the like.

▲ Ensure that there are no vibrations from neighbouring machines at the installation site.

▲ The underground has to be level.

Ambient conditions

➜ Use weighing platforms in a dry environment or in a humid environment.

3.2 Unpacking

The scope of delivery of weighing platform and accessories encompasses the following parts:

Weighing platform	4 rubber retainer plates
	1 operating instructions
	1 set of labels
	1 Declaration of conformity
	1 universal oil
	1 handle
IDNet option	additionally: 1 Identcard
Installation frame	4 screw anchors

➜ Remove all the parts of the packaging.

4. Equipotential bonding

The equipotential bonding must be installed by a professional electrician when using the weighing platforms in hazardous areas. METTLER TOLEDO Service only has a monitoring and consulting function here.

The equipotential bonding terminal is positioned at the terminal box of the weighing platform.

➜ Connect equipotential bonding of all devices (weighing platform, service terminal) in accordance with the country-specific regulations and standards. In the process it must be ensured that

- all the device housings are connected to the same potential via the equipotential bonding terminals,
- no circulating current flows via the cable shielding for intrinsically safe circuits,
- the neutral point for equipotential bonding is as close to the weighing system as possible.

5. Safety-specific characteristic values

5.1 Ignition protection type

	Category 3	Category 2
Load cells	**Load cell 0745A** II 3G Ex nA II T4 II 3G Ex nL IIC T4 –40 °C ≤ T_a ≤ +50 °C II 3D Ex tD A22 IP6X T 100 °C KEMA 03 ATEX 1070	**Load cell 0745A** II 2G Ex ia IIC T4 –40 °C ≤ T_a ≤ +50 °C II 2D Ex tD A21 IP68X T 100 °C KEMA 03 ATEX 1069
Analog scale interface	**System solution Analog Ex2** II 3G Ex nA II T4 –20 °C ≤ T_a ≤ +60 °C II 3D Ex tD A22 IP65 T 75 °C BVS 08 ATEX E 063	**Analog Ex1** II 2G Ex ia IIC T4 –20 °C ≤ T_a ≤ +60 °C II 2D Ex tD A21 IP68 T 75 °C BVS 04 ATEX E221
	System component Analog Ex2 II 3G Ex nA II T4 –20 °C ≤ T_a ≤ +60 °C II 3D Ex tD A22 IP68 T 75 °C BVS 08 ATEX E 063	
Digital scale interface (IDNet)	**System solution type Point** II 3G Ex nA II T4 –10 °C ≤ T_a ≤ +40 °C II 3D Ex tD A22 IP67 T 75 °C BVS 06 ATEX 098	**Point Ex** II 2G Ex ia IIC T4 Gb –20 °C ≤ T_a ≤ +60 °C II 2D Ex tb IIIC IP67 T 75 °C Db BVS 03 ATEX E 432

5.2 Safety-specific characteristic values for the terminal

The following safety-specific characteristic values have to be ensured by the connected weighing terminal:

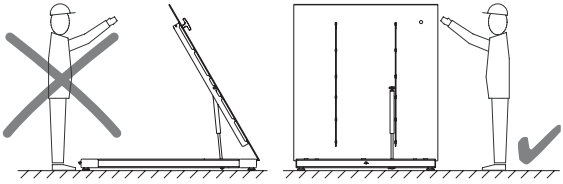
- Digital scales interface (IDNet, Category 3)
  Supply circuit $U_{max} \leq 20$ VDC
  Interface current $U_{max,a} \leq 27$ VDC $I_{max,a} \leq 30$ mA
- Analog scales interface (Category 3)
  Supply circuit $U_{imax} \leq 20$ VDC $U_o = U_i$
  $P_{imax} \leq 20$ W $P_o = P_i$

6. Opening and closing the weighing platform

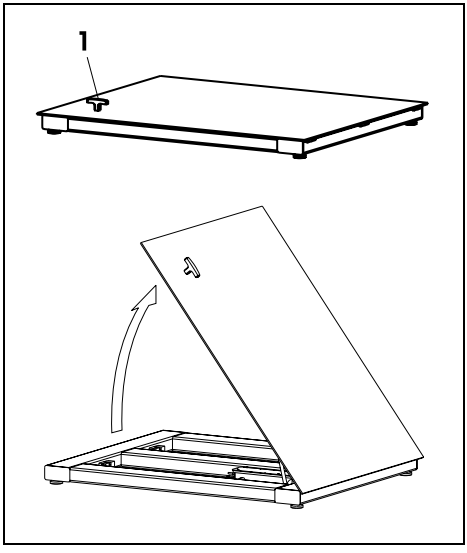
WARNING

Danger of crushing

- ▲ Only instructed personnel may open/close the weighing platforms with foldable load plate.
- ▲ Ensure that there are no persons in the danger area in front of or under the opened load plate.
- ▲ Operation only from the right-hand side.

