



**KERN & Sohn GmbH**

Zieg elei 1

D-72322 Balingen-Frommern

E-Mail: [info@kern-sohn.com](mailto:info@kern-sohn.com)

Tel: 0049-[0]7433- 9933-0

Fax: 0049-[0]7433-9933-149

Internet: [www.kern-sohn.com](http://www.kern-sohn.com)



**Additional operations/installation instructions  
for electronic floor scales**

Page 2

These instructions complete the operation  
instructions of the ITB / ITT / ITT-Platform scales  
Or the instruction manual of the KME-TM indicator

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# KERN

TP 600 M	BTBP 600K200 M	BTBP 1.5T0.5M	BTBP 3T1M
TP 1500 M	BTSP 600K200 M	BTSP 1.5T0.5M	BTSP 3T1M
TP 600 SM	BTTP 600K200 M	BTTP 1.5T0.5M	BTTP 3T1M
TP 1500 SM	BTEP 600K200 SM	BTEP 1.5T0.5SM	BTEP 3T1M
TP 3000 M	BTBP 600K200 SM	BTBP 1.5T0.5SM	BTBP 3T1LM
TP 3000 LM	BTSP 600K200 SM	BTSP 1.5T0.5SM	BTSP 3T1LM
	BTTP 600K200 SM	BTTP 1.5T0.5SM	BTTP 3T1LM
	BTEP 600K200 SM	BTEP 1.5T0.5SM	BTEP 3T1LM

Version 2.0 02/2007

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ME-Nr. 22017701



# KERN

## TP 600/TP 1500/TP 3000

Version 2.0 02/2007

### Manuel d'instructions / d'installation Balance électronique au sol

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## General

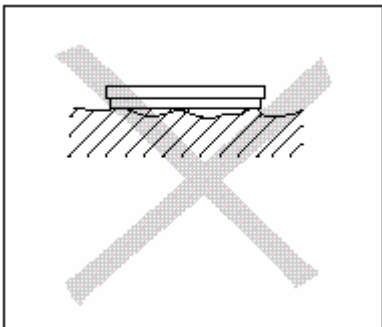
- These installation instructions cover all information required for the installation and start-up of the following weighbridges:

<b>TP 600 M</b>	<b>BTBP 600K200 M</b>	<b>BTBP 1.5T0.5M</b>	<b>BTBP 3T1M</b>
<b>TP 1500 M</b>	<b>BTSP 600K200 M</b>	<b>BTSP 1.5T0.5M</b>	<b>BTSP 3T1M</b>
<b>TP 600 SM</b>	<b>BTTP 600K200 M</b>	<b>BTTP 1.5T0.5M</b>	<b>BTTP 3T1M</b>
<b>TP 1500 SM</b>	<b>BTEP 600K200 SM</b>	<b>BTEP 1.5T0.5SM</b>	<b>BTEP 3T1M</b>
<b>TP 3000 M</b>	<b>BTBP 600K200 SM</b>	<b>BTBP 1.5T0.5SM</b>	<b>BTBP 3T1LM</b>
<b>TP 3000 LM</b>	<b>BTSP 600K200 SM</b>	<b>BTSP 1.5T0.5SM</b>	<b>BTSP 3T1LM</b>
	<b>BTTP 600K200 SM</b>	<b>BTTP 1.5T0.5SM</b>	<b>BTTP 3T1LM</b>
	<b>BTEP 600K200 SM</b>	<b>BTEP 1.5T0.5SM</b>	<b>BTEP 3T1LM</b>

- Information on handling the weighing ranges is contained in Chapter 6.
- Information on maintenance, troubleshooting and repair is contained in Chapter 7.

## 1 Installation

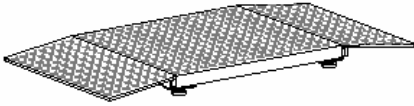
### 1.1 Choosing a location for the scale



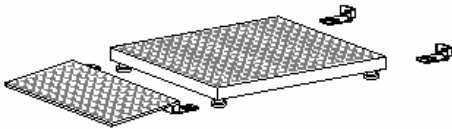
- Do not use in areas with explosive materials or in areas with some risk of explosion due to gases, vapours or dust!
- Use the weighbridge only in a dry environment.
- The foundation on which the scale is placed must be capable of safely supporting the maximum weight to which the weighbridge is exposed at the support points. It must also be stable enough to prevent disturbances during the weighing operations.
- No vibrations should be caused by adjacent equipment.

