



Scout™ Series Balances - SPX Instruction Manual



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1. INTRODUCTION

This manual contains installation, operation and maintenance instructions for the Scout SPX Series Balances. Please read the manual completely before using the balance.

1.1 Definition of Signal Warnings and Symbols

Safety notes are marked with signal words and warning symbols. These show safety issues and warnings. Ignoring the safety notes may lead to personal injury, damage to the instrument, malfunctions and false results.

Signal Words

WARNING	For a hazardous situation with medium risk, possibly resulting in injuries or death if not avoided.
CAUTION	For a hazardous situation with low risk, resulting in damage to the device or the property or in loss of data, or injuries if not avoided.
Attention	For important information about the product.
Note	For useful information about the product

Warning Symbols



Attention Symbol



Electric Shock Hazard

1.2 Safety Precautions



CAUTION: Read all safety warnings before installing, making connections, or servicing this equipment. Failure to comply with these warnings could result in personal injury and/or property damage. Retain all instructions for future reference.

- Verify that the local AC power supply is within the input voltage range printed on the AC adapter's data label.
- Only connect the AC adapter to a compatible grounded electrical outlet.
- Do not position the scale such that it is difficult to disconnect the AC adapter from the power receptacle.
- Make sure that the power cord does not pose a potential obstacle or tripping hazard.
- This equipment is intended for indoor use and should only be operated in dry locations.
- Operate the equipment only under ambient conditions specified in the user instructions.
- Do not operate the equipment in hazardous or unstable environments.
- Do not drop loads on the pan.
- Only use approved accessories and peripherals.
- Disconnect power from the equipment before cleaning or servicing.
- Service should only be performed by authorized personnel.

2. INSTALLATION

2.1 Installing Components

Refer to the illustrations and instructions below to identify and assemble your Scout balance with its components. All components must be assembled before using the balance.

2.1.1 Releasing the transportation Lock

Release the red Transportation Lock on subplatform of the balance by turning the red pointer 90° counter-clockwise.

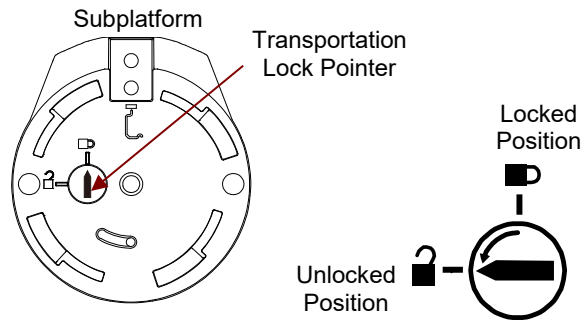


Figure 2-1. Transportation Lock

2.1.2 Installing the Weighing Pan

Balances with a rectangular pan are placed into the sub-platform as shown and rotated counter-clockwise until it locks. Round pans are placed straight down on sub-platform.

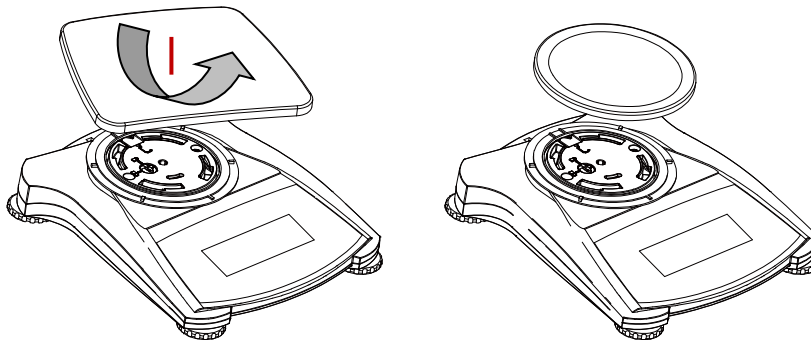


Figure 2-2. Pan Installation

2.1.3 Security Slot

A security slot is provided at the rear of the balance allowing the balance to be secured by an optional cable and lock accessory.

2.2 Selecting the Location

For best performance, the Scout SPX balance should be used in a clean, stable environment. Do not use the balance in environments with excessive drafts, with rapid temperature changes, near magnetic fields or near equipment that generates magnetic fields, or vibrations.

2.3 Leveling the Balance

The Scout has an illuminated level indicator as a reminder that the balance should be leveled for accurate weighing. There is a level bubble in a small round window on the front of the balance. To level the balance, adjust the feet at each corner until the bubble is centered in the circle. Be sure the equipment is level each time its location is changed.

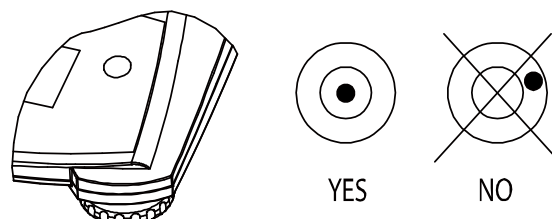


Figure 2-3. Level indicator

2.4 Connecting Power

AC Adapter Installation

AC power is used to power the scale when battery power is not needed. First, connect the AC Adapter (supplied) to the AC Adapter Input Jack at the rear of the balance then connect the AC plug to an electrical outlet.

