Flinn Analytical Balance Owner's Manual

Please read and adhere to all recommendations in this manual to ensure the best experience and to maintain your analytical balance in good working order. This owner's manual is for the following models: OB2160 and OB2161.

Unpacking, Assembly and Storage

1. The analytical balance and accessories have been carefully packed to assure they reach you in the best possible condition. Retain the packaging in case you need to transport, store or return the balance. If it becomes neces¬sary to ship the balance for any reason, pack it in the original packaging and then in another box, secured for transport. Inadequate shipping may result in damage to your balance.
2. Unpack the box and take out the buffer sponge in the shield and install the weighing pan. Each analytical balance comes with the following:
   a. Power cord
   b. Weighing pan
   c. Analytical balance
3. Place the balance on a stable work bench in a location that is free from drafts that come from open windows or doors. Do not place the balance in close proximity to a heater or direct sunlight.
4. Avoid exposing the balance to extreme vibrations during weighing.
5. Moisture in the air can condense on the surfaces of a cold balance whenever it is brought into a substantially warmer place. If you transfer the balance to a warmer area, make sure to condition it for about 2 hours at room temperature, leaving it unplugged from AC power.
6. Level the balance any time you set it up in a new location. Use the back two feet of the balance for leveling. Turn the feet until the air bubble is centered in the level indicator.

Description of Components *(Refer to diagram.)*

1. **Analytical balance:** Unit includes nine buttons, LCD display, shield, weighing pan, and a level indicator.
   a. ON: Turns the LCD display on.
   b. OFF: Turns the LCD display off.
   c. TAR: Tare the balance before weighing and calibrating.
   d. INT: Integral time adjustment.
   e. ASD: Stability adjustment.
   f. CAL: Calibrates the balance; points function confirmation.
   g. COU: Count function.
   h. UNT: Unit selection.
   i. PRT: Output mode setting.
2. **Level indicator:** Located behind the shield. Air bubble moves when the two back feet are adjusted.
3. **Weighing pan:** Stainless steel pan inside the shield. Measures 8.0 cm in diameter.
4. **Power adapter:** AC power adapter that plugs into the analytical balance and cord that plugs into the electrical outlet.

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Operation

1. Check the level before using the balance. If the balance is not leveled, use the two back feet to adjust the balance until the air bubble is centered in the level indicator.
2. Turn the balance on and allow the balance to warm-up for 1 hour.
3. Calibrate the balance using the appropriate weight (step 8).
4. Select the desired modes. The default modes are INT-3, ASD-2, and PRT-4. Other common mode settings are:
   a. Fastest weighing option: INT-1 and ASD-3
   b. Normal use: INT-3 and ASD-2
   c. Undesirable environment: INT-3 and ASD-3
5. Press the TAR button with the shield doors closed and the balance will display zero.
6. Place the object on the weighing pan and make sure the shield doors are completely closed.
7. When the balance stabilizes, the "0" and "Please wait" will no longer be on the screen. The displayed weight is the weight of the object.
8. Balance calibration.
   a. Remove all objects from the pan.
   b. Press the TAR button to tare the pan.
   c. Press the CAL button and hold until the desired calibration weight appears on the screen.
   d. Place the correct weight on the pan until "Please wait" and the calibration weight stop flashing. After several seconds, the weight of the calibration weight will be displayed and "Please wait" will not be on the screen.
   e. Remove the calibration weight from the balance, and the screen should display "0.000 g."
   f. If the screen does not display "0.000 g," repeat the calibration steps a–e.

9. Changing the unit.
   a. Press the UNT button and hold until the screen says "Please choose" and a menu appears, cycling through three options: 0 (g), 1 (metric carat/ct), and 2 (oz).
   b. Release the UNT button when the desired option is displayed.
   c. After releasing the button, "Please wait" and "-----" will appear on the screen, then the weighing status will appear.
10. Integral time adjustment.
   a. Press the INT button and hold until the screen says "Please choose" and a menu appears, cycling through four options: 0 (fast), 1 (short), 2 (long), and 3 (longer).
   b. Release the INT button when the desired option is displayed.
   c. After releasing the button, "Please wait" and "-----" will appear on the screen, then the weighing status will appear.
11. Sensitivity adjustment.
   a. Press the ASD button and hold until the screen says "Please choose" and a menu appears, cycling through four options: 0 (highest), 1 (higher), 2 (medium), and 3 (low).
   b. Release the ASD button when the desired option is displayed.
   c. After releasing the button, "Please wait" and "-----" will appear on the screen, then the weighing status will appear.
12. Output mode setting.
   a. Press the PRT button and hold until the screen says "Please choose" and a menu appears, cycling through five options: 0 (indefinite time), 1 (outputs once every 30 seconds), 2 (outputs every minute), 3 (outputs every two minutes), 4 (outputs continuously).
   b. Release the PRT button when the desired option is displayed.
   c. After releasing the button, "Please wait" and "-----" will appear on the screen, then the weighing status will appear.