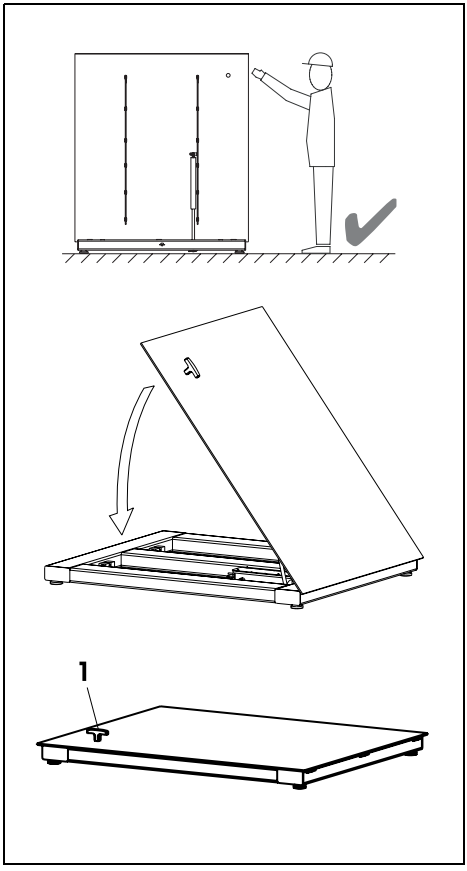


6.1 Opening the weighing platform



1. Remove the weighing sample or assemblies from the load plate.
2. Unscrew the blind plug.
3. Turn the handle (1) clockwise into the load plate until it will go no further.
4. Position yourself next to the weighing platform.
5. Pull the load plate upward using the handle.

6.2 Closing the weighing platform



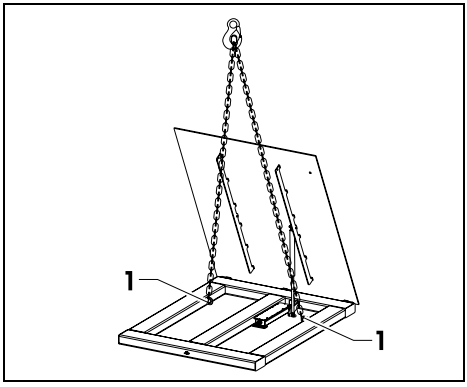
1. Position yourself next to the weighing platform.

2. Press the load plate downward using the handle.

3. Ensure that the load plate latches in and lies plane on the load frame.
4. Turn out the handle (1) counterclockwise.
5. Screw the blind plug into the load plate.

7. Transportation

Transporting the weighing platform to the installation site



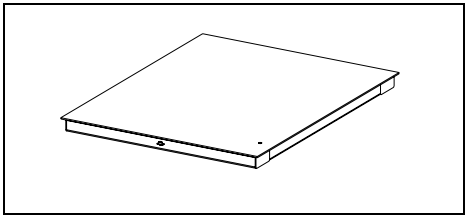
1. Open the weighing platform, see Section 6.1.
2. Fasten a suitable chain or belt sling to the rings (1).
3. Use a suitable crane or forklift truck to place the weighing platform to the installation site.

8. Setting up

Note

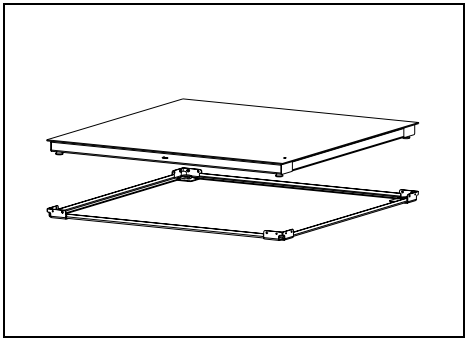
Thanks to the integrated level indicator the weighing platforms can be used even without floor fastening in compulsory-certification operation (OIML).

8.1 Above-floor installation without ramp and without floor fastening



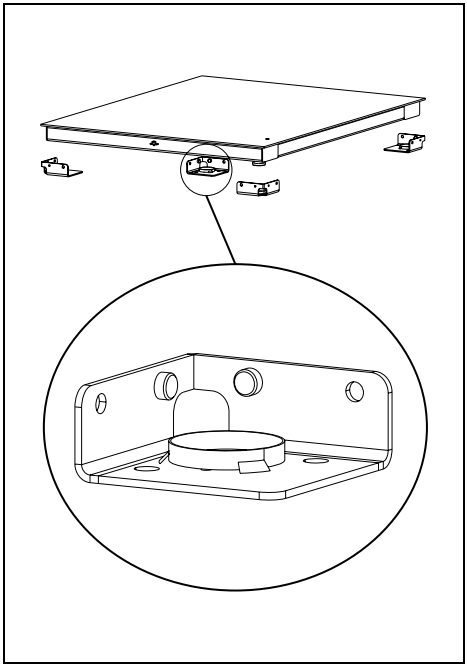
1. Set up the weighing platform at a suitable location with a level underground.
2. Apply antiskid rubber retainer plates to the levelling feet.
3. Level the weighing platform using the level indicator.

8.2 Above-floor setting up with installation frame



1. Set up the installation frame at a suitable location with a level underground.
2. Mark the drill position for the installation frame.
3. Drill dowel-holes. Suck off any dirt particles.
4. Screw the installation frame to the floor.
5. Insert the weighing platform in the installation frame.

8.3 Above-floor setting up with corner plates

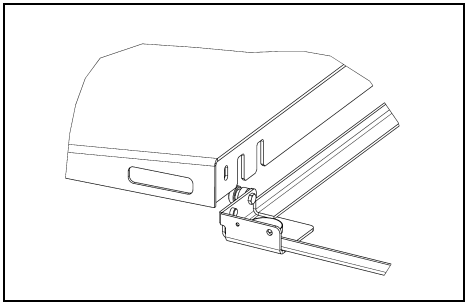


1. Set up the corner plates at a suitable location with a level underground.
2. Place the weighing platform in the corner plates.
3. Align the position of the corner plates. To this purpose check the gap between the corner plate and the load frame. The levelling feet may not be distorted.
4. Mark the position of the corner plates and lift the weighing platform out of the corner plates.
5. Mark the drill positions for the corner plates and drill dowel-holes. Suck off any dirt particles.
6. Fasten the corner plates to the floor using dowels.
7. Insert the weighing platform in the corner plates.

