



**User manual**

# CONTENT

<b>Introduction</b>	-----	01	Filter level setting	-----	16
Safety Precautions	----	01	Print setting	-----	17
<b>Product overview</b>	-----	01	Interface Parameters	-----	18
<b>Product introduction</b>	--	02	<b>Operation</b>	-----	19
Product detail	-----	02	Simple weighing	-----	19
Button	-----	03	Piece counting	-----	19
Display information	-----	04	Percent weighing	-----	21
<b>Technical data</b>	-----	05	Density determination (optional)	-	22
<b>Balance set up</b>	-----	06	Dynamic weighing	-----	25
Leveling the Balance	----	06	Summation Function	-----	26
Connecting and Switching on		06	Pipette calibration	-----	29
Calibration	-----	07	Dual program switching	-----	32
Balance set up	-----	12	<b>Troubleshooting</b>	-----	33
Unit conversion	-----	12	<b>Components List</b>	-----	33
Baud rate setting	-----	13	<b>Product Qualification Certificate</b>		
Time setting	-----	14		-----	33
Sensitivity setting	-----	15			

# Product Brief

JOANLAB 0.01mg Dual Range Analytical Balance CEB series analytical balance work on electromagnetic force compensation technology and micro processor which implements high speed stabilization and high reliability. It can be widely used in industry, agriculture, commerce, schools, scientific research and other institutions to quickly weighing the quality and quantity of objects.

## Safety Precautions

<Verify that the AC Adapter input voltage matches the local AC power supply.

< Sufficient spacing for balances: >15cm all around the instrument.



