Scout^{TM} Series Balances - STX
Instruction Manual

TABLE OF CONTENTS

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.
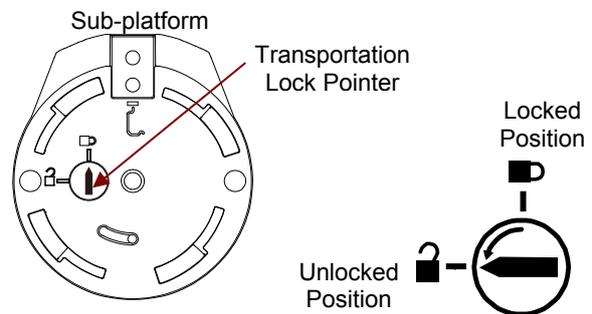
2.1.2 Installing the Weighing Pan

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.
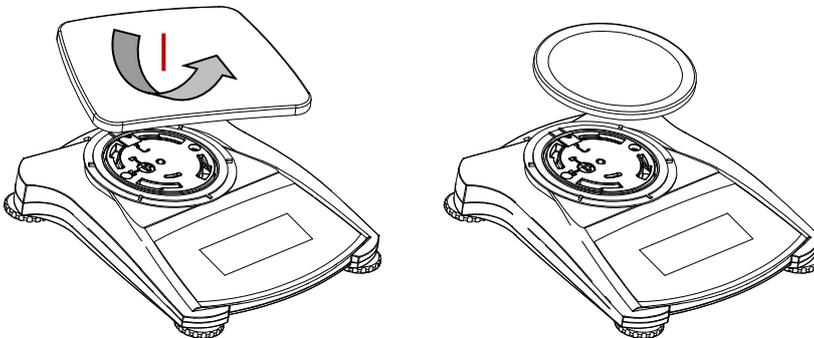
2.1.3 Security Slot

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.
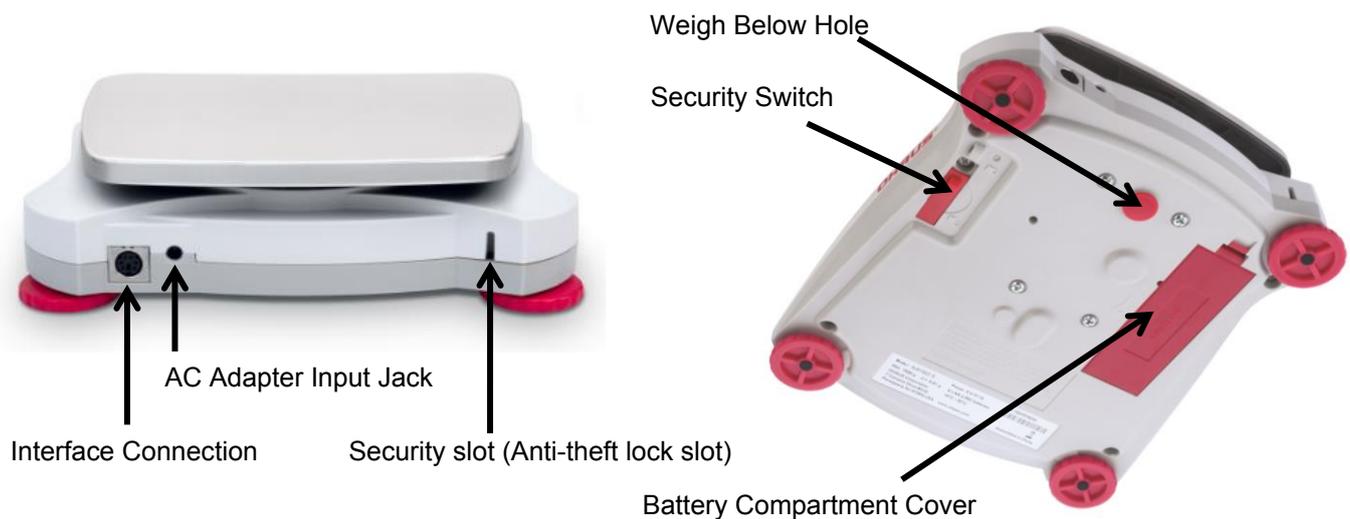
Weigh Below Hole

Security Switch

AC Adapter Input Jack

Interface Connection   Security slot (Anti-theft lock slot)

Battery Compartment Cover

Battery Installation
Install the four "AA" batteries with polarity as shown in the battery compartment.

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

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
3.1Controls

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:

Application		Capacity and readability
Instructional Messages		
Stability (∗), Net (NET), Gross (G) and/or center of zero (>0<) indicators		Result Field: Information varies by application Touch **g** to change unit
Reference Fields		
		Application Buttons: Functions vary by application

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:
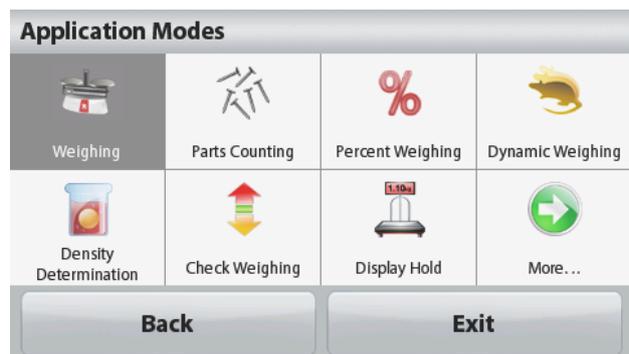
The Scout Balance incorporates the following Applications.

Weighing	**Parts Counting**	**Percent Weighing**	**Dynamic (Animal) Weighing**	**Density Determination**	**Check Weighing**
Display Hold	**Totalization**	**Mole**			
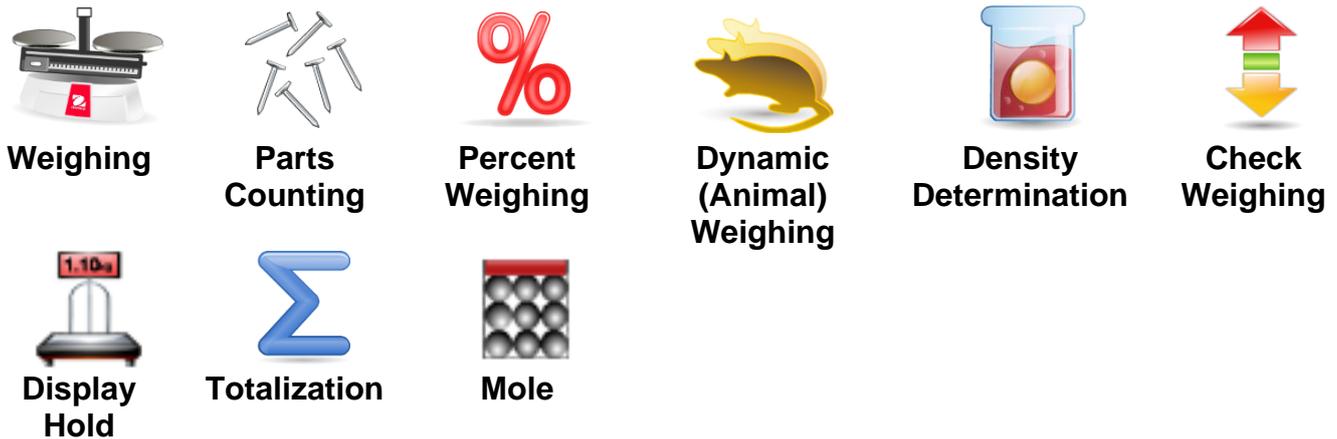
Note: Before using any application, be sure the balance has been leveled and calibrated.

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 Icon

Application Buttons

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.

<u>**APW:**</u>
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.

<u>**Samples:**</u>
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:

Dynamic Weighing	Max 220 g d = 0.001 g
	9/28/2015 12:42

Place sample on the pan. Press Start to begin averaging.

*
>0<

0.000 g

| Gross: | 0.000 g | Averaging Time: | 5 s |
| Tare: | 0.000 g | Sample Name: | |

Item Settings   **Start**   Print   **Menu**

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.

Dynamic Weighing	Max 220 g d = 0.001 g
	9/28/2015 12:43

Dynamic weighing in process. 4 seconds remaining.

*

9.253 g

| Gross: | 9.253 g | Averaging Time: | 5 s |
| Tare: | 0.000 g | Sample Name: | |

Item Settings   **Stop**   Print   Menu

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.

Dynamic Weighing	Max 220 g d = 0.001 g
	9/28/2015 12:44

Averaging complete. Press Clear to clear averaged weight.

9.253 g

| Gross: | 9.253 g | Averaging Time: | 5 s |
| Tare: | 0.000 g | Sample Name: | |

Item Settings   **Clear**   Print   Menu

4.4.1 Item Settings

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

Dynamic Weighing

Averaging Time	Automatic Mode	Sample Name	Weighing Units
Print Settings			

Back	**Exit**

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

Averaging Time

1	2	3	5 s
4	5	6	
7	8	9	**Save**
Clear	0		**Exit**

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.

Dynamic Weighing   Max 220 g d = 0.001 g
                              9/28/2015 12:45

Place sample on the pan to begin averaging.

*
>0<

0.000 g

Gross:	0.000 g	Averaging Time:	5 s
Tare:	0.000 g	Automatic Mode:	On

| **Item Settings**	**Print**	**Menu**

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.
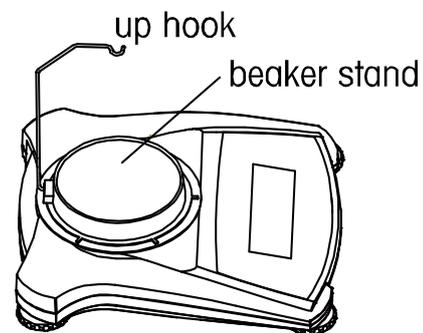
The **DENSITY DETERMINATION** Home screen:
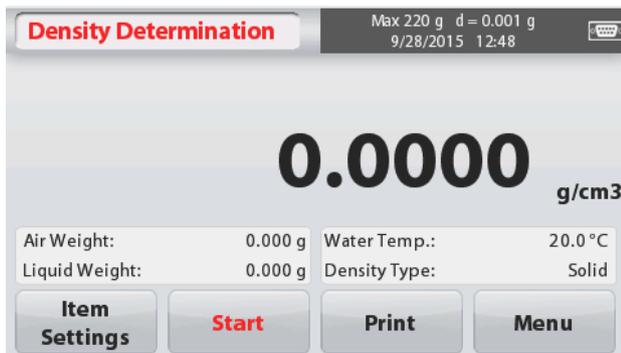
Main Display Line

Reference Fields   Application Icon

Application Buttons

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

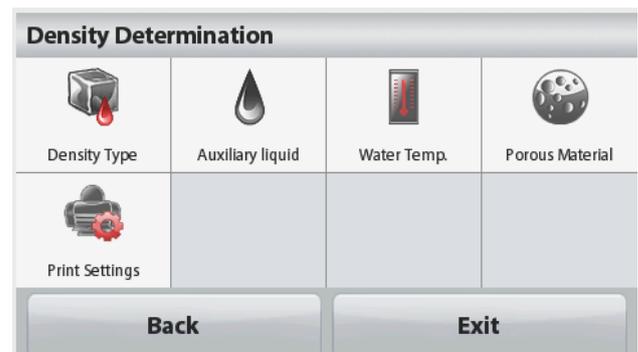Press the **Item Settings** button to open the Density Determination **Settings** screen.

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.

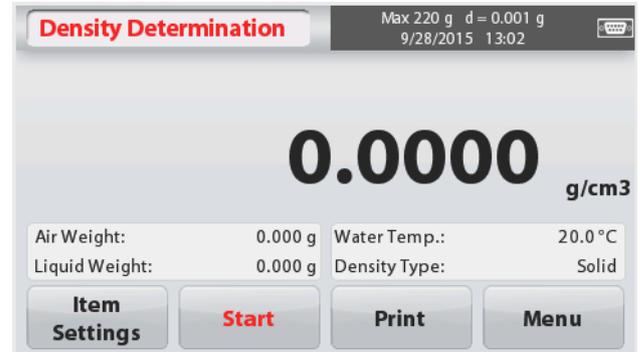Enter the actual water temperature, then press **Save**.

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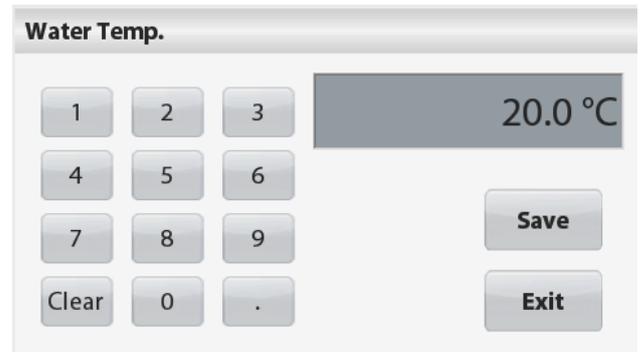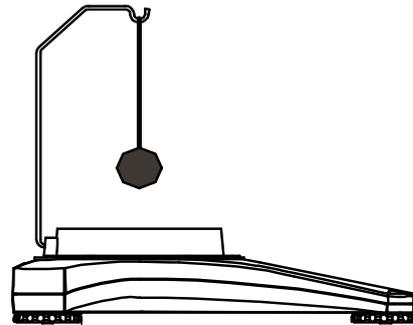
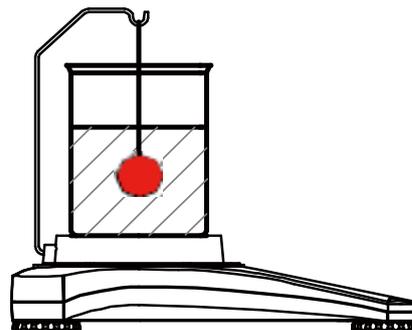To begin the Density Determination process, press **Start**.

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/cm³** (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.

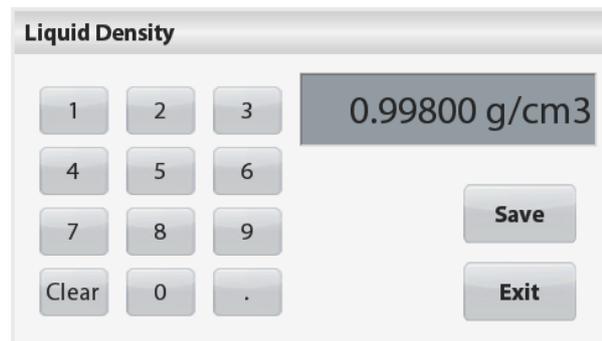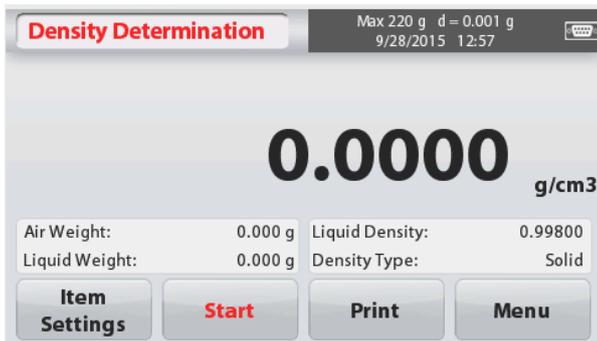## 4.5.4 Measuring the Density of Porous Material Using Oil

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).

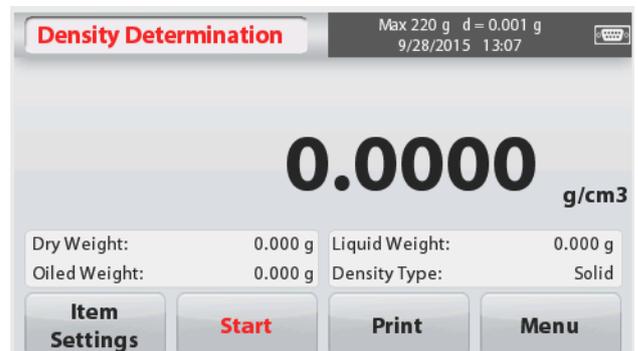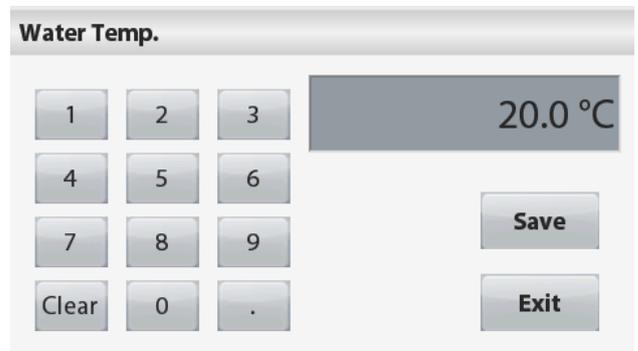Measure the actual water temperature using a precision thermometer.

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/cm³** (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.
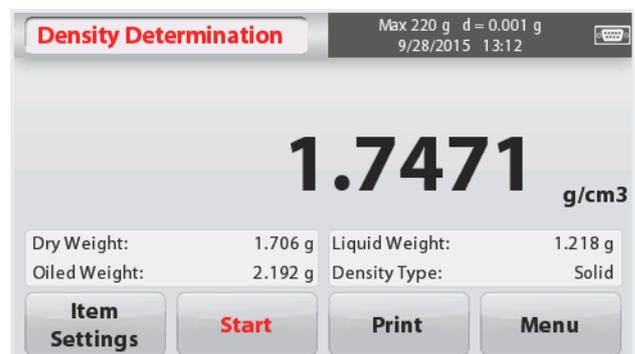
4.6 Check Weighing

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

 Application Icon

Reference Fields

Application Buttons

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:
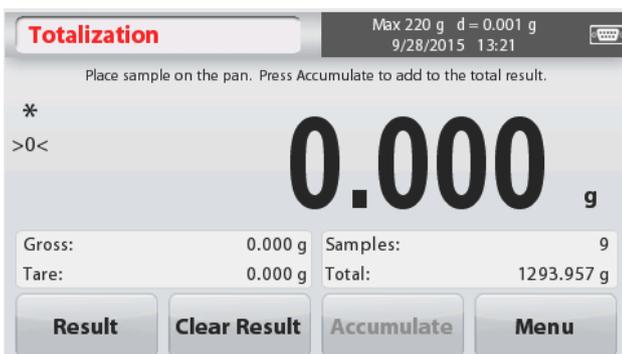
Main Display Line

Reference Fields   Application Icon

Application Buttons

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 Icon
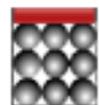
Application Buttons

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.
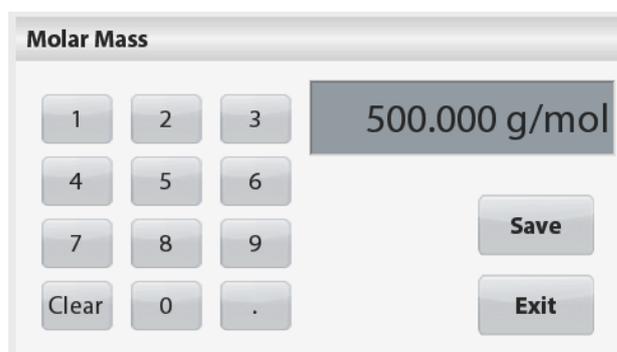
4.10 Additional Features

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 Hook installed

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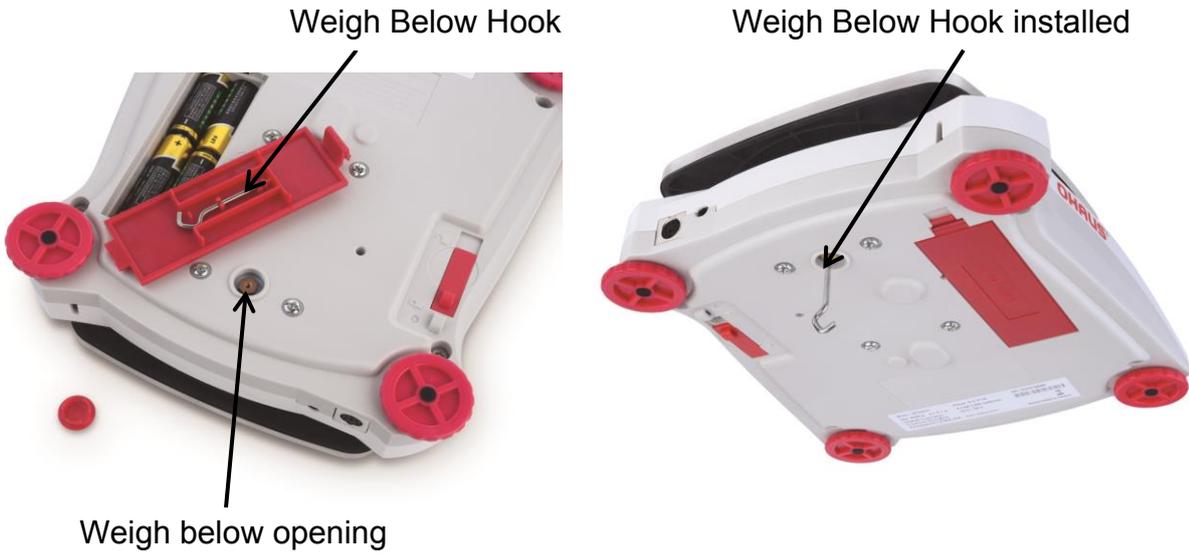
The balance can be supported using lab jacks or any other convenient method. Ensure the balance is level and secure and that the transportation lock has been released. Power on the Balance, then use a string or wire to attach items to be weighed.
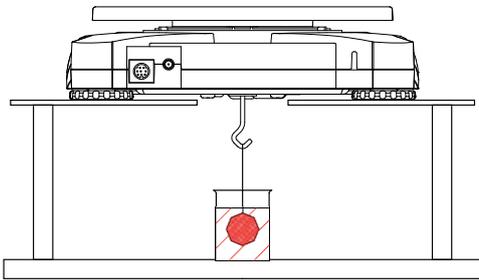
4.10.2 Connecting the Interface

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 connection

AC Adapter Jack

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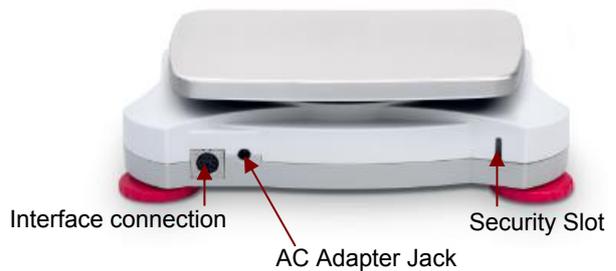
* Interface kits may vary according to local regulations
   The Bluetooth® word mark and logos are registered trademarks owned by Bluetooth SIG, Inc. and any use of such marks by OHAUS is under license.

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:

Locked   Unlocked
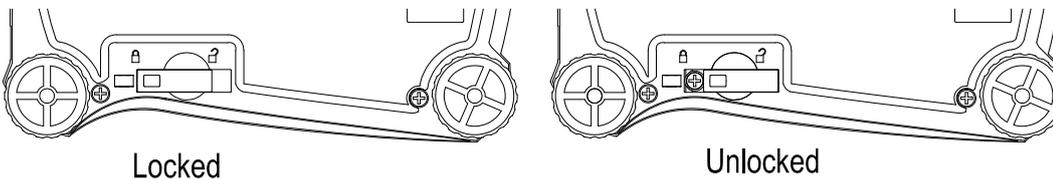
5.1.1 Changing Settings

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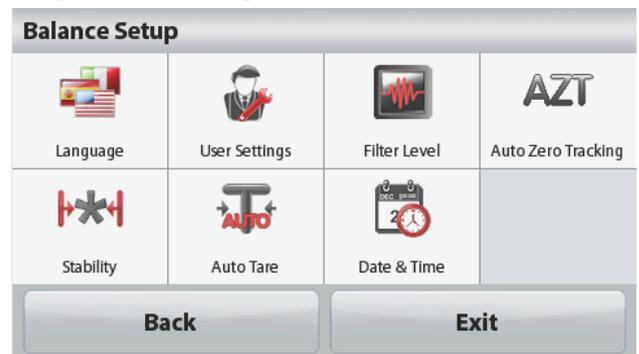
Exit the Menu and Return to the Current Application
After the setting is confirmed, touch **Back or Exit** to return to the Application.

