

Fulcrum Inc.



Instruction Manual Model: DRX-4C2





Instruction Manual Model DRX-4C2

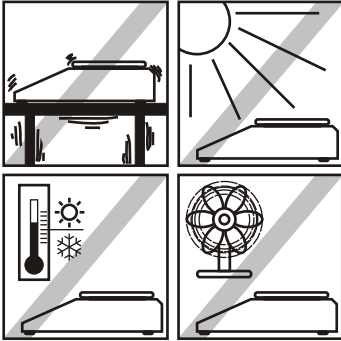
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Cautionary notes and precautions

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



The correct location and proper environment makes an important contribution to the accuracy of the weighing results of TORBAL precision scales.

The optimum location for your scale:

- Stable, vibration-free base as horizontal as possible
- Away from direct sunlight
- Not exposed to high temperature variations
- Away from direct drafts

The best location is on a stable bench away from direct drafts, doors, windows, radiators and air conditioner vents.

CAUTION:

- The scale may only be used indoors.
- Do not operate the scale in hazardous areas or 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.
- Be sure to 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, always use the original packaging.



WARNING:

- Never attempt to repair, disassemble or modify the scale yourself. Tampering with the scale may result in injury and cause more damage to the equipment.
- Be sure to use the specified power source.
- Do not allow foreign matter to fall into the scale.
- If water or other liquid spills into the scale, do not continue to use it. Unplug the power cord immediately and contact technical support.



CHAPTER 1

Specifications:

Model	DRX-4C2
Capacity (Max)	300g
Minimum load (Min)	0.02g
Reading unit (d)	0.001g
Verification unit (e)	0.01g
Tare range	300g
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	300g
Software Version	DRX-4C-2
Certificate of conformance	NTEP Approved Certificate Number: 04-092P
Application	"For prescription weighing only" "The counting feature is for prescription filling only"
Type Evaluation Criteria	NIST Handbook 44, NCWM Publication 14

Counting Feature Specifications

MW (Minimum piece Weight)	30 mg (3 e)
MSS (Minimum Sample Size)	10 pieces
Sample Size Selection	10, 30, 60

CHAPTER 2

Parts Description:



Front View



Rear View



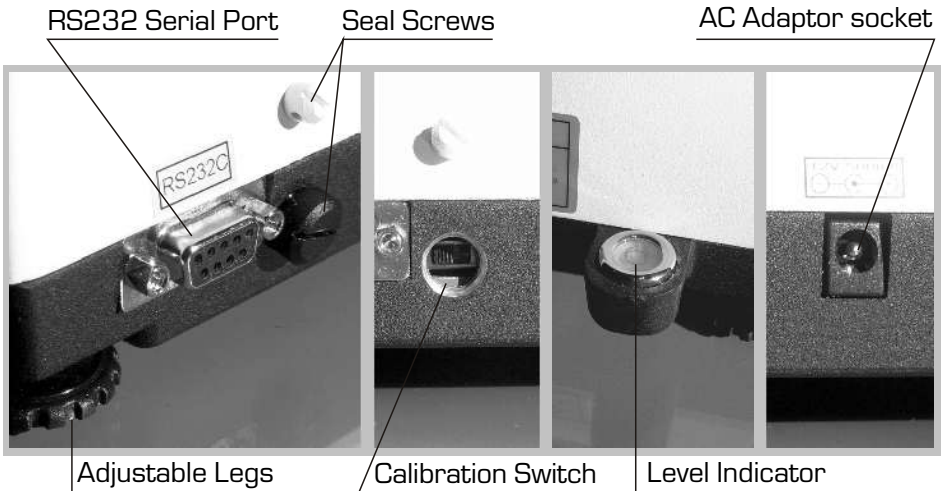
Pan Base



Pan

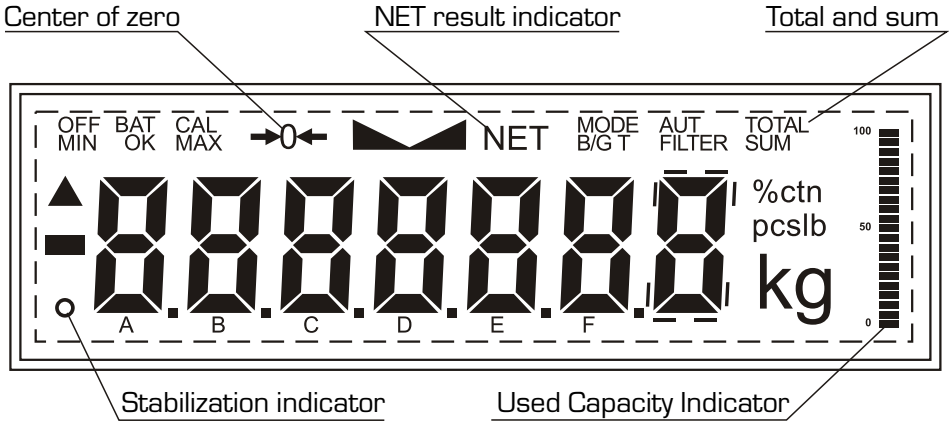


AC Adaptor



CHAPTER 3

Keys and display indicators



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

F

Function button used to swap between the weighing and counting modes.

C

Clear and Cancel key - Used to cancel compounding and counting operations.



Power On/Off button - when turned "Off", the scale enters the standby mode. **



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

AUT

Indicates the Auto Zeroing Setting Mechanism (AZSM) is active. AZSM automatically maintains a "center of zero" condition within +/- .6d (6mg)



Dotted line on the display - indicates the T or →0← buttons have been pressed and the scale is taring or re-zeroing.

g

Weighing unit, in grams

Σ

SUM key used to verify the total recipe weight in the compounding function.

P

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



Zero button, used to re-zero the scale.

NOTE:

*To enter the calibration mode, the rear calibration switch must be toggled to the "ON" position.

** 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 the P button is pressed, "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 300g	Indicates to load the calibration weight of 300 grams on the pan in order to begin calibration. *
C	The scale is calibrating. *
CAL FIN	Calibration procedure is finished. *
pcs	Indicates the scale is in the counting mode.
CONT ON THEN PRESS T	Indicates to place a container on the pan and tare it by pressing the T key. **
FILL	Indicates to begin filling the prescription in order for the count to begin. **
COUNT FINISH TO START COUNT PRESS C	Indicates the counting operation is finished; to start a new count, press the C key. **
NO SU	Indicates SUM is not available. There are no ingredients entered into the scale's memory.

NOTE:

* These commands apply to the calibration mode only.

** These commands apply to the counting mode only.

CHAPTER 5

Getting Started

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

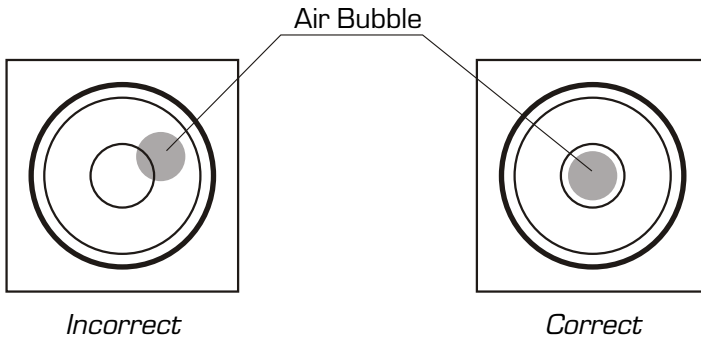


2. After removing the pan base and the pan from their packaging, carefully install the pan base onto the scale by placing it on the pan support located in the middle of the scale. Once the pan base has been installed, carefully place the pan on the base as shown below.



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.



- 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.:

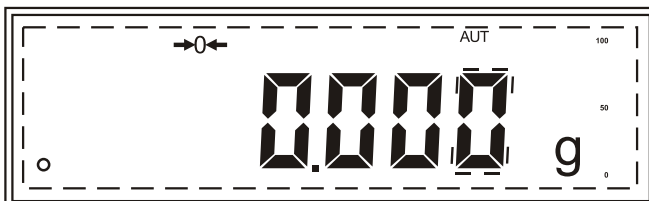


Display in Standby

CHAPTER 6

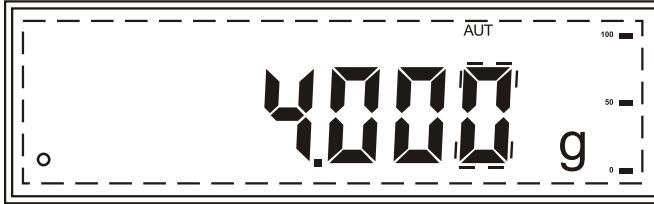
Weighing

- 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

- 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

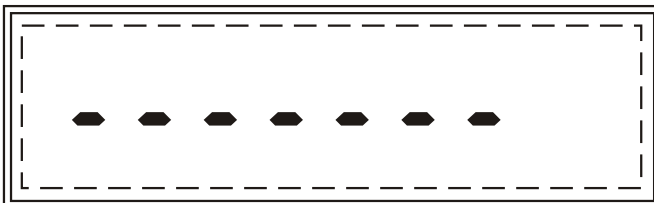
Zeroing the scale

- The DRX-4C2 is armed with AZSM, the "Auto Zero Setting Mechanism." AZSM automatically maintains a "center of zero" condition within +/- .6d or 6mg
- 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.:



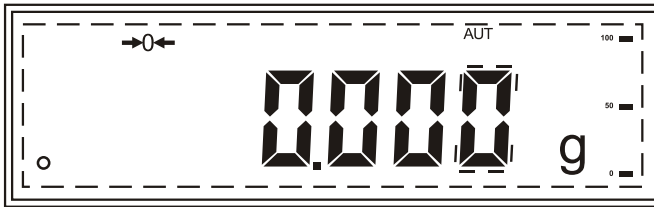
- Re-zero the scale by pressing the zero button.
- The display will show a dotted line, which indicates the scale has begun the re-zeroing process, i.e.:

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



Display in the re-zeroing process

- 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.



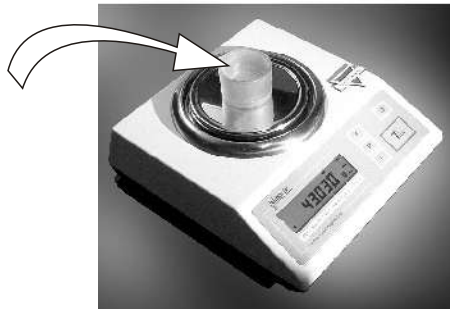
Display in the Weighing Mode after it has been re-zeroed

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

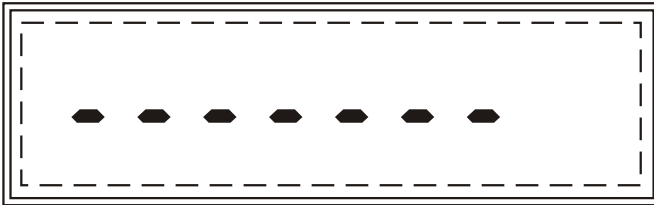
- If a container is used for weighing, it may be tared. When taring the container, the scale subtracts the weight of the container from the gross weight to obtain the net weight.
- To tare the weighing container, place it in the middle of the pan. The container's weight will be shown on the display,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



Display indicating the weight of the container

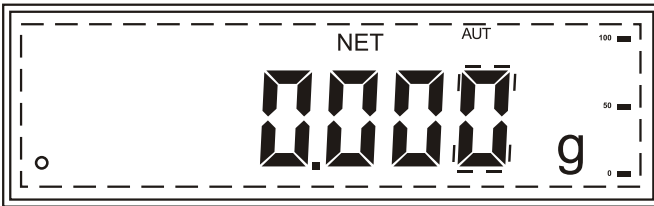
3. Once the stabilization indicator appears on the display, the container is ready to be tared. To tare the container, press the "T" button. The display will show a dotted line which indicates the scale has begun the taring process, i.e.:

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.



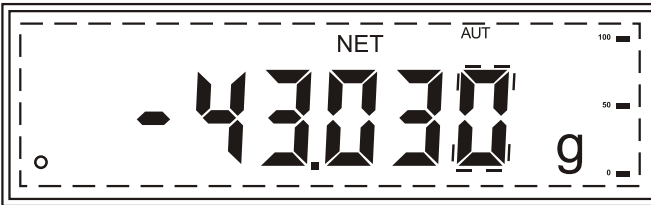
Display after the scale has been tared

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

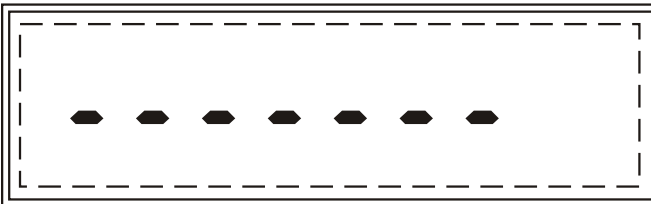
Clearing the Tare

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.