## 2 Siting

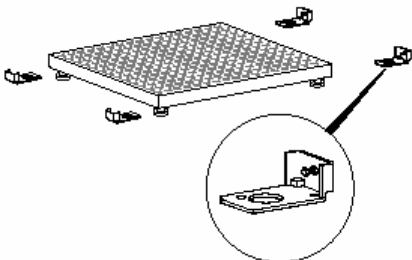
### 2.1 Siting of the weighbridge



or



or



1. The following accessories are required to mount the weighbridges (depending on model):  
two (2) loading ramps  
**or**  
(1) loading ramp and one (1) locator plate set with stop  
**or**  
two (2) locator plate sets with stops.
2. The two loading ramps and/or locator plates must be placed in front and in back of the weighbridge on the floor.
3. Lift the weighbridge and position it with the adjustable feet inserted into the notches in the ramps or locator plates provided for this purpose.
4. Pay special attention to the flatness and horizontal position of the locator plates and ramps at the site, particularly in the area of the adjustable feet. Small differences in height may be offset with the adjustable feet.
5. Adjust the orientation of the ramps and the locator plates.
6. Mark the layout of the ramps or locator plates; the ramps or locator plates must be secured to the floor with the anchor plugs (included in the supply) in the holes.  
(locator plates: 2 anchor plugs, ramp: 2 anchor plugs).

**The weighing platform must be aligned with the use of a water balance.  
All foot screws must equally touch the floor.**

## 2.2 Terminal connection

- Run the connection cable to the terminal.

### Note!

When running the connection cable to the terminal, make sure that is well protected from any possible damage.

- Connect the terminal.

## 2.3 Description of the terminal cables

Lead	Colour	Status
EXC+ [IN+]	Grey	Voltage +
SEN	Yellow	Control line +
SIG+ [OUT+]	White	Signal +
SIGØ [OUT-]	Brown	Signal -
SENØ	Green	Control line -
EXCØ [IN- ]	Blue	Voltage -

### 3 Configuration of the scale

The scale is factory shipped with the following set-up:

- Verifiable
- SingleRange 1 x 3000 e

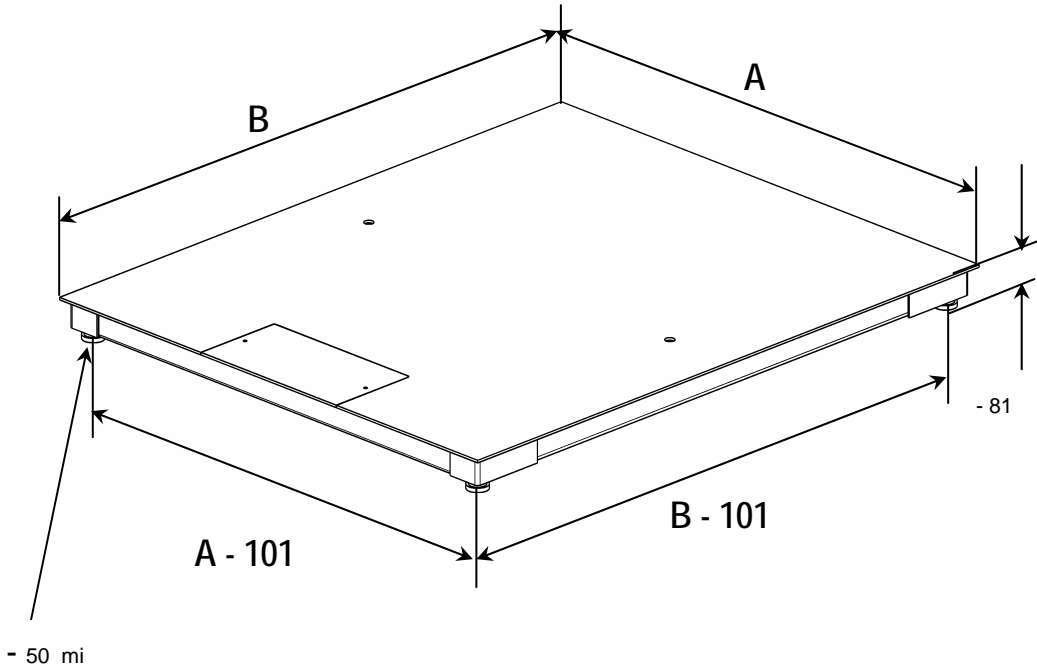
<b>TP 600 M</b>	<b>BTBP 600K200 M</b>	<b>BTBP 1.5T0.5M</b>	<b>BTBP 3T1M</b>
<b>TP 1500 M</b>	<b>BTSP 600K200 M</b>	<b>BTSP 1.5T0.5M</b>	<b>BTSP 3T1M</b>
<b>TP 600 SM</b>	<b>BTTP 600K200 M</b>	<b>BTTP 1.5T0.5M</b>	<b>BTTP 3T1M</b>
<b>TP 1500 SM</b>	<b>BTEP 600K200 SM</b>	<b>BTEP 1.5T0.5SM</b>	<b>BTEP 3T1M</b>
<b>TP 3000 M</b>	<b>BTBP 600K200 SM</b>	<b>BTBP 1.5T0.5SM</b>	<b>BTBP 3T1LM</b>
<b>TP 3000 LM</b>	<b>BTSP 600K200 SM</b>	<b>BTSP 1.5T0.5SM</b>	<b>BTSP 3T1LM</b>
	<b>BTTP 600K200 SM</b>	<b>BTTP 1.5T0.5SM</b>	<b>BTTP 3T1LM</b>
	<b>BTEP 600K200 SM</b>	<b>BTEP 1.5T0.5SM</b>	<b>BTEP 3T1LM</b>

