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Bonvoisin XXX-54

Bonvoisin Analytical Balance Model XXX-54 User Manual

Precision Lab Scale with 200g Capacity and 0.001g Readability

1. Introduction

This manual provides detailed instructions for the proper setup, operation, and maintenance of your Bonvoisin Analytical Balance Model XXX-54. This precision lab scale is designed for accurate weighing in various laboratory, educational, and industrial settings. It features a 200g capacity with 0.001g readability, an RS232 interface for data output, and a protective windshield.



Figure 1.1: Bonvoisin Analytical Balance Model XXX-54.

2. Safety Precautions

- Always operate the balance on a stable, level surface free from vibrations.
- Avoid exposing the balance to direct sunlight, extreme temperatures, or drafts.
- Do not overload the balance beyond its maximum capacity of 200g.
- Keep the balance clean and free from dust and corrosive substances.
- Use only the provided power adapter.
- Ensure the balance is properly grounded.

3. Package Contents

Verify that all items listed below are present in the package:

- Bonvoisin Analytical Balance
- Calibration Weight
- Weighing Platter
- Power Cable/Adapter
- Instruction Manual (this document)



Figure 3.1: Included accessories with the analytical balance.

4. Product Overview

Familiarize yourself with the main components and control panel of the analytical balance.

4.1 Main Components



Figure 4.1: Key components of the Bonvoisin Analytical Balance.

- **Glass Windshield:** Protects the weighing area from air currents for stable readings.
- **Level Bubble:** Indicates if the balance is perfectly level.
- **Stainless Steel Weighing Platter:** The surface where items are placed for weighing.
- **LCD Display:** Shows weight readings and operational information.
- **Aluminum Alloy Die Cast Base:** Provides stability and durability.
- **Height Adjustable Feet:** Used to level the balance.
- **RS232 Interface:** Port for connecting to a computer or printer for data output.

4.2 Control Panel

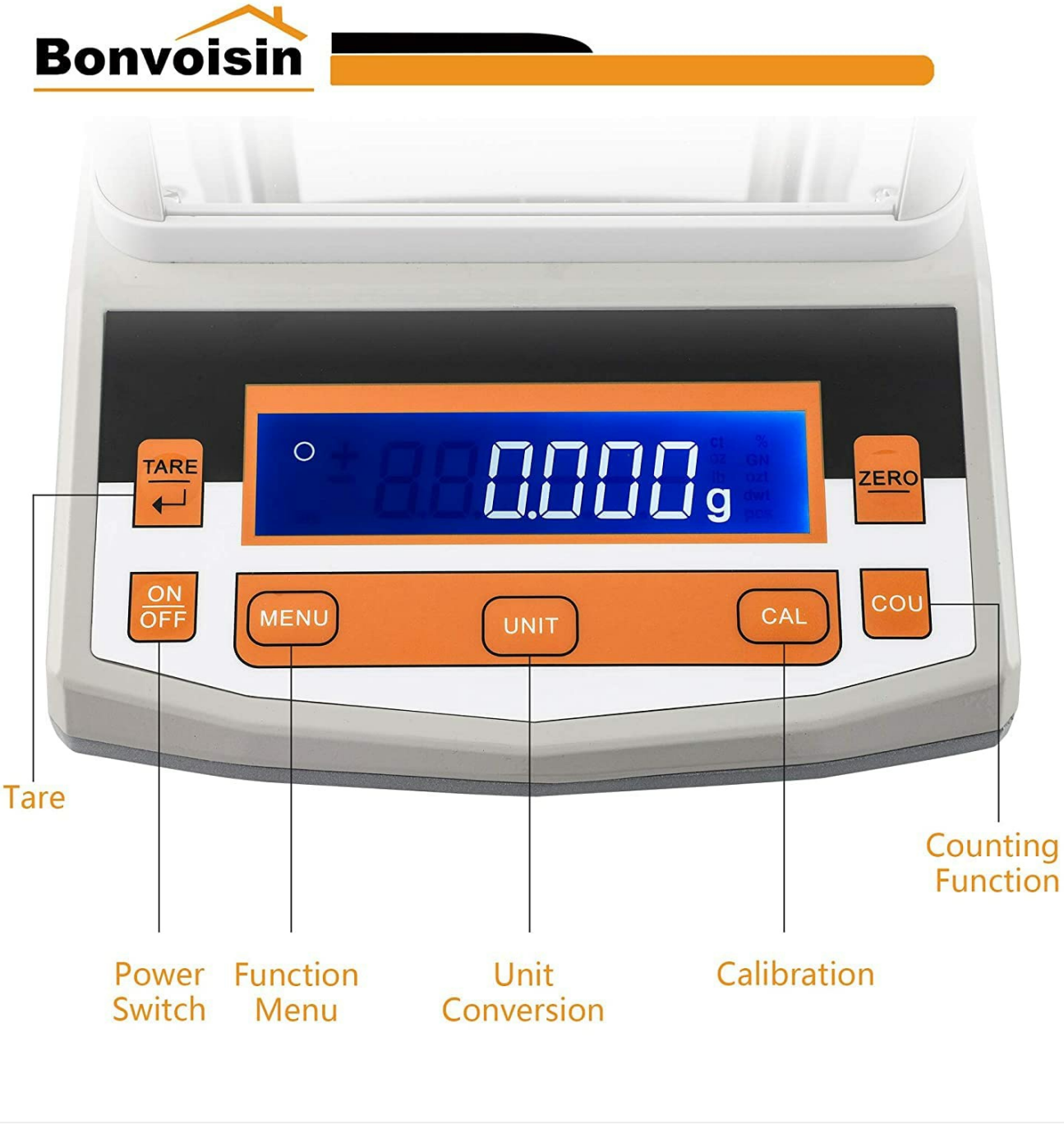


Figure 4.2: Control panel buttons and their functions.