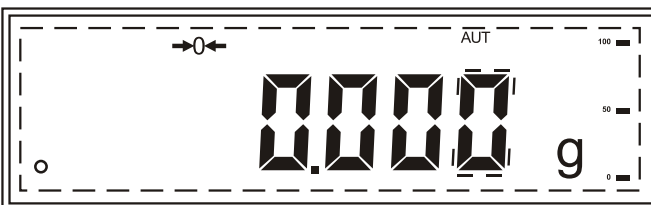
Display indicating a negative tare result

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.



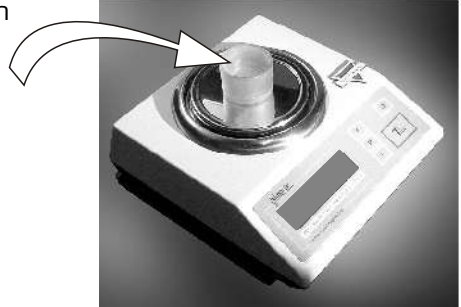
Display in Weighing Mode after the tare has been cleared

CHAPTER 10

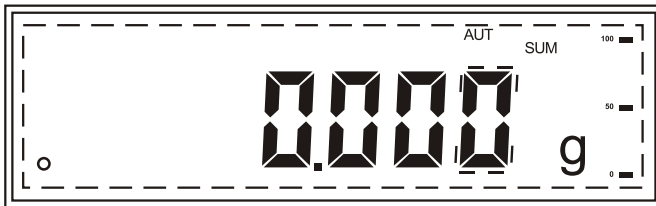
Compounding (Recipe Making)

The DRX-4C2 is an excellent tool for compounding and recipe making. The compounding feature will help you in adding up all of your ingredients as well as printing the details of your recipe. To compound, follow the steps below.

1. Place the container for your recipe in the center of the pan.



2. Tare the container by pressing the T key.
(For more on taring, please turn to Chapter 8 of this manual.)
3. Once the first tare has been taken, the scale will automatically activate the summing function which will help you in adding all of the ingredients. The display will show SUM to indicate this function is activated.



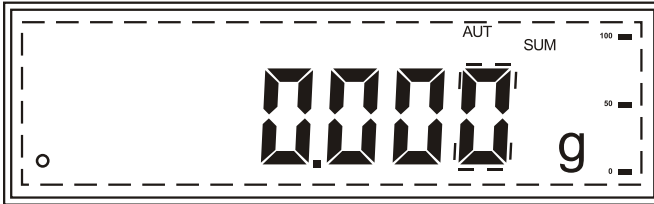
Display indicating SUM has been activated

4. Place the first ingredient in the container and wait until the weight is stable. i.e.



Display showing the first ingredient to be 3g.

5. Press the T key to prepare the scale for the next ingredient. The weight of the ingredient will be tared and stored in the scale's internal memory.
6. The scale will read zero indicating it is ready to receive the next ingredient.



7. Place the second ingredient in the container and wait until the weight has stabilized.



Display showing the second ingredient to be 4g

8. To add up and check the total weight of the ingredients at any time, press the sum button (Σ). The TOTAL weight of the ingredients in the container will appear on the display for approximately 5 seconds. To continue compounding, simply wait until the total weight disappears from the display and press the T button to enter the next ingredient.



Display showing total compound to be 7g

9. These steps may be repeated until the scale reaches its full capacity.
10. To stop compounding and freeze the total compounded weight on the display, press the sum button (Σ) twice.

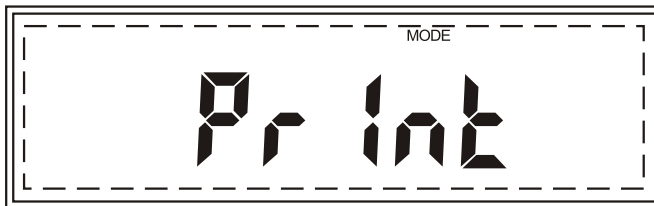
Note: In order to print the detail of the recipe, perform the printing operation before freezing the display with the total compound weight. The detail will not print once the display locks the total compound weight. For more on printing, please turn to chapter 11 of this manual.

11. To clear the compounding process, clear the pan and press the C button.

CHAPTER 11

Printing the Recipe

1. To print a recipe at any time during the compounding process, simply press the P button. The display will read PRINT indicating that printing is in process.