The following configurations can be adjusted, e.g., with the KME-TM, KMB, KMS or KMT terminal:

Model	Max. load	Read-out	
		Verifiable	Not verifiable
600kg-Version	600 kg	0,2 kg	0,2 / 0,1 / 0,05 kg
1500kg-Version	1500 kg	0,5 kg	0,5 / 0,2 / 0,1 kg
3000kg-Version	3000kg	1,0 kg	1,0 / 0,5 / 0,2 kg

# 4 Dimensions

## 4.1 Weighbridge



Dimensions	SM-Size	M-Size	LM Size
A	1000	1250	1500
B	1000	1500	1500

## 5 Start-up



- Before starting the scale, the weighbridge must be securely anchored to the floor using the anchor feet. This must be done to ensure the reproducibility of the measurements.

## 6 Operating limits

- The weighbridges have an extremely sturdy design. The load limits must not exceed the weights indicated in the following table!
- Depending on the way the load is absorbed, the static load capacity, i.e., the maximum allowable load is:

	<b>Weighing Range</b>	<b>600kg</b>	<b>1500kg</b>	<b>3000kg</b>
	• Load in the middle	3000kg	4500kg	4500kg
	• Load on one side	2000kg	3000kg	3000kg
	• Load on one corner	1000kg	1500kg	1500kg
	• Load on wheel	400kg	800kg	800kg
	• Avoid shocks, thrusts or impacts from the side!			

## Operation with loading ramps

- The loading platform of the weighbridge is the actual weighing component whereas the access ramps are passive parts, hence all wheels of the transport vehicles must remain on the loading platform during the weighing operation.
- The groove between the loading platform and the access ramps must be free. The groove must be checked and emptied regularly, particularly when weighing pellets or small parts.

## 7 Cleaning the weighbridge

The maintenance of the weighbridge consists simply of regular cleaning.

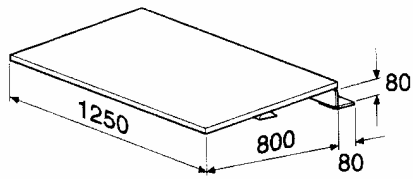


- External cleaning of the weighbridge, painted in a dry environment  
Wipe with a damp cloth, use household cleaning products.

### Cleaning product

- Use the cleaning product and disinfectant as indicated by the manufacturer thereof.

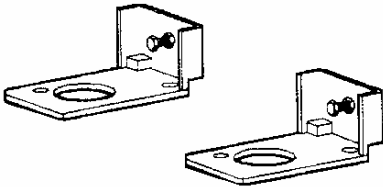
## 8 Accessories



### Ramp dimensions

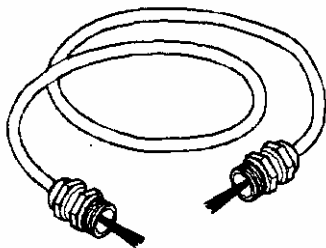
1500 x 750 x 81 (for weighbridge **M+ML**)

1000 x 750 x 81 (für Wägebrücke **SM**)



### Set of locator plates

with stop



### Connection cable

analog connection cable,

length of 10 m,

Cable ends manufactured on both ends for terminal installation with integrated A/D converter

## 9 Service documentation (summary)

### Notes:

This chapter is reserved for scale specialists only!

The weighbridges have been designed with DMS sensor technology and are equipped with a DMS weighing cell at each corner.