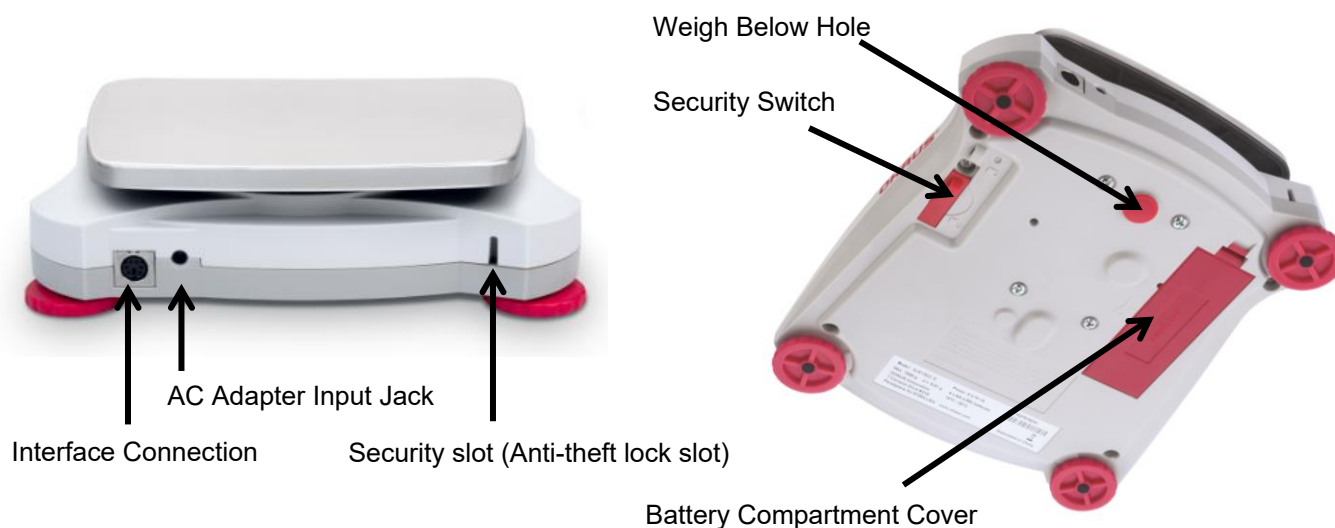


Figure 2-4. Rear and bottom view of balance

Battery Installation

Install the four “AA” batteries with polarity as shown in the battery compartment.

Note:

After power on, it is recommended to warm up the balance for at least 5 minutes before using it.

2.5 Initial Calibration

When the Balance is first installed, and when it is moved to another location, it must be calibrated to ensure accurate weighing results. Have the appropriate calibration masses available before beginning calibration. Refer to the Calibration Section for masses and calibration procedure.

3. OPERATION

3.1 Controls

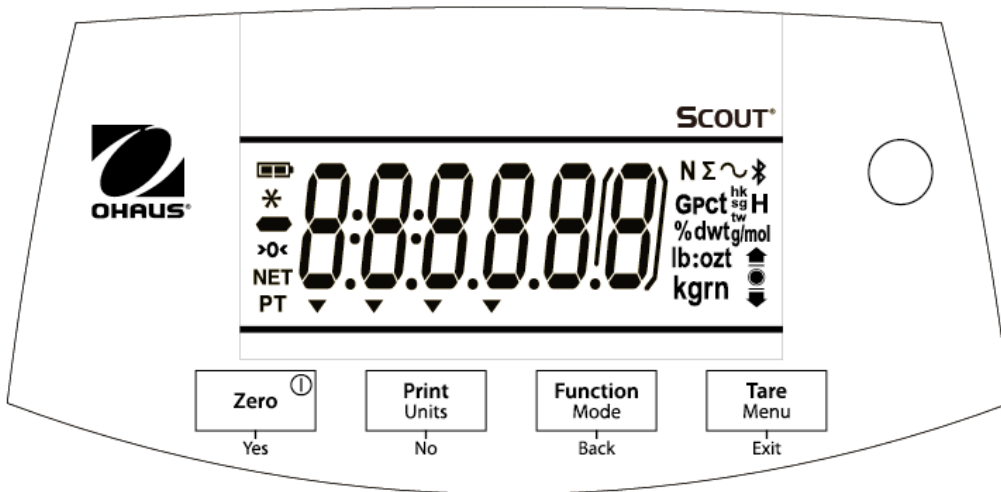
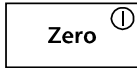
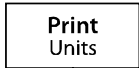
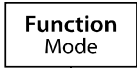



Figure 3-1. Scout Control Panel

TABLE 3-1. Button Functions

Button	 Yes	 No	 Back	 Exit
Primary Function (Short Press)	Zero/On Turns the balance on If balance is On, sets Zero	Print Sends the current value to the selected COM ports if AUTOPRINT is set to Off.	Function Initiates an application mode.	Tare Enter/clear a tare value.
Secondary Function (Long Press)	Zero/Off Turns the balance Off.	Units Changes the weighing unit.	Mode Allows changing the application mode.	Menu Enter the User menu.
Menu Function (Short Press)	Yes Accepts the current setting on the display.	No Advances to the next menu or menu item. Rejects the current setting on the display and advances to the next available setting.	Back Moves Back to previous menu item.	Exit Exits the User menu. Aborts the calibration in progress.

Notes: ¹ Short Press: Press less than 1 second.
² Long Press: Press and hold for more than 2 seconds.

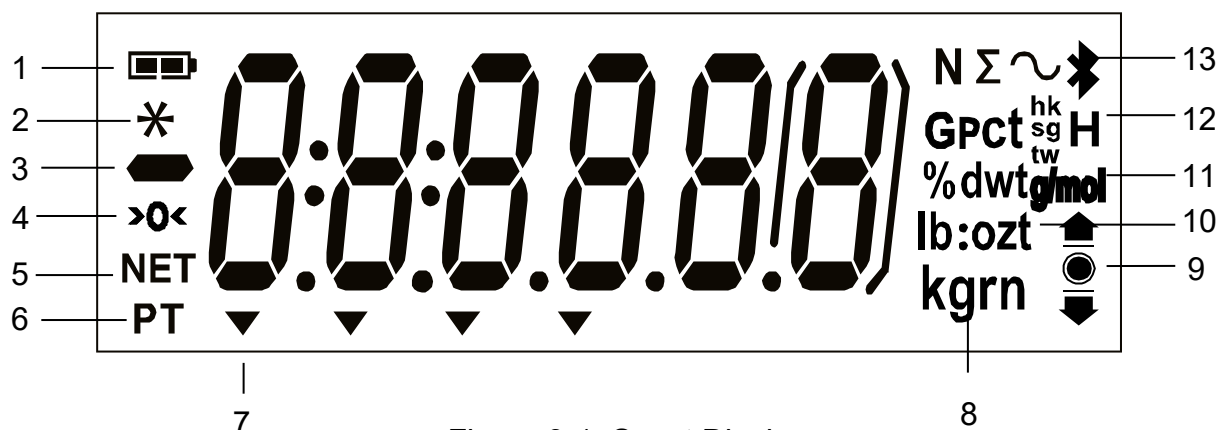


Figure 3-1. Scout Display

TABLE 3-2. Display Symbols*

Item	Description	Item	Description
1	Battery charge symbol	8	Kilogram, grain symbols
2	Stable weight symbol	9	Check Weighing symbols
3	Negative symbol	10	Pound, Ounce, Pound:Ounce symbols
4	Center of Zero symbol	11	Percent, dwt, g/mol symbols
5	NET symbol	12	Gravity, Pieces, t hk, t sg, t tw, Hold symbols
6	Preset Tare symbol	13	Newton, Totalization, Dynamic, Bluetooth symbols
7	Pointer symbols		

