



# PRECISION BALANCE LB-24PBL

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### 1. Safety Measures

- 1) The working room should be clean and dry.
- 2) The balance should be placed on a solid stable horizontal and plain flat surface.
- 3) Avoid locations in which balance can get exposed to any of the following situations:
  - Airflow coming from the air conditioner, fans, doors, or windows.
  - Vibration from surrounding or nearby equipment.
  - Direct sunlight or radiation
  - Electromagnetic waves or fields.
- 4) Do not use the balance under high humidity or high dust.
- 5) When moved from a colder to a warmer place the moisture condensation inside the balance will influence the accuracy and reliability of the scale.
- 6) Avoid using the balance to get exposed to explosive combustible or corrosive gases.
- 7) Avoid extreme temperatures or exposure to direct sunlight or air conditioners.
- 8) The ideal working temperature is 17.5 °C – 22.5 °C with a fluctuation temperature no higher than 1 °C/h.
- 9) Keep the balance clean.
- 10) Do not stack material on a balance scale when not in use.
- 11) Use the correct power supply and voltage.

## 2. Introduction

**Precision Balance LB-24PBL** is a table top balance equipped with a maximum weighing capacity of 5000 g and is designed with high precise sensor that offers smart balancing with minimum error. LCD display for visual monitoring of the measured weight and operational buttons for manual operations. Unique features of count, percentage and multiple unit conversion.

## 3. Features

1. Weighing capacity- 5000 g
2. High precision load cell sensor
3. Accuracy of 0.01 g
4. Dynamic weighing with count, percentage and multiple unit conversion feature
5. Dual anti- corrosive SST and ABS pans
6. Automated 10 point linear calibration
7. Fluctuation free readings
8. Rechargeable batteries
9. Large backlight display for visual monitoring of the weight

#### 4. Specifications

Model	LB-24PBL
Weighing capacity	5000 g
Minimum weighing	0.01 g
Pan size	160 mm
Operational temperature	5 °C – 25 °C
Calibration system	Internally calibrated weight
Interface	RS232
	RS232, RS485
Display	LCD
Power	220 V / 110 V
Bottom thickness of weighing plate	3.8 mm
Outer dimension	330 × 210 × 100 mm
Weight	14 kgs

#### 5. Applications

Precision Balance LB-24PBL is used for sample/standard preparation, formulation, differential weighing, density determination, interval weighing, and pipette routine testing.

## 6. Operations

### 6.1 Starting up

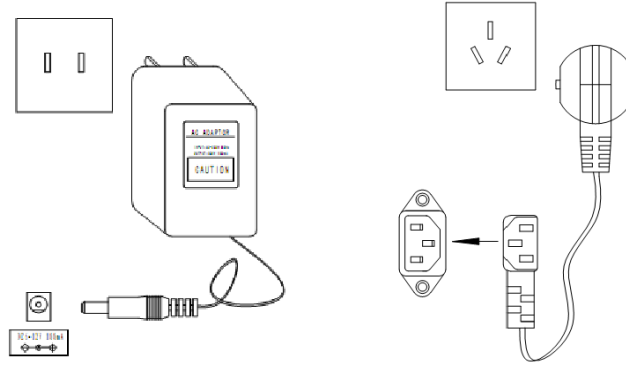


Figure.1

- Plug in one end of the power adapter or power line to the balance input and another end connecting the AC power supply.
- Turn **ON** the power.



Figure.2

### 6.2 Calibration

- Turn **ON** the power and preheat it for half an hour then start the calibration it will be more accurate.
- Take 330g/10mg for example.
- Press “ **CAL** ” (calibration) “for 3 seconds. when there is no subject on the balance.
- It enters the calibration status, and it appears as “ **CAL-d2**” then “ **200.00g**” flashes now put 200g weight on it will display as “ - - **CAL-**” and then “**200.00g**”.
- This means entering the weighing status if the weighing is not accurate then repeat the above said calibration steps.

