Scout® Series Balances - STX
Instruction Manual

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1. INTRODUCTION

1.1 Description

The Scout STX balance is a high quality weighing instrument that will provide you with years of service if properly cared for. Models are available with ranges from 120g to 8200g.

1.2 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

 General Hazard  Electric Shock Hazard

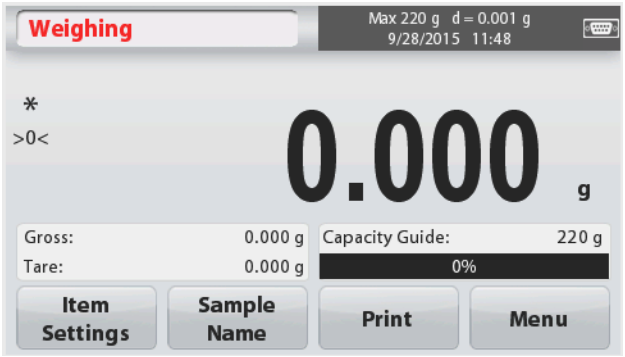
1.3 Safety Precautions

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 input voltage range printed on the data label and the plug type matches the local AC power to be used.
- Make sure that the power cord does not pose a potential obstacle or tripping hazard.
- Use the balance only in dry locations.
- Do not drop loads on the pan.
- Use only approved accessories and peripherals.
- Operate the equipment only under ambient conditions specified in these instructions.
- Disconnect the equipment from the power supply when cleaning.
- Do not operate the equipment in hazardous or unstable environments.
- Service should only be performed by authorized personnel.
- Do not position the balance such that it is difficult to reach the power connection.

1.4 Features

Touch Controls: Quick, graphical access to all control functions, applications and features.



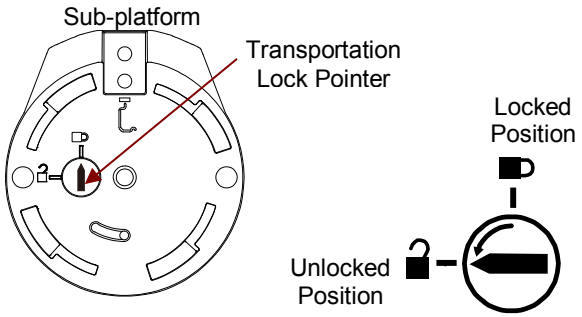
2. INSTALLATION

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.

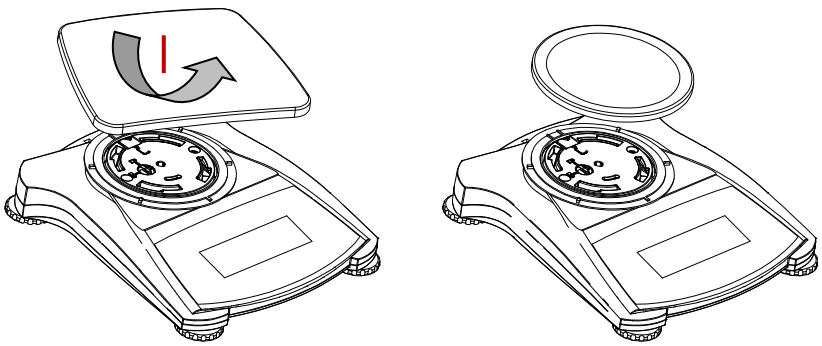
2.1.1 Releasing the Transportation Lock

Release the red transportation lock on the sub-platform of the balance by turning the pointer 90° counter-clockwise.



2.1.2 Installing the Weighing Pan

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



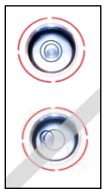
2.1.3 Security Slot

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 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.

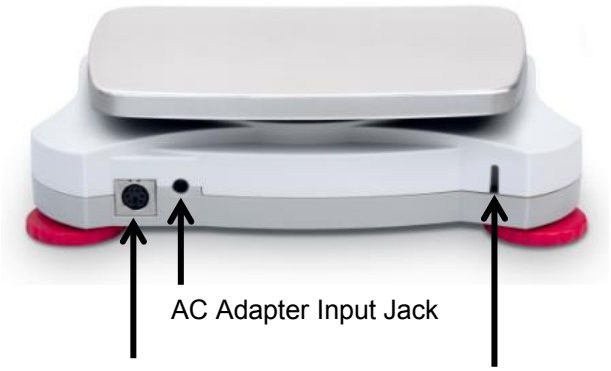
Be sure the balance is level each time its location is changed.

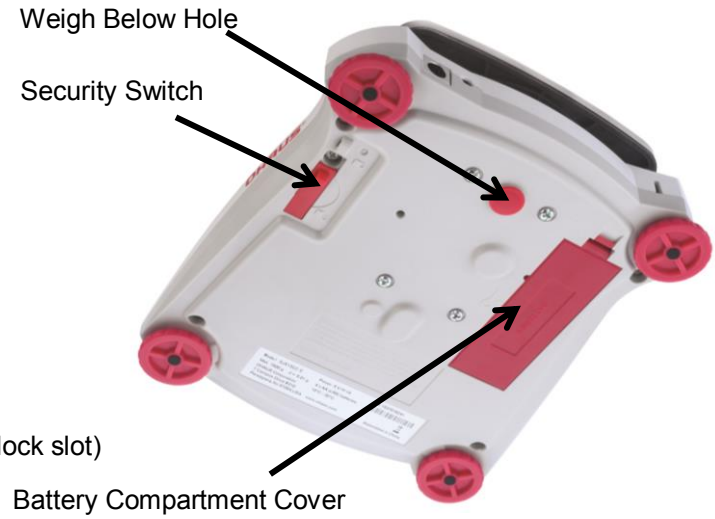
See the Level Assist screen in the User Settings Menu.

2.4 Connecting Power

AC Adapter Installation

AC power is used to power the balance 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.





Battery Installation

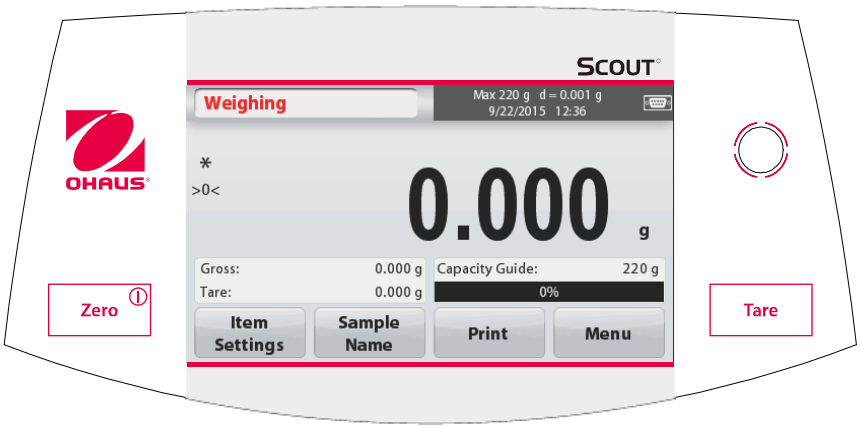
Install the four “AA” batteries with polarity as shown in the battery compartment.

2.5 Calibration

When the Balance is first installed, and when it is moved to another location, it must be calibrated to ensure accurate weighing results. If preferred, the balance can be manually calibrated with external masses. Have the appropriate calibration masses available before beginning calibration. Refer to the Calibration and Specification Sections for masses and calibration procedure.

3. OPERATION

3.1 Controls



Button Functions

Table 3-1.

Button	Zero	Tare
Primary Function (Short Press[1])	**On** Turns the balance on **Zero** If balance is On, sets Zero	**Tare** Enter/clear a tare value.
Secondary Function (Long Press[2])	**Off** Turns the balance Off.	

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

3.2 Overview of Display, Home Screen

This equipment utilizes a touch-sensitive display. *Touch* areas and Buttons to control the equipment's functions.

Main Application Screen:

3.3 Principal Functions and Main Menu

Weighing: Press **Zero** to set the display to zero. Place an item on the pan. Display indicates gross weight.

Taring: With no load on the pan, press Tare to set the display to zero. Place an empty container on the pan and press **Tare**. Add material to the container and its net weight is displayed. Remove container and container's weight appears as a negative number. Press **Tare** to clear.

MENU & SCREEN NAVIGATION

Touch **Menu** to open the menu list.

Calibration:
Touch to view calibration options.

Balance Setup:
Touch to view balance settings.

Weighing Units:
Touch to view weighing units.

Data Maintenance:
Touch to view data maintenance options.

Communication:
Touch to view COM Device Settings and Print Settings.

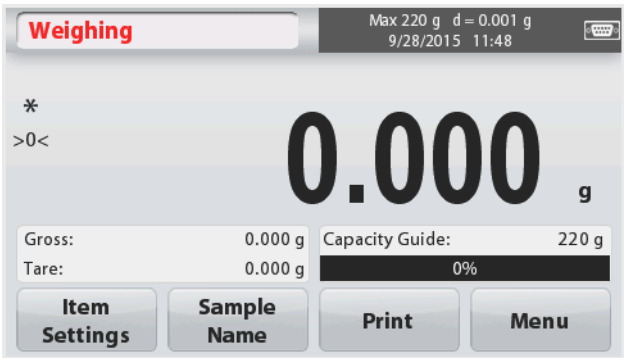
GLP and GMP Data:
Insert user data for traceability.

