





# 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](http://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](http://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.

# 1 Safety Instructions

Product safety is a fundamental concern at METTLER TOLEDO. Use common sense and follow the simple precautions listed below to ensure your safety and to optimize the use and performance of this product.

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



## **⚠ WARNING**

Observe safety warnings located throughout this manual.



## **⚠ WARNING**

Use caution when lifting or moving heavy equipment.



## **⚠ WARNING**

This product should only be serviced by qualified personnel. Exercise care when moving, testing, or adjusting this product.



## **⚠ WARNING**

Disconnect all power to this product before installing, servicing, or cleaning.



## **⚠ WARNING**

Use only METTLER TOLEDO parts for repair.



## **⚠ WARNING**

Observe electrostatic handling precautions for electronic components. Allow at least thirty (30) seconds after power is disconnected to allow charges to dissipate before servicing any electronic components.



## **⚠ WARNING**

Allow the product to adjust to room temperature before connecting the power source.



## **⚠ WARNING**

Do not lean the product against the wall.



## **⚠ WARNING**

Do not move the equipment when it is loaded.



 **WARNING**

Failure to follow these precautions could result in damage to or destruction of the equipment, or bodily harm.

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# 1 Introduction

The PowerDeck™ line of floor scales uses POWERCELL® technology to provide highly accurate and reliable weighing. The load cells transmit weight signals to the scale terminal without a junction box.

The Low-Profile Scale PHD779 is part of the PowerDeck family and available in three different versions:

- Static
- Mobile
- Lift

The three models use the same completely sealed platform. This design feature is especially important to pharmaceutical, food and chemical customers in scale cleaning.

A METTLER TOLEDO scale terminal is used to power the load cells.

## 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](http://www.mt.com/ComplianceSearch)

## 1.1 Product Overview

### Static



### Mobile



### Lift



## 1.2 Smart Configuration Key

This table contains information about the smart configuration key code (SCK) for PHD779. **Note:** Consult your local sales channel for configurations available in your region.

SCK Position																		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
<b>Base Model</b>																		
P	H	D	7	7	9	Stainless Steel Low Profile Scale PHD779												
<b>Application</b>																		
O safe area																		
R hazardous area Cat 3GD / Div 2																		
<b>Configuration</b>																		
1 Static platform																		
3 Manual lifting device																		
5 Mobile																		
<b>Capacity</b>																		
Z 150 kg																		
B 300 kg																		
C 500 kg																		
D 600 kg																		
E 1000 kg																		
F 1200 kg																		
G 1500 kg																		
H 2000 kg																		
<b>Platform size</b>																		
U 650x650 mm																		
A 800x800 mm																		
J 1000x1000 mm																		
V 1000x1250 mm																		
C 1250x1250 mm																		
D 1250x1500 mm																		
B 1500x1500 mm																		
<b>Scale Resolution</b>																		
1 1x3000e																		
3 1x6000e																		
5 1x10000e																		
A 15000d (non-approved)																		
E 20000d (non-approved)																		
F 25000d (non-approved)																		
B 30000d (non-approved)																		
C 50000d (non-approved)																		
D 60000d (non-approved)																		
<b>Material</b>																		
E Stainless steel 304 smooth																		
L Stainless steel 304, E-polish, Ra<0.8µm																		
<b>Suspension</b>																		
6 Installation frame / rocker pin																		
<b>Scale Interface</b>																		
P Powercell																		
<b>Home Run Cable</b>																		
0 No																		
3 3m M12 connector																		
6 10m M12 connector																		
7 20m M12 connector																		
G 3m wired																		
H 10m wired																		
8 20m wired																		
<b>Terminal</b>																		
6 No terminal ( Chinese version)																		
0 No terminal ( English version)																		
1 245H55000110J00																		
2 T36000H50000000010																		
3 T57000H500000000J1																		
4 T36000P50000000010																		
5 T57000P600000000J1																		
<b>Ramp</b>																		
O None																		
B Portable ramp, front 300mm, rear 100mm																		
C Portable ramp, front 450mm, rear 100mm																		
D Portable ramp, front 300mm, rear 300mm																		
E Portable ramp, front 450mm, rear 450mm																		
R Static / Lift 330mm																		
<b>Other</b>																		
6 None																		
<b>Order Type</b>																		
S Standard																		

## 2 Installation

### 2.1 Select the Installation Site

Many problems associated with floor scale installation 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 must be stable and level with maximum slope in any direction of 5mm per 3m. The scale can be shimmed to compensate for floors that are slightly out of level.
- The floor/support at each corner of the scale is strong enough to support the scale when the scale is loaded to full weighing capacity.
- Proper drainage is available away from the scale.
- No heavy vibrations or wind currents exist 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 Unpack

- 1 Open the package.
- 2 Keep the packaging material in case the scale has to be returned.
- 3 Make sure that no item listed in the table is missing.


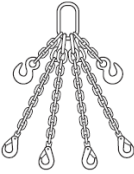

Upon delivery of your floor scale, check all packaging contents based on the packing list supplied with your floor scale and/or accessories. Keep the packing materials in case you need to return the scale and/or its accessories.



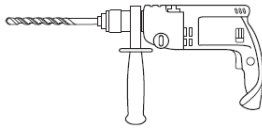
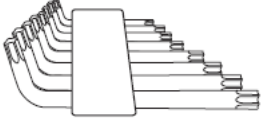

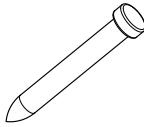
### 2.3 Ambient Conditions

- The floor scale may only be operated accurately in the range of -10°C to +40°C / 14°F to 104°F.
- Application Areas:
  - PHD779 for use in safe area.
  - PHD779xx for use in hazardous areas of Cat 3 GD/ Div 2.

### 2.4 Installing the Scale

#### 2.4.1 Tools

Tool	Description	Quantity
	Flat-head screwdriver	1
	Lifting chain/strap (capacity: 1t, length: 1.5m)	4
	Metric hex wrench kit	1

Tool	Description	Quantity
	Adjustable wrench	1
	Masonry bit 16.5mm	1
	Hammer drill	1
	Spline socket screw key T20	1
	Open-end wrench 12mm, 16mm, 24mm	1
	Punch pin	1

## 2.4.2 Installing the Static Scale

- 1 Attach chains or straps to the 4 handles. Lift the scale (platform and frame) with a forklift or crane.
- 2 Put the scale on the installation site. The floor must be stable and level with maximum slope in any direction of 5mm per 3m.
- 3 To level the scale, connect the scale to terminal, use the terminal's Leveling Guidance feature. For details, refer to the leveling section in Use Factory Calibration.
- 4 Record the shim thicknesses used for each corner.
  - ➔ The scale is leveled.
- 5 Remove the 4 bumpers. The bumpers attach the platform to frame.

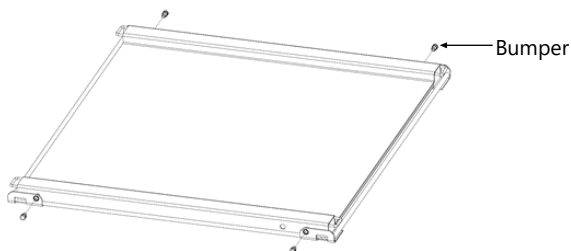


Figure 1: Remove the Bumpers

- 6 Lift the platform with the forklift or crane.

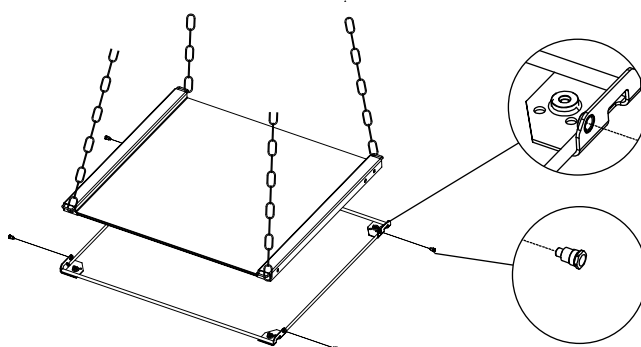


Figure 2: Lift the Platform

- 7 Locate the 8 anchor holes (8- $\text{\O}17.5\text{mm}$ ) in the 4 corners of the frame. Drill holes (depth $\geq 80$  mm) into the floor.
- 8 Clean the holes and the installation site. Place the frame at the installation site and add the shims if needed.
- 9 Install 8 M12  $\times$  35 mm anchor bolts into the holes.
  - ➔ The frame is installed on the floor.

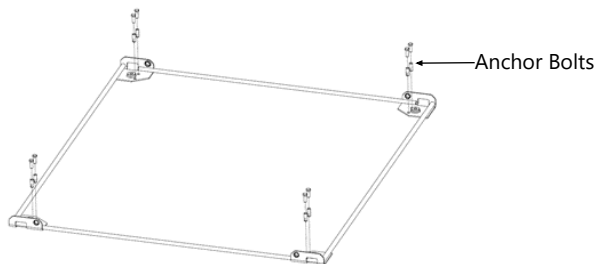


Figure 3: Install the Frame

- 10 Attach the 4 rocker pins in the load cell receivers. Reinstall the platform back to the frame. Make sure that the rocker pins seat properly between the load cells and receivers.

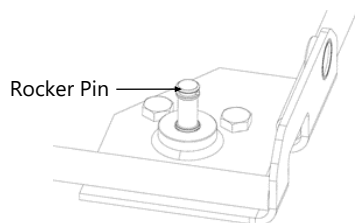


Figure 4: Install the Rocker Pin

- 11 Install the 4 bumpers.
  - ➔ The static scale is installed on the floor.

### 2.4.3 Setting Up the Mobile Scale

- 1 Attach chains or straps to the 4 handles, and lift up the scale with a forklift or crane. (**Note:** Make sure that the rated lifting weight of each chain or strap is not less than 1 t, and the length is not less than 1.5 m.)

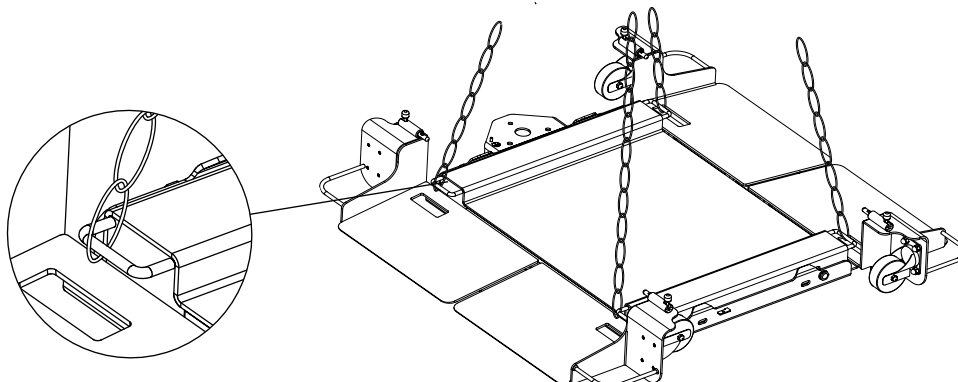


Figure 5: Lift up the Scale

2 Place the scale on the installation site.

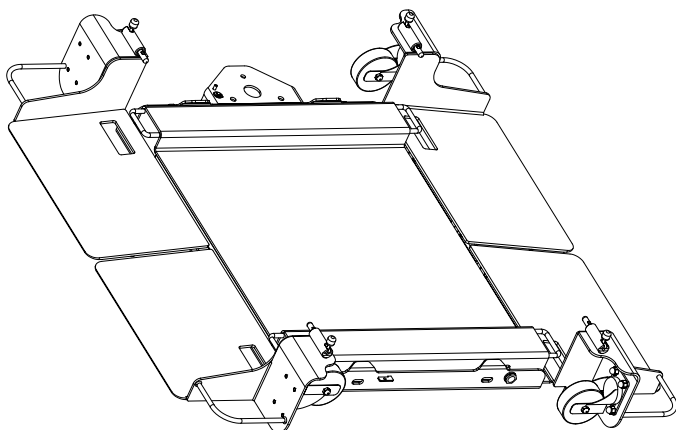


Figure 6: Put Down the Scale

3 Install the column.

According to the scale size, choose the cable wiring methods A or B.

