



Instruction Manual

USS-DBS91 Bench Scale



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Introduction

Thank you for choosing the U.S. Solid USS-DBS91 Series Bench Scale.

The USS-DBS91 Bench Scale is precise and reliable. It offers a high level of operating convenience and response sensitivity to facilitate determination of the weight of your samples. U.S. Solid's dedicated customer service staff are available to answer any inquiries regarding applications and accessories.

Please read the manual completely and follow the usage instructions before installation and operation as this will help you to make full use of the functions and performance of the USS-DBS91 Bench Scale.

1.1 Safety Precautions

The U.S. Solid USS-DBS91 Bench Scale qualifies as state-of-the-art technology and complies with all recognized safety rules. Improper use or handling, however, can result in damage and/or injury. Please follow the precautions below to ensure safe and trouble-free operation of your scale.



- The scale has a 3-pin power socket equipped with a ground terminal. To prevent electric shock and to maintain

stability in operation of the scale, be sure to ground the scale.

- Avoid getting the scale wet as it is not water resistant. Any leakage of liquid into the scale may damage the scale or cause an electric shock to the user.



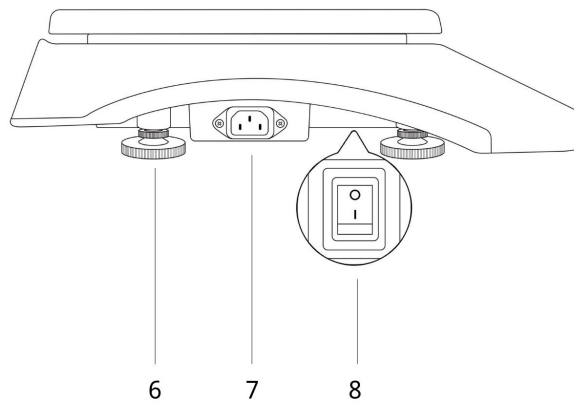
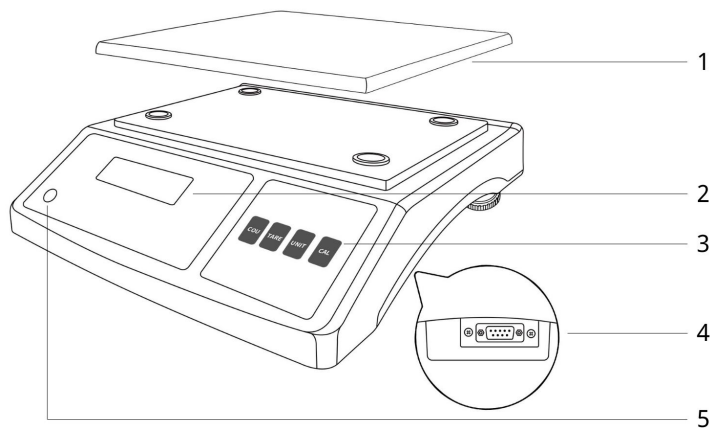
- Use a power source (voltage, frequency, outlet type) adapted to the specification of the scale. If excessive voltage is used, the scale may overheat and be damaged or cause a fire.



- Operate the scale on a stable, rigid and flat table.
- Handle the scale carefully. It is a precision device, subjecting it to impact may result in a malfunction.
- If the device is not be used for a long period of time, the power should be turned off and disconnect the power cable.
- Do not disassemble, remodel or repair this product or accessories.
- Do not weigh items larger than the scale's range, as this may damage the load cell of the scale.

Design and Function

2.1 Components



1: Weighing Pan

4: RS232 Interface

7: Power Inlet

2: Display Panel

5: Leveling Indicator





8: Power Switch

3: Keyboard

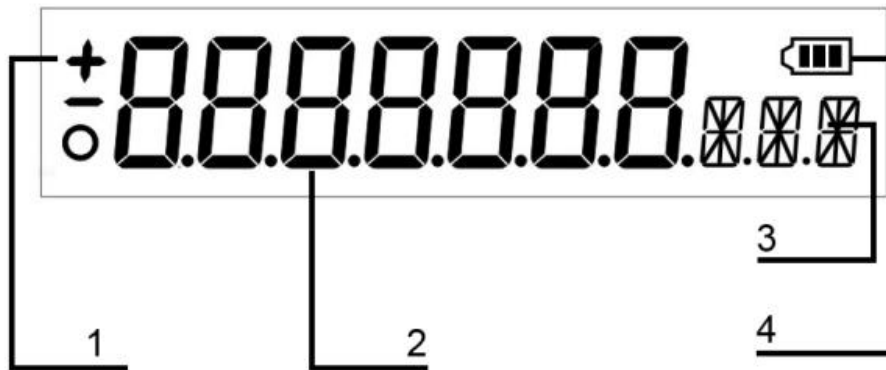
6: Leveling Feet

2.2 Keyboard



| Key | Description |
|---|---|
|  | Enter the counting function |
| | Select the option in the setting of baud rate |
|  | Tare or zero the scale |
| | Perform the baud rate set while powering on |
| | Switch the option in counting mode |
|  | Switch the weighing unit |
|  | Perform weight calibration |