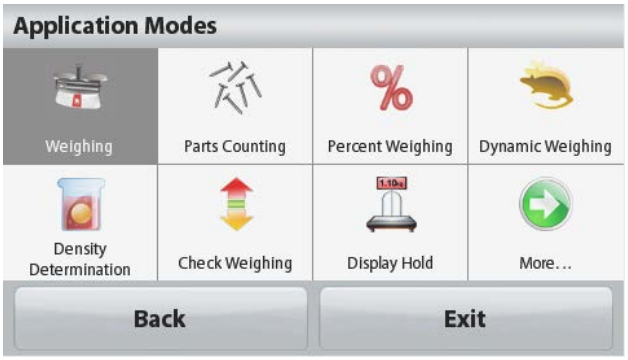
Factory Reset:
Touch to do a Factory reset.

Lockout:
Touch to access the Lockout menu list.

4. APPLICATIONS

The balance can be configured to operate in various Application modes.
Touch the top left button in the Application area to choose the mode:





The Scout Balance incorporates the following Applications.


Weighing


Parts Counting


Percent Weighing


Dynamic (Animal) Weighing


Density Determination


Check Weighing


Display Hold


Totalization


Mole

Note: Before using any application, be sure the balance has been leveled and calibrated.

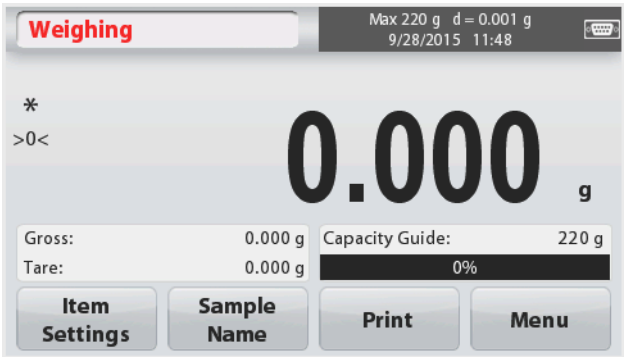
4.1 Weighing

Use this application to determine the weight of items in the selected unit of measure.

Weighing

1. In the upper left portion of the home screen, select Weighing (this application is the default).
2. Press **Tare** or **Zero** if necessary to begin.
3. Place objects on the pan to display the weight. When stable, the * appears.
   The resulting value is displayed in the main Weighing Line in the active unit of measure.

The **WEIGHING** Home screen:



Main Display Line

Reference Fields

Application Buttons


Application Icon

4.1.1 Item Settings

To view or adjust the current settings

Touch the **Item Settings** button. The Settings screen appears.

Capacity Bar: Set to On to display the capacity guide on the weighing main screen.

Weighing Units: Select the displayed unit.

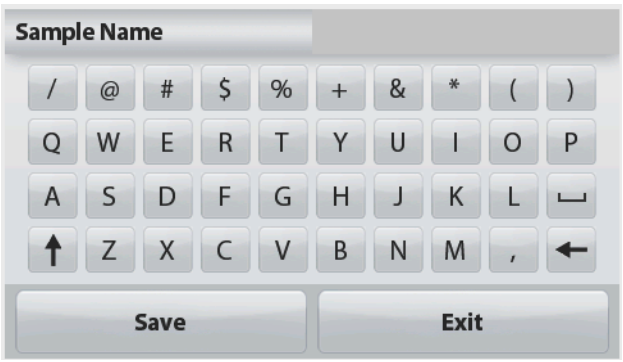
Print Settings: To view or adjust the print settings.

4.1.2 Sample Name

Enter a sample name with the alphanumerical keypad and then press Save to store the name and return to weighing mode main screen. Press ↑ to alternate between Lower and Upper case characters.

Lower Case:

Upper Case:



4.1.3 Print / Save to USB

Print the information based on the settings in Print Settings menu.
Note: This button will be disabled if the optional interface kit (buy separately) is not installed. When the USB Host interface kit is installed, “Save to USB” will be shown.

Save to USB
Insert the USB flash drive into the USB slot. Next, press the Save to USB button to save the data to the USB flash drive. Once saved, the button will momentarily change color to orange.

CAUTION:
Depending on the USB drive used, all data might not be transferred from the balance or the display might freeze. If this happens, unplug the USB flash drive and try another USB flash drive.
Ohaus takes no responsibility if data on USB flash drive is erased or if the USB flash drive breaks while it is connected to the balance.
To minimize the risk of problems arising, Ohaus suggests using a high quality USB flash drive.

For more information, please refer to USB Host instruction manual.

4.1.4 Menu

To view the Main Menu options.

4.2 Parts Counting

Use this application to count samples of uniform weight.

1. In the upper left portion of the home screen, select **Parts Counting**.
2. Press **Tare** or **Zero** if necessary to begin.
3. Establish an Average Piece Weight (APW), the default (or last) APW is displayed.
4. Place objects on the pan to display the number of pieces on Main Display Line.

The **PARTS COUNTING** Standard Home screen:

Main Display Line

Reference Fields

Application Buttons

Application Icon

4.2.1 Item Settings

To view or adjust the current settings, touch the **Item Settings** button:

Touch the **Item Settings** button. The Settings screen appears.

Sample Name: Enter a sample name with the alphanumerical keypad and then press Save to store the name and return to Item Settings screen as shown to the right.

Auto Optimization: It re-calculates the piece weight automatically to improve counting accuracy as parts are added.

By default Auto Optimization is **Off**.

Weighing Units: Select the displayed unit.

Print Settings: To view or adjust the print settings.

4.2.2 APW/Samples:

Enter to set APW and Sample size in pieces by the numerical keypad.

Establish an Average Piece Weight (APW)

Each time a new type of part is counted, the nominal weight of one piece (Average Piece Weight or APW) must be established using a small quantity of pieces. This APW is stored until replaced by another APW.

There are two methods to establish the APW value: APW and Samples.

APW:

Set a *known* Average Piece Weight (APW)

To adjust the APW value directly, touch the **APW** button.

A numeric input window appears.

Key in the desired APW Weight, then press **Save**.

The display returns to the application home screen with the new APW value in the reference field.

Samples:

Set a new Average Piece Weight (APW) – Derived

To establish a new APW, touch the **Samples** button.

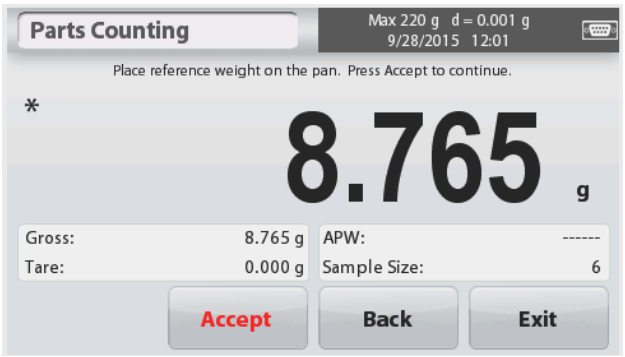
A numeric input window appears.

Key in the desired Sample Size (1 to 10000 pieces), then press **Save**.

The display returns to the application home screen. Follow the screen instructions to establish a new APW.

Place the reference weight on the pan and press **Accept** to continue. The sample size displayed will be used. The new APW value is shown in the reference field.

The Main screen returns with the new APW value calculated.



4.3 Percent Weighing

Use Percent Weighing to measure the weight of a sample displayed as a percentage of a pre-established Reference Weight.

The default (or last) Reference Weight is displayed.

1. In the upper left portion of the home screen, select Percent Weighing.
2. Place an object on the pan. The difference between the sample and the Reference Weight is displayed as both a weight and a percentage.

The **PERCENT WEIGHING** Home screen:

Main Display Line

Reference Fields

Application Buttons

Application Icon

4.3.1 Item Settings

To view or adjust the current settings

Touch the **Item Settings** button. The Settings screen appears.

Sample Name: Enter a sample name with the alphanumerical keypad and then press Save to store the name.

Weighing Units: Select the displayed unit.

Print Settings: To view or adjust the print settings.

4.3.2 Recalculate Reference Weight

To establish a new reference weight value, touch the **Recalculate Ref. Weight** button. Follow the screen instructions to establish a new reference weight.

Alternatively, press the **Ref. Weight** button from the Percent Weighing Recalculate Ref. Wgt screen to establish a new reference weight manually through a numerical keypad.

Key in the desired Reference Weight, then press **Save**.

The display returns to the Percent Weighing home screen.

4.4 Dynamic/Animal Weighing

Use this application to weigh an unstable load, such as a moving animal. Two different start/reset modes can be selected: **Manual** (start and stop via key press) and **Automatic** (start and stop automatically).

The **DYNAMIC WEIGHING** Home screen:

Main Display Line

Reference Fields

Application Buttons

Application Icon

Dynamic Weighing – Manual (default)

1. In the upper left portion of the home screen, select Dynamic Weighing.
2. Press Tare or Zero if necessary to begin.
3. Place objects on the pan. Press the **Start** button.

4. The balance begins a countdown (averaging process).

   During the countdown, the information line displays the time remaining.

   If necessary, press **Stop** to quit and return to the Home screen.