Display indicating
command **PRINT**

2. The printer will print the date, time and weight of the ingredients you have entered, and their total weight. If more ingredients are added once the print has finished, press P once more to reprint.

11/23/04 10:58pm			
INGREDIENT #1	5.00[0]	g	net
INGREDIENT #2	10.00[0]	g	net
INGREDIENT #3	20.00[0]	g	net
TOTAL:	35.00[0]	g	net

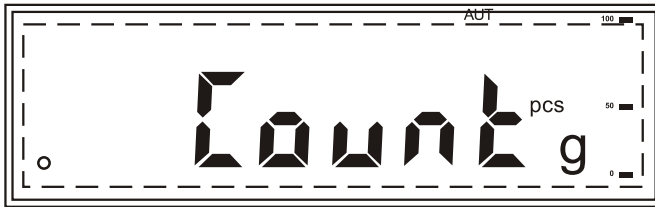
CHAPTER 12

Pill Counting

1. To enter the counting mode, simply press the F button.



2. The display will read "Count" and "pcs" will appear to indicate the scale is ready for counting.



3. The scale will then ask you to place a container on the pan and tare it: "CONT ON THEN PRESS T" will appear sequentially approximately every 2 seconds.



4. To tare the container, press the "T" button.



5. The scale will then ask to select a sample size. Because the minimum sample size is 10 pieces, the scale automatically selects "SPL-10" which is sample size 10. The sample may be changed either to 30 pieces or 60 pieces by pressing the sum button (Σ).



SPL - 10

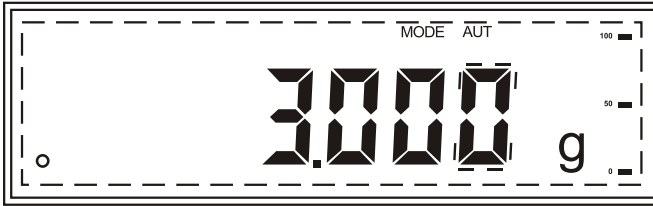
6. Once the sample size has been selected, press the T button to confirm the sample size selection. The display will read SAPL On, indicating you should place the sample of 10 pieces on the pan (if SPL-10 is selected).

SAPL On

7. Manually count 10 pills and place them in the container located on the pan.



8. The weight of the sample will be displayed as it is placed on the pan.



Display showing the sample weight of 10 pieces to be 3g

9. Once the weight of the sample stabilizes and the stable indicator appears on the display, press the T button to confirm and accept the sample weight.



Note: Minimum individual piece weight allowed is 30mg (3e). With a sample size of 10 pieces, the sample weight must be equal to or greater than 300mg (30e). Attempting to set a sample size of 10 pieces with a total sample weight which is lower than 300mg (30e) will result in a Sample Low error (SAPL-LO)

10. The display will now indicate to begin filling. The word FILL will flash on the display for approximately 5 seconds. At anytime during the FILL command, begin to fill the remainder of the pieces.



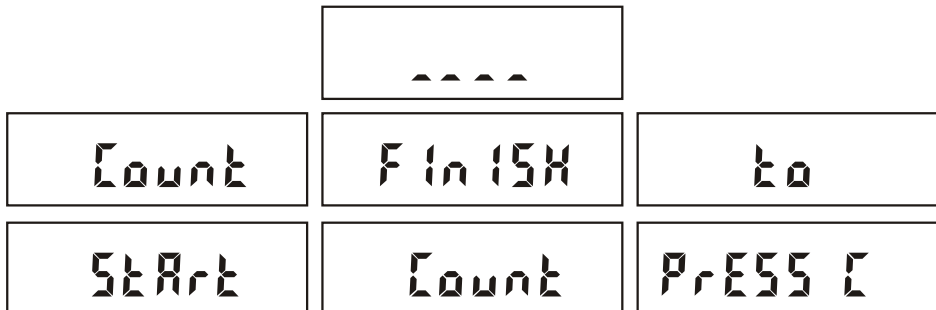
Note: If filling does not begin while the command "Fill" is displayed, after approximately 5 seconds the scale will display 10 pcs and will begin waiting for the count to begin.

11. The display will now begin to indicate the number of pieces placed in the container. Stop filling when the desired count has been reached.