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.
10^{0} = multiply the factor by 1
10^{1} = multiply the factor by 10
10^{2} = multiply the factor by 100
10^{3} = multiply the factor by 1000
10^{-3} = divide the factor by 1000
10^{-2} = divide the factor by 100
10^{-1} = divide the factor by 10

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:
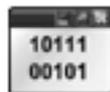
Baud Rate   **Transmission**   **Handshake**

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
```

User Name
Set the status.

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

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. 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.

7.   TECHNICAL DATA
7.1   Specifications

Ambient conditions

- Indoor use only
- Operating temperature: +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 100-240 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 (g)	120	220	220	420	620	1200
Readability (g)	0.001	0.001	0.01	0.01	0.01	0.01
Repeatability (Std. Dev.) (g)	0.002	0.002	0.01	0.01	0.01	0.02
Linearity (g)	0.003	0.003	0.01	0.01	0.02	0.03
Span Calibration Mass*	100 g	200 g	200 g	200 g	300 g	1 kg
Linearity Calibration Mass	50, 100 g	100, 200 g	100, 200 g	200, 400 g	300, 600 g	500 g, 1 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**	mg, g, kg, ct, N, oz, ozt, dwt, lb, lb:oz, grn,Tael (HongKong),Tael (Singapore),Tael (Taiwan), tical, tola, Customer unit 1					
Application Modes	Weighing, Parts Counting, Percent Weighing, Check Weighing, Animal / Dynamic Weighing, Totalization, Density Determination, Display Hold, Mole Weighing					
Typical Battery Life	7 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	Full-Color Touchscreen WQVGA Graphic LCD					
Display Size	4.3 in / 109 mm (diagonal)					
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					
Net Weight	1 kg / 2.2 lb					
Shipping Weight	1.6 kg / 3.5 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 7-2. SPECIFICATIONS (Continued)

Capacity x Readability:

Model	STX123	STX223	STX222	STX422	STX622	STX1202
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
Milligram (mg)	120000 x 1	220000 x 1	/	/	/	/
Kilogram (kg)	/	/	/	/	/	1.2 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
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
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
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
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
Pound (lb)	/	/	/	/	1.36690 x 0.00005	2.64555 x 0.00005
Pound:Ounce (lb:oz)	/	/	/	/	1lb:5.8700oz x 0.0005oz	2lb:10.3290oz x 0.0005oz
Grain (grn)	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

TABLE 7-3. SPECIFICATIONS (Continued)

Model	STX2202	STX421	STX621	STX2201	STX6201	STX8200
Capacity (g)	2200	420	620	2200	6200	8200
Readability (g)	0.01	0.1	0.1	0.1	0.1	1
Repeatability (Std. Dev.) (g)	0.02	0.1	0.1	0.1	0.1	1
Linearity (g)	0.03	0.1	0.1	0.1	0.2	1
Span Calibration Mass*	2 kg	200 g	300 g	2 kg	5 kg	8 kg
Linearity Calibration Mass	1 kg, 2 kg	200, 400 g	300, 600 g	1 kg, 2 kg	3 kg, 6 kg	4 kg, 8 kg
Stabilization Time (s)	1.5	1				
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**	mg, g, kg, ct, N, oz, ozt, dwt, lb, lb:oz, grn, Tael (HongKong), Tael (Singapore), Tael (Taiwan), tical, tola, Customer unit 1					
Application Modes	Weighing, Parts Counting, Percent Weighing, Check Weighing, Animal / Dynamic Weighing, Totalization, Density Determination, Display Hold, Mole Weighing					
Typical Battery Life	7 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	Full-Color Touchscreen WQVGA Graphic LCD					
Display Size	4.3 in / 109 mm (diagonal)					
Pan Size (W x D)	170 x 140 mm / 6.7 x 5.5 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 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					
Net Weight	1 kg / 2.2 lb					
Shipping Weight	1.6 kg / 3.5 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 7-4. SPECIFICATIONS (Continued)

Capacity x Readability:

| Model	STX2202	STX421	STX621	STX2201	STX6201	STX8200
Gram (g)	2200 x 0.01	420 x 0.1	620 x 0.1	2200 x 0.1	6200 x 0.1	8200 x 1
Kilogram (kg)	2.2 x 0.00001	/	/	2.2 x 0.0001	6.2 x 0.0001	8.2 x 0.001
Carat (ct)	11000 x 0.05	2100 x 0.5	3100 x 0.5	11000 x 0.5	31000 x 0.5	41000 x 5
Newton (N)	21.5744 x 0.0001	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)	77.6030 x 0.0005	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)	70.7320 x 0.0005	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)	1414.63 x 0.01	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)	4.85020 x 0.00005	/	1.3670 x 0.0005	4.8500 x 0.0005	13.6685 x 0.0005	18.080 x 0.005
Pound:Ounce (lb:oz)	4lb:13.6030oz x 0.0005oz	/	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)	33951.2 x 0.2	6480 x 2	9570 x 2	33950 x 2	95680 x 2	126540 x 20

7.2 Drawings and Dimensions

Fully assembled dimensions
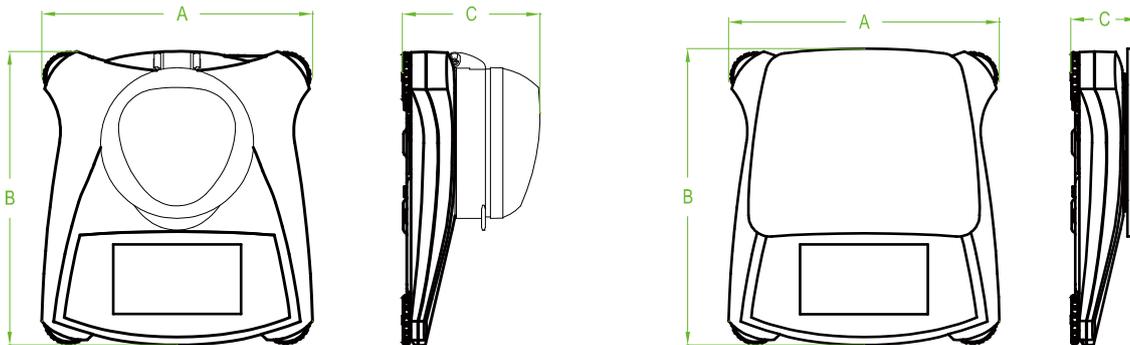
Figure 7-1. Dimensions

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 7-5. 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
$C\!\!\in$	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.

$C\!\!\in$ MXX 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.
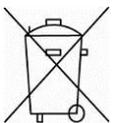
Disposal

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.

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

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 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.

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OHAUS®

SERVICE MANUAL

Scout Series Scales

STX Series

SPX Series

SKX Series

SJX Series-Jewelry Series

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TABLE OF CONTENTS

Appendix C SOFTWARE SERVICE TOOLS INSTRUCTION

LIST OF TABLES

LIST OF ILLUSTRATIONS

1   GETTING STARTED

1.1   INTRODUCTION

This service manual contains the information needed to perform routine maintenance and service on the Ohaus Scout Series scales. Familiarity with the scale's Instruction Manual is assumed. The contents of this manual are contained in five chapters:

Chapter 1 Getting Started – Contains information on service facilities, tools, specifications, and the mechanical and electronic functions of the scale.

Chapter 2 Troubleshooting – Contains a diagnostic guide and error code table.

Chapter 3 Maintenance Procedures – Contains preventive maintenance procedures and disassembly, repair and replacement procedures.

Chapter 4 Testing – Contains a list of required test masses, an operational test, segment display test, performance tests and adjustments.

Chapter 5 Drawings and Parts Lists – Contains exploded views of Scout scales identifying all serviceable components.

Appendix A Standard Calibration – Explains procedures for Standard Calibration, performed prior to using a scale, and after service.

Appendix B Service Calibration – Describes the Service Menu and sub-menus, which allow authorized service personnel to perform factory Linearity and Span calibrations (no pre-set limits), take Ramp readings, adjust the GEO Factor, and use E.PAnd to temporarily increase readability to at least $1/10^{th}$ of the standard readability.

Appendix C Software Service Tool Instructions – Used to re-configure the scale after replacing a Printed Circuit Board.

Appendix D Geographical Adjustment Values – The chart of scale settings for every geographical latitude away from the equator (in degrees and minutes) and every elevation above sea level (in meters or feet).

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.

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Warning Symbols

 General Hazard   Electrostatic discharge sensitive

 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.

- For AC mains powered models:

  - Verify that the local AC power supply is within the input voltage range printed on the equipment's data label. - Only connect the AC power cord to a compatible grounded electrical outlet.

- For AC adapter powered models:

  - 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 power cord from the power receptacle.

- 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.

- Disconnect power from the equipment before cleaning or servicing the equipment.

- Service should only be performed by authorized personnel.

- Use electrostatic protection measures when handling the printed circuit board.

- Only use original replacement parts and accessories.

1.4   SERVICE FACILITIES

To service a scale, the service area should meet the following requirements:

- Should be temperature controlled and meet scale specifications for temperature environmental requirements.

- Must be free of vibrations such as fork lift trucks close by, large motors, air currents or drafts from air conditioning/heating ducts, open windows, people walking by, fans, etc.

- Area must be clean and free of excessive dust.

- Work surface must be stable and level.

- Scale must not be exposed to direct sunlight or radiating heat sources.

- Handle all electronic assemblies with appropriate Electro-Static protection.
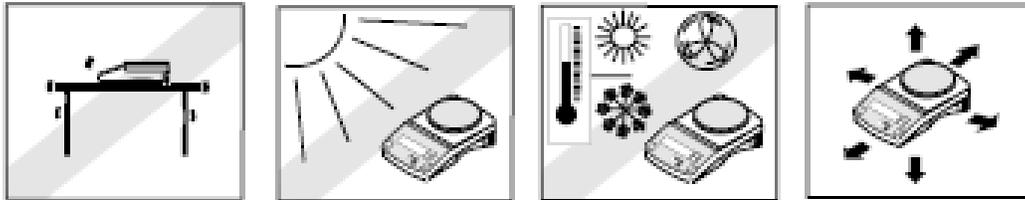
1.5   TOOLS AND TEST EQUIPMENT REQUIRED

1. Common hand tools are sufficient to disassemble the Scout scales.
2. Communication interfacing kit as below.

DESCRIPTION	Item Number
RS232 kit	30268982
USB Host kit	30268983

1.6   SPECIFICATIONS

Specifications for the Ohaus Scout Scales are listed in Table 1-1. According to OIML regulation after a scale is service (load cell is replaced) the scale specification would be double of the scale original specification. Before servicing the scale, determine what specifications are not met.

Ambient conditions
- Indoor use only
- Operating temperature: +10 °C to +30 °C for Class II approved models, +10 °C to +40 °C for other models
- Relative humidity: 10% to 85% 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, 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 1-1 STX SPECIFICATIONS

STX Models:

MODEL	STX123	STX223	STX222	STX422	STX622	STX1202
Capacity	120 g	220 g	220 g	420 g	620 g	1200 g
Readability d	0.001 g	0.001 g	0.01 g	0.01 g	0.01 g	0.01 g
Repeatability (std. dev.)	2 d	2 d	1 d	1 d	1 d	2 d
Linearity	3 d	3 d	1 d	1 d	2 d	3 d
Span Calibration Mass	100 g	200 g	200 g	300 g	500 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)	2 s	2 s	1 s	1 s	1 s	2 s
Sensitivity Temperature Drift	1 d / °C					
Display	Full-Color TFT Graphic LCD					
Display size	4.3 in / 10.92 cm (diagonal)					
Controls	4-wire resistive touch screen					
Balance power input	5 VDC, 1 A					
Pan size	Ø93 mm	Ø93 mm	120 mm	120 mm	120 mm	170 x 140 mm
Balance dimensions (W x D x H)	202 x 222 x 103 mm		202 x 224 x 54 mm			

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Shipping dimensions (W x D x H)	300 mm x 250 mm x 182 mm	300 mm x 250 mm x 86 mm
Net weight (kg)	1.0	
Shipping weight (kg)	1.6	

TABLE 1-1 STX SPECIFICATIONS(Continue)

STX Models:

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.)	2 d	1 d	1 d	1 d	1 d	1 d
Linearity (g)	3 d	1 d	1 d	1 d	2 d	1 d
Span Calibration Mass	2000 g	300 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)	2 s	2 s	1 s	1 s	1 s	1 s
Sensitivity Temperature Drift	1 d / °C					
Display	Full-Color TFT Graphic LCD					
Display size	4.3 in / 10.92 cm (diagonal)					
Controls	4-wire resistive touch screen					
Balance power input	5 VDC, 1 A					
Platform size (diameter)	170 x 140 mm	120 mm	170 x 140 mm	170 x 140 mm	170 x 140 mm	170 x 140 mm
Balance dimensions (W x D x H)	-202 x 224 x 54 mm					
Shipping dimensions (W x D x H)	300 mm x 250 mm x 86 mm					
Net weight (kg)	1.0					
Shipping weight (kg)	1.6					

TABLE 1-2 SPX SPECIFICATIONS

SPX Models:

MODEL	SPX123	SPX222	SPX422	SPX622	SPX1202	SPX2202
Capacity x Readability	120 x 0.001g	220 x 0.01g	420 x 0.01g	620 x 0.01g	1200 x 0.01g	2200 x 0.01g
Repeatability (std. dev.)	2 d	1 d	1 d	1 d	2 d	2 d
Linearity	3 d	1 d	1 d	2 d	3 d	3 d
Span Cal Mass	100 g	200 g	400 g	500 g	1000 g	2000 g
Weighing Units	g, kg, oz, lb, lb:oz, dwt, ozt, grn, N, ct, Tael (HongKong), Tael (Singapore), Tael (Taiwan), tola, tical, custom(1)					
Stabilization Time	2 s	1 s	1 s	1 s	2 s	2 s
Display	LCD with white LED backlight					
Keyboard	5 mechanical buttons					
Application Modes	Weighing, Counting, Percent, Display Hold, Totalization, Check Weigh, Specific Gravity/Density, Dynamic, Mole Weighing					
Battery Operating Time (at 20ºC)	30 hours for LCD version with backlight turned off					
Construction	ABS plastic housing with 304 stainless steel (SST) pan					
Pan Dimensions	93.2 mm	120 mm	120 mm	120 mm	170 x 140 mm	170 x 140 mm
Net Weight (kg)	0.9	1.0	1.0	1.0/1.6	1.0	1.0
Gross Weight (kg)	1.5 / 1.7	1.2 / 1.4	1.2 / 1.4	1.2 / 2.2	1.2 / 1.4	1.2 / 1.4

TABLE 1-2 SPX SPECIFICATIONS (Continue)

SPX Models:

MODEL	SPX421	SPX621	SPX2201	SPX6201	SPX8200
Capacity x Readability	420 x 0.1 g	620 x 0.1 g	2200 x 0.1 g	6200 x 0.1 g	8200 x 1 g
Repeatability (std. dev.)	1 d	1 d	1 d	1 d	1 d
Linearity	1 d	1 d	1 d	2 d	1 d
Span Cal Mass	400 g	500 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)				
Stabilization Time	1 s	1 s	1 s	1 s	1 s
Display	LCD with white LED backlight				
Keyboard	5 mechanical buttons				
Application Modes	Weighing, Counting, Percent, Display Hold, Totalization, Check Weigh, Specific Gravity/Density, Dynamic, Mole Weighing				
Battery Operating Time (at 20ºC)	30 hours for LCD version with backlight turned off				
Construction	ABS plastic housing with 304 stainless steel (SST) pan				
Pan Dimensions	120 mm	170 x 140 mm			
Net Weight (kg)	1.0	1.0	1.0	1.0/1.6	1.0
Gross Weight (kg)	1.2 / 1.4	1.2 / 1.4	1.2 / 1.4	1.2 / 1.4/2.2	1.2 / 1.4

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TABLE 1-3 SJX SPECIFICATIONS

SJX General Models:

Model	SJX323 SJX323/E	SJX322 SJX322/E	SJX622 SJX622/E	SJX1502 SJX1502/E	SJX621 SJX621/E	SJX3201 SJX3201/E	SJX6201 SJX6201/E	SJX8200 SJX8200/E
Capacity	320 ct	320 g	620 g	1500 g	620 g	3200 g	6200 g	8200 g
Readability	0.005 ct	0.01 g	0.01 g	0.01 g	0.1 g	0.1 g	0.1 g	1 g
Repeatability (Std. Dev.)	0.01 ct	0.01 g	0.01 g	0.02 g	0.1 g	0.1 g	0.1 g	1 g
Linearity	0.015 ct	0.01 g	0.02 g	0.03 g	0.1 g	0.1 g	0.2 g	1 g
Span Calibration Mass*	50 g	200 g	300 g	1.5 kg	300 g	3 kg	5 kg	8 kg
Linearity Calibration Mass*	30, 60 g	150, 300 g	300, 600 g	700 g, 1.5 kg	300, 600 g	1.5 kg, 3 kg	3 kg, 5 kg	4 kg, 8 kg
Calibration	SJX/E: User-selectable external span or linearity calibration / Digital with external weight SJX: Manual Internal Calibration							
Stabilization Time (s)	1.5	1	1	1.5	1	1	1	1
Construction	ABS housing & Stainless steel pan							
Draftshield	Yes	No						
Tare Range	Full Capacity by subtraction							
Weighing Units	g, kg, ct, oz, ozt, dwt, lb, grn, hkt, sgt, twt, tical, tola							
Application Modes**	Weighing, Parts Counting, Percent Weighing, Check Weighing, Display Hold							
Typical Battery Life	80 hours			120 hours		80 hours		120 hours
Communication	RS232 (Optional), USB Device (Optional), Ethernet (Optional), Bluetooth (Optional), USB Host (Optional)							
Display Type	Backlit LCD: 6-digit 7-segment with white LED backlight							
Display Size	20 mm digits							
Overload Capacity	10 times rated capacity							
Pan Size (W x D)	Ø93 mm	Ø120 mm	170 x 140 mm					
Scale Dimensions - SJX (W x D x H)	202 x 230 x 114 mm	202 x 230 x 68 mm						
Scale Dimensions – SJX/E (W x D x H)	202 x 222 x 103 mm	202 x 224 x 54 mm						
Shipping Dimensions - SJX (W x D x H)	300 x 250 x 182 mm							
Shipping Dimensions – SJX/E (W x D x H)	300 x 250 x 182 mm	300 x 250 x 86 mm						
Net Weight -SJX	1.1 kg	1.6 kg						
Net Weight -SJX/E	1 kg							
Shipping Weight - SJX	1.7 kg	2.2 kg						
Shipping Weight – SJX/E	1.5 kg							

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TABLE 1-3 SJX SPECIFICATIONS (Continue)

SJX EC Type Approve Models:

Model	SJX322M	SJX622M	SJX1502M	SJX6201M
Capacity	320 ct	620 g	1500 g	6200 g
Readability d	0.01 ct	0.01 g	0.01 g	0.1 g
Verification Interval e	0.1 ct	0.1 g	0.1 g	1 g
Class	II			
Repeatability (Std. Dev.)	0.01 ct	0.01 g	0.02 g	0.1 g
Linearity	0.02 ct	0.02 g	0.03 g	0.2 g
Span Calibration Mass*	50 g	300 g	1.5 kg	5 kg
Linearity Calibration Mass*	30, 60 g	300, 600 g	700 g, 1.5 kg	3 kg, 5 kg
Calibration	Manual Internal Calibration			
Stabilization Time (s)	1.5	1	1.5	1
Construction	ABS housing & Stainless steel pan			
Draftshield	Yes	No		
Tare Range	Full Capacity by subtraction			
Weighing Units	g, kg, ct			
Application Modes**	Weighing, Parts Counting, Percent Weighing, Check Weighing, Display Hold			
Typical Battery Life	80 hours			
Communication	RS232 (Optional), USB Device (Optional), Ethernet (Optional), Bluetooth (Optional), USB Host (Optional)			
Display Type	Backlit LCD: 6-digit 7-segment with white LED backlight			
Display Size	20 mm digits			
Overload Capacity	10 times rated capacity			
Pan Size (W x D)	Ø93 mm	Ø120 mm	170 x 140 mm	
Scale Dimensions - (W x D x H)	202 x 230 x 114 mm	202 x 230 x 68 mm		
Shipping Dimensions - (W x D x H)	300 x 250 x 182 mm			
Net Weight	1.1 kg	1.6 kg		
Shipping Weight	1.7 kg	2.2 kg		

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TABLE 1-3 SJX SPECIFICATIONS

SJX NTEP and Measurement Canada approved models:

Model	SJX322N/E	SJX622N/E	SJX1502N/E	SJX6201N/E
Capacity	320 ct	620 g	1500 g	6200 g
Readability d	0.01 ct	0.01 g	0.01 g	0.1 g
Verification Interval e	0.1 ct	0.1 g	0.1 g	1 g
Class	II			
Repeatability (Std. Dev.)	0.01 ct	0.01 g	0.02 g	0.1 g
Linearity	0.02 ct	0.02 g	0.03 g	0.2 g
