User Manual

PFA584 / PFA589

Floor Scale



PFA584



PFA589

METTLER TOLEDO

METTLER TOLEDO Service

Congratulations on choosing the quality and precision of METTLER TOLEDO. Proper use of your new equipment according to this Manual and regular calibration and maintenance by our factory-trained service team ensures dependable and accurate operation, protecting your investment. Contact us about a service agreement tailored to your needs and budget. Further information is available at ▶ www.mt.com/service.

There are several important ways to ensure you maximize the performance of your investment:

1 **Register your product**: We invite you to register your product at www.mt.com/productregistration so we can contact you about enhancements, updates and important notifications concerning your product.

2 **Contact METTLER TOLEDO for service**: The value of a measurement is proportional to its accuracy – an out of specification scale can diminish quality, reduce profits and increase liability. Timely service from METTLER TOLEDO will ensure accuracy and optimize uptime and equipment life.

- **Installation, Configuration, Integration and Training**: Our service representatives are factory-trained weighing equipment experts. We make certain that your weighing equipment is ready for production in a cost effective and timely fashion and that personnel are trained for success.
- **Initial Calibration Documentation**: The installation environment and application requirements are unique for every industrial scale so performance must be tested and certified. Our calibration services and certificates document accuracy to ensure production quality and provide a quality system record of performance.
- **Periodic Calibration Maintenance**: A Calibration Service Agreement provides on-going confidence in your weighing process and documentation of compliance with requirements. We offer a variety of service plans that are scheduled to meet your needs and designed to fit your budget.

Safety Instructions

- Read this manual BEFORE operating or servicing this equipment and FOLLOW these instructions carefully.
- SAVE this manual for future reference.



⚠ WARNING

1 Before connecting/disconnecting any internal electronic components or interconnecting wiring between electronic equipment, always remove power and wait at least thirty (30) seconds. Failure to observe these precautions could result in bodily harm or damage to or destruction of the equipment.

2 Permit only qualified personnel to service this equipment. Exercise care when making checks, tests, and adjustments that must be made with power on. Failing to observe these precautions can result in bodily harm.



⚠ CAUTION

1 Only authorized personnel may open the device and maintain the device and the equipment on which the device is installed.

2 Use caution when lifting and moving the scale. Use a forklift or crane with a rated capacity that exceeds the weight of the scale. Do not attempt to lift the scale manually, or injury could occur.



NOTICE

1 The floor where the scale will be positioned should be stable, level and strong enough to support the scale when it is loaded to full weighing capacity.

2 No heavy vibration, wind currents or excessive temperature fluctuations at or near the scale.

Safety Instructions for PFA58_x and PFA58_xx



⚠ WARNING

1 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.

2 The equipment grounding must be installed by a professional electrician when using the Ex-version weighing platforms in hazardous areas. METTER TOLEDO Service only has a monitoring and consulting function here.

3 Connect the grounding of all devices (weighing platform, weighing terminal) in accordance with country-specific regulations and standards. In the process, it must be ensured that: a) All the device housings are connected to the same potential via the grounding terminals. b) No circulating current flows via the cable shielding for intrinsically safe circuits. c) The neutral point for grounding is as close to the weighing system as possible.



⚠ CAUTION

1 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 voide.

2 Comply with the following: a) The instructions for the system modules and weighing cells. b) The regulations and standards in the respective country. c) The applicable statutory requirements for electrical equipment installed in hazardous atmospheres in the respective country. d) All instructions related to safety issued by the owner.

3 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.

4 If a replacement part is used, ensure that the load cells are correctly marked for the respective operation location (Category 2GD or Category 3GD).

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

6 Do not use protective coverings for the devices.

7 Avoid damage to the system components.

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

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

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

11 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/Div 2



⚠ CAUTION

1 The explosion-protected weighing platform PFA58_xx may only be operated in Category 3/ Div 2 hazardous areas in conjunction with weighing terminals that have a corresponding approval and interface specification.

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

Cautionary Notes Regarding Cable-Free Battery



⚠ WARNING

The Cable-Free battery is not for use in hazardous areas.



⚠ CAUTION

1 This Wireless Weighing Device includes a Battery Pack ACW520-BR. It is a lithium metal battery, classified as Class 9 Dangerous Goods.

2 Please avoid impact and heavy shock.

3 The device must be transported according to UN38.3 regulations or the regulations for the local country.

4 The battery is for single use only. The following actions may lead to damage or explosion: charging, short circuit, throwing into fire or water, storing in a high-temperature environment or disassembling. Using the battery for other purposes is strictly forbidden! Do not recharge, short circuit, crush, disassemble, heat above 100°C (212°F), incinerate, or expose contents to water.

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1 Introduction

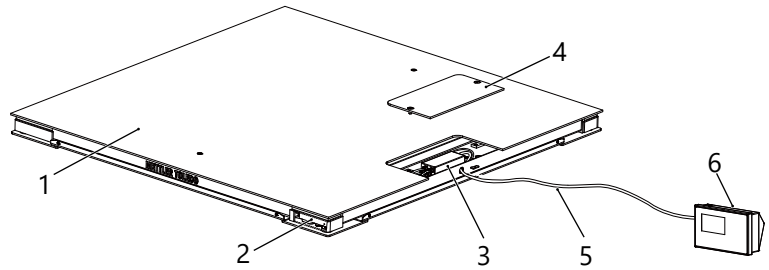
1.1 Product Overview

PFA584 / PFA589 are heavy-duty floor scales that come with flexible customization and METTLER TOLEDO expert consultancy. Thanks to the global approvals and METTLER TOLEDO expertise, it is faster and easier to configure a PFA584 / PFA589 floor scale to fit your application requirements, saving the effort to order it country by country. Besides, the family provides models for either safe or hazardous applications.

A PFA584 / PFA589 floor scale includes at least these following components:

- Weighing Platform
- Load Cells
- Junction Box & Home-run Cable
- Weighing Terminal

Customer may choose from the accessory list provided with PFA584 / PFA589 to configure a floor scale that best suits the application, be it food, pharmaceutical, mobile or heavy load.



Key Components of PFA584_PFA589 Weighing System

1. Scale Platform	2. Load Cell	3. Junction Box
4. Junction Box Access Plate	5. Home-run Cable	6. Weighing Terminal

Compliance Documents Download

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

Manuals Download

Customers can click the link ▶ www.mt.com/PFA584/589-downloads or scan the QR Code below to download more product manuals.

Feedback

We always strive to provide high-quality information and value your feedback. If you find ambiguous information or mistakes in this manual, please do not hesitate to let us know by e-mail.

▶ feedback.manuals.industry@mt.com

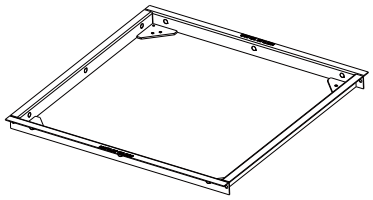
1.2 Application Areas

- PFA584 / PFA589 for use in safe area
- PFA584x / PFA589x for use in hazardous areas of Cat 2 GD / Div 1
- PFA584xx / PFA589xx for use in hazardous areas of Cat 3 GD/ Div 2

1.3 Accessories

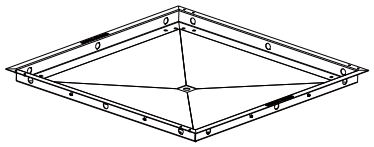
1.3.1 Quick-Pit Frame

With a quick-pit frame, installing a floor scale in a pit is an easy and trouble-free process. Simply level the frame in the pit and pour concrete to complete the pit. After the concrete has cured, install the scale and anchor it. The result is a pit scale that is square and flush with the floor.



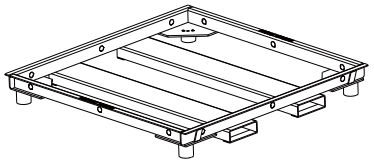
1.3.2 Pit Liner

A pit liner keeps the pit cleaner and more sanitary, suitable for food and pharmaceutical industries.



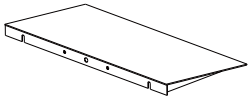
1.3.3 Forklift Channel Frame

A forklift channel frame makes it easy to move the scale with a forklift. Simply slide the forks into the channels and lift. The heavy-duty frame protects the scale from damage.



1.3.4 Ramp

A ramp allows easy access from any side of a scale, eliminating the need to lift heavy loads onto the platform.



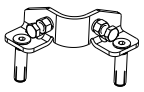
1.3.5 Scale Guard

Protect your scale from side-impact damage with scale guards. When a forklift hits the side of a scale, the impact can bend the scale's frame or damage its load cells. The angled scale guard prevents such damage by deflecting the impact upward. Scale guards can be used on any or all sides of a floor scale.



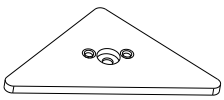
1.3.6 PowerAnchor

PowerAnchor prevents the installation frame from sliding around the installation location and adds extra bumping to the scale platform.



1.3.7 PowerAdapter

PowerAdapter adapts a PFA77_C quick-pit frame for a PFA58_ scale, saving the effort of construction rework.



