Instruction Manual Model DRX-4

Fulcrum Inc.
100 Delawanna Ave. Suite 120
Clifton, NJ 07014
Tel. (973)473-6900
Fax. (973)777-8302
www.fulcruminc.net
www.torbalscales.com

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Important handling Cautions and Warnings

Always handle your scale with care.
Damage caused by improper handling is not covered under the scale's warranty.

Never drop or throw any articles onto the scale's pan or onto any other parts of the unit!

DO NOT let the scale fall or drop from its tabletop surface!

When moving the scale do not press or apply force onto the scales pan!

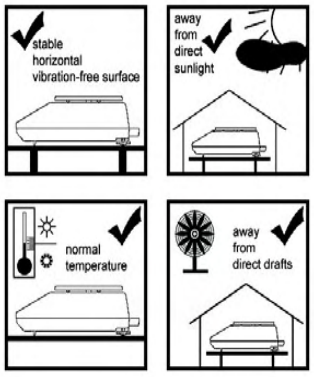
DO NOT pass or handle liquids directly over the scale to avoid spillage and liquid damage!

CAUTIONARY NOTES AND PRECAUTIONS

The TORBAL Precision scale is a sensitive and a delicate instrument. Always handle your scale with care.

The correct location and proper environment affect the accuracy of your TORBAL Precision Scale.

The best location for your scale:



1. Stable, horizontal, vibration-free surface
2. Away from direct sunlight
3. Not exposed to high temperature variations
4. Away from direct drafts
5. The best location is on a stable bench away from drafts, doors, windows, radiators and air conditioner vents.

CAUTION:

- The scale is designed for indoor use only.
- Do not operate the scale in hazardous areas or under dangerous conditions.
- Do not use the scale in locations subject to high humidity or dust levels.
- Do not connect cables in ways other than those mentioned in this manual.
- Set the scale on a firm, stable, horizontal surface.
- Never stand on or lean on this product. Equipment may fall or collapse, causing breakage and possible injury.
- Before moving the product, unplug it and unplug all cables connected to it.
- When storing, transporting or returning the scale for service, use the original packaging.

WARNING:

a. Never attempt to repair, disassemble or modify the scale. Tampering with the scale may result in injury and cause greater damage to the equipment.
b. Never swap the pan, pan base, or any other parts of the scale with pans or parts from other units. Pans and all components are uniquely assigned to each unit.
c. Be sure to use the specified power source.
d. Do not allow foreign matter to fall into the scale.
e. If water or other liquids spill into the scale, unplug the power cord immediately and contact technical support

TORBAL Precision scale is a sensitive and a delicate instrument. Always handle your scale with care.

CHAPTER 1

Specifications:

Model	DRX-4
Capacity (Max)	100g
Minimum load (Min)	0.02g
Reading unit (d)	0.001g
Verification unit (e)	0.01g
Tare range	100g
Accuracy class	II
Temperature range	+15C to +30C
Weighing time	<3s
Pan Dimensions	116mm
Scale Dimensions	235 x 245 x 80mm
Power Supply	Input: 120VDC 60Hz 9.5W Output: 12VDC 500mA
Scale's Net Weight (lb/kg)	8.2 / 3.7
Calibrating weight	100g
Software Version	NA025
Certificate of conformance	NTEP Approved Certificate Number: 04-061
Application	"For prescription weighing only"
Type Evaluation Criteria	NIST Handbook 44, NCWM Publication 14

CHAPTER 2

Parts Description:

Front View

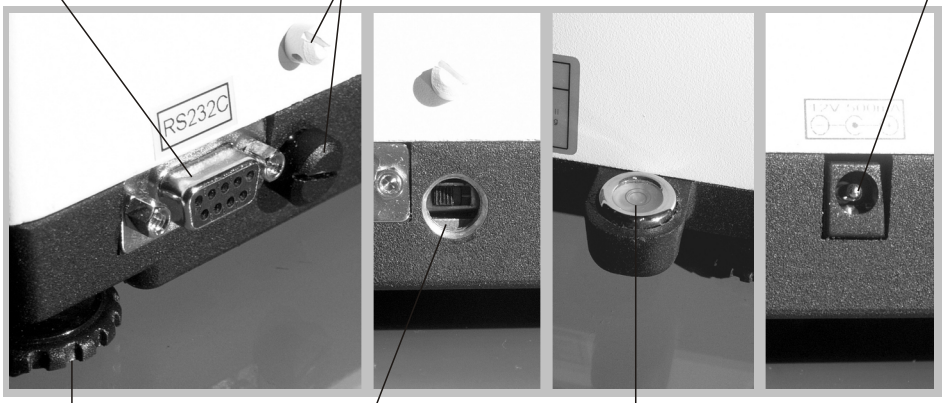
Rear View

Pan Base

Pan

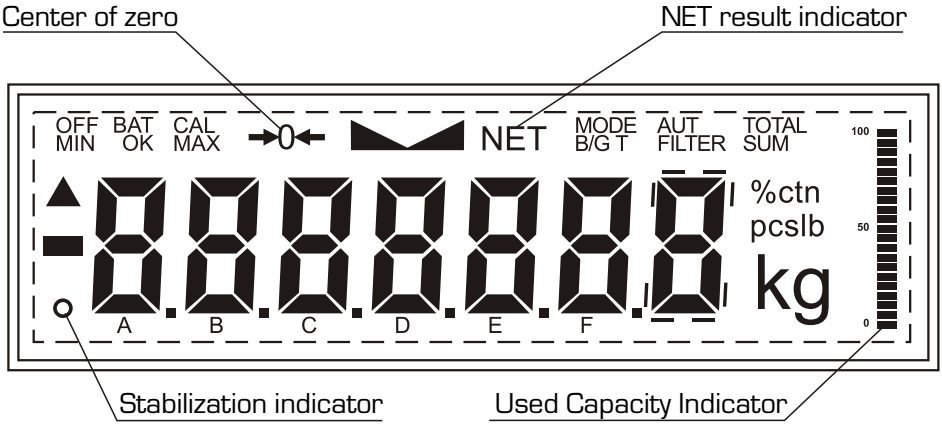
AC Adaptor

Flush Sealing Screw



CHAPTER 3

Keys and display indicators



Tare button - used to tare the weighing pan and enter or accept commands.

F — Function button - used to enable and disable the printing capability.

⏻ — Power On/Off button.- when turned "Off" the scale enters Standby Mode. * *

o — Scale stabilization indicator - signals the weighing result has stabilized and an accurate reading may be taken.

AUT — AZSM - indicates the Auto Zeroing Setting Mechanism (AZSM) is active. AZSM maintains a center of zero condition within +/- .6d or 6mg

- - - - - - - Dotted line on the display indicates the "T" or "O" buttons have been pressed and the scale is taring or re-zeroing.

g — Weighing unit (grams).

P — Print button, used to print or send data to a PC.

→0← — Zero button, used to re-zero the scale.

NOTE:

* * In order for the scale to enter and remain in the Standby Mode, the power supply must be plugged into the scale.

CHAPTER 4

Commands

PRINT When pressing the "P" button, "PRINT" indicates data is printing via the serial port.

CAL Indicates the rear calibration switch has been toggled to the ON position and the scale is in the Calibration Mode. *

TARING Indicates the scale is taring for the calibration procedure to begin. *

LOAD 100g Indicates to load the calibration weight of 100 grams on the pan to begin calibration. *

