

ANALYTICAL BALANCE



This manual should be made available to all users of this equipment. For best results, and for maximum durability of the equipment, carefully read and follow all instructions.

Table of Contents

- I. Getting Started
- II. Specifications
- III. Panel Description
- IV. Installation
- V. Using the Balance
- VI. Maintenance and Cleaning

Cleaning

- Never use scourers or substances that can grate to clean metallic parts. This include, but is not limited to, stainless steel, aluminum, coatings, etc.. These can damage the balance and lead to early erosion of effectiveness of the balance.
- -Use a lint-free cloth, dampened with soapy water, that does not contain any abrasive surfaces, nor corrosive materials

ATTENTION!! If equipment is not properly cleaned and cared for, technical service will be unable to fix or repair issues

Note: According to the applicable legislation regarding "Non-automatic weighing instruments" in which balances are included, by means of writ dating from the 22nd of October, 1994 (BOE 1/3rd/95), these balances must not be used for:

- Commercial transactions
- Calculating taxes, tariffs, rates, indemnities, and other similar canons
- Judicial surveys
- Pharmaceutical medicine preparations, as well as analysis made in medical or pharmaceutical laboratories
- Determining the price or total amount in sale price or in prepackaged preparations



Instructions on environmental protection:

At the end of its life cycle, please do not dispose of this equipment by throwing it in the usual garbage. Instead, hand it over at a collection point for the recycling of electrical and electronic appliances. It does not contain dangerous nor toxic products for humans, but inadequate disposal could still damage the environment. The materials are recyclable as mentioned. By recycling material or through other forms or repurposing old appliances, you are making an important contribution to the protection of our environment. Please inquire with your local community authorities for the proper disposal location.

I. Getting Started

Thank you for choosing U.S. Solid's Analytical Balance. We hope you enjoy your purchase. Please maintain the equipment according to all instructions within the manual.

This product was developed according to CE marking regulations while emphasizing aesthetics and safety for the user. It has ISO certification, specifically ISO 9001. The high quality of the product, coupled with proper user care, should allow you to enjoy the product for years.

Improper use of this equipment can cause accidents, including but not limited to: electric discharges, circuit breaker malfunctions, fire, etc. Please read the maintenance section, where this is explained more fully.

FOR BEST RESULTS AND LONGEVITY IN PRODUCT EFFICACY, READ THROUGH THIS MANUAL THOROUGHLY BEFORE USING THE PRODUCT

Please bear in mind the following:

- This manual should be kept with the analytical balance, so it is available to all users
- Be careful when handling the balance. Avoid any sudden movements when in its vicinity. Be sure to not drop the balance, nor drop any heavy/sharp objects on it. Keep liquids away from the balance to avoid spills.
- Never take apart the balance to try and fix yourself. This could ruin the entire balance, and voids the product warranty. There is also risk of injury when disassembling the balance.
- To prevent fire and electrical issues, avoid dusty or overly dry environments. In case of electrical issue or fire, unplug the balance immediately.
- During setup, installation, and use, contact your wholesaler with any questions that arise.
- This equipment is protected under the Warranties and Consumer Good Regulation (10/2003)
- Overhaul is not covered by the equipment warranty
- Changes made to the product by non-certified individuals will result in a loss of the product warranty
- Accessories, including their loss, are not covered by the product warranty, nor does the warrant cover piece's deterioration over the course of time.
- Keep your invoice, either for having the right to a warranty, or for asking for warranty coverage. Manufacturer reserves the right to modify or improve the manual or equipment.

ALWAYS MAKE SURE YOU CALIBRATE YOUR SCALE BEFORE USING

FEATURES

- High precision load cell
- Aluminum Alloy die cast base
- Stainless Steel Pan
- Super Bright LCD display with back-light
- Glass windshield included
- Height-adjustable feet
- RS232 Interface supplied as standard
- Full Capacity subtraction
- Stabilization time 1- 1.5 seconds typically
- Selectable measure units, g, ct,oz, lb, ozt
- Checking Weighing, Piece counting function,Overload Protection

II. Specification

Technical Parameters:

MODEL	USS-DBS15- 1	USS-DBS15-2	USS-DBS15-3	USS-DBS15-5
Capacity	20 mg-100 g	20 mg-200 g	20 mg-300 g	20 mg-500 g
Readability	0.001g			
Repeatability	±0.002 g			±0.005 g
Linearity	±0.002 g			±0.005 g
Stabilization time	1.5Seconds			
Pan Size	90 mm			
Draft Shield	185 x 175 x 205 mm (Not Detachable) (L*W*H)			
Total Dimensions	290 x 185 x 270 mm (L*W*H)			
Net Weight	3 kg			
Power	AC110V-240V 50Hz/60Hz			

Press Button Output

- Press and hold the "MENU" button, release when "C3-04" is displayed.
- Press the CAL button and select C5-00.
- Press the TARE button and select C5-02
- Finally press the CAL button to enter into "press button output" mode
- Press key "MENU" to start printing

VI. Maintenance and Cleaning

Phenomenon	Possible Reason	Solution
Upper Line - -	Over Load	Re-calibrate
Under Line_ _	Overload or load cell broken	Re-calibrate
Err-1	Too frequently turn on and off the balance	Turn off the balance, resume it after 3 seconds
Err-2	The balance is not stabilized	Wait for a few seconds for stabilization

To get the best results and for product longevity, be sure to follow the suggestions below.