2.3 Display Panel



| No. | Description |
|-----|--|
| 1 | “+”: Indicates positive values |
| | “-”: Indicates negative values |
| | “○ ”: Stabilization indicator (Disappearance indicates stabilization of scale) |
| 2 | Weight value |
| 3 | Weight unit |
| 4 | Remaining capacity of the battery |

Unpacking

The USS-DBS91 Bench Scale is a precision instrument. Unpack the scale carefully and check the delivered items for completeness.

The following accessories are part of the standard equipment for your new USS-DBS91 Bench Scale:

- 1 Scale Main Body
- 1 Weighing Pan (rectangular)
- 1 Power Cable
- 1 Instruction Manual
- 1 Quality Certification

Check the instrument for damage in transit. Immediately inform the U.S. Solid customer service if you have any complaints or parts are missing.

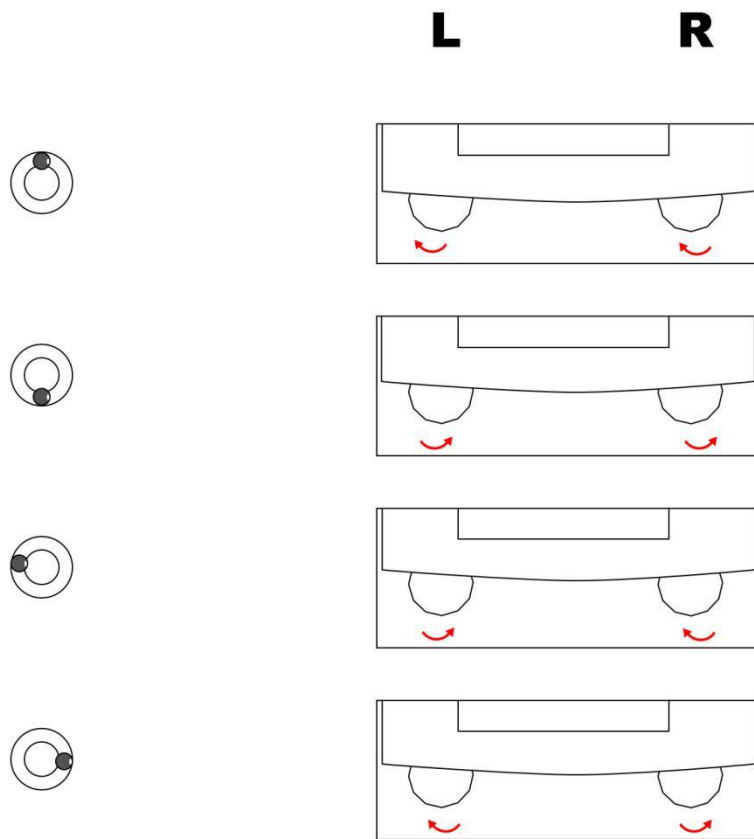
Before Using

- Adjust the leveling feet of the bench scale until the air bubble in the indicator is centered.
- Warm up for 30 minutes after starting up to improve the stability of weighing.

4.1 Leveling the scale

Accurate horizontal positioning is necessary for repeatable measurements and exact results. To compensate for small irregularities or tilts at this location, the instrument needs to be leveled.

Adjust the leveling feet of the bench scale until the air bubble in the indicator is centered. The level indicator is located under the cover towards the rear of the bench scale.



| Position of air bubble | Adjustment method |
|------------------------|---|
| up | Turn both feet clockwise |
| down | Turn both feet counterclockwise |
| Left | Turn left foot counterclockwise, right foot clockwise |
| Right | Turn left foot clockwise, right foot counterclockwise |

4.2 Calibration

Calibration is an important step to assure the bench scale will accurately weigh the sample.

Perform calibration operations in the following situations:

- Changes in the location of use (including moving in the same room).
 - Changes in ambient conditions.
1. Press “TARE” to zero the scale in the weighing state;
 2. Long press the “CAL” button and “--CAL--” will be displayed;
 3. After that “20000” (or “10000”) will be flashing displayed, then place the calibration weight on the pan ;
 4. “-----” will be displayed, then “20000” (or “10000”) will be displayed again;
 5. Remove the calibration weight and “-----” will again displayed.
 6. The calibration is completed and it will return to the weighing interface.