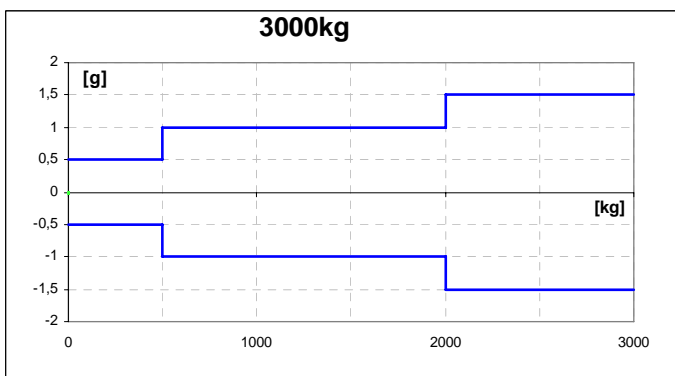
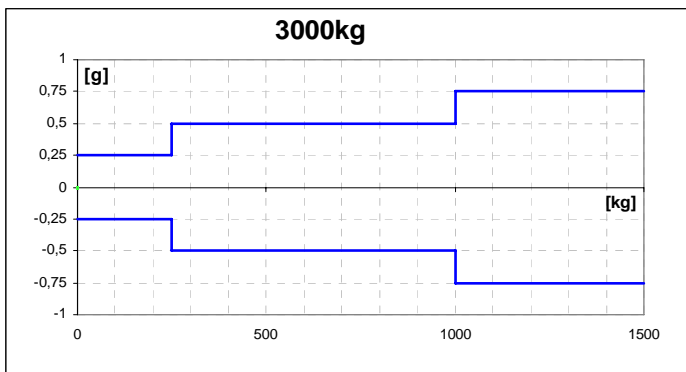
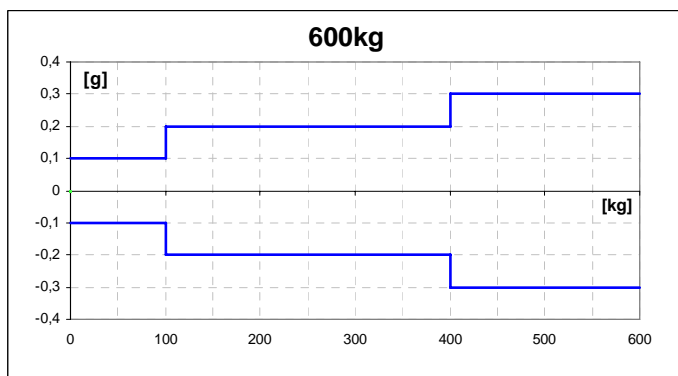
An analog-digital conversion is performed at the operator terminal. All scale and country specific data are also kept here.

## 9.1 Overview, adjustment regulations, tolerances

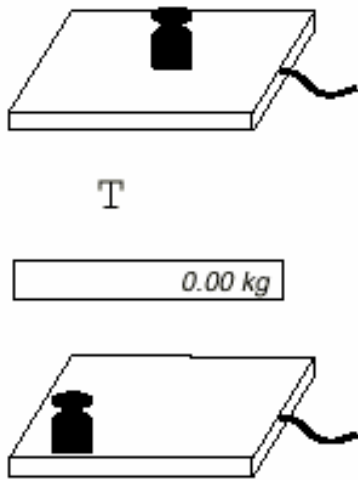
### Adjustment and verification regulations

Capacity	600 kg	1500 kg	3000 kg
Read-out	200 g	500 g	1000 g
Min	4 kg	10 kg	20 kg
Max	600 kg	1500 kg	3000 kg
1/3 load per corner	200 kg	500 kg	1000 kg
Tolerance	200 g	500 g	1000 g

### Adjustment data and tolerances as per OIML



## 9.2 Verification and adjustment of corner load



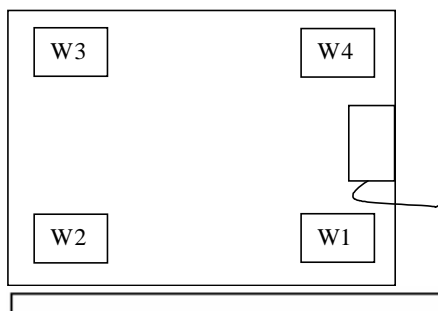
### 9.2.1 Verification and adjustment of corner load

- Position and tare the adjustment weights in the middle of the load plate as shown in Section 2.
- The scale will display -0-.
- Place the adjustment weights sequentially on the four corners.
- Any deviations are displayed, preceded by the sign. Note the values. If any deviations are out of tolerance as indicated in Section 2, the scale must be adjusted.

### 9.2.2 Adjustment of the corner load

#### Preparation

- For better control of the changes occurring during adjustment, take the highest possible reading in service mode.
- Access the junction box and actuate the adjustment potentiometer.



