



Industrial Weighing Systems

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This document shows calibration instructions extracted from Manuals we have on file that may not necessarily match your current model.

For your reference only.

IWSystems provides repair services to instruments and load cells

On site calibrations

For additional information please contact us.

Top Level of 110 Menu

The top level menu items of the 110 menu are shown in Figure 7.

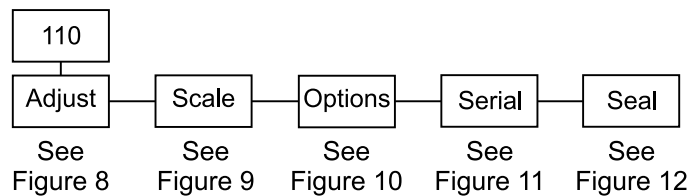


Figure 7
110 Menu

To exit back to normal weighing mode, press the **SELECT** key and save changes as needed by pressing **ENTER** with **SAVE?** displayed.

- Adjust** Use this submenu for calibration of the scale.
- Scale** Use this submenu for configuring units, capacity, divisions, zero, stability, A.Z.T., update rate, averaging and filtering.
- Options** Use this submenu to configure the buttons on the front panel.
- Serial** Use this submenu to setup the baud rate, data bits, parity and stops of the serial ports.
- Seal** Use this submenu to setup a custom password and to set the sealing choices for the unit.

110 Adjust Menu

Be sure the correct capacity and division sizes have been selected before calibrating.

Press the **ZERO** key to delete a displayed calibration point.

Below is the 110 Adjust submenu. If the factory calibration has become corrupt, the word **AdJUST** will flash on and off. You may use the indicator under this condition by calibrating with real weights, not by entering previously recorded count values. See note at left.

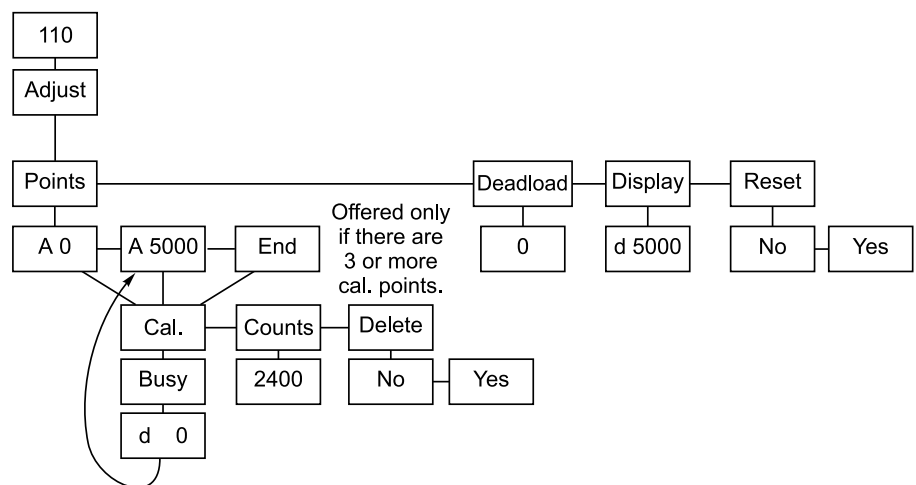


Figure 8
110 Adjust menu

To exit back to normal weighing mode, press the **SELECT** key and save changes as needed by pressing **ENTER** with **SAVE?** displayed.

Reset is very helpful if you get confused and would like to put working values back in the WI-127 calibration menu.