Span Calibration Mass*	50 g	300 g	1.5 kg	5 kg
Linearity Calibration Mass*	30, 60 g	300, 600 g	700 g, 1.5 kg	3 kg, 5 kg
Calibration	External Weight			
Stabilization Time (s)	1.5	1	1.5	1
Construction	ABS housing & Stainless steel pan			
Draftshield	Yes	No		
Tare Range	Full Capacity by subtraction			
Weighing Units	g, kg, ct, oz, ozt, dwt, lb, grn			
Application Modes**	Weighing, Parts Counting, Percent Weighing, Check Weighing, Display Hold			
Typical Battery Life	80 hours			
Communication	RS232 (Optional), USB Device (Optional), Ethernet (Optional), Bluetooth (Optional), USB Host (Optional)			
Display Type	Backlit LCD: 6-digit 7-segment with white LED backlight			
Display Size	20 mm digits			
Overload Capacity	10 times rated capacity			
Pan Size (W x D)	Ø93 mm	Ø120 mm	170 x 140 mm	
Scale Dimensions - (W x D x H)	202 x 230 x 114 mm	202 x 230 x 68 mm		
Shipping Dimensions - (W x D x H)	300 x 250 x 182 mm			
Net Weight	1.1 kg	1.6 kg		
Shipping Weight	1.7 kg	2.2 kg		

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Model	SKX123	SKX222	SKX422	SKX622	SKX1202	SKX2202	SKX421	SKX621	SKX2201	SKX6201	SKX8200
Capacity (g)	120	220	420	620	1200	2200	420	620	2200	6200	8200
Readability (g)		0.001			0.01		0.1		1		
Repeatability (Std. Dev.) (g)		0.002			0.01		0.02		0.1		1
Linearity (g)	0.003		0.01		0.02		0.03	0.1	0.2		1
Span Calibration Mass*	100 g	200 g	200 g	300 g	1 kg	2 kg	200 g	300 g	2 kg	5 kg	8 kg
Linearity Calibration Mass	50,100g	100,200 g	200,400 g	300,600 g	500g,1kg	1kg,2kg	200,400 g	300,600 g	1kg,2kg	3kg,6kg	4kg,8kg
Stabilization Time (s)		1.5			1		1.5		1		
Construction					ABS housing & Stainless steel pan						
Draftshield			Yes				No				
Tare Range					Full Capacity by subtraction						
Weighing Units					g, kg, N, oz, lb, lb:oz						
Application Modes					Weighing, Density Determination, Mole Weighing						
Battery Operating Time (at 20ºC)	80 hours		120 hours		80 hours		120 hours		80hours		120 hours
Display Type					Backlit LCD: 6-digit 7-segment with white LED backlight						
Display Size					20 mm / 0.78 in digits						
Overload Capacity					10 times rated capacity						
Pan Size (W x D)		Ø93mm/3.7in		Ø120 mm / 4.7 in		170 x 140 mm / 6.7 x 5.5 in		Ø120mm / 4.7in		170 x 140 mm / 6.7 x 5.5 in	
Shipping Dimensions (W x D x H)			300x250x129mm/ 11.8x9.8x7.2in			300 x 250 x 129 mm / 11.8 x 9.8 x 5.1 in					
Net Weight					1 kg						
Shipping Weight					1.6 kg						

1.7 SCALE OPERATION

This section contains information on the basic operation of the scale.
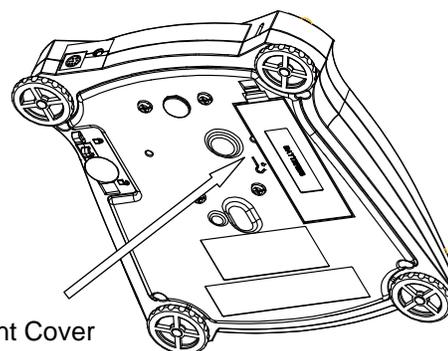
AC Adapter Installation
AC power is used to power the scale when battery power is not needed. First, connect the AC Adapter (supplied) to the AC Adapter Input receptacle at the rear of the scale then connect the AC plug to an electrical outlet.

Battery Installation

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

AC Adapter Input Jack

Battery Compartment Cover

Figure 1-1. Power Connection.

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1.8   Overview of the Controls

1.8.1 Scout STX Series Display.

Figure 1-2. Scout STX Display

TABLE 1-3 BUTTON FUNCTIONS for STX Series

Button	ZERO	TARE
Primary Function (Short Press[1])	**On** Turns the balance on **Zero** If balance is On, sets Zero	**Tare** Performs a Tare function
Secondary Function (Long Press[2])	**Off** Turns the balance Off.	

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1.8.2   Overview of the Display STX Series

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

Main Application Screen

Application

Instructional Messages

Stability (*), Net (NET),
Gross (G) and/or center
of zero (>0<) indicators

Reference Fields

Dynamic Weighing	Max 4201 g d= 0.01 g e= 0.01 g	Capacity and readability

Place sample on the pan. Press Start to begin averaging.

*
>0<

0.00 g

Result Field: Information
varies by application

Touch **g** to change unit

Gross:	0.00 g	Averaging Time:	5 s
Net:	0.00 g	Automatic Mode:	Off

Item Settings	Start	Save to USB	Menu

Application Buttons:

Functions vary by

Figure 1-3. Scout STX Series Touch Screen Display.

1.8.3   Scout SPX Series Control.

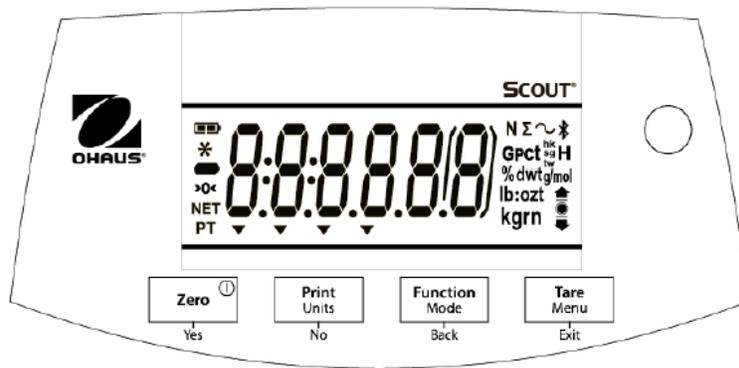Figure 1-4. Scout SPX Series Controls.

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Button	Zero ① / Yes	Print Units / No	Function Mode / Back	Tare Menu / Exit
Primary Function (Short Press)	**Zero** 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** 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.

TABLE 1-4. Scout SPX Series Button Functions

Notes: [1] Short Press: Press less than 1 second.
[2] Long Press: Press and hold for more than 2 seconds.
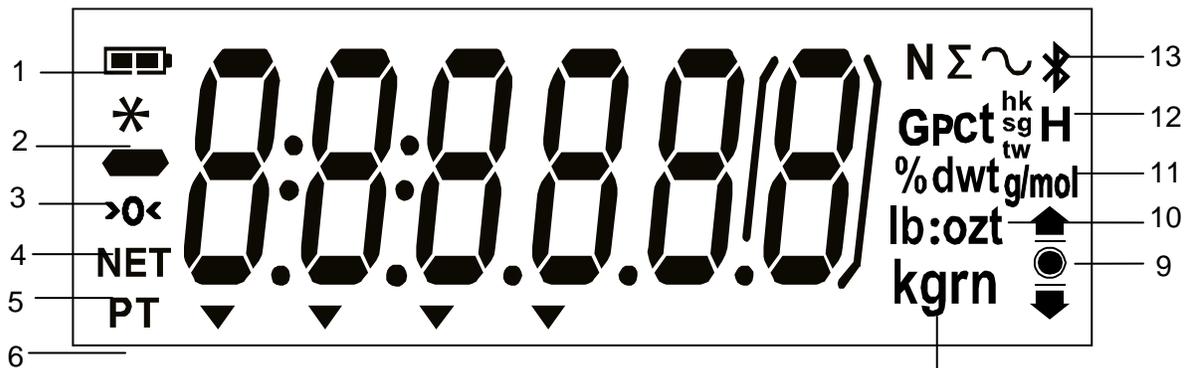
1.8.4 Scout SPX Series LCD Display.

Figure 1-5. Scout SPX Series Display

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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	G, Pieces, hk, sg, tw, H symbols
6	Preset Tare, Tare symbols	13	Newton, Totalization, Dynamic, Bluetooth symbols
7	Pointer symbols		

TABLE 1-5. Scout SPX Series Display Symbols

1.8.5 Scout SJX Jewelry Series Control.
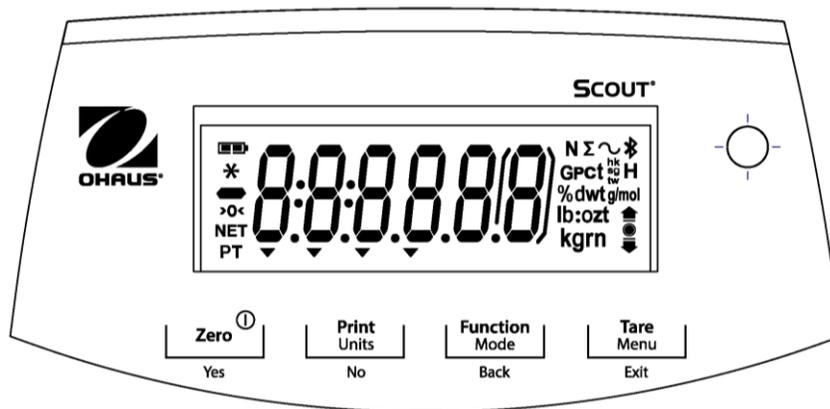
Figure 1-6. Scout SJX Series Control
Panel

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Button	Zero ① / Yes	Print Units / No	Function Mode / Back	Tare Menu / Exit
Primary Function (Short Press)	**Zero** 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** 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.

TABLE 1-6. Scout SJX Series Button Functions

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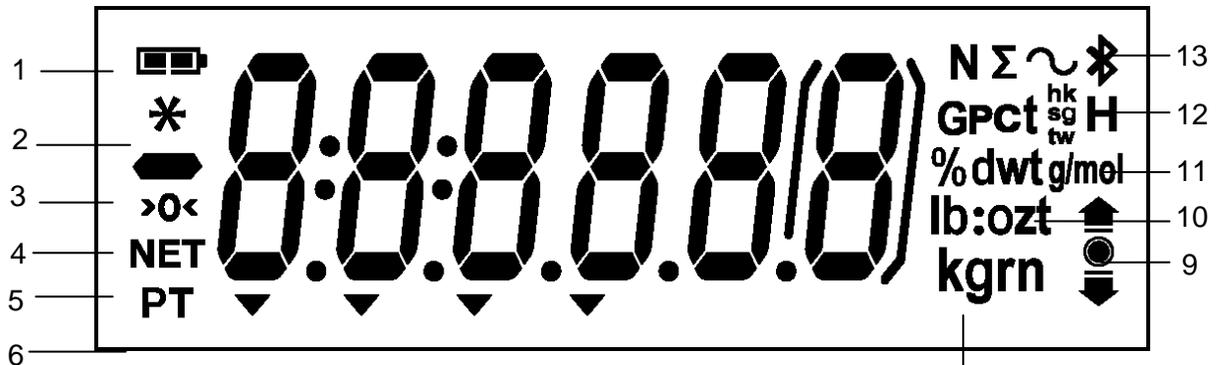[2] Long Press: Press and hold for more than 2 seconds.

Figure 1-7 Scout SJX Series Display

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	G, Pieces, hk, sg, tw, H symbols
6	Preset Tare, Tare symbols	13	Newton, Totalization, Dynamic, Bluetooth symbols
7	Pointer symbols		

TABLE 1-7. Scout SJX Series Display Symbols

1.9 Power On

With power connected, AC Adapter or battery, press **Zero/**⏻**.** After segment display, "OHAUS" and software revision number, the display will show *** 0.00** and the current unit (standard weighing mode).

If the scale is set for LFT (Legal for Trade – EC / OIML "M" or NTEP / MC "N" models), **LFT** flashes briefly after the software revision number before entering to standard weighing mode

Allow time for the scale to stabilize after moving it from an area which is at a different temperature than the area where it is to be operated. Allow one hour for each 5°F (2.7°C) temperature change before using the scale. After temperature stabilization, allow an additional 20 minutes after turning the scale on, for the scale electronics to stabilize.

When the scale is turned on, the last mode and unit will be active.

1.10 Power Off

To turn the scale OFF, press and hold **Zero/**⏻ until the display indicates **OFF**, then release.

1.11 Menu Setup

Programmable features of the Scout scales are contained in menus which are accessed through the Display Panel's control switches. The Menu Structure is described in Section 1.8. (For more detail on using the menus, see the Instruction Manual.)

Note: The Menu Lock switch limits changes to the Cal, Setup, Mode and Unit menus. The switch in type approved models may set some scale settings as required by the approval agency. To gain access to these submenus, see the next section.

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1.12   LEGAL FOR TRADE (LFT)

When the scale is set for LFT (on "M" and "N" models), the following menu settings cannot be accessed / changed: Calibration, Mode and Units. The switch in type approved models may set some balance settings as required by the approval agency. In non-approved models the Menu lock switch will also limit access to certain menu items. The Service Menu (see section 1.8.2) is not available when the switch is "on".

To regain access to the locked menu settings, move the Menu lock switch to the left (away from the middle), which turns LFT off.

Figure 1-8   Menu Lock Switch

Locked

Unlocked

After the Menu Lock setting has been turned off, the scale must be inspected in accordance with local weights and measures regulations before it can be used in LFT mode again. Local authorities may secure the switch using paper seals, wire seals or plastic ties.

Note: "M" and "M" models- When the Menu Lock switch is set to "on" certain menu items will be forced to the required setting and the required menus will be locked.

LFT SETUP PROCEDURE

1. Set the Geographical Adjustment Factor (GEO) according to the current location. (See Appendix D. Possible values are from 1 to 31.) The setting is in the Service Menu: press **ZERO** and **Tare** simultaneously during power on, hold until "Ramp" is seen. Press **No** three times until GEO appears, then press **Yes**. Then continuously press **No** until the desired number appears. Press **Yes**, then **No** until END appears. Press **Yes** to return to weighing mode. This allows the scale to be calibrated at the current location with the local GEO factor. Later the GEO factor can be changed to match the intended destination so that the correct deviations will be implemented.

2. Access the Mode menu (Press and hold **No** until .�odᴇ. appears. Press **Yes** to enter the displayed menu, or **No** to advance to the next menu, etc.)
   Set the following: Modes as per local LFT requirements

3. Access the Unit menu (Press and hold **No** until .ᴜ.ɴ.ɪᴛ. appears. Press **Yes** to enter the displayed menu, or **No** to advance to the next menu, etc.)
   Set the following: Units as per local LFT requirements

4. Perform an accurate calibration. (See Appendix A.)

5. Set the GEO code to the intended destination. Repeat procedure in step 1 except enter the new GEO factor.

6. Move the Menu Lock switch to the right (closer to the center), which sets LFT on.

7. Turn the Scale off and disconnect the AC power connection.

8. Reconnect the AC power, press **O/T/*On/Off*** to turn on the scale. During power on, the display sequence will now include: "LFT." This message confirms the proper setting of the LFT mode and the hardware lock switch. Verify proper scale operation and that the required legal requirements are met. (CAL is locked, available modes and units are correct, etc.)

9. The scale can now be sealed if the proper authority is present. If the scale cannot be sealed at the current location then the customer must do so at his or her location before the scale is put into legal service.

1.13   MENU STRUCTURE

Programmable features of the Scout are contained in the User Menu and Service Menu which are accessed through the Display Panel's control switches. The menu structures are illustrated below.

1.13.1 User Menu

The User Menu is easily accessed and documented for the scale operator. For more detail on using the menu, see the Scout Instruction Manual.

Figure 1.9 STX User Menus

TABLE 1-8 Scout SJX, SKX and SPX USER MENU STRUCTURE

Sub-Menus:	.C.a.l.	.S.e.t.u.p.	.M.o.d.e.	.U.n.i.t.	.E.n.d.
Menu Items:	*In.CAL	rESET	rESET	*ct, *g, *kg, grn, lb, oz, lb:oz, ozt, N, dwt, thk, tsg, ttw, tola, tical	
	*A.CAL	Filter	Weigh		
	*CAL.Adj	AZT	Count	End	
	Span	Stable	Percent		
	Lin	b.Light	Check		
		A.Tare	Dynamic		
		A.OFF	Total		
		END	Specific Gr		
	End		Hold		
			**Mole		
			End		

Note: Available units and modes vary by model and local regulations.

   :*only for SJX models.

   :**Not available in SJX models.

1.13.2 Service Menu

The Service Menu is intended for use by service personnel. The menu items are generally used when servicing the scale but there are setting that may be changed to satisfy a customer's special requirements. For more detail on using the service menu see Appendix B.

Figure 1.10 STX Service Menus
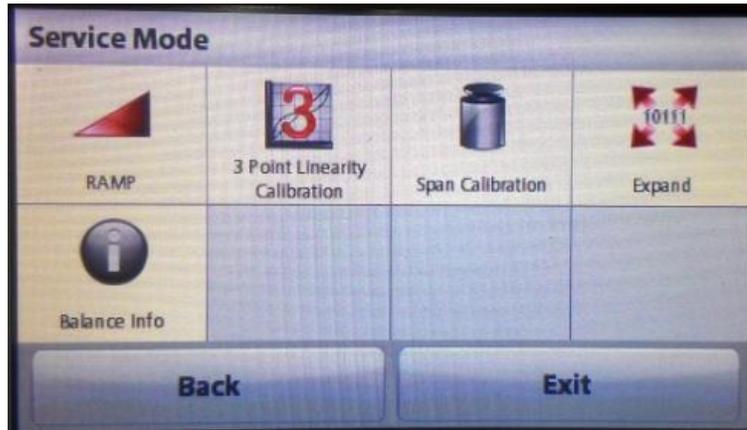
TABLE 1-9 SCOUT SJX, SKX and SPX SERVICE MENU STRUCTURE

	Service Menu
	Lin
	Span
	*Std.CAL
Menu Items:	*In.CAL
	rAMP
	Expand
	End

Note: *only for SJX models.

2   DIAGNOSTIC GUIDE

This section of the manual contains troubleshooting information. Information is contained to isolate specific problems using Table 2-1, Diagnostic Guide. Follow all directions step by step. Make certain that the work area is clean. Handle scale components with care. Use appropriate electro-static protection devices to prevent damage to the sensitive electronic components.

2.1   TROUBLESHOOTING

2.11   General procedures for Troubleshooting

1. Do the most obvious, user-level remedies.

2. Visual Check:

-   Check that the internal parts are clean and free from debris.

-   Examine the scale for damage or signs of abuse, replace any damaged items.

-   Examine the load cell for signs of bending, twisting or corrosion.

3. Use the error code table for solutions for specific codes.

4. Use the Diagnostic Guide; locate the symptom then follow the suggested remedies in order.

2.2   DIAGNOSTIC GUIDE

Table 2-1 is a Diagnostic Guide designed to help locate the problem area quickly and easily. The probable causes are listed with the most common cause first. If the first remedy does not fix the problem, proceed to the next remedy. Before attempting to repair the scale, read all chapters of this manual to be familiar with the scale components and operation.

Diagnosis:

1. Isolate and identify the symptom.

2. Refer to Table 2-1, Diagnostic Guide and locate the symptom.

3. Follow the suggested remedies in the order they appear.

4. Perform the indicated checks, or see the appropriate section of the manual.

5. Repair or replace the defective section of the scale.

NOTE:

If more than one symptom is observed, approach one area at a time, and remember that the symptoms may be interrelated. If a problem arises that is not covered in this manual, contact Ohaus Corporation for further information.

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2.2.1   Diagnosis

TABLE 2-1. DIAGNOSTIC GUIDE For SJX, SPX and SKX

SYMPTOM	PROBABLE CAUSE	REMEDY
Cannot turn on	No power to balance	Check the AC Adapter. Perform troubleshooting on the main PCBA and power inlet cables connection
Poor accuracy	Improper calibration Unstable environment	
Cannot calibrate	Security switch in locked position	Unlock the security switch.
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	
No. data	Cannot find menu or app file in U-disk.	

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TABLE 2-2 DIAGNOSTIC GUIDE For STX.

SYMPTOM	PROBABLE 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	Calibration Menu locked LFT set to on Unstable environment Incorrect calibration masses	Turn Calibration menu lock off Turn LFT off Move balance to suitable location Use correct calibration masses
Cannot change menu settings	Sub-menu locked LFT set to on	Unlock sub-menu Turn LFT 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

2.3   ERROR CODES

When a problem occurs using the scale, the display will indicate an error code.
Table 2-2 describes the various error codes and specifies the probable cause and remedy.

TABLE 2-3. ERROR CODES For SPX, SJX and SKX

Symptom/Err Codeds	Possible Cause
Cannot turn on	No power to balance
Poor accuracy	Improper calibration; Unstable environment
Cannot calibrate	Security switch in locked position
Err 8.1	Weight exceeds power on zero range.
Err 8.2	Weight below power on zero range.
Err 8.3	Over load (weight exceeds rated capacity)
Err 8.4	Under load (pan removed)
Err 8.5	Tare out of range
Err 8.6	Displayed value exceeds 999999 (possible in Totalization mode)
Err 8.7	Unknown internal weight position
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.

3   MAINTENANCE PROCEDURES

3.1   PREVENTIVE MAINTENANCE

Ohaus scales are precision instruments and should be carefully handled, stored in a clean, dry, dust-free area, and cleaned periodically. Follow these precautionary steps:

– When a scale has had chemicals or liquids spilled on it, all exterior surfaces should be cleaned as soon as possible with warm water on a damp cloth.

– Do not leave a mass on the scale when the scale is not in use.

– Allow time for the scale to stabilize after moving it from an area which is at a different temperature than the area where it is to be operated. Allow one hour for each 5°F (2.7°C) temperature change before using the scale. After temperature stabilization, allow an additional 20 minutes after turning the scale on, for the scale electronics to stabilize.

Preventive Maintenance Checklist

The scale should be inspected and checked regularly, as follows:

1. Remove the Pan and Sub Pan to inspect and clean the area beneath the Pan.

2. Clean the outside of the scale using a damp cloth with warm water.

⚠️ **CAUTION**

DO NOT USE CHEMICAL CLEANERS OR SOLVENTS OF ANY TYPE.
SOME CLEANERS ARE ABRASIVE AND MAY AFFECT THE SCALE'S FINISH.

3. Check the Power Cord for broken or damaged insulation.

4. If using batteries and the scale malfunctions, first replace the batteries to see if this resolves the problem.

5. Make a visual inspection for faulty connectors, wiring, and loose hardware.

3.2   OPENING THE SCALE

Opening the Scout series scale varies slightly according to the specific model, as detailed below. Use these procedures in order to replace the Load Cell, the Printed Circuit Board or other components.

3.2.1   Opening Scout Models

Common hand tools are sufficient to disassemble the Scout scales. Turn the scale off and unplug the power cord before you begin. Remove any installed batteries.

