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> [U.S. Solid 100g 0.001g Digital Analytical Balance Precision Scale User Manual](#)

U.S. Solid USS-DBS3-1

U.S. Solid 100g 0.001g Digital Analytical Balance Precision Scale

Model: USS-DBS3-1

INTRODUCTION

This manual provides essential information for the proper operation and maintenance of your U.S. Solid Digital Analytical Balance. Please read this manual thoroughly before using the scale to ensure accurate measurements and prolong the life of the instrument. This precision scale is designed for laboratory and industrial applications requiring high accuracy measurements up to 100 grams with 0.001g readability.

SAFETY INFORMATION

- Always operate the scale on a stable, level, and vibration-free surface.
- Avoid placing the scale near strong electromagnetic fields, heat sources, or direct sunlight.
- Do not overload the scale beyond its maximum capacity of 100g.
- Keep the scale clean and free from dust, liquids, and corrosive substances.
- Handle the draft shield and weighing pan with care to prevent damage.
- Ensure the power adapter is correctly connected and use only the provided adapter.

PACKAGE CONTENTS

Verify that all items are present and in good condition upon unpacking.

- U.S. Solid Digital Analytical Balance
- Stainless Steel Weighing Pan
- Draft Shield (Windshield)
- AC/DC Power Adapter
- Calibration Weight (typically 100g)
- User Manual (this document)

PRODUCT OVERVIEW

Familiarize yourself with the main components and controls of the analytical balance.



Figure 1: Top View of Analytical Balance. This image displays the top view of the U.S. Solid Digital Analytical Balance, highlighting the control panel with its buttons and the transparent draft shield covering the weighing pan.

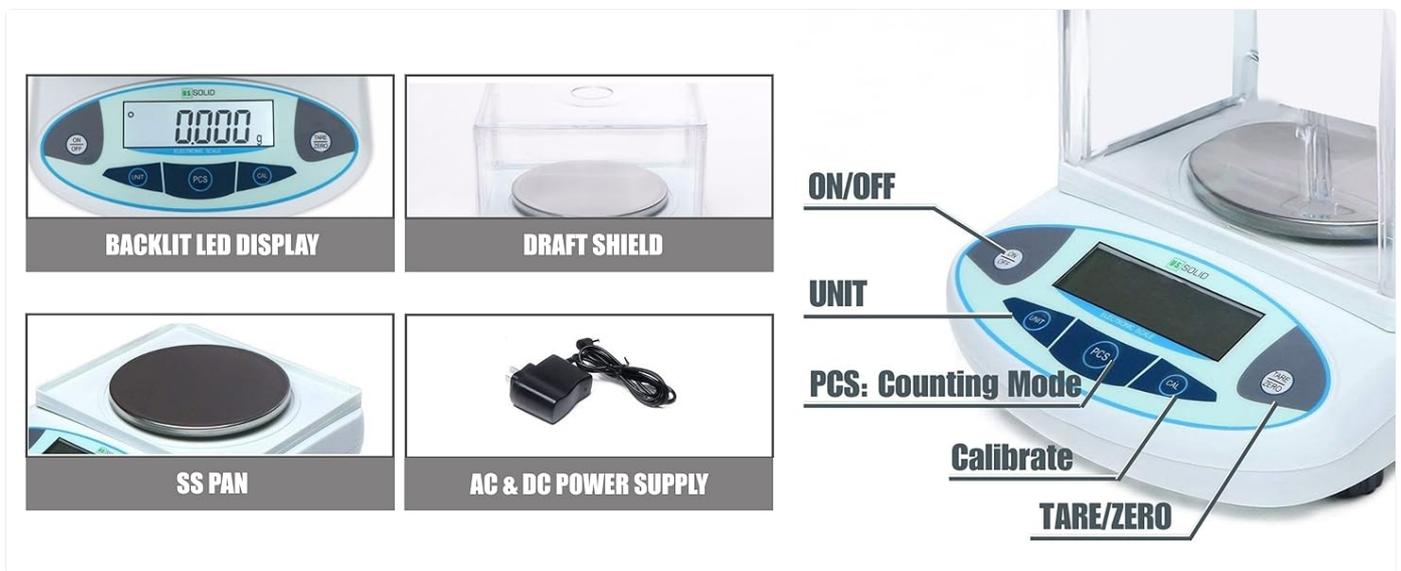


Figure 2: Control Panel and Key Components. This diagram labels the main buttons on the control panel including ON/OFF, UNIT, PCS (Counting Mode), CAL (Calibrate), and TARE/ZERO. It also points out the Backlit LED Display, Draft Shield, Stainless Steel (SS) Pan, and the AC & DC Power Supply connection.