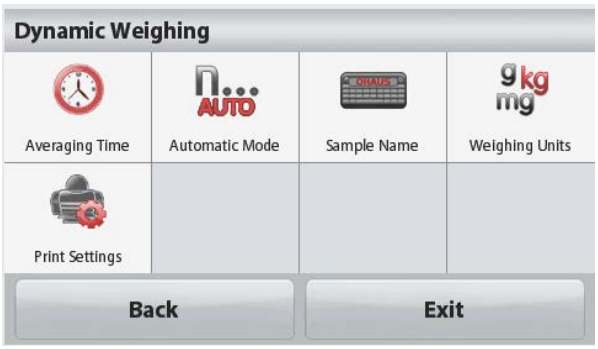
5. When the countdown ends, the result is displayed and held.

   Press **Clear** to clear the held weight and return to the Initial screen.

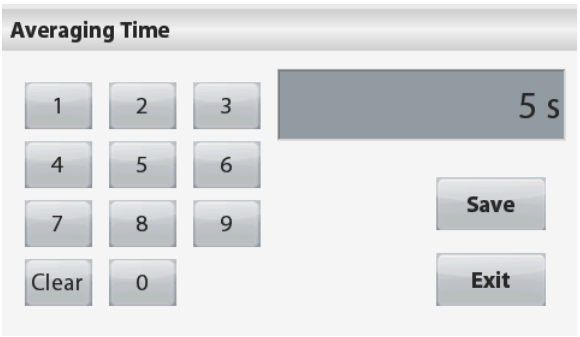
Note: Clear the pan before beginning a new Dynamic Weighing cycle.

4.4.1 Item Settings

To view or adjust the current settings:
Touch the **Item Settings** button. The Settings screen appears.



Averaging Time: The Averaging Time can be set from 1 to 99 seconds.
The default value is 5 seconds.



Automatic Mode:

The cycle begins when an object (animal) is placed on the pan, and the held value is automatically reset when the object is removed from the pan (10-second delay).

Sample Name: Enter a sample name with the alphanumerical keypad and then press Save to store the name.

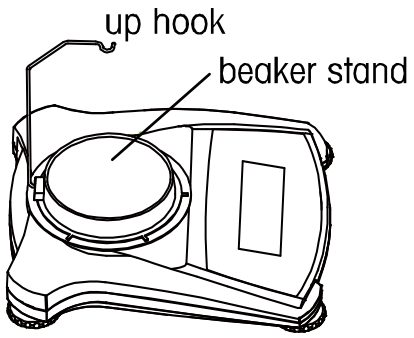
Weighing Units: Select the displayed unit.

Print Settings: To view or adjust the print settings.

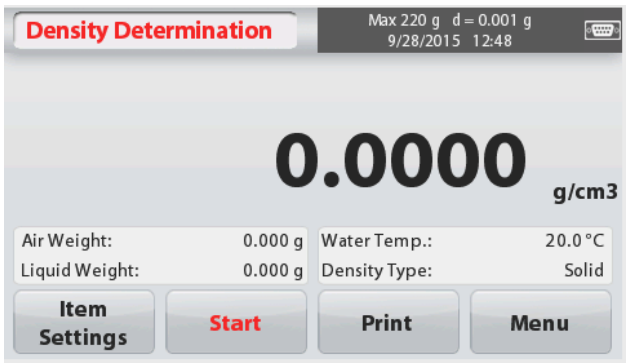
4.5 Density Determination

The Scout can be used to determine an object's density including solid and liquid.

A density determination kit (not included, buy separately) is designed to be used with Ohaus Scout STX. However, you may use whatever lab apparatus that suits the requirements for density measurements. The weigh below hook is recommended to use if the solids weight is more than 200g.

Prepare the balance as shown right 1. Turn off the balance. 2. Remove the balance platform. 3. Insert they up hook and install the beaker stand (beaker is not supplied). 4. Power on the balance 5. In the upper left portion of the home screen select Density Determination. 6. Follow below instructions to determine the object's density.	

The **DENSITY DETERMINATION** Home screen:



Main Display Line

Reference Fields

Application Buttons

Application Icon

4.5.1 Measuring the Density of a Solid Using Water (default)

Press the **Item Settings** button to open the Density Determination **Settings** screen.

Confirm the following **Setups** are selected:

- ✓ **Density Type: Solid**
- ✓ **Auxiliary Liquid: Water**
- ✓ **Porous Material: Off**

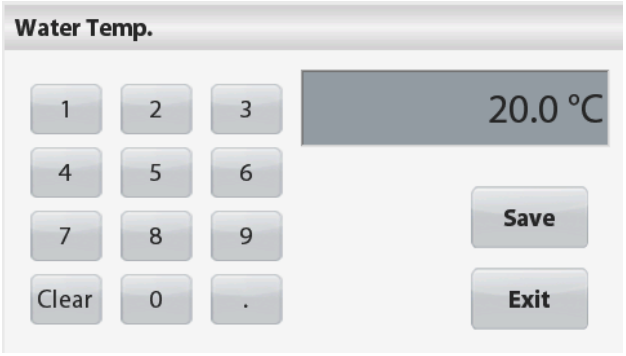
To adjust the water temperature value, touch the **Water Temp** button.

A numeric input window appears.

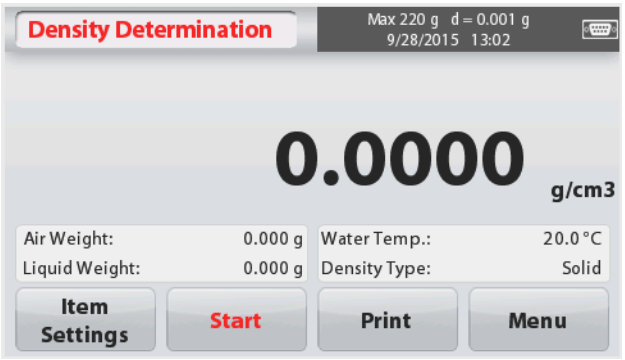
Enter the actual water temperature, then press **Save**.

The balance calculates water density based on the water temperature value entered (internal lookup table). Measure the actual water temperature using a precision thermometer.

Press **Back** to return to the Density Determination home screen.

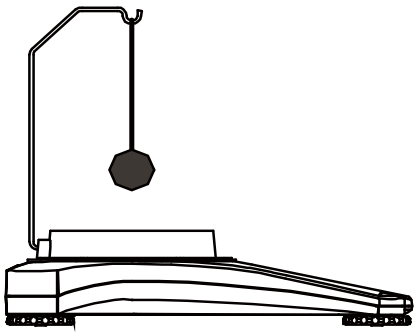


To begin the Density Determination process, press **Start**.



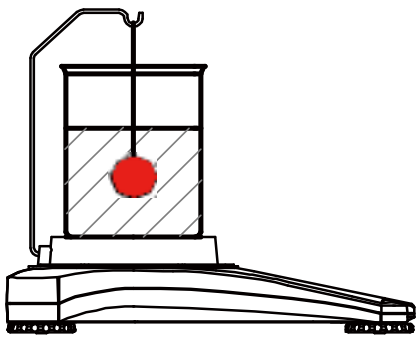
Step 1 of 2 – Weigh the Sample in Air.

Press **Start**. Follow screen instructions, and then press **Accept** to store the dry sample weight ("in air").

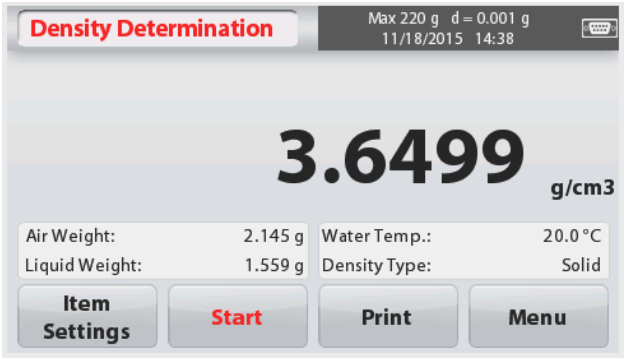


Step 2 of 2 – Weigh the Sample Submerged in the Liquid.

Follow the screen instructions, then press **Accept** to store the sample weight (submerged in liquid).



Once the necessary weights have been determined, the density of the sample is displayed in **g/cm^3** (along with the weight in air, weight in water) on the Application screen.



Press **Start** to reset all the weight values and restart the process.

The balance can also be used to measure the Density of a Buoyant Material Using Water.

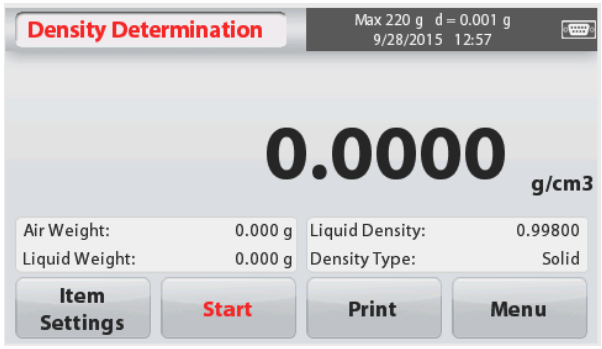
Follow the same procedure as Solid Material above, except in Density Determination step 2, **push the sample down** (requires special tool, not supplied) into the liquid until it is fully submerged.