- **ON/OFF:** Powers the balance on or off.
- **TARE:** Zeros the display, typically used to subtract the weight of a container.
- **MENU:** Accesses the function menu for advanced settings.
- **UNIT:** Changes the weighing unit (g, ct, oz, lb, ozt).
- **CAL:** Initiates the calibration process.
- **COU (COUNT):** Activates the counting function.
- **ZERO:** Resets the display to zero.

5. Setup

5.1 Placement and Leveling

1. Place the balance on a firm, level, and vibration-free surface.

2. Adjust the height adjustable feet until the air bubble in the level indicator is centered. This ensures accurate measurements.

5.2 Windshield Assembly

The balance includes a three-sided sliding glass windshield to minimize environmental interference during weighing.



Figure 5.1: Assembling the sliding glass windshield.

1. Carefully slide the glass panels into their designated slots on the balance frame.
2. Ensure the panels move smoothly and are securely seated.

5.3 Power Connection

1. Connect the power adapter to the balance's power input port.
2. Plug the adapter into a suitable power outlet.

6. Operating Instructions

6.1 Power On/Off

- Press the **ON/OFF** button to turn the balance 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 balance off.

6.2 External Calibration

For optimal accuracy, external calibration is recommended periodically or after moving the balance.

1. Ensure the weighing platter is empty and the windshield is closed.
2. Press the **CAL** button. The display will show 'CAL' and then a calibration weight value (e.g., '200.000g').
3. Carefully place the specified calibration weight (e.g., 200g) onto the center of the weighing platter.
4. Wait for the balance to stabilize. The display will show 'PASS' or return to 0.000g, indicating successful calibration.
5. Remove the calibration weight.

6.3 Basic Weighing

1. Turn on the balance and wait for it to display 0.000g.
2. Place the item to be weighed onto the center of the weighing platter.
3. Read the stable weight displayed on the LCD.

6.4 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 platter.
2. Press the **TARE** button. The display will reset to 0.000g.
3. Add the material to be weighed into the container. The display will show the net weight of the material.

6.5 Unit Conversion

The balance supports multiple weighing units.