1.4 Technical Data

Model		PFA584	PFA589
Platform material	Mild steel powder coated / painted, blue	•	
	Stainless steel AISI304L		•
	Stainless steel AISI316L		•(1)
Top deck plate	Smooth	•	•
	Pattern	•	•
Sizes		From 0.8 x 0.8 m to 2.0 x 2.0 m From 30 x 30 in to 96 x 96 in	
Capacities		From 300 kg to 12,000 kg From 500 lb to 20,000 lb	
Compliance	Metrology	OIML Class III, NTEP Class III, CPA Class III	
	EMC	10 V/m	
Ex	ATEX and IEC-Ex	No	Category 2GD
			Category 3GD
	FM US	NI/I, II, III/2/ABCDFG/T6 Ta=55C	
	FM Canada	NI/I, II/2/ABCDFG/T6 Ta=55C / DIP/III/2/T6 ta=55C	
	NEPSI CN	Ex ic nA C T4 Gc Ex nA C T4 Gc Ex tD A22 IP6X T130 Ex ib IIC T4 Gb Ex ib IIIC T85°C-T135°C Db	
Temperature Range		Compensated: -10°C - +40°C / 14°F - 104°F Operating(2): -20°C - +65°C / -4°F - 149°F	
Home Run Cable / Length		Polyurethane, 5 m, 10 m, 20 m	
Load Cell		SLB215 / SLB415 / SLB515 / 0745A, IP68/IP69K	
Scale Interfaces		Analog, SICSpro, Cable-Free	

(1): Specify when ordering.

(2): The weighing accuracy may be compromised when outside compensated range.

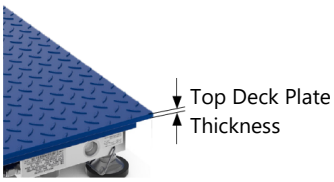
1.5 Designation Concept

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Base Model																	
P	**F**	**A**	**5**	**8**	**4/9**	**Floor Scale PFA584 or PFA589**											
						Application											
						0	Safe Area										
						R	Hazardous Area Cat 3 GD / Div 2										
						X	Hazardous Area Cat 2 GD / Div 1										
							Configuration*										
							1	Static 1 Platform									
							H	Heavy-Duty Static 1 Deck									
								Capacity									
								B	300 kg								
								D	600 kg								
								E	1,000 kg								
								F	1,200 kg								
								G	1,500 kg								
								H	2,000 kg								
								J	3,000 kg								
								K	5,000 kg								
								L	6,000 kg								
								M	10,000 kg								
								N	12,000 kg								
								P	500 lb								
								Q	1,000 lb								
								X	2,000 lb								
								R	2,500 lb								
								S	5,000 lb								
								T	10,000 lb								
								U	20,000 lb								
									Platform Size								
									A	800 × 800 mm							
									Y	850 × 850 mm							
									J	1,000 × 1,000 mm							
									V	1,000 × 1,250 mm							
									C	1,250 × 1,250 mm							
									D	1,250 × 1,500 mm							
									B	1,500 × 1,500 mm							
									E	1,500 × 2,000 mm							
									F	2,000 × 2,000 mm							
									G	2,000 × 2,500 mm							
									H	2,000 × 3,000 mm							
									K	24 × 24 inch							
									W	24 × 28 inch							
									L	30 × 30 inch							
									M	36 × 36 inch							
									N	42 × 42 inch							
									P	48 × 48 inch							
									Q	48 × 60 inch							
									R	48 × 72 inch							
									S	60 × 60 inch							
									T	60 × 84 inch							
									X	72 × 72 inch							
									6	from 700 × 400 mm to 1,000 × 1,000 mm							
									7	from 1,000 × 1,000 mm to 1,500 × 1,500 mm							
									8	from 1,500 × 1,500 mm to 2,000 × 1,500 mm							
									9	from 2,000 × 1,500 mm to 2,000 × 2,000 mm							
										Resolution							
										1	3,000e						
										2	2 × 3,000e MR						
										3	6,000e						
										4	2 × 6,000e MR						
										6	5,000d (NTEP)						
										7	10,000d (NTEP)						
										E	2 × 3,000e MI						
										A	15,000d						
										B	30,000d						
											Material						
											A	Mild Steel Pattern Painted					
											B	Mild Steel Smooth Painted					
											C	Mild Steel SlipNot Plate					
											D	Mild Steel Algrip Plate					
											E	304L Stainless Steel Smooth Plate					
											F	304L Stainless Steel Pattern Plate					
											G	304L Stainless Steel SlipNot Plate					
											H	304L Stainless Steel Algrip Plate					
											J	316L Stainless Steel Smooth Plate					
											K	316L Stainless Steel Pattern Plate					
											L	304L Stainless Steel Smooth Plate Polished (Ra<1µm(<40µin))					
											M	316L Stainless Steel Smooth Plate Polished (Ra<1µm(<40µin))					

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
											N	304L Stainless Steel Smooth Plate Electropolished					
											P	304L Stainless Steel Pattern Plate Electropolished					
											Q	304L Stainless Steel SlipNot Plate Electropolished					
											R	304L Stainless Steel Algrip Plate Electropolished					
											S	316L Stainless Steel Smooth Plate Electropolished					
											T	316L Stainless Steel Pattern Plate Electropolished					
											U	Top plate stainless steel, others mild steel					
											Z	Other					
												Suspension					
												1	Threaded Foot / Tool Steel Load Cell				
												2	Threaded Foot / Stainless Load Cell				
												3	Rocker Foot / Tool Steel Load Cell				
												4	Rocker Foot / Stainless Load Cell				
												5	Frame - Rocker Pin / Tool Steel Load Cell				
												6	Frame - Rocker Pin / Stainless Load Cell				
												Z	Other				
													Scale Interface				
													A	AJB035 Basic Analog			
													B	AJB459 Standard Analog			
													C	AJB641S - Analog HP			
													D	AJB641SX - Analog HP			
													E	AJB579ax Group 3			
													F	AJB579axx Group 2			
													S	AJB579d- SICS-Pro			
													P	PowerCell - M12			
													W	Cableless - Digital Wireless			
													Z	Other			
														Home-Run Cable Length			
														0	0 m (for Cable Free)		
														1	1 m		
														2	2 m		
														3	3 m		
														5	5 m		
														6	10 m		
														7	20 m		
														8	20m PU - M12 - Wired		
														A	PTFE 1m		
														B	PTFE 2m		
														C	PTFE 3m		
														D	PTFE 5m		
														E	PTFE 10 m		
														F	PTFE 20 m		
														Z	Other		
															Terminal		
															0	no terminal	
															A	IND231	
															B	IND236	
															C	IND245	
															D	IND246	
															E	IND131	
															F	IND141	
															G	IND331	
															H	B520	
															J	ICS	
															K	IND570	
															L	IND780	
															M	IND880	
															N	IND256x	
															P	IND331xx	
															Q	IND560x	
															R	IND570xx	
															S	Exd331	
															T	Compound Ex IND331	
															U	IND360	
																Type	
																S	Standard
																E	ETO
P	F	A	5	8	4	0	H	E	J	4	U	6	Z	0	A	S	

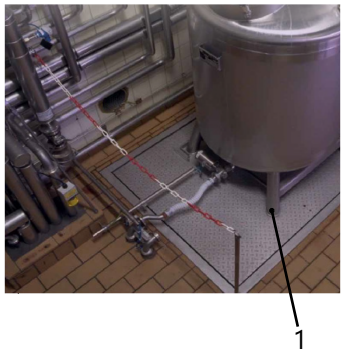
1.6 Top Deck Plate Options

Choose the appropriate top deck plate thickness according to the contact area between the load and the top deck plate.



If there are multiple contact points (1) between the load and the top deck plate, choose one typical point to measure and calculate the contact area. If these contact points have different contact areas, choose the smallest one to measure and calculate.





If a trolley or pallet jack truck is used, suppose the contact area between its wheel and the top deck plate is 1 cm × the wheel width.



Scale Platform Thickness Options

Contact Area S (cm^2) between Load and Top Deck Plate	Scale Capacity					
	6.0 t	**3.0 t**	**2.0 t**	**1.5 t**	**1.2 t / 1.0 t**	**< 1.0 t**
10≤ S <25	16 mm	12 mm	8 mm	8 mm	8 mm	**6 mm**
25≤ S <50	16 mm	12 mm	8 mm	8 mm	8 mm	**6 mm**
50≤ S <100	16 mm	12 mm	8 mm	8 mm	8 mm	**6 mm**
150≤ S <200	16 mm	12 mm	8 mm	8 mm	**6 mm**	**6 mm**
200≤ S <250	12 mm	12 mm	8 mm	**6 mm**	**6 mm**	**6 mm**
250≤ S <300	12 mm	12 mm	8 mm	**6 mm**	**6 mm**	**6 mm**
300≤ S <350	12 mm	12 mm	8 mm	**6 mm**	**6 mm**	**6 mm**
350≤ S <400	12 mm	**8 mm**	**6 mm**	**6 mm**	**6 mm**	**6 mm**
400≤ S <500	12 mm	**8 mm**	**6 mm**	**6 mm**	**6 mm**	**6 mm**
500≤ S <600	12 mm	**8 mm**	**6 mm**	**6 mm**	**6 mm**	**6 mm**
600≤ S <700	12 mm	**8 mm**	**6 mm**	**6 mm**	**6 mm**	**6 mm**
700≤ S <800	**8 mm**	**6 mm**	**6 mm**	**6 mm**	**6 mm**	**6 mm**
800≤ S <1600	**8 mm**	**6 mm**	**6 mm**	**6 mm**	**6 mm**	**6 mm**
1600≤ S	**6 mm**	**6 mm**	**6 mm**	**6 mm**	**6 mm**	**6 mm**

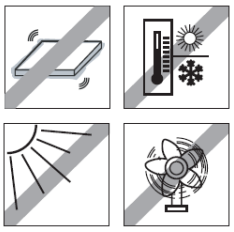
Note: Standard top deck plate thickness options are highlighted in bold. The rest options are available for customized orders.