Points	<p>See the section <i>Calibrating the WI-127</i> for indepth instructions.</p> <p>In this submenu you may view, edit, insert or delete calibration points in a list. The WI-127 allows calibration using up to five calibration points.</p> <p>The WI-127 comes from the factory with two calibration points: 0 and 5000 lbs. (These weight values may differ depending on your unit of measure.)</p> <p>These points may be calibrated in two ways: 1) by standard weight calibration or 2) by entering count values. Counts are calibrated to a 1 mV/V signal from the factory.</p>
A 0	<p>When you access the Points submenu the first item is A 0. This stands for Apply 0 weight. This is the zero calibration point.</p>
A 5000	<p>The next calibration point in the default list is the calibration point for full capacity. Your indicator is factory calibrated to 5000 lbs (1 mV/V). You may keep this value or key in a new value for full capacity.</p>
Deadload	<p>Lets you view the count value for the current deadload. Press the UNITS key to change the display to mV/V.</p>
Display	<p>Shows the weight display without having to exit the menus. An example of what is shown—d 5000. The d indicates a live display of weight and reminds you that the unit is in calibration. The value you see depends on the selected unit of measure, the calibration and the weight applied. The UNITS key works in this mode.</p>
Reset	<p>Use this item to reset the calibration points to factory default values. If you choose yES the values are set to 0 lbs at 0 mV/V and 5000 lbs at 1 mV/V.</p>

110 Scale Menu

The next item in the 110 menu structure is **Scale**. In this group of submenus you set scale related parameters. Figure 9 shows the Scale menu.