**Cable Wiring Methods**

Scale size (m)	A: Route the cable to the column	B: Route the cable to the platform
0.65 x 0.65	✓	Not applicable
0.8 x 0.8	✓	
1.0 x 1.0	✓	
1.0 x 1.25	Not applicable	✓
1.25 x 1.25		✓
1.25 x 1.5		✓
1.5 x 1.5		✓

**A: Route the cable to the column.**

1 Flip all ramps up. Cut the ties with scissors.

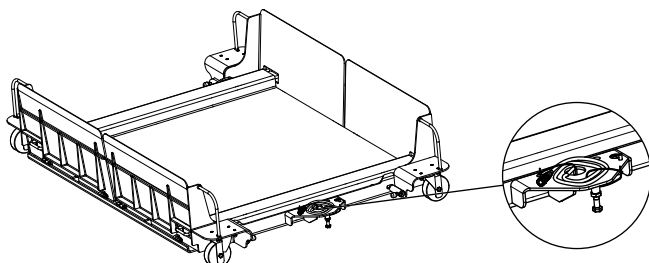


Figure 7: Cut the Ties

2 Take the column out from the package.

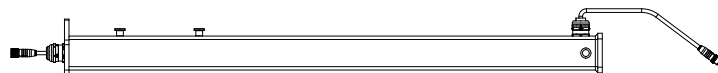


Figure 8: Take Out the Column

3 Disassemble the cable gland at the bottom of the column.



Figure 9: Disassemble the Cable Gland

4 Take the sliding ring away from the cable.

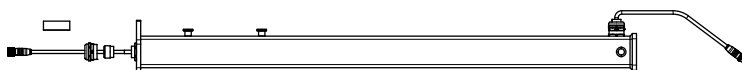


Figure 10: Take Away the Sliding Ring

- 5 Connect the column bottom cable to the cable from the platform, and tighten it by hand.

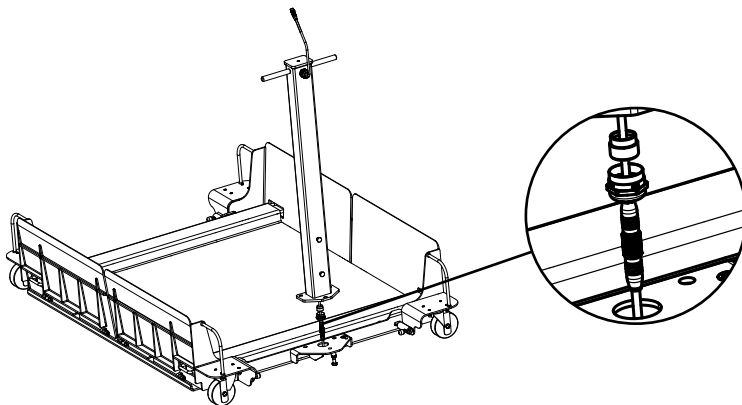


Figure 11: Connect the Cable

- 6 Insert the connected cable into the column gradually. Wrap the black sealing ring around the cable at about 100mm above the bracket, and pass it through the cable gland.

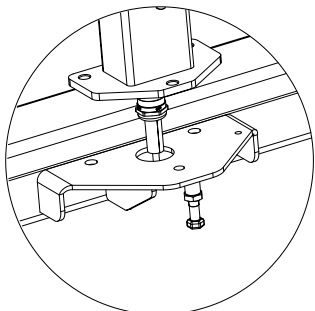


Figure 12: Wrap the Black Sealing Ring

- 7 Bolt the column to the frame and fasten all of the bolts.

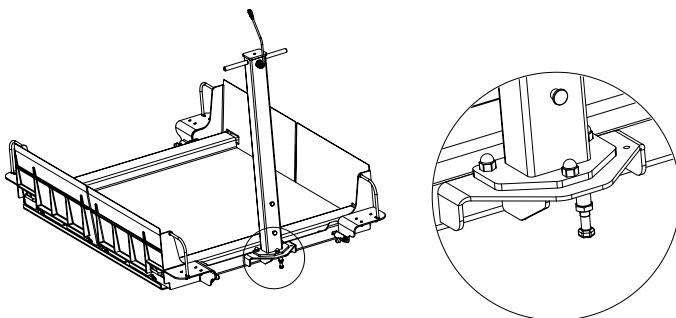


Figure 13: Attach the Column

- 8 From the bottom of the bracket, screw the end, middle and front of the cable gland together. At the same time, draw the cable further into the column, and adjust the black sealing collar to keep the protruding end of the collar at about 3-5mm (the cable gland should not be fully tightened).

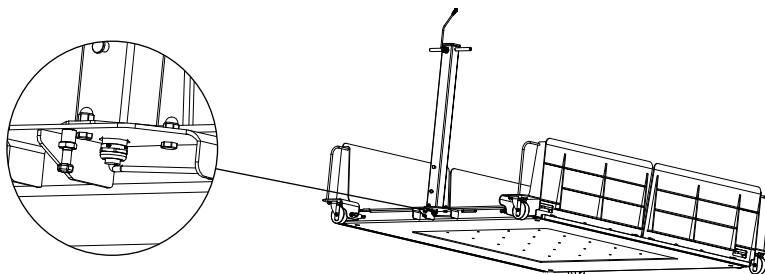


Figure 14: Screw the Cable Gland

- 9 Make sure there is clearance between the root of the cable and the outlet. If the cable is too tight, pull out the cable until proper clearance is achieved.

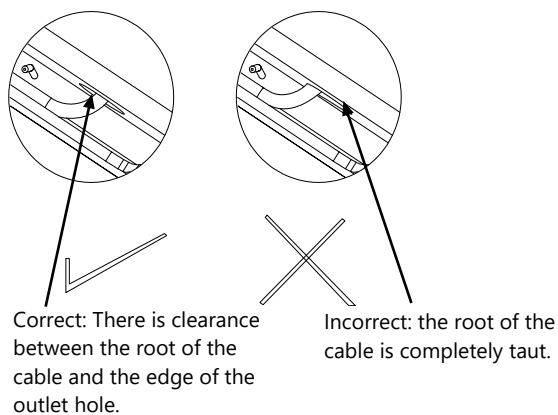


Figure 15: Check Cable Tightness

- 10 Check the black sealing ring again, keep the length of the protruding end about 3-5mm. Tighten the cable gland with a wrench.

- 11 Put down the four ramps. Make sure the cable does not touch the ground. If the cable touches the ground, readjust the length of the cable and the black sealing ring protruding from the cable gland.

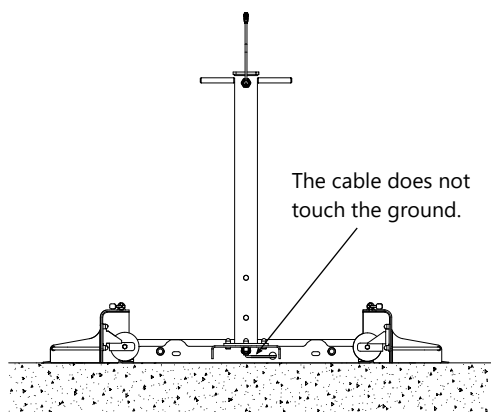


Figure 16: Check the Gap

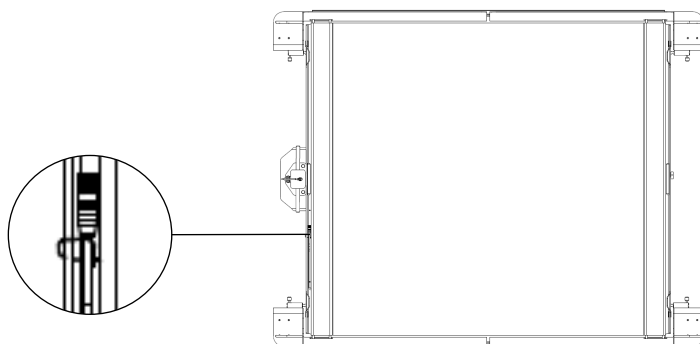
- 12 Tighten the bolts for mounting the column.

➔ The column is firmly attached to the scale.

- 13 Install the terminal bracket and terminal. Connect the cable to the terminal, adjust the length of the cable from the column if needed. And then, fasten the cable gland.

**B: Route the cable to the platform.**

- 1 The cable from the platform is attached to inside of the frame with tie. Cut the tie.



- 2 The column status and the adjustment way are same as method A.



- 3 Attach the column to the frame with screws. Draw the cable a little out from the column. Pass the cable to the inside of the frame through the hole, and attached the two connectors.