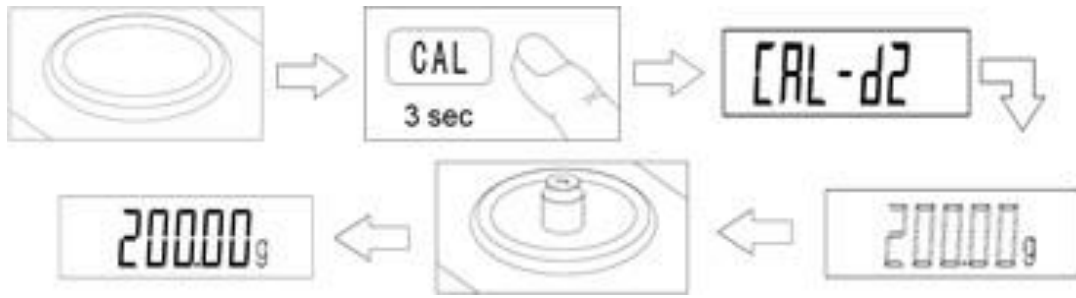


Figure.3

**Linear calibration:**

- Press “ CAL ” (calibration)” (for 0.1mg accuracy balance).
- Press TARE for 3 seconds it enters the calibration status then press CAL till it appears “ CAL-L ” it will enter the linear calibration and then put on the weight by the data on display, one point for calibration has been done, and fixed calibration data will be on display.
- Take OFF the weight the next calibration data is on flashing now put the weight till all points for calibration have been done.

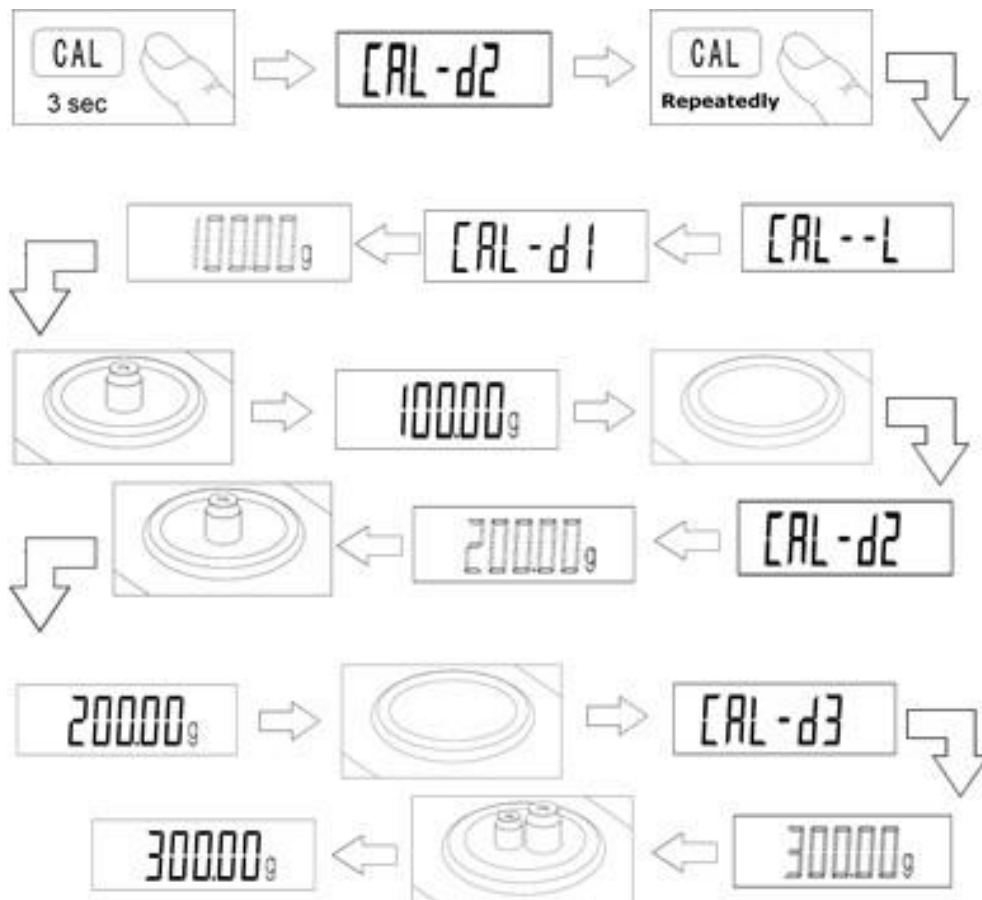


Figure.4

### 6.3 Weighing



Figure.5

- After preheating or calibration put the subject on the balance till a black point on the bottom left side disappears and the value of the subject can be read.
- The max capacity of the balance is +9e and appears when it is turned ON (e=10d, d is a minimal readout to appear).