2 Installation

2.1 Site Selection

Many problems associated with floor scale installations are caused by improper site conditions. Before installing the scale, check the proposed location to make sure that it meets the following requirements:

- The floor where the scale will be positioned should be stable and level. (Levelness: ≤3˚, height difference of scale corner: ≤2.5mm)
- The floor/support at each corner of the scale should be strong enough to support the scale when it is loaded to full weighing capacity.
- There should be proper drainage away from the scale.
- There should be no heavy vibrations or wind currents at or near the scale.
- The scale should not be subjected to excessive or unusual loading due to the location or type of equipment used.
- Observe the following environmental conditions:
  - No direct sunlight
  - No strong drafts
  - No excessive temperature fluctuations



If the site is acceptable, proceed with the installation. If not, choose a new location.

2.2 Concrete Work



⚠ CAUTION

1 Use all personal-protective equipment that is appropriate for working with concrete.

2 Comply with all safety requirements specified in OSHA standard 1926.1153 governing exposure to silica when cutting, grinding, drilling, or demolishing concrete. Use the appropriate protective equipment mandated by OSHA.

2.3 Unpacking

Upon delivery of the floor scale, check all packaging contents based on the packing list supplied with the floor scale and/or accessories. Keep the packing materials in case return the scale and/or its accessories.

2.4 Ambient Conditions

- The floor scale may only be operated accurately in the range of -10°C to +40°C /14°F to 104°F.
- Consult METTLER TOLEDO for information about using the scale in a chemical environment.
- Application Areas:
  - PFA584 / PFA589 for use in safe area.
  - PFA584x / PFA589x for use in hazardous areas of Cat 2 GD / Div 1.
  - PFA584xx / PFA589xx for use in hazardous areas of Cat 3 GD/ Div 2.

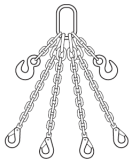
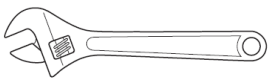
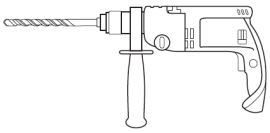
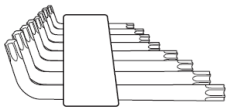
2.5 Installations

This chapter describes the instructions for installing a PFA584 / PFA589 floor scale in different configurations or with different accessories.

Make sure the following tools are ready before starting install the scale and its accessories. Read the user guide for each tool carefully and follow the safety instructions strictly.

Installation Tools

	Flat-head screwdriver

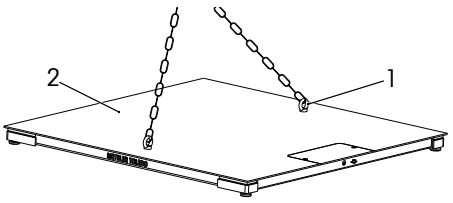
	Lifting chain/strap (capacity: 1t, length: 1.5m)
	Metric hex wrench kit
	Adjustable wrench
	Percussion bit 16mm
	Percussion drill
	Spline socket screw key T20
	Open-end wrench 12mm, 16mm, 24mm

2.5.1 Installing the Footed Floor Scale

You may have your PFA584 / PFA589 floor scale delivered with one of the following types of scale foot: rocker foot, high-resolution rocker foot or screw foot (check your purchase contract for the specific type.)

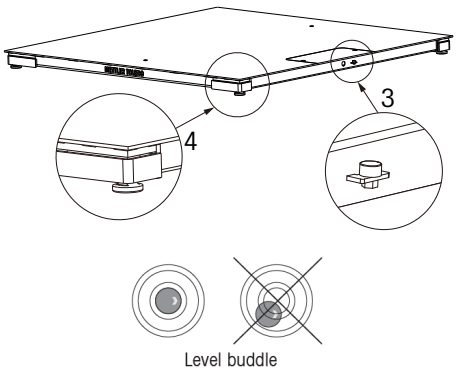
Moving to Proposed Position

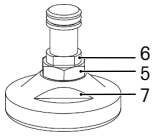
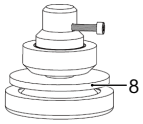
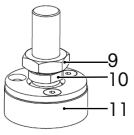
1 Install the eyebolts (1) into the scale platform (2).
2 Lift the scale away from the packaging material.
3 Move the scale to the proposed location and slowly lower it down.



Leveling

1 Check the level bubble (3) and all scale corners: the bubble should be centered, and each foot (4) should firmly touch the ground.
2 Adjust foot height if the level bubble is not centered and/or any foot does not touch the ground fully.



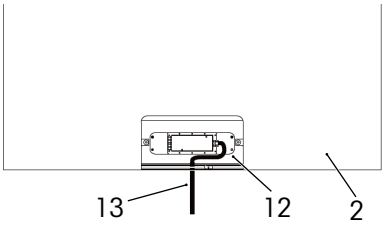
Rocker Foot	High-resolution Rocker Foot	Screw Foot
		

Rocker Foot	High-resolution Rocker Foot	Screw Foot
1 Loosen the nut (5). 2 Hold the pin (6) with a wrench, and use another wrench to adjust the foot (7) to the desired height. 3 Tighten the nut against the foot.	Rotate the knurl screw (8) until the foot reaches the desired height.	1 Loosen the nut (9). 2 Use a wrench to rotate the pin (10) until the foot (11) is at the desired height. 3 Tighten the nut against the load cell.

Note: After levelling and adjustment, verify that all rocker feet or screw feet are locked.

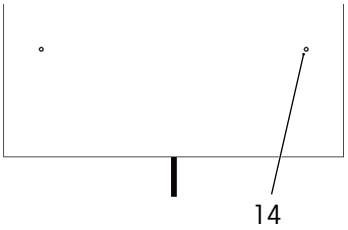
Wiring Home-Run Cable

1 Remove the junction box access plate (12) from the scale platform (2).
2 Thread the home-run cable (13) through the scale frame and the platform.
3 Wire the home-run cable to the weighing terminal according to [Wiring ▸ Page 17] and the terminal manual.
4 Reinstall the junction box access plate.



Verifying Free Movement

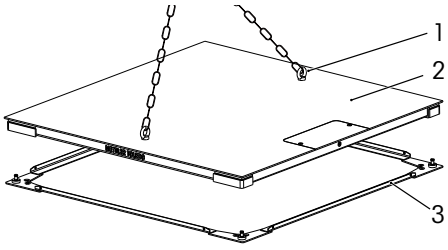
1 Remove the eyebolts.
2 Reinstall the sealing screws (14).
3 Verify that the scale platform can move freely.



2.5.2 Installing the Installation Frame

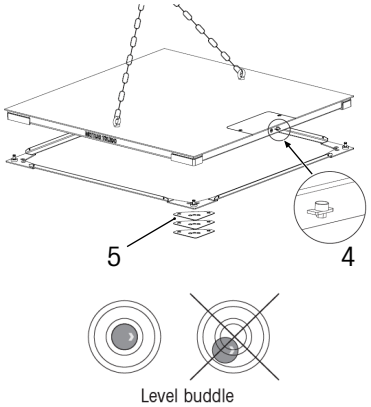
Moving to Proposed Position

1 Install the eyebolts (1) into the scale platform (2).
2 Lift the platform away from the installation frame (3).
3 Set up the installation frame at the proposed location.
4 Lower the platform onto the installation frame.

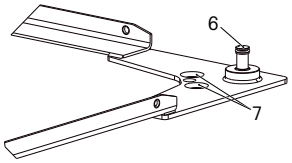


Leveling

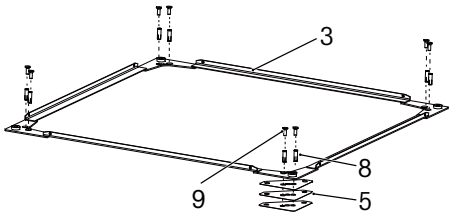
1 Check the level bubble (4) and all scale corners: make sure the level bubble is in the center, and each corner firmly touch the ground.
2 Shim (5) the installation frame if the level bubble is not in the center and/or any scale corner does not touch the ground fully.



Fastening Installation Frame

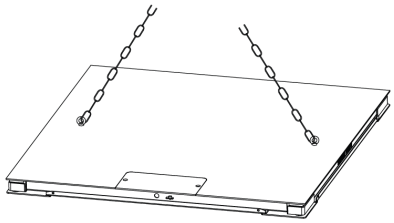


1 Lift the scale platform.
2 Remove all the rocker pins (6).
3 Mark the drill positions (7) for the installation frame.
4 Drill holes for M12 drop-in anchors.
5 Remove any dirt particles.
6 Fasten the installation frame (3) and the shims (5) to the floor with M12 drop-in anchors (8) and M12 hex socket countersunk bolts (9).
7 Ensure that all anchor bolt heads are flush with the surface of the installation frame.



Installing Scale Platform

1 Reinstall the rocker pins in the installation frame.
2 Slowly lower the platform onto the installation frame.

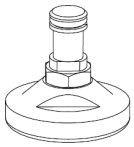


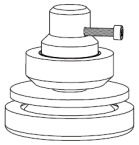
Wiring Home-Run Cable and Verifying Free Movement

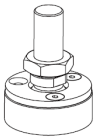
For details, refer to [Wiring Home-Run Cable ▸ Page 11] and [Verifying Free Movement ▸ Page 11].

2.5.3 Installing the Scale Locating Plates

A scale locating plate can be used with a rocker foot, high-resolution rocker foot or screw foot.

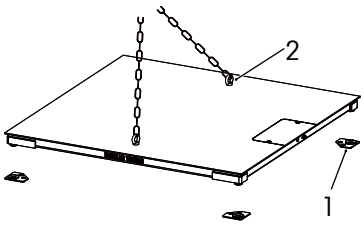

Rocker Foot


High-Resolution Rocker Foot


Screw Foot

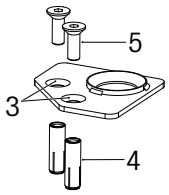
Moving to Proposed Position

1 Place the scale locating plates (1) at the proposed location.
2 Install the eyebolts (2) into the scale platform.
3 Lift the scale above the scale locating plates.
4 Slowly lower the scale.
➡ Each foot is fully engaged with each locating plate.