C The scale is calibrating. *

CAL FIN Calibration procedure is finished. *

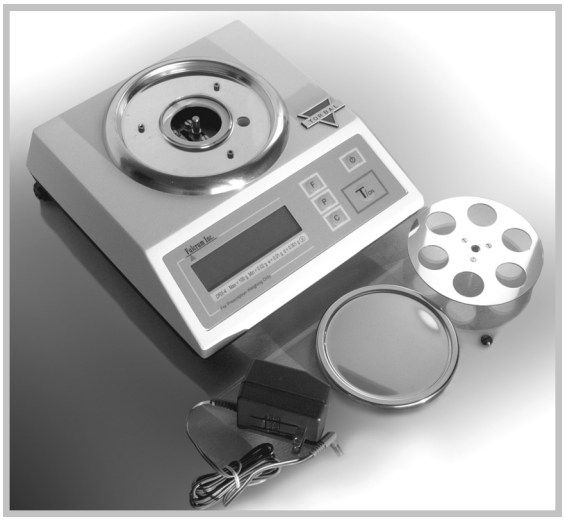
NOTE:

* These commands apply only to the Calibration Mode.

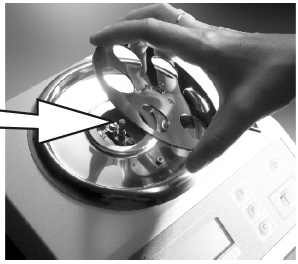
CHAPTER 5

Getting Started

1. Carefully remove the scale and all of its components from the packaging and place it on a stable base where the scale will not be affected by any mechanical vibrations or air movements.

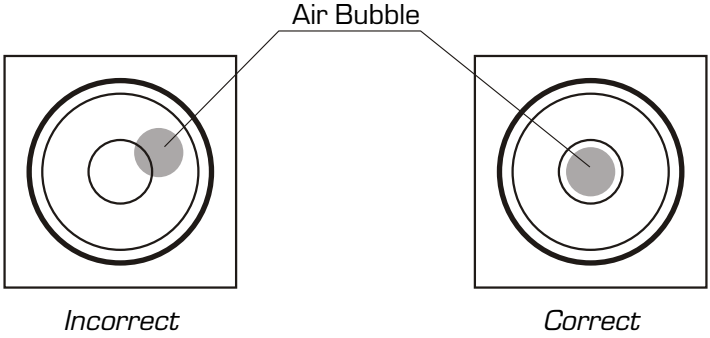


2. After removing the pan base and the pan from its packaging, carefully install the pan base onto the scale by placing it on the pan support located in the middle of the scale. Once the pan base has been installed, carefully place the pan on the base as shown below.



3. Once the pan has been installed, level the scale by adjusting the rear feet until the level indicator shows the "air bubble" is in the center position of the sight glass. The level indicator is located in the rear left side of the scale.

Level Indicator Sight Glass:



4. After leveling the scale, plug in the AC adaptor to the AC adaptor socket located in the rear of the scale.

5. When the AC adaptor is plugged into the wall outlet, the scale will turn "ON" automatically, go through its initiation process, and enter Weighing Mode.

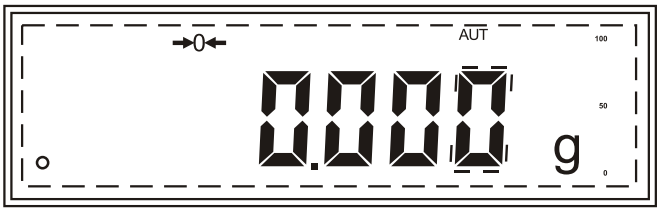
   To put the scale into Standby Mode, leave the AC adaptor plugged into both the scale and the wall outlet and press the Power "OFF" button (⏻). The "OFF" indicator will light up in the upper left corner of the display signaling the scale is in Standby Mode, i.e.:

Display in Standby Mode

CHAPTER 6

Weighing

1. To begin weighing, press the power button (⏻) to turn the scale ON. The scale will go through its initialization procedure and automatically enter Weighing Mode. The scale is ready to begin weighing as soon as the stabilization (○) and center of zero (→0←) indicators appear on the display, i.e.:



Display in Weighing Mode

2. When weighing, always place the mass in the middle of the pan. The weighed result may be taken when the stabilization indicator appears on the display, i.e.:

Display indicating an accurate 4g result

CHAPTER 7

Zeroing the scale

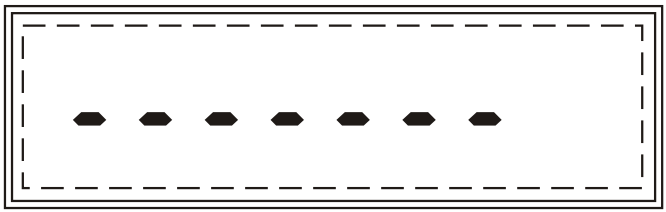
1. The DRX-4 is armed with AZSM, the "Auto Zero Setting Mechanism." AZSM automatically maintains a "center of zero" condition within +/- .6d or 6mg

2. The scale may be re-zeroed manually to obtain a new "center of zero." To re-zero the scale manually with a weight that is out of the AZSM range, make sure the weight and the stabilization indicator are shown on the display, i.e.:

3. Re-zero the scale by pressing the zero button.

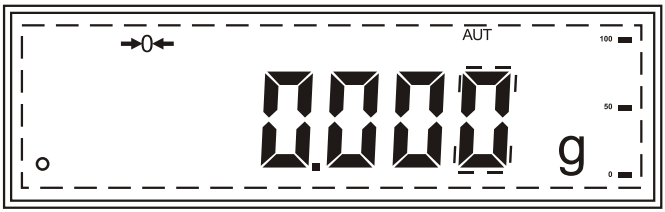
4. The display will show a dotted line, which indicates the scale has begun the re-zeroing process, i.e.:

***WARNING**: Do not touch or move the scale during the re-zeroing process.*



Display in the re-zeroing process

5. When finished re-zeroing, the scale will return to Weighing Mode and the display will indicate 0. A new center of zero has been set, and the scale is ready for weighing.



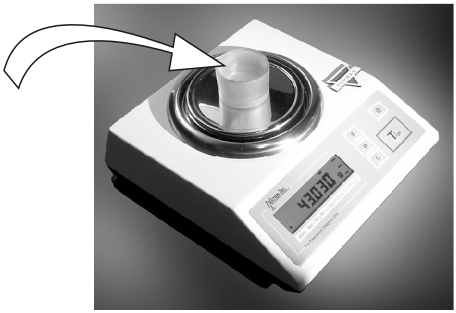
Display in the Weighing Mode after it has been re-zeroed

Note: *Re-zeroing the scale will reduce the capacity of the scale by the re-zeroed weight. The remaining capacity is displayed as a percentage on the right side of the display.*

CHAPTER 8

Taring

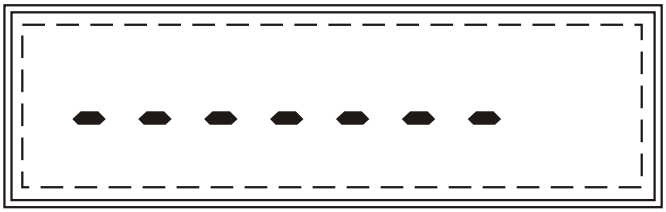
1. If a container is used for weighing, it may be tared. In taring the container, the scale subtracts the weight of the container from the gross weight to obtain the net weight.
2. To tare the weighing container, place it in the middle of the pan. The container's weight will be shown on the display, i.e.:



Display indicating the weight of the container

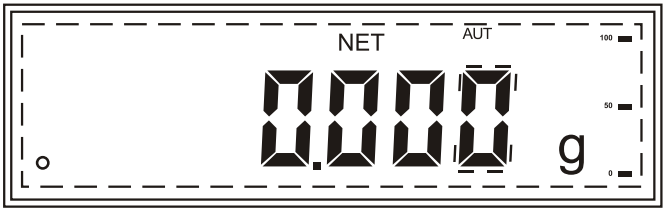
3. Once the stabilization indicator appears on the display, the container is ready to be tared. To tare the container, press the "T" button. The display will show a dotted line which indicates the scale has begun the taring process, i.e.:

***WARNING**: Do not touch or move the scale during the taring process.*



Display in the taring process

4. When finished taring, the balance will return to Weighing Mode. The display will indicate 0, and the NET indicator will be shown on the display signaling the next weight taken is a NET result.



