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Installation Instructions Platform

KERN KFP V40

Type TKFP-V40-A
Version 1.0
2023-09
GB

GB

KERN KFP V40

Platform

Version 1.0 2023-09

Installation Instructions

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1 General hints

These installation instructions contain all data necessary for placing and commissioning the following platforms:

KERN TKFP 6V40M-A

KERN TKFP 15V40M-A, TKFP 15V40LM-A

KERN TKFP 30V40M-A, TKFP 30V40LM-A

KERN TKFP 60V40M-A, TKFP 60V40LM-A

KERN TKFP 150V40M-A, TKFP 150V40LM-A

KERN TKFP 300V40M-A

2 Technical data

Item no./ Type	Weighing range Max kg	Readability d g	Verification value e g	Minimum load Min g	Cable length approx. m	Transport Securing
TKFP 6V40M-A	6	0,5	1; 2	20; 40	3,0	yes
TKFP 15V40M-A	15	1	2; 5	40; 100	3,0	yes
TKFP 15V40LM-A	15	1	2; 5	40; 100	3,0	yes
TKFP 30V40M-A	30	2	5; 10	100; 200	3,0	yes
TKFP 30V40LM-A	30	2	5; 10	100; 200	3,0	yes
TKFP 60V40M-A	60	5	10; 20	200; 400	3,0	no
TKFP 60V40LM-A	60	5	10; 20	200; 400	3,0	no
TKFP 150V40M-A	150	10	20; 50	400; 1000	3,0	no
TKFP 150V40LM-A	150	10	20; 50	400; 1000	3,0	no
TKFP 300V40M-A	300	20	50; 100	1000; 2000	3,0	no

2.1 Technical data of the weighing cell

Sensitivity	2 mV/V
Input resistance (all TKFP models*)	350 Ω ± 3,5 Ω
Output resistance (all TKFP models)	350 Ω ± 3,5 Ω
Power supply (all TKFP models*)	5 – 12 V DC
Accuracy class	C

3 Basic Information (General)

3.1 Documentation

These installation instructions contain all data necessary for placing and commissioning the platform KERN TKFP V40-A.
In combination with a display unit, described below as weighing system, for operation configuration, please refer to the operating instructions of the display unit.

3.2 Proper use

The platform purchased by you is intended to define the weighing value of weighed goods. It is intended to be used as a “non-automatic balance”, i.e. the material to be weighed is manually and carefully placed in the centre of the weighing pan. As soon as a stable weighing value is reached, the weighing value can be read.

3.3 Improper Use

- Our balances are non-automatic balances, not provided for the use in dynamic weighing processes. However, the balances can also be used for dynamic weighing processes after verifying their individual operative range, and here especially the accuracy requirements of the application.
- Do not leave permanent load on the weighing pan. This can damage the measuring mechanism.
- Impacts and overloading exceeding the stated maximum load (max) of the weighing system, minus a possibly existing tare load, must be strictly avoided. The weighing system could be damaged.
- Never operate the weighing system in explosive environment. The serial version is not explosion protected.
- Changes to the weighing system's design are not permitted. This may lead to incorrect weighing results, safety-related faults and destruction of the balance.
- The weighing system unit may only be operated in accordance with the described default settings. Other areas of use must be released by KERN in writing.

3.4 Warranty

Warranty claims shall be voided in case:

- Our conditions in the operation manual are ignored
- The appliance is used beyond the described intended use
- Structural changes of the device
- Mechanical damage and damage caused by media, liquids
- Natural wear and tear
- The appliance is improperly set up or incorrectly electrically connected
- Overload of the measuring system

3.5 Monitoring of Test Resources

In the framework of quality assurance the measuring-related properties of the weighing system and, if applicable, the testing weight, must be checked regularly. The responsible user must define a suitable interval as well as type and scope of this test.

Information is available on KERN's home page (www.kern-sohn.com with regard to the monitoring of weighing system test substances and the test weights required for this. In KERN's accredited DKD calibration laboratory test weights and weighing systems may be calibrated (return to the national standard) fast and at moderate cost.

4 Basic Safety Precautions

4.1 Pay attention to the instructions in the Operation Manual



Carefully read this operation manual before setup and commissioning, even if you are already familiar with KERN balances.

4.2 Personnel training

The appliance may only be operated and maintained by trained staff.
The installation and maintenance must only be carried out by a well acquainted specialist with the workings of weighing balances.

5 Transport and storage

5.1 Testing upon acceptance

When receiving the appliance, please check packaging immediately, and the appliance itself when unpacking for possible visible damage.

5.2 Packaging / return transport



- ⇨ Keep all parts of the original packaging for a possibly required return.
- ⇨ Only use original packaging for returning.
- ⇨ Prior to dispatch disconnect all cables and remove loose/mobile parts.
- ⇨ Reattach possibly supplied transport securing devices.
- ⇨ Secure all parts against shifting and damage.

6 Unpacking, Installation and Commissioning

6.1 Installation Site, Location of Use

The platforms are designed in a way that reliable weighing results are achieved in common conditions of use.
You will work accurately and fast if you select the right location for your weighing system.
On the installation site observe the following:

- Place the weighing system on a firm, level surface. The floor must be able to carry safely the weight of the maximally loaded platform at the resting points. At the same time it should be sufficiently stable, that no vibrations may occur during weighing work. This is to be considered too when the platform is installed in conveyor systems and similar.
- In the installation site possibly no vibrations, e.g. by neighbouring machines should occur.
- Do not use the weighing system in an explosive environment.
- Avoid extreme heat as well as temperature fluctuation e.g. caused by installing next to a radiator or in the direct sunlight.
- Protect the weighing system against direct draughts e.g. due to open windows and doors.
- Use weighing system only in dry environment, protect it against high humidity, vapours and dust.
- The platform must have been stabilized to room temperature, before power supply is switched on.
- Do not expose the appliance to heavy moisture over a longer time period. Non-permitted condensation (condensation of air humidity on the appliance) may occur if a cold appliance is taken to a considerably warmer environment. In this case, acclimatize the disconnected appliance for ca. 2 hours at room temperature.
- Avoid jarring during weighing.
- Avoid static charge of weighed goods and weighing container.
- Keep away chemicals (such as liquids or gasses), which could attack and damage the balance inside or from outside.
- Keep IP protection of the device.
- If electromagnetic fields (e.g. by mobile phones or radio equipment), static charges (e.g. when weighing or countings plastic parts), as well as instable current supply occur, the displayed indications may differ considerably (wrong weighing results, damage to the balance). Change location or remove source of interference.