8.4 Above-floor setting up with access ramp

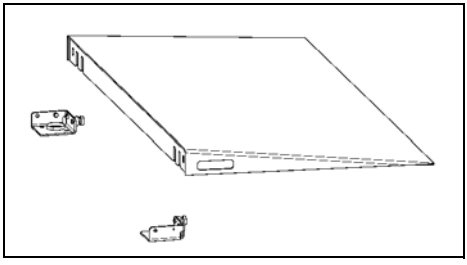
The following options are available for the above-floor installation with access ramp.

- Installation with installation frame
- Installation with corner plates
- Installation with fastening brackets



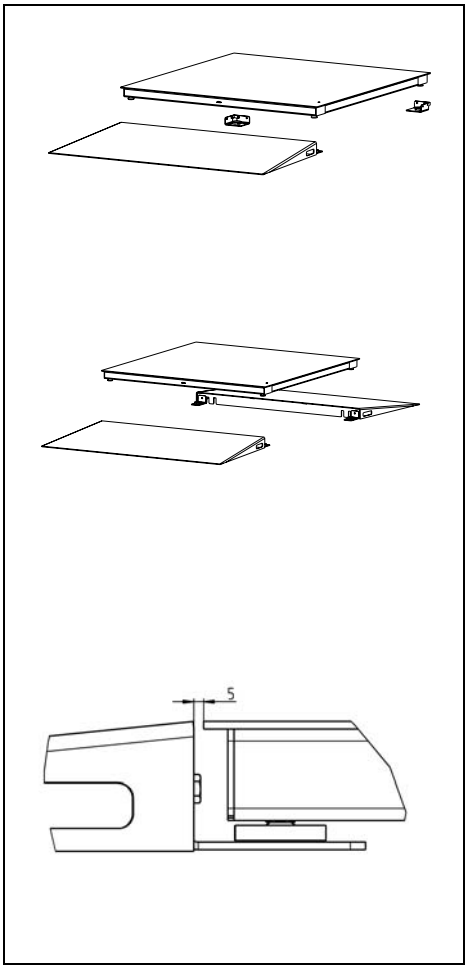
Installation with installation frame:

1. Screw the hanger pins into the installation frame.
2. Engage the access ramp into the installation frame.



Installation with corner plates

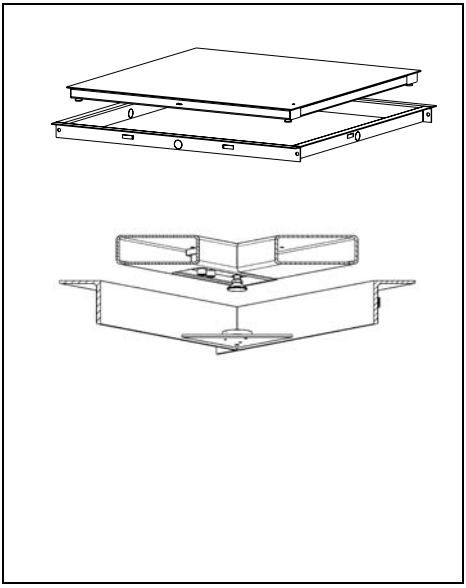
1. Screw the hanger pins into the corner plates.
2. Mount the weighing platforms with corner plates, see Section 6.2.
3. Engage the access ramp at the corner plates.



Installation with fastening brackets

1. Connect the access ramp to the supplied fastening brackets.
2. Set up 1 access ramp and 1 corner plate set (2 pieces) or 2 access ramps at a suitable location with level underground.
3. Place the weighing platform.
4. Align the position of the access ramps(s) and, if applicable, the corner plates. To this purpose check the gap between the access ramp or corner plate and the load frame. The levelling feet may not be distorted.
5. Lift the weighing platform out again. The access ramp(s) and corner plates may not be moved in the process.
6. Mark the drill positions of the access ramps(s) and, if applicable, the corner plates.
7. Drill dowel-holes. Suck off any dirt particles.
8. Fasten the access ramp(s) and, if applicable, the corner plates with heavy-duty dowels to the floor.
9. Insert the weighing platform again.

8.5 Pit installation



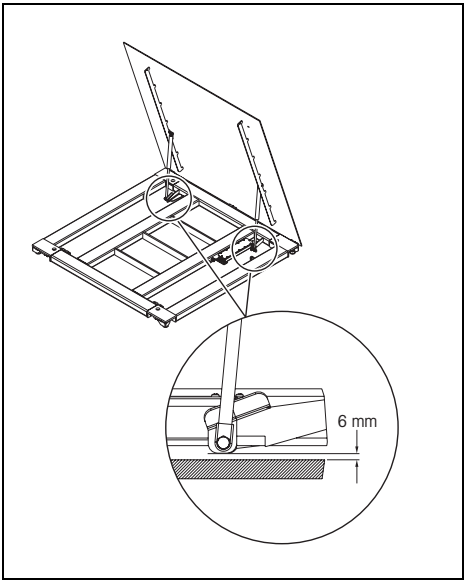
All the mounting and installation aids as well as a detailed documentation for making the pit correctly are supplied with the Quick Pit PFA.

1. Dismount the level indicator.
2. Insert the weighing platform into the Quick Pit PFA.
3. Insert the connecting cable to the terminal through the holes in the Quick Pit PFA and through the empty conduit.