1. Remove the stainless steel Weigh Pan and plastic pan support (on square pan models).

2. Shift the pan support clockwise and remove the pan or remove the pan support screws

(Models vary).

Round supporting pan

Square pan lock position

Square pan un-lock position

Note: Square pan support without screws.

Remove 2 holding screws

Square supporting pan with screws.
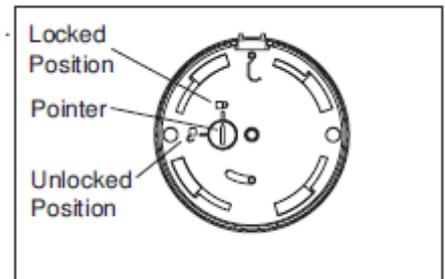
Shipping lock positioning.

Note: For square pan models with screws, to prevent pressure on the load cell during removing of the plastic pan support, turn the red load cell protective screw to the lock position and to the un-lock position when removing the pan support away from the scale.

3.   Remove the 5 screws holding the Top and Bottom Housings in place. (See Figure 3-2.)

Screws that secure the housing
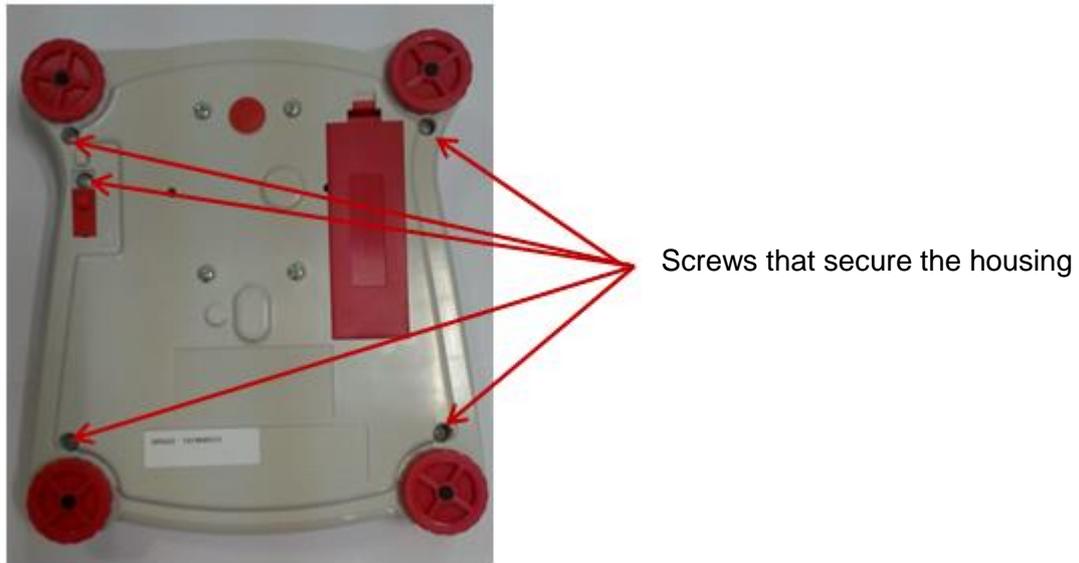
Note: Picture shows a SPX model.

4. Turn the scale over and remove the upper housing. Caution for STX models as the touch screen TFT display film cable is attached to the main PCBA as shown below (do not lift up the housing completely if not might damage the film cable). There is no concern for SJX, SPX and SKX because there is no connection between top and bottom housing.
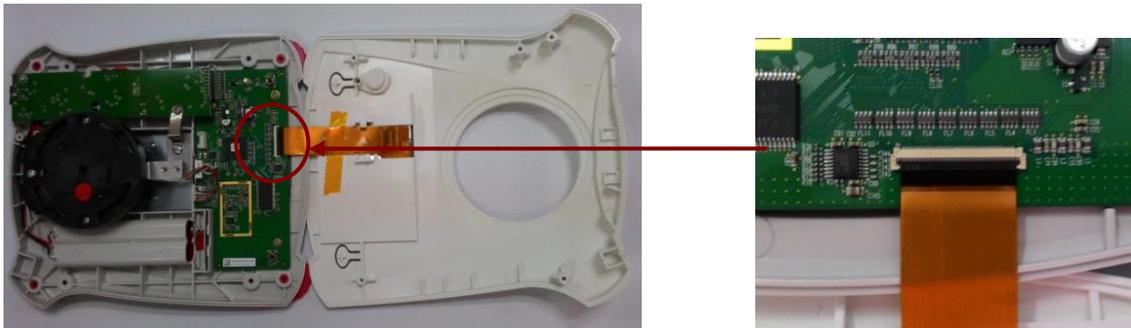
Picture show a STX model.

Picture show a SPX model.

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3.3   REPLACING THE LOAD CELL

The Load Cell may need to be replaced because of scale instability, or because the scale does not calibrate or repeat, or because it is physically broken or displays an error code.

Disassembly:

1.   Open the scale – see Section 3.2 Verify that there is no mechanical interference, pinched wire that may be causing the load cell to appear defective.

2.   Remove the Load Cell – turn the scale over, holding the Load Cell by hand, and remove the 4 load cell screws from the bottom housing. Scout model uses cross-recess screw heads (Phillips type) when securing the load cell to the scale bottom housing.
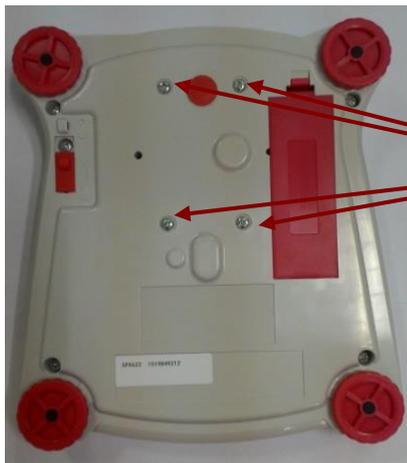
4 screws securing the load cell to bottom housing.

3.   Turn the scale back on its feet and gently lift off the Load Cell from the bottom housing (before doing that make sure you remove the screw holding the load cell with the Power PCBA). Place the Load cell on a static protected work area.

Screw securing the load cell kit to the Power PCBA.
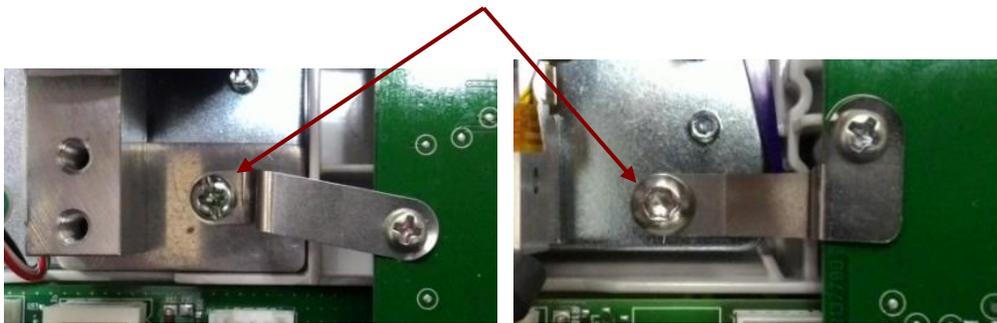
4.   Scout will have two type of load cell connector depends on models. One type is connector type and the other one is film type. Please kindly refer to spare part list when placing load cell during service and repair. For connector type simple detach the cable from the main PCBA connector to replace the load cell. As for film type you might need to be careful, gently lift upward the connector and remove the load cell film cable from the holder.

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Re-Assembly:

1. Insert the load cell cable in the appropriate load cell insert on the main PCBA.

NOTE: Scout has two type of load cell connector one is film type and the other one is connector type (please refer to spare part list and order the correct load cell spare part during service repair).

    : Replacing load cell required Configuration (depending on models) (See Appendix C.)

    : After replacing the load cell for a SJX models it is a MUST to link the scale to Service and Repair Tools and perform a 'Sensor Calibration' process.
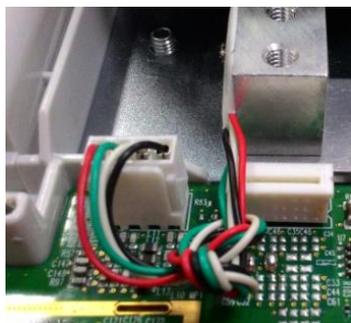
Connector type load cell

Film type load cell

3.4 REPLACING THE PRINTED CIRCUIT BOARD AND DISPLAY

3.4.1 Replacing the Power PCBA.

Open the scale – see Section 3.2, open the scale top housing and remove the two screws holding the Power PCBA in place as shown below. After removing the screws gently lift up the Power PCBA from its connector which attached to the Main PCBA.

Remove the batter cable from the Power PCBA.

2 screws securing the Power PCBA in place.

Connector attached to Main PCBA.
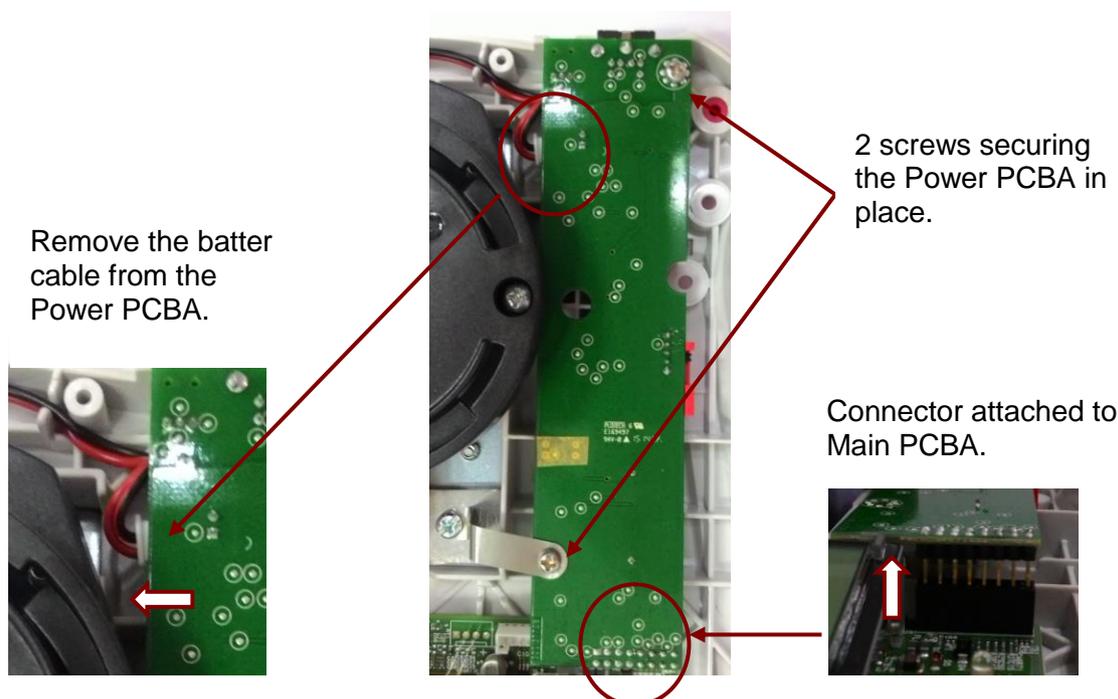
Note: Great care needed when removing Power PCBA from a unit if the scale is with LCD display because the Power PCBA edge if very close to the LCD display. If not careful the LCD might get damage during the process.

Once the Power PCBA is removed from the main PCBA scale date and time will reset back to factory default. For SJX models link the scale to Service tools and perform 'Sensor Calibration' once power PCBA is replaced.
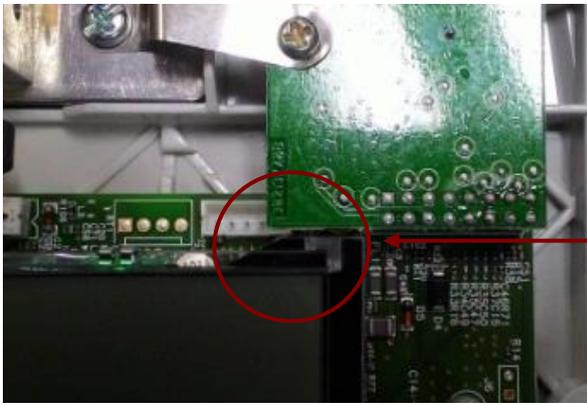
Careful when removing Power PCBA from a Main PCBA with LCD display.

3.4.2   Replacing the Main PCBA.

Open the scale – see Section 3.2, remove the Power PCBA –see Section 3.4.1.

Locate the 3 screws securing the Main PCBA to the scale bottom housing. Screws location are different depends on model you are servicing.

Screws location securing Main PCBA to scale bottom housing.
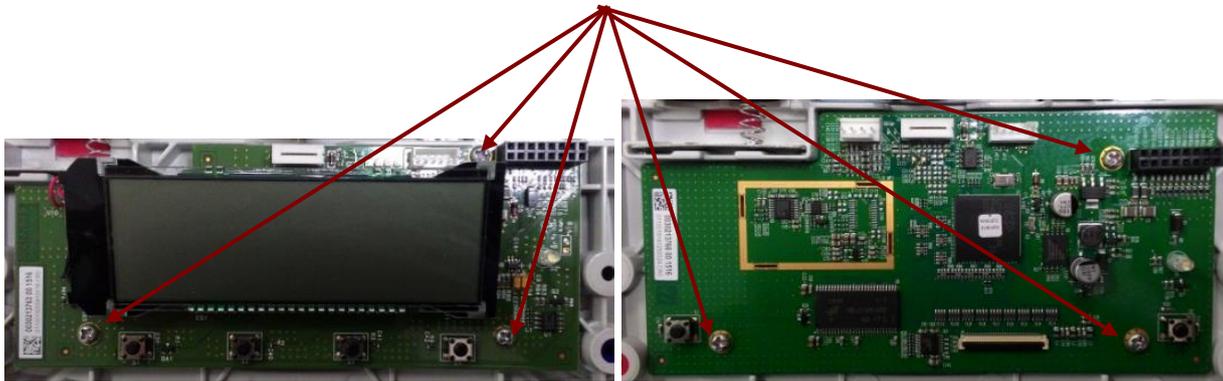
Main PCBA with LCD display (SJX, SPX, SKX)

Main PCBA without LCD display (STX)

Firstly remove the load cell connector from the Main PCBA after that locate and remove the screws securing the main PCBA from its bottom housing.

Note: The scale need to be Configure after replacing a new Main PCBA. (See Appendix C.)

   : The PCBA and LCD Display are supplied as a single unit. However, if only the LCD Display need replacement, it can be separated from the PCBA by unsoldering the fine Lead-wires connecting it to the PCBA. When installing the new LCD Display, carefully

Feed the lead-wires through their holes, check that the new assembly is seated properly on The PCBA and then solder the lead-wires.

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3.5   REPLACING THE FUNCTION LABEL

Open the scale – see Section 3.2, remove the top housing from the base.

If the Function Label needs to be replaced, use a broad blade, such as a wide X-Acto™ knife, to remove the label. Clean the glue residue from the Housing surface. Then carefully place the new label where the old one was. (See Figure 3-5.)
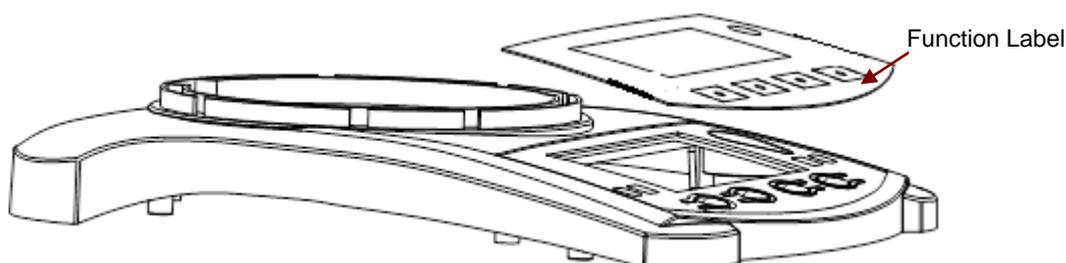

Figure 3-5.   Function Label Removal

Note: For all Scout models a new function label is needed when replacing the level bubble kit.

: For STX models a new function label is needed when replacing the Touch screen display panel.

3.6   Replacing the Touch Screen Display Panel.

Open the scale – see Section 3.2.1, remove the Function Label – see Section 3.5

After removing the Function Label replaces the new Touch Screen Display Panel make sure there are no residuals on the new Display Panel before placing the new Function Label.

Note: A new Keypad overlay will be needed after the touch screen display panel is replaced.

3.7   Replacing Power PCBA Battery.

Scout equip with a type CR2032 3V button battery located on the Power PCBA.

Open the scale – see Section 3.2.1, remove the Power PCBA – see 3.4.1

Remove the Power PCBA and turn the PCBA around you will locate the battery as shown below.

CR2032 3V battery.

Note: Once the Power PCBA is removed from the main PCBA scale date and time will reset back to factory default.

For SJX models link the scale to Service and Repair Tools and perform 'Sensor Calibration' once the power PCBA is removed from the main PCBA.

3.8   **Replacing the Internal Weight and Plastic InCal Mechanism for SJX models.**

Scout Jewelry Series (SJX) are able to perform Internal calibration by pulling out the mechanisms located at the back of the scale to lower down an Internal Weigh and complete the Internal calibration process. This section describes how to remove and replace the InCal Weight and the Plastic InCal Mechanism.
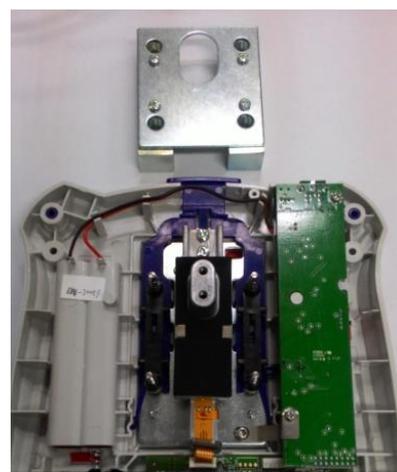
3.8.1   Replacing the Internal Weight.

Open the scale – see Section 3.2, locate the Internal Weight and by wearing a clove remove the weight by lifting it upwards from the weight holder. Replace the Internal weigh if there is damage or corrosion on the weigh.
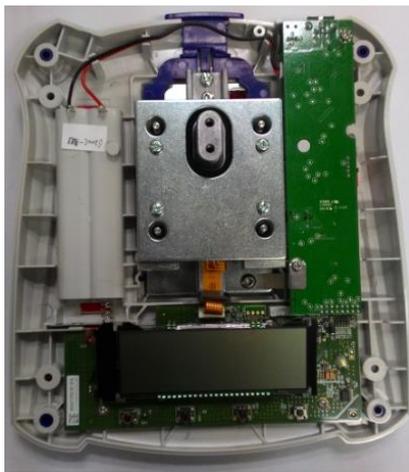
Location of weight   Remove weight   Weight detach from scale.

3.8.2   Replacing the Internal Weight Mechanisms.

Note: Great care need to be taken when handling the Internal Weight Mechanisms because it's made of plastic.

Open the scale – see Section 3.2, remove the Internal Weight –see Section 3.8.1.

Detach the battery compartment connector and set it aside. (Remember to position the wire correctly when re-connecting back the connector.)

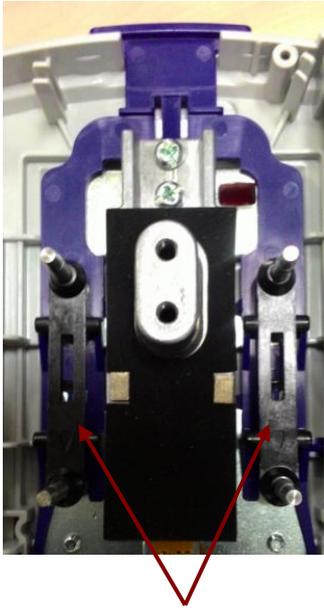Remove the Power PCBA and load cell will give you more room to work with.
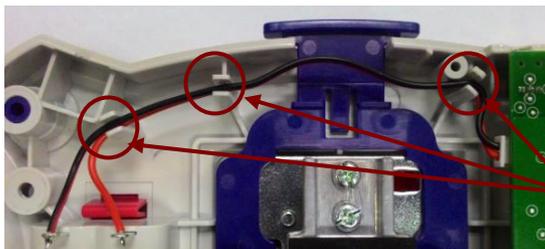
Wire guide

Detach battery compartment connector and set it aside.

Lift up the two Internal Weight holder (Black in color).

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Up close of the weight holder (Note the position marking on the holder which facing scale front end when installing back in position.

Two weight holder.

Remove the load cell and observe the bottom part of the load cell kit. You will see the purple plastic internal calibration bracket which securely attached to the load cell bottom metal plate as shown below.

Apply light pressure and gently flip the internal calibration bracket hook which attach to the load metal cell bottom metal plate and securely remove the bracket away from the load cell assembly.

Observe the bracket for any sign of wear and tear or damage, replace with a new bracket assembly kit if necessary.

Note: Observe the direction of the calibration bracket (position upwards) in this position you will have more room when removing the bracket from the load cell bottom metal plate.
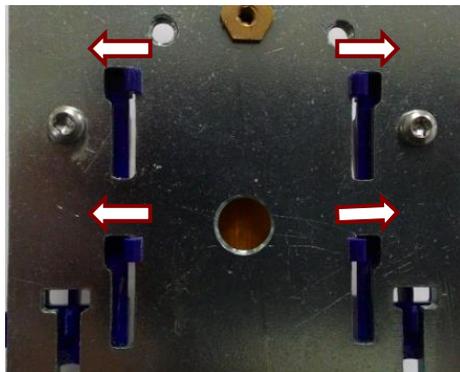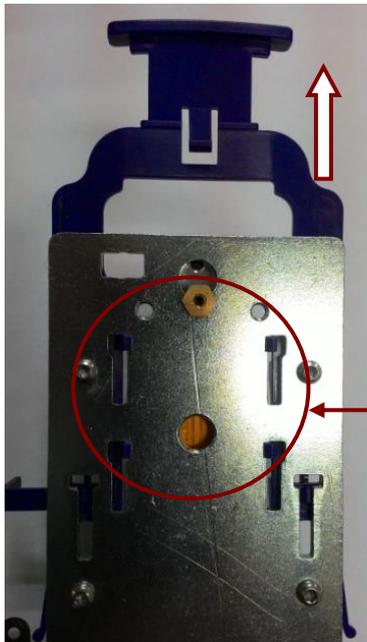
Note: At this stage great care need to be taken when handling the load cell to avoid damage.

3.8.3 Installing back the Internal Weight Mechanisms.

Work reverse of step 3.8 make sure there are free movement without any binding after installing back the calibration bracket to the load cell bottom metal plate. And the calibration bracket sits in the appropriate position.
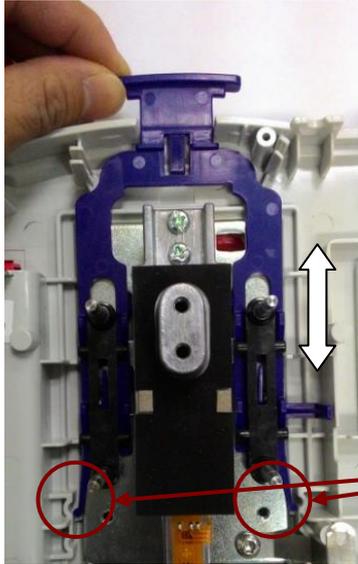
Free movement from the calibration bracket.

Correct position   Wrong position

Note: After replacing the Internal weight mechanical it is a must to link the scale to the Service and Repair Tools and perform a 'Sensor Calibration'

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3.9 Weight String Output Format.

Output examples: (Note: * and _ indicate spaces)

Weight string print format: Field	Weight	space	Unit	space	Stability	Space	T/N/G/PT (Right aligned)	CR	LF
Length	11	1	5	1	1	1	2	1	1

Interface Commands

The following commands must be terminated by a carriage return (CR) or a carriage return-line feed (CRLF).

0P   turns Auto-print off
CP   Continuous print weight
xP   Auto-print on 1 to 3600 second intervals (x = 1 to 3600)
M   Advance to the next enabled mode
PU   Print current unit
U   Advance to the next enabled unit
H   Set or read the print header. Totally 5 headers can be set. For example, H 1 "Header1"
F   Set or read the print footer. Totally 2 footers can be set. For example, F 1 "Footer1"
T   tare
Z   zero the scale
PV   print software version
P   same function as pressing the PRINT/Units key
IP   Immediate Print of displayed weight (stable or unstable)
SP   Print stable weight only

Scout Communication Kits

DESCRIPTION	Item Number
RS232 kit	30268982
USB Host kit	30268983
USB Device Kit	30268984
Bluetooth Kit	30268985
Ethernet Kit	30268986

Note: Detail information kindly refers to communication kit instruction menus

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4 TESTING

Before and after servicing a Scout scale, an operational test and various performance tests should be made to confirm that the scale meets specifications. Turn the scale on and allow it to warm up for at least one hour before performing these tests.

⚠️ **NOTE:**

Make sure the test area is free from drafts and that the scale rests on a level and vibration-free surface.

4.1 TEST MASSES REQUIRED (base on all Scout models)

The masses required to test the Ohaus Scout scales must meet the requirements of ASTM Class 4 or OIML F2 Tolerance. The mass values are listed in Table 4-1.

TABLE 4-1   CALIBRATION MASS VALUES

Model	Span Calibration mass (g)	Linearity Calibration masses (g)
SPX123	100	50,100
SPX223	200	100, 200
SPX222	200	100, 200
SPX422	200	200, 400
SPX622	300	300, 600
SPX1202	1000	500, 1000
SPX2202	2000	1000, 2000
SPX421	200	200, 400
SPX621	300	300, 600
SPX2201	2000	1000, 2000
SPX6201	5000	3000, 6000
SPX8200	8000	4000, 8000
SKX123	100	50, 100
SKX222	200	100, 200
SKX422	200	200, 400
SKX622	300	300, 600
SKX1202	1000	500, 1000
SKX2202	2000	1000, 2000
SKX421	200	200, 400
SKX621	300	300, 600

SKX2201	2000	1000, 2000
SKX6201	5000	3000, 6000
SKX8200	8000	4000, 8000

Model	Span Calibration mass (g)	Linearity Calibration masses (g)
STX123	100	50/100
STX223	200	100, 200
STX222	200	100, 200
STX422	200	200, 400
STX622	300	300, 600
STX1202	1000	500, 1000
STX2202	2000	1000, 2000
STX421	200	200, 400
STX621	300	300, 600
STX2201	2000	1000, 2000
STX6201	5000	3000, 6000
STX8200	8000	4000, 8000
SJX323(E)(M)	50	30, 60
SJX322/E	200	200, 300
SJX622 (E)(M)	300	300, 600
SJX1502(E)(M)	1500	1000, 1500
SJX621/E	300	300, 600
SJX3201/E	3000	1500, 3000
SJX6201(E)(M)	5000	3000, 6000
SJX8200/E	8000	4000, 8000

4.2 OPERATIONAL TEST

1   Connect a functioning Power Adapter to the scale power receptacle located on the bottom of the scale, or install the required batteries.

2   Plug the Power Cord into a suitable power source.

4.3 SEGMENT DISPLAY TEST

Turn the scale on, and ensure that all segments are enabled and displayed briefly. This is a Segment Display Test. (See Figure 4-1 and Figure 4-2)
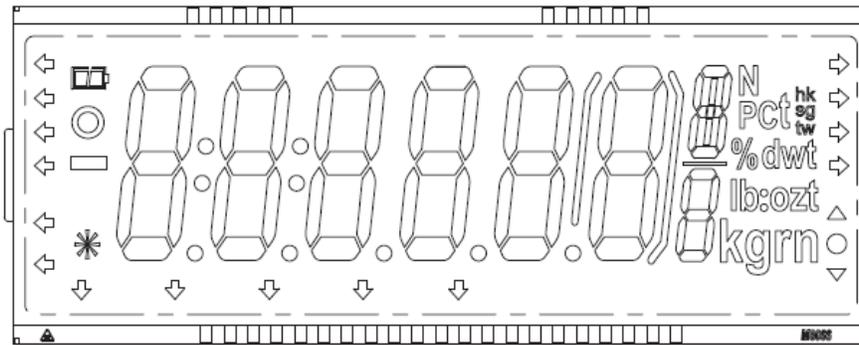
Figure 4-1   LCD Segment Display

4.4 LCD TFT COLOR DISPLAY TEST

Turn the scale on, and ensure there is no missing segment display on the TFT screen.

Scout STX622
620 g x 0.01 g
Version 0.50
S/N 0.01

Figure 4-2   LCD TFT Color Display

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4.5 LOAD CELL TEST USING RAMP

To test the Load Cell using RAMP, see Appendix B.

4.6 PERFORMANCE TESTS (base on all Scout models)

Accurate performance of the Scout scales is determined by a series of four performance tests. The displayed readings are compared with the tolerances listed in Tables 4-2 and 4-3. Tolerance values are expressed in counts. A one-count difference is shown in the last digit on the scale display.

TABLE 4-2   TOLERANCES

Model	Precision (d)	Repeatability (d)	Linearity (d)	OCL (d)
SPX123	0.001	2	3	3
SPX223	0.001	2	3	3
SPX222	0.01	1	1	1
SPX422	0.01	1	1	1
SPX622	0.01	1	2	2
SPX1202	0.01	2	3	3
SPX2202	0.01	2	3	3
SPX421	0.1	2	1	1
SPX621	0.1	1	1	1
SPX2201	0.1	1	1	1
SPX6201	0.1	1	2	2
SPX8200	1	1	1	1
SKX123	0.001	2	3	3
SKX222	0.01	1	1	1
SKX422	0.01	1	1	1
SKX622	0.01	1	2	2
SKX1202	0.01	2	3	3
SKX2202	0.01	2	3	3
SKX421	0.1	1	1	1
SKX621	0.1	1	1	1
SKX2201	0.1	1	1	1
SKX6201	0.1	1	2	2
SKX8200	1	1	1	1

NOTE: According to OIML regulation any repair weighing instruments the tolerance value would be double of the scale specification.

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Model	Precision (d)	Repeatability (d)	Linearity (d)	OCL
STX123	0.001	2	3	3
STX223	0.001	2	3	3
STX222	0.01	1	1	1
STX422	0.01	1	1	1
STX622	0.01	1	2	2
STX1202	0.01	2	3	3
STX2202	0.01	2	3	3
STX421	0.1	1	1	1
STX621	0.1	1	1	1
STX2201	0.1	1	1	1
STX6201	0.1	1	2	2
STX8200	1	1	1	1
SJX323(E)	0.001	2	3	3
SJX322/E	0.01	1	1	1
SJX622 (E)	0.01	1	2	2
SJX1502(E)	0.01	2	3	3
SJX621/E	0.1	1	1	1
SJX3201/E	0.1	1	1	1
SJX6201(E)	0.1	1	2	2
SJX8200/E	1	1	1	1

Model	Precision (e)	Repeatability (e)	Linearity (e)	OCL
SJX323M	0.01g	0.5e	0.5e	0.5e
SJX622M	0.1g	0.5e	0.5e	0.5e
SJX1502M	0.1g	0.5e	0.5e	0.5e
SJX6201M	1g	0.5e	0.5e	0.5e

Model	Precision (e)	Repeatability (e)	Linearity (e)	OCL
SJX323N/E	0.01g	0.5e	0.5e	0.5e
SJX622N/E	0.1g	0.5e	0.5e	0.5e
SJX1502N/E	0.1g	0.5e	0.5e	0.5e
SJX6201N/E	1g	0.5e	0.5e	0.5e

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NOTE: According to OIML regulation any repair weighing instruments the tolerance value would be double of the scale specification.

The following performance tests are used to evaluate scale operation before and after repairs. The scale must meet the requirements specified in each test as well as the specifications listed in Table 4-2. Before proceeding with the following tests, the scale should be calibrated. (See Appendix A)

4.6 Precision Test

The Precision Test is a quick test that measures the deviation of a limited number of weight readings, which should match the specification for each model, listed in Tolerance Table 4-2.

1. Power on the balance. The reading on the display should be 0g.

2. Select a mass weighing near the maximum capacity of the balance, and place it on the center of the Pan. Observe and record the reading.

3. Remove the mass. The reading should return to 0g ± the precision tolerance in Table 4-2.

4. Repeat this test three times. The readings should be within tolerances. If so, the balance passes the Precision Test.

5. If the deviation for any set of readings (using the same mass placed on the center of the Pan) is greater than the tolerance listed in Table 4-2, the balance does not meet the precision specification. Inspect and correct the following areas:

    –   Check for mechanical obstructions. Any foreign object touching any part of the moving assemblies will cause a balance to fail the Precision Test. Inspect and correct as necessary.

    –   If the scale does not meet specifications, move it to a suitable location, ensure that it is level, and try again. If it still does not meet specifications, perform a service calibration, and try again. (See Appendix B for Service Calibration.)

    –   If the scale does not pass this test, the Load Cell may need to be replaced.

4.7 Repeatability Test

The repeatability specification is defined as the Standard Deviation value derived from a set of weight readings. This test uses more weight data than the Precision Test and will allow for occasional weight deviations due to testing variations.

Requirements:

– To perform this test a single mass must be used for all readings.

– The test mass should be approximately ½ of the capacity of the instrument.

– Wear gloves when handling the mass.

Set Up:

Before starting a repeatability test, set up the instrument as follows.

Enter the service menu (see appendix B.1) and adjust and record the following settings:

    A. Set the Stability setting to 0.5d (its lowest setting).

    B. Set the Filter level to L2 (close to mid range).

    C. Set the AZT (Auto Zero Tracking) to .5d (its lowest setting). Do not turn it off.

Enter the User Menu (see 1.8.1) and adjust the following settings:

    A. Set the instrument to display the same units as the performance specifications. (Usually kg, g, or mg)

Record Settings:

    Stability Setting =   _____

    Filter Level Setting =   _____

    Auto Zero Tracking Setting =   _____

    Displayed Units =   _____

    Mass Used =   _____

Test Procedure:

    1. Zero the instrument.

    2. Using a test mass approximately half the capacity of the instrument, place the mass on the center of platform. Record the reading on the worksheet provided.

    3. Remove the mass from the platform.

    4. Repeat this test starting at Step 1 until you record a total of ten readings

Fill in the worksheet (Table 4-3) with the ten (10) readings.

TABLE 4-3. REPEATABILITY WORKSHEET

n	Reading	Delta = Reading – Mean	Delta x Delta
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
n = number of Reading	Mean = Sum of readings / 10		Delta = Reading – Mean
Standard Deviation = Square Root of (sum of (Delta x Delta) / 9)			

5. Add the ten readings and divide the total by 10 to find the Mean (average).

6. Mean = (Reading 1 + Reading 2 + Reading 3 + Reading 4 + Reading 5

7. + Reading 6 + Reading 7+ Reading 8 + Reading 9 + Reading 10) / 10

   Mean =_____

6. Calculate the Delta for each reading and record in the work sheet.

   Delta = Reading – Mean

7. Calculate the Delta x Delta for each reading and record in worksheet.

8. Add the ten Delta x Delta values and divide by 9

9. Calculate the Standard Deviation by applying the square root of the result from step 8.

   Standard Deviation =_____

   Note: If the balance does not meet specifications, move it to a suitable location, ensure that it is level, and try again. If it still does not meet specifications, perform a service calibration, and try again. (See Appendix B for Service Calibration)

4.8 Linearity Test

This test is used to determine the linearity of the unit throughout its operating range. The masses used to perform this test can be utility masses.

NOTE:

The scale must pass the Precision and Repeatability Tests, and be calibrated before the Linearity Test may be performed.

TABLE 4-4   LINEARITY TEST MASSES

Model	Reference Wt.	Load 1	Load 2	Load 3
323	20g	20g	40g	60g
123	40g	40g	80g	120g
223/222	50g	50g	100g	150g
322/422/421	100g	100g	200g	300g
622/621	200g	200g	400g	600g
1202	400g	400g	800g	1200g
1502/2202/2201	500g	500g	1000g	1500g
3201	1000g	1000g	2000g	3000g
6201/8200	2000g	2000g	4000g	6000g

NOTE: All masses are nominal values. Be certain to use the same reference mass throughout the procedure.

1. Place the test mass on the Scale, record the weight and remove.

2. Place Load 1 on the Scale and press TARE.

3. Place the test mass on the Scale, record the weight and remove.

4. Place Load 2 on the Scale and press TARE.

5. Place the test mass on the Scale, record the weight and remove.

6. Place Load 3 on the Scale and press TARE.

7. Place the test mass on the Scale and record the weight.

8. The difference in the weights of the test mass should be within the tolerance in Table 4-2. If the differences are out of tolerance, calibrate (see Appendix A.1) and repeat the test.

9. If the Scale remains out of tolerance, the Load Cell may need to be replaced.

4.9 Off-Center Load Test

The Off-Center Load Test is used to determine whether displayed weight values are affected by moving the sample to different areas of the Pan.

1. Place half of the scale's capacity in the center of the Pan.

2. Note the reading.

3. Move the mass halfway (between the center and the edge) to the front of the Pan. Note any differences in the displayed weight reading.

4. Repeat the test for the back, left, and right position of the Pan.

5. Maximum allowable change in displayed weight readings for each of the four positions can be found in Specifications Tables (Chapter 1). If this maximum is exceeded, follow procedures in Section 4.5.5, Adjusting Off Center Load.

4.10 Adjusting Off Center Load

If the Off Center Load (OCL) is excessive, perform adjustment as follows:
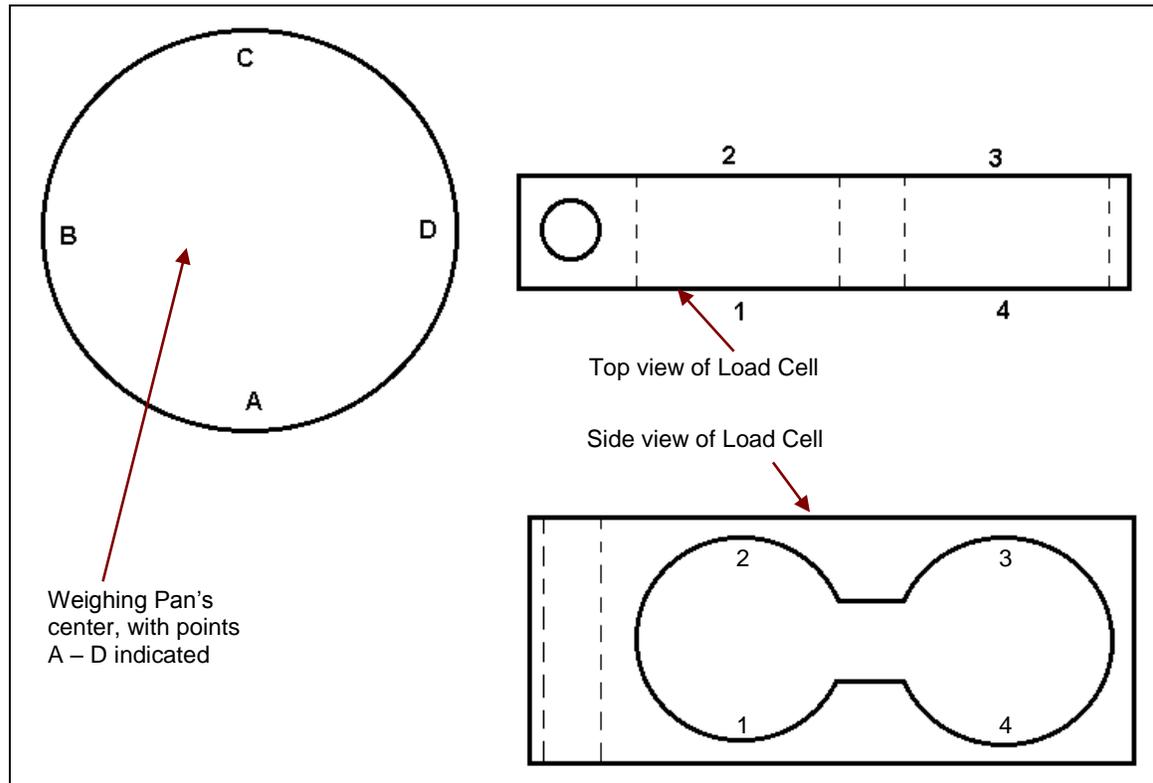
Figure 4-4. Scout Load Cell and Weighing Pan

1. Place the test weight in the center of the Weighing Pan.

2. Tare the balance.

3. Move the weight to point A and record the reading.

4. Move the weight to point B and record the reading.

5. Move the weight to point C and record the reading.

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6. Move the weight to point D and record the reading.

7. If the reading at point A is negative, file at points 1 and 4 AT AN ANGLE.

8. If the reading at point B is negative, file at points 1 and 2 STRAIGHT ACROSS.

9. If the reading at point C is negative, file at points 2 and 3 AT AN ANGLE.

10. If the reading at point D is negative, file at points 3 and 4 STRAIGHT ACROSS.

11. Repeat 1 to 10 until within specifications.

Note: It is not recommended that you try to adjust more than –5 counts if the beam has been filed already. If the beam has not been filed previously, you can adjust –10 counts. Remember, when filing you are weakening the beam

This section contains exploded views of the Scout series scales. The exploded view drawings are designed to identify the parts which can be serviced on the scale in the field.

There are many Scout models that have the same parts this chapter define the parts according to exploded diagram detail spare parts of the scales kindly refer the product Part List .

5.1   SJX JEWELRY DRAFT SHEILD InCal MODELS: HOUSING & PARTS
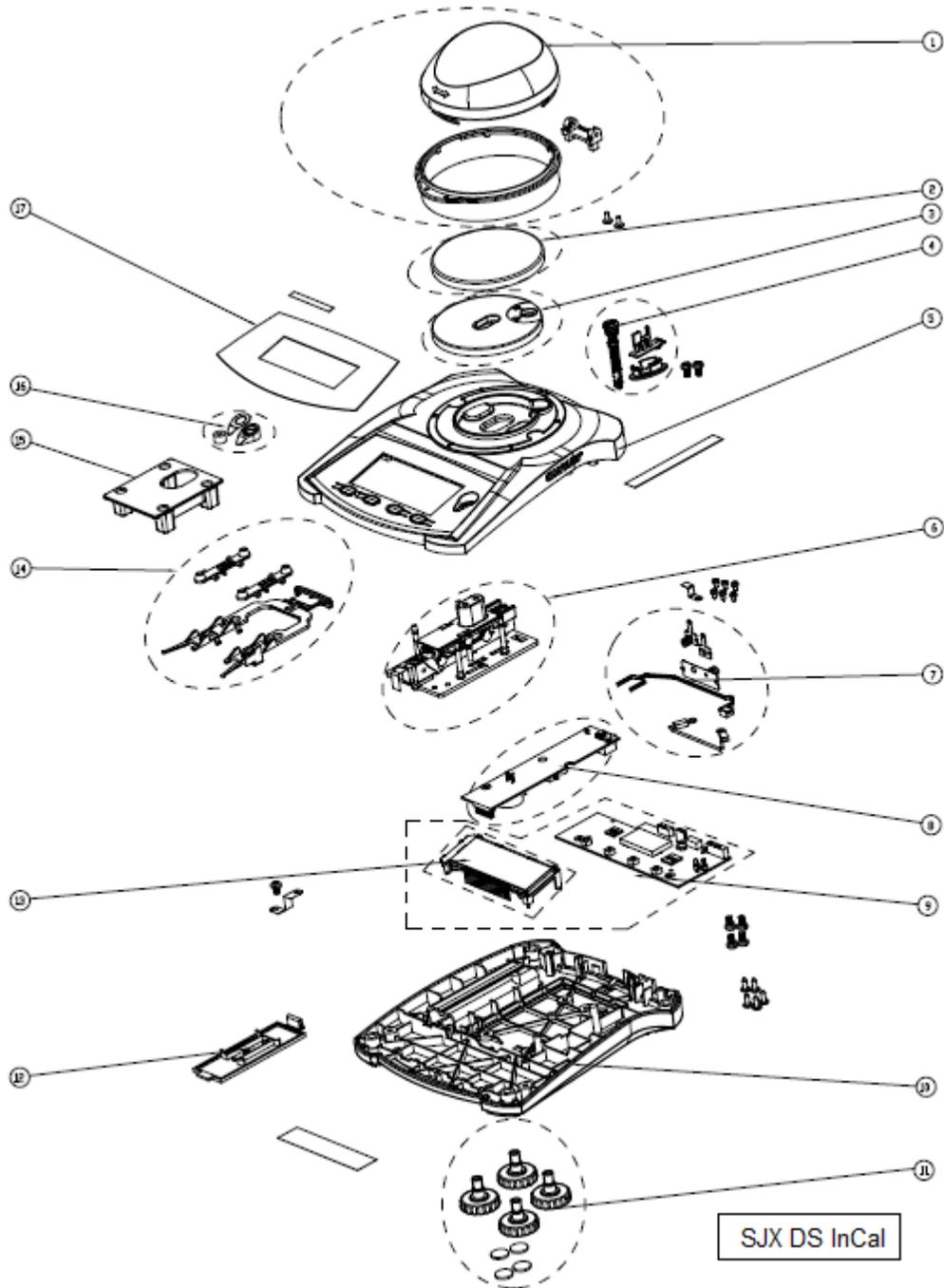
Figure 5-1. SJX Jewelry DS InCal Models: Housing & Parts

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5.1   SJX JEWELRY DRAFT SHEILD InCal MODELS: HOUSING & PARTS

TABLE 5-1. SJX JEWELRY DRAFT SHEILD InCal MODELS: HOUSING & PARTS

Drawing Item	Description
1	Draft Shield
2	SST Pan
3	Plastic Pan
4	Cover & Lock Kit
5	Housing Top
6	Load Cell
7	Harness
8	PCBA Power
9	PCBA Main
10	Housing Bottom
11	Foot
12	Battery Cover
13	LCD Segment
14	InCal Handle Kit
15	Internal Weight
16	Level Bubble
17	Function Label
NS	PWR Adapter
NS	Plug

5.2 SJX JEWELRY InCal MODELS: HOUSING & PARTS

SJX InCal Round & Square Pan
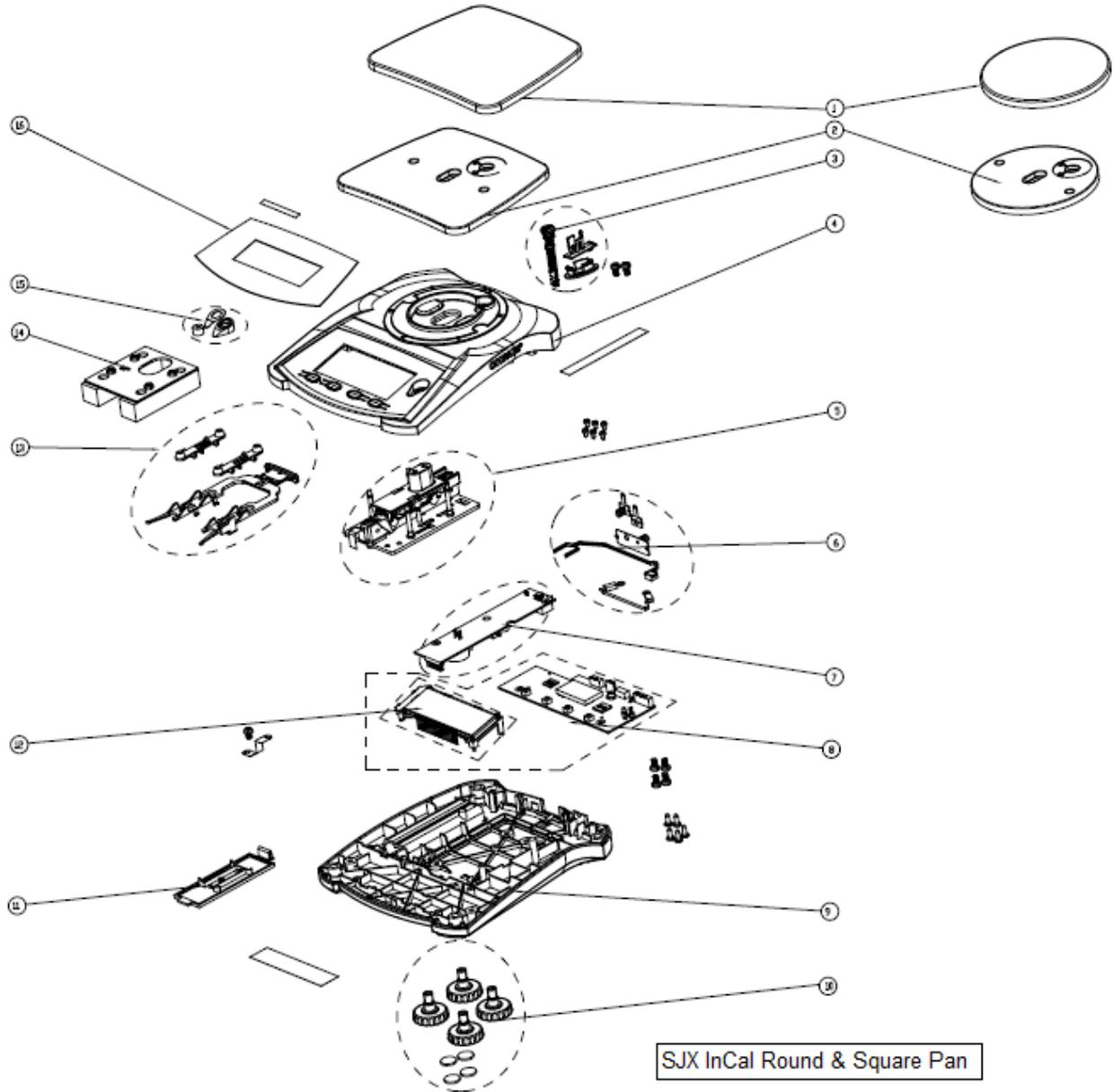
Figure 5-2. SJX Jewelry InCal Models: Housing & Parts.

5.2   SJX JEWELRY InCal MODELS: HOUSING & PARTS

TABLE 5-2. SJX JEWELRY InCal MODELS:
HOUSING & PARTS∗

Drawing Item	Description
1	SST Round Pan
	SST Square Pan
2	Plastic Round Pan
	Plastic Square Pan
3	Cover & Lock Kit
4	Housing Top
5	Load Cell
6	Harness
7	PCBA Power
8	PCBA Main
9	Housing Bottom
10	Foot
11	Battery Cover
12	LCD Segment
13	InCal Handle Kit
14	Internal Weight
15	Level Bubble
16	Function Label
NS	PWR Adapter
NS	Plug

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5.3   SJX/E, SPX, SKX, STX DRAFT SHEILD MODELS: HOUSING & PARTS

Figure 5-3. SJX/E, SPX, SKX, STX Draft Shield Models: Housing & Parts.

5.3   SJX/E, SPX, SKX, STX DRAFT SHEILD MODELS: HOUSING & PARTS

TABLE 5-3. SJX/E, SPX, SKX, STX DRAFT SHEILD MODELS: HOUSING & PARTS∗

Drawing Item	Description
1	Draft Shield
2	SST Pan
15	Plastic Pan
3	Housing Top
4	Load Cell
5	Harness
6	PCBA Power
7	Cover & Lock Kit
8	Housing Bottom
9	Foot
10	Battery Cover
11	PCBA Main
12	LCD Segment
	LCD TFT
13	Level Bubble
14	Function Label
NS	PWR Adapter
NS	Plug

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5.4   SJX/E, SPX, SKX, STX MODELS: HOUSING & PARTS

SJX/E, SPX, SKX, STX Round & Square Pan

Figure 5-4. SJX/E, SPX, SKX, STX Models: Housing & Parts.

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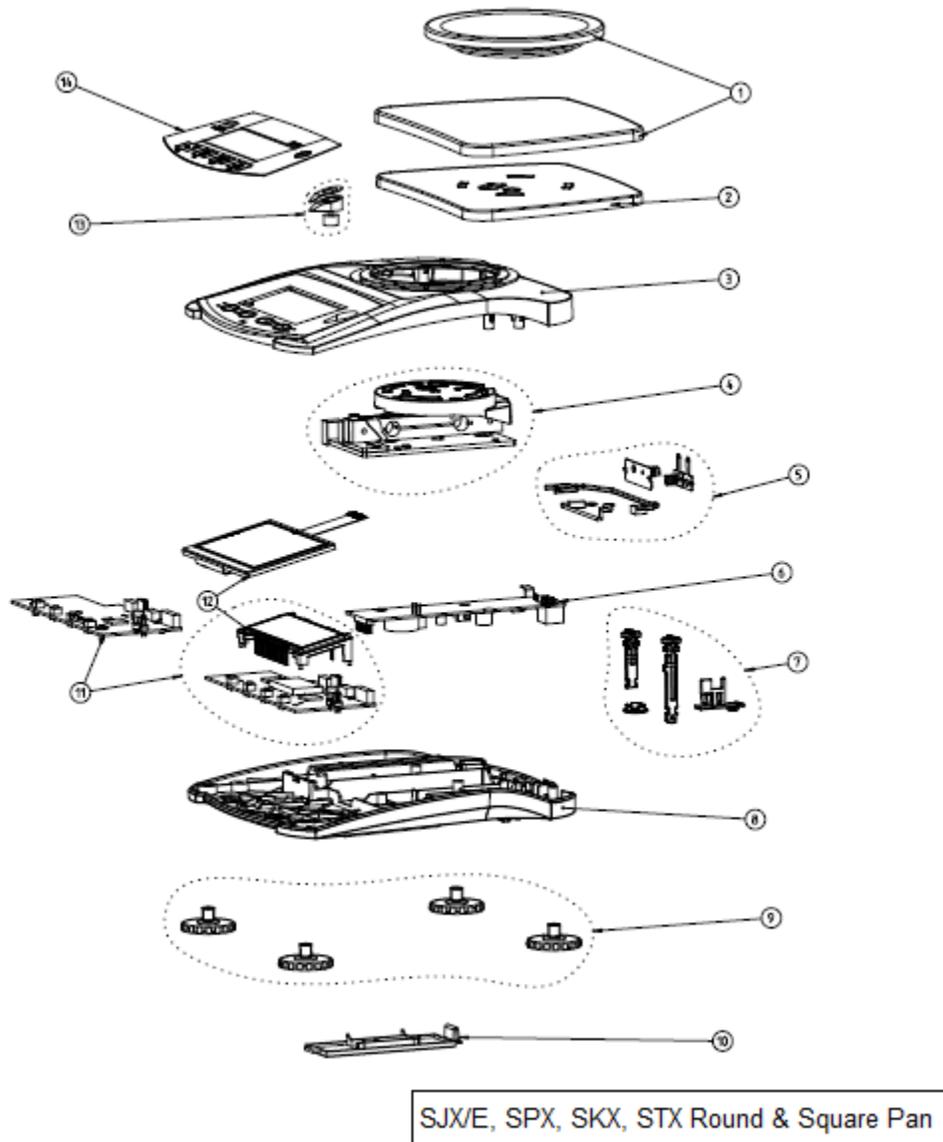
5.4 SJX/E, SPX, SKX, STX MODELS: HOUSING & PARTS

TABLE 5-4. SJX/E, SPX, SKX, STX MODELS: HOUSING & PARTS∗

Drawing Item	Description
1	SST Round Pan
	SST Square Pan
2	Plastic Square Pan
3	Housing Top
4	Load Cell
5	Harness
6	PCBA Power
7	Cover & Lock Kit
8	Housing Bottom
9	Foot
10	Battery Cover
11	PCBA Main
12	LCD Segment
	LCD TFT
13	Level Bubble
14	Function Label
NS	PWR Adapter
NS	Plug

Note: For detail Spare parts information please kindly refer to Product Part List.

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APPENDIX A.   STANDARD CALIBRATION

A.1   CALIBRATION

There are three types of standard calibration for Scout Series: Span, Linearity and Internal Calibration for STJ Series. Span calibration sets the scale's weighing range, within pre-set limits, for zero and a weight value at or near the scale's capacity. Linearity calibration minimizes deviation between actual and displayed weights within the scale's weighing range. Three weight values are used: zero, a weight value in the middle of the scale's weighing range and a weight value at or near the scale's specified capacity. While the Internal Calibration will need to lower down the scale's internal weight manually to complete the Internal Calibration process without the need of external weight.

A.1.1   Calibration Masses

Before beginning calibration, ensure that masses are available. If you begin calibration and realize calibration masses are not available, exit the menu. The balance will retain previously stored calibration data. See Table 4-1 for specified masses for all Pioneer Plus models. Masses must meet or exceed ASTM Class 1 or OIML E1 Tolerance. Calibration masses are available as accessories from any Ohaus dealer.

A.2   Span Calibration

With the scale on, press and release **Tare/Menu.** until **CAL** appears. Press **Yes** (the **On/Off** button).

SPAN appears. Press **Yes**.

---C--- flashes

The specified mass weight flashes.
(Pressing **No** will toggle to alternate mass weight.)
Place the indicated weight in the center of the Pan.

---C--- flashes. After a few seconds **done** flashes.

---

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$$\boxed{600.00}$$

When calibration finishes, **Done** appears briefly, and the scale returns to weighing mode displaying the weight on the weighing pan.

NOTE: If calibration fails, ensure that the test area is free from drafts and the surface the balance rests on is level and free of vibrations. Then try to calibrate again. If it continues to fail, there may be an internal problem. To resolve internal problems, follow procedures in Chapter 3.

A.3 Linearity Calibration

With the scale on, press and release **Unit/Menu.** until **CAL** appears. Press **Yes** (the **On/Off** button).

.CAL.

SPAN appears. Press No. **Lin** appears. Press **Yes**.

L in

After a few seconds **---C---** flashes.

- - -C- - -

Display show the 1st Calibration point (middle weight) Place the indicated weight in the center of the Pan.

300.00

---C--- flashes. After a few seconds the specific maximum weight flashes. Place the indicated weight in the center of the Pan.

- - -C- - -

600.00

---C--- flashes. After a few seconds **done** flashes. The scale will return back to normal weighing modes showing the

- - -C- - -

When calibration finishes, **Done** appears briefly, and the scale returns to weighing mode displaying the weight on the weighing pan.

- - -donE- -

600.00

Note:

Be careful not to touch the scale or the table while calibration is in progress, as it will cause the process to fail.

A.4   InCal (Internal Calibration for SJX models)

With the scale ON, press and hold Tare/Menu until
M.E.N.U appears release Tare/Menu display
Show **C.A.L**

Press **Yes** display show **In.CAL**

Press Yes display show **PULL**

Pull the InCal Handle located at the back of the
Scale away from the scale. Display will show **–C--**

After a few second displays will show **PUSH**

Push the handle toward the scale display will

Show **---C---**

---C--

After a few second displays will show **PULL** again.
Pull the InCal Handle located at the back of the
Scale away from the scale. Display will show **–C--**

---C--

After a few second displays will show **PUSH** again.

PUSH

Push the handle toward the scale display will
Show **---C---**

---C--

After that display will show **done** and return back to
Normal weighing mode showing Zero reading this
Complete the InCal process

donE

0.09

Note: During InCal process kindly take not of the below.

Correct handle position during PULL.

Correct handle position during PUSH.

Wrong handle position during PUSH. (Only halfway not fully close scale).

A.5 STX Standard Calibration.

A.5.1 Span Calibration:

With scale ON press the Menu button and enter to
Main Menu, select 'Calibration'

After pressing the 'Calibration' the scale will have two calibration
As shown below.

Selecting 'Span Calibration' will allow the scale to perform a two
Point calibration (Zero and scale full capacity calibration).

Once selected 'Span Calibration' scale will show 'Calibration in progress'
User will have option to select the Span Calibration point as shown below.
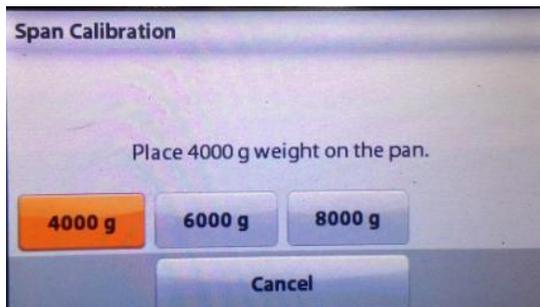
Once selected the calibration point place the test weight on weighing pan scale
And follow instruction shown on the display to complete the Span Calibration
Process.

When the Span Calibration is completed the display will show the calibration result as below, Press 'Close' to exit and return back to weighing mode.

Calibration is done.

Reference weight: 4000g

Actual weight: 3999g

Difference weight: -1g

A.5.2 Linearity Calibration:

Scale linearity calibration will calibrate 3 point which is Zero, mid capacity, and full capacity of the scale.

Once selected 'Linearity Calibration' the scale will ask to place the mid capacity load, follow the instruction from the display to complete the Linearity calibration process.

Once Linearity calibration is completed successfully the scale will display the calibration result similar to above table. Press 'Close' to exit and return back to weighing mode.

Note: Before performing any calibration please kindly make sure the LFT switch is disable.

APPENDIX B.   SERVICE CALIBRATION

This section describes the Service Menu and sub-menus, which allow authorized service personnel to perform factory calibrations.

B.1 Entering the Service Menu

⚠️

NOTE:
The scale should be perfectly level before attempting a span calibration. Use the scale's leveling feet, together with the leveling bubble which is just to the right of the Display.

Be careful not to touch the scale or the table while calibration is in progress, as it will cause the process to fail

Turn the scale off.

Enter the Service Menu by pressing and holding
On/Zero and **Tare/Menu** together. As the scale powers up, **SERVICE** appears followed by **Lin**.
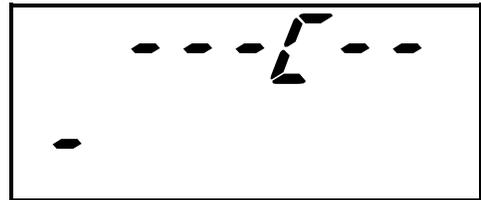
Press **Yes** to select.
Press **No** to advance to **Span, rAMP, E.PAnd** and **End**

Note: To enter to Service Menu the LFT switch must be in disable or Off position.

B.2   Service Linearity Calibration

This service linearity calibration requires that accurate calibration weights be used. Calibration points are done at approximately 0, 50% and 100% of maximum capacity.

When **Lin** appears, press **Yes**.

Display will show **Zero** flashing.

Press **'Yes'** Key display show **---C---** flashing for a few second and 1st calibration point flashing

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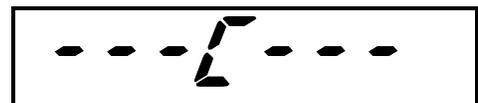
Place the display calibration weigh on weighing pan and press **'Yes'** key
Display show **---C---** for a few second and specified maximum weight flashes.
Place the indicated weight in the center of the Pan and Press **'Yes'** key.
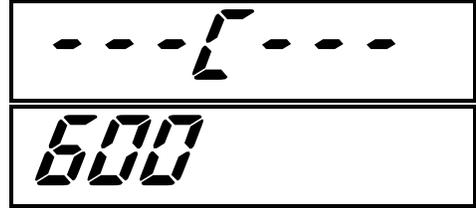
Display show **---C---** and **---done---**, the scale returns to weighing mode displaying the weight on the weighing pan.
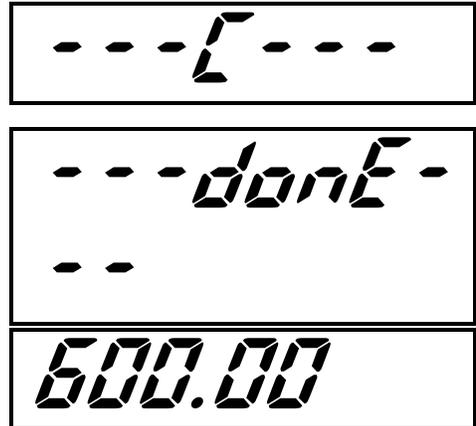
B.3 Service Span Calibration

Service Span Calibration allows one to set a new zero and scale maximum weight point.

Turn the scale off.

Enter the Service Menu by pressing and holding
On/Zero Off and **Unit** together. As the balance powers
up, **SERVICE** appears followed by **Lin.**