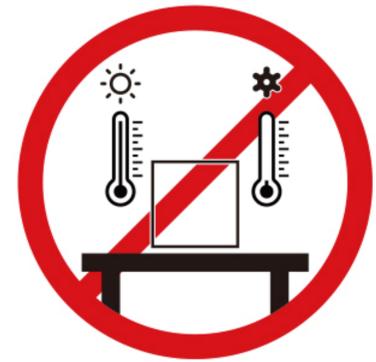
Avoid direct sunlight



Avoid vibrations



Avoid strong drafts



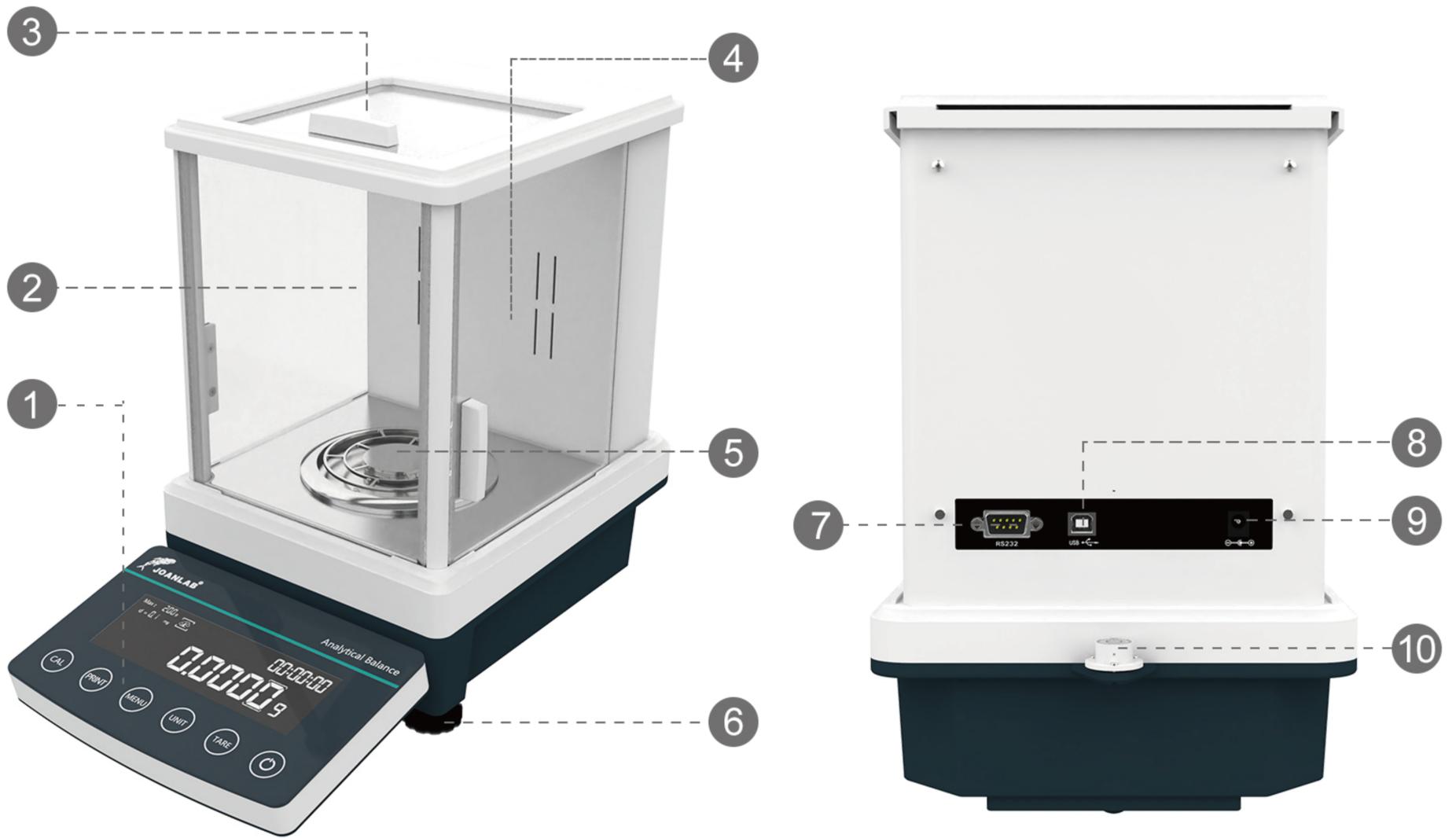
Avoid temperature fluctuations

## Product overview



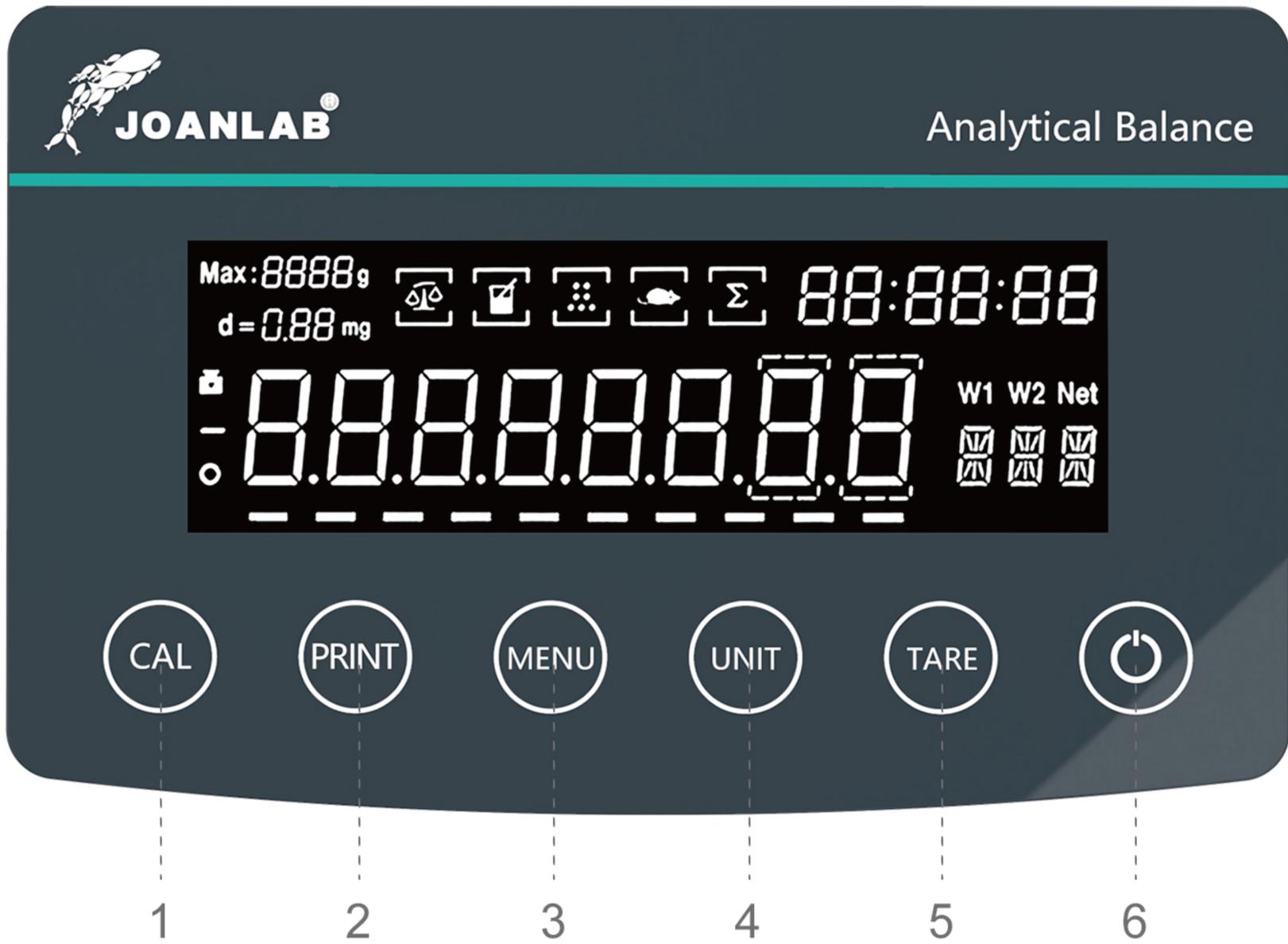