6.2 Unpacking, Scope of delivery

Remove the underconstruction and the weighing plate from the package, remove packaging material and place the devices at the planned workplace. Check if all parts of the scope of delivery are present and free of damage.

Scope of delivery:

- Underconstruction (lacquered steel)
- Weighing pan (stainless steel)
- Transport securing (depending on model, see chap. 2)
- Installation Instructions

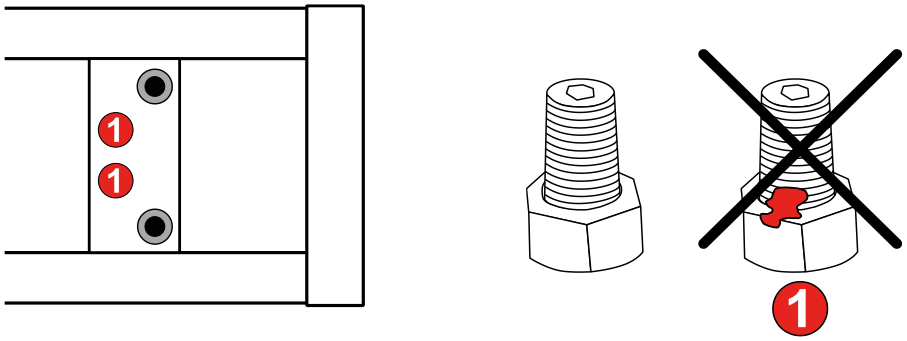
6.3 Placing

1. Remove transport securing (see chap. 6.3.1).
2. Put the weighing plate on the underconstruction.

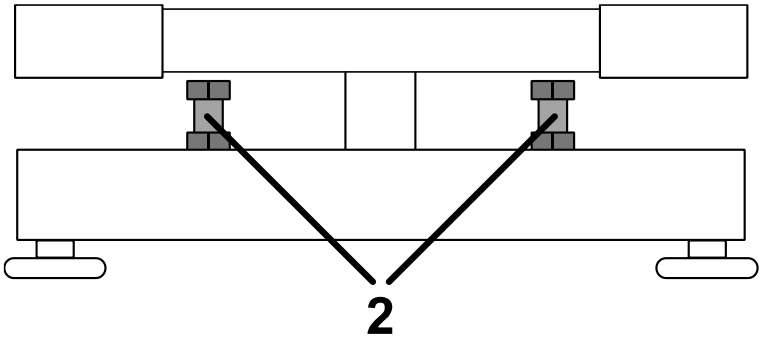
6.3.1 Transport Securing

General hints for transport securing

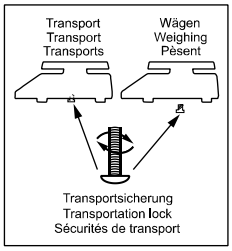
- Please consult the Technical Data whether your balance is equipped with a transport securing, chap. 2.
- There are different types of transport securings in KERN balances. Please see the indications explained in this chapter.
- Never remove other screws than these for the transport securing as otherwise the balance could be damaged.
- The sealed screws **(1)** must not be unscrewed. The sealed screws can be recognized by the sealing varnish (different colours).



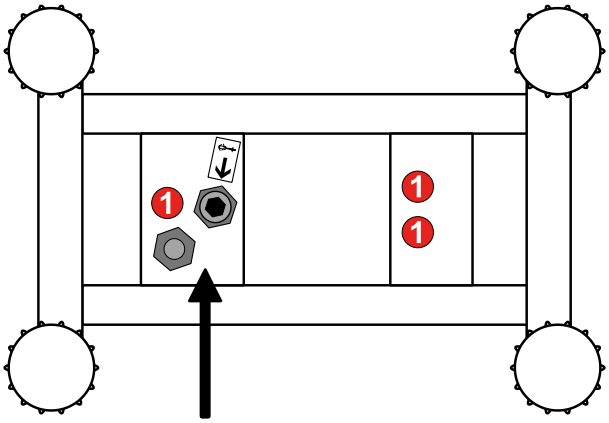
- Do not remove the off-centre load attachments **(2)** as otherwise the balance could be damaged. The off-centre load attachments are located between the upper and the lower part of the platform. They consist of a screw and a nut.



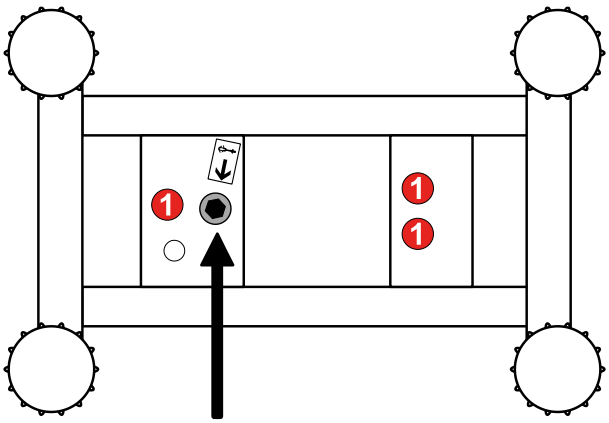
Variant 1:

Note on transport securing	
Type of transport securing	• 1 x hexagon screw on the upper side with nut • 1 x threaded pin with inner hexagon on the lower side with nut

1. Remove the weighing plate.
2. Turn the scale over so that the bottom is facing you.
3. The position of the transport securings is marked by an arrow.
4. Remove the nuts of the transport securings on the lower side.