Note

If an old DN...sk is to be replaced by a PFA579(x)lift or PFA779lift, the old pit frame can be retained. The installation frame PFA is then required to mount the PFA579(x)lift or PFA779lift.

9. Aligning the weighing platform and laying the cable



1. Align the weighing platform with adjustable leveling feet horizontally using the integrated level indicator.
2. Lay the connection cable to the terminal so that it is protected from damage.
3. Ensure clearance to the floor of at least 6 mm in the specified area. If necessary, set the required height using the leveling feet.

10. Commissioning

Weighing platforms with analog scale interface

Terminal	Colour	
	PFA579lift PFA779lift	PFA579xlift
EXC+	grey	grey
SEN+	yellow	yellow
SIG+	white	white
SIG–	brown	brown
SEN–	green	green
EXC–	blue	pink

Weighing platforms with an analog scale interface can be connected to weighing terminals with an integrated A/D converter.

When used in hazardous locations ensure that cable glands suitable for hazardous locations are used.

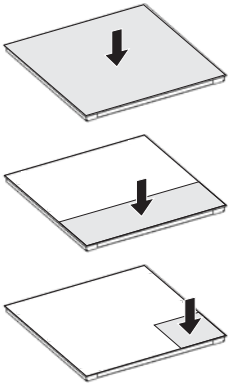
1. Connect the weighing platform to the weighing terminal in accordance with the adjacent table.
2. Route the connecting cable so that it is protected from damage.

Weighing platforms with IDNet interface

Weighing platforms with an IDNet interface can be connected to all weighing terminals with an IDNet connection.

➜ Route the connecting cable so that it is protected from damage.

11. Operating limits

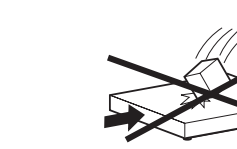


The weighing platforms are designed extremely robustly. However, the load limits in the following table may not be exceeded.

Depending on the type of load bearing, the static bearing, i.e. the maximum permissible load, amounts to:

Maximum permissible load in kg

	A	B	C
PFAx79... 300	1500	900	450
PFAx79... 600	3500	2300	1150
PFAx79-DS/D/E/ES/FL/ FM 1500/3000	4500	3000	1500



➜ Avoid falling loads, shock loads as well as impacts from the side.

➜ Avoid grinding and attrition processes.

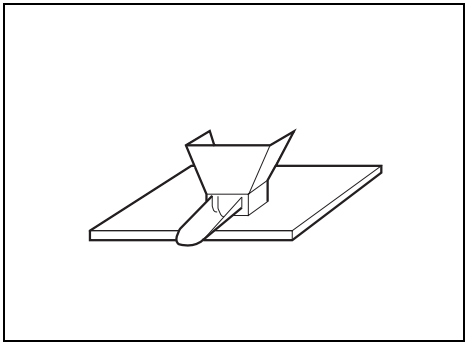
Operation with access ramps/pit frames

- The load plate of the weighing platform is an active weighing component. The access ramps/pit frames are passive. This means that during the weighing process all the wheels of the transport vehicles have to be on the load plate.
- The air gap between the load plate and the access ramps/pit frames has to be free. The gap should therefore be inspected regularly and kept free, in particular during the weighing of granular or small-scale material.

12. Planning assemblies

The following points are to be observed when planning assemblies:

- Moving or rotating parts on the weighing platform must be designed so that they do not affect the weighing result. Rotating parts must be balanced.
- The load frame must be free on all sides so that no connection is established between the load frame and installation frame, Quick Pit PFA, access ramps or corner plates, even by falling parts or dirt deposits.
- Cables or hoses between the weighing platform and other machine parts must be laid so that they do not exert any force on the weighing platform.
- When mounting assemblies, make sure that no metal chips get into the gap between the DMS weighing cell and the load frame. Clean the gap after completing mounting.



Preload range

The weight of the structural parts permanently mounted onto the weighing platform is referred to as preload.

If the preload exceeds the zero set range, the weighing platform has to be electrically compensated so that the full weighing range is available.

The zero-set range and the zero adjustment range must lie within the maximum preload.

Weighing range	Preload *	Preload with 3 x 3000 e MR *
300 kg	400 kg	
600 kg	1400 kg	120 kg
1500 kg	2500 kg	500 kg
3000 kg	1200 kg	

* In the case of certifiable applications (OIML) the NUD factor (**N**on **U**niform **D**istribution of the load) has to be taken into consideration with a corner load supplement of 20% of the maximum load. If necessary, reduce the zero capturing range.

13. Scale configuration

At the factory the scale is configured with a resolution of 1 x 3000 e (standard). Further resolutions are available optionally. Corresponding measuring data plates are applied to the weighing platform or are included.