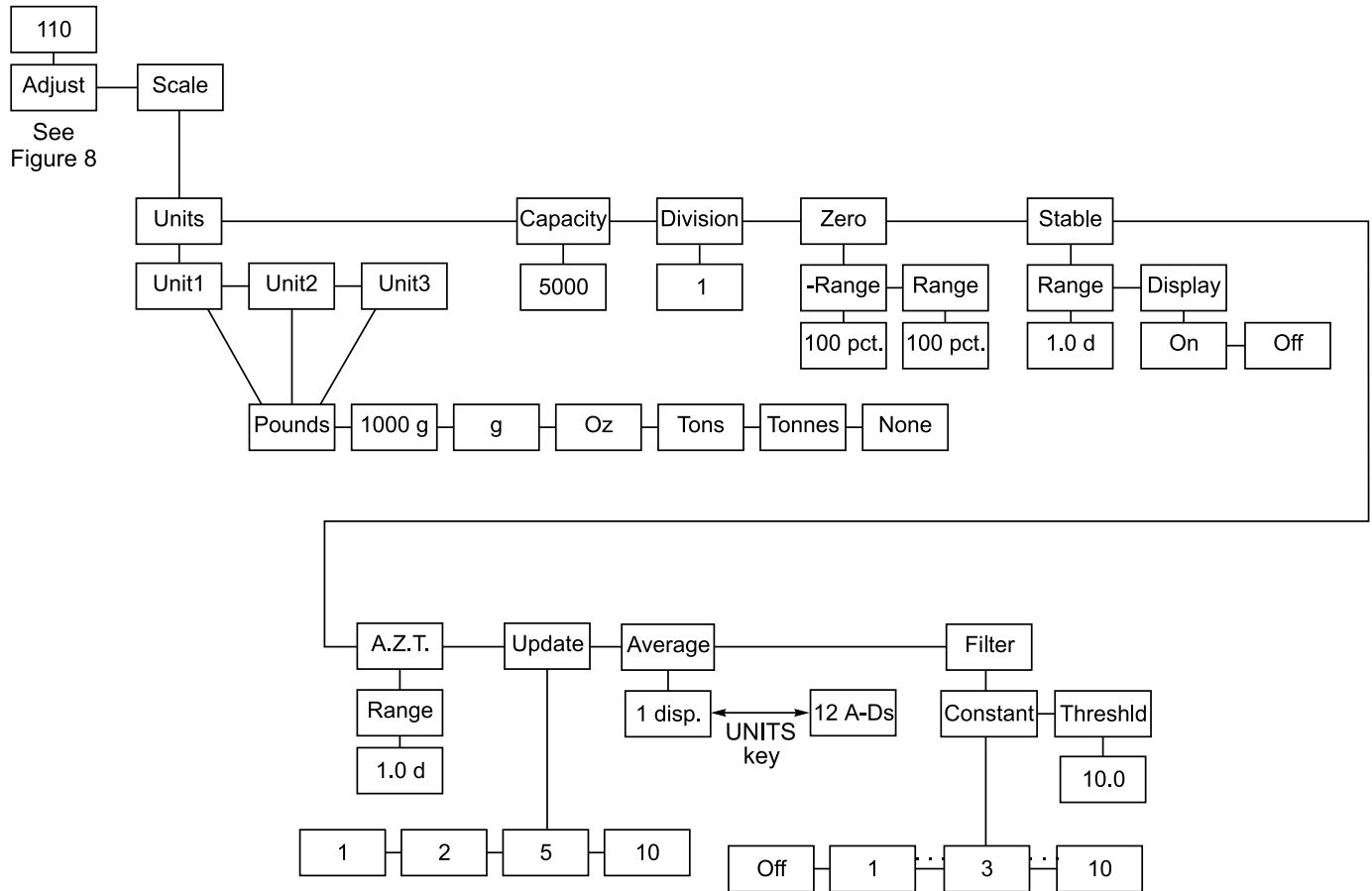


Figure 9
110 Scale menu

Units

This submenu lets you select what unit of measure will be assigned to the three annunciators on the front panel.

Unit 1

The unit of measure you choose for this item will be assigned to the annunciator labeled “lb” on the front panel. You can choose from the following list of units of measure:

Pounds = pounds
 1000g = kilograms
 g = grams
 Oz = ounces
 Tons = tons
 Tonnes = tonnes (metric tons)
 None = no unit of measure is assigned.

Unit 2

The unit of measure you choose for this item will be assigned to the annunciator labeled “kg” on the front panel. You can choose a unit of measure from the same list as above.

Unit 3

The unit of measure you choose for this item will be assigned to the annunciator labeled “oz” on the front panel. You can choose a unit of measure from the same list as above.

Don't forget to re-calibrate your system after you change capacity.

If you change capacity or division size in any unit of measure, this automatically changes all the other enabled units of measure as well.

If you want leading zeroes in your printouts or broadcast and autosend information, key in leading zeroes when setting division size.

*To exit back to normal weighing mode, press the **SELECT** key and save changes as needed by pressing **ENTER** with **SAVE?** displayed.*

Capacity

The next scale menu item is capacity. Use this item to view or edit the capacity of the unit in any unit of measure configured under **Units**. With **CAPACity** displayed, press the **ENTER** ▼ key. The current capacity is displayed. Use the numeric keypad to key in a new value and press **ENTER** ▼ to accept it and return to the **CAPACity** display.

You can view the capacity in other units of measure by pressing the **UNITS** key.

Division

This selection allows you to view and edit the division size of the enabled units of measure. You can enter any division size. The indicator will use the closest division size for each enabled unit of measure (1, 2 or 5 divisions).

You can view the division in other units of measure by pressing the **UNITS** key. The number is stored in the resolution you enter but is displayed in the closest valid division size.

Zero

Use this menu item to set pushbutton zero related options. Zero range is specified as a percent of capacity referenced from the deadload. There are two items in the submenu: - **Range** and **Range**.

-Range

Use this to set the negative range (below reference zero) within which the unit may be zeroed. 100% is the default value.

Range

Use this to set the positive range (above reference zero) within which the unit may be zeroed. 100% is the default value.

Stable

Use this menu item to set the motion detection parameters. There are two items in the submenu: **Range** and **Display**.

Range

Specifies the number of ±divisions for the motion window. Use the numeric keypad to enter appropriate value. Most common settings are 0.5, 1, or 3 divisions.

Display

Choose ON to if you want the display on while the indicator senses scale motion. Choose OFF to blank the display while there is scale motion.

A.Z.T.

This stands for Automatic Zero Tracking. **Range** is the only item in this submenu.

Range

Use this item to set the range within which the indicator will automatically adjust the zero balance towards zero. Use the numeric keypad to enter appropriate value. Most common settings are 0.5, 1, or 3 divisions.

Update

Use this to set the display update rate from these choices:

- 1** One update per second.
- 2** Two updates per second
- 5** Five updates per second
- 10** Ten updates per second.

Changing the update rate changes the x disp. or x a-ds value based on the new update rate.

Harmonizer[®] filter is used only if the average value will not filter out the vibration by itself.