Specifications

Model	**FA1004B**	**FA2204B**
Accuracy Degree	(I)	(I)
Weighing Range (g)	0~100	0~220
Reading Accuracy (mg)	0.1	0.1
Taring Range (g)	0~100	0~200
Max	+/-0.5e or +/-1e	+/-0.5e or +/-1e
Repeatability Standard Deviation (g)	0.0002	0.0002
Stable Time (s)	≤ 8	≤ 8
Integrating (s)	2.5/5/10	2.5/5/10
Pan Diameter (cm)	8.0	8.0
Overall Dimensions (cm)	35.0 × 21.0 × 34.6	35.0 × 21.0 × 34.6
Net Weight (kg)	8.5	8.5
Auto-Cal Weight Range (g)	100	200
Starting-up Time (min)	60	60

Maintenance

WARNING: For your own safety, make certain that device is unplugged before maintaining your analytical balance.

The balance should be used carefully. Clean the pan and the shield frequently. Use a clean, damp cloth to remove dust or dirt from the balance, followed by a dry cloth.

Troubleshooting

No.	Failures	Causes	Recovery
1	Display failure	- Balance is not well connected to power supply. - The display is not turned on. - Instant interference. - Cord damage.	- Make sure the power adapter is connect to the balance and outlet correctly. - Press the "ON" button. - Restart the balance. - Replace the cord.
2	Display the upper half only	- Overloaded the balance. - The calibration in the internal memory may be damaged. - The pan is not installed correctly.	- Reduce the load. - Recalibrate the balance. - Reinstall the pan.
3	Display the lower half only	- Object on pan is too light. - Pan is not installed correctly.	- Recalibrate the balance. - Reinstall the pan.
4	Weighing result is not stable	- There is significant air flow. - Working table is not stable. - The integral time is too low. - Room temperature is fluctuating.	- Reduce the airflow in the room by closing any open doors or windows. - Place the balance on a more stable table. - Move the balance to a more stable environment.
5	Wrong weighing result	- Not taring before weighing. - The balance is not calibrated or the weight for calibration is inaccurate. - The power voltage is incorrect.	- Press the tare button before weighing. - Recalibrate the balance. - Use the correct power supply.
6	Display remains at a certain digit	- Instant interference. - Wrong power voltage.	- Restart the balance. - Use the correct power supply.
7	Stable mark "0" and "Please wait" on the left of the display stays on	- Balance sensitivity is too high. - The balance is not in a suitable environment, e.g. strong air flow, vibrations or fluctuating room temperature.	- Choose a lower sensitivity. - Move the balance to a location with an improved environment.
8	"Please wait" status stays on	- The balance is not in a suitable environment, e.g. strong air flow, vibrations or fluctuating room temperature. - The balance sensitivity is too high.	- Move the balance to a location with an improved environment. - Set to ASD-3.
9	Displays "Cal Err"	- There is an object on the pan before starting the calibration. - There is an object on the pan before the calibration is complete. - Calibration weight is incorrect.	- Remove the object and recalibrate the balance. - Recalibrate using the correct weight.
10	Displays "Err-1" or "Err-2"	- Instant interference. - Something is wrong with the balance.	- Restart the balance. - Send the balance to the repair center.
11	Weighing unit does not appear and there is a weight icon on the left of the screen	- The balance is not calibrated. - The calibrated number in the internal memory of the balance has been erased.	- Calibrated the balance. - Refer to the above recovery method in No. 10.
12	Display "Cou-Err"	- Overload when setting constant. - Underload when setting constant.	- Preset the counting average.

Limited 1-year Warranty

Flinn Scientific, Inc. warrants the analytical balance against manufactures defect for one year from the date of purchase. Please contact Flinn Scientific at flinn@flinnsci.com or 1-800-452-1261.