12. Once an accurate piece count has been taken, the container and its contents may be removed from the scale. After removal of the container with the counted pieces, the scale will indicate the count is finished and that a new count may be initialized by pressing the "C" key. The command " ---, COUNT FINISH, TO START COUNT PRESS C" will appear on the display sequentially.

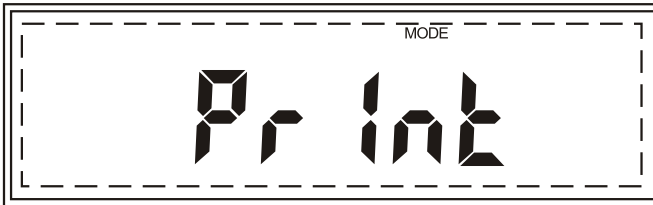
Important: If more pieces have been placed into the container than actually desired, you may use tweezers, a pharmacy spoon, or a similar instrument to remove the excess while the container is still on the scale's pan. You also may remove the container from the pan, dispense out the excess pieces, and place it back on the pan to recheck the count. This may be performed while the command " ---, COUNT, FINISH, TO START COUNT PRESS C" is displayed, but before pressing the C key. Once the C key is pressed the counting operation will reset and a new counting transaction may begin.



CHAPTER 13

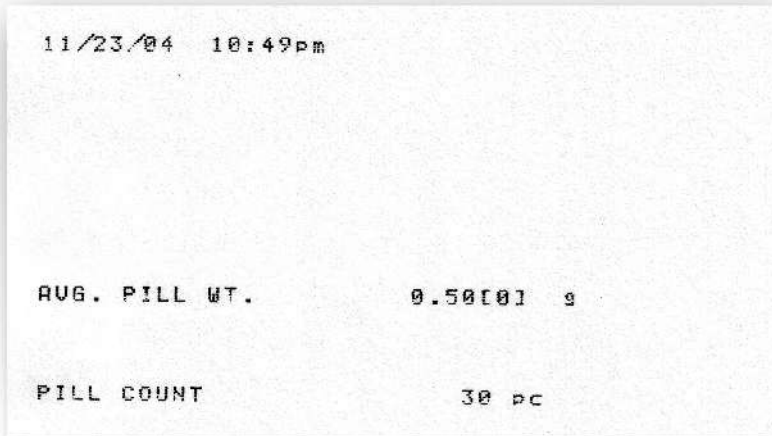
Printing a pill count receipt

1. To print a pill count receipt, simply press the P button. The display will read PRINT indicating printing is in process.



*Display indicating
command **PRINT***

2. The printer will print the date, time, average pill weight, and total count.



CHAPTER 14

Calibration

Calibration of the DRX-4C2 should be performed with a single, accurate 300g weight. To calibrate the scale, follow the directions below:

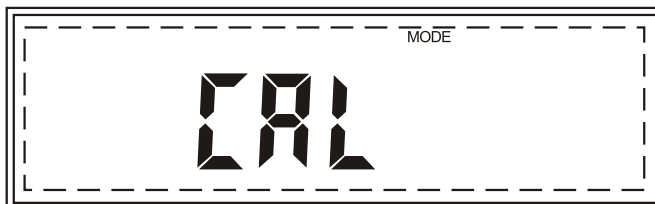
1. Once the scale has its power ON and is in Weighing Mode, use a flathead screwdriver to gently remove the Calibration Seal Screw located in the rear of the scale.



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.)

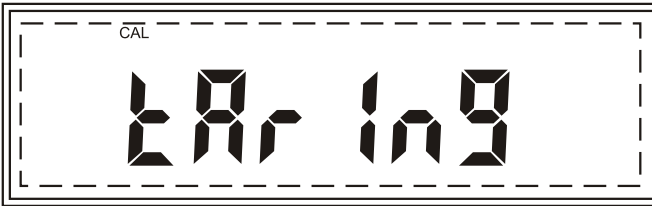


3. Upon toggling of the calibration switch, the balance will go into Calibration Mode. For approximately five (5) seconds the display will read CAL, indicating the scale is in Calibration Mode.



*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, 300g" which indicates a single 300-gram calibration weight should be loaded. "Load, 300g" appears sequentially every two (2) seconds.