Values change with unit of measure.



Average

The next menu item is **Average**. This can be entered in one of two methods: **x disp.** or **x a-ds**. Press the **UNITS** key to switch back and forth between the two choices.

The suggested method of setting the average is by picking a value for **x disp.** Doing this insures that a multiple of the display rate is always being averaged. This results in a steadier weight display.

Use **x a-ds** if you need an exact number of A-D conversions for your particular situation.

x disp. 1 disp. is the default display when you access this item. **x** is the number of display interval(s) over which the data is internally averaged prior to being displayed. The number of A-Ds averaged is based on the display update rate you set under the **Update** menu item. Default is **1 disp.**

x a-ds **x** is the number of a-d conversions to average for each display.

The A-D weight conversion happens 60 times per second in this indicator. **Average** is the number of conversions you want to average for the weight that is displayed. Default is **12 a-ds** when **Update** is at default of 5 and **x disp.** is at default value of 1.

Filter

Use this menu item to configure the Harmonizer[®] filter settings. **Constant** and **Threshld** are the two items you can configure in this submenu.

Constant

This number represents the amount of filtering. Choose a setting between 1 and 10. Choose 1 for the least amount of filtering but the fastest response. Choose 10 for the most filtering but the slowest response. Choose Off to disable the Harmonizer functions and default to the lowest filtering.

Threshld

This is the window, in the current unit of measure, within which weight changes are altered according to the constant. **10.0** is the default value shown in Figure 9. You should set the threshold value between 130 and 150% of the weight swings that need to be suppressed.

We recommend the following values as a starting point for Harmonizer filtering:

*Display Update = 10 sec
Ave. = 8 disp.
or 48 A-Ds
Constant = Level 4
Threshold = Zero*

Tips on setting up and using the Harmonizer® filtering

To find the best settings for your filter needs, follow the steps listed below.

1. **What to Do:** Determine the amount of positive and negative force exerted by the vibration on the scale.

How to Do It: Set Threshld to 0.0, Constant to OFF, and Average to 1.0 A-Ds. Return to weigh mode and observe the weight swings. Record the difference between the highest and lowest displayed weight values. Add 30 to 50% to this value. This is a good starting value for the Threshld setting. Do not set your indicator to this value until told to in step 7.

2. Setting the Average to higher values increases the filtering effect.

What to Do: Set Threshld to 0.0, Constant to OFF and Average to 12.0 A-Ds. Check the stability of the scale.

How to Do It: Save changes and exit to normal weight mode. Observe the Center of Zero light. If it is on all the time your scale is stable within $\frac{1}{4}$ division. If the Center of Zero light blinks more filtering is required. Go to step 3.

3. Repeat step 2 but increase the Average by 12.0 A-Ds. Keep repeating steps 2 and 3 until the scale is stable or you've tried the entire range of Average (300 A-Ds). If the scale is still not stable go to step 4.

4. Setting the Constant to higher values increases the filtering effect.

What to Do: Set Threshld to 0.0, Constant to 1.0 and Average to 300 A-Ds. Check the stability of the scale.

How to Do It: Save changes and exit to normal weight mode. Observe the Center of Zero light. If it is on all the time your scale is stable within $\frac{1}{4}$ division. If the Center of Zero light blinks more filtering is required. Go to step 5.

5. Repeat step 4 but increase the Constant by 1.0. Keep repeating steps 4 and 5 until the scale is stable or you've tried the entire range of Constant (10). If the scale is still not stable, decrease your display update rate and start over at step 1 using the new, slower display rate.
6. After the Constant value is established you may wish to lower the Average value to improve display response time.
7. After a final value for Constant and Average has been set, enter the Threshld value established in step 1. If this value is too small your scale will act as if the filtering is off or not working. Increase the Threshld value until your scale stabilizes.

If the Threshld value is too high your scale will react slowly to weight changes.

When Harmonizer is properly adjusted the scale will be stable at zero and will rapidly display a stable test weight value.