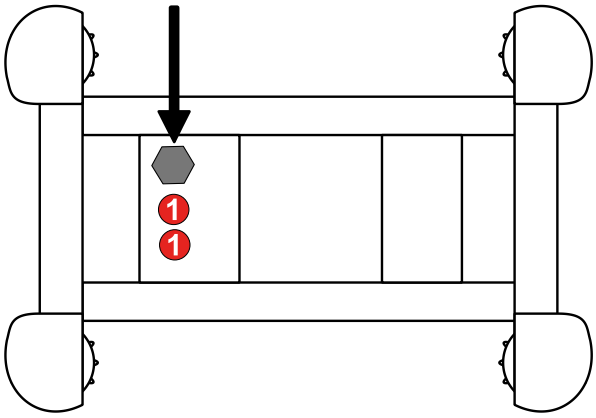


5. Remove the threaded pin on the lower side.

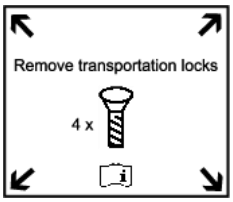


6. Turn the balance over so that the top is facing you.

7. Remove the hexagon screw on the upper side.

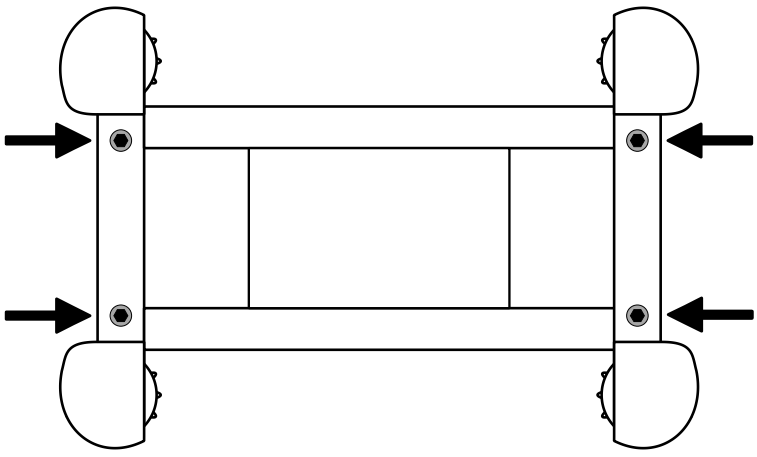


Variant 2:

Note on transport securing	
Type of transport securing	• 4 x cylinder head screw with inner hexagon on the upper side

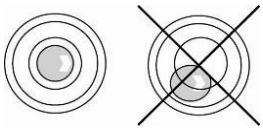
1. Remove the weighing plate.

2. Remove the transport securings.



6.4 Levelling

Accurate weighing results require a platform with perfect horizontal alignment. During initial installation and after each change of work area it is necessary to level the platform.



⇨ As the air bubble is located under the weighing plate, remove it.

⇨ Align the platform with the adjustment feet until the air bubble of the water balance is in the prescribed circle.

6.5 Connecting a display unit



Before any installation work, disconnect the appliance from the operating voltage.

Put the connecting cable to the display unit in a manner that it is protected against damage.

Connect the platform to the display unit according to the following table.

Output load cell	**Connection of platform KERN KFP**
EXC+ (5V)	see labelling of load cell
EXC- (0)	
SIG-	
SIG+	
SEN+	
SEN-	

7 Operation

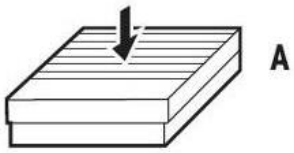
Information about

- **Mains connection**
  (power is supplied via the connecting cable of the display unit)
- **Initial Commissioning**
- **Connection of peripheral appliances**
- **Adjustment, linearization and verification**
  (only the complete balance is verifiable, i.e. platform in conjunction with a suitable display unit)

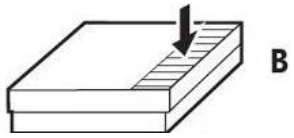
and the correct operation you will find in the operating instructions included in the scope of delivery of the display unit.

8 Operation limits

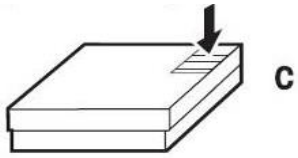
The platform is designed so robust that a casual excess of the maximum weighing load will not cause any damage.
The static carrying capacity, i.e. the maximum admitted load depends on the type of load carrier (Position A – C). The maximum static carrying capacity must not be exceeded.



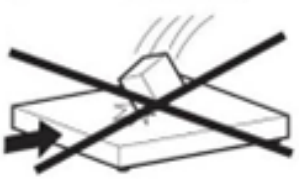
A = with centrical load



B = with side load



C = with one-side load



Avoid falling load, shock loads and impacts from the side!

Observe the following operation limits:

Item no./ Type	A	B	C
TKFP 6V40M-A	9 kg	6 kg	3 kg
TKFP 15V40M-A	22 kg	15 kg	7 kg
TKFP 15V40LM-A	22 kg	15 kg	7 kg
TKFP 30V40M-A	45 kg	30 kg	15 kg
TKFP 30V40LM-A	45 kg	30 kg	15 kg
TKFP 60V40M-A	90 kg	60 kg	30 kg
TKFP 60V40LM-A	90 kg	60 kg	30 kg
TKFP 150V40M-A	225 kg	150 kg	75 kg
TKFP 150V40LM-A	225 kg	150 kg	75 kg
TKFP 300V40M-A	450 kg	300 kg	150 kg

9 Servicing, maintenance, disposal



Before any maintenance, cleaning and repair work disconnect the appliance from the operating voltage.

9.1 Cleaning

⇨ Clean the platform with a soft cloth soaked with a mild cleaning agent.

⇨ Remove the weighing plate and wipe-off the dirt and the foreign bodies under it. Do not use hard or sharp objects for this.

⇨ Remove regularly corrosive substances.

⇨ Keep IP protection.

9.2 Servicing, maintenance

⇨ The appliance may only be opened by trained service technicians who are authorized by KERN.

⇨ Ensure that the weighing system is regularly calibrated, see chap. 3.5 Testing instruments monitoring.

9.3 Disposal

⇨ Disposal of packaging and appliance must be carried out by operator according to valid national or regional law of the location where the appliance is used.

10 Instant help for troubleshooting

In case of an error in the program process, briefly turn off the balance and disconnect from power supply. The weighing process must then be restarted from the beginning.

Help:

Fault	Possible cause
The displayed weight is permanently changing	• Draught/air movement • Floor vibrations • The platform has contact with foreign objects. • Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)
The weighing result is obviously wrong	• No zero display with unloaded balance • Adjustment is no longer correct. • Great fluctuations in temperature. • Platform on an uneven surface. • Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)

Should other error messages occur, switch balance off and then on again. If the error message remains inform manufacturer.