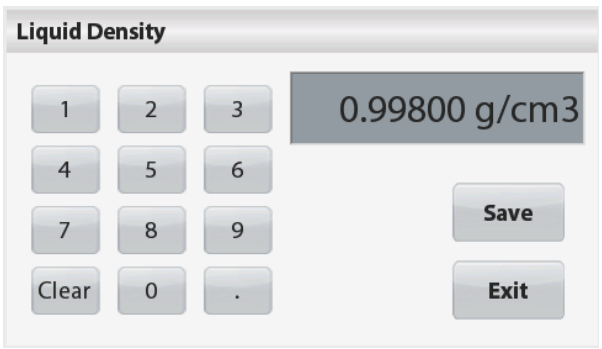
4.5.2 Measuring the Density of a Solid Using an Auxiliary Liquid

To enable this feature, enter the **Item Settings** screen and select the following:

- ✓ **Density Type: Solid**
- ✓ **Auxiliary Liquid: Other**
- ✓ **Porous Material: Off**

Confirm the default values displayed (Liquid Density, etc) are correct.
Begin the Density determination process by pressing **Start** and following the screen instructions.





4.5.3 Measuring the Density of a liquid using a Calibrated Sinker (not supplied)

Enable this feature, enter the Density **Item Settings** screen and select the following;

- ✓ **Density Type: Liquid**

Note: when the Density Type is set to Liquid, the Liquid type and Porous material selections are disabled.

Confirm that the default value displayed (sinker volume) is correct. To edit the default values, touch **Sinker Volume**.

A numeric input window is displayed.

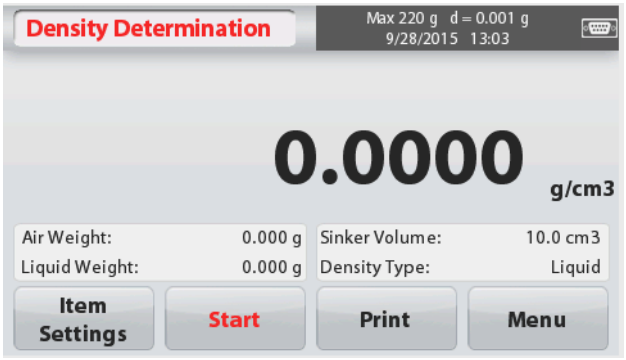
Key in the desired value, then press **Save**.

The display returns to the previous screen.

Edit the Liquid temperature if required.

To return to the Density Determination home screen, touch **Back**.

Press **Start** to start the process.

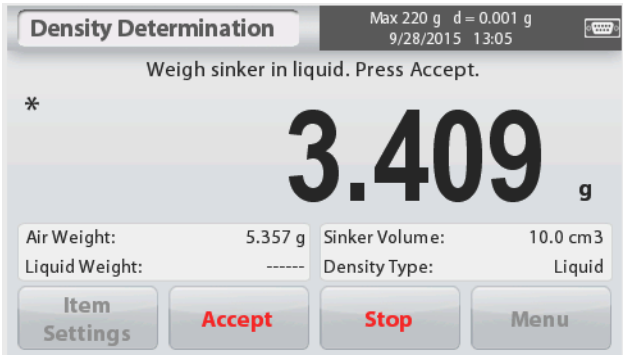


Step 1 of 2 – Weigh the Sinker in Air.

Follow the screen instructions, then press **Accept** to store the sinker weight ("in air").

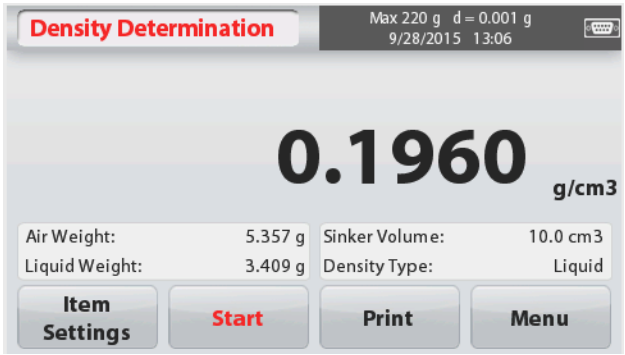
Step 2 of 2 – Weigh the Sinker Submerged in the Test Liquid.

Follow the screen instructions, then press **Accept** to store the sinker weight (submerged in liquid).



Once the necessary weights have been determined, the density of the Liquid sample is displayed in **g/cm^3**(along with the weight in air, weight in water) on the Application screen.

Press **Start** to reset all the weight values and restart the process.



4.5.4 Measuring the Density of Porous Material Using Oil

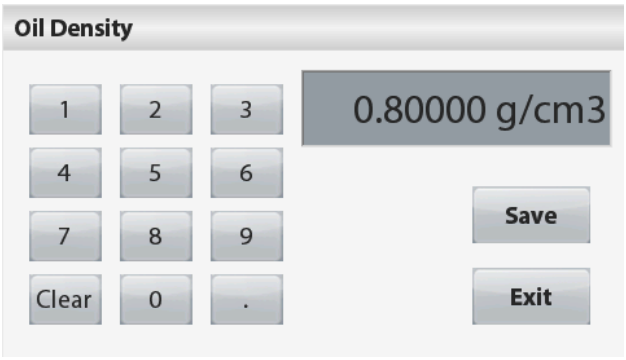
To enable this feature, enter the Item Settings screen, and select the following:

- ✓ **Density Type: Solid**
- ✓ **Auxiliary Liquid: Water**
- ✓ **Porous Material: On**

To adjust the Water Temperature or Oil Density values, touch the **Water Temp** or **Oil Density** button.

The balance calculates water density based on the water temperature value entered (look-up table).

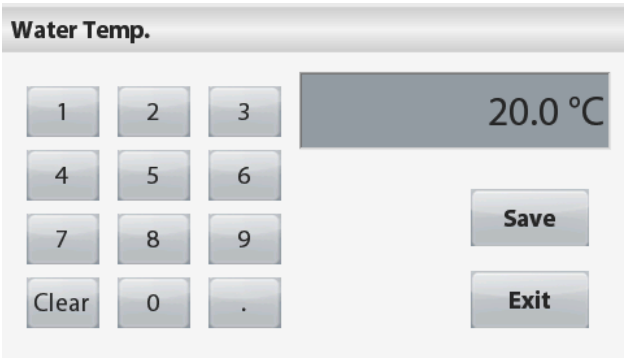
Measure the actual water temperature using a precision thermometer.



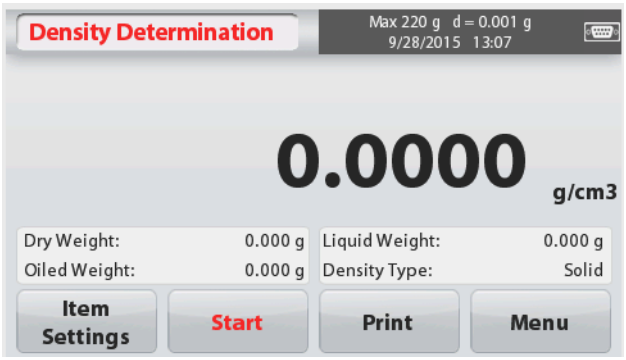
Numeric input windows appear.

Key in the desired value, then press **Save**.

To return to the Density Determination home screen, touch **Exit.**



Press **Start** to begin density determination.



Step 1 of 3 – Weigh the Un-Oiled Sample in Air.

Follow the screen instructions then press **Accept** to store the dry sample weight (in air).

Step 2 of 3 – Weigh the Oiled Sample in Air.

Follow the screen instructions then press **Accept** to store the sample weight (oiled).

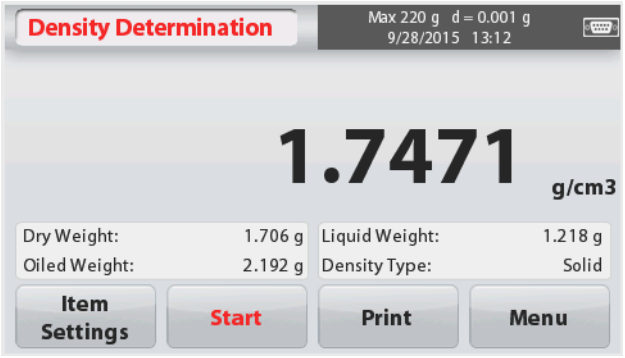
Step 3 of 3 – Weigh the Oiled Sample Submerged in Liquid.

Follow the screen instructions then press **Accept** to store the oiled sample weight (submerged in liquid).

Once the necessary weights have been determined, the density of the sample is displayed in **g/cm^3** (along with the weight in air, un-oiled and oiled, and weight in water) on the Application screen

The value stays on the display until **Start** is touched.

Press **Start** to reset all the weight values and restart the process.



4.6 Check Weighing

Check Weighing is used to compare the weight of a sample against target limits.

1. In the upper left portion of the home screen, select **Check Weighing**.
2. The default (or last) Check weigh limits are displayed.
3. Place objects on the pan.
4. The **Under/Accept/Over** status is shown in the progress bar area while the actual weight of the item is shown on the main Display Line.

The **CHECK WEIGHING** Home screen:

Main Display Line

Reference Fields

Application Buttons

Application Icon

4.6.1 Item Settings

To view or adjust the current settings
Touch the **Item Settings** button. The Settings screen appears.

Sample Name: Enter a sample name.

Weighing Units: Select the displayed unit.

Print Settings: To view or adjust the print settings

4.6.2 Limits

To view or adjust the current settings
Touch the **Limits** button. The limits settings screen appears.