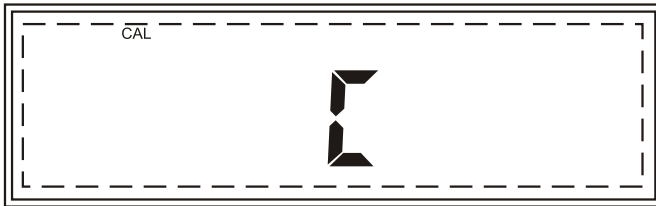


*Display indicates to
"Load, 300g"*

6. Anytime during the “Load, 300g” message, place a single 300-gram weight in the center of the weighing pan.



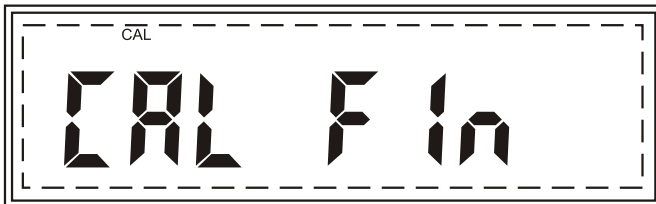
7. When the 300g weight is placed on the pan, the scale will automatically begin the calibration process. The display will read “C” which means the scale is calibrating. Because calibration is a very sensitive process, make sure the scale is not exposed to any air movements or vibrations.



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 15

Sealing the DRX-4C2

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-4C2 can be sealed in two ways by using either a paper seal or a wire seal.

Paper Seal:

1. To seal the DRX-4C2 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.



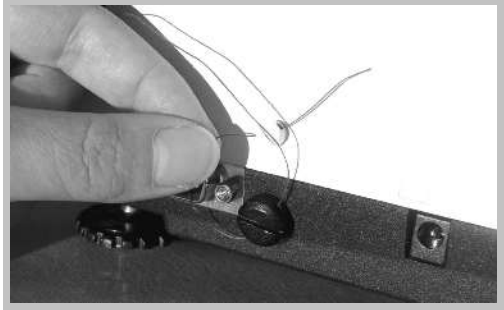
WARNING: Do not attempt to screw the flush sealing screw all the way in. Stop when the screw is flush with the casing of the scale.

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.

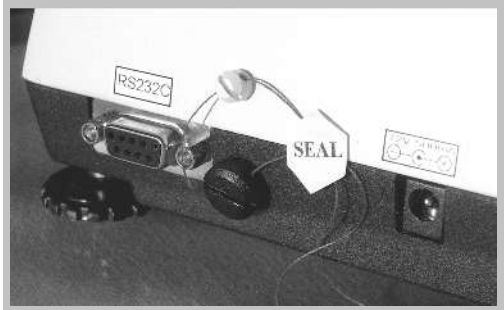


Wire Seal:

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.



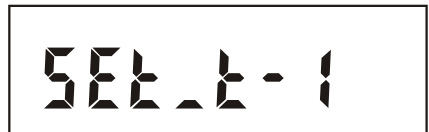
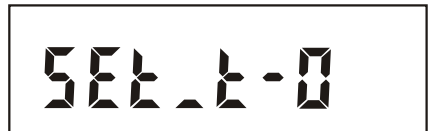
CHAPTER 16

Setting the Time and Date

1. Turn the scale on by pressing the power key (⏻). The scale will then begin its initialization procedure. The display will indicate C-1, C-2, C-3, C-4, C-5, and C-6. During the last initialization segment the display will indicate the software version of the scale: DRX-4C-2. While the software version is displayed, press the "P" key to enter the time and date settings.



2. The scale will then display commands Set-t-0, and Set-t-1 appearing sequentially approximately every 2 seconds. To change the date and time, press the "T" key while command Set-t-1 is displayed. If you want to cancel the operation, press the T key while Set-t-0 is displayed.



3. Upon pressing the T key while Set-t-1 is displayed, the scale will allow you to change the time.
4. The current time setting will be displayed.

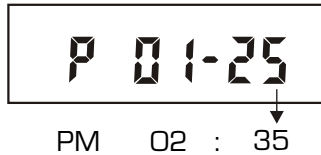


Display indicating the current time is 1:29 p.m.

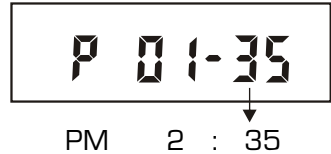
Time: PM 1 : 29

5. The letter P will be blinking on the display. If your time setting is PM, press the T key while P is shown on the display. If the time setting is AM, press the T key while P is not shown on the display.
6. The scale will then allow you to adjust the minutes of a particular time setting. The last digit of the time will begin to change. Press the T key while the correct digit is displayed or use the zero key (→0←) to toggle between the digits and to make your selection manually. For example if the new time setting is 2:35 p.m., wait until the last digit changes to a 5 and press the T key while 5 is displayed.