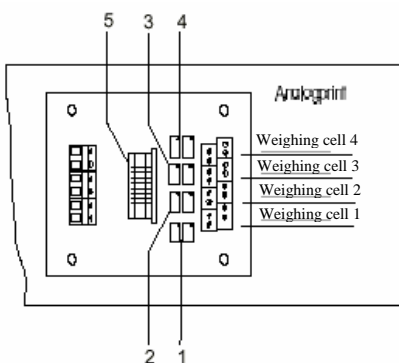
#### Adjustment gauge

- Set the corner (weighing cell) with the highest negative deviation (-) to zero. Do not vary this corner even after repeated adjustment processes.

#### Analogprint adjustment

Weighing cell 1 can be adjusted by using the first pair of potentiometers, and so on for 2, 3 and 4. To do so, open the switch (5) located in the Analogprint.

- For + deviations, turn to the right,  
For - deviations, turn to the left.  
Both potentiometers must have the same number of adjustment turns.






## 10 Declarations of conformity

**Declaration of conformity for apparatus with CE mark**  
**Konformitätserklärung für Geräte mit CE-Zeichen**  
**Déclaration de conformité pour appareils portant la marque CE**  
**Declaración de conformidad para aparatos con marca CE**

**Dichiarazione di conformità per apparecchi contrassegnati con la marcatura CE**



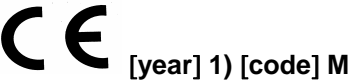
<b>English</b>	We hereby declare that the product to which this declaration refers conforms with the following standards.
<b>Deutsch</b>	Wir erklären hiermit, dass das Produkt, auf das sich diese Erklärung bezieht, mit den nachstehenden Normen übereinstimmt.
<b>Français</b>	Nous déclarons avec cela responsabilité que le produit, auquel se rapporte la présente déclaration, est conforme aux normes citées ci-après.
<b>Español</b>	Manifetamos en la presente que el producto al que se refiere esta declaración está de acuerdo con las normas siguientes
<b>Italiano</b>	Dichiariamo con ciò che il prodotto al quale la presente dichiarazione si riferisce è conforme alle norme di seguito citate.

**Scale Series:** BTBP/BTSP/BTTP/ITB/ITS/ITT  
**Plattform line:** TP  
**Terminal:** KMB-TM, KMS-TM, KMT-TM

Mark applied	EU Directive	Standards	Approval/ Test- certificate N°
	73/23/EEC 93/68/EEC Low Voltage	EN61010-1	
	89/336/EEC 93/68/EEC 92/31/EEC EMC	EN61326-1 EN61000-3-2 EN61000-6-1 0,5µV/e ( 3V/m) EN61000-6-2 1,3µV/e (10V/m)	
 [year] 1) [code] M	90/384/EEC 93/68/EEC Non automatic weighing Instruments 1), 2), 3)	EN45501 1), 2), 3)	T6189 1), 2) TC7089 1), 2)

- 1) applies only to certified balances  
gilt nur für geeichte Waagen  
valable uniquement pour les balances vérifiées  
sólo aplicable a balanzas verificadas  
la dichiarazione vale solo per le bilance omologate
- 2) valid only for KMB-TM/KMS-TM/KMT-TM terminals in connection with approved load cells  
nur gültig für KMB-TM/KMS-TM/KMT-TM Terminals in Verbindung mit zugelassenen Lastzellen  
valable uniquement pour les terminaux KMB-TM/KMS-TM/KMT-TM en liaison avec des cellules de charge homologuées  
sólo válido para terminales KMB-TM/KMS-TM/KMT-TM en combinación con células de carga aprobadas  
valido solo per terminali KMB-TM/KMS-TM/KMT-TM in collegamento con celle di carico approvate
- 3) valid only for TP weighing platforms in connection with an approved weighing indicator  
nur gültig für TP Wägebrücken in Verbindung mit einem zugelassenen Waagenterminal  
valable uniquement pour les plates-formes TP en liaison avec un terminal de pesée homologué  
sólo válido para plataformas de pesaje TP en combinación con un terminal de balanza aprobado  
valido solo per basamenti TP in collegamento con un terminale di pesata approvato

**Scale Series: BTEP**

Mark applied	EU Directive	Standards	Approval/ Test-certificate N°
	73/23/EEC 93/68/EEC Low Voltage	EN60950-1	
	89/336/EEC 93/68/EEC 92/31/EEC EMC	EN61326-1 Kl.B EN61000-3-2 EN61000-3-3	
	90/384/EEC 93/68/EEC Non automatic weighing instruments 1)	EN45501 1)	T7092 1) TC7091 1)

- 1) applies only to certified balances  
gilt nur für geeichte Waagen  
valable uniquement pour les balances vérifiées  
sólo aplicable a balanzas verificadas  
la dichiarazione vale solo per le bilance omologate

**Englisch**



Weighing instruments verified at the place of manufacture bear the preceding mark on the packing label and a green M-sticker on the descriptive plate. They may be set to work immediately.



