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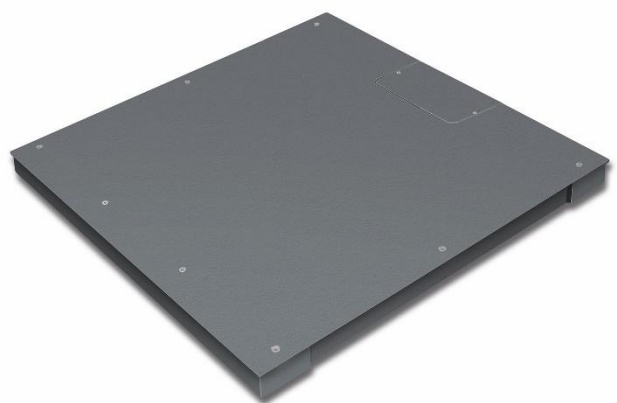
## Floor scale installation instructions

### KERN KFP V20 / V40

Version 1.3

10/2024

E



KFP-V20NM\_V40-IA-e-2410



# KERN KFP V20 / V40

Version 1.3 10/2024

## Floor scale installation instructions

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## 1 General information

These installation instructions contain all the information required for the installation and commissioning of the following weighing platforms:

**KERN KFP 600V20NM**

**KERN KFP 600V20SNM**

**KERN KFP 1500V20NM**

**KERN KFP 1500V20SNM**

**KERN KFP 3000V20NM**

**KERN KFP 3000V20LNM**

**KERN KFP 6000V20M**

**KERN KFP 600V40SM**

**KERN KFP 1500V40M**

**KERN KFP 1500V40SM**

**KERN KFP 3000V40M**

## 2 Technical data

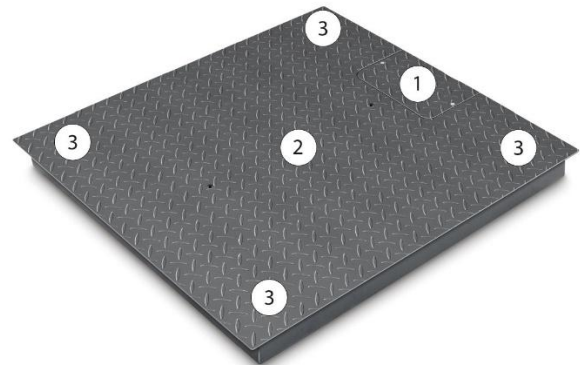
Model	Max. weighing range kg	Readabi- lity (d) kg	Calibration values (e) kg	Min. load min kg	Cable length ap- prox. m	Net weight ap- prox. kg
<b>Steel, powder-coated</b>						
KFP 600V20NM	600	0,2	0,2	4	5	150
KFP 600V20SNM	600	0,2	0,2	4	5	100
KFP 1500V20NM	1500	0,5	0,5	10	5	150
KFP 1500V20SNM	1500	0,5	0,5	10	5	100
KFP 3000V20NM	3000	1	1	20	5	150
KFP 3000V20LNM	3000	1	1	20	5	175
KFP 6000V20M	6000	2	2	40	5	210
<b>Stainless steel</b>						
KFP 600V40SM	600	0,2	0,2	4	5	100
KFP 1500V40M	1500	0,5	0,5	10	5	145
KFP 1500V40SM	1500	0,5	0,5	10	5	95
KFP 3000V40M	3000	1	1	20	5	135

## 2.1 Device overview

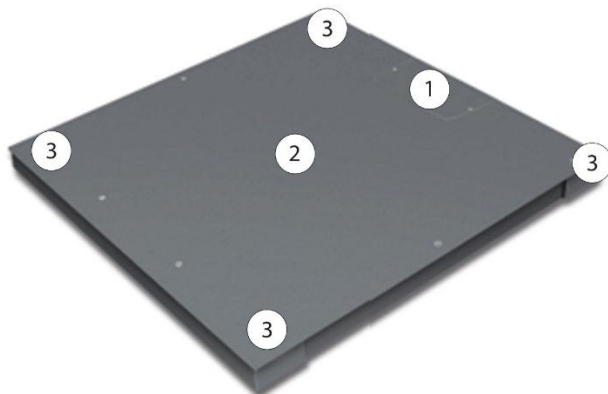
KFP 600V20NM  
KFP 600V20SNM  
KFP 1500V20NM  
KFP 1500V20SNM  
KFP 3000V20NM  
KFP 3000V20LNM



KFP 6000V20M



KFP 600V40SM  
KFP 1500V40M  
KFP 1500V40SM  
KFP 3000V40M



- 1 Terminal box cover
- 2 Weighbridge
- 3 Cover screws for leveling \*

\*For all models except the KFP 6000V20M under the load plate

### 3 Basic information (general)

#### 3.1 Documentation

These installation instructions contain all the information for setting up and commissioning the KERN KFP V20 and KERN KFP V40 weighing platforms.

In combination with a display unit, hereinafter referred to as a weighing system, the operation and configuration can be found in the instructions for the display unit.

#### 3.2 Intended use

The scales you have purchased are used to determine the weight of items to be weighed. It is intended for use as a "non-automatic scale", i.e. the sample is placed manually, carefully and centrally on the weighing plate. Once a stable weight value has been reached, the weight value can be read off.

#### 3.3 Improper use

Do not leave a permanent load on the weighing platform. This can damage the measuring system damage.

Avoid impacts and overloading the weighing platform above the specified maximum load (Max), minus any existing tare load. This could damage the weighing platform. Never operate in potentially explosive atmospheres. The standard version is not explosion-proof.

The weighing platform must not be modified in any way. This can lead to incorrect weighing results, safety defects and destruction of the scales.

The weighing system may only be used in accordance with the specifications described. Deviating areas of use/application must be approved in writing by KERN.



⇒ If the weighing platform is to be used in the EX area, please contact KERN.

#### 3.4 Warranty

Warranty expires with

- Non-compliance with our specifications in the operating instructions
- Use outside the described applications
- Structural changes to the device
- Mechanical damage and damage caused by media, liquids
- Natural wear and tear
- Improper set-up or electrical installation
- Overload of the measuring system

### 3.5 Test equipment monitoring

As part of quality assurance, the metrological properties of the weighing system and any test weight must be checked at regular intervals. The responsible user must define a suitable interval as well as the type and scope of this check. Information regarding the test equipment monitoring of weighing systems and the test weights required for this is available on the KERN homepage ([www.kern-sohn.com](http://www.kern-sohn.com)). In its accredited DKD calibration laboratory, KERN can calibrate test weights and weighing systems quickly and cost-effectively (traceability to the national standard).

## 4 Basic safety instructions

### 4.1 Observe the notes in the operating instructions



Read the operating instructions carefully before installation and commissioning, even if you already have experience with KERN scales.

All language versions include a non-binding translation.

The original German document is binding.

### 4.2 Staff training

The appliance may only be operated and maintained by trained personnel.  
An indicator may only be installed by a specialist with in-depth knowledge of scales.

## 5 Transportation and storage

### 5.1 Control on takeover

Please check the packaging immediately upon receipt and the appliance for any visible external damage when unpacking.

### 5.2 Packaging/return transportation



- ⇒ Keep all parts in the original packaging for any necessary return transportation.
- ⇒ Only the original packaging is to be used for return transportation.
- ⇒ Disconnect all connected cables and loose/movable parts before shipping.
- ⇒ Refit any transportation locks provided.
- ⇒ Secure all parts against slipping and damage.

## 6 Unpacking, installation and commissioning

### 6.1 Installation site, place of use

The weighing platforms are designed to achieve reliable weighing results under normal operating conditions.

You can work accurately and quickly if you choose the right location for your weighing system.

#### Observe the following at the installation site:

- Place the weighing platform on a stable, level surface.  
The surface at the installation site must be able to safely bear the weight of the maximum load of the weighing platform at the support points. At the same time, it should be stable enough to prevent vibrations during weighing operations.
- If possible, there should be no vibrations at the installation site, e.g. from neighboring machines.
- Do not use the weighing platform in potentially explosive atmospheres.
- Avoid extreme heat and temperature fluctuations, e.g. by placing next to the heating or in direct sunlight.
- Protect the weighing platform from direct draughts, e.g. from open windows and doors.
- Only use the weighing platform in a dry environment, protect it from high humidity, vapors and dust.
- Do not expose the appliance to high humidity for long periods of time. Unauthorized condensation (condensation of humidity on the appliance) can occur if a cold appliance is brought into a much warmer environment. In this case, acclimatize the appliance disconnected from the mains for approx. 2 hours at room temperature.
- Avoid vibrations during weighing.
- Avoid static charging of items to be weighed and weighing containers.
- Chemicals (e.g. liquids or gases) that could attack and damage the inside or outside of the scales must be kept away.
- Comply with the IP protection of the device
- Large display deviations (incorrect weighing results) are possible if electromagnetic fields (e.g. from cell phones or radios), static charges or an unstable power supply occur. The location must then be changed or the source of interference removed.