# Products introduction

## 1.Product detail



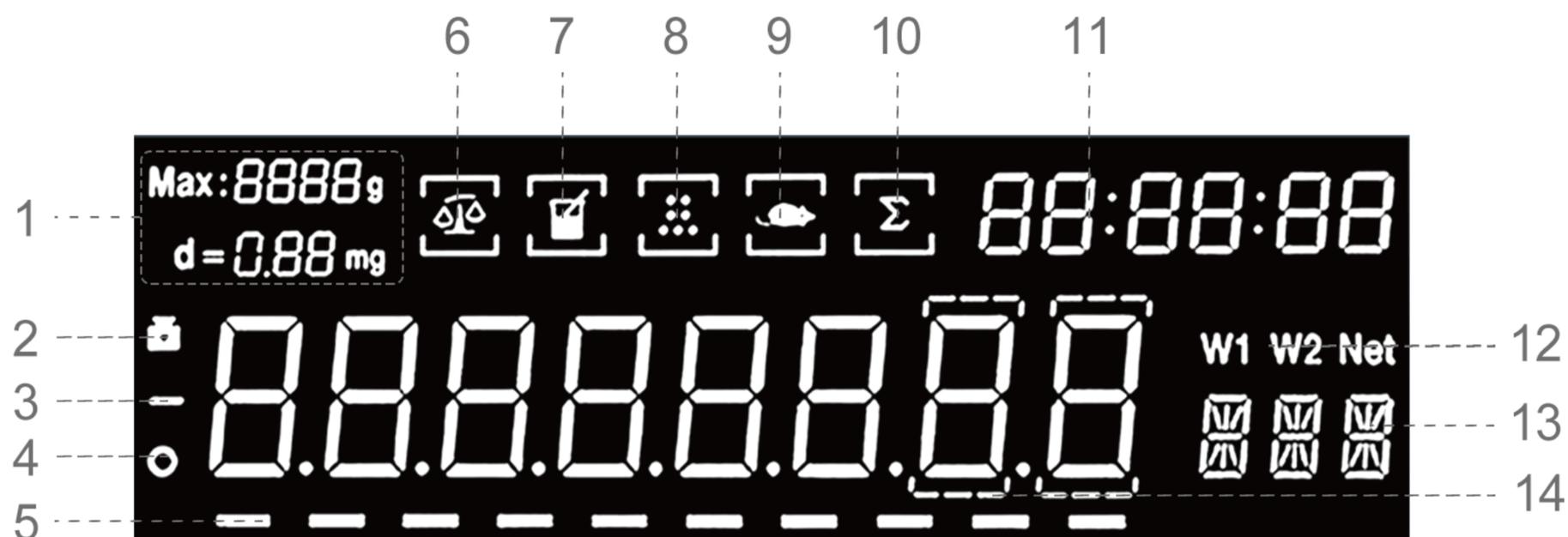
NO.	Name	NO.	Name
①	Terminal	⑥	Leveling feet
②	Front panel draft shield	⑦	RS232 interface
③	Top door draft shield	⑧	USB-B port
④	Side door draft shield(right/left)	⑨	Socket for poweradappter
⑤	Weighing pan	⑩	Bubble level