Note: * Some symbols might not be available depending on different models.

3.2 Turning Balance On/Off

To turn the balance on, press and hold the **On/Zero Off** button for 1 second. The balance performs a display test, momentarily displays the software version, and then enters the active weighing mode.

To turn the balance off, press and hold the **On/Zero Off** button until OFF is displayed.

3.3 Calibration Operation

When the balance is operated for the first time, a span calibration is recommended to ensure accurate weighing results. Before performing the calibration, be sure to have the appropriate calibration weights. Ensure that the Security switch is set to unlocked position.

Press and hold Menu until [MENU] (Menu) is displayed. When the button is released, the display will show [C.A.L.]. Press **Yes** to accept. [SPAN] will then be shown. Press Yes to begin the span calibration.

[--E--] will be displayed while zero reading is stored. Next, the display shows the calibration weight value (press **No** to toggle value). Place the specified calibration mass on the pan. [--E--] will be displayed while the reading is stored. The display will show [done] if the calibration was successful. The balance returns to the previous application mode and is ready for use.

3.4 Weighing Mode

This mode is the factory default setting.

1. If needed, press and hold **Mode** until [**WEIGH**] (Weigh) is displayed.
2. If required, place an empty container on the pan and press **Tare**.
3. Add sample to the pan or container. The display shows the weight of the sample.

3.5 Counting Mode

This mode counts large numbers of items based on the weight of a reference count.

1. Place an empty container on the pan and press **Tare**.
2. Press and hold **Mode** until [**Count**] (Count) is displayed. [**Clr.PW**] (Clear Average Piece Weight, APW) will then display.
If no APW exists, the balance will display [**Pwt. 0**], proceed to step 5.
3. Press **No** to use the stored APW. Proceed to step 7.
4. Press **Yes** to establish an APW.
5. The balance will then display the stored sample size, i.e. [**Pwt. 0**]. Press **No** or **Back** to toggle the choices (5, 10, 20, 50 or 100).
6. Put the indicated number of pieces on the pan then press **Yes** to calculate the APW. The display shows the piece count.
7. Add additional pieces until the desired count is reached.
8. To clear the stored APW press and hold **Mode** until [**Count**] is displayed. Press **Yes** when [**Clr.PW**] is displayed.

Note: Press **Function** to view the current APW.

3.6 Percent Mode

This mode measures the weight of a sample as a percentage of a reference weight.

1. If required place an empty container on the pan and press **Tare**.
2. Press and hold **Mode** until [**Percent**] is displayed. [**Clr.rEF**] (clear reference) will then display. If no reference weight exists, the balance will display [**Pwt.rEF**], proceed to step 5.
3. Press **No** to use the stored reference weight and proceed to step 6.
4. Press **Yes** to establish a new reference. Balance will now display [**Pwt.rEF**].
5. Add the desired reference material to the pan or container. Press **Yes** to store the reference weight. The display shows 100%.
6. Replace the reference material with the sample material. The display shows the percentage of the sample compared to reference weight.
7. To clear the stored reference press and hold **Mode** until [**Percent**] is displayed. Press **Yes** when [**Clr.rEF**] is displayed.


Note: Press **Function** to view the current reference weight.



3.7 Check Mode

Use this mode to compare the Weight to a target weight range. The balance supports positive, negative and zero check weighing.

3.7.1 Check Weighing

Use this mode to compare the weight of items to a target weight range.


1. Press and hold **Mode** until [**CHECK**] (Check) is displayed. [**ClearEF**] (clear check limits) will then display.
2. Press **No** to use the stored check limits and proceed to step 5.
3. Press **Yes** to establish new check limits. The balance will then display [**Set. Lo**]. Press **Yes** to view the “Low” limit value. Press **Yes** to accept or **No** to edit the “Low” limit value. The stored value then displays with the first digit highlighted [**000.000** kg]. Repeatedly press **No** until the desired number appears. Press **Yes** to accept and highlight the next digit. Repeat until all the digits are correct. Press **Yes** to accept the “low” limit value, [**Set. Hi**] will be displayed.
4. Repeat the same procedure to accept or edit the “high” value.
5. If required, place an empty container on the pan and press **Tare**.
6. Place sample material on the pan or in the container. If the sample weight is under the target weight range, the under icon  will light.

If the sample is within the target weight range, the accept symbol  will light. If the sample is over the target weight range, over icon  will light.

Note: Press **Function** to view the low and high check limits.

Positive Check

Positive check is used to determine when the material added to the balance is within the target range. In this case the UNDER and OVER limits must be positive values. (The OVER limit must be greater than the UNDER limit.)

Add material to the balance until it is within the ACCEPT () range.

Negative Check

Negative check is used to determine when the material removed from the balance is within the target range. In this case the UNDER and OVER limits are both negative values. (The UNDER limit must be greater than the OVER limit.)

Place the item to be weighed on the balance and press **TARE**.

Remove a portion of the item until it is within the ACCEPT range.

Zero Check

Zero check is used when comparing subsequent samples to an initial reference sample. In this case, the UNDER limit must be a negative value and the OVER limit must be a positive value. Place the reference item on the balance and press **TARE**. Remove the reference sample and place the item to be compared on the balance to determine if it is within the ACCEPT range.