## 6.2 Unpacking, scope of delivery



**CAUTION**  
Danger for your back!

The weighing system is relatively heavy. Always use an appropriate lifting device to lift it out of the packaging or to transport it to the required installation location

### Scope of delivery:

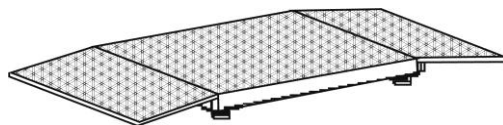
- Weighbridge
- Load cell feet
- Installation management
- 2 eyebolts

1. Remove outer packaging and packaging material.
2. Remove the covers.
3. Installing eyebolts
4. Lift the weighing platform evenly from the packaging material, see caution note. Secure the weighing platform so that it cannot fall when it is lifted.
5. Ensure that the package contents are complete.



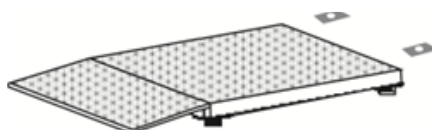
Depending on the version, the following accessories (optional) must be available when installing the weighing platforms:

**(A) 2 access ramps**



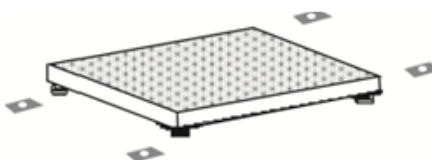
or

**(B) 1 access ramp and 1 set of base plates**



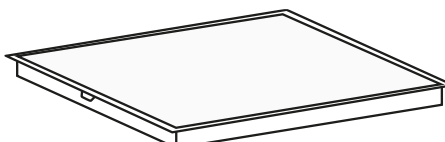
or

**(C) 2 base plate sets**



or

**(D) Pit frame**



### 6.3 Setting up , Leveling (except KFP 6000V20M)

Only an exactly horizontally aligned weighing platform provides accurate weighing results. The weighing platform must be leveled during initial installation and every time it is moved.

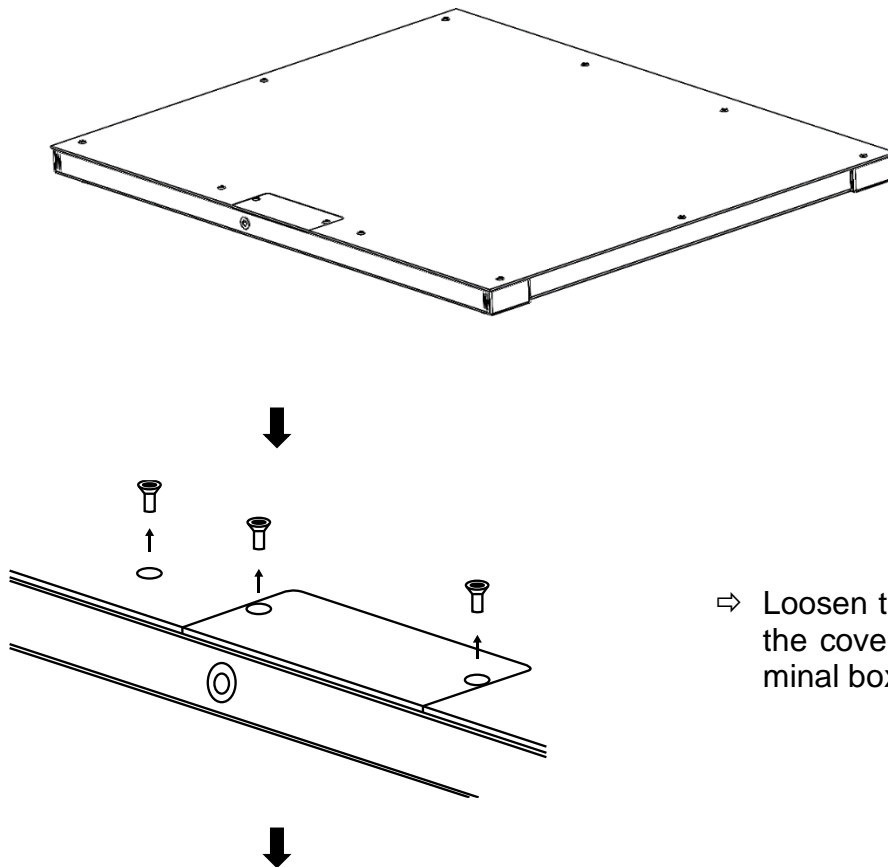


**All adjustable feet must rest evenly.**

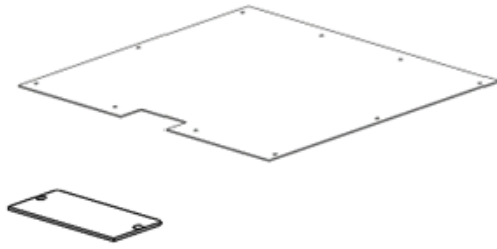
#### **Calibrated weighing systems:**

With calibrated weighing systems, the weighing platform must be firmly fixed to the floor. This is essential for the reproducibility of the measurement results and can be implemented with the aid of pairs of base plates.

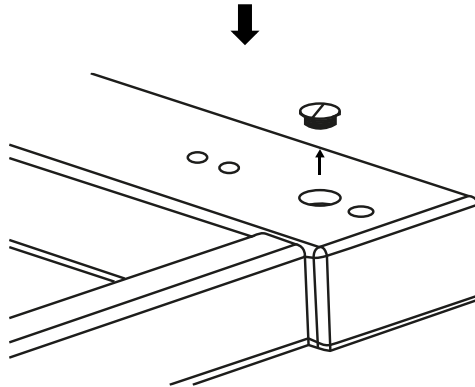
#### **Implementation:**



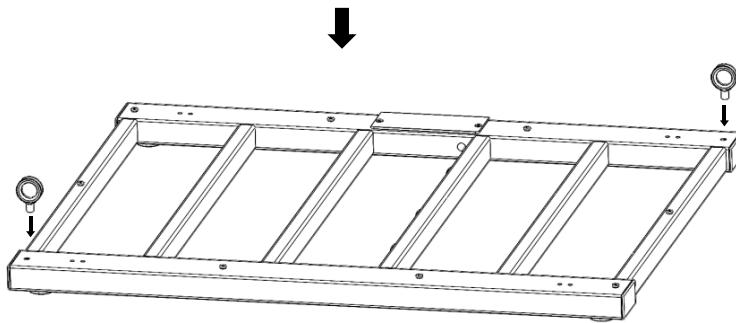
⇒ Loosen the screws on the cover and the terminal box



⇒ Remove the weighing plate and cover of the terminal box



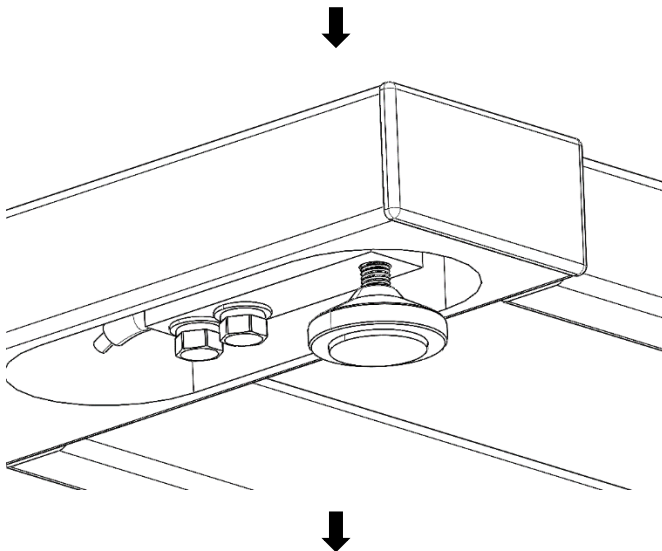
⇒ Remove the cover screws from the adjustable feet (4x)



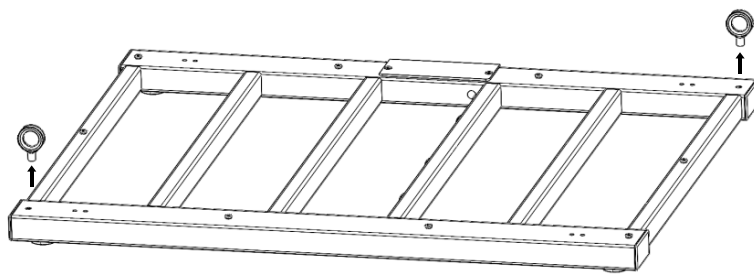
⇒ Insert 2x eyebolt (diagonally to each other)

⇒ Have the weighing platform lifted by qualified personnel using a lifting aid (crane or similar)

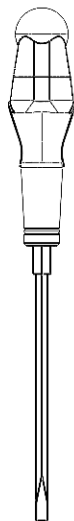
Ensure that the connection cable is not crushed or damaged.