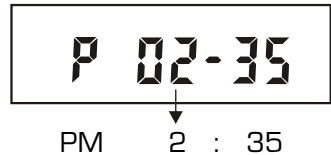
Note: It is recommended to use the zero key (→0←) and to manually toggle between the digits. Using the zero key (→0←) will speed up the time setting. The zero key may be used throughout the entire time and date setting.



7. Upon pressing the T key, the first minute digit will begin to change. Press the T key while the correct digit is displayed. Using our example, if the new time setting is 2:35 p.m., wait until the digit changes to a 3, and press the T key while 3 is displayed.



8. Upon pressing the T key, the hour digit will begin to change. In order to adjust the hour digit, press the T key while the correct hour digit is displayed. Per our example, if the time is 2:35 p.m., wait until the digit changes to a 2, and press the T key while 2 is displayed.

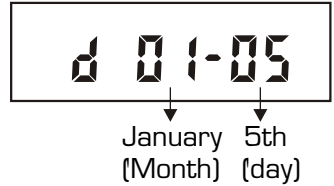


9. If this is a 12-hour clock setting, make sure that the first digit is set to 0. Press the T key while 0 is displayed.

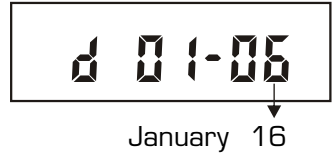


New Time setting: PM 02 : 35

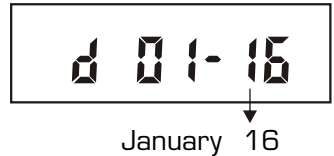
10. Once the time is set, the scale will display the current date setting (Month and Day). Press the T key to begin adjusting the date.



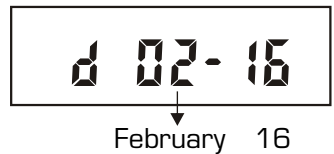
11. To adjust the day, wait until the last digit changes to the desired day and press the T key while the correct day digit is displayed. For example, if the new setting is February 16 (2/16), wait until the last digit changes to a 6, and press the T key while 6 is displayed.



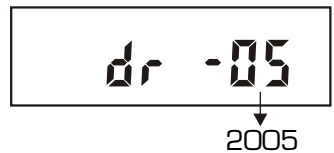
12. The scale will then begin to adjust the first digit of the day. Wait until the desired number is displayed, and press the T key. Per our example, in order to set the date of February 16 (2/16), wait until the digit changes to a 1, and press the T key while 1 is displayed.



13. Now select the desired month. Press the T key while a number of the desired month is displayed. Per our example, press the T key while the number 2 for February is displayed.



14. Once the desired day and month have been selected, the scale will allow you to adjust the year setting. The scale will display the current year setting. Press the T key to begin adjusting the year setting.

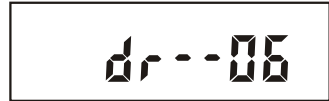


15. To change the year, wait until the last digit changes to the desired year setting and Press the T key while a number of the desired year is displayed. For example, to change the year to 2006, press the T key while the last digit changes to a 6.



16. The scale will then begin to adjust the first digit of the year. Per our example, if the year setting is 2006, set the first digit at 0 by pressing the T key while 0 is displayed.

17. The display will then indicate two dashed lines in front of the year setting. If your setting is correct, press the T key to accept and store the date and time setting in the scale memory.



Note: The Date and Time setting will be remembered in the scale memory for a period of 90 days, even if the scale is unplugged from the wall outlet.

CHAPTER 17

Common Errors and Troubleshooting

- - - - Behind zero. (Negative gross value cannot be displayed).
Re-zero the scale by pressing the zero key. →0←

- - Taking a tare is not allowed. The scale may be behind the
center of zero or there is no weight to be tared.

- - Re-zeroing is not allowed. The scale is out of the re-
zeroing range or an active tare value has been entered.
Make certain the pan is free of any weight and any existing
tare values have been cleared.

- 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** Indicates pan was not free of weight while the scale was
initiating at startup. The weight on the pan was out of the
IZSM (Initial zero setting mechanism) range.

- SAPL LO** Total sample weight is lower than allowed.

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NOTES



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