```
SErVICE
```
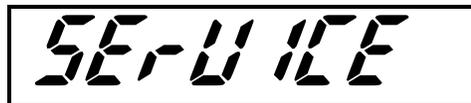
Press **No** to advance to **Span Calibration**.

```
L in
```

SPAN appears. Press **Yes**.

```
SPAn
```

Display show '0g' press Yes display show ---C---

```
0g
```

```
---C---
```

The specified maximum mass weight flashes.
Place the indicated weight in the center of the Pan and
Press **Yes**.

```
600
```

Display show **---C---** and display **done**

```
---C---
```

```
donE
```

When span calibration finishes, **3 Lin** appears.
Press **Yes**, to proceed to 3 Point- Linearity Calibration.
To exit, press **No** and then **Yes** to end service
calibration.

```
600
```

NOTE: If calibration fails, ensure that the test area is free from drafts and the surface the scale

rests on is level and free of vibrations. Then try to calibrate again. If it continues to fail, there
may be an internal problem. To resolve internal problems, follow procedures in Chapter 3.

B.4 Std.Cal (SJX)

This calibration option only for SJX models which allow the scale Internal weight calibrated against a certified External weight. At this point a certified weight is to be used during the whole service calibration process.

Turn the scale off.

Enter the Service Menu by pressing and holding **On/Zero Off** and **Unit** together. As the scale powers up, **SERVICE** appears followed by **Lin.**
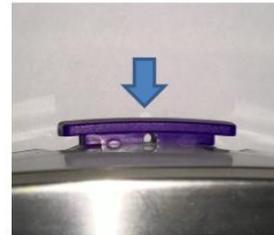
```
SErVICE
```

Press **No** to advance to **Std.Cal**.

```
Lin
```

```
Std.CAL
```

Press **Yes** display show **PULL**

```
PULL
```

Pull the InCal Handle located at the back of the Scale away from the scale. Display will show –C—

```
---C---
-
```


After a few second displays will show **PUSH**

```
PUSH
```


Push the handle toward the scale display will

---

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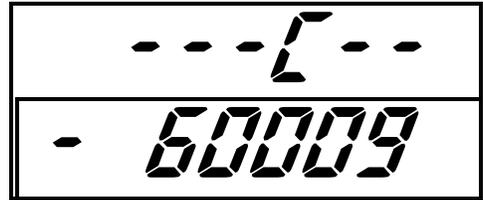
Show **---C---**

After display will show scale full load

Place weight and press **Yes** display show **---C---** and follow by **0g** flashes.
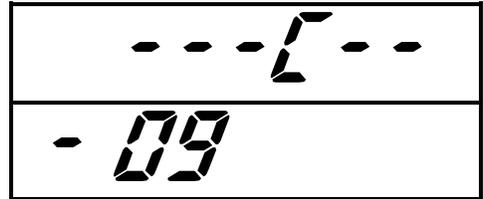
Remove weight from platform and

Press **Yes** display will show **---C---**

Follow by **PULL**
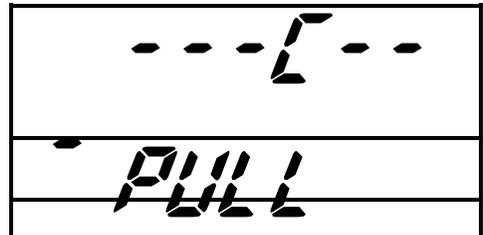
Pull the InCal Handle located at the back of the Scale away from the scale. Display will show **–C—**
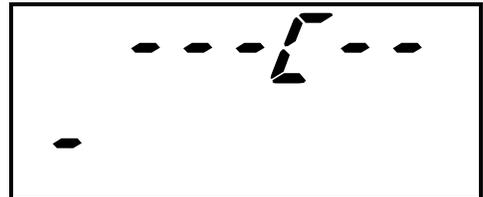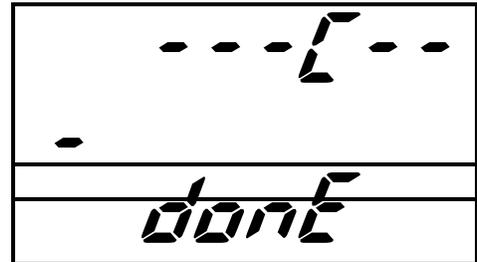
After a few second displays will show **PUSH**

Push the handle toward the scale display will Show **---C---** follow by done and zero reading.

$$---C--$$

$$donE$$

$$0.09$$
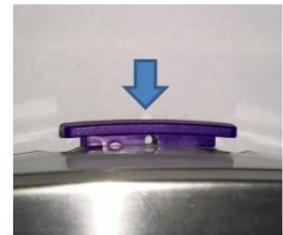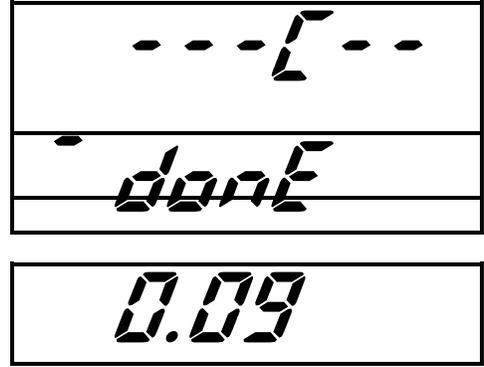
B.5 In.Cal (SJX)

Turn the scale off.

Enter the Service Menu by pressing and holding
On/Zero Off and **Unit** together. As the scale powers
up, **SERVICE** appears followed by **Lin.**

$$SErUICE$$

Press **No** to advance to **In.Cal**.

$$Lin$$

$$In.CAL$$

Display show **PULL**

$$PULL$$

Pull the InCal Handle located at the back of the
Scale away from the scale. Display will show **–C--**

$$---C--$$

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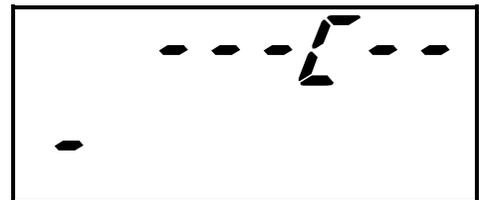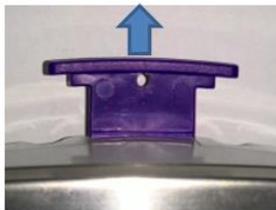
After a few second displays will show **PUSH**

Push the handle toward the scale display will
Show **---C---**
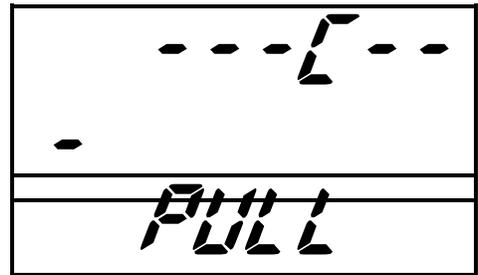
After a few second displays will show **PULL** again.
Pull the InCal Handle located at the back of the
Scale away from the scale. Display will show **–C--**
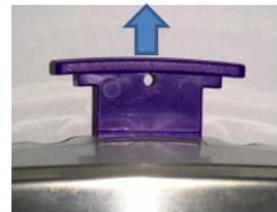
After a few second displays will show **PUSH** again.

Push the handle toward the scale display will
Show **---C---**
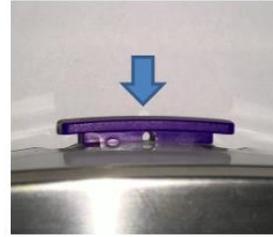
After that display will show done and return back to
Normal weighing mode showing Zero reading this
Complete the InCal process

Note: During InCal process kindly take not of the below.

Correct handle position during PULL.

Correct handle position during PUSH.

Wrong handle position during PUSH. (Only halfway not fully
close scale).

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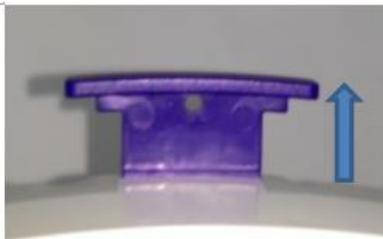
B.6 rAMP

The ramp display shows the percentage of use of the A to D circuit. **The actual value is not as important as how it changes.** It should increase as the weight on the scale is increased. The ramp display should remain constant without fluctuations.

Turn the scale off.

Enter the Service Menu by pressing and holding **On/Zero Off** and **Unit** together. As the scale powers up, **SERVICE** appears followed by **Lin.**

```
SErU ICE
```

Press **No** to advance to **ramp**.

```
rAMP
```

To view the Ramp value, press **Yes**. A number will appear and should be constant. Place masses on the scale from minimum to maximum capacity. The reading will increase but should not fluctuate. The example at right is with no weight on the Pan. The reading will vary with others scales.