Display after the scale has been tared

***Note:** Taring and re-zeroing are two completely separate functions. Once the scale has been tared, it may not be re-zeroed until the tare is cleared.*

CHAPTER 9

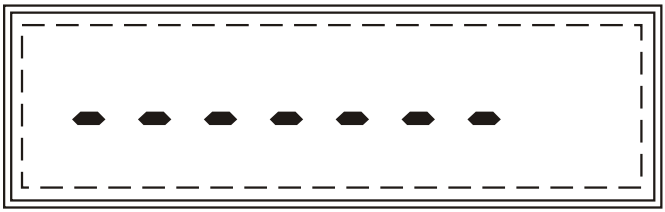
Clearing the Tare

1. To clear the tare, remove the tared object along with the NET weight from the pan. The scale will then display a negative NET tare result.

Display indicating a negative tare result

2. To clear the tare, press the T button.

3. The display will show dashed lines indicating the tare is clearing.



Display in the tare clearing process

4. When finished clearing the tare, the scale will return to Weighing Mode.

Display in Weighing Mode after the tare has been cleared

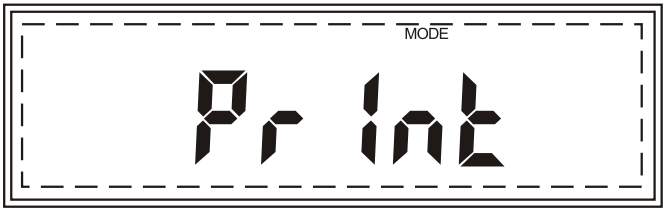
CHAPTER 10

Printing

The printing function is used to print data via the RS232 port. Data may be printed via a printer or sent to PC software. The printing function is pre-set; it is automatically enabled each time the scale is turned ON. To turn the printing function OFF or ON, follow the steps below:

1. Enter the Function menu by pressing the "F" key located on the front panel of the scale.

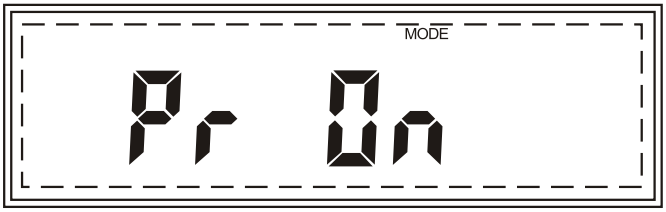
2. The scale will display PRINT



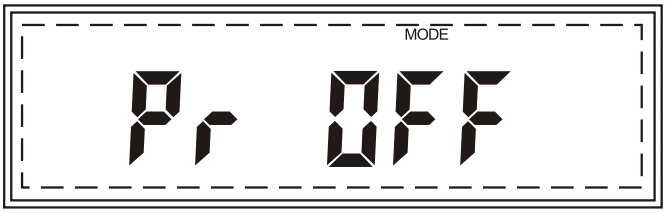
Display indicating the **PRINT** *command*

3. To enter the Print Function press the "T" key while the command PRINT is displayed.

4. The scale will display commands PR ON and PR OFF, appearing sequentially every two (2) seconds, i.e.:



Display indicating the **PRINT ON** *command*

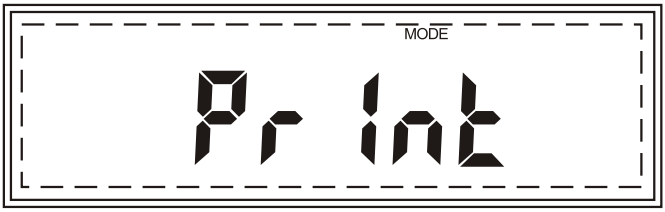


Display indicating the **PRINT OFF** *command*

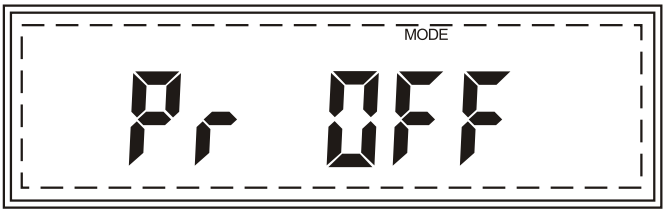
5. To turn the Printing function "ON", press the "T" key while command PR ON is displayed.