110 Options Menu

The third item in the 110 menu structure is Options. Figure 10 shows the Options Menu. Use this menu to enable/disable and configure the buttons on the front panel.

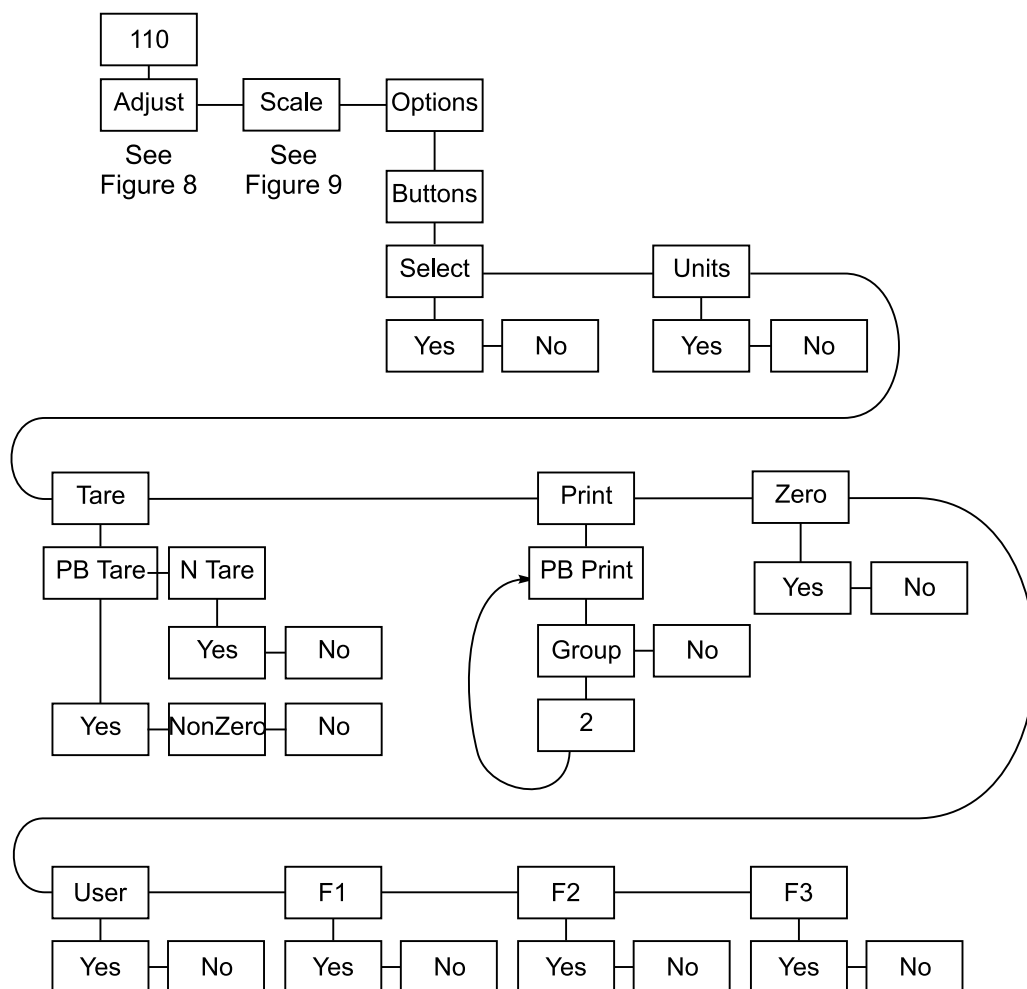


Figure 10
110 Options menu

Select	Enables or disabled the SELECT key.
Units	Enables or disables the UNITS key.
Tare	This parameter enables or disables the pushbutton tare and numeric tare entry.
PB Tare	Options under this item are Yes (allows pushbutton tare for all nonnegative values), Non-Zero (enables pushbutton tare for all nonnegative values excluding zero), and No (disables pushbutton tare).
n Tare	Enables and disables numeric tare entry.

To exit back to normal weighing mode, press the **SELECT** key and save changes as needed by pressing **ENTER** with **SAVE?** displayed.