Fastening Locating Plate

1 Remove the scale.
2 Mark the drill positions (3) of each locating plate.
3 Drill holes for M12 drop-in anchors.
4 Remove any dirt particles.
5 Fasten each locating plate with M12 drop-in anchors (4) and M12 hex socket countersunk bolts (5).
6 Replace the scale into the locating plates.



Leveling

Refer to [Leveling ▸ Page 10].

Wiring Home-Run Cable

Refer to [Wiring Home-Run Cable ▸ Page 11].

Verifying Free Movement

Refer to [Verifying Free Movement ▸ Page 11].

2.5.4 Installing the Ramps

The ramp offered by PFA584 / PFA589 should be used together with the installation frame or the scale locating plates. For information about installing the installation frame or scale locating plates, please go to [Installing the Installation Frame ▸ Page 11] and [Installing the Scale Locating Plates ▸ Page 12].

The following instructions take the installation frame as the example to show the installation method of the ramp.

Fastening the Ramp Block

1 Place the ramp blocks (1) against the side of the installation frame (2) or the scale locating plates (3).

2 Install the ramp (4) with the ramp blocks.

➡ The ramp and the floor scale are aligned as required.

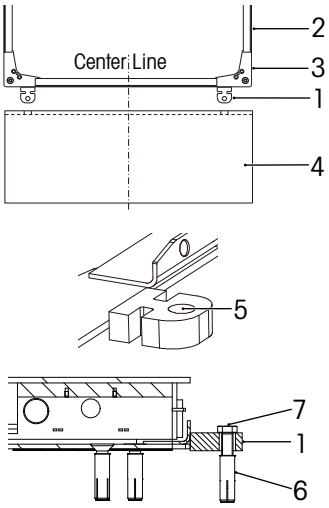
3 Remove the ramp.

4 Mark the drill positions (5) for the ramp blocks.

5 Drill holes for M12 drop-in anchors.

6 Remove any dirt particles.

7 Fasten each ramp block with a M12 drop-in anchor (6) and a M12 hex-head bolt (7).

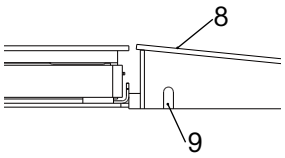


Connecting the Home-run Cable to the Terminal

1 Remove the junction box access plate from the scale platform.

2 Thread the home-run cable through the scale frame and the platform, then through the hole provided in the ramp (8) and lastly the home-run cable access hole (9).

3 Wire the home-run cable to the weighing terminal according to [Wiring ▸ Page 17] and the terminal manual.

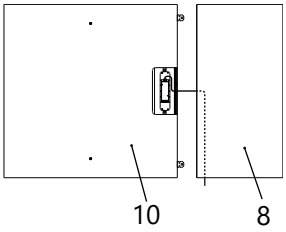


Installing the Ramp

1 Reinstall the junction box access plate.

2 Install the ramp (8) with the ramp blocks.

3 Verify that the scale platform (10) can move freely.



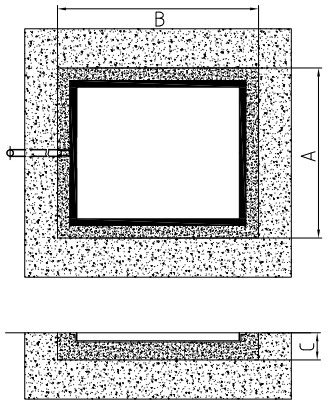
2.5.5 Installing the Quick-Pit Frame / Pit Liner

For pit installations, using an optional quick-pit frame or pit liner. A quick-pit frame simplifies installation by providing a ready-made pit coping around the perimeter of the scale. A pit liner provides a pit with an easy-to-clean surface. The following procedure explains how to install a quick-pit frame or pit liner.

Excavating the Pit

- Before constructing a pit, contact METTLER TOLEDO or an authorized METTLER TOLEDO distributor to obtain the correct pit construction drawing.

1 Cut a pit in the floor, matching the dimensions shown in the table below.



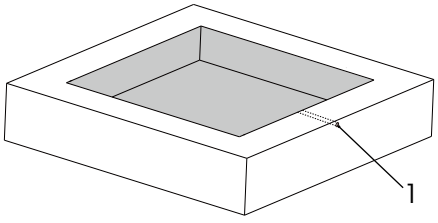
Pit Dimensions (mm)

Scale Platform Size (mm)	Pit Dimensions (mm)		
	A	B	C
800 x 800	1100	1100	300
1000 x 1000	1300	1300	300
1000 x 1250	1300	1550	300
1250 x 1250	1550	1550	300
1250 x 1500	1550	1800	300
1500 x 1500	1800	1800	300
1500 x 2000	1800	2300	300
2000 x 2000	2300	2300	300

Pit Dimensions (inch)

Scale Platform Size (inch)	Pit Dimensions (inch)		
	A	B	C
30 x 30	40	40	12
36 x 36	46	46	12
48 x 48	58	58	12
48 x 60	58	70	12
60 x 60	70	70	12
60 x 84	70	94	12
72 x 72	82	82	12

2 Position the home-run cable conduit (1).

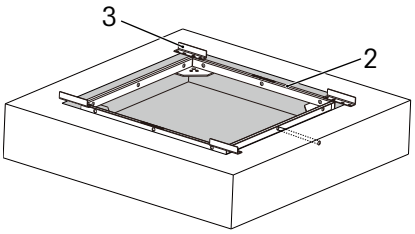


Note:

- Use high-grade steel conduit (minimum 2-inch or 50-mm EMT thin-wall conduit).
- Conduit is not supplied by METTLER TOLEDO.
- Do not secure the conduit until the frame or liner is in the correct position.

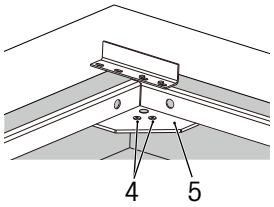
Preparing Framework

If the floor scale was shipped inside the frame or liner (2), remove the floor scale. Then support the frame or liner.

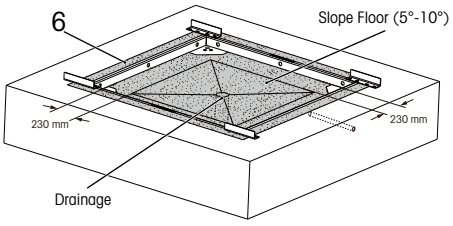


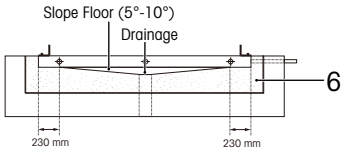
1 Bolt 4 installation brackets (3) to the frame or liner so that they extend outward from the frame with the flanges facing up.
2 Lower the frame or liner into the pit.
   ➡ The installation brackets rest on the surface of the floor to support the frame or liner.
3 Center the frame or liner in the pit opening.
4 Make sure the frame or liner is level. If the frame or liner is not level, adjust it by shimming between the installation brackets and floor.

Concreting



1 Secure the home-run cable conduit to the frame or liner.
2 Install the M12 bolts (4) provided with the quick-pit frame into the holes in the quick-pit frame corner plates (5).
3 Mask off the four corner plates and the top flange of the frame or liner to prevent concrete from adhering to these surfaces.
4 Cover the interior of the pit liner to protect the surface while pouring concrete.
5 Pour concrete (6) around the perimeter of the frame or liner.
6 Work the concrete until it is level with the top flange of the frame or liner.
   ➡ The undersides of all corner plates are completely supported.
7 Slope the floor of the pit 5-10 degrees to a suitable drain at the center of the pit.





Note:

- Use a minimum of 3,000 psi (20.7 Mpa) strength concrete cured for 28 days with 5 to 7 percent air entrainment.
- Make sure the undersides of all corner plates are completely supported by concrete.
- Take care to hold the pit liner in place while pouring concrete into the pit.

Installing the Floor Platform in the Pit

1 Remove the installation brackets that provided temporary support for the frame or liner.

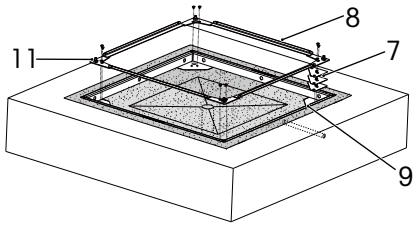
2 Remove the bolts from the quick-pit frame corner plates.

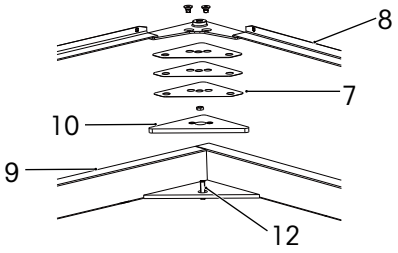
3 Install the floor scale in the quick-pit frame or pit liner, using the procedure described in [Installing the Installation Frame ▸ Page 11] or [Installing the Scale Locating Plates ▸ Page 12].

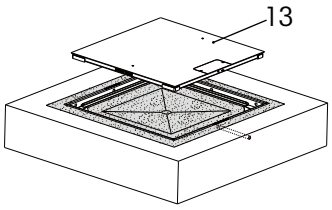
4 Shim (7) between the installation frame (8) and the quick-pit frame (9) if the scale is not level.