Weighing instruments which are verified in two steps has no green "M" on the descriptive plate, bear the aforementioned identification on the packing label. The second step of the verification must be carried out by the W&M authorities.

The first step of the verification has been carried out in the manufacturing company. It comprises all tests according EN45501-8.2.2. In regards to scales with analog connection to the weighing-platform, a weighing test according to EN45501-3.5.3.3 must be carried out additionally. This test is not necessary if the terminal bears the serial-number of the weighing-platform.

**Deutsch**



Werksg geeichte Waagen tragen vorstehendes Kennzeichen auf dem Packetkett und eine grünen M-Kleber. auf dem Eichschild. Sie dürfen sofort in Betrieb genommen werden.



Waagen die in zwei Schritten geeicht werden und kein grünes "M" auf dem Eichschild haben, tragen vorstehendes Kennzeichen auf dem Packetkett. Der zweite Schritt der Eichung ist durch den Eichbeamten durchzuführen.

Der erste Schritt der Eichung wurde im Herstellerwerk durchgeführt. Er umfaßt alle Prüfungen gemäß EN45501-8.2.2. Bei Waagen mit analogen Wägebrückenanschluss muß zusätzlich die Richtigkeit gemäß EN45501-3.5.3.3 geprüft werden. Diese Prüfung ist nicht notwendig, wenn das Terminal die Serien-Nr. der Wägebrücke trägt.

**Français**



Les instruments de pesage vérifiés en usine sont identifiés par un M sur leur emballage et par un sticker M vert sur la plaque d'identification. Ils peuvent être utilisés après leur installation.



Les instruments de pesage vérifiés en deux étapes portent l'identification M barré sur leur emballage. La seconde étape de la vérification doit être effectuée par l'assistant technique de l'administration des poids et mesures.

La première étape de la vérification a été effectuée en usine. Cela comprend tous les essais suivant la norme EN45501-8.2.2. Pour les instruments de pesage avec une connexion analogique à la plate-forme de pesage, un essai de pesage suivant la norme EN45501-3.5.3.3 doit être effectué en plus. Cela n'est pas nécessaire si le terminal porte le numéro de la plate-forme de pesage.

## Español



Las básculas verificadas en origen llevan esta indicación en la etiqueta del embalaje y con la etiqueta M sobre fondo verde en la placa de características pueden ser utilizadas inmediatamente.



Básculas cuya verificación se realiza en dos fases llevan esta indicación en la etiqueta del embalaje. La segunda fase de la verificación debe ser realizada por el asistente técnico de la oficina de contraste.

La primera fase de la verificación ha sido realizada en origen. Incluye todos los ensayos según la norma EN45501-8.2.2. Para las básculas con plataforma de pesaje con salida analógica debe realizarse además el ensayo según EN45501-3.5.3.3. Este ensayo no es necesario si el terminal lleva el número de la plataforma de pesaje.

## Netherlands



In de fabriek geijkte weegschalen dragen dit kenteken op het emballage-etiket en een groene M-sticker op het ijklabel.

Deze kunnen meteen in gebruik genomen worden.



Bij weegschalen die in twee stappen geijkt moeten worden en geen groene "M" op het ijklabel hebben, staat dit kenteken op het emballage-etiket.

De tweede stap van de ijking moet door het ijkwezen uitgevoerd worden.

De eerste stap van de ijking werd in de fabriek uitgevoerd. Deze stap omvat alle tests overeenkomstig EN45501-8.2.2. Bij weegschalen met een analoge weegbruggenaansluiting moet aanvullend de nauwkeurigheid overeenkomstig EN45501-3.5.3.3 getest worden.

Deze controle is niet nodig als de terminal het serienummer van de weegbrug heeft.

**Date: 03.01.2007**

**Signature:**

**Gottl. KERN & Sohn GmbH  
Management**

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Gottl. KERN & Sohn GmbH, Ziegelei 1, D-72336 Balingen, Tel. +49-[0]7433/9933-0, Fax +49-[0]7433/9933-149

## Notice

Certified balances and balances used for legal applications have the EU type approval. The year of the initial verification is shown next to the CE mark. Such balances are verified in the factory and carry the „M“ mark on the actual balance and the packaging. The year of initial verification is shown next to the CE mark. The GEO value of verified balances explains for which location of use the balance has been verified. This GEO value is shown on the balance itself and on the packing. Further details see GEO value table.