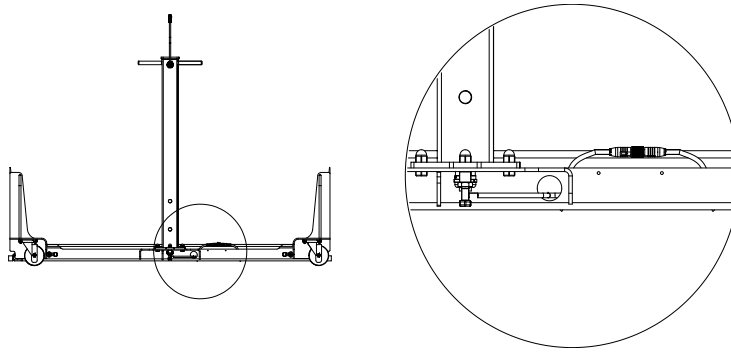
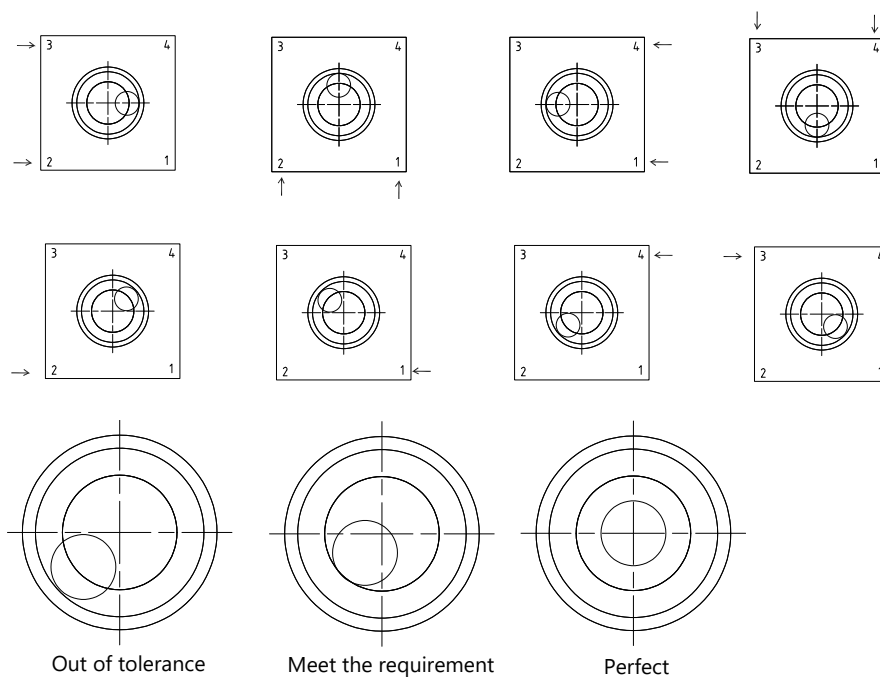


Figure 17: Connect the Cable

- 4 Insert the protruding cable into the outlet hole of the platform to ensure that the cable does not interfere with the platform inside the frame.
- 5 Put down the four ramps. Make sure the cable does not touch the ground. If the cable touches the ground, readjust the length of the cable and the black sealing ring protruding from the cable gland.
  - ➔ The column is firmly attached to the scale.
- 6 Install the terminal bracket and terminal. Connect the cable to the terminal, adjust the length of the cable from the column if needed. And then, fasten the cable gland.

#### Level the scale

- Use the bubble to level. Make sure the bubble is in the center of black circle. If the bubble is not in the center, as indicated by the arrow, insert shims into the corresponding position of the frame to adjust the bubble to a horizontal position.



## 2.4.4 Installing the Lift Scale

- 1 Remove the components from the packaging.

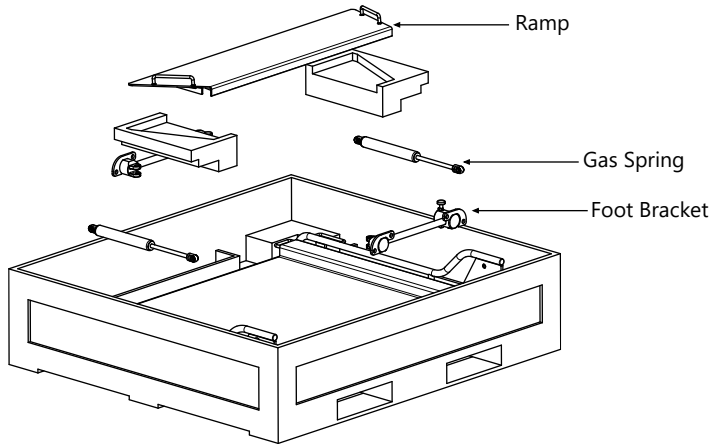


Figure 18: Foot Brackets, Gas Spring and Ramp

- 2 Attach chains or straps to the 4 handles. Lift up the scale (platform and frame) with appropriate equipment.

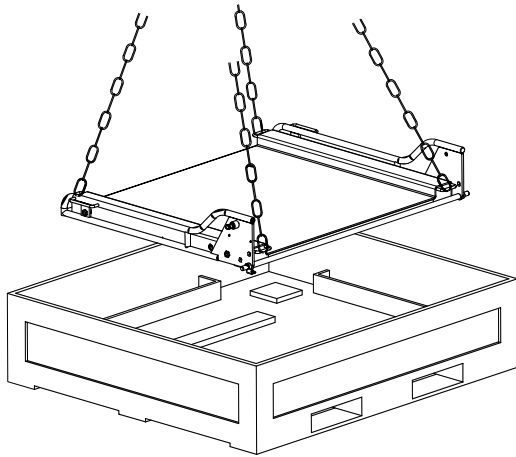


Figure 19: Lift up the Scale

- 3 Move the scale to the installation site.
- 4 Install the foot brackets on both sides of the frame. Use the position tool to limit the distance between the foot brackets and the frame. Mark the positions of the eight anchor holes with a center punch.

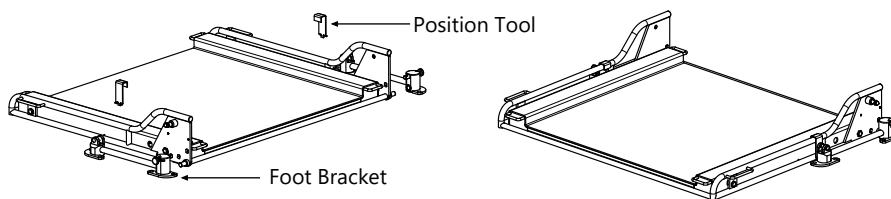


Figure 20: Install the Foot Brackets

- 5 Remove the foot brackets from the lifting frame.

- 6 Drill a hole at the marked position by using the  $\Phi 16\text{mm}$  hammer drill to a depth appropriate to the anchor bolts being used.

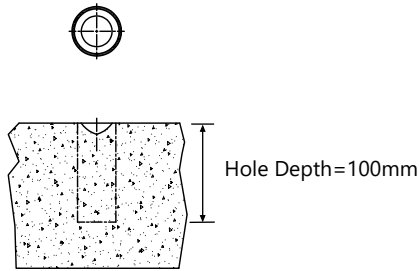


Figure 21: Locate the Hole Center

- 7 If needed, add shims to adjust the scale. Make sure that there is no clearance between foot plates and ground. Make sure the lock pins are in the locked position. For scale sizes  $1500 \times 1250$  and  $1500 \times 1500$ , check the position of the front lock pin when at locking position. Shim the front foot if needed to make sure the lock curve face has minimal clearance to the round bar.

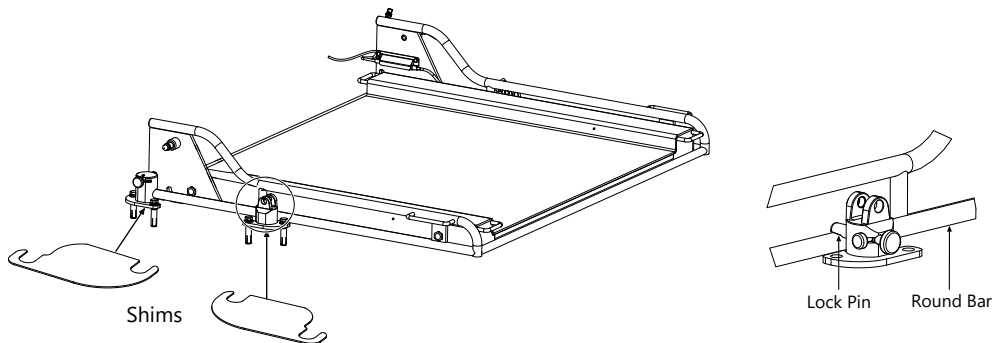


Figure 22: Add Shims under the Foot Plate

- 8 Clean each hole, put the expansion screw into the hole, and ensure that the uppermost end of the screw is 5~10mm from the ground.
- 9 Install the shims and  $8 \times M12$  anchor bolts into each holes.
- 10 Lift up the scale and lock the frame.
- 11 Install the two gas springs. Attach chains or straps to the 2 handles. Lift up the scale and lock the frame by lock pins. Confirm orientation of gas spring. Mount the gas spring to the front end of the foot brackets with shoulder bolts. Secure the gas spring to the frame with washers and cap nuts. Remove the chains or straps.

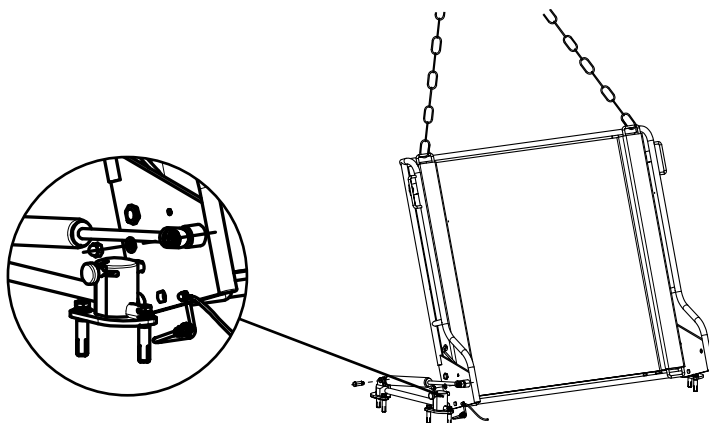


Figure 23: Install the Gas Spring

- 12 Close the frame. Oscillate the platform from back to front. All the rocker pins will stand in right position.

Level the scale

- 1 Check whether there is a gap between the 4 corners of the frame and ground. Lift the platform and lock it with safe lock pin. Add a clip to fill the gap. If needed, add shims to the clip.

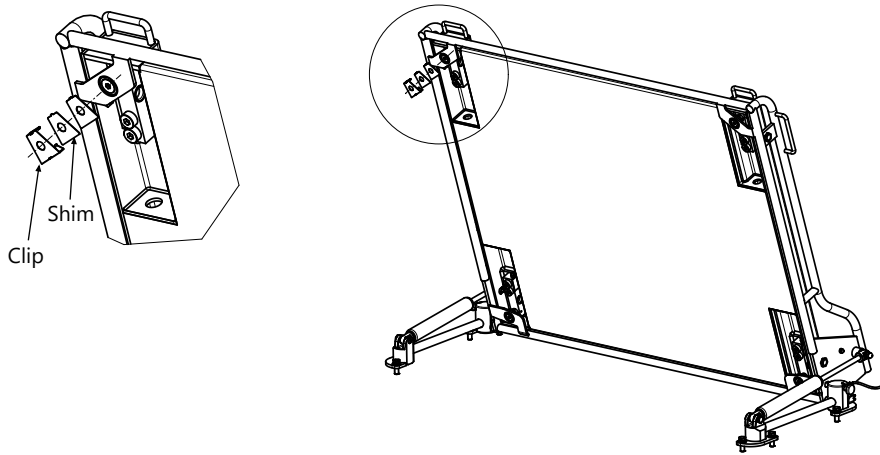


Figure 24: Clip and Shim for Receiver Plate

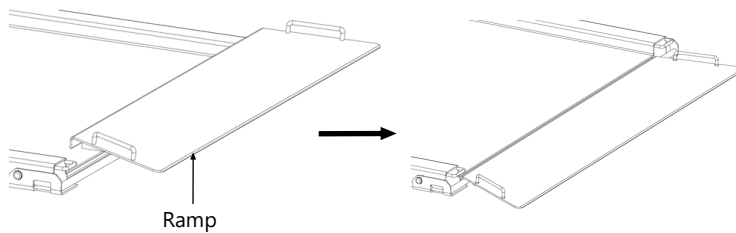
- 2 Connect the scale to the terminal. Use the terminal's Leveling Guidance feature. For details, refer to the leveling section in Use Factory Calibration.