Key Components:

- **Weighing Pan:** Stainless steel platform for placing items to be weighed.
- **Draft Shield:** Transparent enclosure to protect the weighing pan from air currents, ensuring stable and accurate readings.
- **LCD Display:** Backlit screen showing weight readings, units, and other operational information.
- **Control Buttons:**
 - **ON/OFF:** Powers the scale on or off.
 - **UNIT:** Cycles through available weighing units (g, ct, oz, lb, etc.).
 - **PCS (Counting Mode):** Activates the piece counting function.
 - **CAL (Calibrate):** Initiates the calibration process.
 - **TARE/ZERO:** Resets the display to zero, or tares the weight of a container.
- **Leveling Bubble:** Indicates if the scale is perfectly level.
- **Adjustable Feet:** Used to level the scale.

SETUP

1. Placement and Leveling

For optimal accuracy, place the analytical balance on a firm, stable, and level surface, free from vibrations, drafts, and direct heat.



Figure 3: Leveling Bubble. This image shows a close-up of the leveling bubble on the side of the scale, which helps ensure the device is perfectly horizontal for accurate measurements.

	<p>Horizontal Adjustment</p> <p>Adjust leveling feet until the bubble is centered. Proper leveling is essential for accuracy.</p>		<p>Environmental stability</p> <p>Ensure the balance is on a stable, vibration-free surface, away from air currents and temperature changes to maintain accuracy.</p>
	<p>Warm-up time</p> <p>Warm up the balance for 30 minutes after power-on or power loss for accurate measurements. See the manual for specific times.</p>		<p>Calibration</p> <p>Recalibrate after moving the balance or before use. Hold the CAL button if needed. Refer to the manual for instructions.</p>

Figure 4: Horizontal Adjustment and Environmental Stability. This diagram illustrates how to adjust the leveling feet until the bubble is

centered for proper horizontal adjustment. It also emphasizes the need for a stable, vibration-free environment, away from air currents and temperature changes, to maintain accuracy.

1. Place the scale on a sturdy workbench or table.
2. Adjust the four adjustable feet located at the bottom of the scale until the bubble in the leveling indicator is perfectly centered. This ensures the weighing mechanism is horizontal.

2. Power Connection

Connect the provided AC/DC power adapter to the power input port on the scale and then plug it into a suitable electrical outlet.

3. Warm-up Time

After connecting power, allow the balance to warm up for at least 30 minutes before use. This stabilizes the internal components and ensures accurate measurements. For best results, keep the scale powered on during periods of frequent use.

OPERATING INSTRUCTIONS

1. Power On/Off

- Press the **ON/OFF** button to turn the scale on. The display will show a self-test sequence and then settle at 0.000g.
- Press and hold the **ON/OFF** button to turn the scale off.

2. Calibration

Calibration is crucial for maintaining accuracy. It is recommended to calibrate the scale before first use, after moving it, or if you suspect inaccurate readings.



Figure 5: Calibration Process. This diagram illustrates the steps for calibration, including pressing the CAL button and placing the provided calibration weight on the weighing pan. The display will guide the user through the process.

1. Ensure the weighing pan is empty and the draft shield is closed.
2. Press the **CAL** button. The display will show "CAL" followed by the required calibration weight (e.g., "100.000g").
3. Carefully place the specified calibration weight (e.g., 100g) onto the center of the weighing pan.
4. Wait for the display to stabilize and show "PASS" or return to 0.000g, indicating successful calibration.
5. Remove the calibration weight. The scale is now ready for use.

3. Weighing

1. Ensure the scale is powered on and displays 0.000g. If not, press **TARE/ZERO**.
2. Carefully place the item to be weighed onto the center of the weighing pan.
3. Close the draft shield to prevent air currents from affecting the reading.
4. Read the stable weight displayed on the LCD.
5. Remove the item from the pan.

4. Tare Function

The tare function allows you to subtract the weight of a container, so only the net weight of the contents is measured.

1. Place an empty container on the weighing pan. The display will show its weight.
2. Press the **TARE/ZERO** button. The display will reset to 0.000g.
3. Add the substance to be weighed into the container. The display will now show only the weight of the substance.
4. To clear the tare, remove the container from the pan and press **TARE/ZERO** again.

5. Unit Conversion

The scale supports multiple weighing units.



Figure 6: Measuring Units. This diagram illustrates the different measuring units supported by the scale, including grams (g), carats (ct), ounces (oz), troy ounces (ozt), pounds (lb), Newtons (N), Tael (T), Grains (GN), Dram (dr), Tola (tIT), and T/A/R.

- Press the **UNIT** button to cycle through the available weighing units (e.g., grams (g), carats (ct), ounces (oz), pounds (lb)).
- The currently selected unit will be displayed on the LCD.

6. Piece Counting (PCS)

This function allows you to count a large number of identical items by weighing a sample.