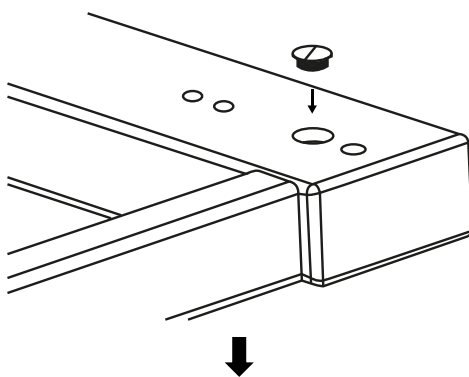
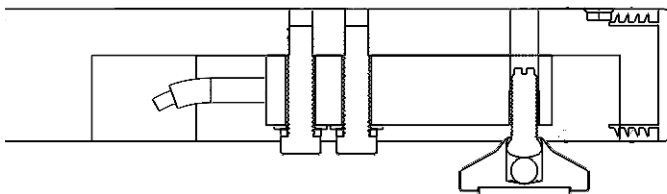
⇒ Before parking: Insert the foot bolts (4x)



- ⇒ Set down the weighing platform and check that the weighing platform is positioned level and that all 4 feet are touching the ground
- ⇒ Ensure that the connection cable is not crushed or damaged.
- ⇒ Remove eyebolts

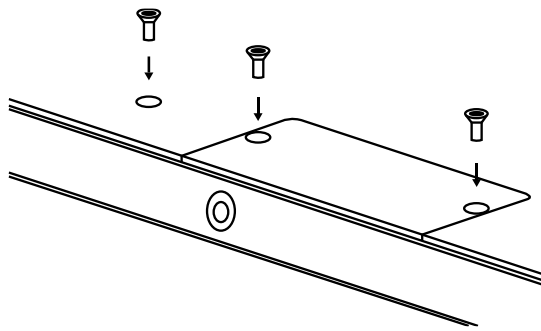


- ⇒ Level with a Phillips screwdriver.
- ⇒ There is a level bubble in the connection box for leveling.



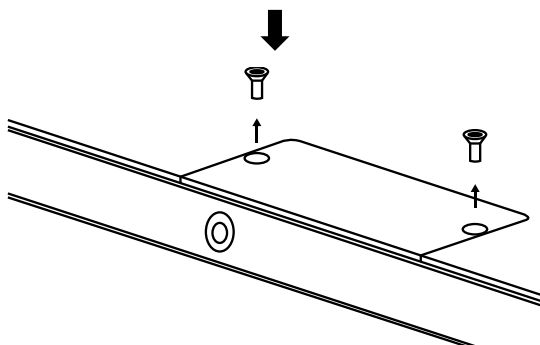
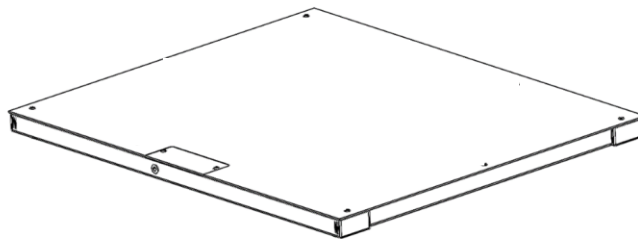
- ⇒ Replace the cover screws



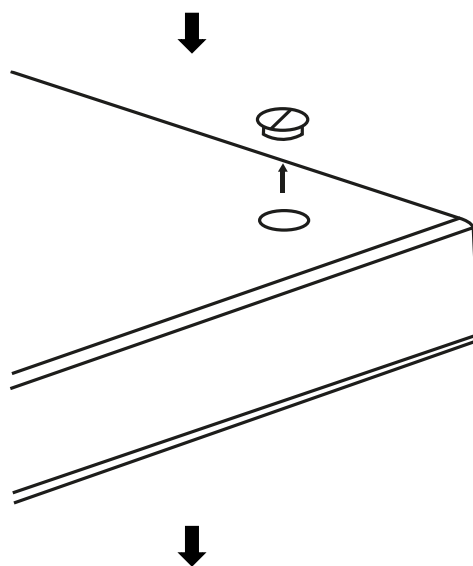


- ⇒ Replace and secure the weighing platform.
- ⇒ Fastening the terminal box cover

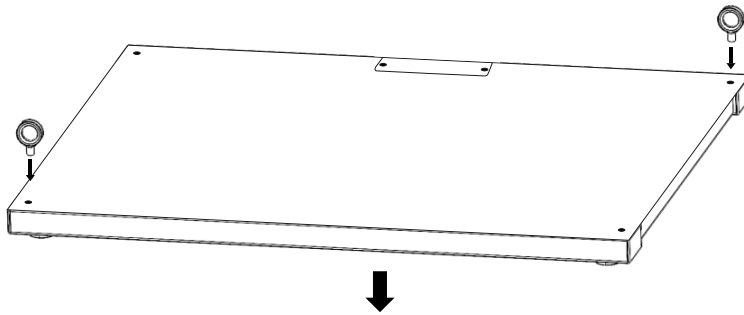
#### 6.4 Setting up, leveling KFP 6000V20M



- ⇒ Loosen the screws of the terminal box

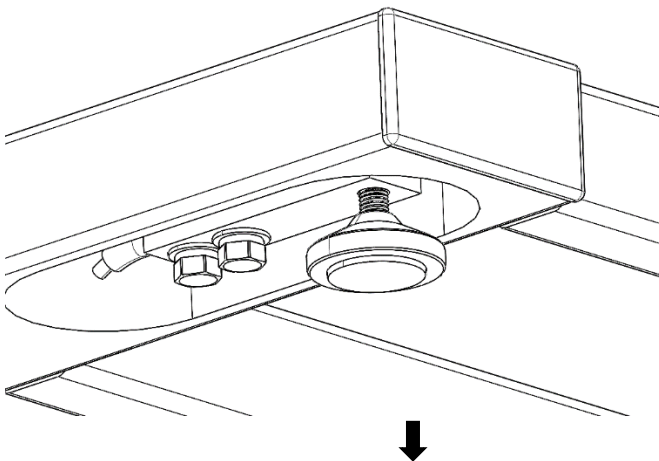


- ⇒ Remove the cover screws from the adjustable feet (4x)

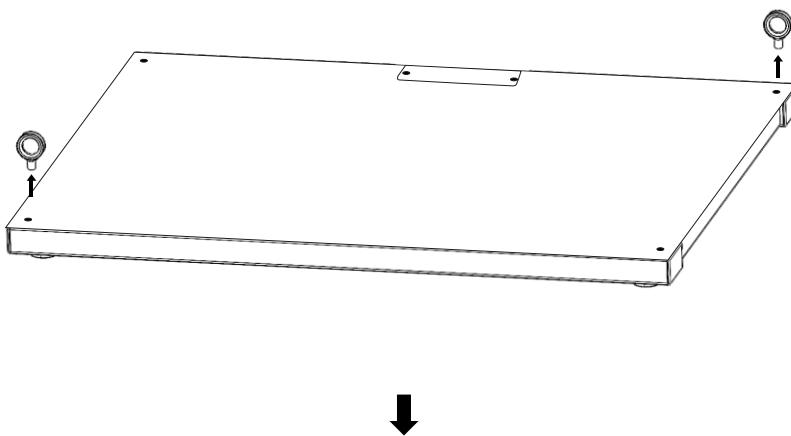


- ⇒ Insert 2x eyebolt (diagonally to each other)