5 If a PFA77_C quick pit frame is used to install the PFA58_ floor scale, place a PowerAdapter (10) on each corner plate of the PFA77_C quick pit frame, then fix it with the anchor bolt (12) (cut off the extra part that extends from the Power Adapter) supplied with PFA77_C quick pit frame.

6 Place the scale platform (13) into the pit by engaging it with each rocker pin (11) at each corner.







Connecting the Home-run Cable to the Terminal

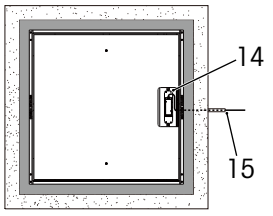
1 Remove the junction box access plate (14) from the scale platform.

2 Thread the home-run cable (15) through the scale frame and the platform, then the quick-pit frame or pit liner, and lastly through the conduit.

3 Wire the home-run cable to the weighing terminal according to [Wiring ▸ Page 17] and the terminal manual.

4 Reinstall the junction box access plate.

5 Verify that the scale platform can move freely.



2.5.6 Installing the Forklift Channel Frame

1 Place the installation frame (1) into the forklift channel frame.

2 Place the rocker pins into the receivers.

3 Place the scale platform (2) into the installation frame.

➡ The installation frame and the platform are fully engaged through the rocker pins (3).

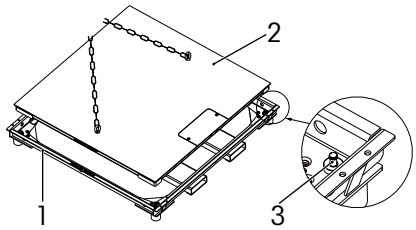
4 Verify that all scale corners firmly touch the forklift channel frame. Otherwise shim (4) between the installation frame and the forklift channel frame.

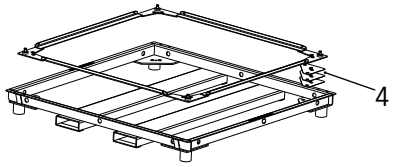
5 Lift out the platform.

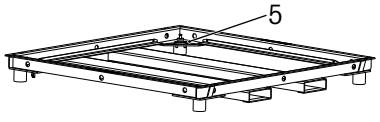
6 Fasten the installation frame, shims and forklift channel frame with the M12 hex-head socket bolts (5).

7 Replace the scale platform into the installation frame.

➡ The installation frame and the platform are fully engaged through the rocker pins.





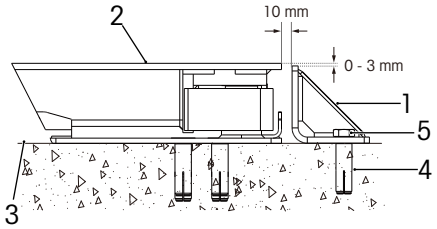


Wiring Home-Run Cable and Verifying Free Movement

For details, refer to [Wiring Home-Run Cable ▸ Page 11] and [Verifying Free Movement ▸ Page 11].

2.5.7 Installing the Scale Guard

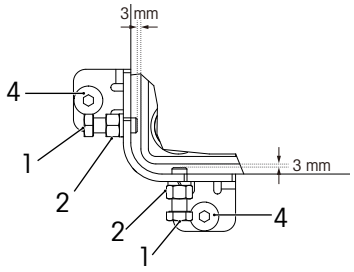
1 Locate the scale guard (1) a minimum of 10 mm (3/8 inch) from the edge of the scale platform (2).
2 Each scale guard is equipped with at least two holes for anchoring it to the floor (3).
3 Use the holes in the side guard as guides to drill holes into the floor.
4 Install the M12 drop-in anchors (4).
5 Insert M12 hex-head bolts (5) and tighten them to secure the scale guard to the floor.

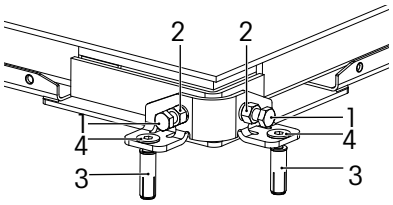


Note: When choosing the side to install the scale guard, ensure that the top of the scale guard is 0-3 mm lower than that of the scale platform.

2.5.8 Installing the PowerAnchor

1 Place a PowerAnchor at each corner of the installation frame.
   ➡ The arc plates of the PowerAnchors firmly press the installation frame.
2 Screw the M12 bolts (1) and the nuts (2) into the Power-Anchors.
   ➡ There is a 3-mm clearance between the PowerAnchors and the scale bumping plates.
3 Use the holes in the PowerAnchors as guides to drill holes into the floor.
4 Install the M12 drop-in anchors (3).
5 Insert the M12 countersunk bolts (4) and tighten them to secure the PowerAnchors to the floor.



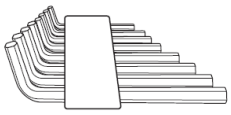
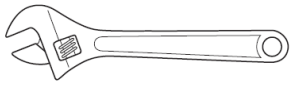
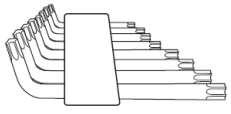


2.6 Wiring

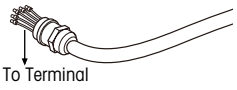
2.6.1 Connecting PFA584 / PFA589 to an Analog Weighing Terminal

For PFA584 / PFA589 equipped with an analog junction box of AJB459, AJB579x-a or AJB579xx-a (check the name plate or label on the junction box), make sure that you have the following tools ready before wiring.

Tools Needed for Wiring

	Flat-head screwdriver
	Metric hex wrench kit
	Adjustable wrench
	Spline socket screw key T20

Connect the home-run cable to the weighing terminal according to the installation manual of the weighing terminal and the following color code.



Analog Home-run Cable

Color Code of Analog Home-Run Cable (EU)

Color (Analog home-run cable for EU)	Signal
Grey	EXC+
Yellow	SEN+
White	SIG+
Brown	SIG-
Green	SEN-
Pink/Red	EXC-

Color Code of Analog Home-Run Cable (US)

Color (Analog home-run cable for US)	Signal
Red	SEN-
Yellow	SEN+
Black	SIG-
Green	SIG+
Blue	EXC-
White	EXC+
Orange	Shield

Color Code of Analog Home-Run Cable (Asian-Pacific)

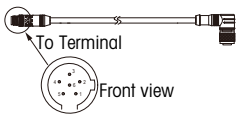
Color (Analog home-run cable for Asian-Pacific)	Signal
Blue	SEN-
Yellow	SEN+
Red	SIG-
White	SIG+
Black	EXC-
Green	EXC+

2.6.2 Connecting PFA584 / PFA589 to a Digital Weighing Terminal

For PFA584 / PFA589 equipped with a digital junction box AJB579-d (check the name plate or label on the junction box), follow the instructions below to connect the scale to the digital weighing terminal.

1 Route the home-run cable from the AJB579-d junction box to the weighing terminal.

2 Connect the plugs of the home-run cable to the AJB579-d junction box and the weighing terminal.



SICSPro Home-run Cable

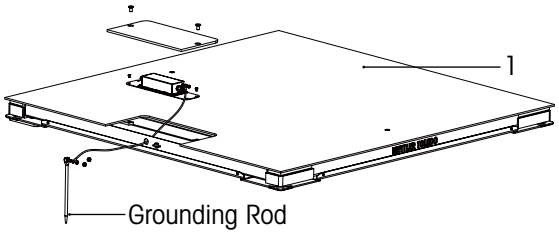
2.6.3 Equipment Grounding (for Category 2 GD/Div 1 and Category 3 GD/Div 2)

The equipment grounding must be installed by a professional electrician when using the weighing platforms PFA584(x) / PFA589(x) in hazardous areas. METTER TOLEDO Service only has a monitoring and consulting function here.

Connect the grounding of all devices (weighing platform, weighing terminal) in accordance with 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 grounding terminals.

- No circulating current flows via the cable shielding for intrinsically safe circuits.
- The neutral point for grounding is as close to the weighing system as possible.
- The resistance for the grounding of PFA584(x) / PFA589(x) should be no more than 4 Ω.



3 Setup and Configuration

For information about configuring and calibrating the floor scale, refer to the manual for the connected weighing terminal.

3.1 Initial Zero Range

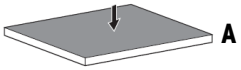
Note that terminals have a different initial zero range when working with a PFA58_ floor scale. The table below lists all the terminals with an initial zero range of 0-15%. For those not listed below, the initial zero range is 0-20%.

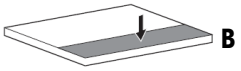
Terminal	Capacity	Resolution	Sizes	Initial Zero Range
IND245 AC / IND245 Battery	6000 kg	6000	1.5 m x 2.0 m to 2.0 m x 2.0m	0 - 15%
	6000 kg	3000		
	3000 kg	6000		
	3000 kg	3000		
IND246 AC / IND246 Battery	6000 kg	6000		
	6000 kg	3000		
	3000 kg	6000		
IND331 (Ex) / ICS series / IND236 Export / IND256x	6000 kg	6000		
	6000 kg	3000		
IND231 / IND570	6000 kg	6000		
	6000 kg	3000		

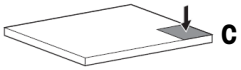
4 Operation

4.1 Maximum Permissible Load Limits

The PFA584 / PFA589 floor scales are extremely robust. However, the load limits in the following table may not be exceeded.