Print

PB Print

This item determines which layouts are sent to which ports for pushbutton print. Press **ENTER** ▾ and **Group** is displayed. From this item you may either disable the pushbutton print option, or select a group to print. To select a group, press **ENTER** ▾ again. Using the keypad, enter the number of the group you wish to print. To disable, press **MENU** ▸, then **ENTER** ▾. The four default print groups are as follows:

- | | |
|--------------------------------|-------------------------------------|
| 1 = Displayed weight | } All are sent out of Port #1 only. |
| 2 = Gross, Tare, Net (default) | |
| 3 = Gross and Net | |
| 4 = Net and Tare. | |

Zero

Enables or disables the **ZERO** key.

User

Enables or disables the User's Menu.

F1

Enables or disables the **F1** key. The default setting for this key accesses the tare registers.

F2

Enables or disables the **F2** key. The default setting for this key accesses the identification number entry.

F3

Enables or disables the **F3** key. The default setting for this key accesses the cutoff values.

110 Serial Menu

The fourth item in the 110 menu structure is Serial. This submenu sets up the baud rate, data bits, parity, and stops of the serial port(s). Figure 11 below outlines the Serial Menu.

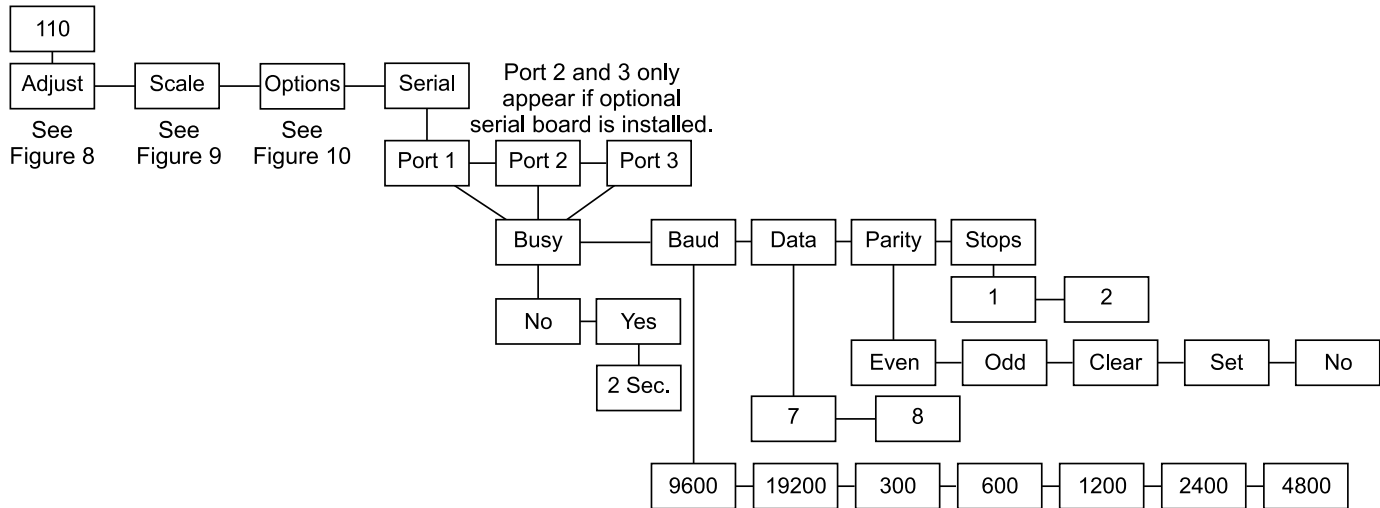


Figure 11
110 Serial menu

Ports 2 and 3 present if optional hardware is installed.

Port 1, 2 & 3

Port 1 is the onboard serial port. Any additional boards installed are configured under Ports 2 & 3. Ports 2 & 3 show up in the Serial Menu only if additional boards are installed.

Busy

Enables or disables the ready/busy input. If the ready/busy input is enabled, you may enter a timeout period. This value determines how long a port can be busy before the indicator displays a port busy message.