## 2.5 Installing Ramp

Ramps can be used to provide access from one or both ends of a scale. The size of the selected ramp must be consistent with the size of the corresponding mounting edge of the scale platform. Use the following procedure to install ramps:

### 2.5.1 Static

- 1 After the scale frame is anchored to the floor, grasp two handles of the ramp and lift up the ramp.
- 2 Align the front plate of the ramp with the slot between round bar of frame and platform.
- 3 Insert the ramp's front plate into the slot.
- 4 Make sure the ramp is in the middle of the left and right receiver plates.
- 5 Make sure the platform can move freely.

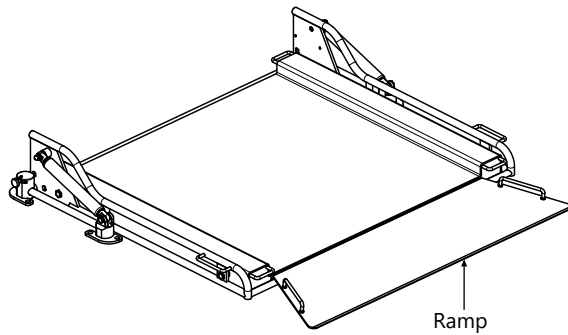


### 2.5.2 Mobile

The ramps of mobile scale have been installed at the factory.

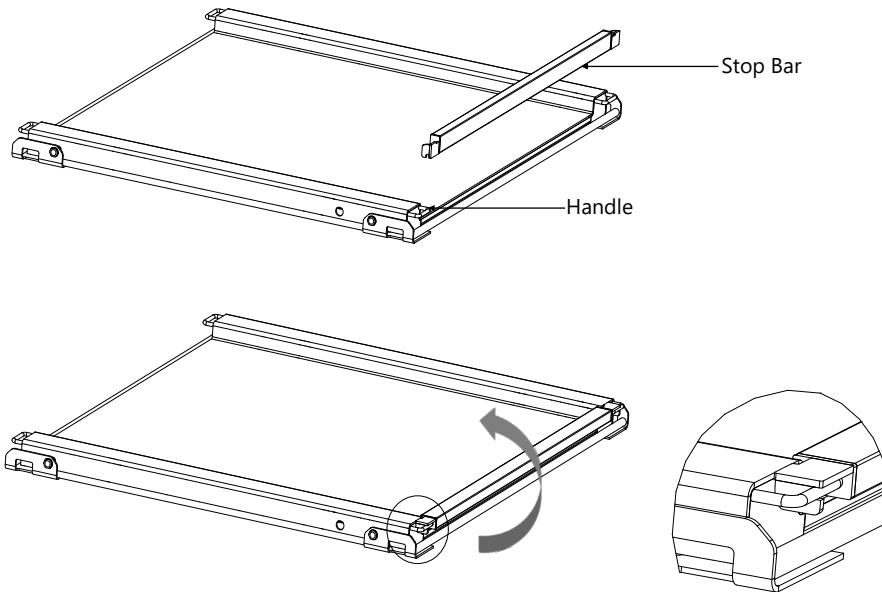
### 2.5.3 Lift

- 1 After the scale frame is anchored to the floor, grasp two handles of the ramp and lift up the ramp.
- 2 Align the front plate of the ramp with the slot between round bar of frame and platform.
- 3 Insert the ramp's front plate into the slot.
- 4 Make sure the ramp is in the middle of the left and right receiver plates.
- 5 Make sure the platform can oscillate freely.



## 2.6 Installing Stop Bar

- 1 According to the position shown in the figure below, place the stop bar on the two handles of the scale.
- 2 Rotate the stop bar towards the scale until it can't rotate.



## 2.7 Install Cable Protection Kit (Ex Version)



It's the customer's responsibility to protect all the accessories and cables when an Ex version of PHD779 Low-Profile Scale is installed in a hazardous area. METTLER TOLEDO provides a kit of parts to protect the Y cable and the home-run cable connection when the scale is used in a hazardous area.

### 2.7.1 Static

Depending upon the installation environment or requirements, the customer can choose different installation possibilities:

1. install the straight pipe
2. install the straight pipe + the elbow pipe
3. install the long clamp

Follow the instructions below to install any of the cable protection hardware.

#### 2.7.1.1 Option 1: Install the Straight Pipe

- 1 Route the home-run cable (the end with loose wires) through the straight pipe. Ensure that the connector is outside of the pipe.
- 2 Connect the home-run cable to the Y cable, and insert the cable connectors into the pipe.

- 3 Gently pull the loose-wires end of the home-run cable and position the straight pipe. Ensure that the connectors of the Y cable and the home-run cable are fully protected by the pipe and the pipe rests against the installation frame.
- 4 Fix the clips to the straight pipe. Using the clips' holes as guides, drill holes for M12x35 bolts.
- 5 Fasten the straight pipe to the floor with the clips and the M12x35 bolts.

**Important:**

- Make sure that the straight pipe does not touch the scale platform.
- Make sure that the home-run cable that is outside the straight pipe is well protected from any damage, especially when the scale is installed in a hazardous area.

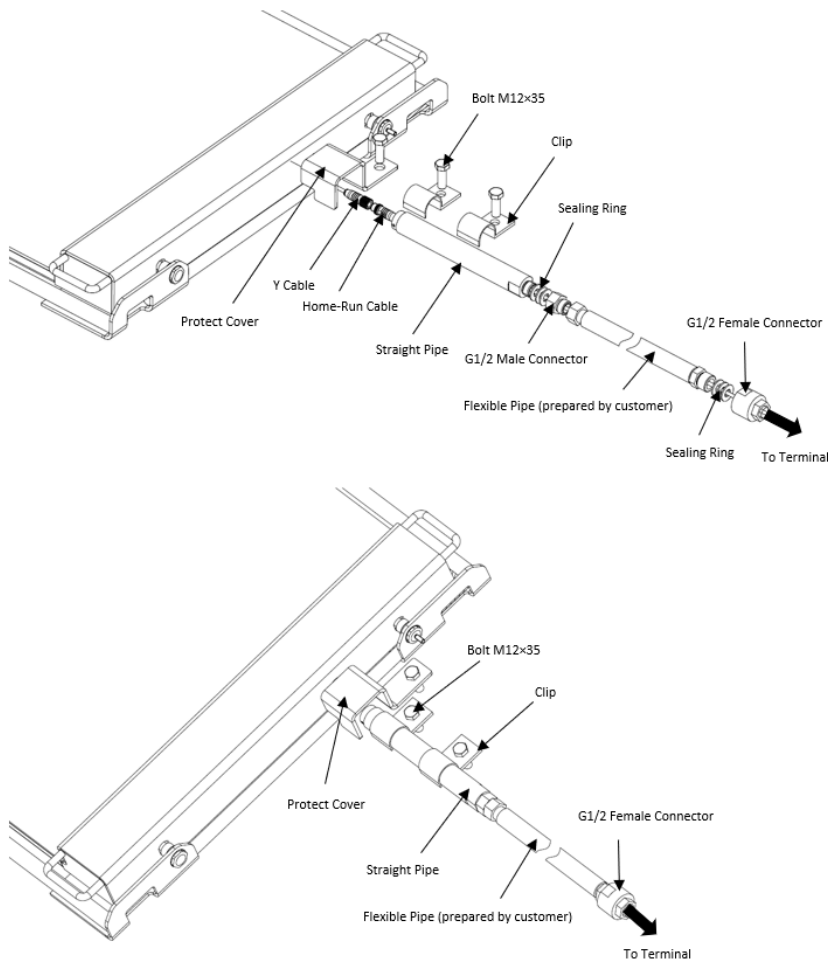


Figure 25: Install Straight Pipe

### 2.7.1.2 Option 2: Install the Straight Pipe + Elbow Pipe

- 1 Route the Y cable through the elbow pipe.
- 2 Route the home-run cable (the end with loose wires) through the straight pipe. Ensure that the connector is outside of the pipe.
- 3 Connect the home-run cable to the Y cable, and insert the cable connectors into the straight pipe.
- 4 Insert the straight pipe into the elbow pipe, and fasten the two pipes with two M4 bolts.
- 5 Gently pull the loose-wires end of the home-run cable and position the pipes. Ensure the connectors of the Y cable and the home-run cables are fully protected by the pipes and the elbow pipe rests against the installation frame.
- 6 Attach the clips to the straight pipe. Using the clips' holes as guides, drill holes for M12x35 bolts.
- 7 Fasten the straight pipe to the floor with the clips and the M12x35 bolts.

**Important:**

- Make sure that the elbow pipe does not touch the scale platform.
- Make sure that the home-run cable that is outside the pipes is well protected from any damage, especially when the scale installed in a hazardous area.

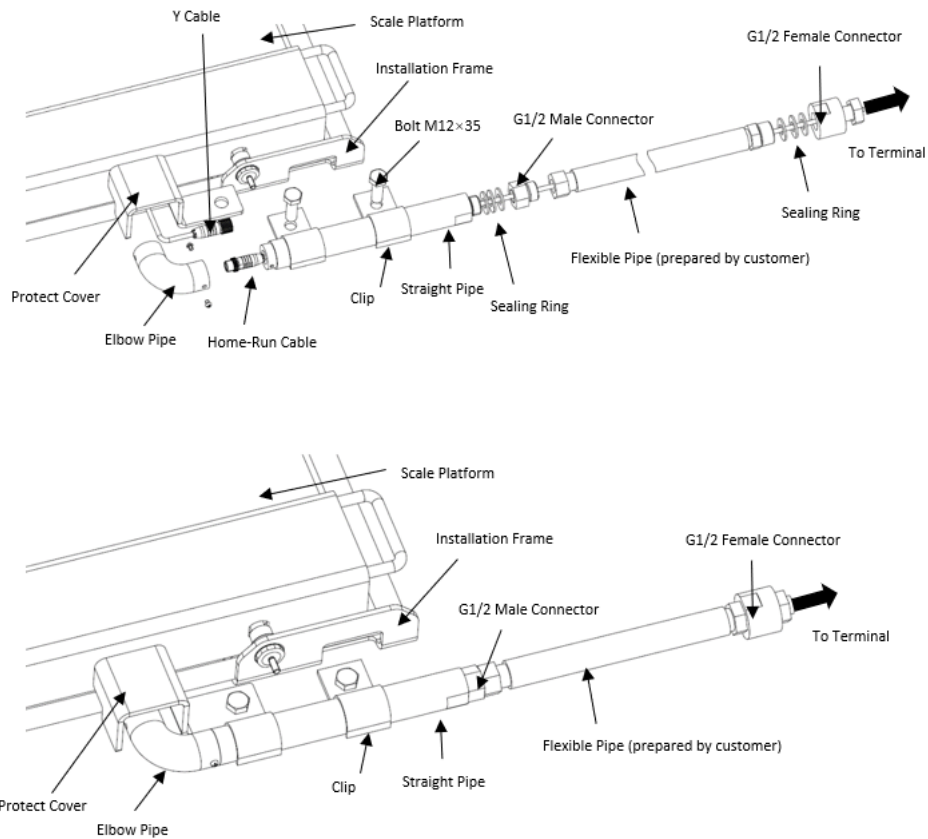


Figure 26: Install Elbow Pipe

### 2.7.1.3 Option 3: Install the Long Clamp

- 1 Connect the Y cable to the home-run cable.
- 2 Cover the cable connectors with the long clamp.
- 3 Fasten the long clamp with three M3 screws provided.

