



OPERATION MANUAL
Analytical Balance
BAL13-200 / BAL13-220

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01. About the Balance

Specification

Model	Range	Division	Repeatability	Linearity	Pan Size
BAL13-200	200g	0.1mg	0.2mg	0.5mg	ø 80mm
BAL13-220	220g	0.1mg	0.2mg	0.5mg	ø 80mm

Features

Stainless Steel Pan
Super 5 inch Touch panel display
RS232 Interface
Mains adapter supplied as standard
Windshield supplied as standard
Height adjustable feet
Internal Auto Calibration
Selectable measure units:mg, g, oz, ct
Memory for accumulated time

Applications

Weighing
Net weight / tare
Below balance weighing
Piece counting function
Density Test
Percentage Test



02. Know your balance

Thank you for selecting the BAL13-220 Analytical Balance.

This Instruction Manual will guide you of the installation, accessories, trouble-shooting, after sales service information, general maintenance of the balance, etc. it will also guide you through the various applications.

Please read this Manual thoroughly before starting the operations. If you need any clarifications, feel free to contact us.

The BAL13-220 balances are ideal for laboratory and general purpose weighing. The balances can also be used for some advanced weighing functions.



FEATURES:

- Stainless Steel Pan
- Super bright LCD display with backlight
- RS232 Interface
- Adapter supplied as standard
- Windshield supplied as standard
- Height adjustable feet, Bubble Level
- Internal Auto Calibration
- Selectable measure units, g, oz, ct,mg
- Memory for accumulated time
- Weighing fuction
- Piece counting function
- Below balance weighing



03. Specifications

Model	BAL13-200	BAL13-220
Range	0-200g	0-220g
Division	0.1mg	
Repeatability	0.2mg	
Linearity	0.5mg	
Resp. Time	≤ 4 Sec.	
Pan Size	ø80mm	
Interface	RS-232 bi-directional	
Overall Dimensions	340 x 215 x 350mm	
Operating temperature	+10°C to 40°C	
Power Supply	Output voltage 5 VDC, 600mA through External Power Adapter as standard (Input Voltage 220 V)	
Net Weight	8.5 kg	

04. Unpacking the balance

Remove the balance from the packing by carefully lifting it out of the box. Inside the box you will find everything needed to start using the balance



05. Unpacking the balance

Press "CAL" key, and it will show and shining: CAL-XXX.XXXX, and the balance begin internal calibration.

You also can choose manual calibration with standard weight, and there will have the notes tell you step by step:



06. Locating the balance

- The balance should not be placed in a location that will reduce the accuracy.
- Avoid extremes of temperature. Do not place in direct sunlight or near air conditioning vents.
- Avoid unsuitable tables. The table or floor must be rigid and not vibrate.
- Avoid unstable power sources. Do not use near large users of electricity such as welding equipment or large motors.
- Do not place near vibrating machinery.
- Avoid high humidity that might cause condensation. Avoid direct contact with water. Do not spray or immerse the balances in water.
- Avoid air movement such as from fans or opening doors. Do not place near open windows or air-conditioning vents.
- Keep the balance clean. Do not stack material on the balances when they are not in use.



07. Setting up the balance

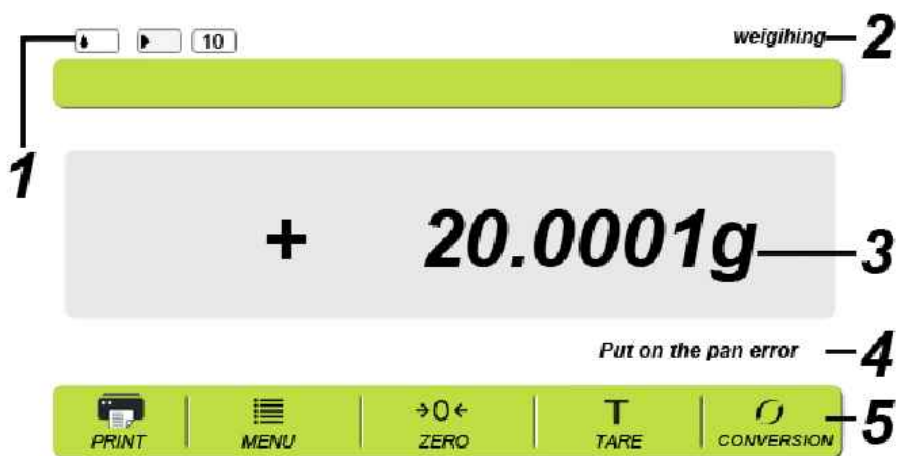
8.1. Assembling the balance

- Locate balance on solid surface, free from vibration
- Open the sliding door and gently place the stainless steel top.
- Level balance using the adjustable feet and the bubble level
- Connect the power to the balance
- For best performance, let the balance warm up for 30-60 min. and calibrate before using

8.2. Levelling the balance

After placing the balance in a suitable place, level it by using the bubble level. To level the balance turn the two adjustable feet at the rear of the balance until the bubble in the bubble level is center.