Possible configurations

		Standard	Options		
Weighing platform	**Maximum load**	**1 x 3000 e SR**	**2 x 3000 e MR/MI**	**3 x 3000 e MR**	**1 x 6000 e SR**
PFAx79.. DS/FL	300 kg	0.1 kg	0.05 / 0.1 kg	–	0.05 kg
	600 kg	0.2 kg	0.1 / 0.2 kg	0.05 / 0.1 / 0.2 kg	0.1 kg
	1200 kg	–	–	–	0.2 kg
	1500 kg	0.5 kg	0.2 / 0.5 kg	0.1 / 0.2 / 0.5 kg	–
PFAx79.. D/E/ES/FM	300 kg	0.1 kg	0.05 / 0.1 kg	–	0.05 kg
	600 kg	0.2 kg	0.1 / 0.2 kg	0.05 / 0.1 / 0.2 kg	0.1 kg
	1200 kg	–	–	–	0.2 kg
	1500 kg	0.5 kg	0.2 / 0.5 kg	0.1 / 0.2 / 0.5 kg	–
	3000 kg	1.0 kg	0.5 / 1.0 kg	0.2 / 0.5 / 1.0 kg	0.5 kg

SR Single Range

MR Multi Range

MI Multi Interval

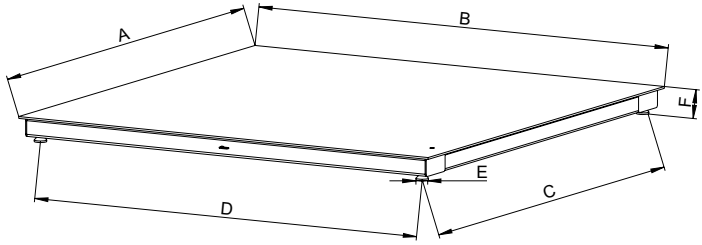
Notes

- If the configuration is changed, the new measuring data sign has to be affixed to the ID card.
- Further non-certifiable variants can be configured at weighing platforms with an IDNet interface in Service mode, see the Service Manual A/D Converter Point 22004256.

14. Dimensional drawings

14.1 Dimensions

Weighing platforms

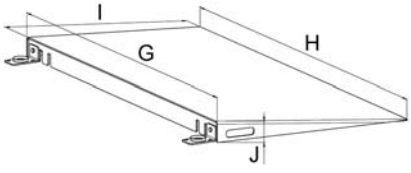


Dimensions in mm

	A	B	C	D	E	F*
PFAx79-DS	1000	1000	899	899	Ø 40	80
PFAx79-D	1000	1250	899	1149	Ø 40	80
PFAx79-E	1250	1500	1149	1399	Ø 40	80
PFAx79-ES	1500	1500	1399	1399	Ø 40	80
PFAx79-FL	800–1000	800–1000	A–101	B–101	Ø 40	80
PFAx79-FM	800–1500	800–1500	A–101	B–101	Ø 40	80

* Without installation frame

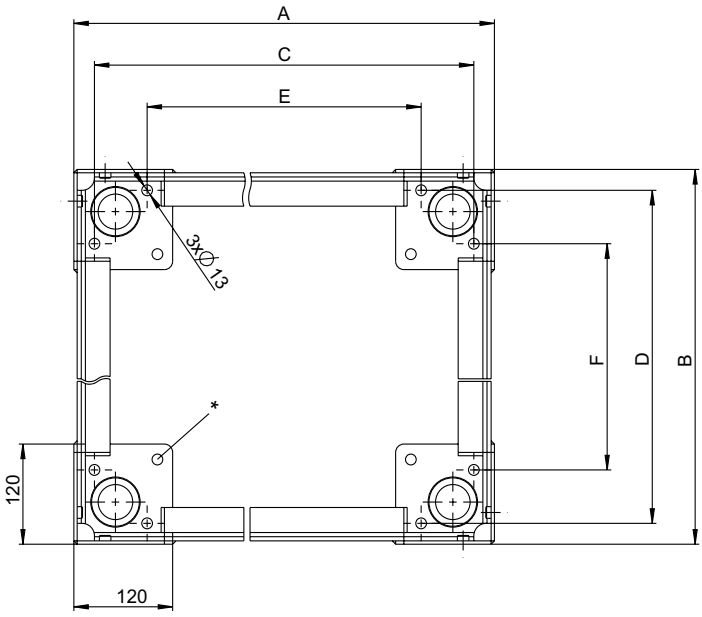
Access ramps



Dimensions in mm

Width	Dimension			
	G	H	I	J
1000	1000	1150	830	85
1250	1250	1400	830	85
1500	1500	1650	830	85
up to 1000	800–1000	G+150	830	85
up to 1500	1001–1500	G+150	830	85

Installation frame and corner plates



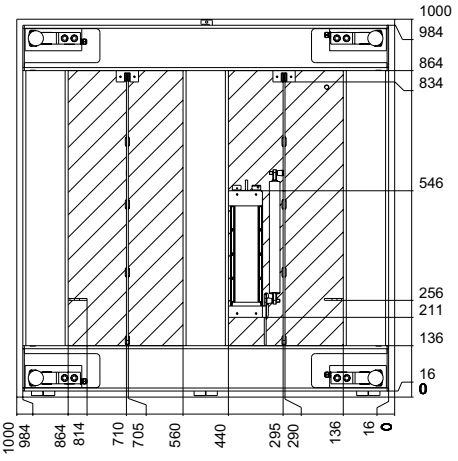
Dimensions in mm

	A	B	C	D	E	F
PFA57.-DS	1000	1000	950	950	820	820
PFA57.-D	1000	1250	950	1200	820	1070
PFA57.-E	1250	1500	1200	1450	1070	1320
PFA57.-ES	1500	1500	1450	1450	1320	1320
PFA57.-FL	800–1000	800–1000	A–50	B–50	A–180	B–180
PFA57.-FM	800–1500	800–1500	A–50	B–50	A–180	B–180