Operation

5.1 Basic Weighing

1. Press “TARE” to zero the scale in the no-load state.
2. Place the weighing sample on the weighing pan.
3. After the display stabilizes, read the value displayed.

Weighing a sample that needs to be in a container:

1. Place the weighing container on the weighing pan.
2. Wait for the display to stabilize. Then press “TARE” to tare, and the displayed value will return to zero.
3. Place the sample(s) to be weighed in the weighing container.
4. After the display stabilizes, read the value displayed.

*** Overweight Alarm**

When “-----” is displayed in the weighing state, it indicates that the sample weight exceeds the maximum range of the scale. The sample should be removed immediately to avoid damage to the scale.

5.2 Unit Switching

The USS-DBS91 Bench Scale offers four weight units of “g”, “ct” “oz” and “lb”. The unit selection function can be used to meet the unit requirements in various usage situations.

In the weighing state, press the "UNIT" button to switch weight units.

5.3 Counting

The U.S. Solid USS-DBS91 Bench Scale offers a counting function that meets various industrial counting requirements, especially the counting function for small components.

To ensure the accuracy of the counting function for small components, it is necessary to ensure that the weight of all samples is consistent, and that the weight of a single object is $\geq 4g$.

1. Press “COU” and “--COU--” will be displayed;
2. After that “10 PCS” will be flashing displayed;
3. Press “TARE” to select the quantity and put the corresponding quantity of samples on the pan;
4. Press “COU” to confirm and “-----PCS” will be displayed;

5. Put samples to be counted after the “-----PCS” again displayed and the corresponding number appears.

Exit counting function:

1. Press “COU” and “-----” will be displayed;
2. Then it will exit the counting function and return to the weighing interface.

Setting

6.1 Baud Rate

The baud rate could be set to change the transmission speed of the interface.

1. Press “TARE” while powering on, and the baud rate options will be displayed cyclically.
2. When looping to the required baud rate, press “COU” to confirm the selection.
3. Then the baud rate set successfully.

Maintenance

7.1 Precautions

The U.S. Solid USS-DBS91 Bench Scale is a precision mechatronics intelligent measuring instrument, which must be carefully maintained and treated.

1. Do not use sharp objects (such as pens) to click the button, use only your fingers.
2. To avoid damage to the weighing system, do not let the object fall from the height onto the weighing pan.
3. Do not expose the scale to high humidity or dusty conditions for an extended period of time.
4. When the scale is not to be used for a long time, cover it with to prevent dust from entering.
5. When weighing powder and fine particles should be done with a suitable container to prevent dust and particles from falling into the load cell below the weighing pan.
6. Keep the scale clean and dry.

7.2 Cleaning

- Turn off the power switch and remove power cord during maintenance.
- Make sure that no dust or liquid enters the scale housing.
- Do not use any aggressive cleaning agents (solvents, abrasive cleaning agents, etc.) or organic solvents to clean the scale.

Clean the scale using a piece of lint-free cloth which has been wet with a mild detergent (soap) only.

7.3 Disposal

Disposal of equipment and packaging must be carried out by the operator in accordance with relevant laws of the country or region in which the equipment is to be used.

Troubleshooting

Problem: Display remains off after switching on.

Possible causes:

- Power cord is not connected
- Power line fuse blown
- Power transformer damaged
- Instrument faulty

Problem: Weight display is constantly changing or unstable.

Possible causes:

- Test bench vibration
- Electromagnetic field interference
- Power supply instability

Problem: Displayed value and actual weight are not consistent.

Possible causes:

- Not returned to zero before weighing
- Scale not leveled well

Technical Data

| Model | USS-DBS91- 16 | USS-DBS91- 21 | USS-DBS91- 31 |
|---------------------|------------------------------|--------------------------|--------------------------|
| Capacity | 16 kg | 21 kg | 31 kg |
| Readability | 1g | | |
| Repeatability | ± 2 g | | |
| Linearity Deviation | ± 3 g | | |
| Stabilization Time | Within 3 seconds | | |
| Pan Size | 12 × 9 inches (315 × 230 mm) | | |
| Interface | RS232 | | |
| Power | 110V 60Hz AC | | |
| Dimensions | 15.8 × 15.0 × 6.3 inches | | |
| Net Weight | 7.72 lbs | | |
| Shipping Weight | 8.82 lbs | | |

Contact

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