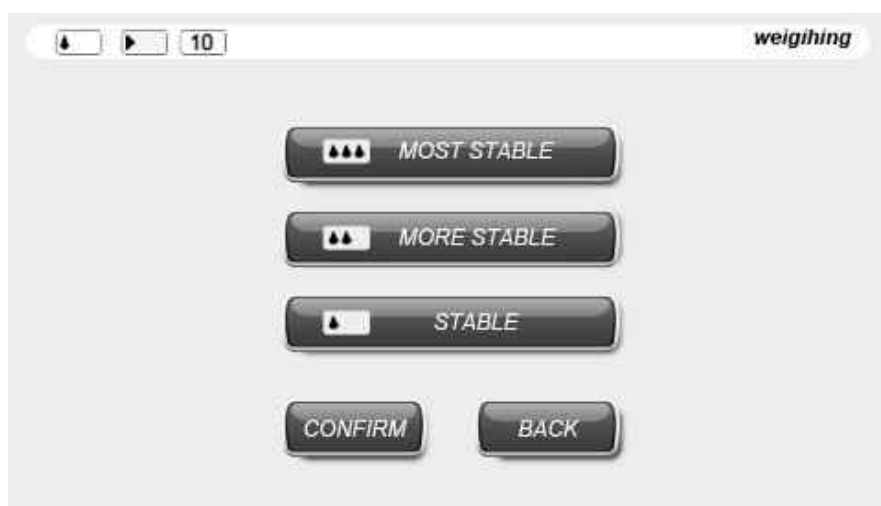
08. Operation Setting



1.State Icon 2. Function State 3.Weighing Digits 4.Notes 5.Operation Keys



8.1. Sensitivity Setting



8.2. Speed Setting



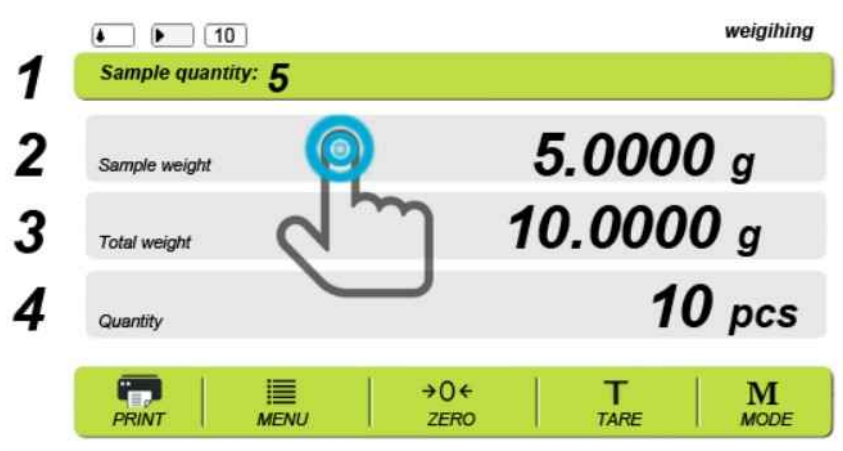
8.3. Weighing unit setting

Under the weighing state, press "CONVERSION" to choose the unit. There are 4 units :g/ct/oz/mg.



8.4. Counting Function

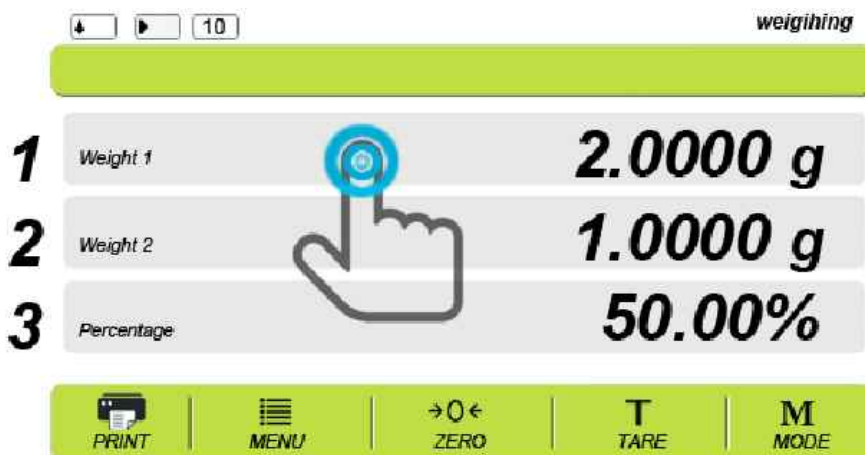
There are counting functions in the balance, And please keep the products have the same weight, and the minimum weight must be $\geq 0.5\text{mg}$.