6. To turn the Printing function "OFF", press the "T" key while command PR OFF is displayed.

After you have made your selection, the scale will automatically return to Weighing Mode. Printing or Sending Data is initialized by pressing the "P" key located on the front panel of the scale. If the Printing function is enabled, the scale will display "PRINT" when the "P" key is pressed. If the printing function is disabled, "PR OFF" will be displayed.



Display indicating the PRINT function is enabled when the "P" key is pressed



Display indicating the PRINT function is disabled when the "P" key is pressed

CHAPTER 11

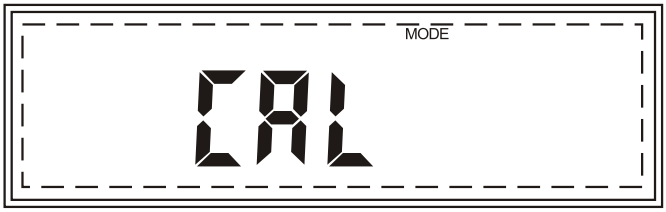
Calibration

Calibration of the DRX-4 should be performed with a single accurate 100g weight. To Calibrate the scale follow the directions below:

1. Once the scale has its power ON and is in Weighing Mode, use a flathead screwdriver to gently remove the Calibration Seal Screw located in the rear of the scale.

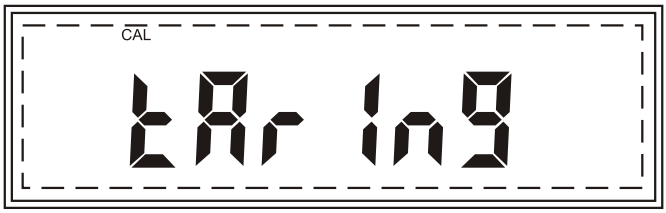
2. Once the screw has been removed and the calibration switch exposed, use a pen or another pointing device to toggle the calibration switch to the right (which is the ON position.)

3. Upon toggling of the calibration switch, the balance will go into Calibration Mode. For approximately five (5) seconds the display will read CAL, indicating the scale is in Calibration Mode.



Display in Calibration Mode

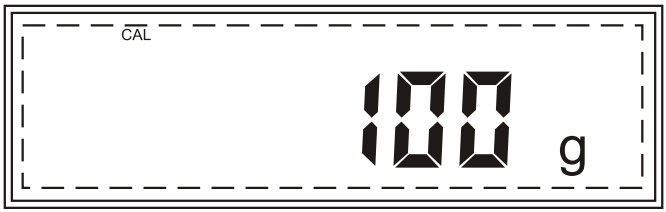
4. The scale will then automatically begin its taring procedure, and the word "Taring" will appear on the display.



Display while taring in Calibration Mode

***WARNING**: Do not touch or move the scale during the taring process.*

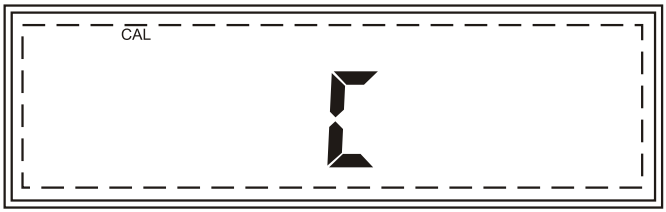
5. Once the scale has finished taring, the display will read "Load, 100g" which indicates a single 100-gram calibration weight should be loaded. "Load, 100g" appears sequentially every two (2) seconds.



Display indicates to "Load, 100g"

6. Anytime during the "Load, 100g" message, place a single 100-gram weight in the center of the weighing pan.

7. When the 100g weight is placed on the pan, the scale will automatically begin the calibration process. The display will read "C" which means the scale is calibrating. Because calibration is a very sensitive process, make sure the scale is not exposed to any air movements or vibrations.