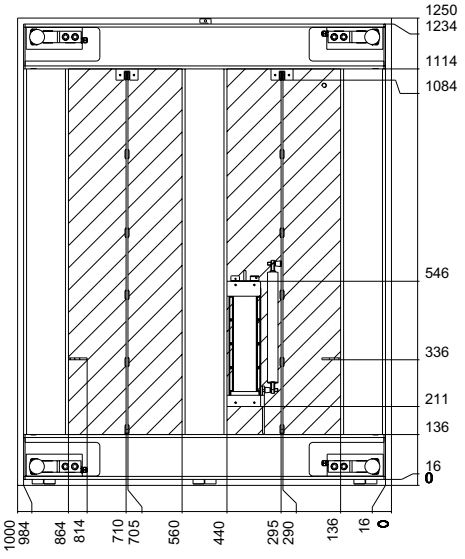
* Locating bore for fastening to the existing pit frame QuickPit DN

14.2 Mounting possibilities

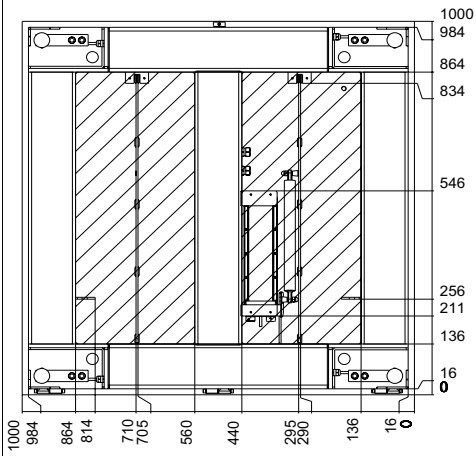
PFA579(x)lift-DS



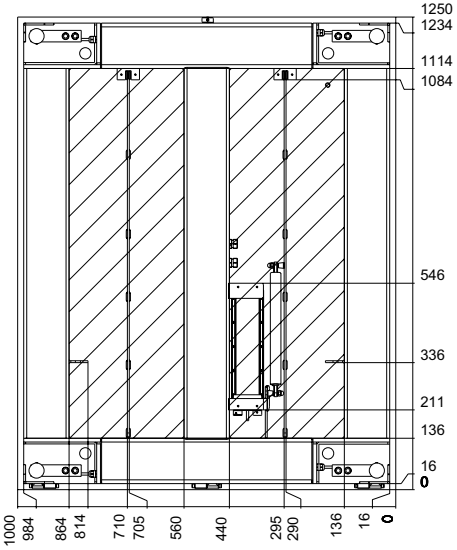
PFA579(x)lift-D



PFA779lift-DS

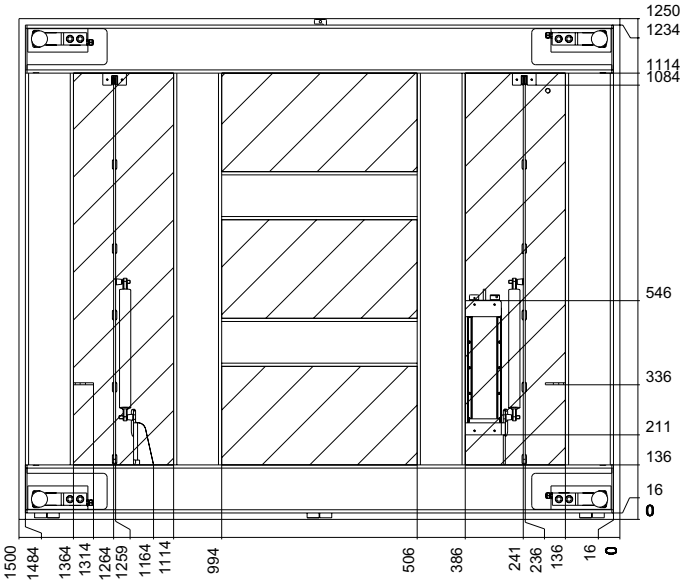


PFA779lift-D

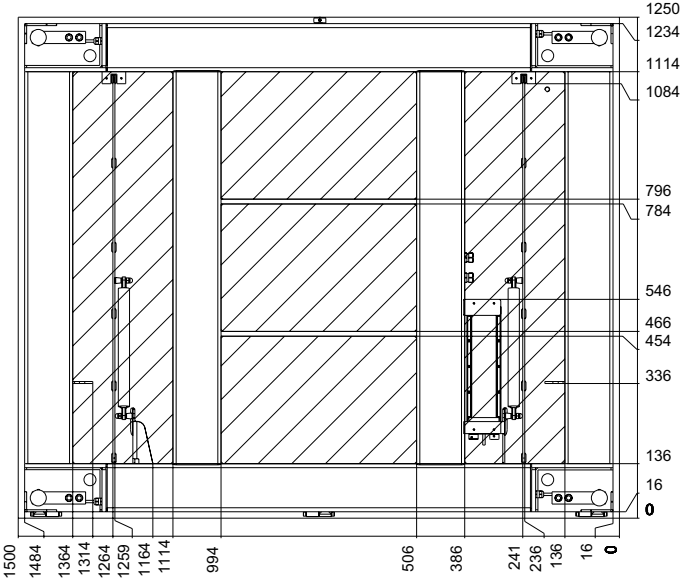


Opening/fastening possibilities are shown hatched.