Baud

Select a baud rate. Choices are: 9600 (default), 19200, 300, 600, 1200, 2400, 4800.

Data

Choose between 7 (default) & 8 data bits.

Parity

Choices are:

No - Specifies that no parity bit is to be included.

Even - Specifies that a parity bit which insures an even number of logic one bits is transmitted. (default) (7, 1 or 2, even)

Odd - Specified that a parity bit which insures an odd number of logic one bits is transmitted. (7, 1 or 2, odd)

Clear - Specified that a logic zero bit is always transmitted after the data bits (space parity). (8, 1, none)

Set - Specifies that a logic one bit is always transmitted after the data bits (mark parity). (7, 2, none)

Stops

Select the number of stop bits. Choices are 1 or 2.

A flashing value indicates an invalid combination.

110 Seal Menu

The last item in the 110 Setup menu is Seal. Use this submenu to set up a custom password and to set the sealing choices for the unit. Items in the Setup menu (Figure 6) can be protected from unrecorded changes.

Two internal counters record changes to items in the Setup menu. View these counters under **AUDIT** in the Service menu (Figure 4). These counters cannot be reset and thus can be used by auditors or inspectors to check if changes have been made. One counter is for scale calibration items and the other for configuration items. The level of protection is set in the Seal menu. The Seal menu is shown in Figure 12.

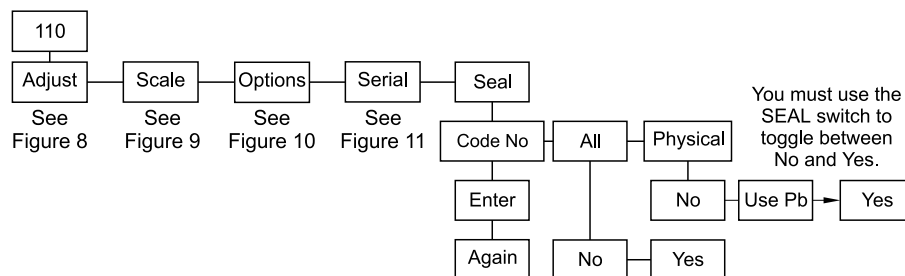


Figure 12
110 Seal Menu

To exit back to normal weighing mode, press the **SELECT** key and save changes as needed by pressing **ENTER** with **SAVE?** displayed.

Code No. This item allows you to enter a personalized security code number. Digits are not shown on the display as you key them in, so the display prompts you to enter the code number twice.

All & Phys. The two parameters in the **SEAL** menu are **All** and **Phys**. Below are explanations of the choices you can make.

ALL set to **YES**

Any time you access the setup menu and change any item in Table 1, the appropriate counter increments one count. Changing multiple items on one visit to the menu increments the counter only one count. It's the number of visits with changes that are counted, not the number of changes per visit.

ALL set to **NO**

With this setting the calibration internal counter will increment when you access the setup menu and change any calibration item in Table 1. The internal configuration counter will increment only if you change one of the configuration items in **bold** print from Table 1.

Phys. set to Yes

If **Phys.** is set to **Yes**, you must remove the physical seal (rear sealing plug) of the WI-127 to access an internal switch. When you press this switch you have full editing privileges and the display shows the first item in the Service menu, **About**, without the need to enter the password.

If you enter the Service menu using the password and not the internal switch, you can change only the configuration items in Table 1 that are in normal, not **bold**, print.

PHYS set to NO

*If **PHYS.** is set to **NO**, you can still press the internal switch and have instant setup menu access and editing privileges.*

If **PHYS.** is set to **NO**, correct password entry is the only way to have editing privileges of all the items in Table 1 without breaking the physical seal. See note to left.

If the password is not entered correctly, the setup menu items can be viewed but not edited.

Calibration Items	Configuration Items
Any item in the Adjust menu	Any item in the Scale menu Any item in the Options menu Any item in the Seal menu Any item in the Serial menu Any item in the Analog menu Any item in the B.C.D. Out menu

Table 1
Calibration and Configuration list

This is the end of the 110 section. The next section covers the 127 section of the Setup menu.