The check limit values are displayed in the settings screen.

To set the *Over Limit value*, touch the **Over Limit** button and then enter the desired limit weight.

To set the *Under Limit value*, touch the **Under Limit** button and then enter the desired limit weight.

When finished, press **Exit** to return to application home screen.

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.

4.7 Display Hold

The Display hold application allows the user to capture and store the highest stable weight in a series of weight measurements.

In the upper left portion of the home screen, select **Display hold**.

The **DISPLAY HOLD** Home screen:

Main Display Line

Reference Fields

Application Buttons

Application Icon

4.7.1 Item Settings

To view or adjust the current settings:

Touch the **Item Settings** button. The Settings screen appears.

Mode: Select the mode to either Peak Hold or Display Hold (default).

Sample Name: Enter a sample name.

Weighing Units: Select the displayed unit.

Print Settings: To view or adjust the print settings

4.7.2 Display Hold Mode

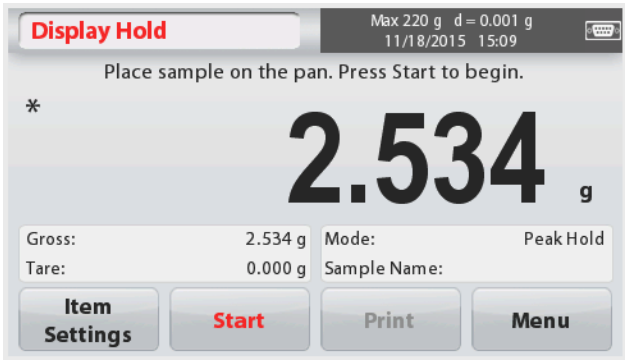
This mode allows the user to hold a stable weight reading.
Follow the screen instructions to begin.

1. Place item on the pan and press **Hold**. The capture process starts.
2. The Main Display Line now shows the first stable weight.
3. Press Clear to remove the hold and return to Display Hold Home screen.

4.7.3 Peak hold mode

This mode allows the user to hold the highest stable weight reading.
Follow the screen instructions to begin.

1. Select Peak Hold Mode in Item settings (see section 4.7.1).
2. Place item on the pan and press **Start**. The capture process starts.
3. Continue to weigh items. The highest stable weight will be held.
4. Press **Stop** to remove the hold and return to normal operation screen.

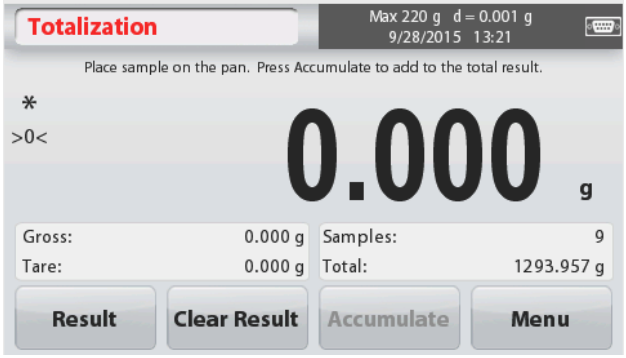


4.8 Totalization

Totalization measures the cumulative weight of a sequence of items. The cumulative total may exceed the capacity of the Balance. The maximum number of samples (n) is 99.

1. Touch the upper left portion of the home screen. Application menu appears. Touch the **More** icon to enter next page then select **Totalization** if it is present.
2. Place items on the pan to begin.

The **TOTALIZATION** Home screen:



Main Display Line

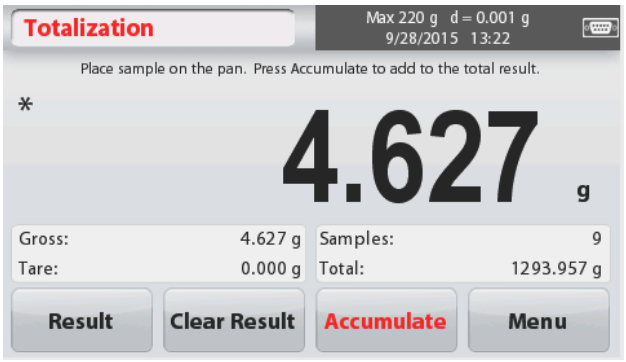
Reference Fields

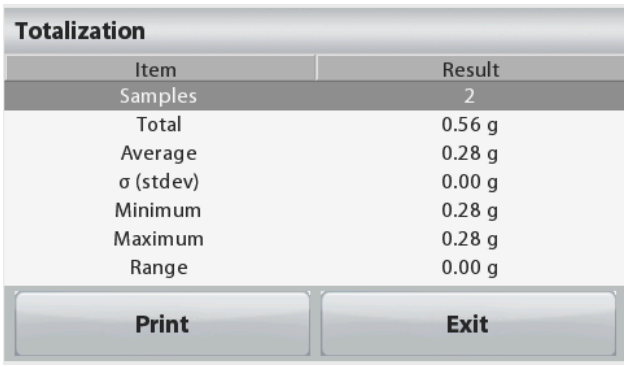
Application Buttons

Application Icon

The sample weight is shown on the Main Display Line.

3. Press **Accumulate** to add the weight of the item to the total.
   When stable, the new total is shown on the secondary Display Line.
4. Remove the item from the weighing pan, then add the next item and continue as above.
5. Press **Result** to view the accumulation results and if needed print them out or save to a USB flash drive.
6. When finished, press the **Clear Result** button.
   A confirmation window will appear.
   Press **Yes** to reset the total weight to zero.
   Press **No** to return to the main screen.



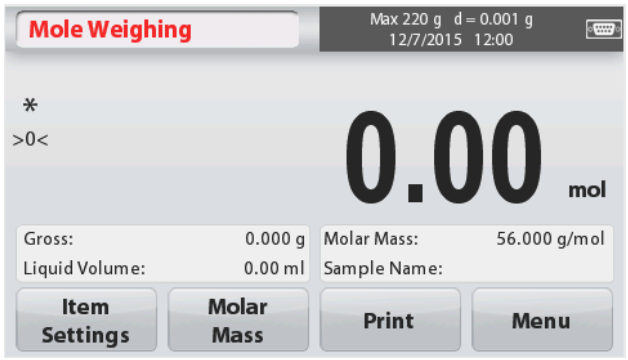


4.9 Mole Weighing

Use this application to measure the amount of a sample.

1. In the upper left portion of the home screen, select **Mole** (if it does not appear, press the **More** icon).
2. Press **Molar Mass** to set the Molar mass of the substance.
3. Place the substance on the pan to begin.

The **Mole Weighing** Home screen:



Main Display Line

Reference Fields

Application Buttons

Application Icon

4.9.1 Item Settings

To view or adjust the current settings:

Touch the **Item Settings** button. The Settings screen appears.

Liquid Volume: Set the Solution volume of the Liquid if molarity info is required.

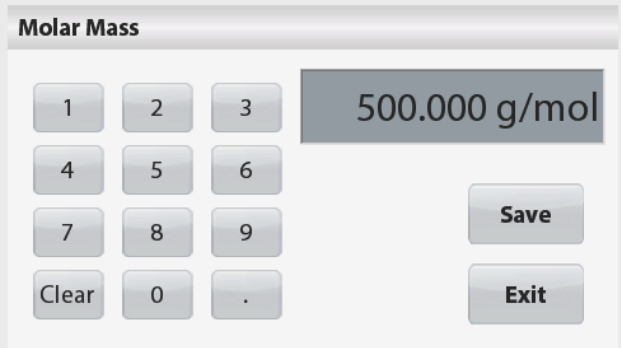
Sample Name: Enter a sample name.

Weighing Units: Select the displayed unit for gross and tare.

Print Settings: To view or adjust the print settings

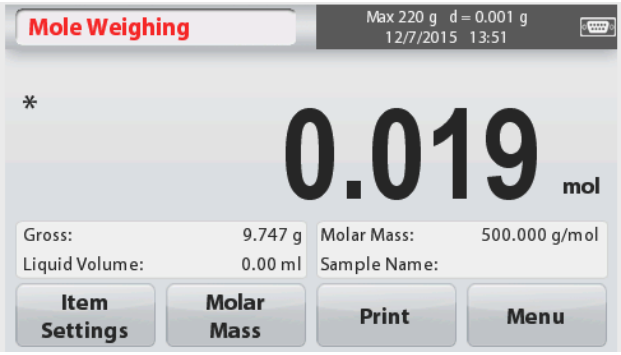
4.9.2 Enter Molar Mass

Press **Molar Mass**, and use the numeric keypad to enter the required Molar Mass value of the substance, and then press **Save**.



4.9.3 Calculate Molarity

The Molarity is only calculated when the Liquid Volume is set up. If Liquid Volume is set, the Molarity value can be seen at the bottom right window block.



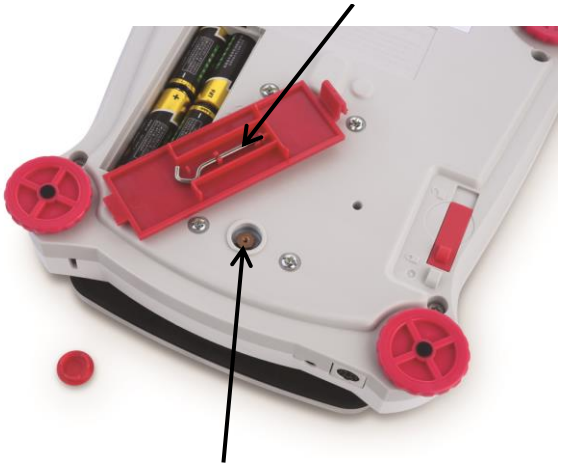
4.10 Additional Features

4.10.1 Weigh Below

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.