## 2.Button



NO.	Icon	Name	NO.	Icon	Name
1		Calibration key	4		Unit selection (g/oz/ct/mg...)
2		Print key	5		Peeling key
3		Menu	6		ON/OFF

### 3. Display information



NO.	Display	Describe	NO.	Display	Describe
1	Max: 8888g d = 0.88 mg	Model display	8		Piece counting
2		Internal calibration sign	9		Dynamic weighing
3	-	Negative weight value	10		Summation
4	○	Stable value	11	88:88:88	Time setting
5	-----	Progress bar	12	W1 W2	W1: weight in air W2: weight in liquid
6		Weighing sign	13		Unit display
7		Density determination	14		Unauthenticated numbers

# Technical Data

## Model

**CEB1035**

**CEB2055**

**CEB2055N**

Picture



Weighing range	120g/31g	220g/51g	220g/51g
Accuracy	0.1mg/0.01mg		
Stability time	约2s/3s		
Preheating time	30~60min		
Weighing unit	g/oz/ct/mg/customized		
Minimum value	0.1mg/0.01mg		
Repeatability	±0.1mg/±0.03mg		
Linear error	±0.2mg/±0.03mg		
Calibration mode	CEB*****series(external calibration) <b>CEB****N series (internal automatic calibration, intelligent dynamic compensation)</b> ①Intelligent calculation and correction based on environmental temperature, humidity, vibration and other factors, making it easy and accurate.②Automatic correction during working intervals		
Output interface	RS232 /USB standard configuration		
Pan size	Φ90mm		
Product size	220*403*310mm		
N.W.	6.28kg		
Power supply	AC110V-240V		

# Operation Guide

## 1. Leveling the Balance

- 1). Put the balance on the stable desk, the desk can not be moved.;
- 2). Adjust the 2 Leveling Feet on the bottom, until the bubble is centered in the circle, then installing the scale pan :

<bubble right above  
clockwise rotate two  
leveling feet

<bubble right below  
counterclockwise  
rotate two leveling feet

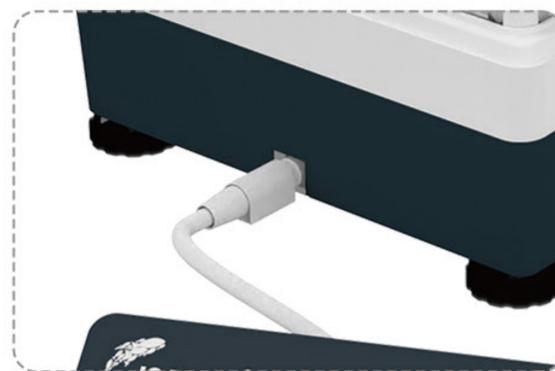
<bubble left  
counterclockwise rotate left  
leveling foot clockwise  
rotate right leveling foot

<bubble right  
counterclockwise rotate  
right leveling foot  
clockwise rotate left leveling foot



## 2. Connecting and Switching on

- 1). Plug in the AC/CD adapter
- 2). Connect the terminal with the balance
- 3). Press ON/OFF button,  
balance enter the weighing interface



\*When the operating temperature changed, put the balance in the new place for 2 hours in the state of "power on", to make the balance comply with the new temperature.