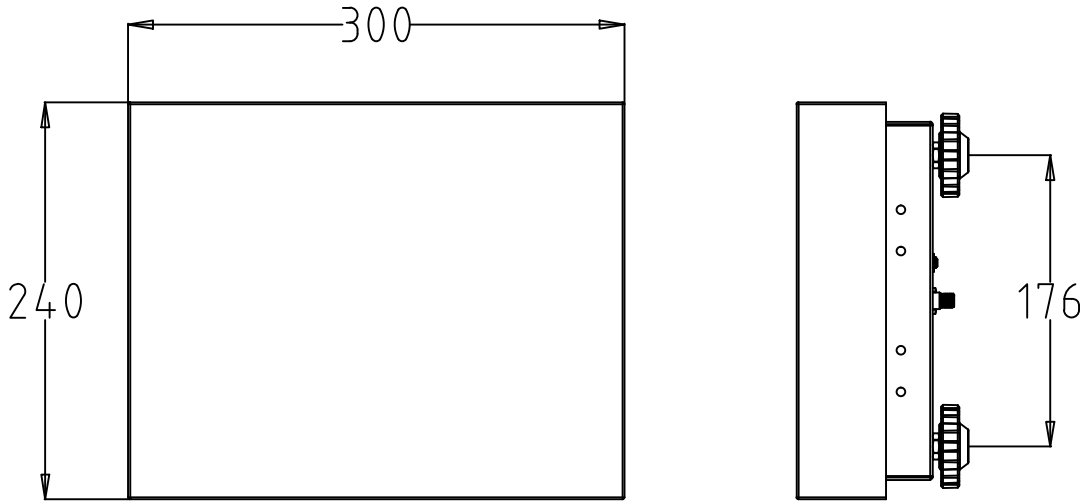
11 Preload, Deadload and Overload settings

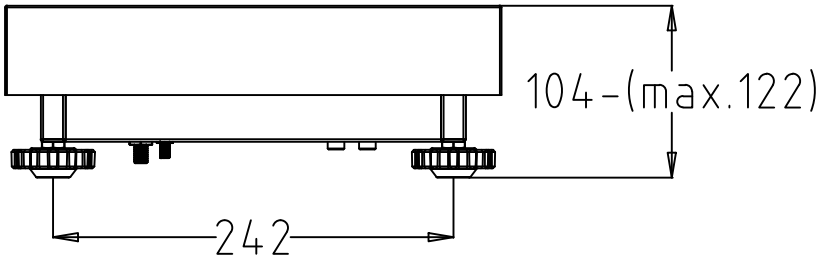
Item no./ Type	**Deadload** (kg)** **= already applied preload	**Centric overload protection (kg)**	**Off-centre overload protection (kg)**	**Minimum capactiy of the load cell E_{min} (kg)**	**Maximum capacity of the load cell E_{max} (kg)**
TKFP 6V40M-A	2,5	-	7,2	0	10
TKFP 15V40M-A	2,5	-	18	0	20
TKFP 15V40LM-A	3,3	-	18	0	20
TKFP 30V40M-A	3,3	-	36	0	50
TKFP 30V40LM-A	6,3	-	36	0	50
TKFP 60V40M-A	4,7	-	72	0	100
TKFP 60V40LM-A	5	-	72	0	100
TKFP 150V40M-A	5	-	180	0	200
TKFP 150V40LM-A	10	-	180	0	200
TKFP 300V40M-A	10	-	360	0	500

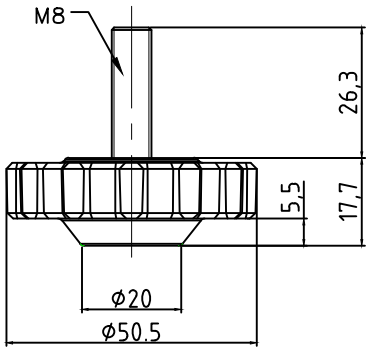
Item no./ Type	Dimensions of the platform (mm)	Load cell type	Test certificte no.	Accuracy class	Ratio of min. load cell verification interval	Maximum admitted number of interval sizes	Allowable temperature range		Ratio of min. dead load output return	Error percentage
					Y	n_{LC}/n_{max}	T_{min}	T_{max}	Z	PLC
							(°C)	(°C)		
TKFP 6V40M-A	300 x 240 x 104	BM6G 10KG	D09-10.06 rev. 1	C	10000	3000	-10	40	6000	0,7
TKFP 15V40M-A	300 x 240 x 104	BM6G 20KG	D09-10.06 rev. 1	C	10000	3000	-10	40	6000	0,7
TKFP 15V40LM-A	400 x 300 x 107	BM6G 20KG	D09-10.06 rev. 1	C	10000	3000	-10	40	6000	0,7
TKFP 30V40M-A	400 x 300 x 107	BM6G 50KG	D09-10.06 rev. 1	C	10000	3000	-10	40	6000	0,7
TKFP 30V40LM-A	500 x 400 x 117	BM6G 50KG	D09-10.06 rev. 1	C	10000	3000	-10	40	6000	0,7
TKFP 60V40M-A	400 x 300 x 120	BM6G 100KG	D09-10.06 rev. 1	C	10000	3000	-10	40	6000	0,7
TKFP 60V40LM-A	500 x 400 x 124	BM6G 100KG	D09-10.06 rev. 1	C	10000	3000	-10	40	6000	0,7
TKFP 150V40M-A	500 x 400 x 124	BM6G 200KG	D09-10.06 rev. 1	C	10000	3000	-10	40	6000	0,7
TKFP 150V40LM-A	650 x 500 x 136	BM6G 200KG	D09-10.06 rev. 1	C	10000	3000	-10	40	6000	0,7
TKFP 300V40M-A	650 x 500 x 136	BM6G 500KG	D09-10.06 rev. 1	C	10000	3000	-10	40	6000	0,7

12 Enclosure

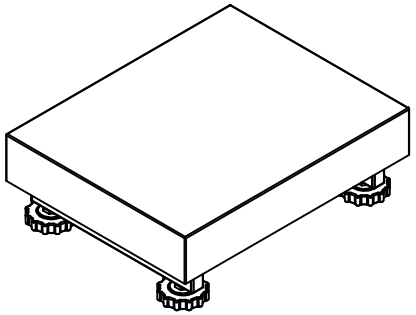
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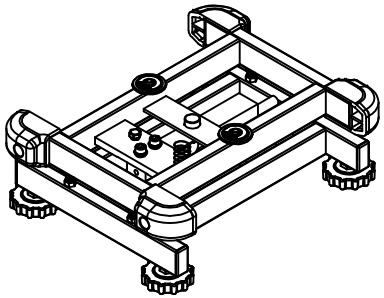


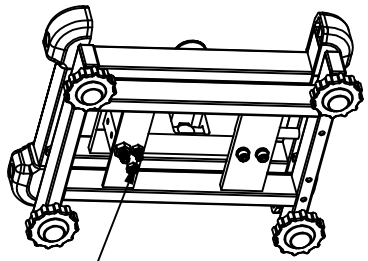




REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A0	Released	2023.9.19	Tim.Zhao