```
0.358      %
```

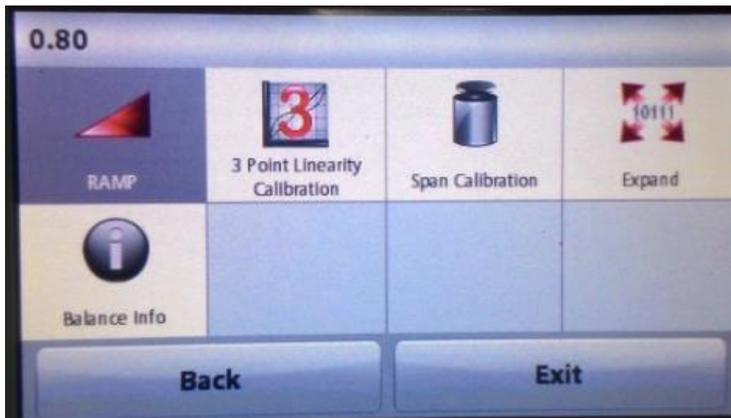### B.7 Service Calibration (STX)

Turn the scale off.

Press and hold Zero and Tare key until display enter to Service Mode as shown below.
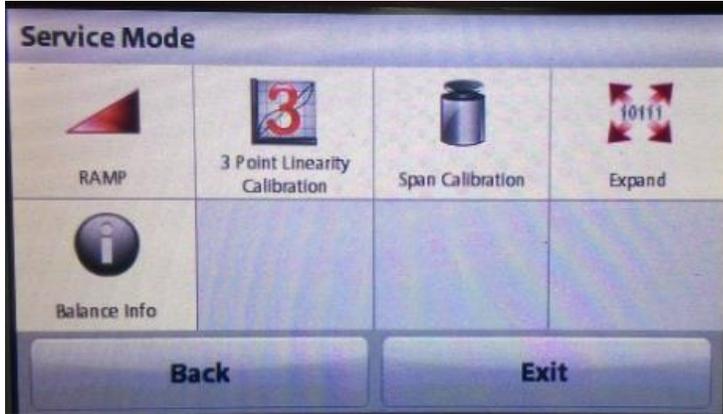
B.7.1 Ramp.

Press and select RAMP you will see the ramp value at the left corner of the display.

B.7.2 3 Point Linearity Calibration.

Press and select this option to allow the scale to perform Service 3 point calibration, before proceeding please kindly make sure you have sufficient test weight in hand and follow the instruction on screen to complete the 3 point calibration process.

B7.3 3 Span Calibration.

Press and select this option to allow the scale to perform Service Span calibration, before proceeding please kindly make sure you have sufficient test weight in hand and follow the instruction on screen to complete the Service Span calibration process.

Note: Before performing any calibration please kindly make sure the LFT switch is disable.

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APPENDIX C.   SOFTWARE SERVICE TOOL INSTRUCTIONS

For the latest software service tool version and instructions on how to use it, please follow below steps:

1. Go to http://dmx.ohaus.com and log in with your username and password.
2. Go to **View by product**.
3. Open the folder '**Service Software**'.
4. Open sub folder '**Service**'.
5. Open sub folder '**Service Tools'**.
6. Download tool and database file.
7. Open sub folder '**Service Manual**'.
8. Download service tool instruction manual.

Note: Under 'Product Selection' kindly select Scout Series.

Scout Products is available in Ohaus Repair and Service Tools V2.1.2.5 above.

Note: Kindly download and use the update Service.mdb file from DMX.

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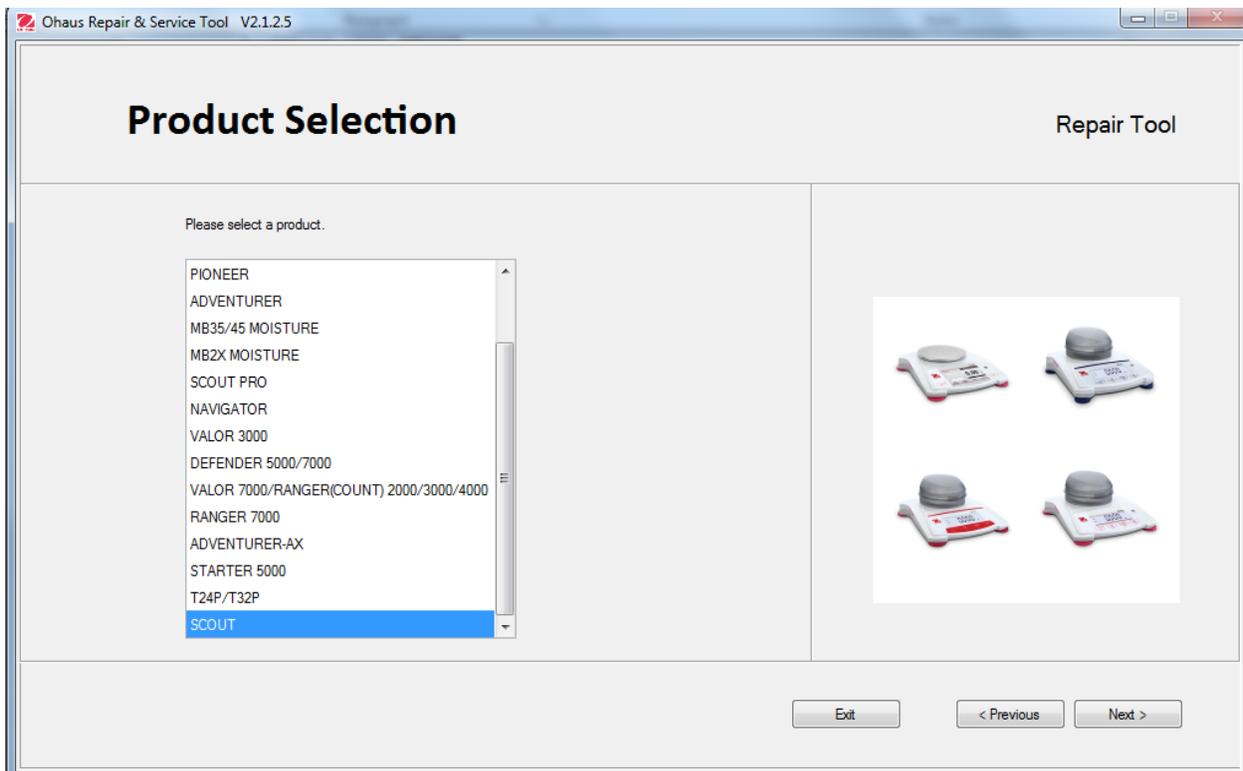
After selected **'Scout'** under **'Product Selection'** you will able to see the below 'Function Selection' which support Scout.
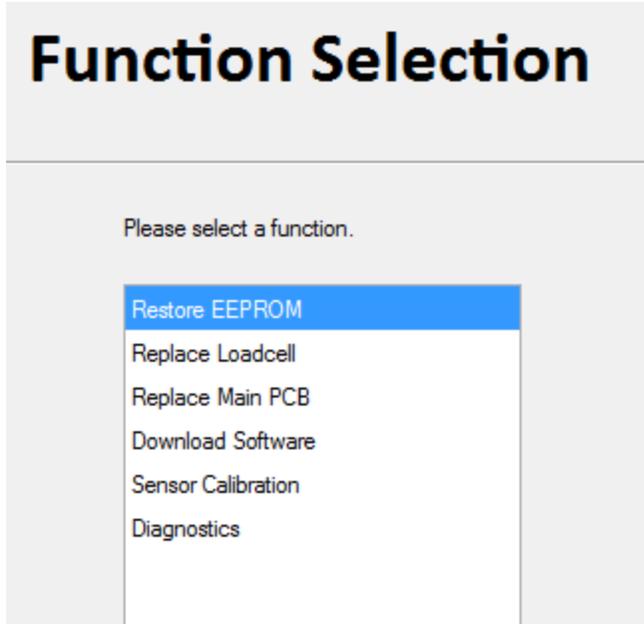

C.1 Restore EEPROM

Restore EEPROM allow authorize service person to upload and restore the scale data.

Information such as below will need to provide to OHAUS in order to obtain the scale eif file.

1. Scale Model Number.
2. Scale Serial Number.

Once **Restore EEPROM** is selected Wire Image File will appear on screen click **Next** will allow you to set the **Com Port Configuration**.

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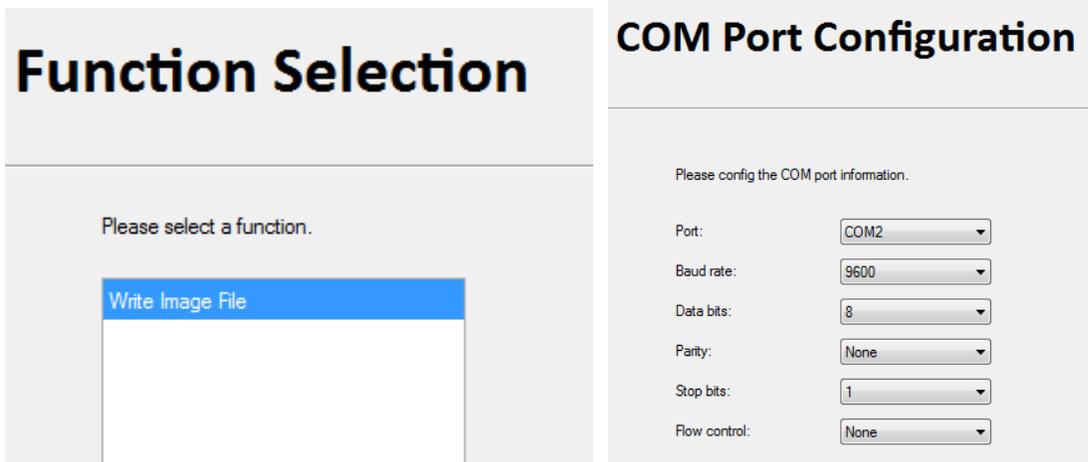
After completed the Comport configuration click **Next** you will come to **Write Image File** page as shown below.

Fill in the below and click **Next** to complete the **Write Image File** process.

1. Scale Serial Number.
2. Point to the scale image file (eif files) provided by OHAUS.
3. Click **Next** to complete the **Write Image File** process.

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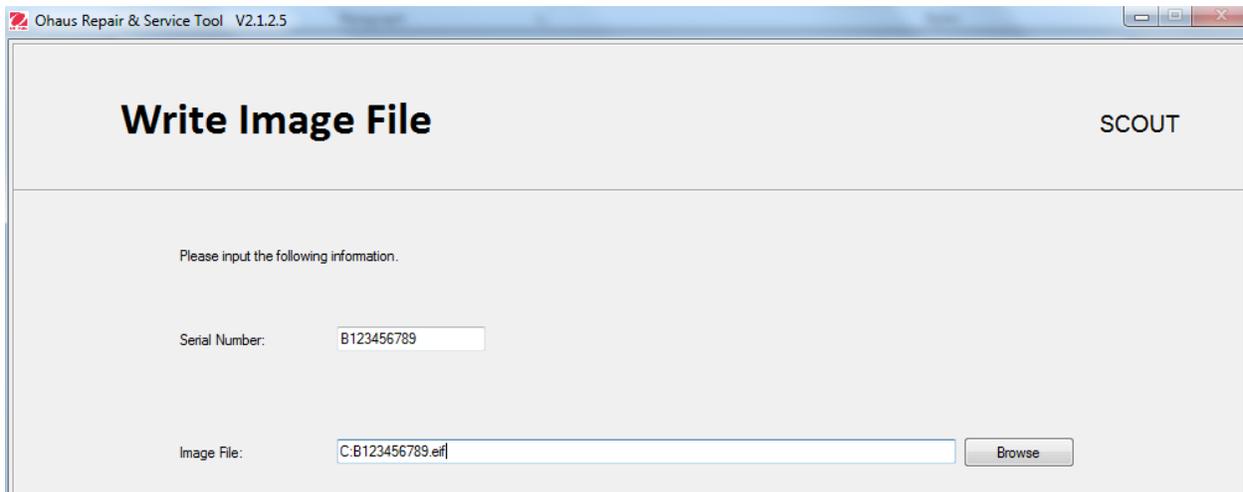
C.2 Replace Load Cell.

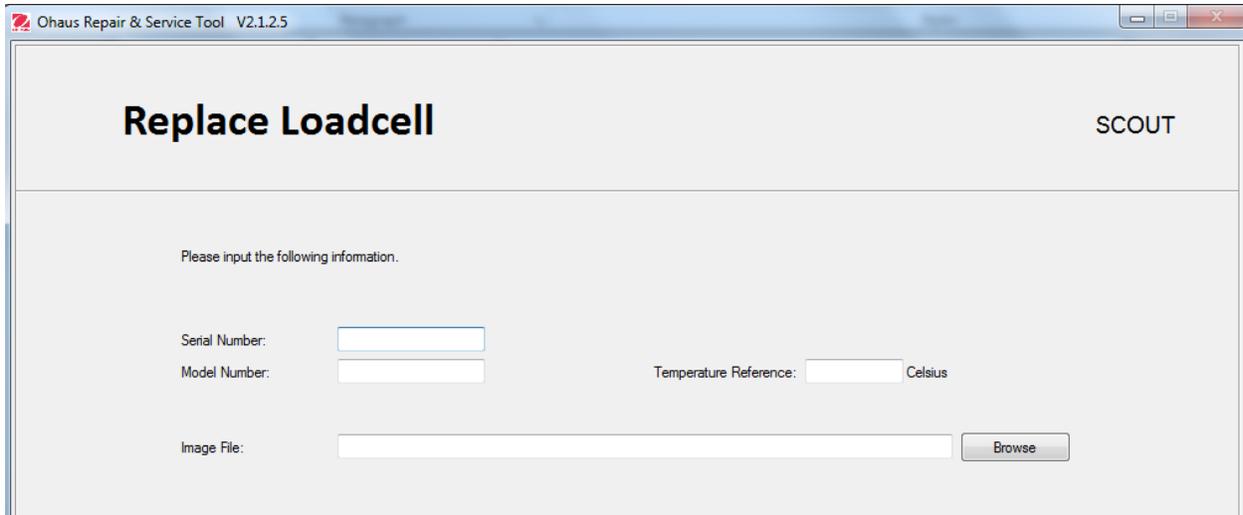If replacing a new Load cell to the scale one will need to perform the 'Replace Load cell' function.
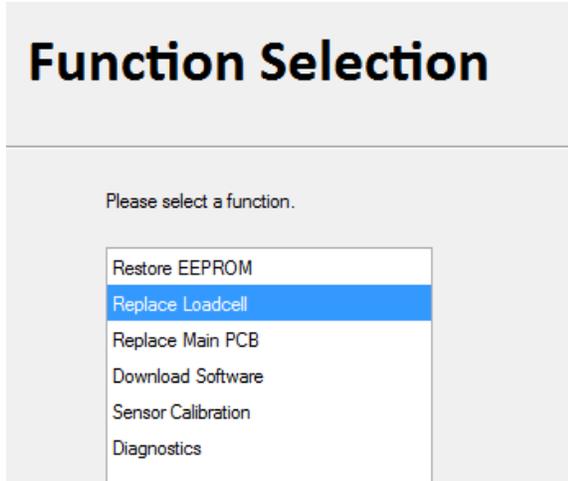
One needs to provide the new load cell serial number to OHAUS in order to obtain the new load cell image file (eif).

The new load cell serial number is located at the label on the load cell kit as shown below.

Once 'Replace Loadcell' is selected the **Com Port Configuration** option will appears, complete the configuration and click **Next** you will see the bellow window.

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Fill in the below and click **Next.**

1. New load cell serial number.
2. Model number.
3. Temperature Reference in Celsius.
4. Point to the new load cell image file provided by OHAUS.
5. Click **Next** to complete the **Replace Loadcell** process.

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C.3 Replace Main PCB

If replacing a new main PCB to the scale one will need to perform the 'Replace Main PCB' function.
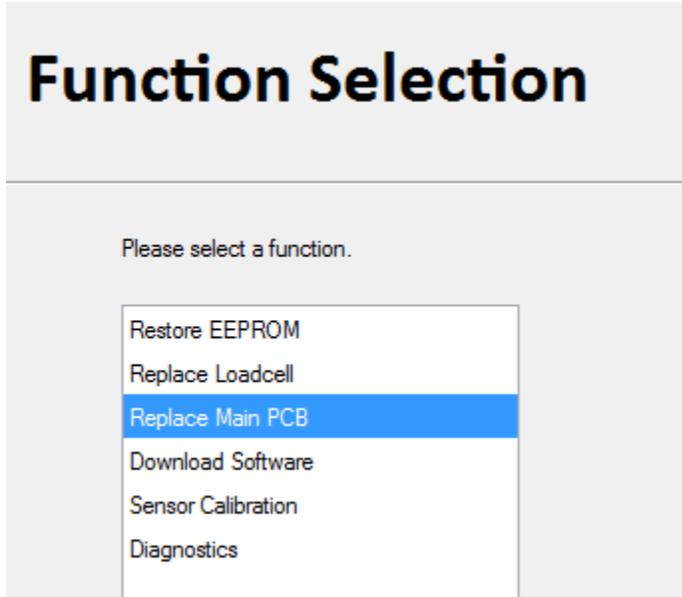
One needs to provide the scale serial number to OHAUS in order to obtain the scale image file (eif).

One also needs to provide the scale load cell serial number to OHAUS in order to obtain the load cell image file (eif).

For scale which the load cell has never been replaced before you can obtain the load cell serial number on the load cell itself as shown on the right side picture (example 7284510191)

For scale which the load cell had been replaced before you can obtain the load cell serial number on the load cell label as shown on the right side picture (example 7284500318)

Once 'Replace Main PCB' is selected the **Com Port Configuration** option will appears, complete the configuration and click **Next** you will see the bellow window.

Fill in the below and click **Next.**

1. Scale Serial Number.
2. Model number.
3. Load Cell Serial Number.
4. Point to the scale image file provided by OHAUS.
5. Point to the load cell image file provided by OHAUS.
6. Click **Next** to complete the **Replace Loadcell** process.

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C.4 Down load Software.

Scout will have the below MOT files version.

Below table showing models and software matching.

Models	SG 20k SR	SG 60k SR
SJX323		Y
SJX323M		Y
SJX323/E		Y
SJX322/E		Y
SJX622/E		Y
SJX622		Y
SJX622M		Y
SJX1502		Y
SJX1502M		Y
SJX6201		Y
SJX6201M		Y
SJX1502E		Y
SJX621E	Y	
SJX3201E		Y
SJX6201E		Y
SJX8200E	Y	

SJX Series Software matching table.

Models	SG 20k SR	SG 60k SR
SKX123		Y
SKX222	Y	
SKX422		Y
SKX622		Y
SKX421	Y	
SKX1202		Y
SKX2202		Y
SKX621	Y	
SKX2201	Y	
SKX6201		Y
SKX8200	Y	

SKX Series Software matching table.

Models	SG 20k SR	SG 60k SR
SPX123		Y
SPX223		Y
SPX222	Y	
SPX422		Y
SPX622		Y
SPX421	Y	
SPX1202		Y
SPX2202		Y
SPX621	Y	
SPX2201	Y	
SPX6201		Y
SPX8200	Y	

SPX Series Software matching table.

Models	TFT 20k SR	TFT 60k SR
STX123		Y
STX223		Y
STX222		Y
STX422		Y
STX622		Y
STX421	Y	
STX1202		Y
STX2202		Y
STX621	Y	
STX2201		Y
STX6201		Y
STX8200	Y	

STX Series Software matching table.

Note: For STX222 and STX2201 the mot file use is 60k.

Once 'Download Software' is selected the **Com Port Configuration** option will appears, complete the configuration and click **Next** you will see the bellow window.
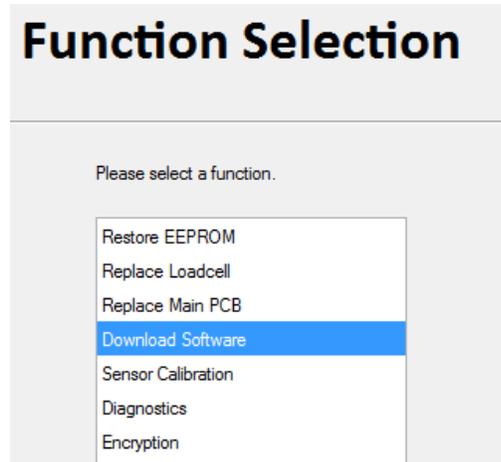

Fill in the below and click 'Next'
1. Model number.
2. Point to the appropriate software according to the above table.
3. Software Version: Once you key in the Model Number the Service Tools will automatically display the appropriate software version to be used. (Software version checking feature).
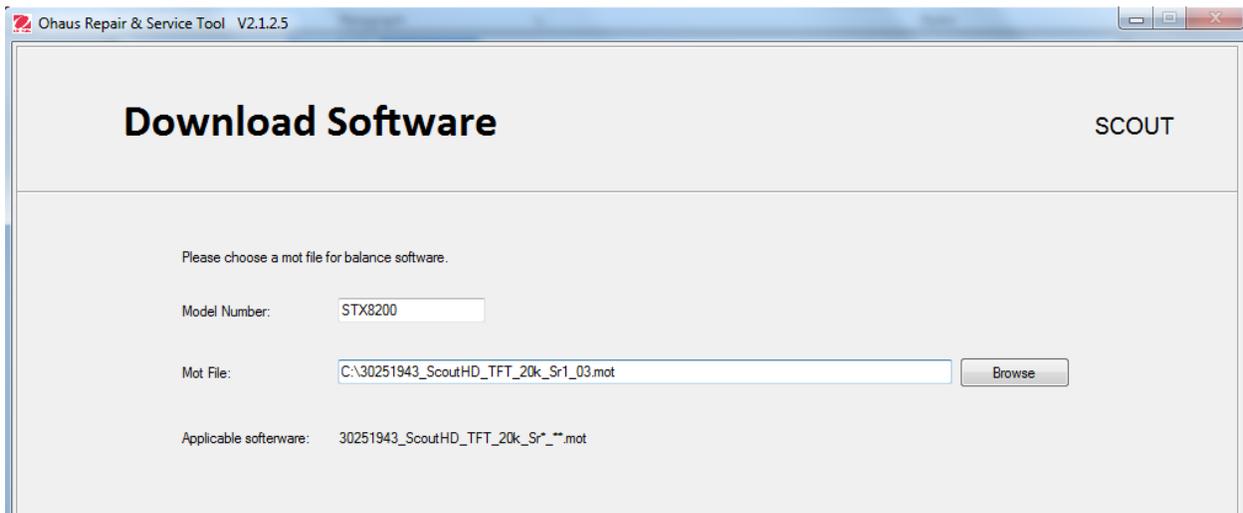
C.5 Sensor Calibration (Only for SJX models).