Attention: If the number on display is not stable in first boot, this occurred by operating temprature you can press "TARE" botton repeatly and layaside for 30 minutes

### 3.CALIBRATION

In order to get accurate weighing result, balance should be calibrated before the below usage scenarios.

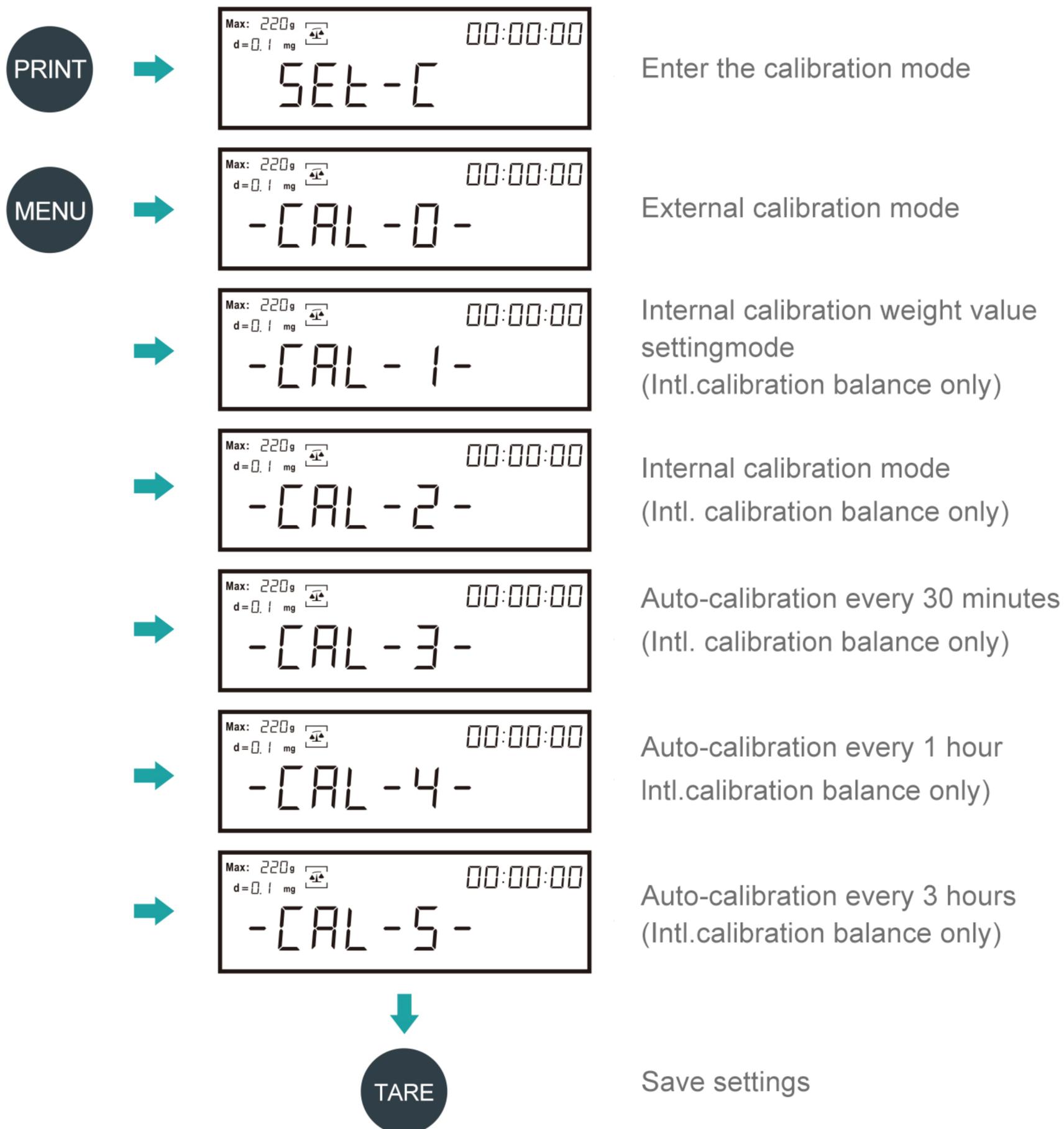
<Before first use

<Balance power off for long time or power error.