## Hinweise

Für geeichte/eichpflichtige Waagen liegt eine EU Bauartzulassung vor. Das Jahr der ersten Eichung ist neben dem CE Zeichen aufgeführt. Solche Waagen sind ab Werk geeicht und tragen die Kennzeichnung „M“ auf dem Gerät selbst und auf der Verpackung. Der GEO-Wert gibt bei vom Hersteller geeichten Waagen an, für welchen Aufstellungsort die Waage geeicht ist. Dieser GEO-Wert befindet sich auf der Waage sowie der Verpackung. Genaueres ist der GEO-Wert-Tabelle zu entnehmen.

## Remarques

Les balances vérifiées/admissibles à la vérification font l'objet d'une approbation de modèle UE. L'année de la vérification primitive est indiqués à côté de la marque CE. Ces balances sont vérifiées d'origine et portent la marque „M“ sur l'appareil lui-même et sur l'emballage. Le valeur GEO indique le lieu d'utilisation pour lequel la balance été vérifiée. Ce valeur GEO se trouve sur la balance ainsi que sur l'emballage. Veuillez trouver plus de détails dans le tableau GEO.

## Notas

Las balanzas verificadas/verificables cuentan con una aprobación de modelo UE. El año de la primera verificación está indicado al lado del distintivo CE. Estas balanzas están verificadas en fábrica y llevan la designación „M“ sobre el propio aparato y sobre el embalaje. El valor GEO indica el lugar de ubicación por lo cual la balanza está verificado. El valor se encuentra sobre la balanza así como sobre el embalaje. Por favor toman demßas detalles de la tabla GEO.