### 6.4 Tare



Figure.6

Press **TARE** the tare weight of the pan to be taken out.

### 6.5 Backlit

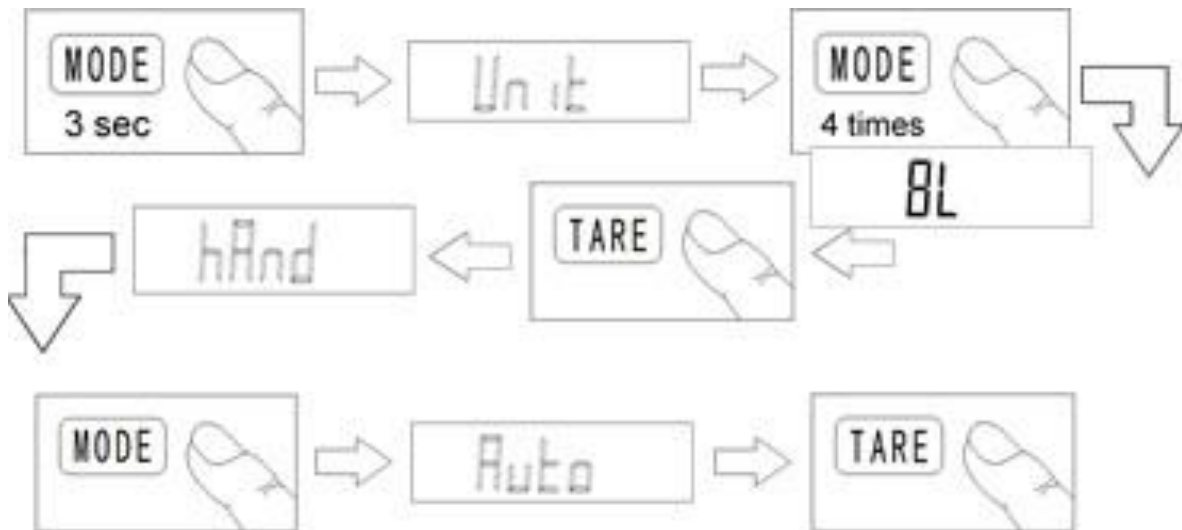


Figure.7

- Then backlit is **ON** when the balance is turned **ON**.
- Press **BL** to turn **OFF** the backlit and the service time of the balance can be prolonged.
- Switch **OFF** the backlit in case of using the rechargeable battery or dry battery.