A with centered load 

B with side load 

C with corner load 

Maximum Permissible Load Limits (Asian-Pacific and EU)

Floor Scale	A	B	C
PFA58…300	1500 kg	900 kg	450 kg
PFA58…600			
PFA58…1200	3500 kg	2300 kg	1150 kg
PFA58…1500			
PFA58…3000	4500 kg	3000 kg	1500 kg
PFA58…6000	9000 kg	6000 kg	3000 kg
PFA58…12000	18000 kg	9000 kg	4500 kg

Maximum Permissible Load Limits (US)

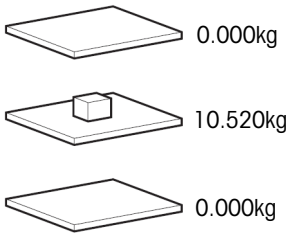
Floor Scale	A	B	C
PFA58…500	3000 lb	1500 lb	750 lb
PFA58…1000	3000 lb	1500 lb	750 lb
PFA58…2500	6000 lb	3750 lb	1900 lb
PFA58…5000	10000 lb	7500 lb	3750 lb
PFA58…10000	20000 lb	15000 lb	7500 lb
PFA58…20000	40000 lb	30000 lb	15000 lb

4.2 Checking the Floor Scale

Function Check

The function check should be performed under the condition that the floor scale is calibrated. Refer to the manual provided with the connected weighing terminal for information about calibration.

1 Before starting a weighing series, perform a function check of the floor scale and the connected weighing terminal.
2 Make sure that the floor scale is connected to a weighing terminal and that the weighing terminal is switched on.
3 Make sure that the floor scale is unloaded and the display of the weighing terminal shows 0.
4 Load the floor scale. The display must show a value different from 0.
5 Unload the floor scale. The display must return to 0. Otherwise, zero the scale.

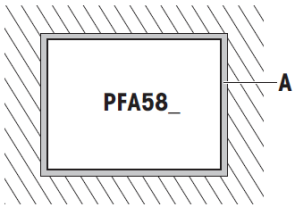


Verification Test

For a verification test refer to the manual of the connected weighing terminal. If the verification seal is broken, verification is no longer valid.

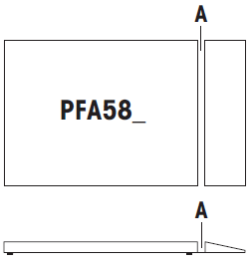
4.3 Checking Recessed Floor Scale

1 Make sure that the floor scale does not touch the pit frame.
2 Make sure that the gap (A) between floor scale and the pit frame is free from dust deposits.



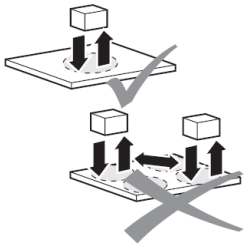
4.4 Checking Ramps

1 Make sure that the floor scale does not touch the ramp.
2 Make sure that the gap (A) between the floor scale and ramp is free from dust deposits.

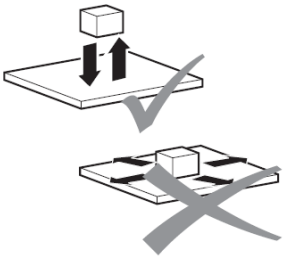


4.5 Important Notes

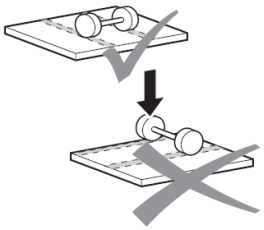
For best weighing results observe the following:



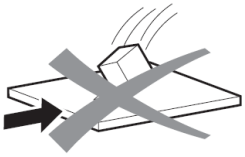
- To achieve best weighing results, place the weighing sample always in the middle of the floor scale.



- Avoid abrasive and wear processes.



- When travelling across recessed floor scales with pallet trucks, ensure that the axle load does not exceed the maximum side load, see the table in [Maximum Permissible Load Limits ▸ Page 21].



- Avoid falling loads, shocks and lateral impacts.

5 Maintenance and Service

Have an authorized METTLER TOLEDO service representative inspect and calibrate the floor scale periodically. If the scale is used for legal-for-trade purposes, consult the local weights and measures authorities for minimum inspection requirements. Contact your local authorized METTLER TOLEDO service representative for information about periodic inspection and calibration service.



⚠ WARNING

Permit only qualified personnel to service this equipment. Exercise care when making checks, tests and adjustments that must be made with power on. Failing to observe these precautions can result in bodily harm and/or property damage.



⚠ WARNING

Before connecting/disconnecting any internal electronic components or interconnecting wiring between electronic equipment always remove power and wait at least thirty (30) seconds before any connections or disconnections are made. Failure to observe these precautions could result in damage to or destruction of the equipment and/or bodily harm.

5.1 Cleaning and Maintenance



NOTICE

Damage to the floor scale due to incorrect use of cleaning agents.

1 Use only such cleaning agents that do not act on the plastics used in the floor scale.
2 Only use disinfectants and cleaning agents in accordance with the manufacturer's instructions.
3 Do not use highly acidic, highly alkaline or highly chlorinated cleaning agents. Avoid substances with a high or low pH value since increased danger of corrosion otherwise exists.
4 Be particularly careful when cleaning the interior.

- The procedure depends both on the type of surface and on the environmental conditions prevailing at the installation location.

– Remove dirt and deposits at regular intervals from the outside and inside of the floor scale.

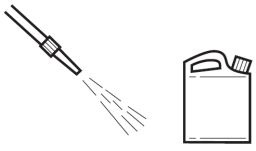
Cleaning Mild Steel Scales

- Wipe with a damp cloth.
- Use mild cleaning agents.



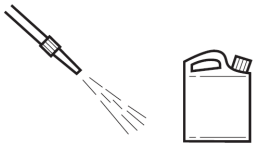
Cleaning Stainless Steel Scales

- Use a water jet up to 80°C / 176°F and max. 8 bars, minimum distance 40 cm.
- Use mild cleaning agents.

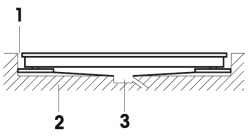


Cleaning in a Corrosive Environment

- Use a water jet up to 80°C / 176°F and max. 8 bars, minimum distance 40 cm.
- Remove corrosive substances at regular intervals.
- Only use disinfectants and cleaning agents in accordance with the manufacturer's specifications and instructions.



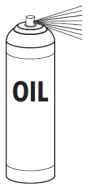
Cleaning a Recessed Floor Scale



Ensure that the gap (1) between the floor scale and pit frame/pit liner is always kept clear.

- Remove large dirt deposits at the pit bottom (2) at regular intervals.
- Check the pit drainage channel (3) for blockage at regular intervals.

5.2 Subsequent Treatment



In order to protect the floor scale, carry out the following subsequent treatment:

- Rinse the floor scale with clear water and remove cleaning agent completely.
- Dry off the floor scale with a lint-free cloth.
- With stainless steel floor scales, treat the inside and outside with food-grade oil.

5.3 Disposal



In conformance with the European Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE) this device may not be disposed of with domestic waste.

In conformance with the European Directive 2006/66/EC on Batteries and Accumulators and waste Batteries and Accumulators the lithium metal battery (Cable-Free battery) may not be disposed of with domestic waste.

This also applies to countries outside the EU, per their specific requirements.

- Please dispose of this product in accordance with EU directives and local regulations at the collecting point specified for electrical and electronic equipment and batteries.
- To avoid additional transportation, it is recommended that customers dispose of the waste battery pack by themselves according to EU and local country regulations. Otherwise the MT service technician can dispose of the battery at a suitable collection point.

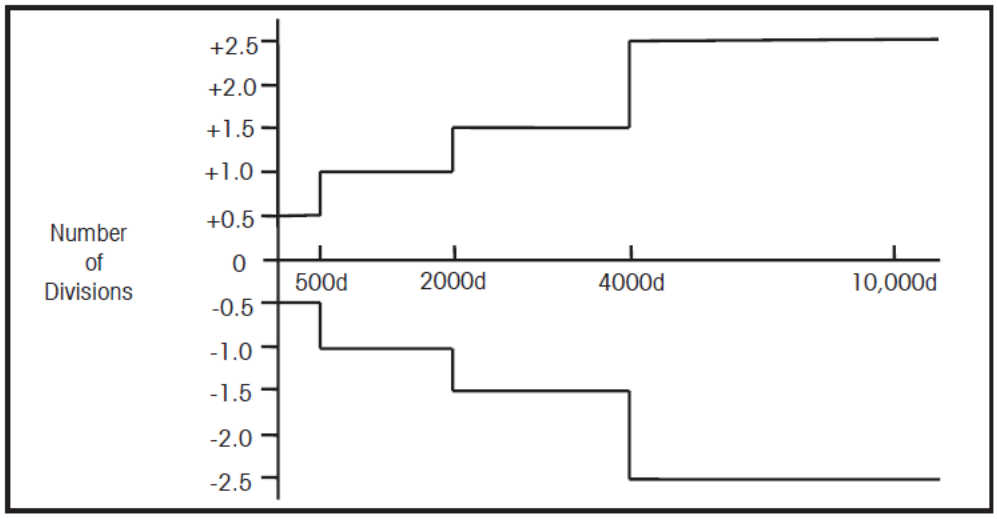
If you have any questions, please contact the responsible authority or the distributor from which you purchased this device.

Should this device be passed on to other parties (for private or professional use), the content of this regulation must also be related.