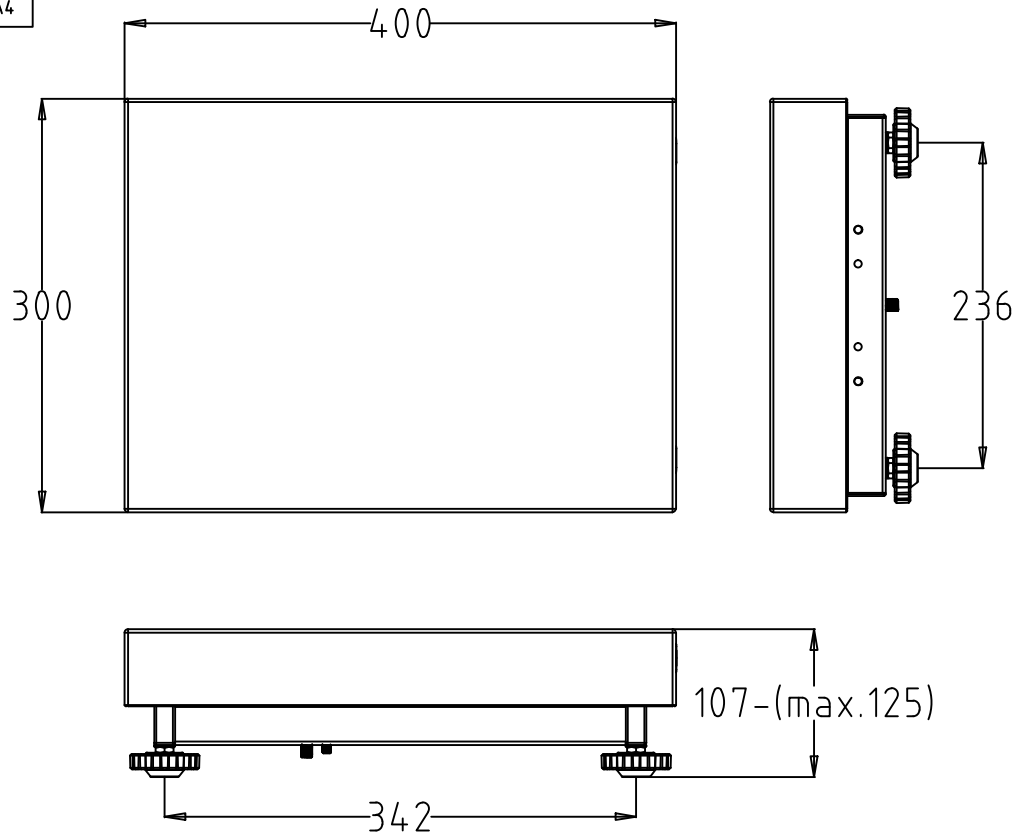




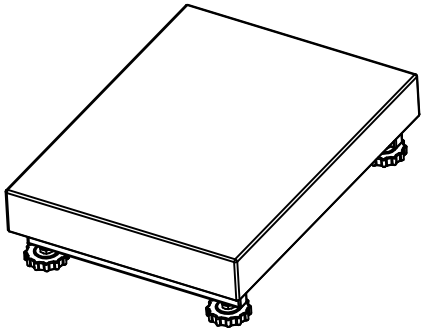


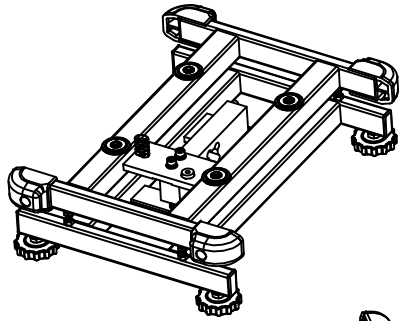
TOLERANCE UNLESS OTHERVISE SPECIFIED DEC ANGLES ±0.1 FOR 0.X ±0.5 ±0.05 FOR 0.XX		KERN KERN & SOHN GmbH				
3RD ANGLE PROJECTION		TITLE:	TKFP 15V30M-A with feet TKFP 30V30SM-A with feet TKFP 6V40M-A with feet TKFP 15V40M-A with feet			
DRAWN	YJ.Zhao					
CHECKED	Tim.Zhao	MODEL NO.	SPB3024-15K-B6N-KERN SPB3024-30K-B6N-KERN SPB3024-6K-BM6G-KERN SPB3024-15K-BM6G-KERN	PART NO.	130805200010 130805200035 130805200059 130805200060	
APPROVED	Tim.Zhao	MATERIAL		FINISH		
UNIT	mm	SCALE		DO NOT SCALE DRAWING		SHEET OF

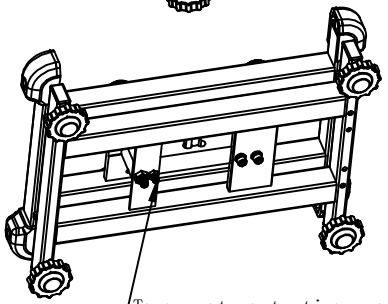
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REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A0	Released	2023.9.19	Tim.Zhao