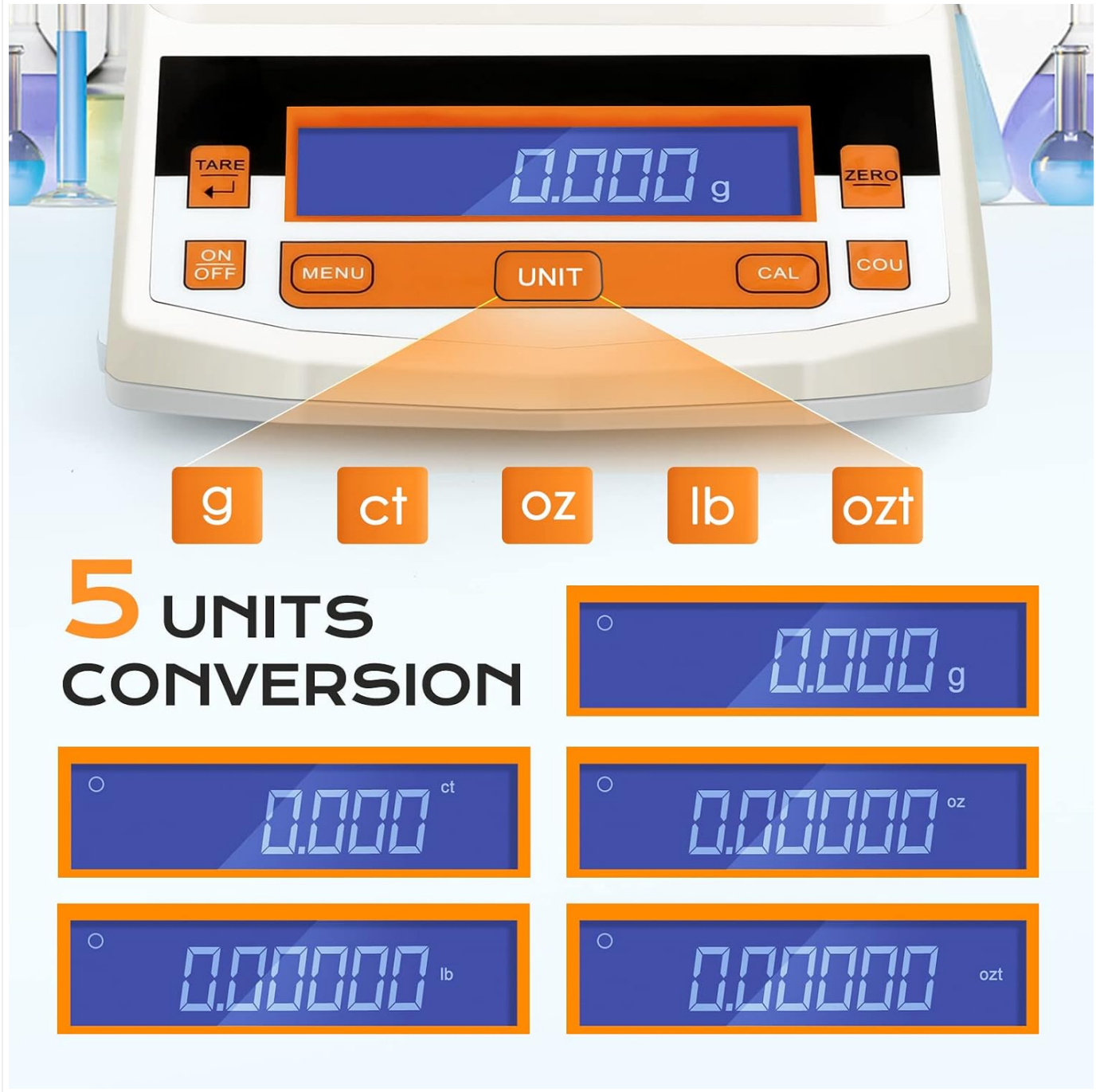


Figure 6.1: Available weighing units.

- Press the **UNIT** button to cycle through the available weighing units: grams (g), carats (ct), ounces (oz), pounds (lb), and troy ounces (ozt).
- The current unit will be indicated on the LCD display.

6.6 Counting Function

Use the counting function to determine the quantity of identical small items.

1. Place a known quantity of items (e.g., 10, 20, 50, 100 pieces) on the platter.
2. Press the **COU** button. The display will prompt you to select the sample size.
3. Use the **UNIT** button to select the corresponding sample size (e.g., '10 PCS').
4. Press **COU** again to confirm. The balance will calculate the average piece weight.
5. Add more items to the platter, and the display will show the total count.

6.7 RS232 Interface

The RS232 interface allows for serial data exchange with a computer or printer.



Figure 6.2: RS232 interface for data output.

- Connect a compatible RS232 cable from the balance to your computer or printer.
- Note that the balance uses a null modem serial connection (TX/RX switched). A computer application (such as a hyper terminal program) is required for data output to a PC.
- Refer to your computer or printer's documentation for specific setup instructions for serial communication.

7. Maintenance

7.1 Cleaning

- Wipe the balance exterior with a soft, damp cloth. Do not use abrasive cleaners or solvents.
- For the stainless steel weighing platter, a mild detergent can be used, followed by thorough rinsing and drying.
- Ensure no liquids enter the internal components of the balance.

7.2 Storage

- When not in use, store the balance in a clean, dry environment, away from direct sunlight and extreme temperatures.
- Keep the windshield closed to protect the weighing mechanism from dust.

8. Troubleshooting

This section addresses common issues you might encounter with your analytical balance.

Problem	Possible Cause	Solution
Display shows 'Err' or 'OL'	Overload or error indication	Remove excess weight from the platter. Ensure weight does not exceed 200g. Restart the balance.
Inaccurate readings	Balance not level, drafts, vibrations, or needs calibration.	Check level bubble and adjust feet. Close windshield. Ensure stable environment. Perform external calibration (Section 6.2).
Balance does not power on	Power connection issue.	Check if the power cable is securely connected to both the balance and the power outlet. Verify the power outlet is functional.
RS232 data not transmitting	Incorrect cable, software settings, or connection type.	Ensure you are using a null modem RS232 cable. Verify computer software settings (baud rate, parity, data bits, stop bits) match the balance. Consult your computer's serial port documentation.

9. Specifications

Technical specifications for the Bonvoisin Analytical Balance Model XXX-54.



Figure 9.1: Product dimensions.

Feature	Detail
Model Number	XXX-54
Brand	Bonvoisin
Capacity	200 Grams
Readability	0.001g (1mg)
Material	Aluminum Alloy (Base), Stainless Steel (Platter)
Display	HD LCD with Backlit Display
Interface	RS232

Feature	Detail
Weighing Units	g, ct, oz, lb, ozt
Special Features	Adjustable Feet, Level Bubble, Overload Alarm, Error Indication, External Calibration, Counting Function, Full Range Tare
Product Dimensions	29.01 x 18.49 x 27 cm (11.42 x 7.28 x 10.63 inches)
Item Weight	200 Grams (Note: This refers to the product's shipping weight, not its weighing capacity)
UPC/GTIN	795787257524

10. Warranty and Support

For warranty information and technical support, please refer to the documentation provided with your purchase or contact Bonvoisin customer service. Keep your purchase receipt as proof of purchase.

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