6 Appendix

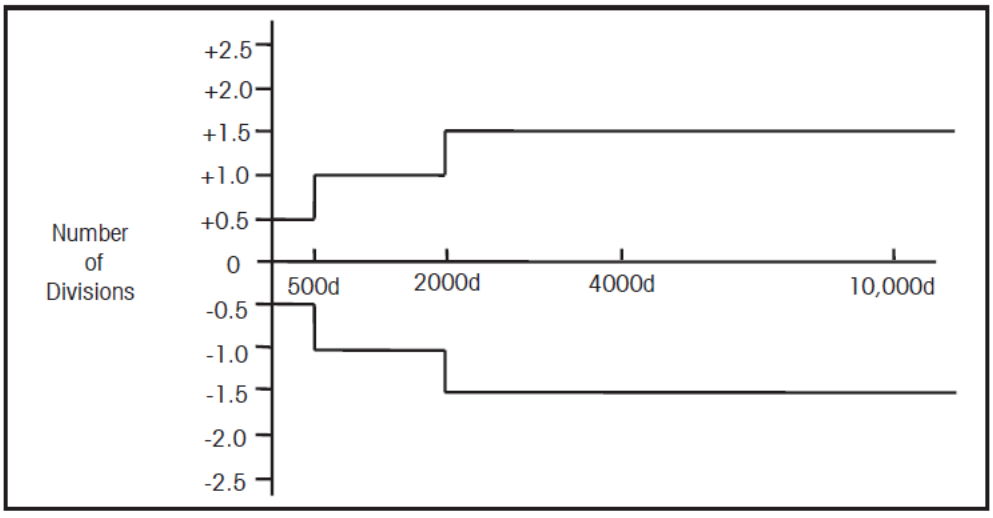
6.1 Scale Accuracy

PFA584 / PFA589 floor scale meet or exceed the National Institute of Standards and Technology (NIST) Handbook 44 requirements for Class III scales. Standard PFA584 / PFA589 scales meet 5000-division accuracy.



Applied Weight	Allowable Error
0 - 500 Divisions	± 1/2 Division
501 - 2,000 Divisions	± 1 Division
2,001 - 4,000 Divisions	± 1.5 Divisions
4,001 - 10,000 Divisions	± 2.5 Divisions

NIST Class Ⅲ Acceptance Tolerances



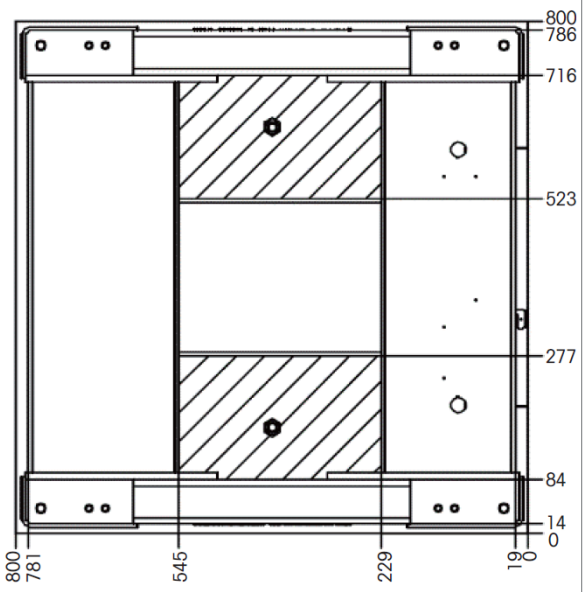
Applied Weight	Allowable Error
0 - 500 Divisions	± 1/2 Division
501 - 2,000 Divisions	± 1 Division
2,001 - 10,000 Divisions	± 1.5 Divisions

OIML Acceptance Tolerances

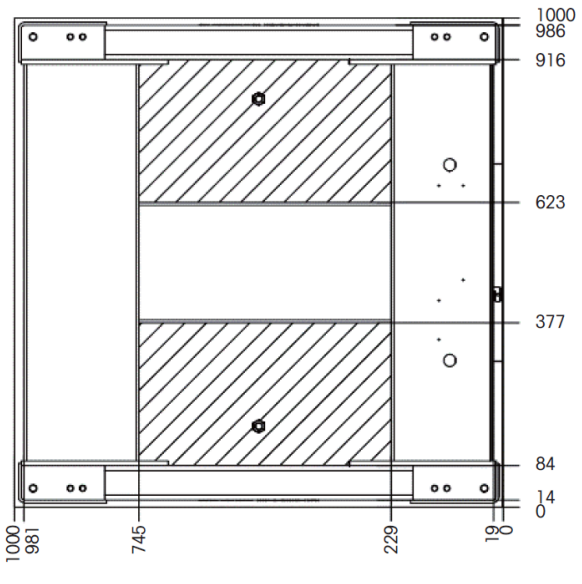
6.2 Mounting Possibilities

Opening/mounting possibilities are shown in grey.