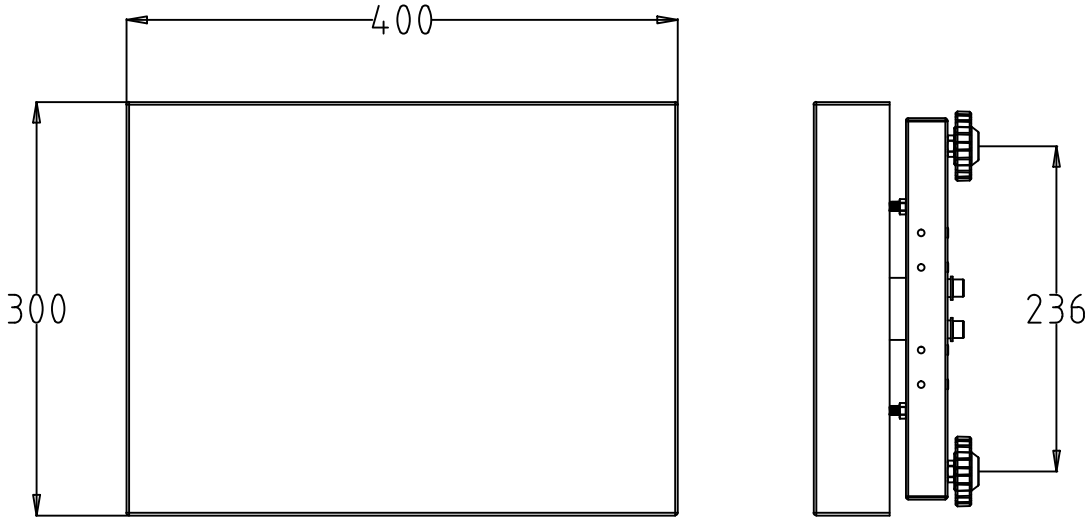


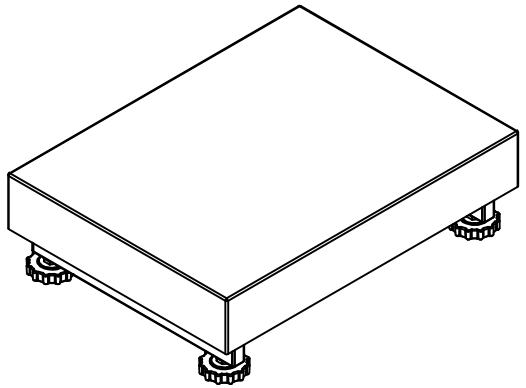


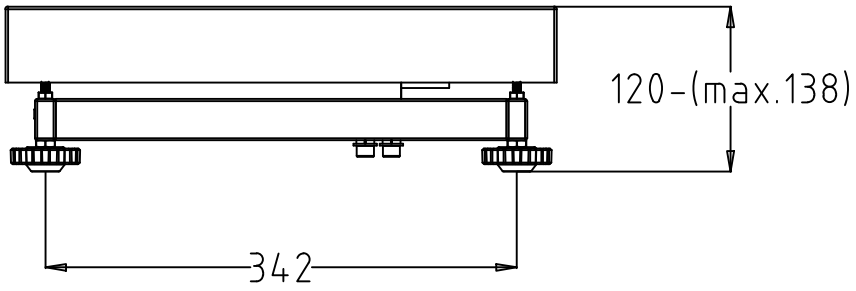
TOLERANCE UNLESS OTHERVISE SPECIFIED DEC ANGLES ±0.1 FOR 0.X ±0.05 FOR 0.XX ±0.5		KERN® KERN & SOHN GmbH			
3RD ANGLE PROJECTION		TITLE:	TKFP 30V30M-A with feet TKFP 15V40LM-A with feet TKFP 30V40M-A with feet		
DRAWN	YJ.Zhao				
CHECKED	Tim.Zhao	MODEL NO.	SPB4030-30K-KERN SPB4030-15K-BM6G-KERN SPB4030-30K-BM6G-KERN	PART NO.	130805300009 130805300012 130805300013
APPROVED	Tim.Zhao	MATERIAL		FINISH	
UNIT	mm	SCALE		DO NOT SCALE DRAWING	SHEET OF

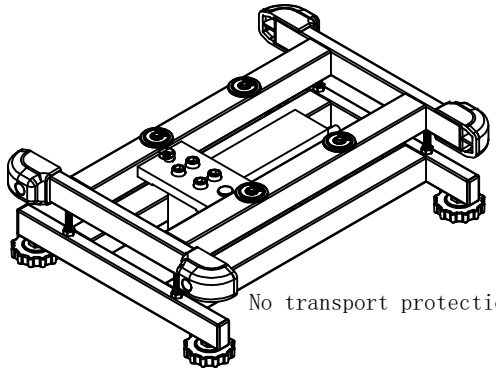
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REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A0	Released	2023.9.19	Tim.Zhao

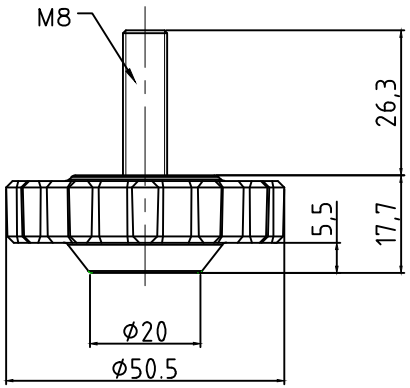






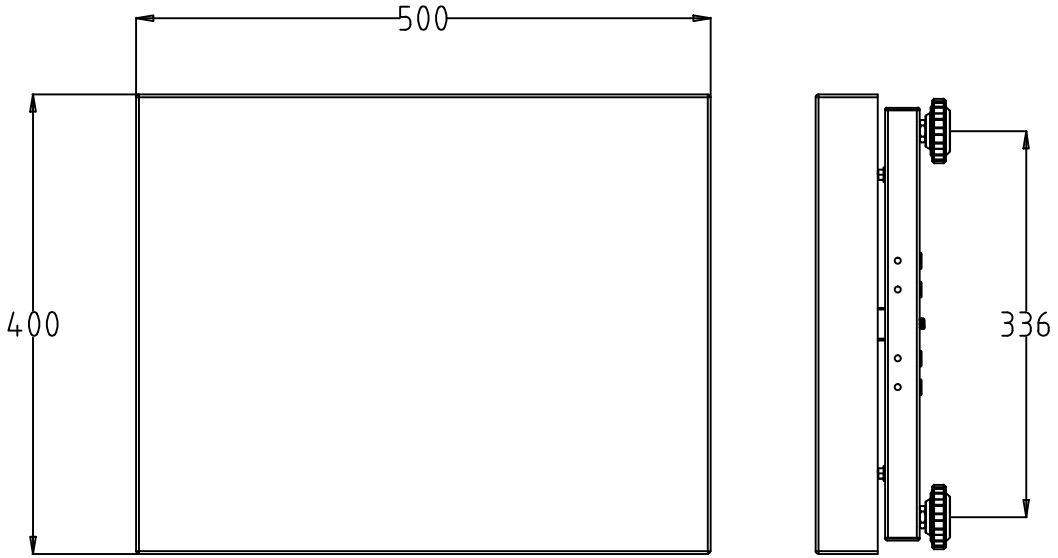


No transport protection screws

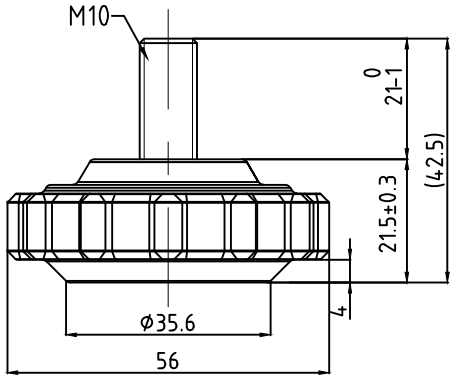


TOLERANCE UNLESS OTHERVISE SPECIFIED DEC ANGLES ±0.1 FOR 0.X ±0.05 FOR 0.XX	±0.5	KERN® KERN & SOHN GmbH			
3RD ANGLE PROJECTION		TITLE:	TKFP 60V40M-A with feet		
DRAWN	YJ.Zhao				
CHECKED	Tim.Zhao	MODEL NO.	SPB4030-60K-BM6G-KERN	PART NO.	130805300014
APPROVED	Tim.Zhao	MATERIAL		FINISH	
UNIT	mm	SCALE		DO NOT SCALE DRAWING	SHEET OF