Note: All of the suggestions and guidelines mentioned below and throughout this manual will only be effective with continuous and careful maintenance of the equipment

- Follow all processes outlined in the manual
- Make the manual available to all users of the equipment
- Prevent the balance from any sudden movements or falls, as well as from direct sunlight or air flow. The balance is a precision instrument and must be handled carefully.
- Balance must be plugged into a grounded electrical outlet and the socket should be easily accessible to unplug in case of emergency
- Never unplug the balance by pulling on the wire, do so from the base
- Never use the balance in a wedged-in location, such as a shelf
- Never use other objects such as pens, pencils, etc. to press the buttons on the control panel; use only your fingers
- Never place anything on the pan heavier than the maximum capacity of the balance, or the sensor could be damaged
- Do not submerge the balance, nor spill any liquids on it
- If any liquid does come into contact with the electrical parts of the balance, immediately disconnect it and send it in for service to be checked and adjusted if necessary
- Always use only original components and supplies. Other devices and parts may appear similar, but can damage the equipment.

RS232 Interface

Balance (9 pins) Printer/ PC (9 pins)

RXD(Input) 2-----3
 TXD(Output) 3-----2
 GND(Ground) 5-----5

- Download "Uartassist" Software
- The default Baud Rate is 2400 bps

Baud rate setting,

Press and hold key MENU to show C3-02, indicating baud rate 2400 BPS,

When C3-01 shows, indicating 1200BPS

When C3-03 shows, indicating 4800BPS

When C3-04 shows, indicating 9600BPS

When C3-05 shows, indicating 19200BPS

When C3-06 shows, indicating 115200BPS

Release key MENU when the desired baud rate shows, press key CAL thrice to confirm the setting.

- The data format is: 10 bits; 0 as start bit, 1 as stop bit, 8 digits (ASCII code)
- No odd and even numbers adjustments

Data output format:

1	2	3	4	5	6	7
±	Space	Data or dot	Data or dot	Data or dot	Data or dot	Data or dot
8	9	10	11	12	13	14
Data or dot	Data or dot	Unit 1	Unit 2	Unit 3	End	Return

Data Output Settings

2. Continuous output

- Press and hold the "MENU" button, release when "C3-04" is displayed;
- Press the CAL button and select C5-02;
- Press the TARE button and select C5-00;
- Finally press the CAL button to enter into "continuous output" mode. Key output

III. Panel Description

Panel Explanations

1. ON/OFF: Turn on/off the balance
2. TAR: Tare the balance
3. MENU: Controls printing function
4. UNIT: Press UNIT key to select the desired weighing unit from g/ct/oz/lb/ozt
5. CAL: Calibration key
6. COU: Piece counting mode

IV. Installation

Choosing the installation location

The location should meet the following conditions:

1. Work room should be clean and dry
2. Balance should be placed on a solid, stable, plain flat surface
3. Avoid locations in which the balance could be exposed to any of the following:
 - a. Airflow from air conditioners, fans, doors, or window
 - b. Vibrations from surrounding or nearby equipment
 - c. Direct sunlight or radiation
4. Do not use the balance anywhere exposed to explosive, combustible, or corrosive gases.
5. Do not use the balance in areas with high humidity or high levels of dust
6. Keep the balance clean.
7. Do not leave material on the balance when not in use.

Unpacking and inspection

Check that all of the items indicated below are included in the package and that nothing has been damaged:

- Balance
- Weight
- Power Cable
- Manual

In case the balance or any component is damaged during transport, tell your transportation agent immediately in order to process claims within the proper time frame.

V. Using the Balance

Start

1. Connect the balance to the power supply and press ON key on the panel. Wait 30 minutes after powering on for best performance.
2. After warming up, calibrate the balance.
3. After calibration, the balance will enter weighing mode
4. To turn the balance off, press the OFF key on the panel and the display will shut off. If the balance will be unused for an extended period of time, disconnect it from the power supply.

Standard Calibration

1. Press CAL key; the value of the necessary weight will flash on display.
2. Put the calibration weight on the pan. Wait until the value of the calibration weight stops flashing and is fixed on the display (e.g. 100.00 g, 200.00 g, etc., depending on the model)
3. Remove the weight from the pan
4. The balance returns to weighing mode and displays zero.

It is recommended to make the standard calibrations twice to achieve the best calibration result. If the standard calibration doesn't work, then the balance needs to do linear calibration.

Linear Calibration

1. Press and hold down "CAL" button, when it shows "CAL" on display, release "CAL".
2. Long press "COU", when it shows "CAL" on display again, release "COU". It will enter linearity calibration mode, the value of the necessary weight will flash on display.
3. Put the calibration weight on the pan. Wait until the value of the calibration weight stops flashing and is fixed on the display. Remove the weight from the pan. Another value will flash on display, place the related calibration weight on the pan (What number is displayed, please put the corresponding weight on the pan).
4. Finally the balance will return to weighing mode and display zero.

Tare Function

1. Put the receptacle on the weighing pan; its weight will be displayed
2. Press TARE key and the reading on the display will automatically be set to 0.000g; tare is complete.
3. If the receptacle is removed from the pan, the corresponding weight, with negative value will be displayed.
4. Press the TARE key again and the value on display will be set to zero again.

Piece Counting Function

1. Press the TARE button to clear the readings on the screen.
2. Press the COU button to enter the counting mode, "- -COU- -" "- - -" and figure 10(default sampling quantity) will be shown in turns on the screen. Keep pressing key COU to select sampling quantity from 10,25,50,100 up to 500, release key COU when the desired quantity flashes on the screen.
3. Put the corresponding number of pieces on the pan, press the COU button to confirm.
4. Remove the pieces from the pan and the balance is ready to be used in piece counting mode.
5. To return to weighing mode, simply press the COU button again.

Notice: In counting mode, the weight of the sampling objects should be even, the weight of the individual sample should not be less than the division of the balance.

Weighing Unit Conversion

Press key UNIT to select desired weighing unit from g, ct, oz,lb and ozt.

The default weighing unit of the balance is g.