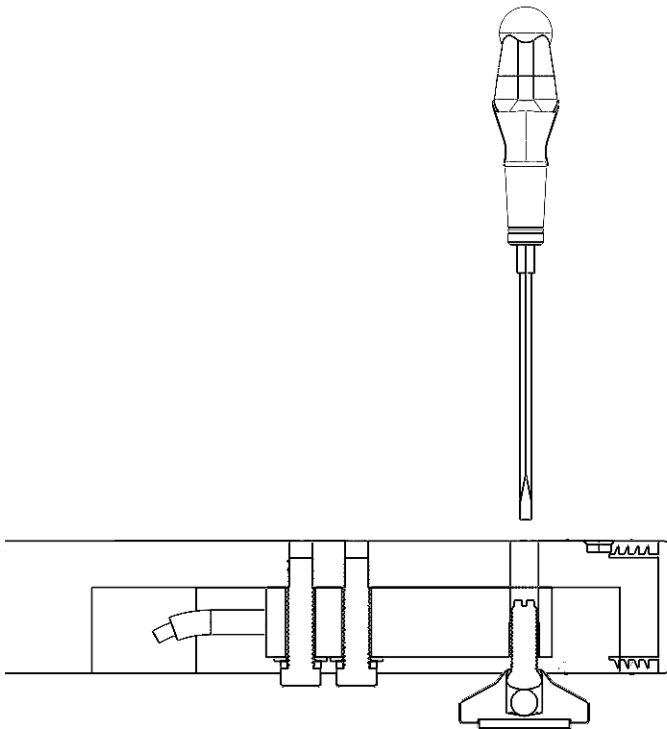
- ⇒ Have the weighing platform lifted by qualified personnel using a lifting aid (crane or similar)
- ⇒ Ensure that the connection cable is not crushed or damaged.



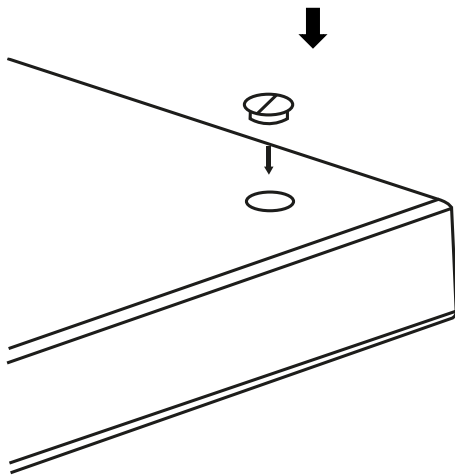
- ⇒ Before parking: Insert the foot bolts (4x)



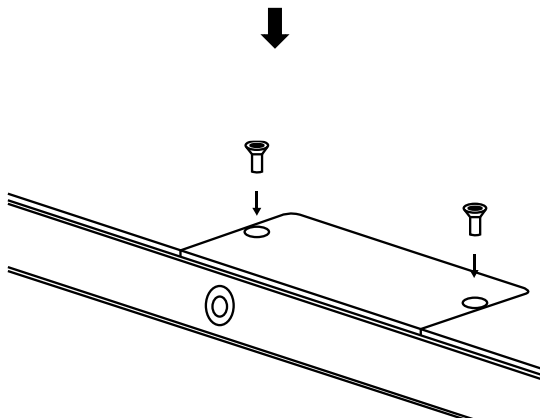
- ⇒ Set down the weighing platform and check that the weighing platform is positioned level and that all 4 feet are touching the floor
- ⇒ Ensure that the connection cable is not crushed or damaged.
- ⇒ Remove eyebolts



- ⇒ Level with a Phillips screwdriver.
- ⇒ There is a level bubble in the connection box for leveling.



Replace the cover screws



- ⇒ Replace and secure the weighing platform.
- ⇒ Fastening the terminal box cover

### **Setting up a weighbridge with ramps and/or footplates:**

- ⇒ Before step 2 (see Setting up the weighbridge), mark and fix the position of the ramps or base plates.
- ⇒ Set the weighing platform down evenly at the installation site. Ensure that the weighing platform is level and that the base plates and ramps are horizontal in the area where the weighing platform is to be installed, especially in the area of the load cell feet. Compensate for minor height differences using the adjustable load cell feet and the spirit level in the connection box.
- ⇒ Remove the eyebolts, refit the eyebolt covers and load cell feet.
- ⇒ Ensure that the connection cable is not crushed or damaged during lifting and installation.

**All adjustable feet must rest evenly.**



#### **Calibrated weighing systems:**

With calibrated weighing systems, the weighing platform must be firmly fixed to the floor. This is essential for the reproducibility of the measurement results. Optionally with two drive-on ramps or two pairs of foot plates or a combination of both.



## 6.5 Connecting a display device

### Attention

Route the connection cable to the display unit so that it is protected from possible damage.

### Description of the connection cables:

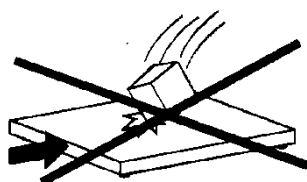
Clamp	Color	Condition
+EXE	Red	Voltage +
+SEN	Brown	Sense +
+SIG	Blue	Signal +
-SIG	Green	Signal -
-SEN	White	Sense -
-EXE	Black	Voltage -

## 7 Operation

Information about

- **Mains connection** (power is supplied via the connection cable of the display unit)
- **Initial commissioning**
- **Connection of peripheral devices**
- **Adjustment, linearization and calibration** (only the complete scale can be calibrated, i.e. weighing platform in conjunction with a suitable indicator)

For correct operation, please refer to the operating instructions supplied with the display unit.

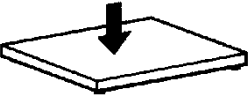
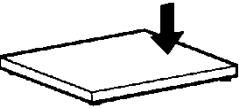
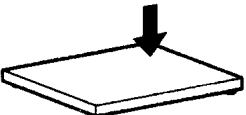


This ensures continuous optimum performance:

- Avoid falling loads, shock loads and lateral impacts!
- When weighing, all items must be placed in the center of the weighing platform and must not hang over the sides or ramps.
- Check the adjustment at regular intervals.

## 7.1 Operating limits

- The weighbridges are designed to be extremely robust. However, the load limits in the following table should not be exceeded!
- The static load-bearing capacity, i.e. the maximum permissible load, depends on the type of load suspension:

	<b>Weighing ranges</b>	<b>600 kg</b>	<b>1500 kg</b>	<b>3000 kg</b>	<b>6000 kg</b>
	With centric load	2850 kg	4500 kg	4500kg	9000kg
	With lateral load	1400 kg	2700 kg	2700 kg	5400kg
	With one-sided corner load	700 kg	1400 kg	2200 kg	3500 kg

## 7.2 Operation with access ramps

- The load plate of the weighbridge is the active weighing part, the drive-on ramps are passive, i.e. all wheels of the conveyor vehicles must be on the load plate during the weighing process.
- The air gap between the load plate and the drive-on ramps must be kept clear. The gap should therefore be checked regularly and kept clear, especially when weighing granular or small pieces.

## 7.3 Weighbridge loading/unloading

- Place the load on the scales using a pallet truck, crane or forklift. Ensure that the load does not swing when it is placed on the scale.
- First lift the load at least 10 cm above the scales before removing or repositioning it.

## 8 Maintenance, servicing, disposal



Disconnect the appliance from the power supply before carrying out any maintenance, cleaning or repair work.

### 8.1 Daily checks

- ⇒ Make sure that all 4 feet are touching the floor.
- ⇒ Ensure that the connection cable to the display unit and the mains connection cable of the display unit are not damaged.
- ⇒ Ensure that the scales are free of dirt, especially under the edges of the scales.

### 8.2 Cleaning

- ⇒ Clean stainless steel parts with a soft cloth soaked in a cleaning agent suitable for stainless steel.
- ⇒ Do not use cleaning agents containing caustic soda, acetic, hydrochloric, sulphuric or citric acid on stainless steel parts.
- ⇒ Do not use metal brushes or cleaning sponges made of steel wool, as this causes surface corrosion.
- ⇒ Wipe surfaces with a damp cloth.
- ⇒ Only use common household cleaners.
- ⇒ Do not use a water jet or high-pressure cleaner
- ⇒ Remove the weighing plate and remove any dirt and foreign objects that have accumulated underneath. Do not use any hard objects to do this.
- ⇒ Protect load cells from splashing water.
- ⇒ Remove corrosion-causing substances regularly.
- ⇒ Comply with IP protection.
- ⇒ When using optional ramps or base plates, keep the air gap at the edge of the weighing platform free of dirt.