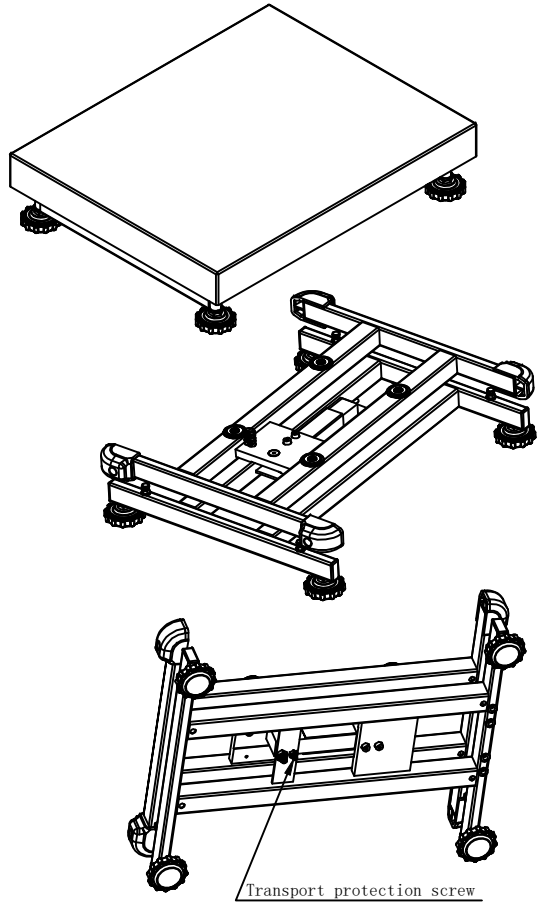
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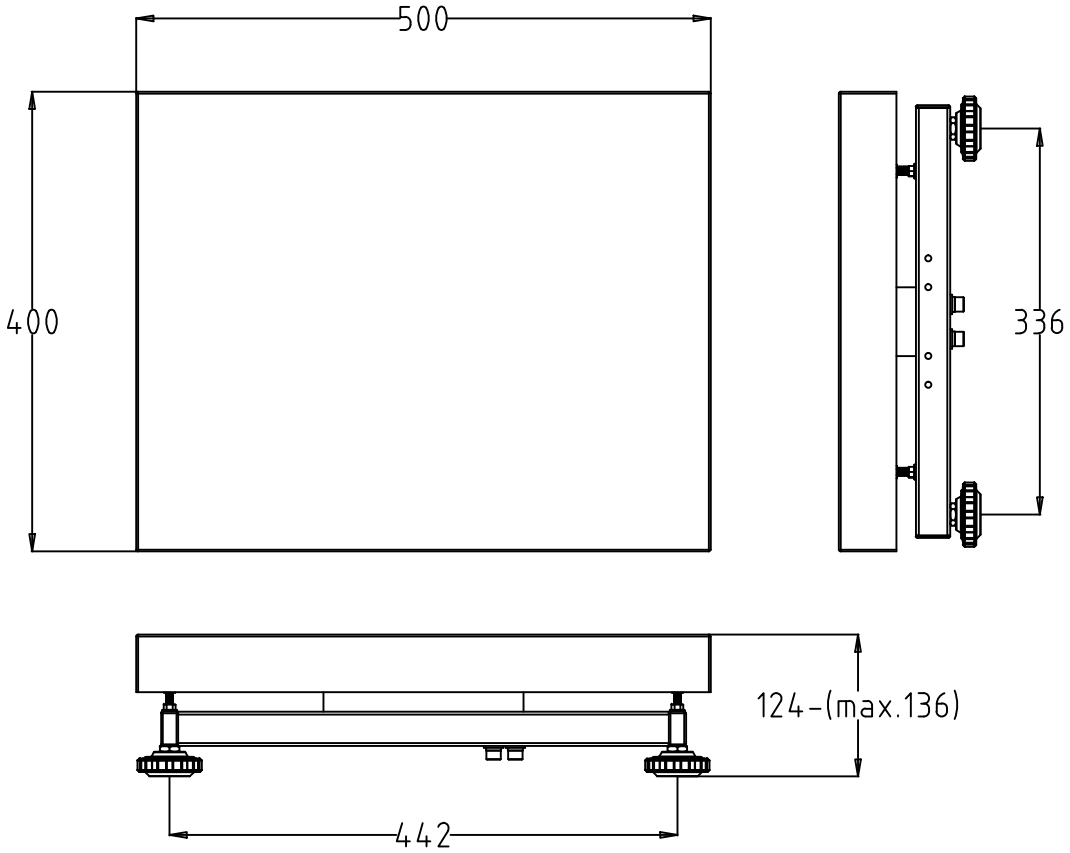
REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A0	Released	2023.9.19	Tim.Zhao

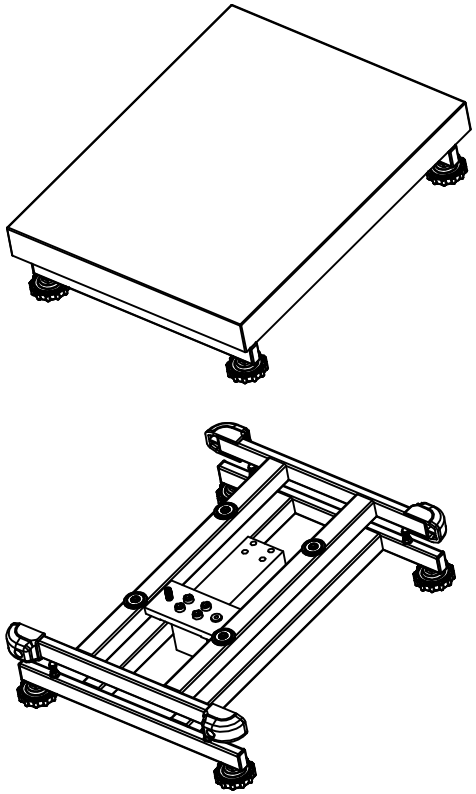


TOLERANCE UNLESS OTHERVISE SPECIFIED DEC ANGLES ±0.1 FOR 0.X ±0.5 ±0.05 FOR 0.XX		KERN KERN & SOHN GmbH			
3RD ANGLE PROJECTION		TITLE:	TKFP 30V40LM-A with feet		
DRAWN	YJ.Zhao				
CHECKED	Tim.Zhao	MODEL NO.	SPB5040-30K-BM6G(SE) -KERN	PART NO.	130805800023
APPROVED	Tim.Zhao	MATERIAL		FINISH	
UNIT	mm	SCALE		DO NOT SCALE DRAWING	SHEET OF