3.8 Totalization Mode

This mode allows the user to store a series of weight measurements. Totalize mode has been initiated when the symbol “ Σ ” is displayed and the current unit is displayed.

Notes: Only positive numbers are totalized.

1. Press and hold **Mode** until [**total**] (Totalization) is displayed. [**Unit**] will then be displayed.
2. Press **Yes** or **No** key to clear the current totalized data or not. When a weight is added to the scale the value is displayed.
3. If required, place an empty container on the pan and press **Tare**. Add the first item, its weight is displayed. Press **Function** to store the weight, the “ Σ ” symbol will flash and the display will show the total weight.
4. Press **Tare** (or remove the weight in previous operation) and add the next item. The scale will display its weight. Press **Function** to store its weight. The “ Σ ” symbol will flash and the new total weight will be displayed.
5. Repeat step 4 for all of the items to be accumulated.
6. To clear the stored total press and hold **Mode** until [**total**] is displayed. When [**Unit**] is displayed, press **Yes**.

3.9 Hold Mode

There are two modes for the display hold:

- Peak Hold: allows the user to capture and store the highest stable weight value ($\geq 5d$).
- Display Hold (default): allows the user to capture and store the first stable weight value ($\geq 5d$).

Start

If no weight value is held on the display, press **Function** key to begin. The [**Ready**] (Ready) will be displayed until a weight is added on the pan.

When the stable value is being held on the display, the Hold icon (**H**) will blink and the displayed weight will not change.

Reset

If the pan is empty and a weight value was held on the display, a single short press of the **Function** key will clear the held value and show the new weight on the pan.

1. Press and hold **Mode** until [**Hold**] is displayed.
2. If required, place an empty container on the pan and press **Tare**. Zero value will then display.
3. Press **Function** key to begin. The [**Ready**] (Ready) will be displayed.
4. Place samples to be weighed on the pan.
5. The stable value will be held on the display, the Hold icon (**H**) will blink.

4. MENU SETTINGS

The User Menu allows the customizing of balance settings.

Note: Additional Sub-Menus may be available if Interface Options are installed. See Interface User Manual for the additional setting information.

4.1 Menu Navigation

User Menu:

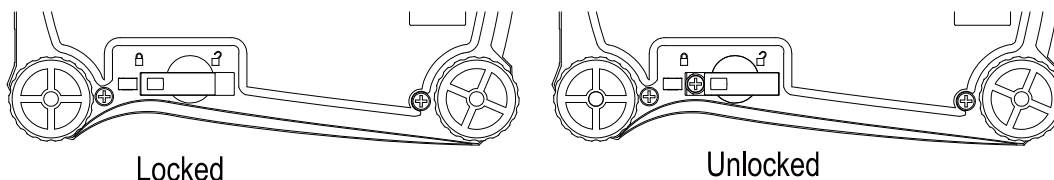
<u>Sub-Menus</u>	<u>C.a.l</u>	<u>S.e.t.u.p</u>	<u>M.o.d.e</u>	<u>U.n.i.t</u>	<u>E.n.d</u>
<p>User Menu Items:</p> <p>Tare Menu Long press - Enter menu Exit</p> <p>Yes Short press - Accept</p> <p>No/Back Short press - Go to Next/Prev. menu</p> <p>Exit Short press - Exit menu</p>	<p>Span Lin</p> <p>End</p>	<p>Reset Yes/No</p> <p>Filter Low/Med/High</p> <p>AZT 0.5/1/3/Off</p> <p>StableRange 0.5/1/2//5</p> <p>Backlight Off/On/Auto</p> <p>Auto Tare Off/On/On-acc</p> <p>Auto Off Off/1/5/10</p> <p>End</p>	<p>Reset Yes/No</p> <p>Weighing On/Off</p> <p>Counting On/Off</p> <p>Percent On/Off</p> <p>Check On/Off</p> <p>Totalize On/Off</p> <p>Hold Disp/Peak/Off</p> <p>End</p>	<p>Reset</p> <p>g</p> <p>kg</p> <p>ct</p> <p>N</p> <p>oz</p> <p>ozt</p> <p>dwt</p> <p>lb</p> <p>lb:oz</p> <p>grn</p> <p>hkt*</p> <p>sgt*</p> <p>twt*</p> <p>t*</p> <p>total/tical</p> <p>C</p> <p>End</p>	

Notes:

* Only available in certain regions.

When the Security Switch is in locked position, the Calibration function is hidden, Units are locked to the current setting.

Security switch:



4.2 Calibration Menu

Enter this menu to perform calibrations.

Span:	Perform
Linearity:	Perform
End Calibration:	Exit menu

Span [SPAN]

Initiates a span calibration procedure (zero and span)

Lin [L IN]

Initiates a linearity calibration procedure (zero, mid-point and span).

End Cal [END]

Advance to the next menu or return to the top of the current menu.

4.3 Setup Menu

Enter this menu to set balance parameters.

Reset:	no , yes
Filter:	Low, Med , High
Auto Zero Tracking:	off, 0.5d , 1d, 3d
Stable:	0.5d, 1d , 2d, 5d
Backlight:	off, on, auto
Auto Tare:	off , on, on-acc
Auto Off:	off , 1, 5, 10
End Setup:	Exit menu

Note: **Bold** always represents factory default value

Reset [**rE5E**]

Reset the Setup menu to factory defaults.

NO = not reset
YES = reset

Filter [**F ILLE**]

Set the amount of signal filtering.

LOW = less stability, faster stabilization time
MED = normal stability, stabilization time
HI = greater stability, slower stabilization time

AZT [**AZE**]

Set the automatic zero tracking functionality.

OFF = disabled
0.5d = the display will maintain zero until a change of 0.5 divisions per second has been exceeded.
1d = the display will maintain zero until a change of 1 divisions per second has been exceeded.
3d = the display will maintain zero until a change of 3 divisions per second has been exceeded.

Stable Range [**STABLE**]

Set the amount the reading can vary while the stability symbol remains on.