## 6.6 Zero-tracking & Auto tare

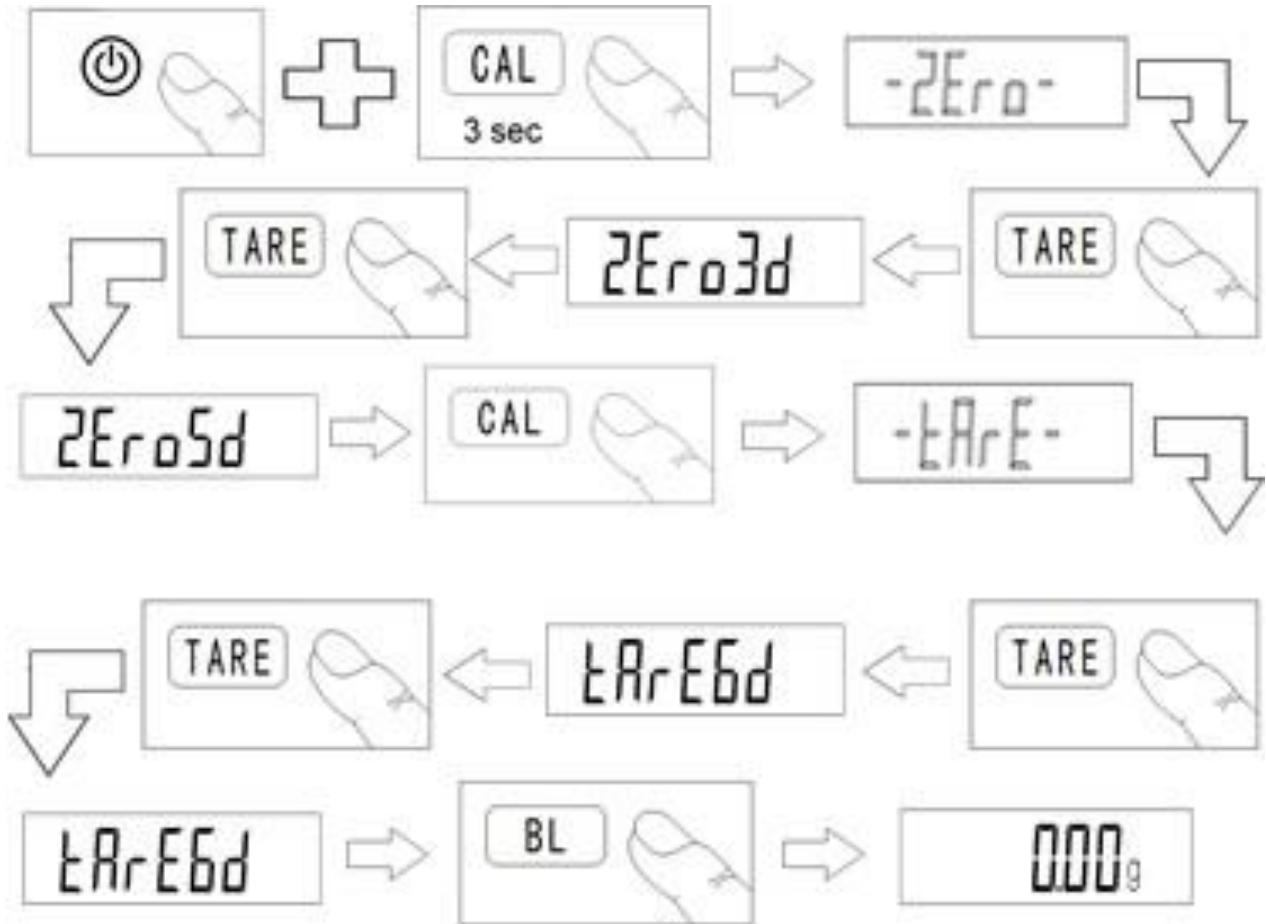
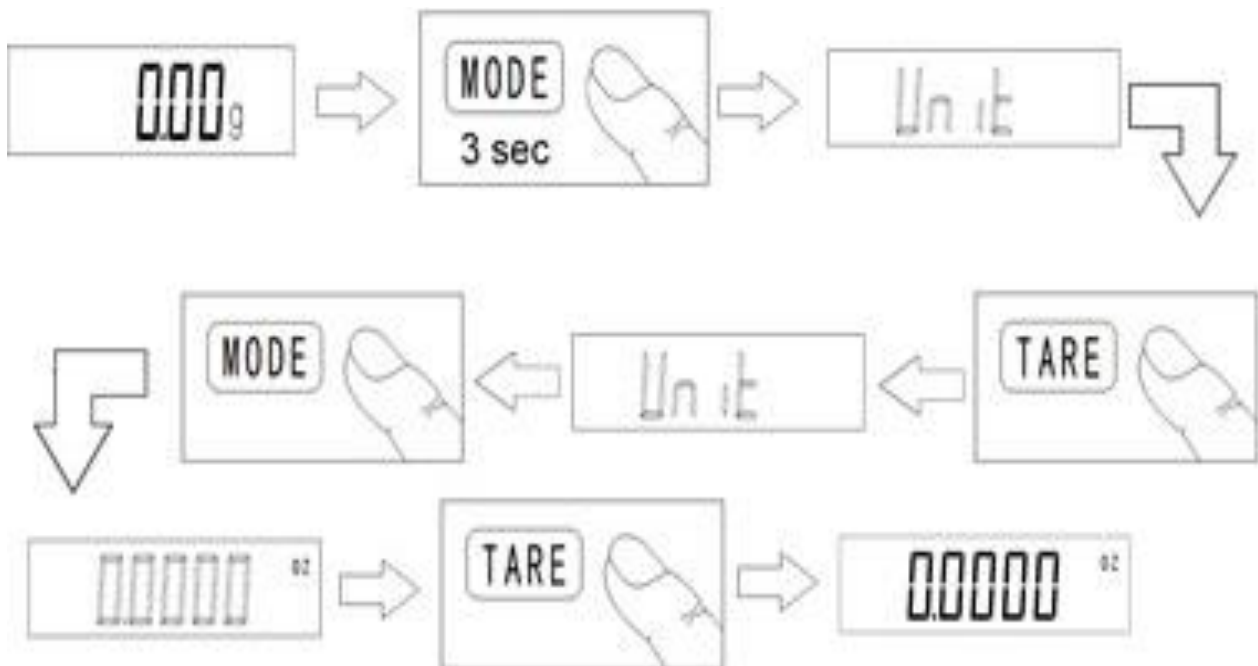