PFA579(x)lift-E

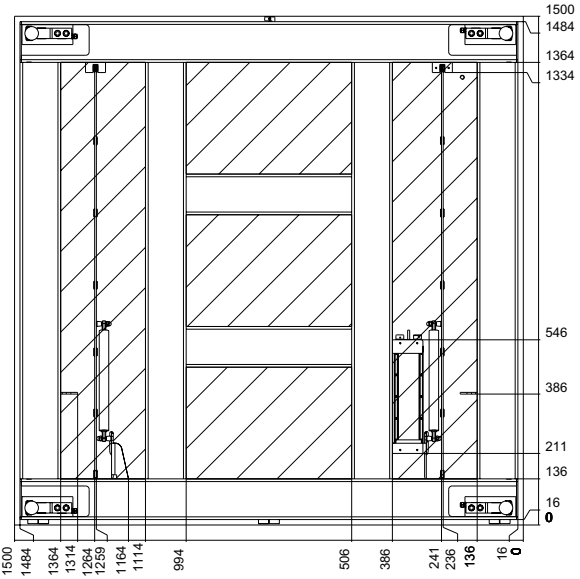


PFA779lift-E

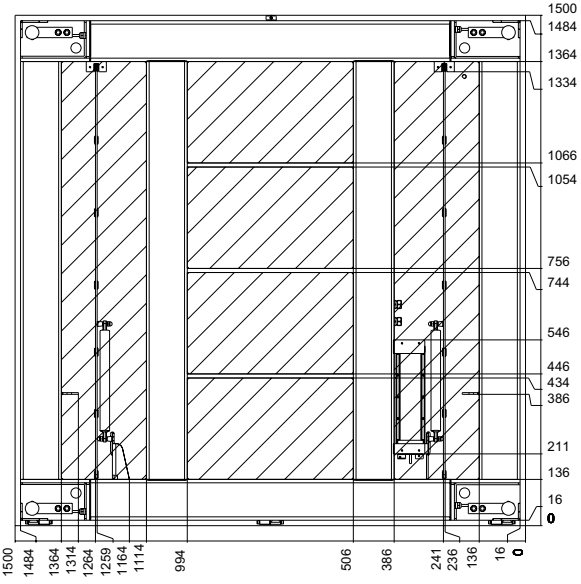


Opening/fastening possibilities are shown hatched.

PFA579(x)lift-ES



PFA779lift-ES



Opening/fastening possibilities are shown hatched.

15. Cleaning the weighing platform

Maintenance of the weighing platform is limited to its regular cleaning and to oiling of the surface. The procedure depends on the type of surface and on the ambient conditions prevalent at the installation site.

CAUTION

Even minor damage, corrosion or flecks of paint on the piston rod lead to failure of the gas pressure springs.

▲ Protect gas pressure springs against soiling and damage.

▲ Have soiled or damaged gas pressure springs cleaned immediately by the METTLER TOLEDO Service.

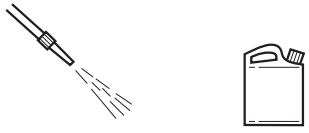
▲ Use only the spare parts specified by METTLER TOLEDO.

Cleaning agents

➜ Only use disinfectants and cleaning agents in accordance with the manufacturer's instructions.

➜ Do not use highly acidic, highly alkaline or high-chlorine-content cleaning agents. Avoid substances with a high or low pH value, since the danger of corrosion is otherwise higher.

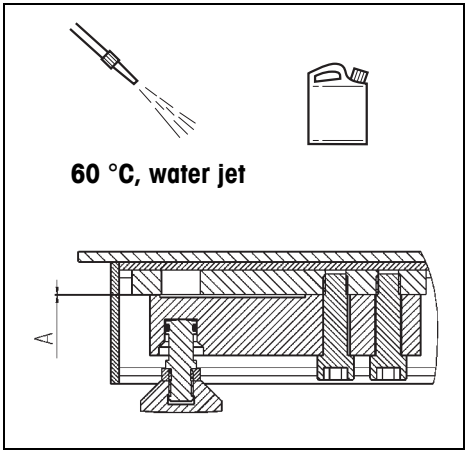
15.1 Cleaning the exterior (weighing platform closed)



80 °C, 100 bars

- Remove corrosive substances, dirt and deposits regularly from the surface.
- Check the gap between the load plate and access ramp/pit frame and if appropriate remove any soiling.
- Water temperature up to 80 °C
- High pressure up to 100 bars
- For subsequent treatment see Section 15.3

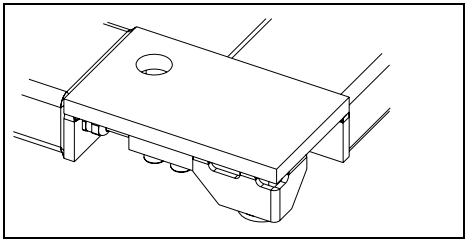
15.2 Cleaning the interior (weighing platform opened)



- Open the weighing platform, see Section 6.1.
- Remove corrosive substances, dirt and deposits regularly from the surface.
- Check the gap between the load plate and pit frame and if appropriate remove any soiling.
- Water temperature up to 60 °C
- Water jet
- Use compressed air to clean dirt particles from Gap A between the overload protection of the measuring cell and the load frame of the weighing platform.

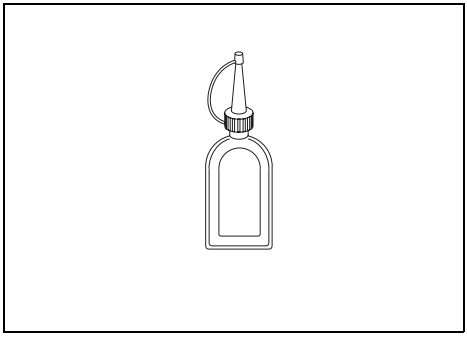
Cleaning the interior PFA779lift

The load frame is closed completely. There are no covered edges and no potential contamination sources in the interior of the load frame.