0.5d = 0.5 balance division
1d = 1 balance division
2d = 2 balance division
5d = 5 balance division

Back Light [**L IGH**]

Sets backlight functionality.

OFF = always off
ON = always on
AUTO = turns on when a button is pressed or the displayed weight changes.

Note: When connected with power pack, the backlight is always on.

Auto Tare [**A.TArE**]

Set the automatic tare functionality.

OFF = Automatic Tare is disabled
ON = the first stable gross weight is tared
ON-ACC = stable gross loads within the accept limits are tared (in Check weighing mode)

Auto off [A.OFF]

Set the automatic shut off functionality.

- OFF = disabled
- 1 = powers off after 1 minute of no activity
- 5 = powers off after 5 minutes of no activity
- 10 = powers off after 10 minutes of no activity

End Setup [End]

Advance to the next menu or return to the top of the current menu.

4.4 Mode Menu

This menu activates modes so they will be available for use with the Mode button.

Reset:	no, yes
Weigh:	off, on
Count:	off, on
Percent:	off, on
Check:	off, on
Totalize:	off, on
Hold:	Disp, Peak, Off
End Mode:	Exit menu

Reset [rESEt]

Reset the Mode menu to factory defaults.

- NO = not reset
- YES = reset

Weigh [WJEIGH]

Set the status.

- OFF = disabled
- ON = enabled

Count [COUNT]

Set the status.

- OFF = disabled
- ON = enabled

Percent [PERCENT]

Set the status.

- OFF = disabled
- ON = enabled

Check [CHECK]

Set the sub-mode

- OFF = disabled
- ON = enabled

Totalize [TOTAL]

Set the sub-mode

- OFF = disabled
- ON = enabled

Hold [HoLd]

Set the sub-mode.

- OFF = disabled
- Peak Hold = allows the user to capture and store the highest stable weight value (>=5d).
- Display Hold = allows the user to capture and store the first stable weight value (>=5d).

When the stable value is being held on the display, the “Hold” icon will blink and the displayed weight will not change.

Advance to the next menu or return to the top of the current menu.

End Mode [End]**4.5 Unit Menu**

This menu activates units so they will be accessible with the **Units** button. The units in the menu must be turned “on” to be active.

Note: Available units vary by model and local regulations.

g:	off, on
kg:	off, on
ct:	off, on
N:	off, on
oz:	off, on
ozt:	off, on
dwt:	off, on
lb:	off, on
lb:oz:	off, on
grn:	off, on
hkt:	off , on
sgt:	off , on
twt:	off , on
t:	off , tola, tical
C:	off, on
End Unit:	Exit menu

Custom Unit (C)

Use the Custom Unit to display weight in an alternative unit of measure. The custom unit is defined using a conversion factor based on gram unit, where the conversion factor is the number of custom units per gram expressed in scientific notation (Factor x 10^{Exponent}).

Factor

Set the conversion factor (0.1 to 1.99) using the numeric keypad.

The default setting is 1.0.

Exponent

Set the factor multiplier.

-3 = divide the Factor by 1000 (1×10^{-3})

-2 = divide the Factor by 100 (1×10^{-2})

-1 = divide the Factor by 10 (1×10^{-1})

0 = multiply the Factor by 1 (1×10^0)

1 = multiply the Factor by 10 (1×10^1)

2 = multiply the Factor by 100 (1×10^2)

3 = multiply the Factor by 1000 (1×10^3)

Least Significant Digit

Set the graduation.

Settings of 0.5, 1, 2, 5, 10, 100 are available.

Note: Custom Unit is locked at Off position when the Security Switch is set to the locked position.

Follow below instructions below to enter the unit menu to set the Custom Unit.

Press and hold **Menu** until [MENU] is displayed. When the button is released, the display will show [C.A.L]. Press **No** through the succeeding menu items: [C.A.L], [SETUP], [Mode] until [Unit] is displayed.

1. When [Unit] is displayed, press **Yes**.
2. [RESET] will be displayed. Press **No**, [Unit g] will be displayed.
3. Press **No** to toggle through active units until [Unit °] is displayed.
4. Press **Yes**, [Unit °] will be displayed, then press **Yes**.
5. [Factor] is displayed. Press **Yes** to view the default Factor. Press **Yes** to accept or **No** to edit the “factor multiplier”. The stored value is then displayed with the first digit highlighted [0.0000000]. Repeatedly press **No** until the desired number appears. Press **Yes** to accept and highlight the next digit. Repeat until all the digits are correct. Press **Yes** to accept the “Factor” value.
6. [Exp] is displayed. Repeat the same procedure as in step 5 to accept or edit the “Exponent” value. Press **Yes** to accept the “Exponent” value.
7. [L5d] is displayed. Repeat the same procedure as in step 5 to accept or edit the “Least Significant Digit” value. Press the Yes key to accept the graduation value, [End] is displayed.
8. When [End] is displayed, press **Exit** to exit to weighing mode.

4.6 Additional Features

Weigh Below Hook

The Scout Balance is equipped with a weigh below hook for weighing below the balance. The weigh below hook is located at the reverse side of the battery cover as shown below. To use this feature, remove the red protective cover underneath for the weigh below opening.



Attention: Before turning the balance over, remove the Pan and Pan Support (if present), and turn the transportation lock to “locked” position to prevent damage.

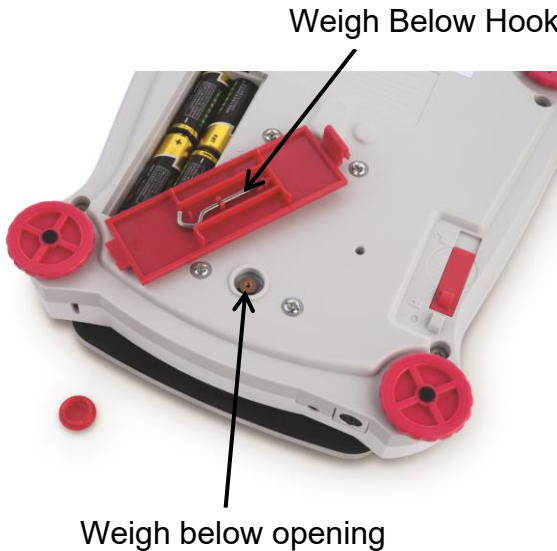


Figure 4-2. Weigh below

The balance can be supported using lab jacks or any other convenient method. Ensure the balance is level and secure and that the transportation lock has been released. Power on the balance, then use a string or wire to attach items to be weighed.