**Important:** Make sure that the cables and the long clamp are well protected from any damage, especially when they are installed in a hazardous area.

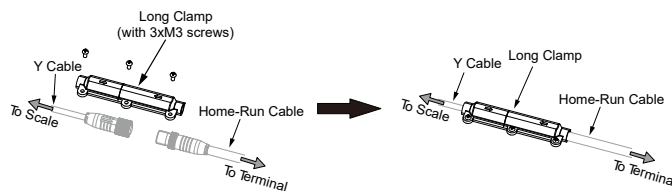


Figure 27: Install Long Clamp

## 2.7.2 Mobile

### 2.7.2.1 Install Fitting Protection Clip

- 1 Connect the Y cable to the home-run cable.
- 2 Cover the cable connectors with the fitting protection clip.

3 Place the fitting protection clip on the frame.

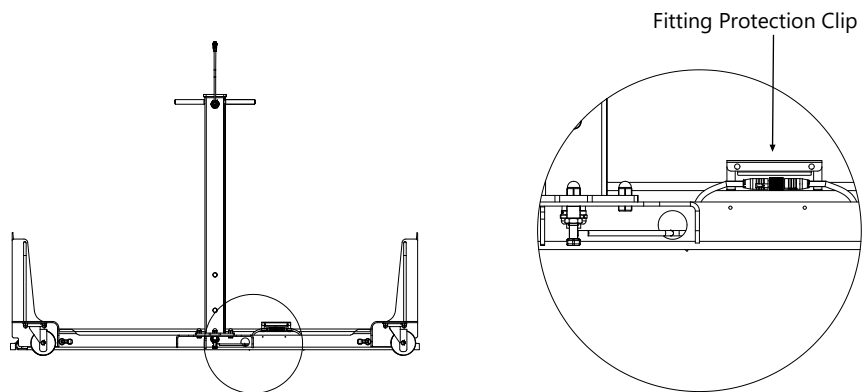


Figure 28: Place the Fitting Protection Clip

4 Align the holes in the frame and attach with two M4 bolts.

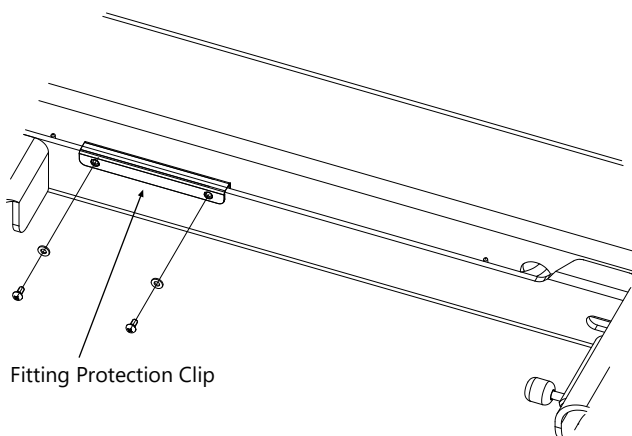


Figure 29: Fix the Fitting Protection Clip

### 2.7.3 Lift

#### 2.7.3.1 Install Fitting Protection Clip

- 1 Connect the Y cable to the home-run cable.
- 2 Align the holes for the fitting protection clip with the holes for the frame side panel.
- 3 Attach the clip with two M6 bolts.
- 4 Tighten the other end of the bolt with M6 plan washer and M6 cap nut.

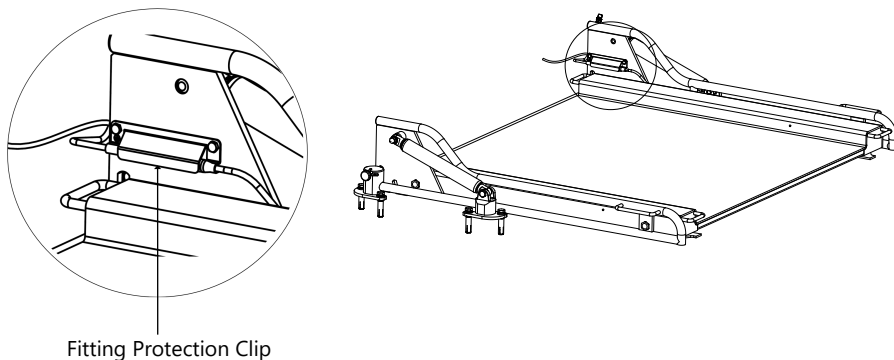


Figure 30: Attach the Fitting Protection Clip



## 2.7.4 Connect Home-Run Cable to Terminal

The Ex version of PHD779 floor scale will work with Ex version terminal only. Refer to the manual of the Ex version terminal and connect the home-run cable to the terminal through one of the M16 connectors.



Figure 31: Example - IND570xx Terminal

## 2.8 Equipotential Bonding

Grounding connections must be installed by a professional electrician when using the Ex version of PHD779 floor scale in a hazardous area. METTLER TOLEDO Service only has a monitoring and consulting function here.

Grounding connections of all devices, including the floor scale and the weighing terminal, shall be made 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.

### 2.8.1 Static

- 1 Put the grounding cable over the grounding post.
- 2 Put on the lock washer.
- 3 Secure grounding cable with cap nut.
- 4 Connect the other end of the grounding cable to the customer's grounding.

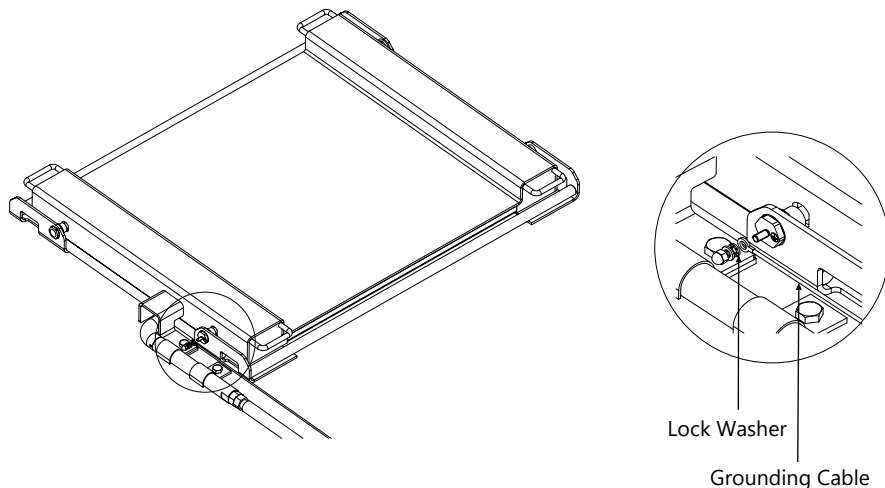


Figure 32: Equipotential Bonding of Static

### 2.8.2 Mobile

- 1 Wrap the grounding cable around the grounding post.
- 2 Secure grounding cable with M6 nut.
- 3 Connect the other end of the grounding cable to the customer's grounding.

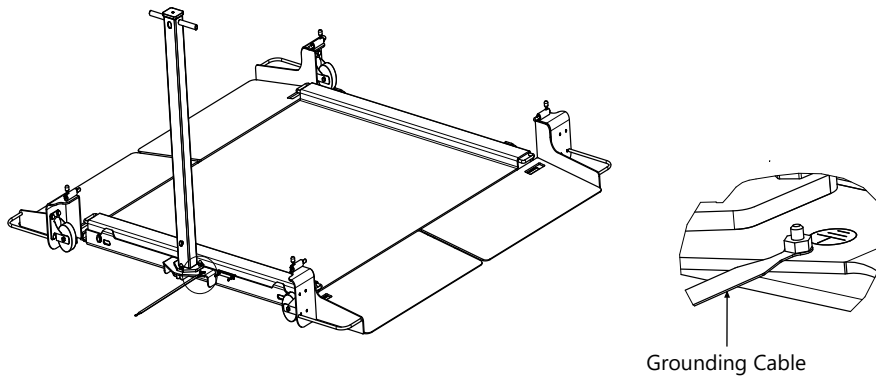


Figure 33: Equipotential Bonding of Mobile

### 2.8.3 Lift

- 1 Insert M6 hex head bolt from the inside of the frame into the hole refer to figure below.
- 2 On the outside of the frame, put the lock washer and grounding cable on the bolt in turn.
- 3 Secure grounding cable with cap nut.
- 4 Connect the other end of the grounding cable to the customer's grounding.

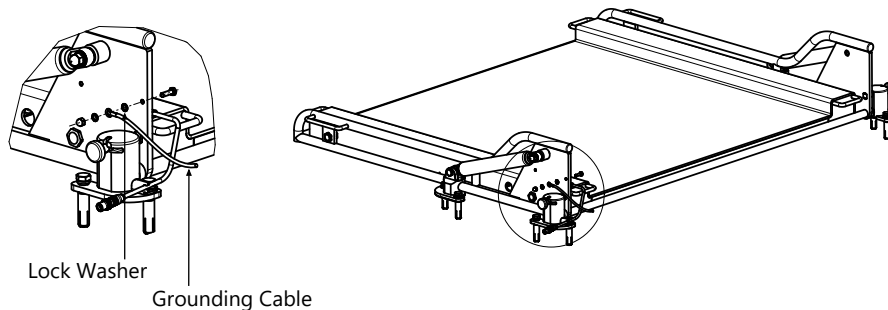


Figure 34: Equipotential Bonding of Lift

## 2.9 Special Condition of Use

The following special condition of use for load cells must be fulfilled with the Ex version of PHD779 floor scale:

- The load cell shall be installed in such a way that the risk for mechanical damage is low.
- The equipment shall only be used in an area of not more than pollution degree 2, as defined in IEC 60664-1.
- The aviation connector connected to the weighing indicator shall not be plugged or unplugged with power on.
- When the aviation connector connected to the weighing indicator is actually used, the protection level of the assembled shell must be greater than IP6X. When it is not connected, it shall be taken to ensure the degree of protection of the enclosure.
- The installation of explosion-proof system must strictly follow the relevant regulations of "electrical installation in hazardous locations".

### 2.10 Connect the Scale to the Terminal

Before connecting the scale to terminal, the user must check the terminal to make sure that the terminal is set to the floor scale application. To do so:

- 1 Power up the terminal and navigate to the scale type settings (Setup/Scale/Type).
- 2 Verify that "Floor" is selected in the "Application" drop-down box.
- 3 Power down the terminal and disconnect it from the power source.

