

KERN & Sohn GmbH

Ziegelei 1 D-72336 Balingen E-Mail: info@kern-sohn.com Tel: +49-[0]7433- 9933-0 Fax: +49-[0]7433-9933-149 Internet: www.kern-sohn.com

Service manual Precision balance

KERN PKP / PKS

Version 1.0 1/2012 GB



PKP_PKS-SH-e-1210



KERN PKP / PKS

Version 1.0 1/2012 Service Manual Precision balance

Table of Contents

1	Basic Information	3
2	Introduction	3
3	Menu-Map	4
4	Troubleshooting	5
5	Adjustment	6
6	Service Menu	7
	6.1 How to Enter the Service Menu	7
	6.2 Factory Reset	8
	6.3 Factory Adjustment	8
	6.4 Linearity Adjustment	10
	6.5 Geo Value	12
	6.6 Serial Number	13
	6.7 Clear Passwords	14
	6.8 Remark	14
7	Electronics	15

1 Basic Information

Grundlegende Hinweise

The device must be repaired only by trained specialist staff or personnel with professional formation (such as a repair-specialist accredited by law concerning verification).

The service manual is obligatory for repair work.

After repair, original conditions of the device have to be restored.

Only original spare parts should be used.

Das Gerät darf nur von geschultem oder beruflich ausgebildetem Fachpersonal (z. B. eichrechtlich anerkannter Instandsetzer) repariert werden.

Die Serviceanleitung ist bindend für Reparaturen.

Das Gerät muss nach erfolgter Reparatur wieder in den Originalzustand zurückversetzt werden.

Es dürfen nur Originalersatzteile verwendet werden.

2 Introduction

This service manual covers the PKP and PKS series and is edited for the authorized servicing personnel.

Note all rights are reserved. Copying any part of this manual is prohibited without our permission.



3 Menu-Map

PKP_PKS-SH-e-1210

4 Troubleshooting

Interruption	Possible cause
	 Overload: The scale is overloaded Underload: Weighing range has been fallen short of Mechanical defect
or — — — 92,6 g (unstable negative value)	 Low voltage: Check power supply The batteries are empty and should be replaced
Weight display is not illuminated	 The balance is not switched on The mains supply connection has been interrupted (mains cable not plugged in/faulty) Power supply interrupted
The weight display changes continually	 Draught/air movement Table/floor vibrations The weighing plate is in contact with foreign matter Electromagnetic fields / static charging (choose different location/switch off interfering device if possible)
The weighing result is obviously incorrect	 The balance display is not set to zero Adjustment is no longer correct Great fluctuations in temperature 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.

5 Adjustment

The balance must be adjusted at its place of installation before initial use and at regular intervals.

A warm-up time of about 4 hours is recommended for stabilisation.

To receive accurate measuring values it is also recommended to carry out adjustment as near as possible to the balance's maximum weight.

- 1. Turn ON the balance.
- 2. Press the [**MENU**] key. Confirm [**Adjust**] by pressing the [**OK**] key to start the adjustment procedure
- 3. The display appears:



4. Press the [STRT] key. After a short time the display appears:



- 5. Now set one of the required adjusting weights in the centre of the weighing plate.
- 6. After a short time balance will return into weighing mode automatically.
- 7. Remove adjusting weight.

6 Service Menu

6.1 How to Enter the Service Menu

- 1. Turn ON the balance.
- 2. Press the [MENU] key.
- 3. Press the [] key, then select [**Service**] and confirm with the [**OK**] key.
- 4. The display appears:

PKS	Please enter Password
	1234587890

5. Enter the password [**101**] and finally confirm with the [**OK**] key.



6.2 Factory Reset

Reset the application settings to factory settings, e.g. language, basic settings etc., by pressing the [**OK**] key to confirm [**Factory reset**].

reset	or-9	Fact	lory ist
Linea	ar),	Tem adji	ist)

6.3 Factory Adjustment

1. Select [Factory adjust] and confirm with the [OK] key.



 With empty weighing pan select [Zero adjust] and confirm with the [OK] key. After a short time balance will return into weighing mode automatically. Please wait until the display appears the stability mark .

PKS			(R.Weight adjust		
			EIIII		
		Θ			כ

3. Now enter the Service Menu and select [Factory adjust] again, place the maximum weight on the weighing pan and after that select [R. Weight adjust] and confirm with the [OK] key.



- 4. Balance measuring for approx. 1 minute.
- 5. After that the display appears the stability mark \frown .
- 6. Remove the weight.

6.4 Linearity Adjustment

- 1. Turn ON the balance. After warming-up time and adjustment, check balance readings in all measuring points. In case of differences make a note.
- 2. Enter the Service Menu, select [Linear] and confirm with the [OK] key.
- 3. The display appears the first linearity point, e.g.

	r.Þ	nt:	Corr	ect.
We	igh 200	t.,0)	Devi	.at. 0.0
			enna	

Select [Deviat.] and confirm with the [OK] key.

4. Enter the difference in digit, e.g. minus 5 digit and confirm with the [BACK] key.



5. The display appears

PKS		
	Con.Pnt:	Correct.
	Weight 2000.0	Deviat. -0.5
		etwe lok

To select another linearity point, which is outside the permissible tolerances, select [**Cor.pnt:**], press the [**OK**] key and inscribe the deviation like described above.

6. To store the new deviation of the correction points press the [SAVE] key.

			111	1
Cor.	ant:	Cori	~ect.	
Weigh 200	nt 30,0)	Dev	iat. -0,5	
		Billia		

The balance will return into weighing mode automatically.

Information:

If there is a <u>positive difference</u> (e.g. 2000.6g = + 6 digit) you should <u>subtract this difference</u> to the stored value (e.g. [2000.0g -6d]).

If there is a <u>negative difference</u> (e.g. 1999.4g = -6 digit) you should <u>add this difference</u> to the stored value (e.g. [2000.0g +6d]).

6.5 Geo Value

As the acceleration value due to gravity is not the same at every location on earth, each balance must be coordinated - in compliance with the underlying physical weighing principle - to the existing acceleration due to gravity at its place of location (only if the balance has not already been adjusted to the location in the factory).

To receive accurate measuring values it is recommended to adjust the balance with external weights according to chapter 5 "Adjustment".

In this category you can set the value of gravitational acceleration without external weights and thus adapt the scale to local gravitational conditions.

Please only change this setting if you are certain of the correct gravitational acceleration!





6.6 Serial Number

In this category you can view or change the balance serial number.

The number was assigned to it in the factory and should never be altered.

It is only necessary to change this number after replacing the main board. The serial number is given on the balance model label.

PKS				4
	Geo Value	Û	erial Imber	
	Creep		lartu °eep	P
		iii si	ua no	

			<u>iezkich</u>	
	28	3 4 5	8 2 0	
K.	<u>sta</u>	i atema		
C	ו	Ca		

6.7 Clear Passwords

In this category you can clear all passwords (device code and configuration code).

1. Select [Clear Password] and press the [OK] key.



2. To clear all passwords press the [SAVE] key.



The balance will return into weighing mode automatically.

6.8 Remark

Please notice the categories [**Temp. adjust**], [**Creep**] and [**Startup creep**] were configured and used only in our production line.

Therefore it is not recommended to use them!

7 Electronics