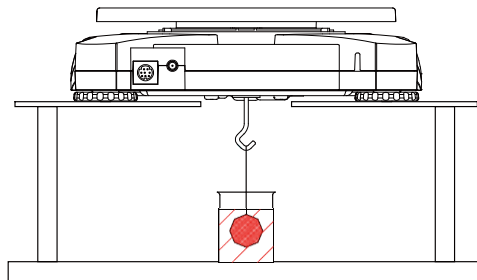


Figure 4-3. Weigh below application

Connecting the Interface

Use an optional interface connectivity kit to connect the balance either to a computer or a printer.

Below Interface kit accessories are available: RS232, USB Host, USB Device, Ethernet, Bluetooth®.

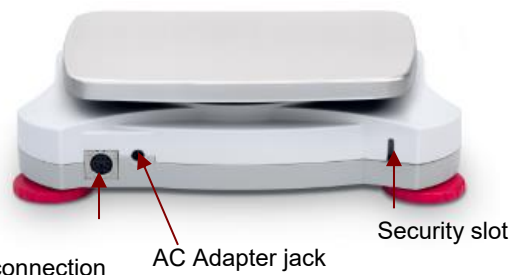


Figure 4-4. Rear of the balance

* Interface kits may vary according to local regulations

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5. MAINTENANCE

5.1 Cleaning



WARNING: Electric Shock Hazard. Disconnect the equipment from the power supply before cleaning. Electric Shock Hazard.

The housing may be cleaned with a cloth dampened with a mild detergent if necessary.

Attention: Do not use solvents, chemicals, alcohol, ammonia or abrasives to clean the housing or control panel.

5.2 Troubleshooting

The following table lists common problems and possible causes and remedies. If the problem persists, contact OHAUS or your authorized dealer.

TABLE 5-1

Symptom	Possible Cause
Cannot turn on	No power to balance
Poor accuracy	Improper calibration; Unstable environment
Cannot calibrate	Security switch in locked position
Err B.1	Weight exceeds power on zero range.
Err B.2	Weight below power on zero range.
Err B.3	Over load (weight exceeds rated capacity)
Err B.4	Under load (pan removed)
Err B.5	Tare out of range
Err B.6	Displayed value exceeds 999999 (possible in Totalization mode)
rEF.Err	Parts counting or percentage error – sample weight <1d. Balance shows error then exits parts counting or goes to [CLr.APU].
Lo.rEF	Percent Reference weight or APW is too low for accurate results
CAL E	Fail to do calibration.
USB.Err	Cannot find menu or app file in U-disk.

5.3 Service Information

If the troubleshooting section does not resolve or describe your problem, contact your authorized OHAUS service agent. For service assistance or technical support in the United States call toll-free 1-800-672-7722 ext. 7852 between 8:00 AM and 5:00 PM EST. An OHAUS product service specialist will be available to provide assistance. Outside the USA, please visit our web site, www.ohaus.com to locate the OHAUS office nearest you.

5.4 Accessories

TABLE 5-2. ACCESSORIES

DESCRIPTION	Item Number	DESCRIPTION	Item Number
RS232 kit	30268982	Stacking Kit, x1	30268988
USB Host kit	30268983	Specific Gravity kit	30269020
USB Device Kit	30268984	Auxiliary Display Kit	30269019
Bluetooth Kit*	30268985	Carrying Case	30269021
Ethernet Kit	30268986	In-Use Cover	30269022
Stacking Kit, x6	30268987	Printers and Cables	Contact OHAUS

Note: * Bluetooth kit is only available in certain regions according to the local regulations.

6. TECHNICAL DATA

The technical data is valid under the following ambient conditions:

Indoor use only

Operating temperature range: +5°C to +40°C

Relative humidity: 10% to 80% at 31°C, decreasing linearly to 50% at 40°C, non-condensing

Altitude: Up to 2000 m

Power: AC power adaptor input 100-240V 50/60 Hz and output 5 V DC 1 A, or 4 AA batteries

Pollution degree: 2

Installation category: II

Main supply voltage fluctuations: up to $\pm 10\%$ of the nominal voltage

6.1 Specifications

TABLE 6-1. SPECIFICATIONS

Model	SPX123	SPX223	SPX222	SPX422	SPX622	SPX1202	SPX2202
Capacity (g)	120	220	220	420	620	1200	2200
Readability (g)	0.001	0.001	0.01	0.01	0.01	0.01	0.01
Repeatability (Std. Dev.) (g)	0.002	0.002	0.01	0.01	0.01	0.02	0.02
Linearity (g)	0.003	0.003	0.01	0.01	0.02	0.03	0.03
Span Calibration Mass*	100 g	200 g	200 g	200 g	300 g	1 kg	2 kg
Linearity Calibration Mass	50, 100 g	100, 200 g	100, 200 g	200, 400 g	300, 600 g	500 g, 1 kg	1 kg, 2 kg
Stabilization Time (s)	1.5		1			1.5	
Construction	ABS plastic housing with 304 stainless steel (SST) pan						
Draftshield	Yes		No				
Calibration	User-selectable external span or linearity calibration / Digital with external weight						
Tare Range	Full Capacity by subtraction						
Weighing Units**	g, kg, ct, N, oz, ozt, dwt, lb, lb:oz, grn, Tael (HongKong), Tael (Singapore), Tael (Taiwan), tical, tola, C (Custom unit)						
Application Modes	Weighing, Parts Counting, Percent Weighing, Check Weighing, Totalization, Display Hold						
Typical Battery Life	80 hours		120 hours		80 hours		
Specified Temperature Range	10°C (50°F) to 40°C (104°F) at 10% to 80% relative humidity, non-condensing						
Storage Conditions	-20°C (-4°F) to 55°C (131°F) at 10% to 90% relative humidity, non-condensing						
Communication	RS232, USB Host, USB Device, Ethernet or Bluetooth*** (all available as accessory)						
Display Type	Backlit LCD: 6-digit 7-segment with white LED backlight						
Display Size	0.78 in / 20 mm digits						
Pan Size (W x D)	Ø93 mm / 3.7 in		Ø120 mm / 4.7 in			170 x 140 mm / 6.7 x 5.5 in	
Balance Dimensions (W x D x H)	202 x 222 x 103 mm / 8 x 8.7 x 4.1 in		202 x 224 x 54 mm / 8 x 8.8 x 2.1 in				
Shipping Dimensions (W x D x H)	300 x 250 x 129mm / 11.8 x 9.8 x 5.1 in		300 x 250 x 86 mm / 11.8 x 9.8 x 3.4 in				
Net Weight	1 kg / 2.2 lb						
Shipping Weight	1.5 kg / 3.3 lb						