SJX is Jewelry scale with internal calibration function one need to perform 'Sensor Calibration' if the load cell is replaced and power board is removed from main PCB or a new power board is installed.
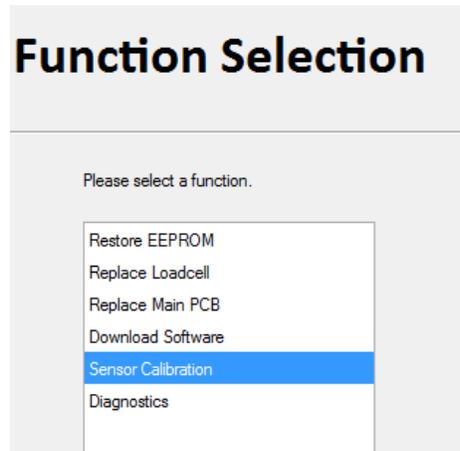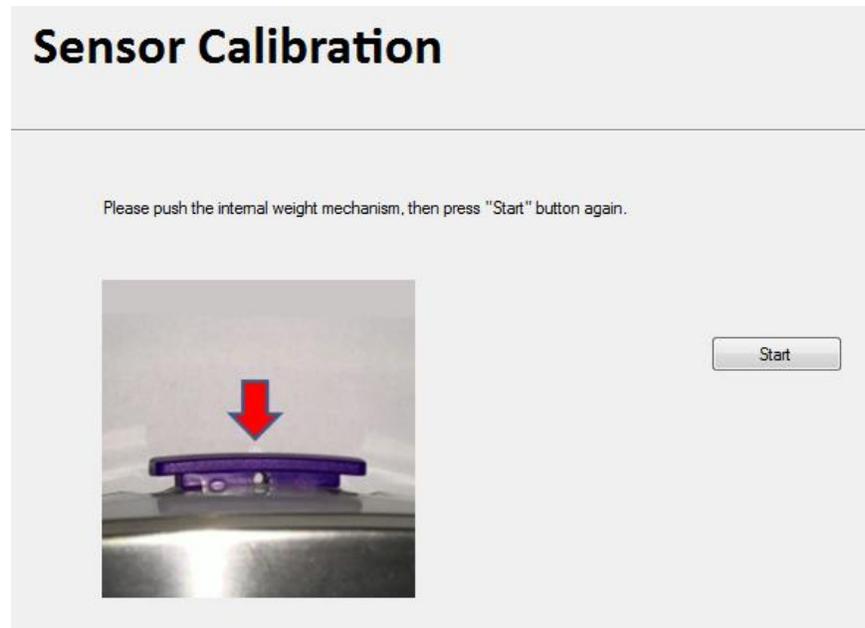

When scale is Off select 'Sensor Calibration' the **Com Port Configuration** option will appears, complete the configuration and click **Next** you will see the bellow window.


Pull the internal weight handle as shown on the above picture and press 'Start', scale will display –PUSH-

--PUSH--

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Push the internal weight handle as shown on the below picture and press 'Start'.
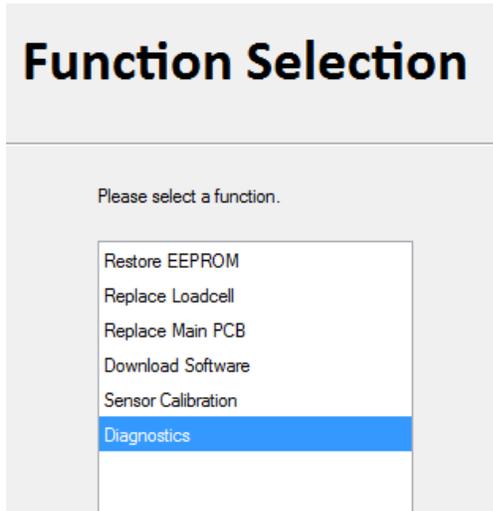

Scale will Auto re-start and return to normal weighing mode. While Service and Repair Tools will display '**Done**' as shown below.

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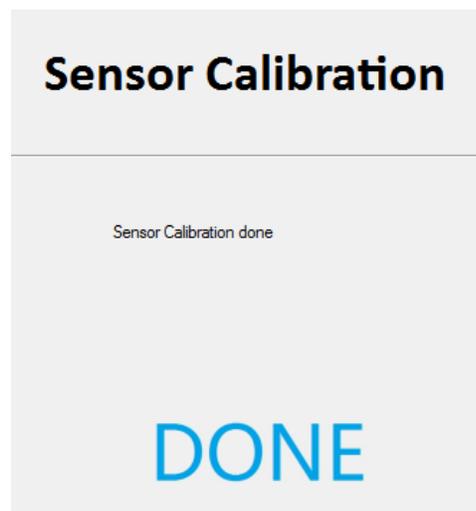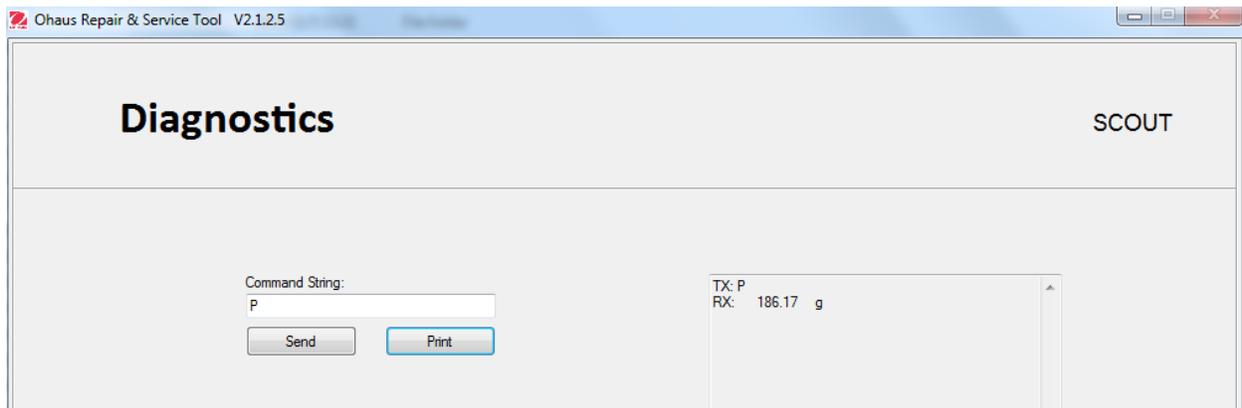
C.6 Diagnostics.

Diagnostic act as a communication window between scale and Service and Repair Tools.

Once 'Diagnostic' is selected the **Com Port Configuration** option will appears, complete the configuration and click **Next** you will see the bellow window.

Key in scale command and press 'Send' the right side window will show the response to the command.
Example show a P command (print command) where the scale response a weight value.

Note: Scale command kindly refer to Chapter 3 (3.9)

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P/N 3032039A SERVICE MANUAL: SCOUT SERIES SCALE

Service Parts List

**Click on the model being serviced**

STX123
STX223

STX222
STX422
STX622
STX421

STX1202
STX2202
STX621
STX2201
STX6201
STX8200

Note: Service software is required when replacng a PC board or load cell
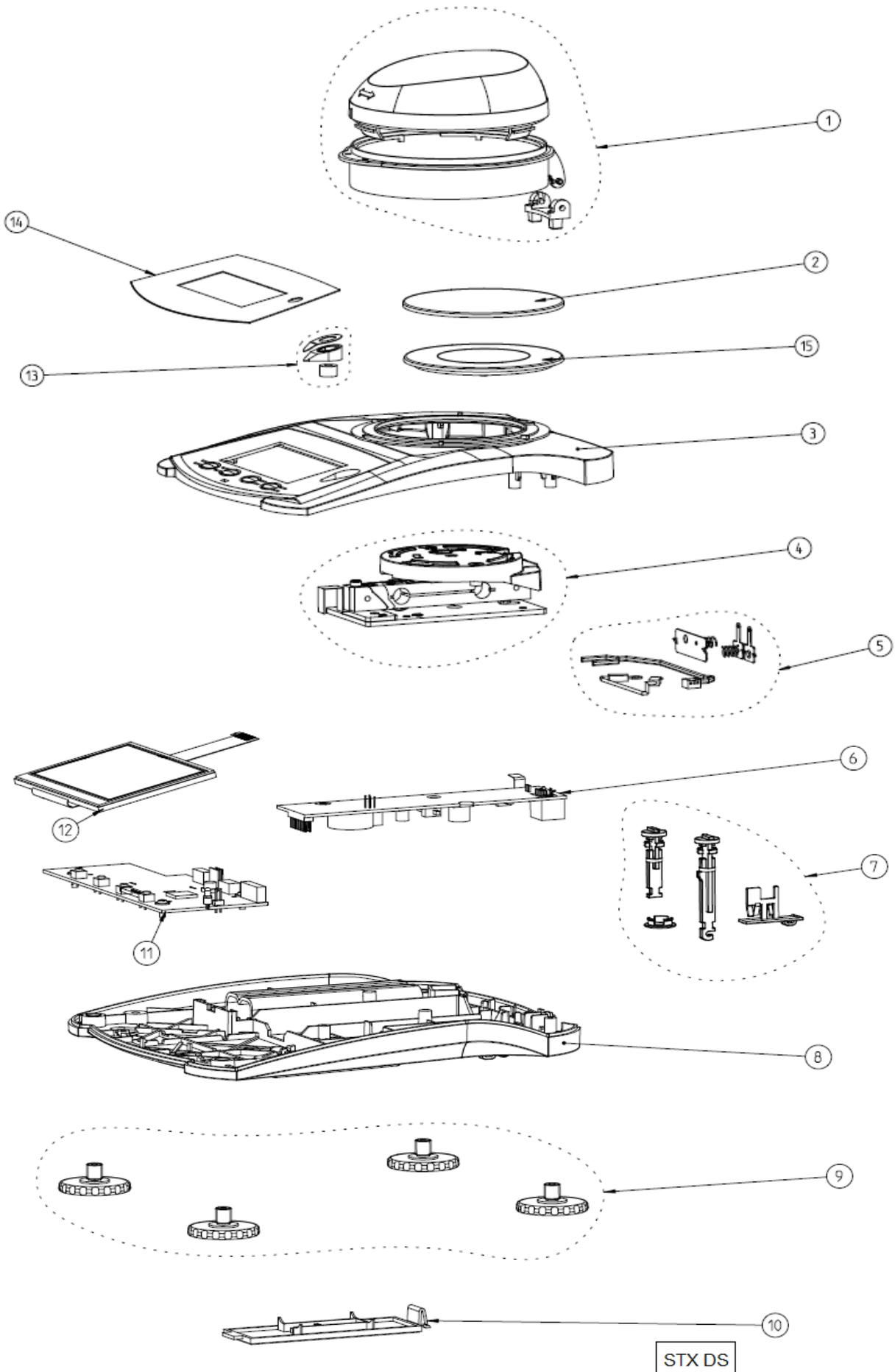
STX DS
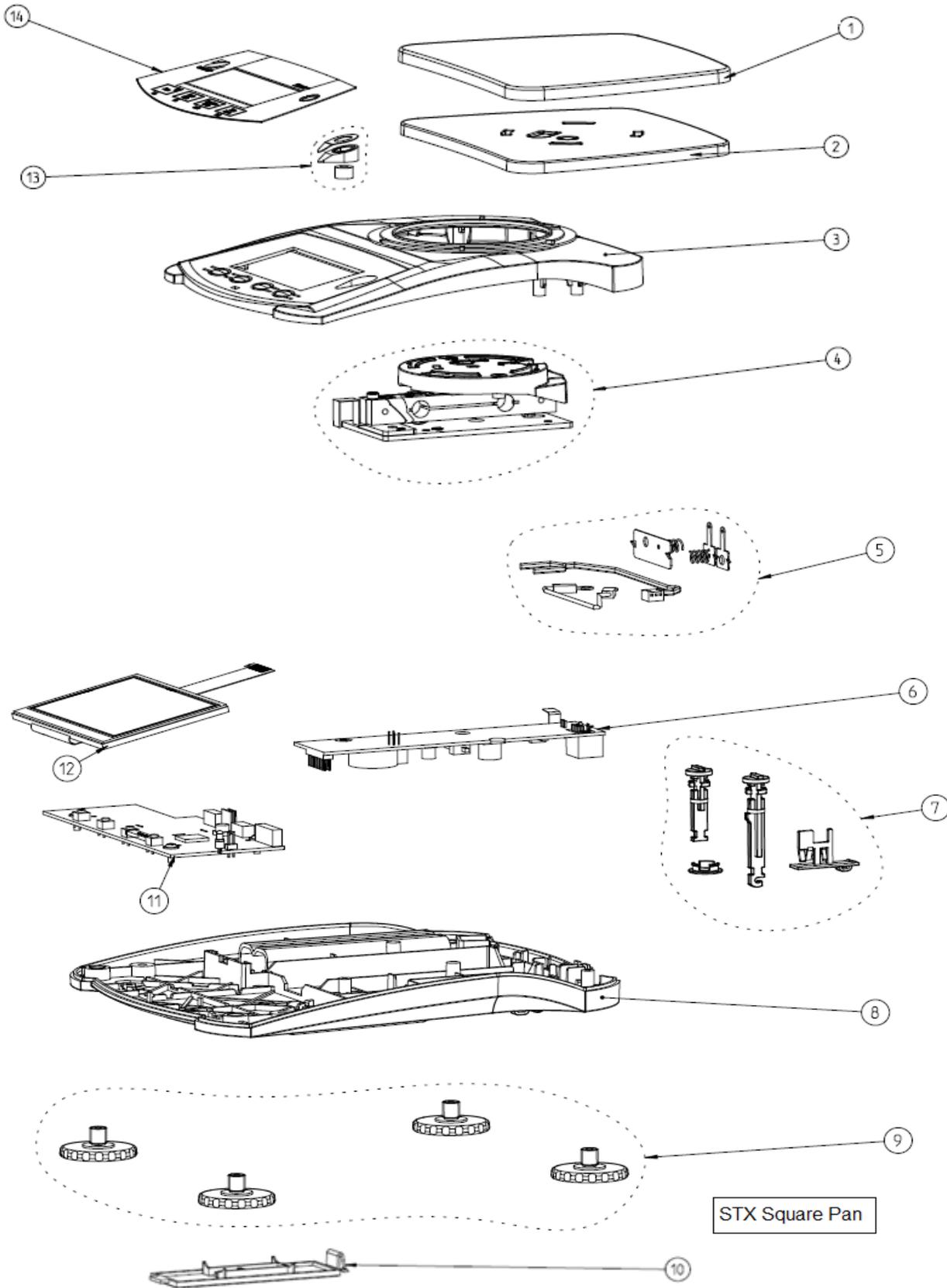
Part numbers are subject to change without notice.
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Drawing Item	Part Number	Description
1	30296526	Draft Shield Kit, Sp.P, Scout
2	71156022	SP, Pan, SST 93mm, STX SPX SKX SJX/E
15	71160307	SP, Pan, Plastic 93mm, STX SPX SKX SJX/E
3	30301971	SP, Housing, Top DS, STX
4	30296550	LC, Sp.P, 223 323, STX SPX SKX SJX/E
5	30301937	Harness, Sp.P, Scout
6	30301942	PCBA, Sp.P, Power 60K, Scout, 123,223,323,222,322,422,622,1202,1502,2202,2201,3201, 6201
7	30301956	Cover & Lock Kit, Sp.P, Scout
8	30301948	SP, Housing, Bottom, STX SPX SKX SJX/E
9	30301950	Foot, Sp.P, Adjustable x4, Red, STX SPX
10	83033694	Battery Cover, NV, Scout HD
11	30301945	PCBA, Sp.P, Main 60K, STX, 123,223,323,222,322,422,622,1202,1502,2202,2201,3201, 6201
12	30301943	LCD, Sp.P, TFT, STX (req new Function Label)
13	30301947	Bubble, Sp.P, mg 100K Approved, Scout
14	30296541	Function Label, Sp.P, EN, STX
	30296542	Function Label, Sp.P, ZH, STX
	30296543	Function Label, Sp.P, JP, STX
	30296544	Function Label, Sp.P, KR, STX
	30296545	Function Label, Sp.P, RU, STX
NS	30301967	PWR, Sp.P, Leader 5V 1A, Scout
	30296514	Plug, Leader US, Sp.P, Scout
	30293385	USB Cable, Leader Adaptor, Sp.P, Scout
	30333868	PWR, Sp.P, 5V 1A KR, Scout
	30333869	PWR, Sp.P, 5V 1A CN, Scout
	30333870	PWR, Sp.P, 5V 1A JP, Scout
	30330714	PWR, Sp.P, 5V 1A US, Scout
	30333865	PWR, Sp.P, 5V 1A AU Plug, Scout
	30333866	PWR, Sp.P, 5V 1A EU Plug, Scout
	30333867	PWR, Sp.P, 5V 1A UK Plug, Scout
	30301958	Box, DS, STX SPX SKX SJX/E SJX
	30301960	Box Kit, Sp.P, mg, STX SPX SKX SJX/E

AfterMarket

STX Round Pan
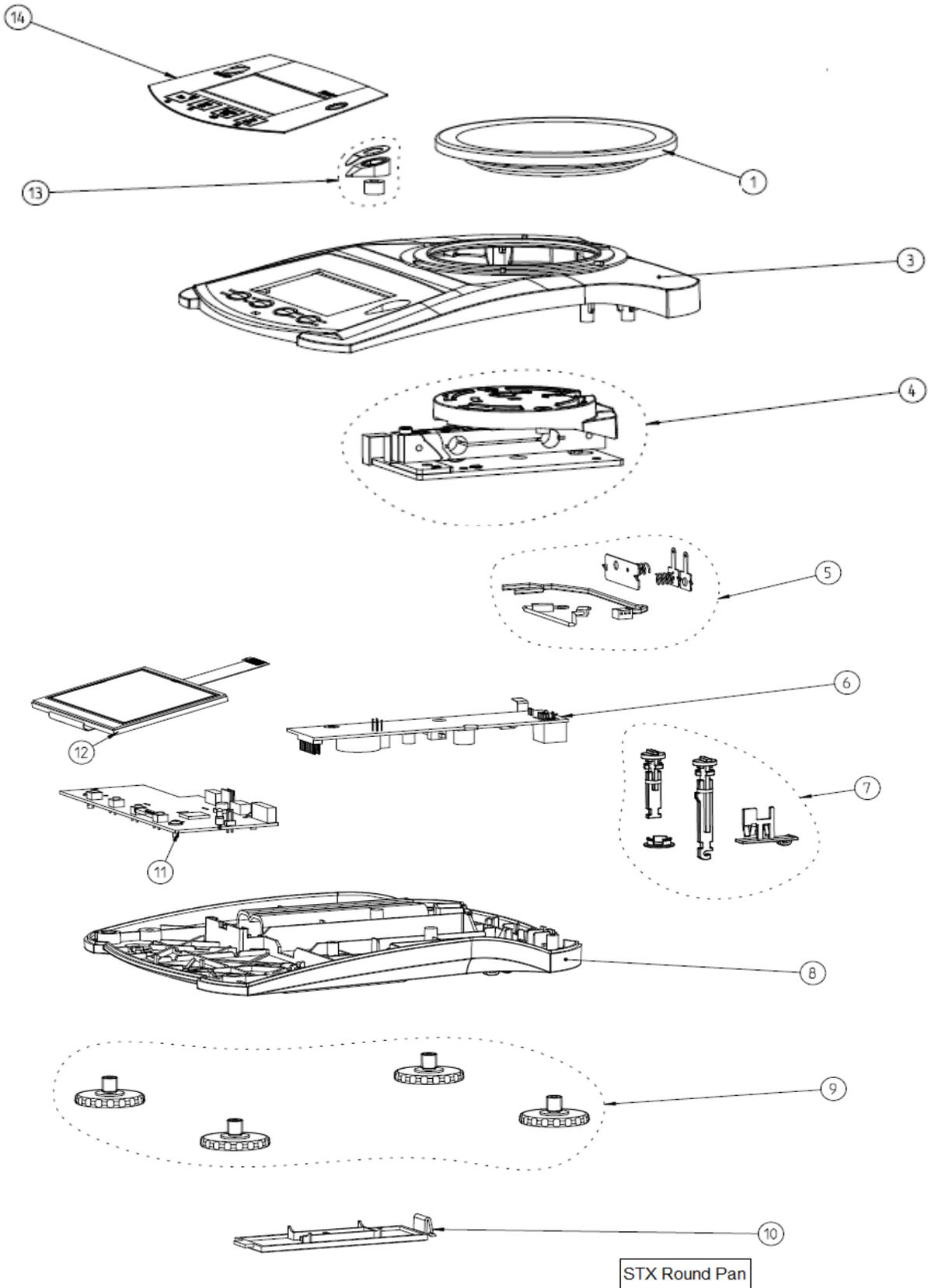
Drawing Item	Part Number	Description
1	71154611	SP, Pan Assembly, 120mm, STX SPX SKX SJX/E
3	30301972	SP, Housing, Top, STX
	30296551	LC, Sp.P, 222 422 622, STX SPX SKX SJX/E
	30296556	LC, Sp.P, 421 621, STX SPX SKX SJX/E
5	30301937	Harness, Sp.P, Scout
6	30301941	PCBA, Sp.P, Power 20K, Scout,421,621,8200
	30301942	PCBA, Sp.P, Power 60K, Scout, 123,223,323,222,322,422,622,1202,1502,2202,2201,3201, 6201
7	30301956	Cover & Lock Kit, Sp.P, Scout
8	30301948	SP, Housing, Bottom, STX SPX SKX SJX/E
9	30301950	Foot, Sp.P, Adjustable x4, Red, STX SPX
10	83033694	Battery Cover, NV, Scout HD
11	30301944	PCBA, Sp.P, Main 20K, STX, ,421,621,8200
	30301945	PCBA, Sp.P, Main 60K, STX, 123,223,323,222,322,422,622,1202,1502,2202,2201,3201, 6201
12	30301943	LCD, Sp.P, TFT, STX (req new Function Label)
13	30301947	Bubble, Sp.P, mg 100K Approved, Scout
14	30296541	Function Label, Sp.P, EN, STX
	30296542	Function Label, Sp.P, ZH, STX
	30296543	Function Label, Sp.P, JP, STX
	30296544	Function Label, Sp.P, KR, STX
	30296545	Function Label, Sp.P, RU, STX
NS	30301967	PWR, Sp.P, Leader 5V 1A, Scout
	30296514	Plug, Leader US, Sp.P, Scout
	30293385	USB Cable, Leader Adaptor, Sp.P, Scout
	30333868	PWR, Sp.P, 5V 1A KR, Scout
	30333869	PWR, Sp.P, 5V 1A CN, Scout
	30333870	PWR, Sp.P, 5V 1A JP, Scout
	30330714	PWR, Sp.P, 5V 1A US, Scout
	30333865	PWR, Sp.P, 5V 1A AU Plug, Scout
	30333866	PWR, Sp.P, 5V 1A EU Plug, Scout
	30333867	PWR, Sp.P, 5V 1A UK Plug, Scout
	30301958	Box, DS, STX SPX SKX SJX/E SJX
	30301961	SP, Box with Inserts, Non DS, STX SKX

AfterMarket

STX Square Pan

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Drawing Item	Part Number	Description
1	30296530	Pan, Sp.P, SST, Square, Scout
2	30296531	Pan, Plas.Sq., Sp.P, STX SPX SKX SJX/E
3	30301972	SP, Housing, Top, STX
4	30296552	LC, Sp.P, 2202, STX SPX SKX SJX/E
	30296553	LC, Sp.P, 2201 3201 6201, STX SPX SKX SJX/E
	30296556	LC, Sp.P, 421 621, STX SPX SKX SJX/E
	30296557	LC, Sp.P, 8200, STX SPX SKX SJX/E
5	30301937	Harness, Sp.P, Scout
6	30301941	PCBA, Sp.P, Power 20K, Scout,421,621,8200
	30301942	PCBA, Sp.P, Power 60K, Scout, 123,223,323,222,322,422,622,1202,1502,2202,2201,3201, 6201
7	30301956	Cover & Lock Kit, Sp.P, Scout
8	30301948	SP, Housing, Bottom, STX SPX SKX SJX/E
9	30301950	Foot, Sp.P, Adjustable x4, Red, STX SPX
10	83033694	Battery Cover, NV, Scout HD
11	30301944	PCBA, Sp.P, Main 20K, STX, ,421,621,8200
	30301945	PCBA, Sp.P, Main 60K, STX, 123,223,323,222,322,422,622,1202,1502,2202,2201,3201, 6201
12	30301943	LCD, Sp.P, TFT, STX (req new Function Label)
13	30301947	Bubble, Sp.P, mg 100K Approved, Scout
14	30296541	Function Label, Sp.P, EN, STX
	30296542	Function Label, Sp.P, ZH, STX
	30296543	Function Label, Sp.P, JP, STX
	30296544	Function Label, Sp.P, KR, STX
	30296545	Function Label, Sp.P, RU, STX
NS	30301967	PWR, Sp.P, Leader 5V 1A, Scout
	30296514	Plug, Leader US, Sp.P, Scout
	30293385	USB Cable, Leader Adaptor, Sp.P, Scout
	30333868	PWR, Sp.P, 5V 1A KR, Scout
	30333869	PWR, Sp.P, 5V 1A CN, Scout
	30333870	PWR, Sp.P, 5V 1A JP, Scout
	30330714	PWR, Sp.P, 5V 1A US, Scout
	30333865	PWR, Sp.P, 5V 1A AU Plug, Scout
	30333866	PWR, Sp.P, 5V 1A EU Plug, Scout
	30333867	PWR, Sp.P, 5V 1A UK Plug, Scout
	30301958	Box, DS, STX SPX SKX SJX/E SJX
	30301961	SP, Box with Inserts, Non DS, STX SKX

Part numbers are subject to change without notice.