- 4 Connect the home-run cable to the Y cable connector from the platform.

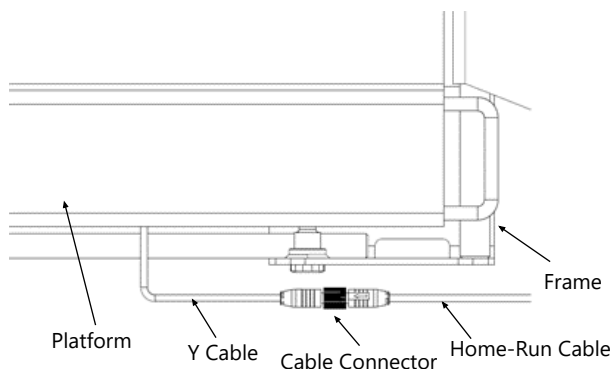


Figure 35: Home-Run Cable Routing

- 5 To connect the other end of the home-run cable to the terminal, refer to the terminal technical manual.
  - Home-run cable connection with M12 connector. The M12 connector is to be tightened by hand. Align the M12 connector with the socket first. Rotate the nut clockwise until it is difficult to rotate, push the plastic ring forward, then continue to rotate clockwise. Repeat the above two operations until it is firmly attached.



Figure 36: M12 Connection

- Home-run cable connection with wiring. Refer to the terminal’s technical manual for detailed wiring instructions.
- 1 Power up the terminal. Click “Yes” when the message “Use Factory Calibration” shows on the screen.
  - 2 To level the scale, use the Leveling Guidance function. For details, see information Level the Scale in section Onsite Calibration.

## 2.11 Check the Scale Accuracy

- 1 Set terminal to the weighing page. Clear the weighing platform and press the Zero button.
- 2 Use weights to check the repeatability, linearity and corner shift.
- 3 If the scale performance is unsatisfactory, do the Onsite Calibration. For details, see Onsite Calibration.

### 3 Operation

The scale terminal is the user interface for PHD779. PHD779 can be used with several METTLER TOLEDO terminals. For more information about how to operate the terminal, refer to the terminal's user's guide.

#### 3.1 Startup

- 1 Connect the terminal to a power source, and power up the terminal.
- 2 Confirm that the weight reading is zero.
- 3 If the weight reading is not zero, press the zero button.

#### 3.2 Loading

When using a forklift or crane to place loads onto the scale platform, observe the following requirements:

- Do not drop loads onto the platform.
- Avoid shock loading and lateral impacts.
- The forklift truck's forks must not touch the scale during weighing.

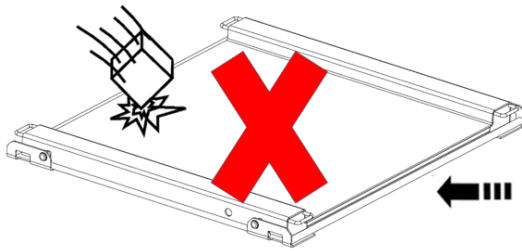
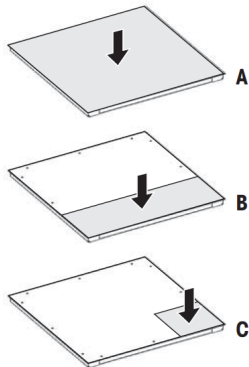


Figure 37: Avoid shock loading and lateral impacts

#### 3.3 Operating Limits

The load limits in the following table may not be exceeded. The maximum permissible load also depends upon where the load is placed on the weighing platform.

##### Maximum permissible load in kg



- A** with centred load
- B** with load on side
- C** with one-sided corner load

##### Maximum Permissible Load Limits (Metric)

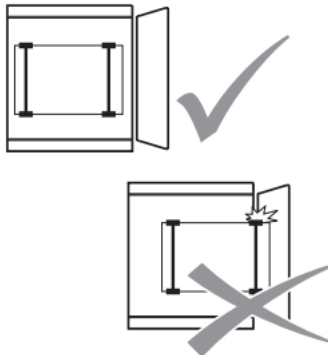
Scale Capacity	A	B	C
300	880 kg	440 kg	220 kg
500	880 kg	440 kg	220 kg
600	2540 kg	1270 kg	635 kg
1000	2540 kg	1270 kg	635 kg
1200	2540 kg	1270 kg	635 kg
1500	5280 kg	2640 kg	1320 kg

Scale Capacity	A	B	C
2000	5280 kg	2640 kg	1320 kg

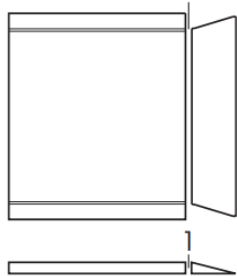
### 3.4 Operating with Access Ramps

The access ramps are passive.

- Make sure that during the weighing process all wheels of the transport vehicle are on the load plate.



- Make sure that the gap (1) between weighing platform and ramp is free from dirt deposits.



### 3.5 Instructions for PHD779 Mobile

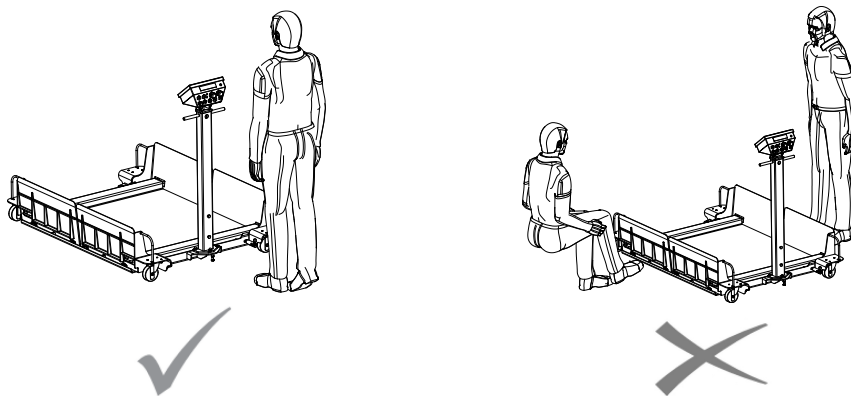
#### 3.5.1 Safety Notes



#### **⚠ WARNING**

**Danger of crushing.**

- 1 Only qualified personnel can operate the mobile weighing scales.
- 2 Operate the mobile weighing scale only from the side.
- 3 Don't stand in areas where the ramps may flip down.

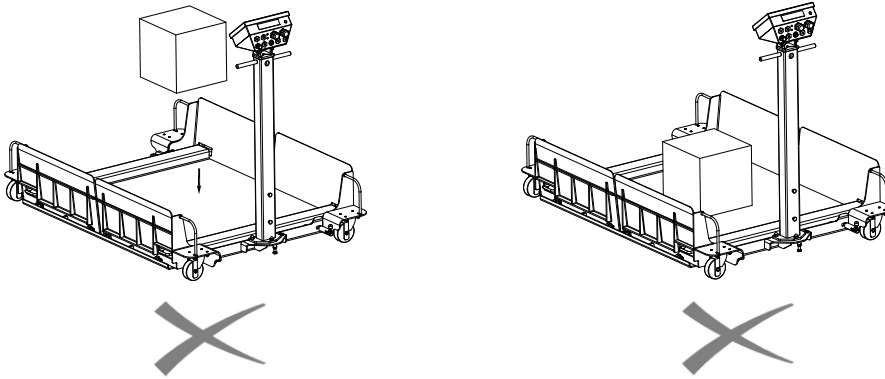




## CAUTION

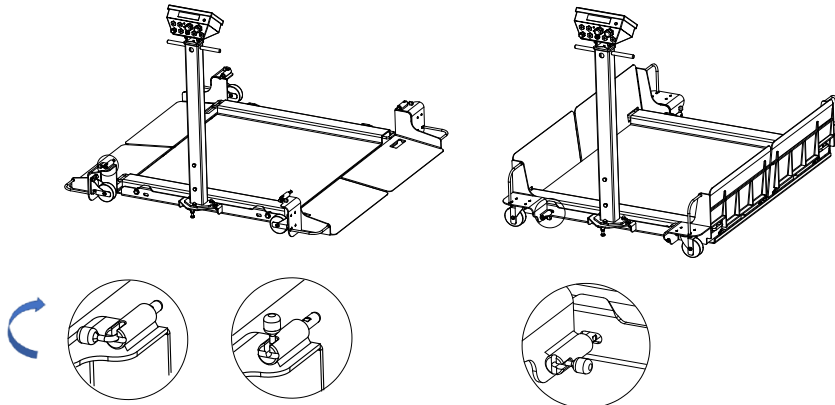
### Damage to and/or malfunction of the weighing platform

- 1 Weighing samples or other loads are not permitted on the mobile weighing platform while it is being moved.
- 2 Weighing samples or other loads are not permitted on the mobile weighing platform while the ramps are flipped up.
- 3 Put on weighing samples only in weighing mode.
- 4 Ensure that the connection cable does not touch the floor.
- 5 Ensure the grounding cable is disconnected before moving the scale under hazard application.
- 6 Use only the handle on the column to move the scale.
- 7 Do not move with people on the scale.



### 3.5.2 Putting Scale into Portability Mode

- 1 Rotate the plunger pin to vertical direction from horizontal direction.
- 2 Grasp the handle of the ramp and flip up the ramp.
- 3 Insert the plunger pin into the slot on the frame side.

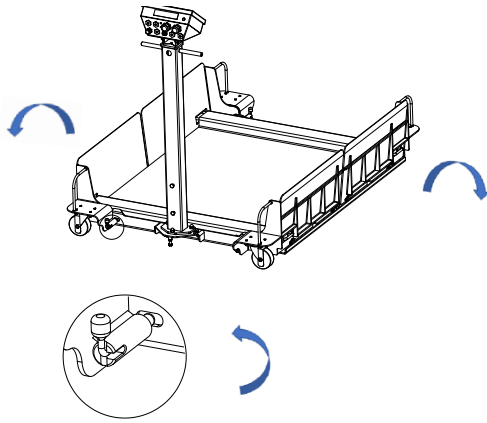


### 3.5.3 Establishing the Weighing Mode

- 1 Move the scale to the selected site.
- 2 Pull out the plunger pin. Rotate the plunger pin to vertical direction.
- 3 Grasp the handle and flip down the ramp gently until lying flat.

#### Note:

- Before establishing the weighing mode, make sure the floor is level within  $\pm 2.5$ mm.
- Make sure the weighing platform is positioned correctly.
- Make sure the scale is level and adjust it if needed.
- For hazardous application, make sure the grounding cable is connected before leveling the scale.



### 3.6 Instructions for PHD779 Lift

#### 3.6.1 Safety Notes



#### **WARNING**

- 1 Do not operate the PHD lift outside the temperature range of  $-10\text{ }^{\circ}\text{C}$  to  $+40\text{ }^{\circ}\text{C}$ . Otherwise, the safety of the gas springs is not guaranteed.
- 2 Only instructed personnel may use the PHD lift. It is recommended to wear safety shoes.
- 3 Walking across the lifting frame is not intended as it might be a trip hazard and could potentially damage the gas springs.
- 4 Only lift and lower the platform from the side. Ensure that no people are in the danger area in front of or under the opened weighing platform.
- 5 For greater safety when operating, please mind the danger of crushing.

