U.S. Solid USS-DBS87-110G

U.S. Solid 0.001 g Precision Balance Instruction Manual

Model: USS-DBS87-110G

Brand: U.S. Solid

Introduction

This manual provides comprehensive instructions for the setup, operation, maintenance, and troubleshooting of your U.S. Solid 0.001 g Precision Balance. Please read this manual thoroughly before using the device to ensure proper function and accurate measurements. This analytical balance is designed for precise weighing in laboratory and industrial environments.

What's in the Box

- Main Body of the Precision Balance
- Weighing Pan
- Draft Shield
- Power Cable
- Calibration Weight
- Instruction Manual

Figure 1: Components included with the U.S. Solid Precision Balance.

Safety Precautions

- Always operate the balance on a stable, level surface.
- Avoid placing the balance near strong electromagnetic fields, vibrations, or air currents.
- Do not overload the balance beyond its maximum capacity of 110 g to prevent damage.
- Use only the provided UL-certified power cable.
- Keep the balance clean and free from dust and corrosive substances.
- Do not attempt to disassemble or repair the balance yourself. Contact qualified service personnel.

Setup

1. Unpacking and Placement

Carefully remove all components from the packaging. Place the balance on a sturdy, level, and vibration-free workbench, away from direct sunlight, heat sources, and strong air currents (e.g., air conditioning vents).

2. Assembly

1. Place the weighing pan onto the pan support in the center of the balance.
2. Assemble the draft shield around the weighing pan. Ensure all panels are securely in place to protect against air disturbances.

Figure 2: Assembled balance with draft shield.

3. Leveling

The balance must be perfectly level for accurate measurements. Adjust the adjustable feet at the bottom of the balance until the bubble in the spirit level (located on the front or side of the balance) is centered.

Figure 3: Leveling the balance using adjustable feet and the bubble level.

4. Power Connection

Connect the UL-certified power cable to the 6V DC input port on the rear of the balance and then plug it into a suitable

power outlet.

5. Warm-up Time

After connecting to power, allow the balance to warm up for at least 30 minutes before use. This stabilizes the internal components and ensures optimal accuracy.

Operating Instructions

Figure 4: Control panel of the precision balance.

1. Power On/Off

- Press the **POWER** button to turn the balance on.
- Press and hold the **POWER** button to turn the balance off.

2. Unit Conversion

Press the **MODE** button to cycle through available weighing units: grams (g), carats (ct), ounces (oz), and grains (gn). The selected unit will be displayed on the LCD.