### 8.3 Maintenance, servicing

- ⇒ The device may only be opened by trained service technicians authorized by KERN.
- ⇒ Ensure that the weighing system is calibrated regularly, see section 3.5 Test equipment monitoring.

### 8.4 Waste disposal

- ⇒ The operator must dispose of the packaging and appliance in accordance with the applicable national or regional legislation at the place of use.

## 8.5 Small breakdown service

In the event of a fault in the program sequence, the scale should be switched off briefly and disconnected from the mains. The weighing process must then be re-started from the beginning.

### Malfunction

The weight display changes continuously

### Possible cause

- Draught/air movement
- Vibrations of the floor
- The weighbridge is in contact with foreign objects.
- Electromagnetic fields/static charge  
(choose a different installation location / switch off the interfering device if possible)
- Load cell damaged/defective

The weighing result is obviously incorrect

- No zero display when the scales are unloaded
- The adjustment is no longer correct.
- There are strong temperature fluctuations.
- Weighing bridge is not level.
- Electromagnetic fields / static charge  
(choose a different installation location / if possible, switch off the interfering device)

If other error messages occur, switch the scales off and on again. If the error message remains, contact the manufacturer.

## 9 Service documents



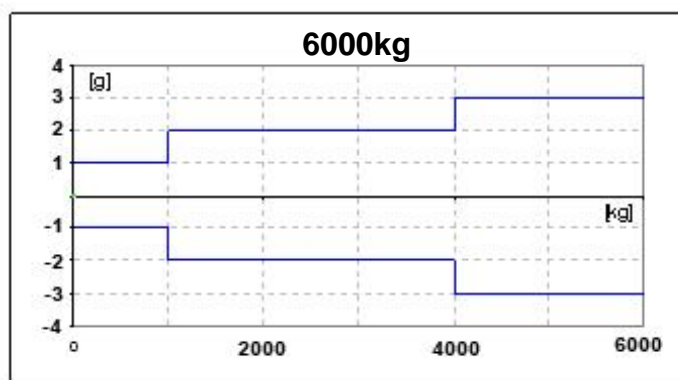
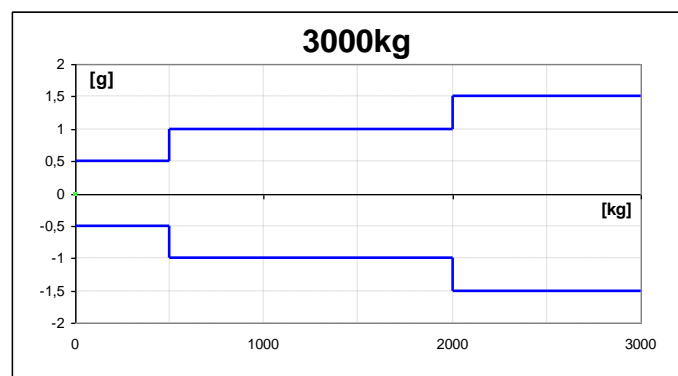
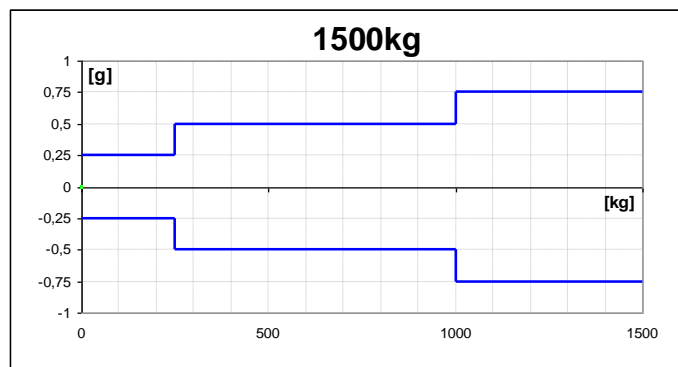
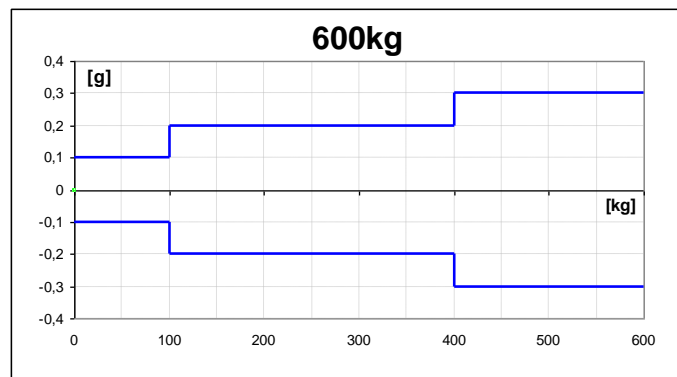
- This chapter is intended for specialist personnel only.
- There is a strain gauge load cell at each corner of the weighing bridge.
- The analog-to-digital conversion takes place in the display unit. All scale and country-specific data is also stored there.

### 9.1 Overview, setting instructions, tolerances

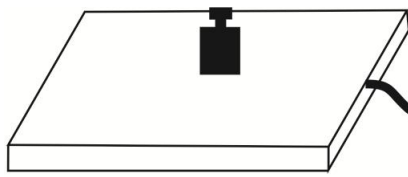
#### Test and adjustment instructions:

Capacity	600 kg	1500 kg	3000 kg	6000 kg
Readability	0.2 kg	0.5 kg	1 kg	2 kg
Min	4 kg	10 kg	20 kg	40 kg
Max	600 kg	1500 kg	3000 kg	6000 kg
1/3 corner load	200 kg	500 kg	1000 kg	2000kg
Tolerance	0.2 kg	0.5 kg	1 kg	2 kg

## Calibration data and tolerances according to OIML



## 9.2 Checking and adjusting the corner load



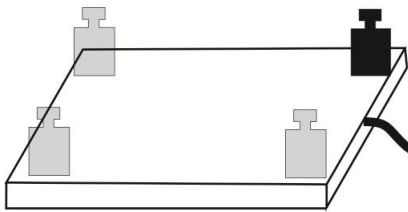
### Checking the corner load :

- Place the test weights in the center of the load plate and tare.



0.00 kg

- Scale displays -0-.

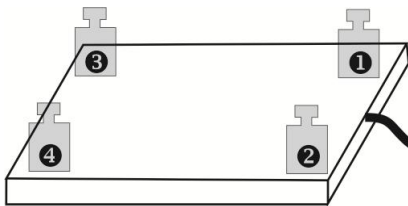


- Place the test weights on all 4 corners one after the other.
- Deviations are now displayed with a sign, note the values. If there are deviations that are outside the tolerances (see section 9.1), an adjustment is required.