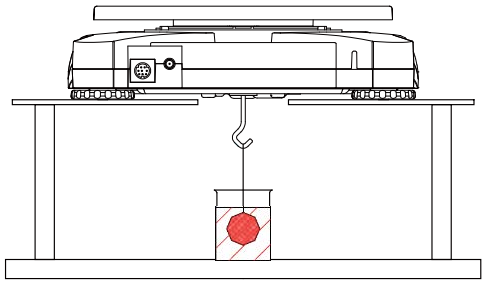
Weigh Below Hook



Weigh below opening

Weigh Below Hook installed

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.

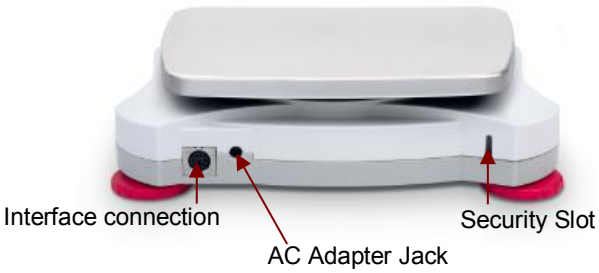


4.10.2 Connecting the Interface

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

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

Interface connection on the rear of the balance:

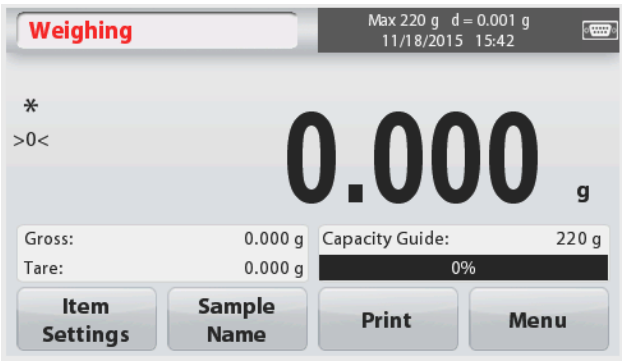


* Interface kits may vary according to local regulations
The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by OHAUS is under license.

5. MENU SETTINGS

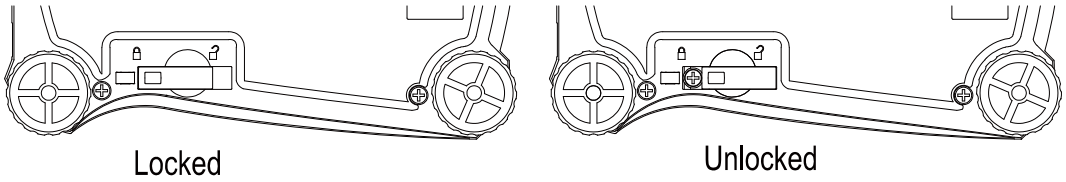
5.1 Menu Navigation

All menu navigation is performed by touching the display. To enter the Menu, touch **Menu** from any Application Home screen. The Main menu appears, with buttons for **Back** and **Exit**. Continue touching the appropriate list item to navigate to the Menu items or touch a button to change location.



When the Security Switch is in locked position, the Calibration and Lockout menus will be hidden.

Security switch:



5.1.1 Changing Settings

To change a menu setting, navigate to that setting using the following steps:

Enter the Menu
From any Application screen, Touch **Menu.** The Main Menu List appears on the display.

Select the Sub-Menu
Locate to the desired item of the Main Menu List and touch it. The Sub-Menu appears.

Select the Menu Item
Continue until the desired setting is chosen in the Menu list. Touch the setting to change it. The changed setting will be displayed as highlighted yellow for about 1 second to confirm the changed value.

Exit the Menu and Return to the Current Application
After the setting is confirmed, touch **Back or Exit** to return to the Application.

5.2 Main Menu

The Scout balance Main menu structure is illustrated below.

5.2.1 Calibration

Scout STX balances offer a choice of two calibration methods: Span Calibration and Linearity Calibration.

Note: Do not disturb the balance during any calibration.

Calibration sub-menu


Span Calibration


Linearity Calibration

5.2.1.1 Span Calibration

Span calibration uses two calibration points, one at zero load and the other at specified full load (span). For detailed calibration mass information please see the specification tables in section 7.

Before beginning calibration, make sure the menu Security Switch is unlocked. With the balance turned ON and no load on the pan, touch **Span Calibration** to initiate the procedure. Additional calibration values to be used are shown on the display. The best accuracy is achieved using the mass closest to the full span value.

Note: To change the span calibration point, touch the alternate weight shown on the display.

Follow the screen instructions and place the specified calibration weight on the balance when prompted to do so. When complete, the display shows the Span calibration status and returns to the current application.

5.2.1.2 Linearity Calibration

Linearity calibration uses three calibration points; zero, mid-capacity and full capacity.

Before beginning calibration, make sure the menu Security Switch is off.

With no load on the balance, press **Linearity Calibration** from the calibration sub-menu and follow the screen instructions.

Place the specified calibration weight on the balance and the calibration process completes.

The display shows status, then returns to the current application.

5.2.2 Balance Setup

Enter this sub-menu to customize Balance display functionality.


Language


User Settings


Filter Level

Auto Zero Tracking


Stability

Auto Tare


Date & Time

Balance Setup sub-menu

Factory default settings are shown below in bold.

Language

Set the language displayed for menus and displayed messages.
There are 9 languages available. The selectable languages are region dependent as follows:
Method-1:
English / German / French / Spanish / Italian / Russian / Chinese / Japanese / Korean
Method-2:
English / German / French / Spanish / Italian / Polish/ Turkish / Czech / Hungarian

User Settings


Touch Calibrate


Brightness


Auto Dim

Auto Off


Level Assist

Touch Calibrate

Perform a calibration of the displays touch functionality. Follow the screen instructions.

Brightness

Set the brightness level of the display.
Low = low screen resolution
Medium = normal screen resolution
High = high screen resolution

Auto Dim

Set the time after inactivity the display will dim.
Off, 10 s, 30 s, 60 s
Note: When AC Power is connected, Auto Dim is disabled.

Auto Off

Set the time after inactivity the equipment will automatically turn off.
Off, 1 min, 5 mins, 10 mins
Note: Auto Off only works at gross or when the security switch is in on position.

Level Assist
Shows how to level the equipment by adjusting the feet.

Filter level
Set the amount of signal filtering.

LOW = faster stabilization time with less stability.
MEDIUM = normal stabilization time with normal stability.
HIGH = slower stabilization time with more stability.

Auto Zero Tracking
Set the automatic zero tracking functionality.

OFF = disabled.
0.5 Division = display maintains zero up to a drift of 0.5 graduation per second.
1 Division = display maintains zero up to a drift of 1 graduation per second.
3 Divisions = display maintains zero up to a drift of 3 graduations per second.

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

0.5 Division = 0.5 graduation
1 Division = 1 graduation
2 Divisions = 2 graduations
5 Divisions = 5 graduations

Auto Tare
Set the automatic Tare status.

OFF = disabled.
ON = enabled.

"Place container on the pan" will be displayed when an Automatic Tare is about to start.
A **Deactivate** button is displayed underneath the text. Press this button to deactivate the Automatic Tare function

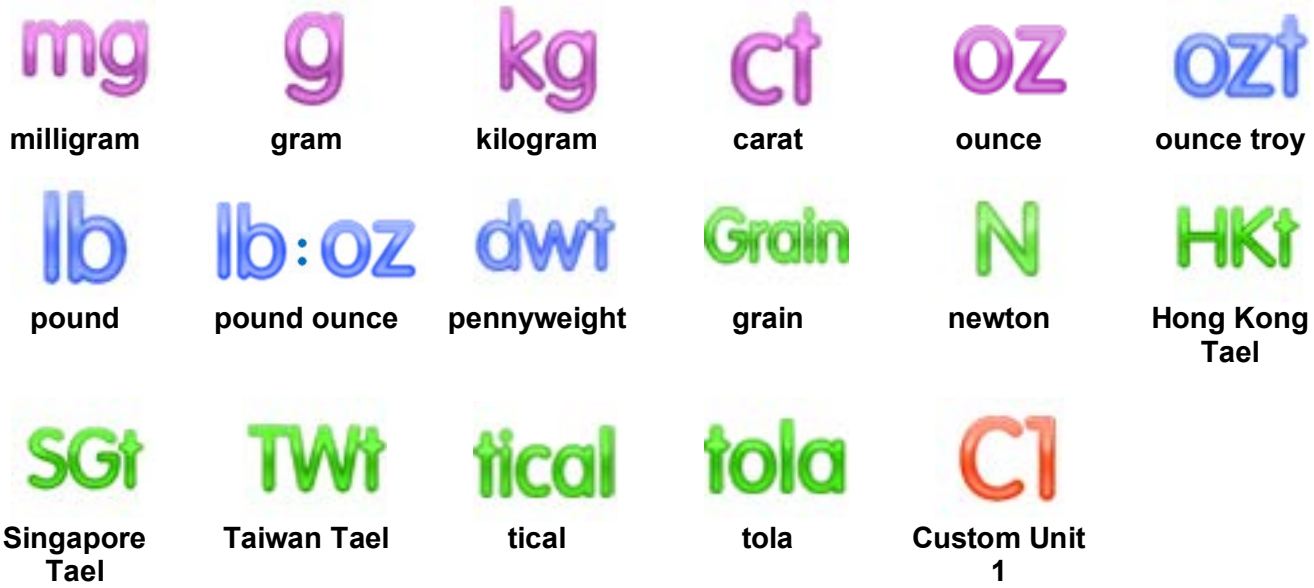
Date and Time
Set the date and time.
Change the format (if desired), then enter the current value.
Date: Touch M/D/Y to reposition the Month, Day and Year.
Time: Touch 24 HRS to change the time format to 12HRS.
Press **Save** to confirm the new value.