Figure.8

- Press **CAL** at the same time as turning **ON** the power (within 3 seconds) till "**Zero**" flashes then **TARE** press till "**Zero\*d**" displays.
- Press **TARE** repeatedly as "**Class ! \*variation from 0-20**", "**Class II\* variation from 0-5**", and "**Zero0d**" means no zero point tracing.
- Press **CAL** again "**-tare**" flashes then press **TARE** "**tare\*d**" gets display.
- Press **TARE** again class I "**\* " variation from 0-30**" class II "**\* " variation from 0-9**", "**tare0d**" means no auto tare.
- Setting ends press **BL** it restarts and is back to normal weighing mode.

## 6.7 Other functions

### 6.7.1 Unit conversion



**Figure.9**

- Press **MODE** for 3 seconds till “ **Unit**” flashes then press **TARE** “**Unit**” flashes on press then **MODE** choose the unit required.
- Press **TARE** to make sure unit conversion is completed.

### 6.7.2 Counting

- Press **MODE** for 3 seconds till “ **Unit**” flashes then press **MODE** ‘ **Count**’ flashes then press **TARE** make sure 10pcs get flash.
- Press **MODE** basic counting number can be changed from “**10pc - 500pcs**” the bigger the number, higher will be the counting accuracy.
- Put the same number of the articles as per it is flashing data on display then press **TARE** to make sure “-----” gets displayed then the counting setup is completed when a single article for counting is less than 2d it shows as “**no-Cou**” the counting setup cannot be completed.

Taking an article of 10 pcs counting for example:

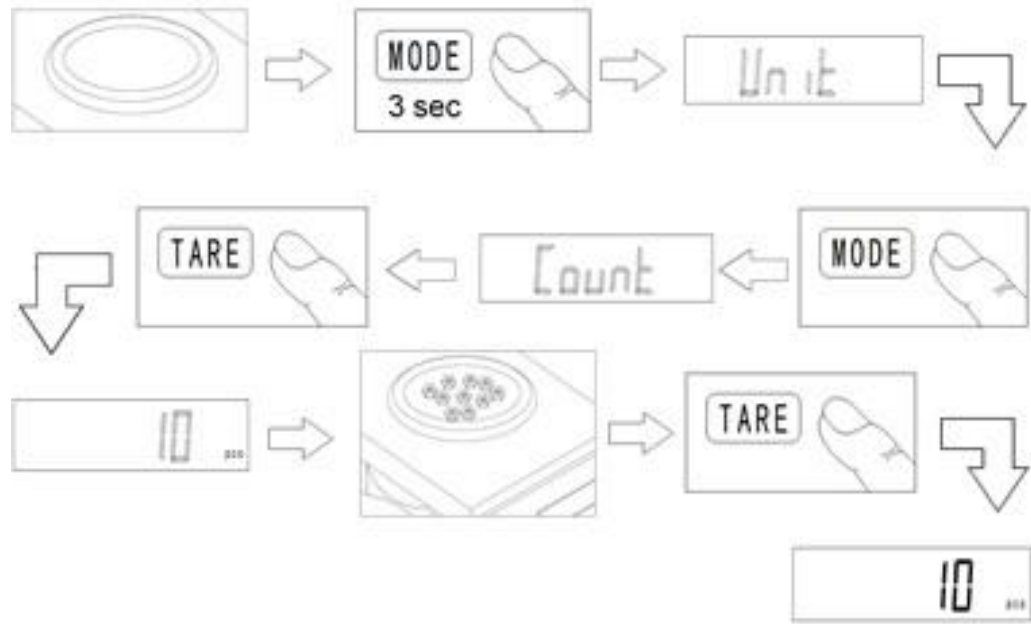


Figure.10

### 6.7.3 Percentage

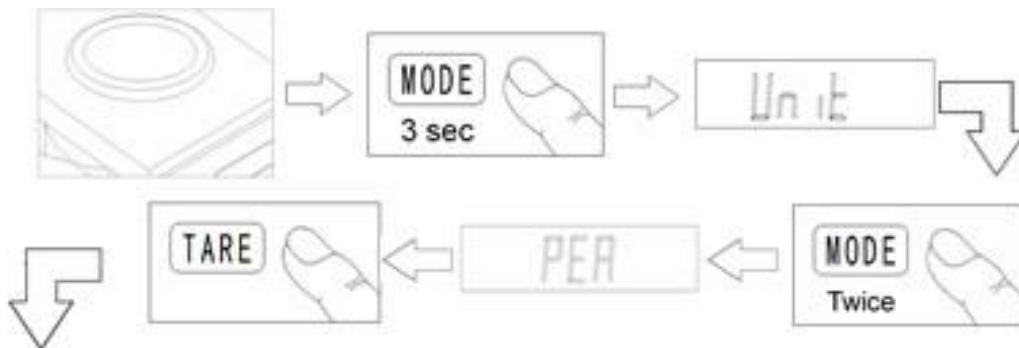


Figure.11

- Press **MODE** for 3 seconds till “Unit” flashes on then press **MODE** two times “PER” flashes on and press **TARE** to make sure “100%” flashes on and put on the article to beset as 100%.
- Press **TARE** “100%” on display take out the article and put on the other substances thepercentage on display is that of the one substance vs the former article.
- In case the value of the setting article divided by 100 is less than 2d “no-PER” appears on display which means that the percentage setting up cannot be completed the mass of the article to be set has to be increased.

6.7.4 Printing



Figure.12

- Press **MODE** for 3 seconds till “Unit” flashes on then press **MODE** three times “Prt” on display.
- Press **TARE** to make sure “hand” is on display.
- **Manual printing mode:** Press **TARE** again to enter orienting mode and press **PRT** or printer code key to end the printing setup.
- **Auto printing mode:** After above mentioned “hand” is displayed on the display press **MODE** again “Auto” gets displayed then press **TARE** put in the substance which should be bigger than 5D the weight value on display will be printed out after the black point for stable reading disappears.
- **Continuous printing mode:** After above mentioned “hand” is on display then press **MODE** two times press **TARE** to make sure that the data can be printed out continuously.

6.8 IR sensor control function

The steps for shut down IR sensor function as below:

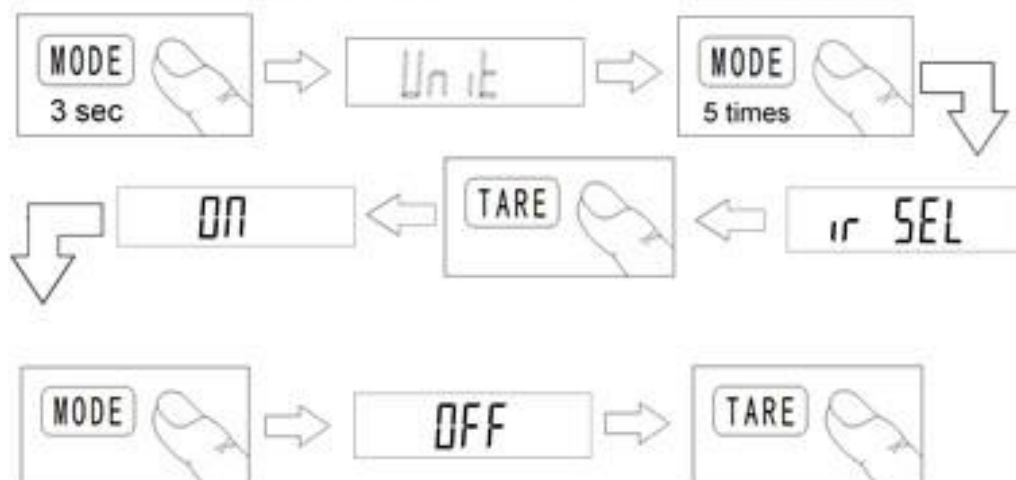


Figure.13

- Put the finger above the “**IR sensor** “ ( IR sensor window ) it can control and carry out the calibration and tare operation.
- For tare operation just put the finger above the IR window shortly it can be done.
- For the calibration put the finger above the IR window for 3 seconds and it can be calibrated.
- When the IR sensor is working its red indicator light is **ON**.
- To touch two IR windows the function shuts down and the function can be restored when turning on the balance again.
- For Mode function it can be turned **ON** or turned **OFF**.
- The IR sensor control function could be possibly affected by strong light or in the case of nearby windows.
- After turning **ON** the balance if a black arrow appears on the upper right side of the screen it means that the IR sensor function has been shut down automatically so adjust its position and turn **ON** the balance again.
- During the operation if a single sensing red indicator lights up just move the balance to the position where the red indicator lights **OFF** and it will start to work normally after the data on display comes to zero.