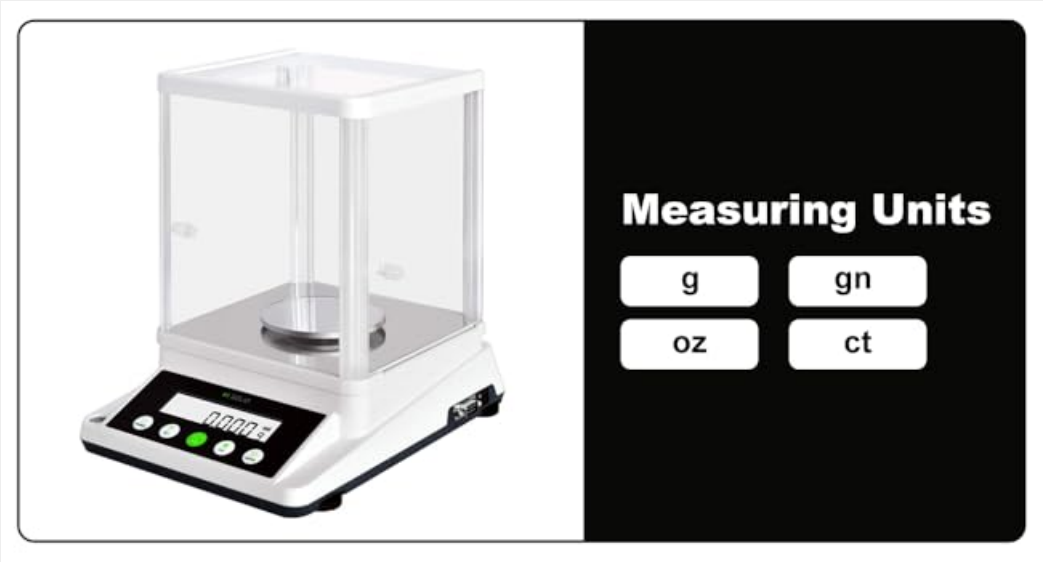

Figure 5: Available weighing units.

3. Tare Function

To subtract the weight of a container, place the empty container on the weighing pan and press the **0/T** (Tare) button. The display will reset to zero, allowing you to measure only the net weight of the contents.

4. Calibration

Regular calibration ensures the accuracy of your balance. It is recommended to recalibrate if the balance has been moved or if accuracy is critical. Refer to the specific calibration procedure in the full manual for detailed steps. Generally, this involves pressing the **CAL** button and following on-screen prompts using the provided calibration weight.

5. Piece Counting Function

The balance includes a piece-counting function for counting multiple items of uniform weight. To use this feature:

1. Place a known number of sample pieces (e.g., 10, 20, 50, or 100) on the pan.
2. Press the **SET** button and follow the instructions to input the sample quantity.
3. Once the sample is registered, remove it and place the bulk quantity of items on the pan. The display will show the total count.

Figure 6: Piece counting function.

6. RS232 Data Transfer

The balance is equipped with an RS232 serial port for data transfer to a computer or other compatible device. Connect a

compatible RS232 cable (not included) to the port on the rear of the balance. Refer to your software documentation for data acquisition procedures.

Figure 7: Rear view with RS232 port.

7. Overload Protection

The balance features an overload alarm function. If the weight on the pan exceeds the maximum capacity (110 g), an alarm will sound, and an error message may appear on the display. Immediately remove excess weight to prevent damage to the weighing sensor.

Maintenance

1. Cleaning

Clean the balance regularly with a soft, damp cloth. Do not use abrasive cleaners, solvents, or harsh chemicals, as these can damage the display or housing. Ensure no liquids enter the internal components.

2. Storage

When not in use for extended periods, store the balance in a dry, dust-free environment. It is recommended to keep the

draft shield assembled to protect the weighing pan.

Troubleshooting

Problem	Possible Cause	Solution
Inaccurate readings	Balance not level, environmental interference (drafts, vibrations), needs calibration, warm-up time insufficient.	Ensure balance is level. Relocate to a stable, draft-free area. Perform calibration. Allow sufficient warm-up time.
Display shows 'EEEE' or 'OVER'	Overload condition.	Remove excess weight immediately. Ensure weight does not exceed 110 g.
Balance does not power on	Power cable not connected, power outlet fault, power adapter fault.	Check power cable connection. Test power outlet with another device. Contact support if power adapter is suspected faulty.
Piece counting is incorrect	Incorrect sample quantity entered, inconsistent piece weight.	Ensure the correct sample quantity is entered during setup. Verify that all pieces have a uniform weight.

Specifications

Feature	Specification
Model Number	USS-DBS87-110G
Brand	U.S. Solid
Capacity	110 g
Readability	0.001 g (1 mg)
Weighing Units	g, ct, oz, gn
Display Type	LCD with Backlight
Special Features	Piece-counting function, RS232 serial port, Overload protection
Power Supply	UL Certified Power Cord (6V DC)
Material	Metal (pan), Plastic ABS (housing)
Product Dimensions	10.4 x 13.8 x 14.2 inches
Item Weight	3.53 ounces (approx. 100 grams)

Figure 8: Product dimensions.

Warranty and Support

For warranty information or technical support, please refer to the warranty card included with your product or visit the official U.S. Solid website. Keep your purchase receipt as proof of purchase for warranty claims.