- Visual inspection and cleaning possibilities in the corner area by cleaning holes.
- Measuring cell area accessible at the side for additional visual inspection and cleaning.
- For subsequent treatment see Section 15.3.

15.3 Subsequent treatment

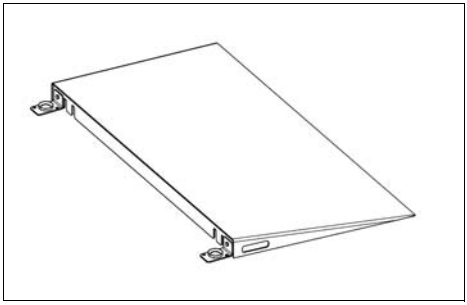


Carry out the following subsequent treatment to protect the weighing platform against corrosion:

- After the cleaning process rinse the weighing platform intensively with clear water.
- Remove cleaning agent completely.
- Oil the interior and exterior of the weighing terminal regularly using the supplied universal oil (suitable for foodstuffs).

16. Standard accessories

Access ramp



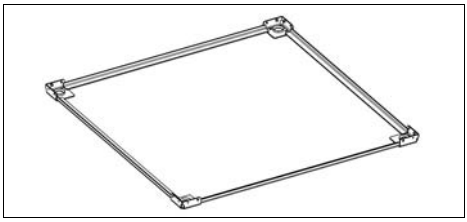
Order example access ramp

Stainless steel	Width	corrugated
AISI304	1250 mm	surface

22 016 732 + 22 016 736

		Basic model: smooth surface	Option: corrugated surface	Option: ground
Stainless steel AISI304/V2A	Width 1000 mm Width 1250 mm Width 1500 mm Width <1000 mm Width >1000 mm	22 016 731 22 016 732 22 016 733 22 016 734 22 016 735	22 016 736	RA < 1µm 22 019 491
Stainless steel AISI316/V4A	Width 1000 mm Width 1250 mm Width 1500 mm Width <1000 mm Width >1000 mm	22 019 481 22 019 482 22 019 483 22 019 484 22 019 485	22 019 448	RA < 1µm 22 019 491

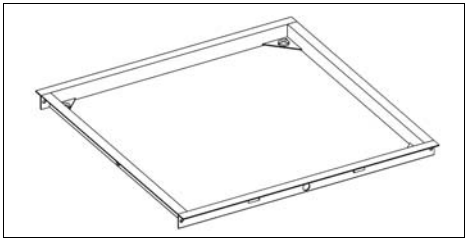
Installation frame



Stainless steel AISI304/V2A	
Size DS	22 019 457
Size D	22 019 458
Size E	22 019 459
Size ES	22 019 460
Size FL	22 019 462
Size FM	22 019 463

Stainless steel AISI316/V4A	
Size DS	22 019 465
Size D	22 019 466
Size E	22 019 467
Size ES	22 019 468
Size FL	22 019 470
Size FM	22 019 471

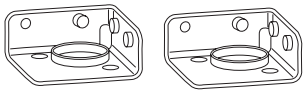
Quick Pit PFA

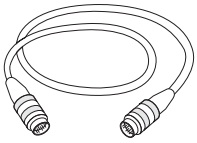


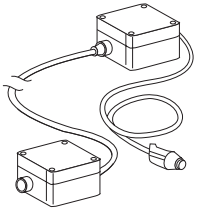
Stainless steel AISI304/V2A, mounted completely	
Size DS	22 016 693
Size D	22 016 694
Size E	22 016 695
Size ES	22 016 696
Size FL	22 016 698
Size FM	22 016 699

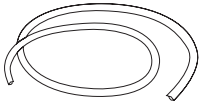
Stainless steel AISI316/V4A, mounted completely	
Size DS	22 019 473
Size D	22 019 474
Size E	22 019 475
Size ES	22 019 476
Size FL	22 019 478
Size FM	22 019 479

Further accessories









	Order No.
Corner plates	
Set consisting of 2 pieces	
stainless steel AISI304/V2A	22 016 703
stainless steel AISI316/V4A	22 019 492
Connecting extension cable 10 m long, pluggable on both ends, for remote control of the IDNet terminal	00 504 134
Connecting set for IDNet terminals for progressive extension of the connecting cable to 100 m, consisting of two terminal boxes, box at terminal end with connecting cable 2.5 m long	00 504 133
Special cable from the roll 100 m, in connection with the connecting set for progressive extension of the connecting cable for IDNet terminals	00 504 177

17. Disposal

In accordance with the requirements of the European Directive 2002/96 EC about Waste Electrical and Electronic Equipment (WEEE) this equipment may not be disposed of in the household refuse.
This applies correspondingly for countries outside the EC in accordance with the applicable national regulations.

➜ Please dispose of this product in accordance with the local regulations in a separate collection for electrical and electronic equipment.

Should you have any questions, please contact the responsible authorities or the dealer from whom you purchased this equipment.
If this equipment is passed on (for example for private or commercial/ industrial further use), this specification has to be passed on correspondingly as well.
Many thanks for your contribution to protecting the environment.

ServiceXXL

Tailored Services

METTLER TOLEDO products stand for highest quality and precision. Careful handling in accordance with these operating instructions as well as regular maintenance and inspection by our professional customer service ensure the long and reliable function and maintenance of value of your measuring instruments. Our experienced service team will be pleased to inform you about corresponding service agreements or calibration services.

Please register your new product under www.mt.com/productregistration, so that we can inform you about improvements, updates and further important information about your METTLER TOLEDO product.

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