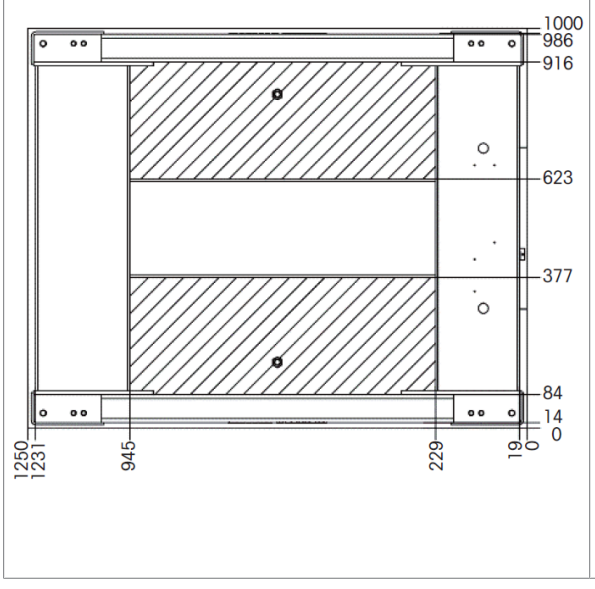
PFA58_-800*800-0.3~3t



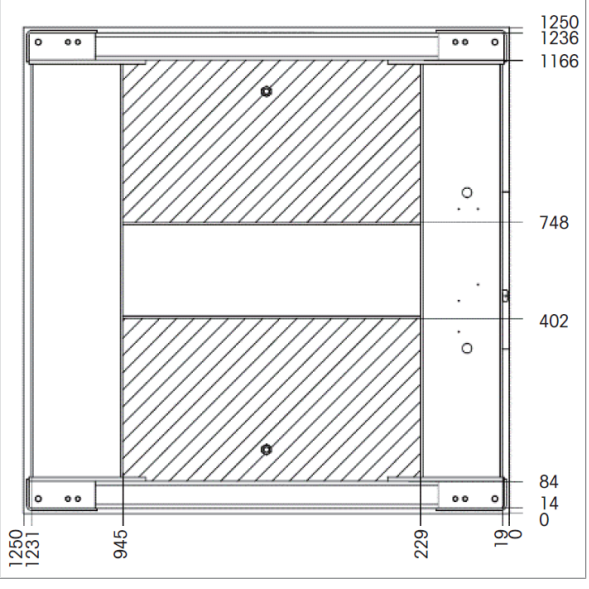
PFA58_-1000*1000-0.3~3t



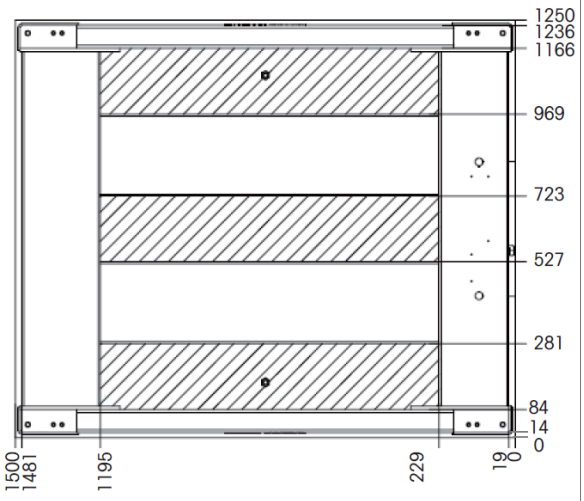
PFA58_-1000*1250-0.3~3t



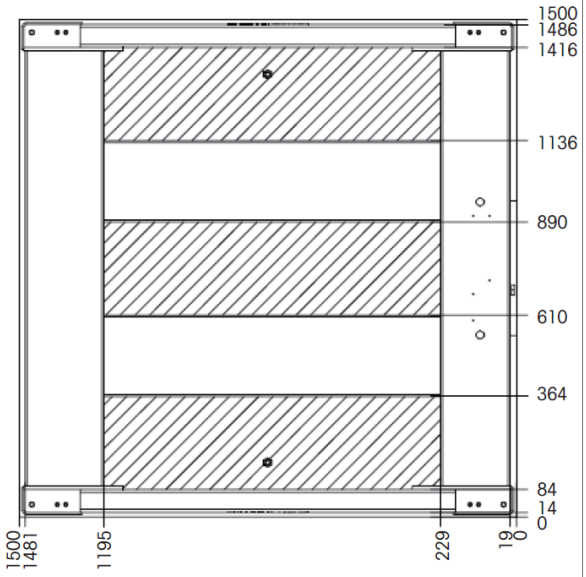
PFA58_-1250*1250-0.3~3t



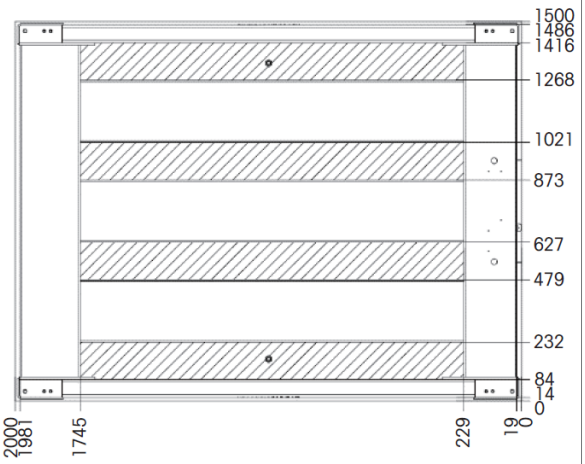
PFA58_-1250*1500-0.3~3t



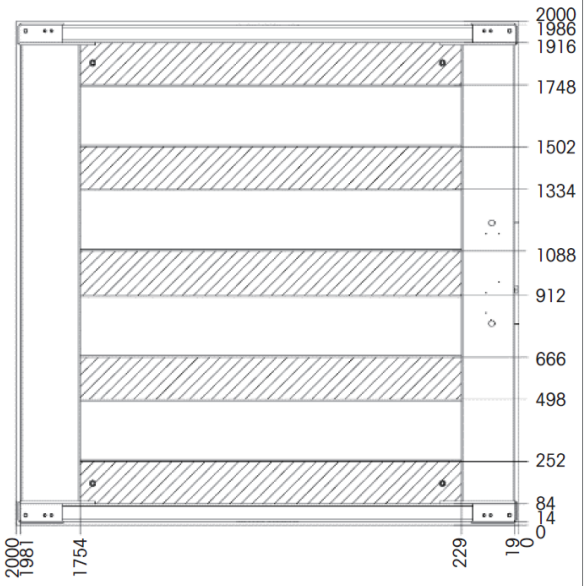
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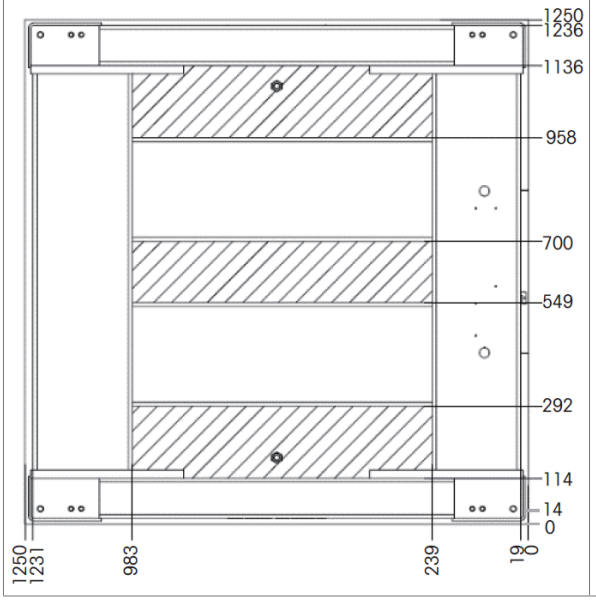
PFA58_-1500*2000-0.3~3t



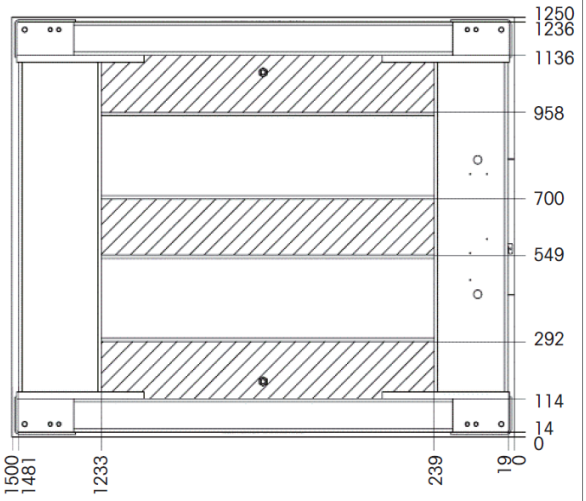
PFA58_-2000*2000-0.3~3t



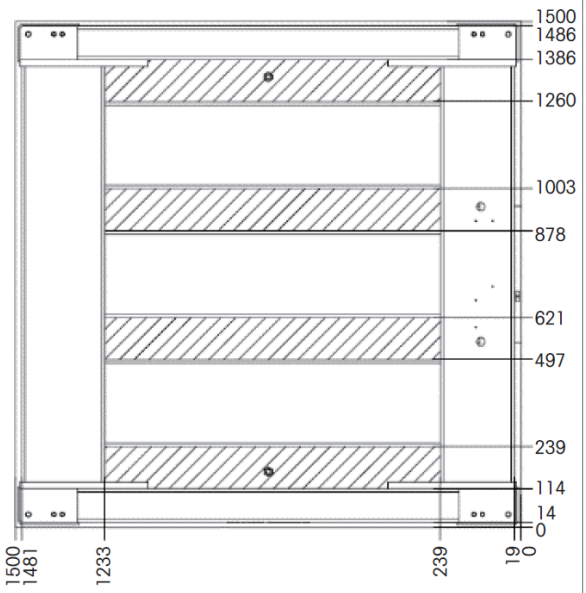
PFA58_-1250*1250-6t



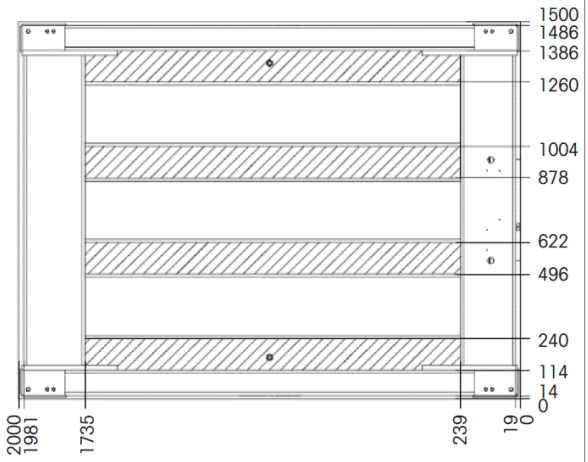
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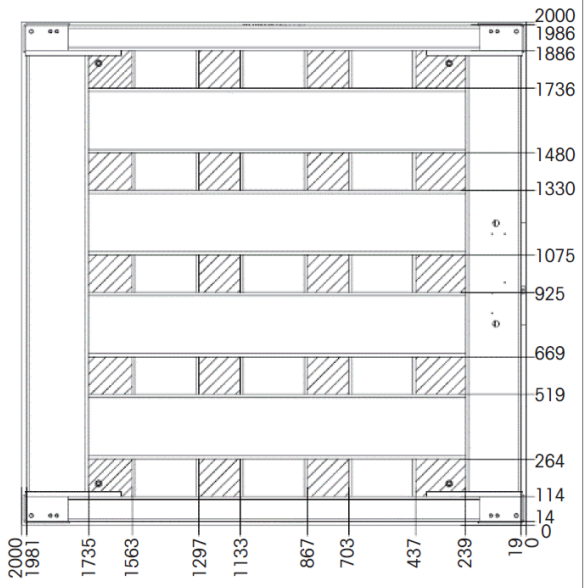
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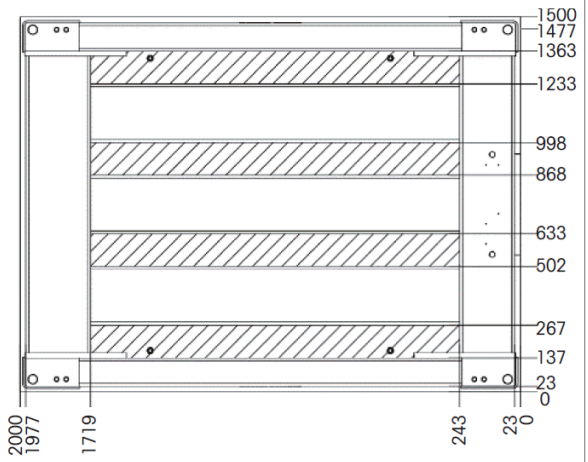
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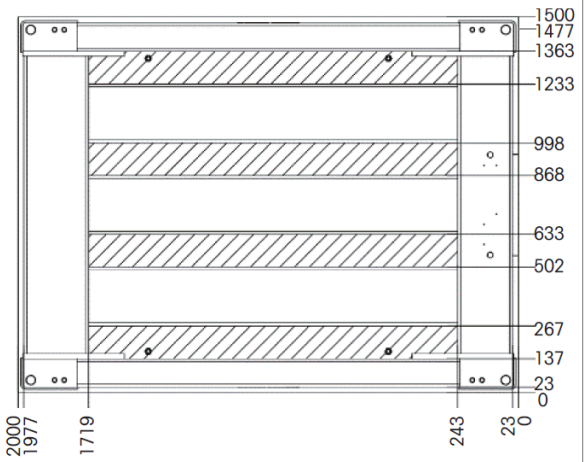
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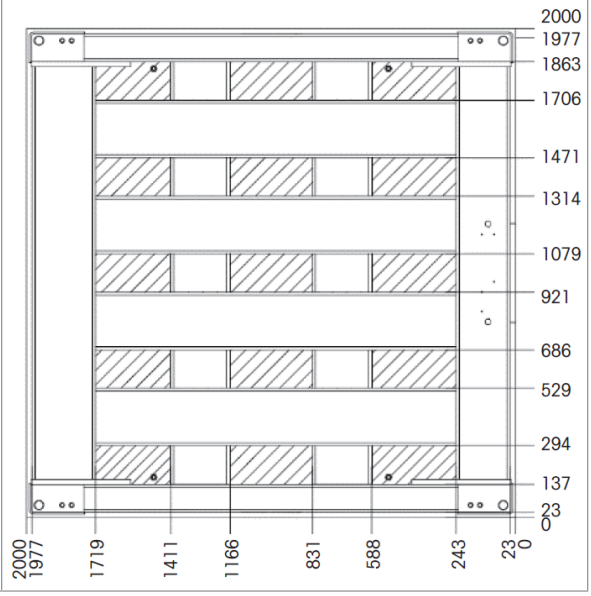
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PFA58_-1500*2000-10/12t



PFA58_-2000*2000-10/12t



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