1. Choose the sample quantity which you will put on the pan
2. Touch the weighing value you want weighing, here is the sample weight, after the weighing stable touch again, the result will check and store.
3. Touch here and weighing the total weight, and touch again check the weight.
4. The quantity will be show here.

8.5. Percentage Function

Check the weight percentage function:



1. Choose the 100% which you will put on the pan
2. Touch the weighing value you want weighing, here is the sample weight, after the weighing



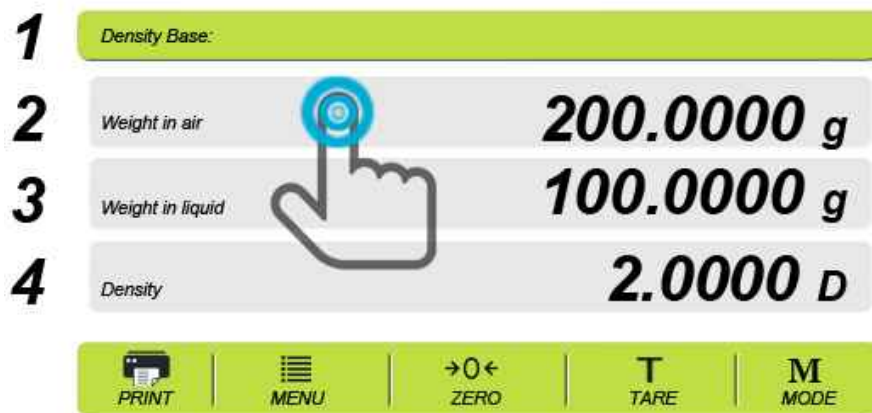
stable touch again, the result will check and store.

3. Touch here and weighing the total weight, and touch again check the weight.

4. The percentage will be show here.

8.6 Density Function

Same operation with counting function, just touch the air weight and weighing in the air, then weighing in the liquid, the result will show in the display.

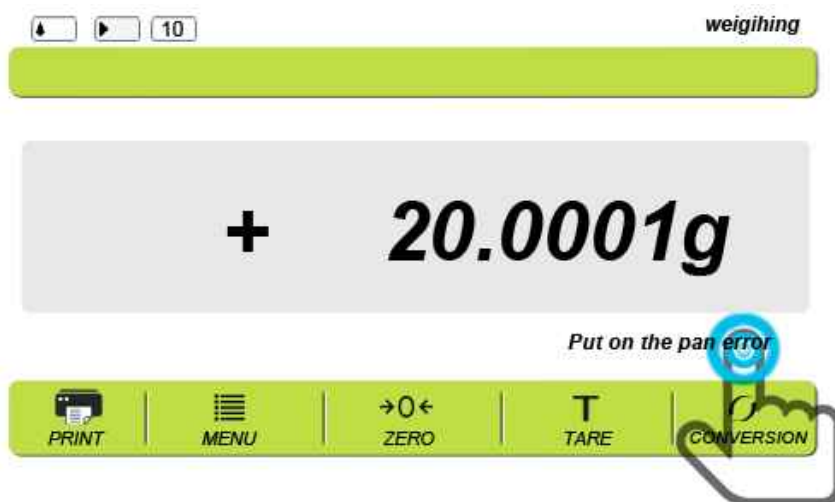




09. Fault Judgement

If you come across any problem, you can check it by you self and find the reasons.

FAULT	RESON	EXCLUDE
No display	Not connected to the power supply; Fuse is broken; Power transformer damage;	Plug in the power line; Replace the fuse; Replacement of power transformer; Contact factory
Weighing unstable	Bad working conditions; The wind screen is open ; Something between the table and balance ; The power unstable ; Weighing unstable ;	Keep the environment stable,close the windows and doors ; Close the glass door ; Take away the things ; Connect the stable power ;
The weighing digits wrong	The balance not calibration. Not tare before weighing. No adjust the level.	Calibration. Tare before weighing. Adjust the level feet.



10. Output Data

1	Model or a decimal point
2	A space or a decimal point
3	A space or *
4	+ or - or a decimal point
5	data
6	Data or a decimal point
7	Data or a decimal point
8	Data or a decimal point
9	Data or a decimal point
10	Data or a decimal point
11	Data or a decimal point
12	Data
13	Unit 1
14	Unit 2
15	Unit 3
16	Enter
17	Wrap



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