5.2.3 Weighing Units

Enter this sub-menu to activate the desired units of measure.

Note: Due to national laws, the indicator may not include some of the units of measure listed.

Units Sub-menu



milligram | **gram** | **kilogram** | **carat** | **ounce** | **ounce troy**

pound | **pound ounce** | **pennyweight** | **grain** | **newton** | **Hong Kong Tael**

Singapore Tael | **Taiwan Tael** | **tical** | **tola** | **Custom Unit 1**

5.2.3.1 Custom Unit

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).

Name

The Custom Unit's name can be customized up to 3 characters. It should be different from existing weighing units.

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.

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.

5.2.4 Data Maintenance

Data Maintenance sub-menu:


Export to USB


Import from USB


Balance Info

Export to USB*
Export data to USB flash drive. Two types of data can be exported:
- Application Mode Settings = APW, Ref.Weight etc.
- Menu Settings = balance setup functions etc.

Note: The function Save to USB needs to be set to ON to enable data transfer to USB.

Import from USB*
Import data from USB flash drive
Application Mode Settings = import balance setup and application settings
Menu Settings = import menu settings

Balance Info
Information about the balance: Balance Type, Balance ID, Capacity, Readability and software version.

*Only available when USB Host is connected, and USB flash drive is installed.

5.2.5 Communication

Enter this menu to define external communication methods and to set printing parameters.

Data may be output to either a printer or PC

Factory default settings are shown in bold.

Notes: The RS232, Ethernet, Bluetooth, USB Device and USB Host menu is only available if the optional Interface is installed.

Communication Sub-menu


RS-232


Print Settings

Choosing a Settings item brings up yet another menu level:

RS-232 Sub- Menu:

Baud Rate

Transmission


Handshake

Baud Rate
Set the baud rate (bits per second).

1200	= 1200 bps
2400	= 2400 bps
4800	= 4800 bps
9600	= 9600 bps
19200	= 19200 bps
38400	= 38400 bps
57600	= 57600 bps
115200	= 115200 bps

Transmission
Set the data bits, stop bit, and parity.

7 EVEN 1	= 7 data bits, even parity
7 ODD 1	= 7 data bits, odd parity
7 NONE 1	= 7 data bits, no parity
8 NONE 1	= 8 data bits, no parity
7 EVEN 2	= 7 data bits, even parity
7 ODD 2	= 7 data bits, odd parity
7 NONE 2	= 7 data bits, no parity
8 NONE 2	= 8 data bits, no parity

Handshake
Set the flow control method.

NONE	= no handshaking
Xon-Xoff	= XON/XOFF handshaking

Note: The selected character can only be used for one command.

Print Settings Sub- Menu:

Print Output

Auto Print

Print Content

Feed

Format

Alt. Command

Print Output

Stable Weight Only
Set the printing criteria.

OFF	= values are printed immediately, regardless of stability.
ON	= values are printed only when the stability criteria are met.

Numeric Value Only
Set the printing criteria

OFF	= All data values are printed
ON	= Only numeric data values are printed

Single Header Only
Set the printing criteria.

OFF	= Headers will be printed for every print requirement
ON	= Headers will be printed once a day

Print Options*
Set the printing criteria.

Printer	= Print data to a printer
PC	= Print data to a PC

Note: If language selection is set to Chinese, Japanese or Korean, these options shall match the actual peripheral device.

Auto Print
Set the automatic printing functionality.

OFF	= disabled
ON Stability	= printing occurs each time the stability criteria are met.
Interval (seconds)	= printing occurs at the defined time interval.
Continuous	= printing occurs continuously.

When ON Stability is selected, set the conditions for printing.

Load	= Prints when the displayed load is stable.
Load and Zero	= Prints when the displayed load or zero reading is stable.

When INTERVAL is selected, set the time interval using the numeric keypad.

Settings of **1** to 3600 seconds are available.

Print Content
Enter this sub-menu to define the content of the printed data.

See details below:

Selection
Set the status.

Select All = all options will be turned on
Deselect All = all options will be turned off

Header
Set the status.

OFF = the user defined header is not printed.
ON = the user defined header is printed.

```
USER DEFINED TEXT
USER DEFINED TEXT
USER DEFINED TEXT
USER DEFINED TEXT
USER DEFINED TEXT
```

Note: The header information must be defined using the H x "text" interface command.
(See Section 5.1.)

Date and Time
Set the status.

OFF = the time and date are not printed.
ON = the time and date are printed.

```
01/31/10  12:30 PM
```

Balance ID
Set the status.

OFF = the Balance ID value is not printed.
ON = the Balance ID value is printed.

```
Balance Id:
XXXXXXX
```

Balance Name
Set the status.

OFF = the Balance Name is not printed.
ON = the Balance Name is printed.

```
Balance Name: XXXXXXX
```

Sample Name
Set the status.

OFF = the Sample Name is not printed.
ON = the Sample Name is printed.

Result
Set the status.

OFF = the displayed reading is not printed.
ON = the displayed reading is printed.

Gross
Set the status.

OFF = the gross weight is not printed.
ON = the gross weight is printed.

```
12.000 kg
```

Net
Set the status.

OFF = the net weight is not printed.
ON = the net weight is printed.

```
10.000 kg NET
```

Tare
Set the status.

OFF = the tare weight is not printed.
ON = the tare weight is printed.

Information
Set the status.

OFF = the reference info is not printed.
ON = the reference info is printed.

Note: See below for more clarification

User Name
Set the status.

OFF = the User Name is not printed.
ON = the User Name is printed.

```
User Name:
XXXXXXXXXXXX
```

Project Name
Set the status.

OFF = the Project Name is not printed.
ON = the Project Name is printed.

```
Project Name:
XXXXXXXXXXXX
```

Application Name
Set the status.

OFF = the Application Name is not printed.
ON = the Application Name is printed.

```
Application Name:
XXXXXXXXXXXX
```

Signature Line
Set the status.

OFF = the Signature Line is not printed.
ON = the Signature Line is printed.

```
Signature:_____________________

Verified by: _________________
```

Note: "Verified by" is to be signed by an officer from local metrological regulation office to assert that the weighing and/or calibration results are in accordance with regulations.

Footer
Set the status.

OFF = the user defined footer is not printed.
ON = the user defined footer is printed.

```
USER DEFINED TEXT
USER DEFINED TEXT
USER DEFINED TEXT
USER DEFINED TEXT
USER DEFINED TEXT
```

Feed
Set the paper feed.

1 LINE = move the paper up one line after printing.
4 LINE = move the paper up four lines after printing.

Format
Set the printing format.

SINGLE LINE = a single line printout is generated. A TAB delimiter is added between each data output.
MULTIPLE LINES = a multiple line printout is generated. A CRLF is added after each data output.

Alt Command (Alternate Print Command)
Alternate Print Command
Set the alternate command character for Print.

Settings of A to Z are available. The default setting is empy, except P.T or Z.

Alternate Tare Command
Set the alternate command character for Tare.

Settings of A to Z are available. The default setting is empty, except P&Z.

Alternate Zero Command
Set the alternate command character for Zero.

Settings of A to Z are available. The default setting is empty, except P&T.

Print Settings Menu:

Note: If security switch is set to locked, the print Output-Stable setting is not reset. A TAB delimiter is added between each data output.

5.2.6 GLP and GMP Data

Enter this menu to set the Good laboratory Practices (GLP) data.


Header

Balance Name


User Name


Project Name


Footer

GLP Data Sub-menu

Header
Enables the printing of GLP headings. There are up to 5 headings available.

Alphanumeric settings up to 25 characters are available for each Header setting. .

Balance Name
Set the balance identification.

Alphanumeric settings up to 25 characters are available.
The default setting is **blank**.

User Name
Set the user identification.
Alphanumeric settings up to 25 characters are available.
The default setting is **Scout**.

Project Name
Enter this menu to set the Project identification.
Alphanumeric settings up to 25 characters are available.
The default setting is **blank**.

Footer
Enables the printing of GLP headings. There are 2 headings available.

Alphanumeric settings up to 25 characters are available for each Header setting. .

5.2.7 Factory Reset

Use this sub-menu to reset the menus to their Factory default settings.

Reset All = reset all menus to their factory default setting.
Exit = return to main screen without resetting any menus.

Note: Calibration data is not affected.

5.2.8 Lockout

Use this menu to lock/unlock certain menus to prevent unauthorized changes to menu settings. Once locked, a small lock will appear on the menu icon and user will not be able to enter that menu.