### Adjusting the corner load :

#### Preparation:

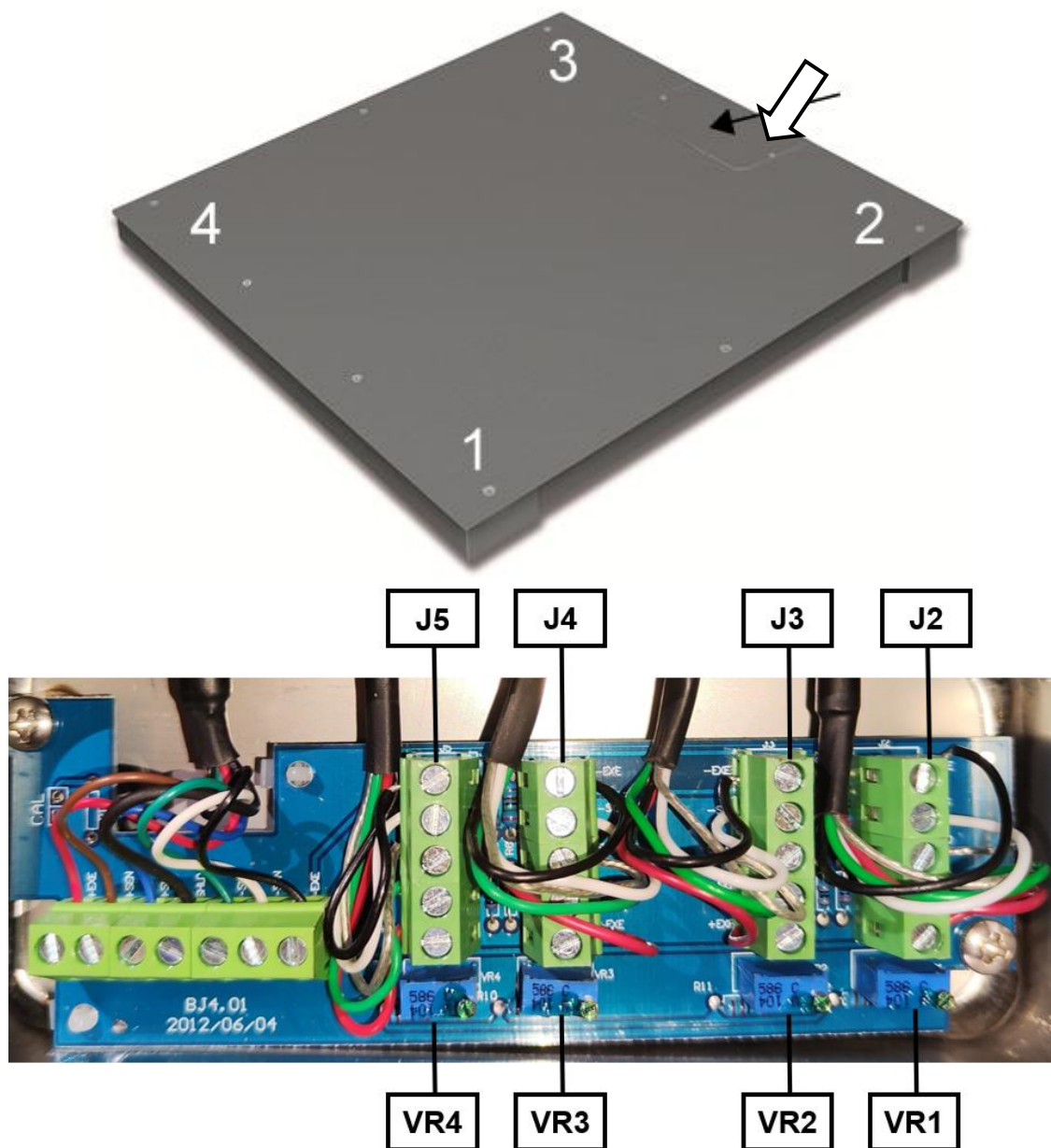
- For better control of the changes that occur during adjustment, select maximum readability for control purposes in the configuration menu.
- Open the terminal box



#### Adjustment rule:

The corner (load cell) with the largest negative deviation must be set to zero. Do not adjust this corner even after several adjustment runs.

## Adjusting the individual corners



The load cell J2 is adjusted using potentiometer VR1.  
The load cell J3 is adjusted using potentiometer VR2.  
The load cell J4 is adjusted using potentiometer VR3.  
The load cell J5 is adjusted using potentiometer VR4.  
Turn value increase to the right, turn value decrease to the left.

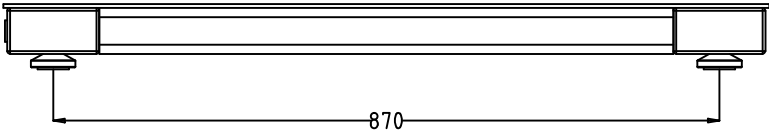
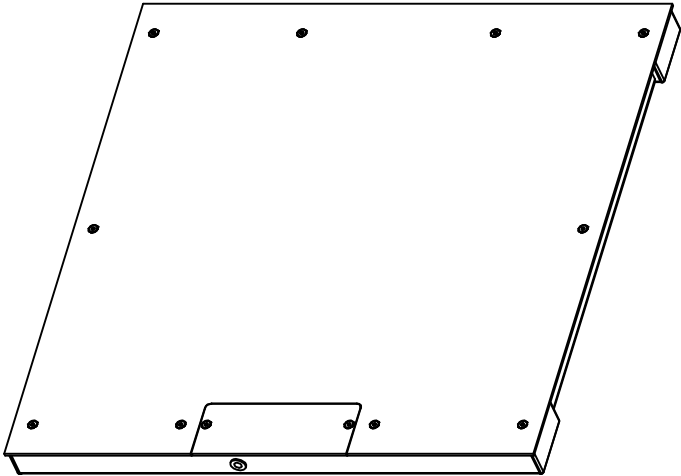
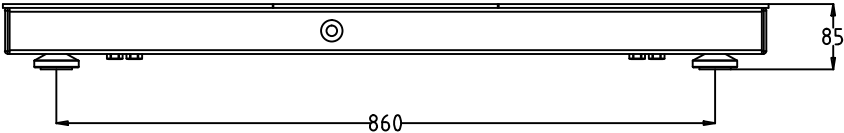
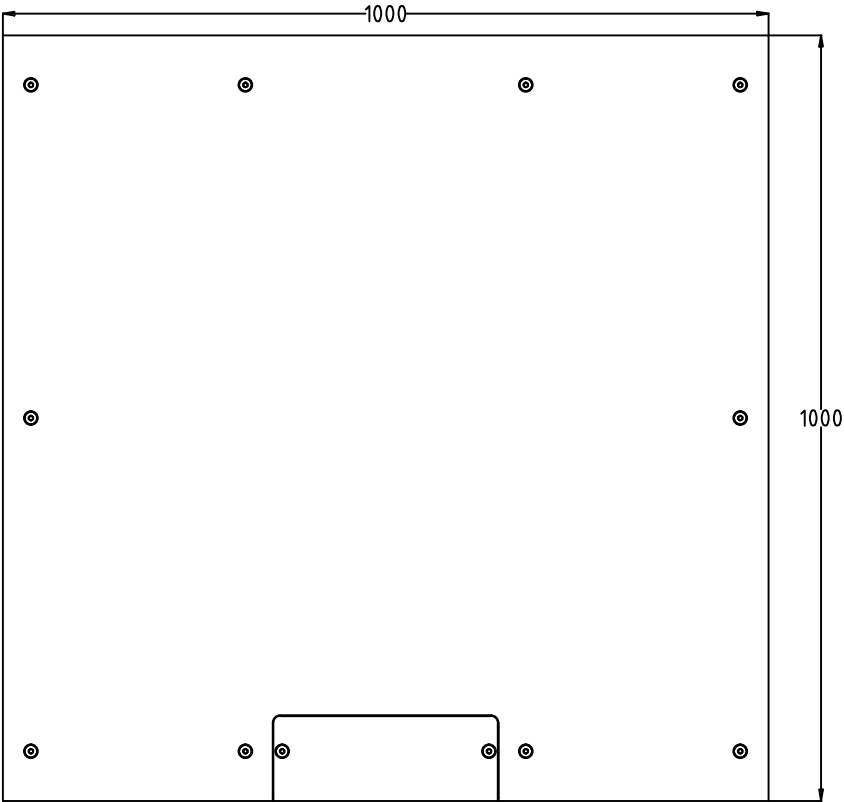


## 10 Dead load and Overload protection


Platform type	Weighing platform dimensions mm	Weighing surface dimensions mm	Dead load kg	Overload security	Load cell type	Test certificate of the load cell	Nominal load kg	Accuracy
Steel, powder-coated								
KFP 600V20SNM	1000x1000x85	1000x1000	95	-	Zemic H8C	TC8012	500	C3
					Keli SQB*	TC6911		
KFP 600V20NM	1500x1250x85	1500x1250	145	-	Zemic H8C	TC8012	500	C3
					Keli SQB*	TC6911		
KFP 1500V20SNM	1000x1000x85	1000x1000	95	-	Zemic H8C	TC8012	1000	C3
					Keli SQB*	TC6911		
KFP 1500V20NM	1500x1250x85	1500x1250	145	-	Zemic H8C	TC8012	1000	C3
					Keli SQB*	TC6911		
KFP 3000V20NM	1500x1250x85	1500x1250	147	-	Zemic H8C	TC8012	1500	C3
					Keli SQB*	TC6911		
KFP 3000V20LNM	1500x1500x85	1500x1500	170	-	Zemic H8C	TC8012	1500	C3
					Keli SQB*	TC6911		
KFP 6000V20M	1500x1500x123	1500x1500	220	-	Zemic H8C	TC8012	2500	C3
					Keli SQB*	TC6911		
Stainless steel								
KFP 600V40SM	1000x1000x85	1000x1000	95	-	Zemic BM8H	TC8104	500	C3
KFP 1500V40SM	1000x1000x85	1000x1000	95	-	Zemic BM8H	TC8104	1000	C3
KFP 1500V40M	1500x1250x85	1500x1250	145	-	Zemic BM8H	TC8104	1000	C3
KFP 3000V40M	1500x1250x85	1500x1250	145	-	Zemic BM8H	TC8104	1500	C3

