GOYOJO FA2204E

GOYOJO FA2204E Analytical Balance User Manual

Model: FA2204E

1. Introduction

Thank you for choosing the GOYOJO FA2204E Analytical Balance. This precision instrument is designed for highly accurate weighing in laboratory, industrial, and educational settings. With a capacity of 220 grams and a readability of 0.1 mg (0.0001g), it is ideal for measuring small, delicate samples such as chemicals, jewelry, and gemstones. This manual provides essential information for the safe and efficient operation, setup, and maintenance of your analytical balance.

2. Safety Information

- Always operate the balance on a stable, level surface free from vibrations and drafts.
- Avoid exposing the balance to extreme temperatures, humidity, or direct sunlight.
- Do not overload the balance beyond its maximum capacity of 220g.
- Use only the provided power adapter.
- Keep the balance clean and free from dust and chemical spills.
- Do not attempt to disassemble or repair the balance yourself. Contact qualified service personnel.
- Ensure proper ventilation when weighing volatile substances.

3. Package Contents

Carefully unpack the box and ensure all items are present and undamaged:

- GOYOJO FA2204E Analytical Balance unit
- Weighing pan (80mm diameter)
- Draft shield (glass enclosure)
- Power adapter

- Calibration weight (if included)
- User Manual (this document)

4. Product Overview

The FA2204E analytical balance features a robust design with a glass draft shield to protect against air currents, ensuring stable and accurate readings. It includes an easy-to-read LCD and multiple connectivity options.

Figure 4.1: Front view of the GOYOJO FA2204E Analytical Balance with a sample beaker.

Key Components:

- **Weighing Pan:** Stainless steel platform for placing samples.
- **Draft Shield:** Glass enclosure to minimize air current interference.
- **LCD Display:** Shows weight readings, units, and operational status.
- **Control Panel:** Buttons for power, tare, unit selection, and calibration.
- **Level Indicator:** Bubble level for ensuring proper balance setup.
- **Adjustable Feet:** For leveling the balance.

- **RS232/USB Ports:** For data communication with external devices.

5. Setup

5.1 Unpacking and Placement

1. Carefully remove the balance from its packaging. Retain all packaging materials for future transport or storage.
2. Place the balance on a sturdy, level, and vibration-free workbench. Avoid locations near air conditioning vents, windows, or heavy machinery that could cause drafts or vibrations.
3. Ensure sufficient space around the balance for operation and maintenance.

5.2 Assembly

1. Install the weighing pan onto the pan support. Ensure it sits securely and centrally.
2. Assemble the glass draft shield around the weighing pan. The shield panels should slide smoothly into their designated slots.

Figure 5.1: Side view illustrating the assembled draft shield and weighing pan.

5.3 Leveling the Balance

Accurate leveling is crucial for precise measurements.

1. Locate the bubble level indicator, usually at the front or side of the balance base.
2. Adjust the two front adjustable feet (or all four, depending on the model) by turning them clockwise or counter-clockwise until the air bubble is centered within the indicator circle.

5.4 Power Connection

1. Connect the power adapter to the power input port on the rear of the balance.
2. Plug the power adapter into a suitable electrical outlet (110V-240V).

Figure 5.2: Rear view showing the power input, RS232, and USB ports.

6. Operating Instructions

6.1 Powering On/Off

- **To Power On:** Press the **[ON/OFF]** button. The display will show a self-test sequence and then settle at zero.
- **To Power Off:** Press and hold the **[ON/OFF]** button until the display turns off.

6.2 Initial Warm-up

Allow the balance to warm up for at least 30 minutes after powering on for the first time or after a long period of inactivity. This ensures thermal stability and optimal measurement accuracy.

6.3 Calibration

Regular calibration is essential for maintaining accuracy. Refer to your specific model's calibration procedure, which typically involves using a known calibration weight.