Lockout Sub-menu


Calibration


Balance Setup

Weighing Units


Data Maintenance


Communication


GLP and GMP Data


Factory Reset

Click on a menu and choose.

OFF = the sub-menu is not locked.
ON = the sub-menu is locked.

6. MAINTENANCE

6.1 Calibration

Periodically verify calibration by placing an accurate weight on the balance and viewing the result. If calibration is required, perform a Balance internal calibration.

6.2 Cleaning

WARNING: Electrical Shock Hazard. Disconnect the Scout Balance from the power supply before cleaning.
Make sure that no liquid enters the interior of the Terminal or Base.

Attention: Do not use solvents, harsh chemicals, ammonia or abrasive cleaning agents. Clean the Balance at regular intervals.

Housing surfaces may be cleaned with a lint-free cloth slightly dampened with water or a mild cleaning agent.

6.3 Troubleshooting

TABLE 6-1. TROUBLESHOOTING

Symptom / Display	Possible Cause	Remedy
Balance will not turn on	No power to Balance	Verify connection and voltage
Poor accuracy	Improper calibration Unstable environment	Perform calibration Move balance to suitable location
Cannot calibrate	Security switch set to on Unstable environment Incorrect calibration masses	Turn security switch off Move balance to suitable location Use correct calibration masses
Cannot change menu settings	Security switch set to on	Turn security switch off
Low Reference weight	Reference weight too small The weight on the pan is too small to define a valid reference weight.	Increase sample size
Invalid Piece Weight	Average piece weight is too small	Increase average piece weight
Operation Timeout	Weight reading is not stable	Move balance to suitable location
------	Busy (tare, zero, printing)	Wait until completion

6.4 Service Information

If the troubleshooting section does not resolve or describe your problem, contact your authorized OHAUS service agent.

7. TECHNICAL DATA

7.1 Specifications

Ambient conditions

- Indoor use only
- Operating temperature: +5 °C to +40 °C
- Specified temperature: +10 °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 100-240 V 50/60 Hz and output 5 V DC 1 A, or 4 AA batteries
- EMC: See Declaration of Conformity
- Pollution degree: 2
- Installation category: II
- Main supply voltage fluctuations: up to ± 10% of the nominal voltage

TABLE 7-1. SPECIFICATIONS

MODEL	STX123	STX223	STX222	STX422	STX622	STX1202
Capacity	120 g	220 g	220 g	420 g	620 g	1000 g
Readability d	0.001 g	0.001 g	0.01 g	0.01 g	0.01 g	0.01 g
Repeatability (std. dev.)	0.002 g	0.002 g	0.01 g	0.01 g	0.01 g	0.02 g
Linearity	0.003 g	0.003 g	0.01 g	0.01 g	0.02 g	0.03 g
Linearity Calibration Mass	50, 100 g	100, 200 g	100, 200 g	200, 400 g	300, 600 g	500 g, 1 kg
Span Calibration Mass	100 g	200 g	200 g	200 g	300 g	1000 g
Weighing units*	g, kg, oz, lb, lb:oz, dwt, ozt, grn, N, ct, Tael (HongKong), Tael (Singapore), Tael (Taiwan), tola, tical, custom(1)					
Applications	Weighing, Counting, Percent, Display Hold, Totalization, Check Weigh, Density, Dynamic, Mole Weighing					
Stabilization time (typical)	1.5 s	1.5 s	1 s	1 s	1 s	1.5 s
Draftshield	Yes		No			
Tare Range	Full Capacity by subtraction					
Display	Full-Color TFT Graphic LCD					
Display size	10.92 cm / 4.3 in (diagonal)					
Pan size	Ø93 mm / 3.7 inch	Ø93 mm / 3.7 inch	120 mm / 4.7 inch	120 mm / 4.7 inch	120 mm /¨ 4.7 inch	170 x 140 mm / 6.7 x 5.5 inch
Balance dimensions (W x D x H)	202 x 222 x 103 mm / 8.0 x 8.7 x 4.1 inch		202 x 224 x 54 mm / 8.0 x 8.8 x 2.1 inch			
Shipping dimensions (W x D x H)	300 mm x 250 mm x 129 mm / 11.8 x 9.8 x 5.1 inch					
Net weight (kg)	1.0					
Shipping weight (kg)	1.6					

Note: * Availability is dependent on model and region.

TABLE 7-2. SPECIFICATIONS (Continued)

MODEL	STX2202	STX421	STX621	STX2201	STX6201	STX8200
Capacity	2200 g	420 g	620 g	2200 g	6200 g	8200 g
Readability d	0.01 g	0.1 g	0.1 g	0.1 g	0.1 g	1 g
Repeatability (std. dev.)	0.02 g	0.1 g	0.1 g	0.1 g	0.1 g	1 g
Linearity (g)	0.03 g	0.1 g	0.1 g	0.1 g	0.2 g	1 g
Linearity Calibration Mass	1 kg, 2 kg	200, 400 g	300, 600 g	1 kg, 2 kg	3 kg, 5 kg	4 kg, 8 kg
Span Calibration Mass	2000 g	200 g	300 g	2000 g	5000 g	8000 g
Weighing units*	g, kg, oz, lb, lb:oz, dwt, ozt, grn, N, ct, Tael (HongKong), Tael (Singapore), Tael (Taiwan), tola, tical, custom(1)					
Applications	Weighing, Counting, Percent, Display Hold, Totalization, Check Weigh, Density, Dynamic, Mole Weighing					
Stabilization time (typical)	1.5 s	1.5 s	1 s	1 s	1 s	1 s
Draftshield	No					
Tare Range	Full Capacity by subtraction					
Display	Full-Color TFT Graphic LCD					
Display size	4.3 in / 10.92 cm (diagonal)					
Platform size (diameter)	170 x 140 mm / 6.7 x 5.5 inch	120 mm / 4.7 inch	170 x 140 mm / 6.7 x 5.5 inch	170 x 140 mm / 6.7 x 5.5 inch	170 x 140 mm / 6.7 x 5.5 inch	170 x 140 mm / 6.7 x 5.5 inch
Balance dimensions (W x D x H)	202 x 224 x 54 mm / 8.0 x 8.8 x 2.1 inch					
Shipping dimensions (W x D x H)	300 mm x 250 mm x 129 mm / 11.8 x 9.8 x 5.1 inch					
Net weight (kg)	1.0					
Shipping weight (kg)	1.6					

Note: * Availability is dependent on model and region.

7.2 Drawings and Dimensions

Fully assembled dimensions

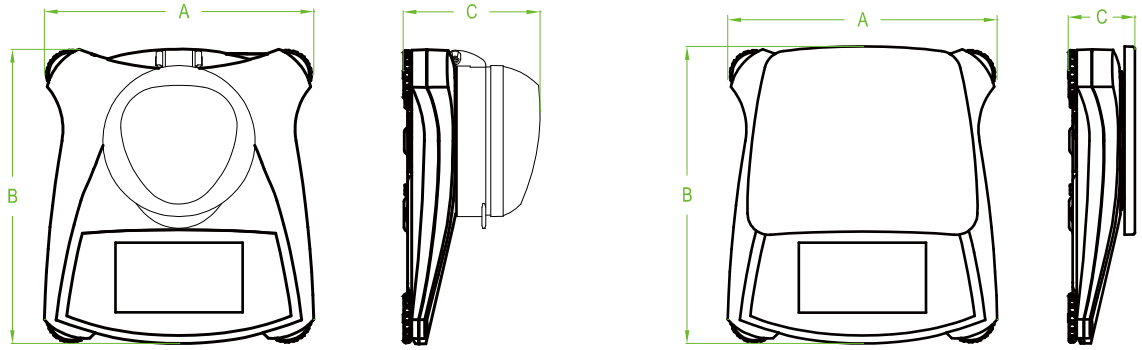


Figure 7-1. Dimensions

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.

7.3 Accessories

TABLE 7-3. ACCESSORIES

DESCRIPTION	Item Number
RS232 Interface Kit	30268982
USB Host Interface Kit	30268983
USB Device Interface Kit	30268984
Bluetooth Interface Kit*	30268985
Ethernet Interface Kit	30268986
Stacking Kit, set (6)	30268987
Stacking Kit, set (1)	30268988
Auxiliary Display Kit	30269019
Security device	80850043
Top loading kit for Density determination	30269020
Carrying case, Scout	30269021
In-use cover, Scout	30269022
Printers and Cables	Contact OHAUS

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

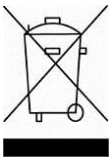
8. SOFTWARE UPDATES

Ohaus is continuously improving its balance software. To obtain the latest release, please contact your Authorized Ohaus Dealer or Ohaus Corporation.

9. COMPLIANCE

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

Mark	Standard
CE	EN 61010-1, EN 61326-1
	This product complies with the EU Directive 2002/96/EC (WEEE). Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment.
	AS/NZS 61000.6.1, AS/NZS 61000.6.3
	CAN/CSA-C22.2 No. 61010-1, UL Std. No. 61010-1



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.

The Batteries Directive 2006/66/EC introduces new requirements from September 2008 on removability of batteries from waste equipment in EU Member States. To comply with this Directive, this device has been designed for safe removal of the batteries at end-of-life by a waste treatment facility.

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.

For disposal instructions in Europe, refer to

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 A 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 Veritus 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.