PHD779 Lift	Typical Lifting Forces	
Platform Size	Ambient temperature greater than $5^{\circ}\text{C}$	Cold temperature at $5^{\circ}\text{C}$ or below
650 x 650 mm – 1250 x 1000 mm	< 15 kg	< 20 kg*
1250 x 1250 mm – 1500 x 1250 mm	< 20 kg	< 25 kg*
1500 x 1500mm**	< 25 kg	< 30 kg*

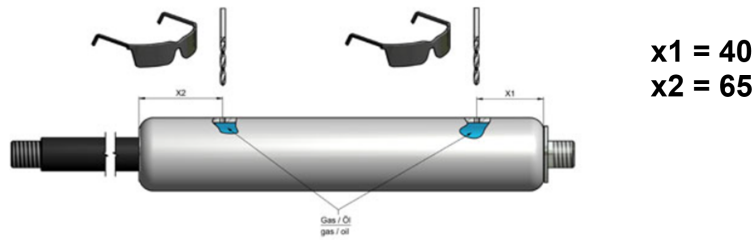
#### 3.6.2 Disposal of Gas Springs



#### **WARNING**

- 1 Keep in mind that the springs are under very high pressure when disposing gas springs.
- 2 Check which size the gas spring belongs to. If you are not sure, please contact METTLER TOLEDO for help.
- 3 Don't stand in the area of the extended spring travel axis. The piston rod couldn't show on a person when it will be depressurized.
- 4 Don't cut the ends.
- 5 Don't use a turning lathe in any case!
- 6 Dispose old oil according to the local regulations. Don't pour it into ground soil or in running water. Dispose the empty gas spring with iron scrap.

- 1 Drill slowly the extended gas spring at point X1 (with a drill diameter 2 – 3 mm). Due to the high pressure in-side, shavings and oil may spurt out. To protect the person, suitable precautionary measures should be taken. (eye and face protection, covering of the drill area). If it is marked, drill point X2.



- 2 If you move slightly the piston rod, you can note if the cylinder is pressure-less.
- 3 If required, the cylinder can now be sawn through.
- 4 If you have any questions, please contact the responsible authority or the distributor from which you purchased this device.
- 5 Should this device be passed on to other parties (for private or professional use), the content of this regulation must also be related.

### 3.7 Confirm Data

Confirm the weight reading on the terminal. Print a weight ticket if required by your operation's procedures.



## 4 Setup and Configuration

For information about configuring the scale, refer to the technical manual for the terminal connected to the floor scale.

## 5 Service and Maintenance

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 services.



### **WARNING**

#### **Electrical shock**

Bodily harm and/or destruction of the equipment

- 1 Permit only qualified personnel to service this equipment.
- 2 Exercise care when making checks, tests and adjustments that must be made with power on.
- 3 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.

### 5.1 Scale Maintenance

#### 5.1.1 Static/ Regular Check

##### **Daily Check**

- Check the scale every day before using it.
- Oscillate the platform to make sure that the rocker pins are seated properly and there is no binding.
- Make sure that all corners of the frame are supported and the scale frame does not rock.
- Make sure that the home-run cable connections are not loose.

##### **Weekly Check**

- Check for debris between the platform and frame.
- Check for debris in the bumper gap between the receiver and platform.

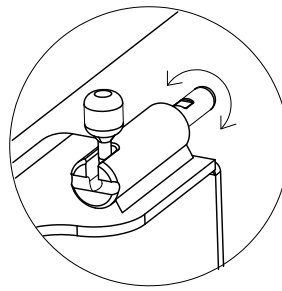
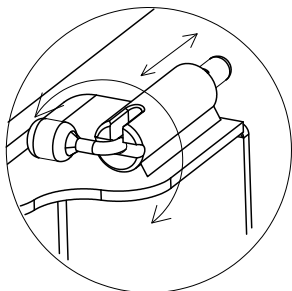
##### **Monthly Check**

- Check the load cell mounting hole and the receiver. Add lubricant if needed.

#### 5.1.2 Mobile Check

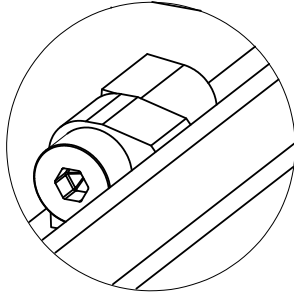
##### **Check the plunger pin**

- Check the proper functioning of the plunger pin.
- Make sure that the plunger pin is not loose when it is locked.



##### **Check the shoulder bolts**

- Check the shoulder bolts that connecting the ramps to the frame every month.



### Check the rollers

The rollers are maintenance-free under normal conditions of use.

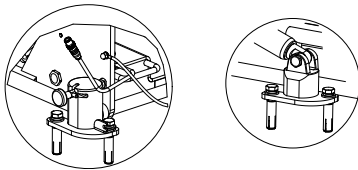
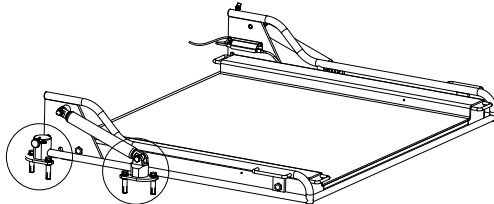
- In case of frequent cleaning, lubricate the roller bearings of the moving rollers with long-life grease.
- Make sure that the scroll wheels are not stuck.

### Check the bracket lock bolt

- Check the bracket lock bolt every month. Make sure it is tightened after adjustment.

## 5.1.3 Lift Check

- Make sure the anchor bolts are locked.



- Check the magnitude of the lifting force. The lifting force varies with temperature, higher in lower temperatures, lower in warmer temperatures.

## 5.2 Cleaning Notes



### NOTICE

#### Damage to the weighing platform due to incorrect use of cleaning agents.

- 1 Use only such cleaning agents that do not act on the plastics used in the weighing platform.
- 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.
- 4 Avoid substances with a high or low PH value since increased danger of corrosion otherwise exists.
- 5 Be particularly careful when cleaning the load cell. Avoid rinsing the load cell connector with a high-pressure water gun.

Remove dirt and deposits at regular intervals from the outside and inside of the weighing platform. The procedure depends both on the type of surface and on the environmental conditions prevailing at the installation location.

#### Cleaning from the outside in a wet environment

- Use a water jet up to 80 °C / 176 °F and max. 80 bar / 1160 psi, minimum distance 40 cm / 16".
- Use household cleaning agents.

### Cleaning in a corrosive environment

- Use a water jet.
  - inner cleaning: up to 60 °C / 140 °F, max. 2 bar / 30 psi, minimum distance 40 cm / 16"
  - outer cleaning: up to 80 °C / 176 °F, max. 80 bar / 1160 psi, minimum distance 40 cm / 16"
- Remove corrosive substances at frequent regular intervals.
- Only use disinfectants and cleaning agents in accordance with the manufacturer's specifications and instructions.

### Cleaning the gas springs



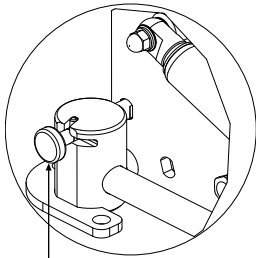
#### CAUTION

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

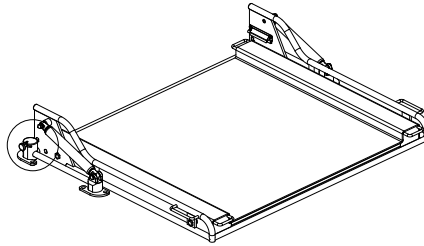
- 1 Protect gas springs against soiling and damage.
- 2 When cleaning the gas springs make sure that the cleaning agent will not cause any corrosion.
- 3 The cleaning agent must not corrode any brass components of the pneumatic spring sealings.

### Cleaning the lift scale

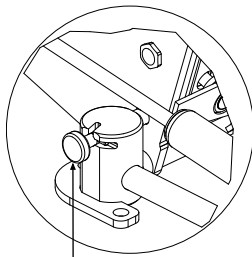
- 1 Remove the front and rear ramps. Unlock the lock pins.



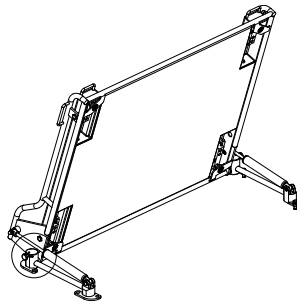
Lock Pin



- 2 Stand on the side of the frame and lift the scale upwards. Check that the two lock pins effectively insert into the lock hole.



Lock Pin



- 3 Perform the cleaning procedures.
- 4 Unlock the lock pins and turn the scale down to the horizontal.
- 5 Check again that the lock pins effectively engage with the lift frame. Ensure the lifting frame is pressed on the ground.
- 6 Reset the ramps.

## 6 Appendix

### 6.1 Technical Data

The technical data of the models Static, Mobile and Lift are the same.

Dimensions and Weights							
Platform size (mm)	650×650	800×800	1000×1000	1250×1000	1250×1250	1500×1250	1500×1500
Height 1* (mm)	35						
Height 2* (mm)	45						
Weight 1 (kg)	52.6	74.3	108.3	149.4	158.6	215.6	258
Weight 2 (kg)	-	-	-	131	161.8	187.4	223.3

\* Height 1 is for capacity 300kg-1500kg, Height 2 is for capacity 2000kg

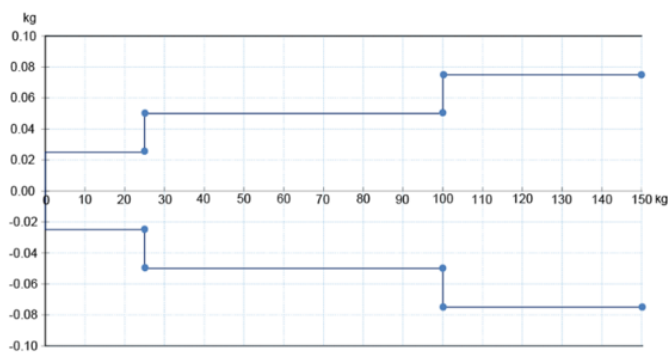
General Specification		
Platform Material	Stainless steel AISI304/1.4301	
Load Plate Surface	Ceramic bead blasted, Ra < 3.2µm Optional: ground, Ra < 0.8µm, e-polish, welding lines, cutting edges excluded	
Sizes	650 x 650 – 1500 x 1500 mm	
Capacities	300 – 2,000 kg	
Home-Run Cable/Length	Polyurethane / 3 m, 10m, 20 m	
Load Cell	SLB615D, E-polish, IP68/IP69K	
Terminal	IND246 Powercell (246H5), IND570 Powercell (T57000H5), IND570xx Powercell, IND780PDX, IND930 / IND970 Powercell	
Ingress Protection	IP68/IP69K	
Scale Interfaces	POWERCELL® CanOpen Network	
Compliance	Metrology	OIML Class III, NTEP Class III, CPA Class III
	EMC	10V/m
Hazardous Area Approvals	ATEX	II 3G Ex nA IIC T6 Gc II 3G Ex ec IIC T6 Gc II 3D Ex tc IIIC T85°C Dc Load cell SLB615D: DEKRA 14ATEX0030X* Load Frame: XXX*
	IECEX	Ex nA IIC T6 Gc Ex ec IIC T6 Gc Ex tc IIIC T85°C Dc Load cell SLB615D: IECEx DEK 15.0077X*
	CFMUS	NI/I,II/2/ABCDFG/T6 -40°C≤Ta≤55°C DIP/III/2/T6 -40°C≤Ta≤55°C Load cell SLB615D: FM17US0281 FM17CA0143
	Temperature Range	Compensated -10°C to +40°C (+14°F to +104°F) Operating (Non-Ex Version) -20°C to +65°C (-4°F to +149°F) Operating (Ex Version) -20°C to +55°C (-4°F to +131°F)