## 7. Troubleshooting

### 1) Unable to turn ON the balance

- Check the power adapter properly plugged in.
- To replace it with a new adapter if it is damaged.
- Insert the overlay connection wire or replace it with a new one if the overlay is disconnected or damaged.
- Main board damaged.

### 2) All characters on display after turning ON and unable to return to normal weighing status

- The balance crashed due to the AD chip being affected turn **OFF** the balance and turn it **ON** again after 30 minutes.
- The switch of overlay is damaged to be replaced with a new one.

### 3) S-cal displaying after turning ON unable to work normally

- The balance crashed due to the AD chip being affected turn **OFF** the balance and turn it **ON** again after 30 minutes.
- To replace it with a new AD chip if it is damaged.
- Load cell wires disconnected and check the wire connector.
- To replace it with a new one if the load cell is damaged.

### 4) Zero appears after turning ON even after putting the weighing substance, unable to work

- The balance crashed due to the AD chip being affected turn **OFF** the balance and turn it **ON** again after 30 minutes.
- Load cell wire disconnected.
- Check the wire connector.
- To replace it with a new one if the load cell is damaged.

### 5) "Zero" flashing after turning on the balance

- The calibration button is damaged.
- To replace with a new one or replace with a new overlay
- The "**calibration**" function is affected by hard lights for the IR sensor function.
- To move the balance position till the red indicator of "calibration" sensoring window lights **OFF**.

### 6) The G series with IR sensoring function comes to zero after turning on, and not on effect:

- Two IR sensoring windows auto turn **OFF** due to being affected by hard light.
- Move the balance to the position and turn on it again till two IR windows work normally.

**7) Nothing on display after turning on the balance, except backlit on flashing**

- Pin 12 or pin 13 of the program slices (D78F0511A) on the main board have faulty soldering with pin 6 or pin 7 of the screen driving chip (BL55066).
- To have them soldered firmly.

**8) No Max. capacity appears initially on the screen after turning on but only the random numbers or white screen on display**

The main board storage chip was damaged, to replace it with a new one.

**9) Zero point not stable, put on small substance, the reading data on display is much more than its real weight or "-----" appears. Unable to have a normal calibration after press the button**

- Put on the wrong weight when calibration or the weighing substance is much less than the calibration weight which leads to the inner criterion amplified.
- Press till " CAL-d \* " is on display ( it has different d on display by different capacities).
- Press  repeatedly till " CAL- d " which is as same as max. capacity, then keep waiting till " CAL- d " flashes on the screen, put on the weight corresponding to the data on display.

**10) The reading value stopped suddenly during the weighing process and remained unchanged even by adding the substance weight.**

- The balance crashed due to static electricity interference to shut down and restart it.
- If it happens frequently please contact our company for a solution.

**11) "No Cou " appears during the counting process**


A single substance weight for counting purposes is less than 2d (d is an actual division value which is also a minimum reading on display).

**12) "No PEA " appears during the percentage process:**

- The substance sample weight for percentage measuring is less than 200d (d is an actual division value which is also a minimum reading on display).
- It has to be greater than 200d to carry out the percentage function normally.

**13) The balance with RS232C serial communication automatically shuts down or the data on display as well as the screen are all flashing at the same time**

- The RS232 serial communication chip (MAX232) on the main board was damaged.
- To replace it with a new one.

- 14) The printer cannot print out by pressing  after the balance with the RS232C serial communication feature connected to the printer.**
- Setup error for print output.
  - Among the balance mode functions set up data output mode as manual print mode.
  - Printing connection line disconnected checkup connection line plug to open the plug and check it, if necessary.

## 8. Accessories

### Optional Accessories

Rechargeable batteries



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