Notes:

* Calibration weights are included with models up to 620g capacity.

** Availability is dependent on model and region.

*** Bluetooth kit is only available in certain regions according to the local regulations

TABLE 6-2. SPECIFICATIONS cont.

Capacity x Readability:

Model	SPX123	SPX223	SPX222	SPX422	SPX622	SPX1202	SPX2202
Gram (g)	120 x 0.001	220 x 0.001	220 x 0.01	420 x 0.01	620 x 0.01	1200 x 0.01	2200 x 0.01
Kilogram (kg)	/	/	/	/	/	1.2 x 0.00001	2.2 x 0.00001
Carat (ct)	600 x 0.005	1100 x 0.005	1100 x 0.05	2100 x 0.05	3100 x 0.05	6000 x 0.05	11000 x 0.05
Newton (N)	1.17679 x 0.00001	2.15744 x 0.00001	2.1574 x 0.0001	4.1188 x 0.0001	6.0801 x 0.0001	11.7679 x 0.0001	21.5744 x 0.0001
Ounce (oz)	4.23290 x 0.00005	7.76030 x 0.00005	7.7600 x 0.0005	14.8150 x 0.0005	21.8700 x 0.0005	42.3290 x 0.0005	77.6030 x 0.0005
Ounce Troy (ozt)	3.85810 x 0.00005	7.07320 x 0.00005	7.0730 x 0.0005	13.5030 x 0.0005	19.9335 x 0.0005	38.5810 x 0.0005	70.7320 x 0.0005
Pennyweight (dwt)	77.162 x 0.001	141.463 x 0.001	141.46 x 0.01	270.07 x 0.01	398.67 x 0.01	771.62 x 0.01	1414.63 x 0.01
Pound (lb)	/	/	/	/	1.36690 x 0.00005	2.64555 x 0.00005	4.85020 x 0.00005
Pound:Ounce (lb:oz)	/	/	/	/	1lb:5.8700oz x 0.0005oz	2lb:10.3290oz x 0.0005oz	4lb:13.6030oz x 0.0005oz
Grain (grm)	1851.88 x 0.02	3395.12 x 0.02	3395.0 x 0.2	6481.6 x 0.2	9568.0 x 0.2	18518.8 x 0.2	33951.2 x 0.2

TABLE 6-3. SPECIFICATIONS cont.

Model	SPX421	SPX621	SPX2201	SPX6201	SPX8200
Capacity (g)	420	620	2200	6200	8200
Readability (g)	0.1	0.1	0.1	0.1	1
Repeatability (Std. Dev.) (g)	0.1	0.1	0.1	0.1	1
Linearity (g)	0.1	0.1	0.1	0.2	1
Span Calibration Mass*	200 g	300 g	2 kg	5 kg	8 kg
Linearity Calibration Mass	200, 400 g	300, 600 g	1 kg, 2 kg	3 kg, 6 kg	4 kg, 8 kg
Stabilization Time (s)	1				
Construction	ABS plastic housing with 304 stainless steel (SST) pan				
Draftshield	No				
Calibration	User-selectable external span or linearity calibration / Digital with external weight				
Tare Range	Full Capacity by subtraction				
Weighing Units**	g, kg, ct, N, oz, ozt, dwt, lb, lb:oz, grn, Tael (HongKong), Tael (Singapore), Tael (Taiwan), tical, tola, C (Custom unit)				
Application Modes	Weighing, Parts Counting, Percent Weighing, Check Weighing, Totalization, Display Hold				
Typical Battery Life	120 hours		80 hours		120 hours
Specified Temperature Range	10°C (50°F) to 40°C (104°F) at 10% to 80% relative humidity, non-condensing				
Storage Conditions	-20°C (-4°F) to 55°C (131°F) at 10% to 90% relative humidity, non-condensing				
Communication	RS232, USB Host, USB Device, Ethernet or Bluetooth*** (all available as accessory)				
Display Type	Backlit LCD: 6-digit 7-segment with white LED backlight				
Display Size	0.78 in / 20 mm digits				
Pan Size (W x D)	Ø120 mm / 4.7 in	170 x 140 mm / 6.7 x 5.5 in			
Balance Dimensions (W x D x H)	202 x 222 x 103 mm / 8 x 8.7 x 4.1 in		202 x 224 x 54 mm / 8 x 8.8 x 2.1 in		
Shipping Dimensions (W x D x H)	300 x 250 x 129mm / 11.8 x 9.8 x 5.1 in		300 x 250 x 86 mm / 11.8 x 9.8 x 3.4 in		
Net Weight	1 kg / 2.2 lb				
Shipping Weight	1.5 kg / 3.3 lb				

Notes: * Calibration weights are included with models up to 620g capacity.

** Availability is dependent on model and region.

*** Bluetooth kit is only available in certain regions according to the local regulations

TABLE 6-4. SPECIFICATIONS cont.