\*Replacement option

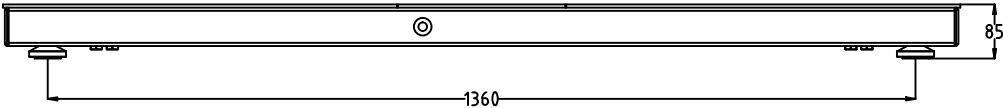
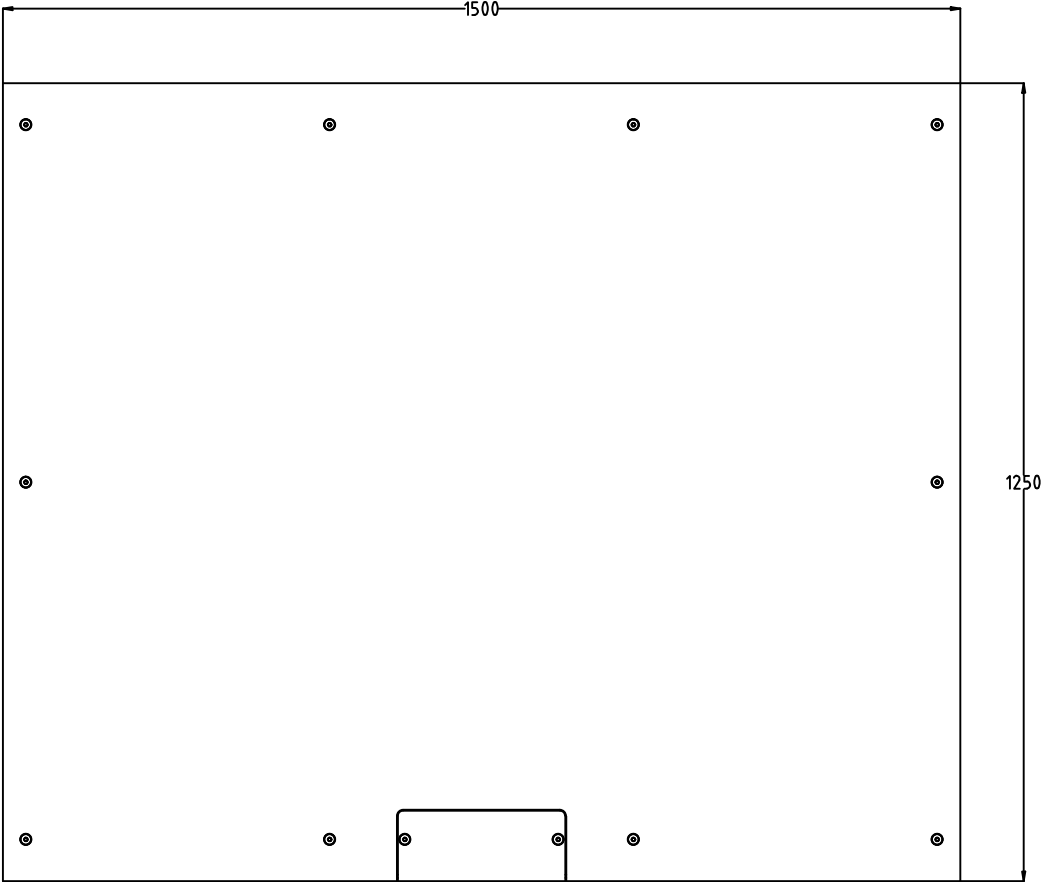
A4



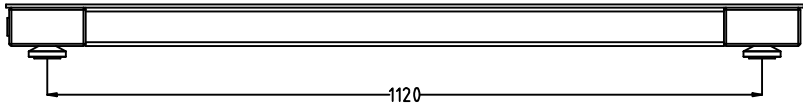
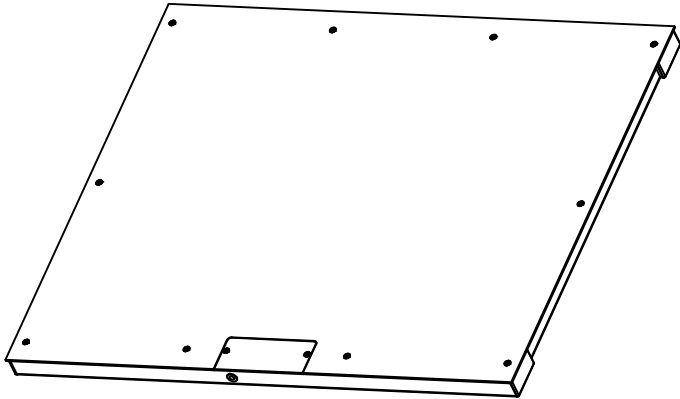
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A0	Released	2024.04.12	Tim.Zhao


TOLERANCE UNLESS OTHERWISE SPECIFIED DEC ANGLES ±0.1 FOR 0.X ±0.05 FOR 0.XX		±0.5		<b><i>KERN® KERN &amp; SOHN GmbH</i></b>			
 3RD ANGLE PROJECTION		TITLE:		KFP 600V20SNM KFP 1500V20SNM KFP 600V40SM KFP 1500V40SM			
DRAWN							
Y.J.Zhao							
CHECKED	Tim.Zhao	MODEL NO.	TFG-1010-600kg TFG-1010-15t TFGS-1010-600kg TFGS-1010-15t		PART NO.	130900300036 130900300037 130902100031 130902100032	
APPROVED	Tim.Zhao	MATERIAL			FINISH		
UNIT	mm	SCALE		DO NOT SCALE DRAWING		SHEET OF	

A4



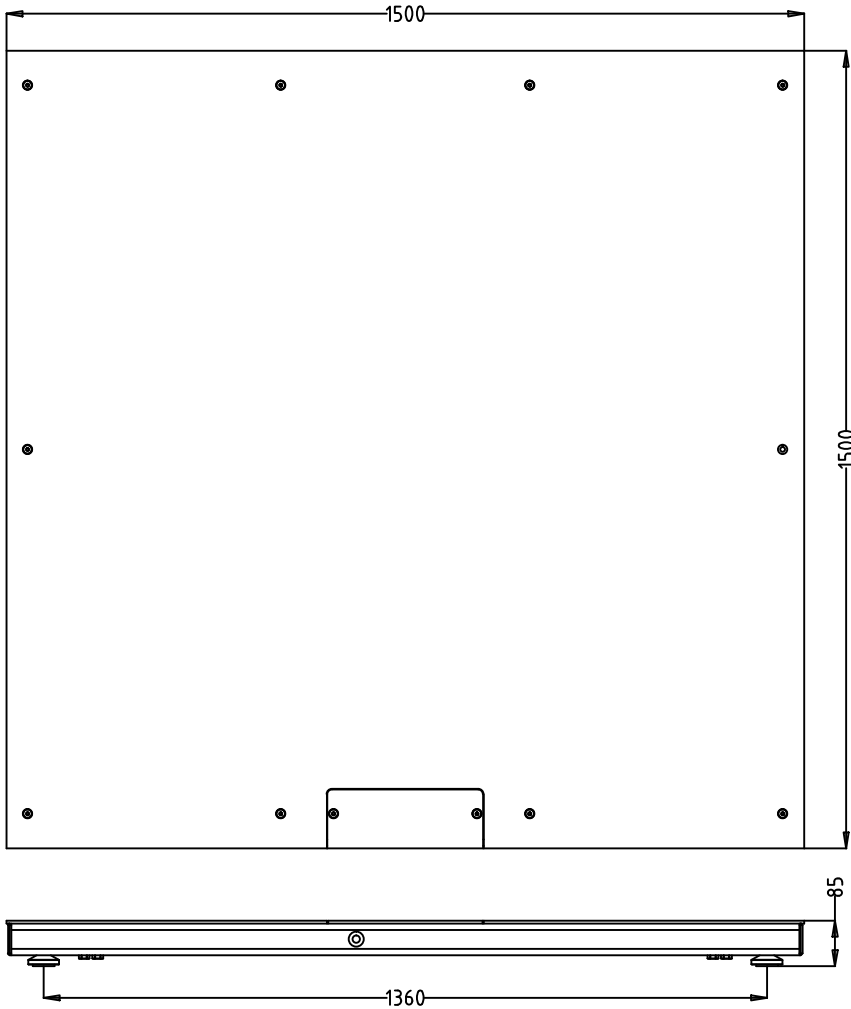
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A0	Released	2024.03.25	Tim.Zhao