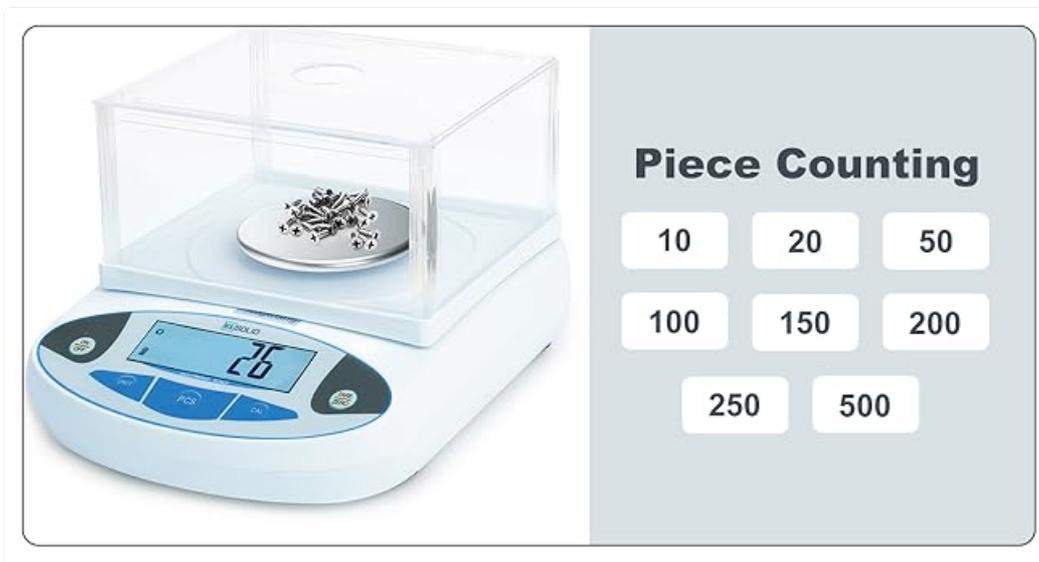


Figure 7: Piece Counting Sample Sizes. This diagram illustrates the various sample sizes that can be used for the piece counting function, including 10, 20, 50, 100, 150, 200, 250, and 500 pieces.

1. Place a known quantity of items (e.g., 10, 20, 50, 100 pieces) on the weighing pan.
2. Press the **PCS** button. The display will show "PCS" and a number (e.g., "PCS 10").
3. Press the **UNIT** button to select the sample size that matches the number of items you placed on the pan.
4. Press **PCS** again to confirm the sample size. The display will now show the total count of items.
5. You can now add more items, and the scale will display the total count.
6. To exit counting mode, press the **PCS** button again.

MAINTENANCE

1. Cleaning

- Always disconnect the power adapter before cleaning.
- Wipe the scale's exterior with a soft, damp cloth. Do not use abrasive cleaners, solvents, or immerse the scale in water.
- The stainless steel weighing pan can be removed and cleaned separately with mild soap and water. Ensure it is completely dry before placing it back on the scale.
- Clean the draft shield with a soft cloth to maintain visibility.

2. Storage

- When not in use for extended periods, store the scale in a dry, dust-free environment at room temperature.
- Keep the draft shield in place to protect the weighing mechanism.

TROUBLESHOOTING

Problem	Possible Cause	Solution
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Problem	Possible Cause	Solution
Display shows "Err" or unstable readings.	Overload, unstable surface, strong air currents, electromagnetic interference, or internal error.	<ul style="list-style-type: none"> ◦ Ensure item weight is within capacity (max 100g). ◦ Place scale on a stable, level surface. ◦ Close the draft shield. ◦ Move scale away from electronic devices. ◦ Recalibrate the scale. ◦ Restart the scale.
Inaccurate readings.	Not calibrated, unstable environment, insufficient warm-up time, or dirty pan.	<ul style="list-style-type: none"> ◦ Perform calibration. ◦ Ensure scale is level and on a stable surface. ◦ Allow 30 minutes warm-up time. ◦ Clean the weighing pan. ◦ Ensure no air currents are affecting the scale.
Scale does not turn on.	No power, faulty adapter, or internal issue.	<ul style="list-style-type: none"> ◦ Check power adapter connection and wall outlet. ◦ Ensure the power button is pressed firmly. ◦ If using batteries (if applicable), check battery level.
Tare function not working.	Incorrect operation.	<ul style="list-style-type: none"> ◦ Ensure the container is placed on the pan before pressing TARE/ZERO. ◦ Remove the container and press TARE/ZERO to clear previous tare.

SPECIFICATIONS

Feature	Detail
Brand	U.S. Solid
Model Number	USS-DBS3-1
Capacity	100 g
Readability / Accuracy	0.001g / 1 mg
Display Type	LCD with Backlight
Weighing Units	g, ct, oz, lb, N, T, GN, dr, tIT, T/A/R
Power Supply	AC/DC Adapter (100-240V)
Weighing Pan Material	Stainless Steel
Product Dimensions	13.78 x 9.45 x 4.92 inches

Feature	Detail
Item Weight	4.39 pounds

WARRANTY AND SUPPORT

U.S. Solid products are designed for reliability and performance. For warranty information, technical support, or service inquiries, please refer to the official U.S. Solid website or contact their customer service directly. Keep your purchase receipt for warranty claims.

U.S. Solid Customer Service: Please visit www.ussolid.com for contact details and support resources.