Display in the calibration process

***WARNING**: Do not touch or move the scale during the calibration process.*

8. Calibration can last anywhere from 15 to 30 seconds. When it is finished, the display will read CAL Fin.

Display indicating the calibration process is finished

9. Once CAL Fin is displayed, the calibration weight can be removed from the pan. The rear calibration switch should be toggled back to the left (which is the OFF position.)

10. Toggling the Calibration switch to the OFF position will return the scale to Weighing Mode. The calibration screw should then be screwed back into its original position.

CHAPTER 12

Sealing the DRX-4

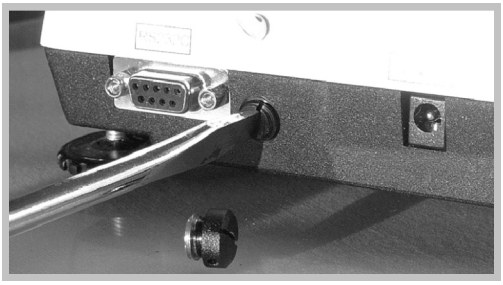
Depending on individual state law, the calibration feature of the scale may be required to be sealed by an NIST/NTEP official. To seal the calibration feature, follow the instructions below.

The DRX-4 can be sealed in two ways by using either a paper seal or a wire seal.

Paper Seal:

1. To seal the DRX-4 using a paper seal or a sticker, use a flathead screwdriver to gently remove the calibration wire seal screw located in the rear of the scale.

2. Once the wire seal screw has been removed and the calibration switch exposed, gently insert the flush sealing screw provided with the scale in the place of the wire seal screw.

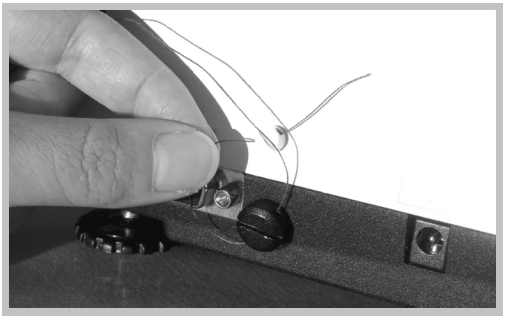


WARNING: Do not attempt to screw the flush sealing screw all the way in. Stop when the screw is flush with the casing of the scale.

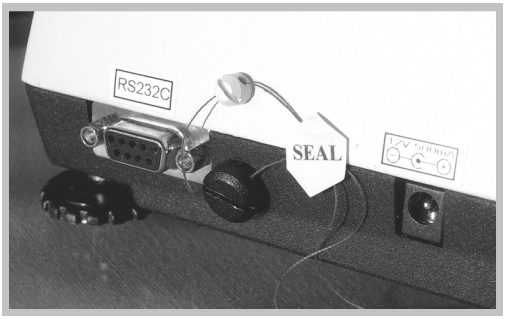
3. Once the flush sealing screw is in place, the paper seal can be simply placed over the opening as shown in the picture below.

Wire Seal:

1. To seal the scale using a wire seal, insert the wire into the opening of the calibration screws located in the rear of the scale.



2. The seal may then be placed over the wires. Do not attempt to remove the calibration screw as it will rip the wire and break the seal.



CHAPTER 14

Common Errors and Troubleshooting

- - - -	The scale must then be re-zeroed (negative gross value can not be displayed.)
- -	Taring is not allowed.
- -	The scale is out of the re-zeroing range or an active tare value is entered. Make sure the pan is free of any weight and any existing tare values have been cleared. For more on clearing the tare, see page 11.
L	Indicates the pan is not properly placed on the pan support or is not installed.
H	Indicates the scale exceeded its weighing capacity.
Err-b	Pan was not free of weight while the scale was initiating at startup.

Fulcrum Inc.
100 Delawanna Ave. Suite 120
Clifton, NJ 07014
Tel. (973)473-6900
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