Capacity x Readability:

Model	SPX421	SPX621	SPX2201	SPX6201	SPX8200
Gram (g)	420 x 0.1	620 x 0.1	2200 x 0.1	6200 x 0.1	8200 x 1
Kilogram (kg)	/	/	2.2 x 0.0001	6.2 x 0.0001	8.2 x 0.001
Carat (ct)	2100 x 0.5	3100 x 0.5	11000 x 0.5	31000 x 0.5	41000 x 5
Newton (N)	4.119 x 0.001	6.080 x 0.001	21.574 x 0.001	60.801 x 0.001	80.41 x 0.01
Ounce (oz)	14.815 x 0.005	21.870 x 0.005	77.600 x 0.005	218.700 x 0.005	289.25 x 0.05
Ounce Troy (ozt)	13.500 x 0.005	19.930 x 0.005	70.730 x 0.005	199.335 x 0.005	263.60 x 0.05
Pennyweight (dwt)	270.1 x 0.1	398.7 x 0.1	1414.6 x 0.1	3986.7 x 0.1	5270 x 1
Pound (lb)	/	1.3670 x 0.0005	4.8500 x 0.0005	13.6685 x 0.0005	18.080 x 0.005
Pound:Ounce (lb:oz)	/	1lb:5.870oz x 0.005oz	4lb:13.600oz x 0.005oz	13lb:10.700oz x 0.005oz	18lb:1.25oz x 0.05oz
Grain (grn)	6480 x 2	9570 x 2	33950 x 2	95680 x 2	126540 x 20

6.2 Drawings

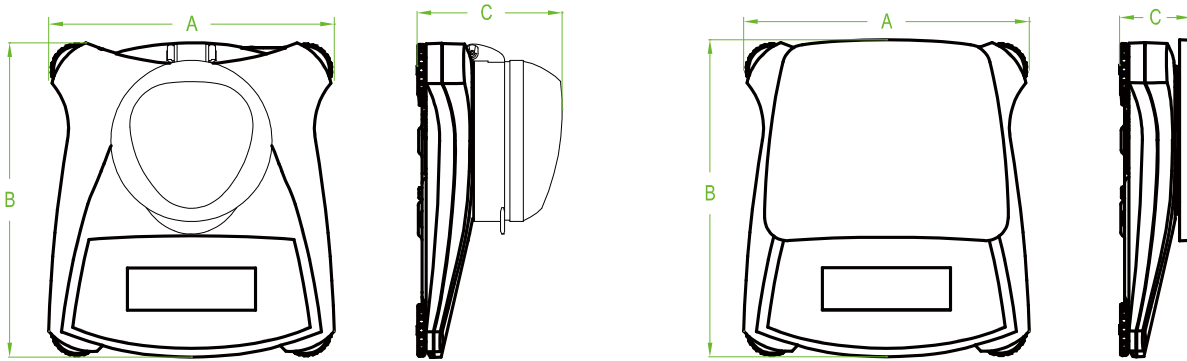


Figure 6.1 Dimensions

Model	A	B	C
with draftshield	202 mm / 8.0 in.	222 mm / 8.7 in.	103 mm / 4.1 in.
w/o draftshield	202 mm / 8.0 in.	224 mm / 8.8 in.	54 mm / 2.1 in.

6.3 Compliance

Compliance to the following standards is indicated by the corresponding mark on the product.

Mark	Standard
	This product complies with the applicable harmonized standards of EU Directives 2011/65/EU (RoHS), 2014/30/EU (EMC), 2014/35/EU (LVD) and 2014/31/EU (NAWI). The EU Declaration of Conformity is available online at www.ohaus.com/ce .
	EN 61326-1
	CAN/CSA-C22.2 No. 61010-1 UL Std. No. 61010-1

Important notice for verified weighing instruments in the EU

When the instrument is used in trade or a legally controlled application it must be set up, verified and sealed in accordance with local weights and measures regulations. It is the responsibility of the purchaser to ensure that all pertinent legal requirements are met.

Weighing Instruments verified at the place of manufacture bear the following supplementary metrology marking on the descriptive plate.

  1259

Weighing Instruments to be verified in two stages have no supplementary metrology marking on the descriptive plate. The second stage of conformity assessment must be carried out by the applicable weights and measures authorities.

If national regulations limit the validity period of the verification, the user of the weighing instrument must strictly observe the re-verification period and inform the weights and measures authorities

As verification requirements vary by jurisdiction, the purchaser should contact their local weights and measures office if they are not familiar with the requirements.

Disposal

In conformance with the European Directive 2002/96/EC on Waste Electrical and Electronic Equipment (WEEE) this device may not be disposed of in domestic waste. This also applies to countries outside the EU, per their specific requirements.

Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment. If you have any questions, please contact the responsible authority or the distributor from which you purchased this device.

Should this device be passed on to other parties (for private or professional use), the content of this regulation must also be related.

Disposal instructions in Europe are available online at www.ohaus.com/weee.

Thank you for your contribution to environmental protection.

FCC Note

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Industry Canada Note

This Class B digital apparatus complies with Canadian ICES-003.

ISO 9001 Registration

In 1994, OHAUS Corporation, USA, was awarded a certificate of registration to ISO 9001 by Bureau Veritas Quality International (BVQI), confirming that the OHAUS quality management system is compliant with the ISO 9001 standard's requirements. On June 21, 2012, OHAUS Corporation, USA, was re-registered to the ISO 9001:2008 standard.

LIMITED WARRANTY

OHAUS products are warranted against defects in materials and workmanship from the date of delivery through the duration of the warranty period. During the warranty period OHAUS will repair, or, at its option, replace any component(s) that proves to be defective at no charge, provided that the product is returned, freight prepaid, to OHAUS. This warranty does not apply if the product has been damaged by accident or misuse, exposed to radioactive or corrosive materials, has foreign material penetrating to the inside of the product, or as a result of service or modification by other than OHAUS. In lieu of a properly returned warranty registration card, the warranty period shall begin on the date of shipment to the authorized dealer. No other express or implied warranty is given by OHAUS Corporation. OHAUS Corporation shall not be liable for any consequential damages.

As warranty legislation differs from state to state and country to country, please contact OHAUS or your local OHAUS dealer for further details.



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