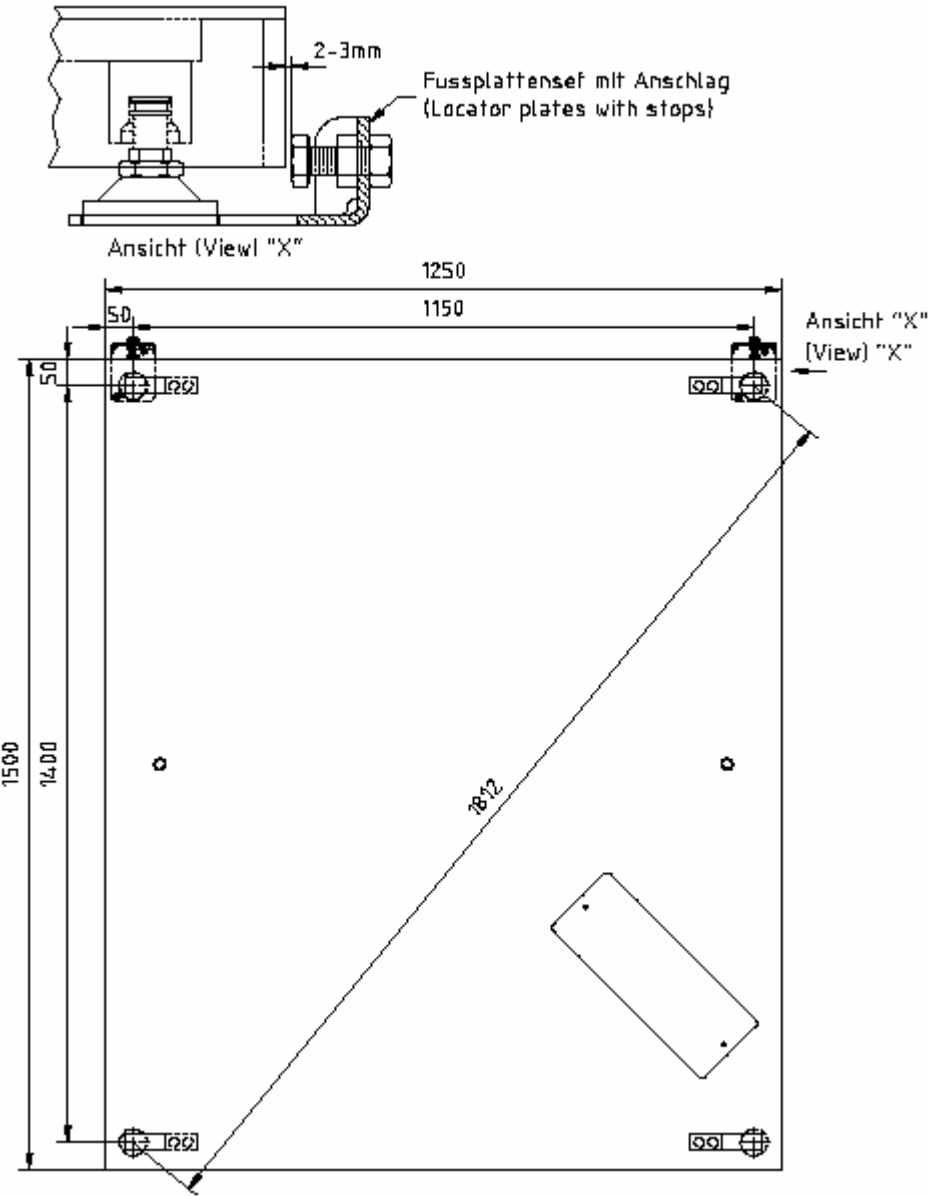
## Avvertenza

Per le bilance approvate esiste un'approvazione CE del tipo. L'anno della prima verifica è indicato a fianco della marcatura CE. I tipi marcati con un contrassegno „M“ su sfondo verde peino possono essere impiegati da subito. Il coefficiente GEO di bilance omologate indca per quale luogo la bilancia è stata omologata. Questo coefficiente GEO si trova sulla bilancia e sull'imballo. Ulteriiori informazioni vedi tabella coefficiente GEO.

## GEO-WERT-Tabelle / GEO-value table

geographische Breite /geo- graphical latitude				Höhe über Meer in Metern / altitude					
				0-650	650-1300	1300-1950	1950-2600	2600-3250	
0°	0'	-	9°	52'	4 / 5	3 / 4	2 / 3	1 / 2	0 / 1
9°	52'	-	15°	6'	5 / 6	4 / 5	3 / 4	2 / 3	1 / 2
15°	6'	-	19°	2'	6 / 7	5 / 6	4 / 5	3 / 4	2 / 3
19°	2'	-	22°	22'	7 / 8	6 / 7	5 / 6	4 / 5	3 / 4
22°	22'	-	25°	21'	8 / 9	7 / 8	6 / 7	5 / 6	4 / 5
25°	21'	-	28°	6'	9 / 10	8 / 9	7 / 8	6 / 7	5 / 6
28°	6'	-	30°	41'	10 / 11	9 / 10	8 / 9	7 / 8	6 / 7
30°	41'	-	33°	9'	11 / 12	10 / 11	9 / 10	8 / 9	7 / 8
33°	9'	-	35°	31'	12 / 13	11 / 12	10 / 11	9 / 10	8 / 9
35°	31'	-	37°	50'	13 / 14	12 / 13	11 / 12	10 / 11	9 / 10
37°	50'	-	40°	5'	14 / 15	13 / 14	12 / 13	11 / 12	10 / 11
40°	5'	-	42°	19'	15 / 16	14 / 15	13 / 14	12 / 13	11 / 12
42°	19'	-	44°	32'	16 / 17	15 / 16	14 / 15	13 / 14	12 / 13
44°	32'	-	46°	45'	17 / 18	16 / 17	15 / 16	14 / 15	13 / 14
46°	45'	-	48°	58'	18 / 19	17 / 18	16 / 17	15 / 16	14 / 15
48°	58'	-	51°	13'	19 / 20	18 / 19	17 / 18	16 / 17	15 / 16
51°	13'	-	53°	31'	20 / 21	19 / 20	18 / 19	17 / 18	16 / 17
53°	31'	-	55°	52'	21 / 22	20 / 21	19 / 20	18 / 19	17 / 18
55°	52'	-	58°	17'	22 / 23	21 / 22	20 / 21	19 / 20	18 / 19
58°	17'	-	60°	49'	23 / 24	22 / 23	21 / 22	20 / 21	19 / 20
60°	49'	-	63°	30'	24 / 25	23 / 24	22 / 23	21 / 22	20 / 21
63°	30'	-	66°	24'	25 / 26	24 / 25	23 / 24	22 / 23	21 / 22
66°	24'	-	69°	35'	26 / 27	25 / 26	24 / 25	23 / 24	22 / 23
69°	35'	-	73°	16'	27 / 28	26 / 27	25 / 26	24 / 25	23 / 24
73°	16'	-	77°	52'	28 / 29	27 / 28	26 / 27	25 / 26	24 / 25
77°	52'	-	85°	45'	29 / 30	28 / 29	27 / 28	26 / 27	25 / 26

# 11 Instructions for locator plates with stops



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