1. Ensure the balance is level and warmed up.
2. Clear the weighing pan.
3. Access the calibration menu (often by pressing and holding a specific button like**[CAL]** or **[MODE]**).
4. Follow the on-screen prompts to place the specified calibration weight on the pan.
5. Remove the weight when prompted. The balance will then display "PASS" or similar upon successful calibration.

6.4 Basic Weighing Procedure

Figure 6.1: Close-up of the LCD display and control panel.

1. **Zeroing the Balance:** With nothing on the weighing pan, press the **[ZERO]** button to set the display to 0.0000g.
2. **Taring (for containers):** Place an empty container on the weighing pan. Wait for the reading to stabilize, then press the **[TARE]** button. The display will return to 0.0000g, effectively subtracting the container's weight.
3. **Placing the Sample:** Carefully place the item or substance to be weighed onto the center of the weighing pan (or into the tared container). Close the draft shield doors.
4. **Reading the Measurement:** Wait for the reading on the LCD to stabilize. This is your accurate weight measurement.

5. **Unit Selection:** Press the **[UNIT]** or **[MODE]** button to cycle through available weighing units (grams, carats, ounces, etc.).

6.5 Data Transfer (RS232/USB)

The FA2204E balance is equipped with RS232 and USB interfaces for connecting to a computer or printer for data logging and analysis.

- Connect the appropriate cable (RS232 or USB) from the balance to your computer or peripheral device.
- Install any necessary drivers or software provided by GOYOJO or available online for your operating system.
- Refer to the software's instructions for configuring communication settings (e.g., baud rate, data bits, parity) to match the balance's settings.
- Data can typically be sent manually via a print button or automatically at specified intervals, depending on the balance's settings and connected software.

7. Maintenance

7.1 Cleaning

- Always disconnect the balance from the power supply before cleaning.
- Use a soft, damp cloth with a mild detergent to clean the exterior surfaces. Avoid abrasive cleaners or solvents.
- The stainless steel weighing pan can be removed and cleaned separately with soap and water. Ensure it is completely dry before re-installing.
- Use a soft brush or lint-free cloth to gently clean around the weighing pan and inside the draft shield.
- Do not allow liquids to enter the balance housing or ports.

7.2 Storage

- When not in use for extended periods, store the balance in a clean, dry, and temperature-controlled environment.
- Cover the balance with a dust cover to prevent dust accumulation.
- If transporting the balance, use the original packaging to protect it from shock and vibration.

8. Troubleshooting

Problem	Possible Cause	Solution
Unstable readings / Drifting display	Vibrations, drafts, unlevel balance, temperature fluctuations, electromagnetic interference.	Ensure balance is on a stable, level surface. Close draft shield doors. Avoid air currents. Allow warm-up time. Relocate away from strong electromagnetic fields.
Balance does not power on	No power, faulty power adapter, loose connection.	Check power cable connection. Ensure outlet has power. Try a different outlet. Verify power adapter is functioning.
Inaccurate readings	Needs calibration, pan not centered, foreign object under pan, overloaded.	Perform calibration. Ensure pan is correctly seated. Clean under the pan. Do not exceed maximum capacity.

Problem	Possible Cause	Solution
Communication error (RS232/USB)	Incorrect cable, driver issues, wrong software settings.	Verify cable type and connection. Install/update drivers. Check software communication settings (baud rate, etc.).

9. Specifications

Feature	Specification
Model	FA2204E
Capacity	220 grams
Readability (Precision)	0.1 mg (0.0001g)
Repeatability	0.2 mg
Pan Size	80 mm
Sensor Type	Electromagnetic
Display	LCD
Weighing Units	grams, pounds, ounces, grams per square meter (g/m²)
Interfaces	RS232, USB
Voltage	110V-240V
Material (Draft Shield)	Glass

10. Warranty and Support

For warranty information, technical support, or service inquiries, please refer to the contact information provided with your purchase documentation or visit the official GOYOJO website. Please have your model number (FA2204E) and purchase date ready when contacting support.