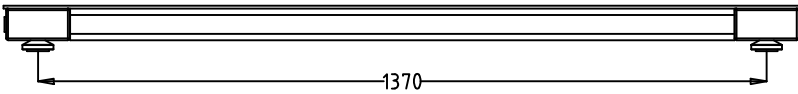
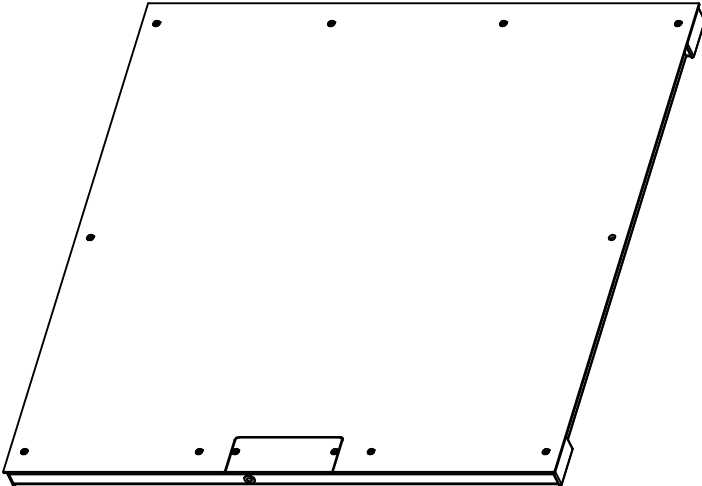
TOLERANCE UNLESS OTHERWISE SPECIFIED DEC ANGLES ±0.1 FOR 0.X ±0.05 FOR 0.XX		<b>KERN® KERN &amp; SOHN GmbH</b>					
 3RD ANGLE PROJECTION		TITLE:		KFP 600V20NM KFP 1500V20NM KFP 3000V20NM KFP 1500V40M KFP 3000V40M			
DRAWN	Y.J.Zhao						
CHECKED	Tim.Zhao	MODEL NO.	TFS-1215-4000g TFS-1215-151 TFS-1215-31 TFS-1215-151 TFS-1215-31		PART NO.	130900300034 130900300033 130900300035 130900000017 130900000018	
APPROVED	Tim.Zhao	MATERIAL			FINISH		
UNIT	mm	SCALE		DO NOT SCALE DRAWING			SHEET OF

**KERN® KERN & SOHN GmbH**

A4

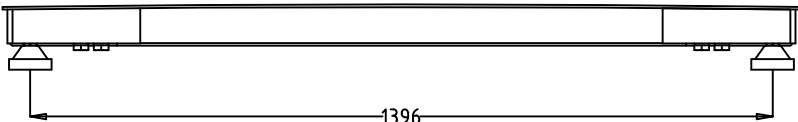
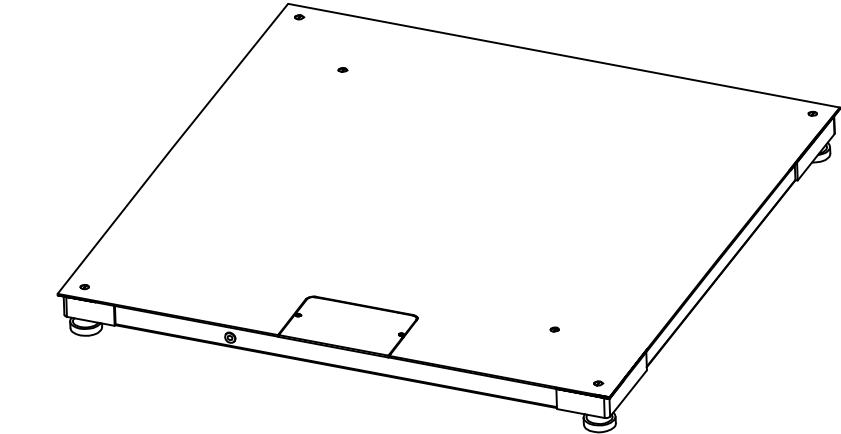
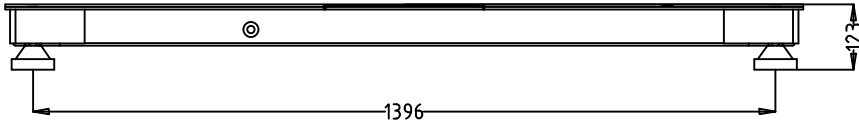
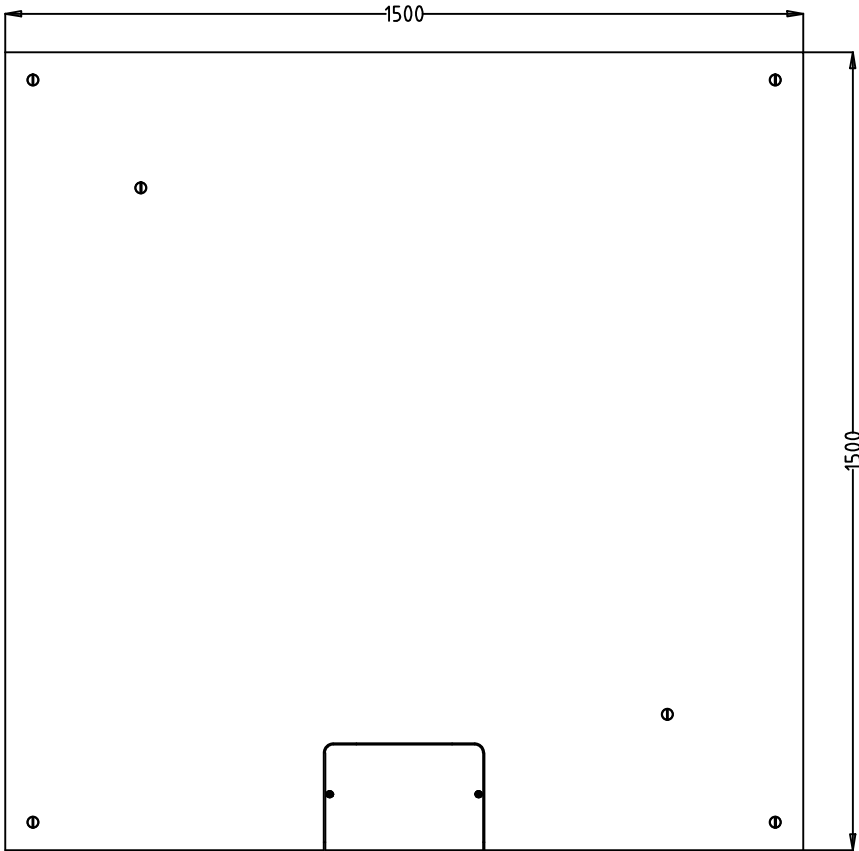


REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A0	Released	2024.03.25	Tim.Zhao



TOLERANCE UNLESS OTHERWISE SPECIFIED DEC ANGLES ±0.1 FOR 0.X ±0.05 FOR 0.XX		±0.5		<b>KERN® KERN &amp; SOHN GmbH</b>		
		3RD ANGLE PROJECTION		TITLE: KFP 3000V20LNM		
DRAWN	Y.J.Zhao	MODEL NO.	TFG-1515-3†		PART NO.	130900300083
CHECKED	Tim.Zhao					
APPROVED	Tim.Zhao	MATERIAL			FINISH	
UNIT	mm	SCALE			DO NOT SCALE DRAWING	SHEET OF

A4



REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A0	Released	2024.04.12	Tim.Zhao

<div>TOLERANCE UNLESS OTHERWISE SPECIFIED DEC ANGLES ±0.1 FOR 0.X ±0.05 FOR 0.XX</div>		±0.5		<div><b>KERN® KERN &amp; SOHN GmbH</b></div>		
		3RD ANGLE PROJECTION		TITLE: KFP 6000V20M		
DRAWN		Y.J.Zhao				
CHECKED		Tim.Zhao		MODEL NO.	TF-1515-6T-KERN	PART NO. 130900100642
APPROVED		Tim.Zhao		MATERIAL		FINISH
UNIT		mm		SCALE	DO NOT SCALE DRAWING	
						SHEET OF