A4

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A0	Released	2023.9.19	Tim.Zhao

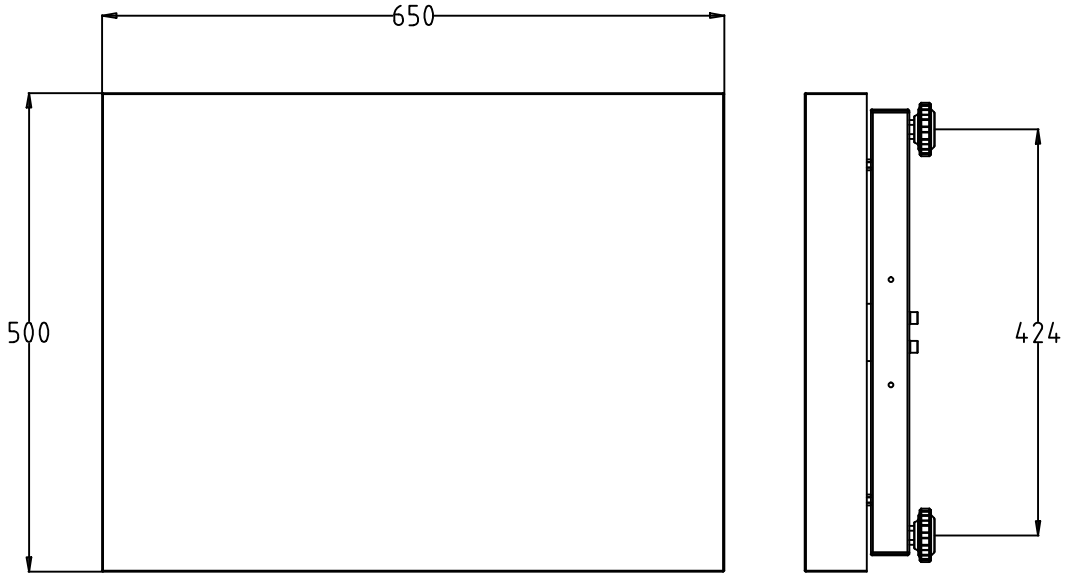


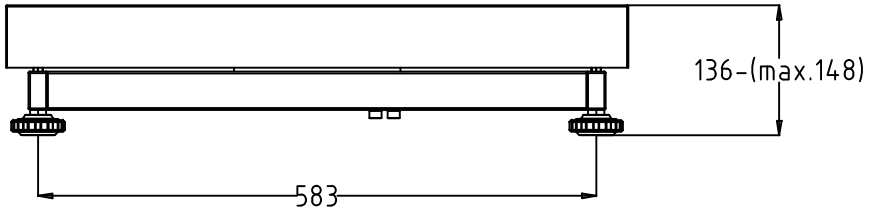


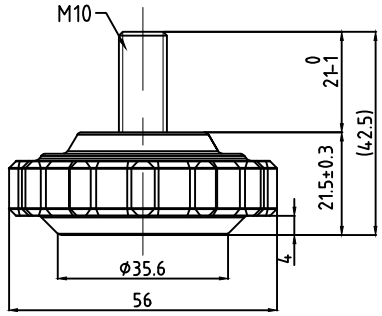
No transport protection screws

TOLERANCE UNLESS OTHERVISE SPECIFIED DEC ANGLES ±0.1 FOR 0.X ±0.5 ±0.05 FOR 0.XX		KERN KERN & SOHN GmbH			
3RD ANGLE PROJECTION		TITLE:	TKFP 60V40LM-A with feet TKFP 150V40M-A with feet		
DRAWN	YJ.Zhao				
CHECKED	Tim.Zhao	MODEL NO.	SPB5040-60K-BM6G-KERN SPB5040-150K-BM6G-KERN	PART NO.	130805800024 130805800025
APPROVED	Tim.Zhao	MATERIAL		FINISH	
UNIT	mm	SCALE		DO NOT SCALE DRAWING	SHEET OF

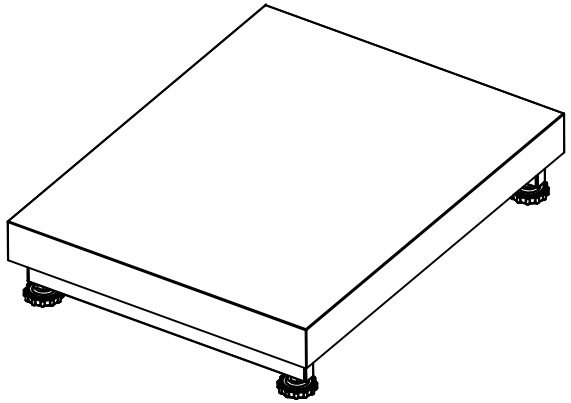
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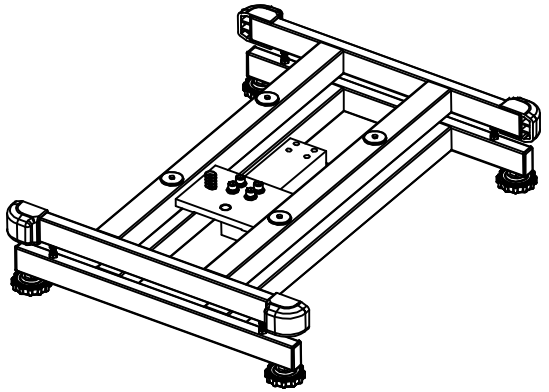






REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A0	Released	2023.9.19	Tim.Zhao





No transport protection screws

TOLERANCE UNLESS OTHERVISE SPECIFIED DEC ANGLES ±0.1 FOR 0.X ±0.5 ±0.05 FOR 0.XX		KERN KERN & SOHN GmbH			
3RD ANGLE PROJECTION		TITLE:	TKFP 60V30XLM-A with feet TKFP 150V30LM-A with feet TKFP 300V30M-A with feet TKFP 150V40LM-A with feet TKFP 300V40M-A with feet		
DRAWN	YJ.Zhao				
CHECKED	Tim.Zhao	MODEL NO.	SPB6550-60K-KERN SPB6550-150K-KERN SPB6550-300K-KERN SPB6550-150K-RMSG-KERN SPB6550-300K-RMSG-KERN	PART NO.	13005900006 13005900004 13005900005 13005900007 13005900008
APPROVED	Tim.Zhao	MATERIAL		FINISH	
UNIT	mm	SCALE		DO NOT SCALE DRAWING	SHEET OF