## 6.2 Verification Data and Tolerances

### Capacity: 150 kg

3000e/15000d\*  
 Class III  
 e = 0.05 kg  
 max. 150 kg  
 min. 1 kg  
 (OIML)

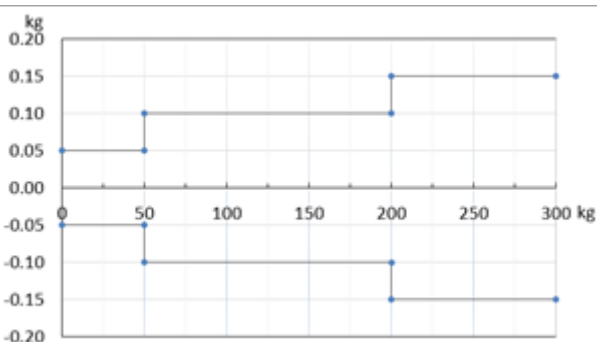
Corner load deviation  
 Weight 50 kg  
 Tolerance 0.05 kg



### Capacity: 300 kg

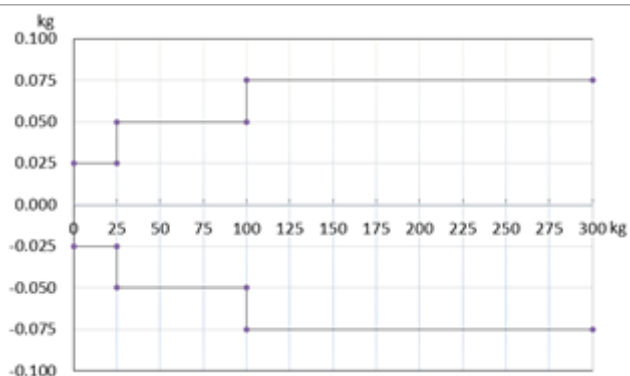
3000e/15000d\*  
 Class III  
 e = 0.1 kg  
 max. 300 kg  
 min. 2 kg  
 (OIML)

Corner load deviation  
 Weight 100 kg  
 Tolerance 0.1 kg



6000e/30000d\*  
 /60000d\*  
 Class III  
 e = 0.05 kg  
 max. 300 kg  
 min. 1 kg  
 (OIML)

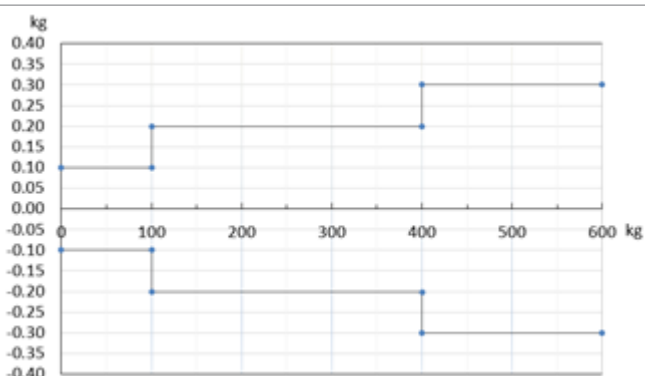
Corner load deviation  
 Weight 100 kg  
 Tolerance 0.05 kg

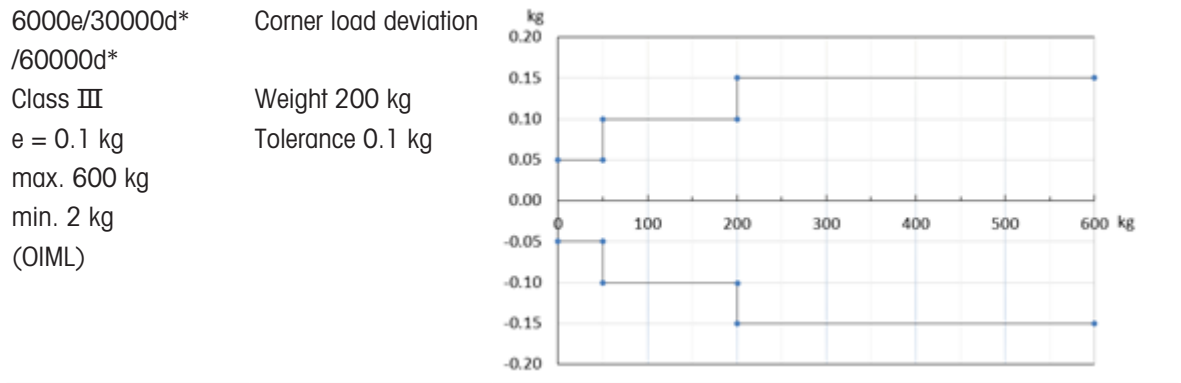


### Capacity: 600 kg

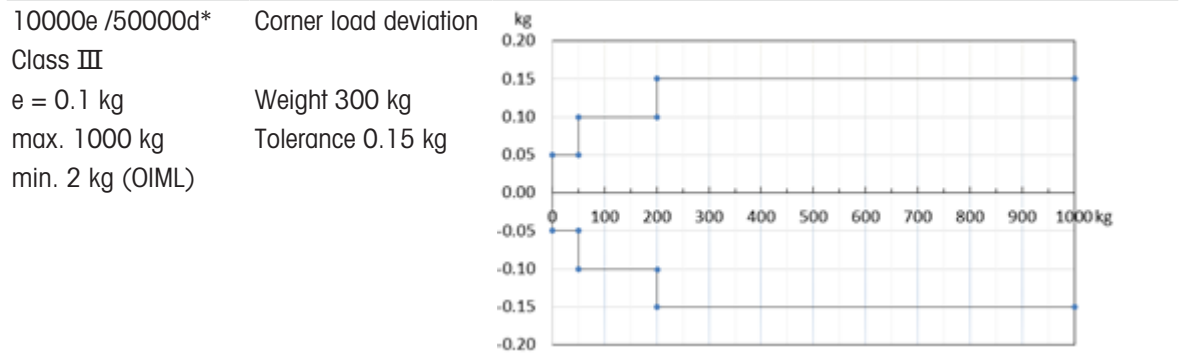
3000e/30000d\*  
 Class III  
 e = 0.2 kg  
 max. 600 kg  
 min. 4 kg  
 (OIML)

Corner load deviation  
 Weight 200 kg  
 Tolerance 0.2 kg

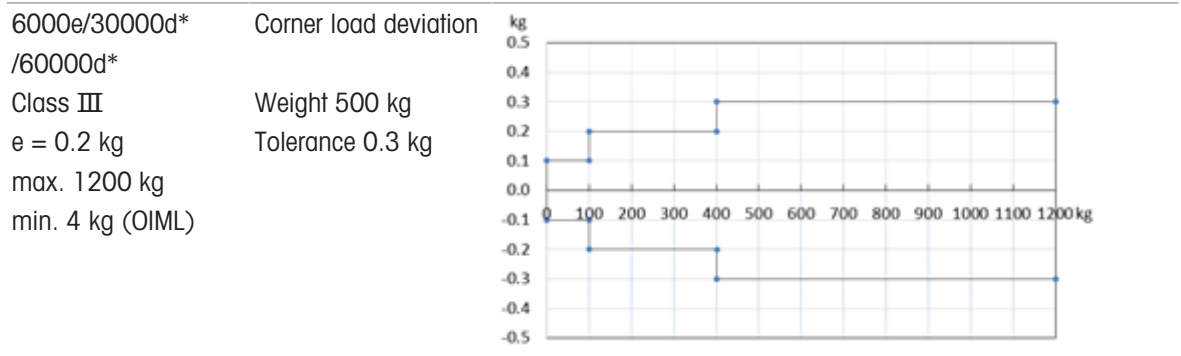




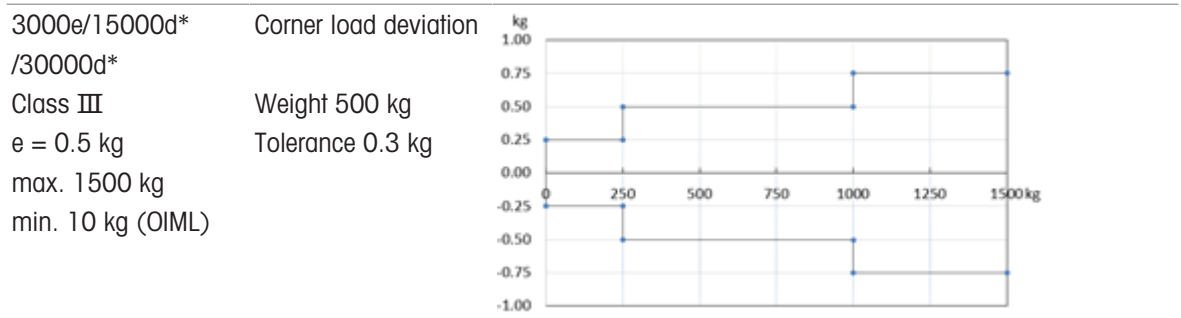
**Capacity: 1,000 kg**



**Capacity: 1,200 kg**



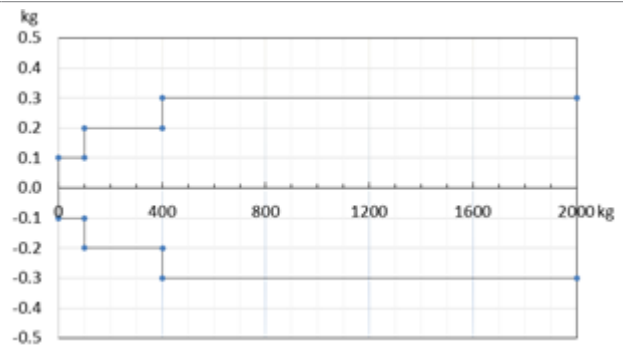
**Capacity: 1,500 kg**



**Capacity: 2,000 kg**

10000e  
Class III  
e = 0.2 kg  
max. 2000 kg  
min. 4 kg (OIML)

Corner load deviation  
Weight 800 kg  
Tolerance 0.3 kg







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