<After changing the operating environment.

<Perform regularly in weighing procedure.

(1)Chose the calibration methods(follow the sequence)



(2) External calibration(single-point calibration)

TARE



Balance back to Zero

CAL



Enter External calibration mode ("CAL-100" flicker)



Shows "CAL-100"



Finish the calibration

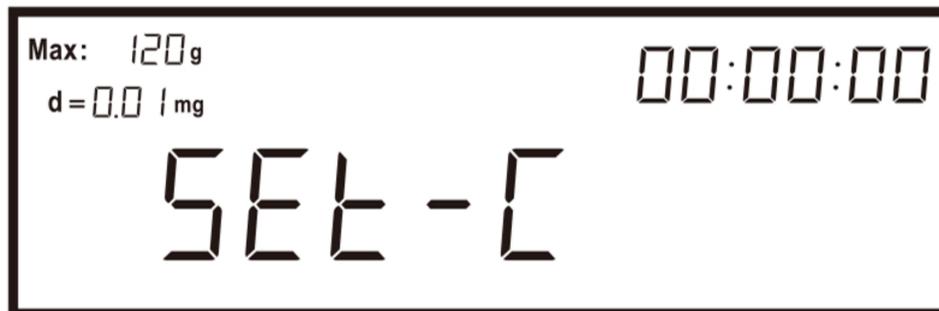
### (3) Linear Calibration

TARE



Balance back to Zero

MENU



Till display shows "SET-C"

CAL



Enter linear calibration mode Shows "LIN-0"



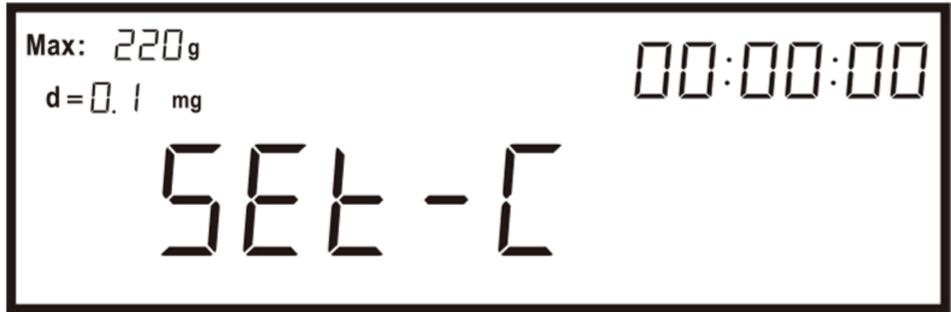
Follow the prompts to put the Corresponding weights(e.g.:CEB124)



Finish the calibration

(4) Internal calibration weight value setting(Intl.calibration balance only)

MENU



Enter calibration mode



PRINT



Chose the calibration methods



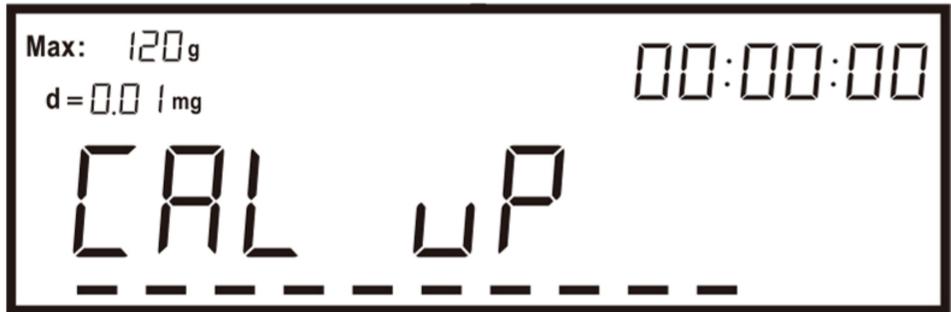
CAL



Shows "CAL-DN"



Put the corresponding weight(e.g.:CEB124)



Shows "CAL-UP"



Remove the weight

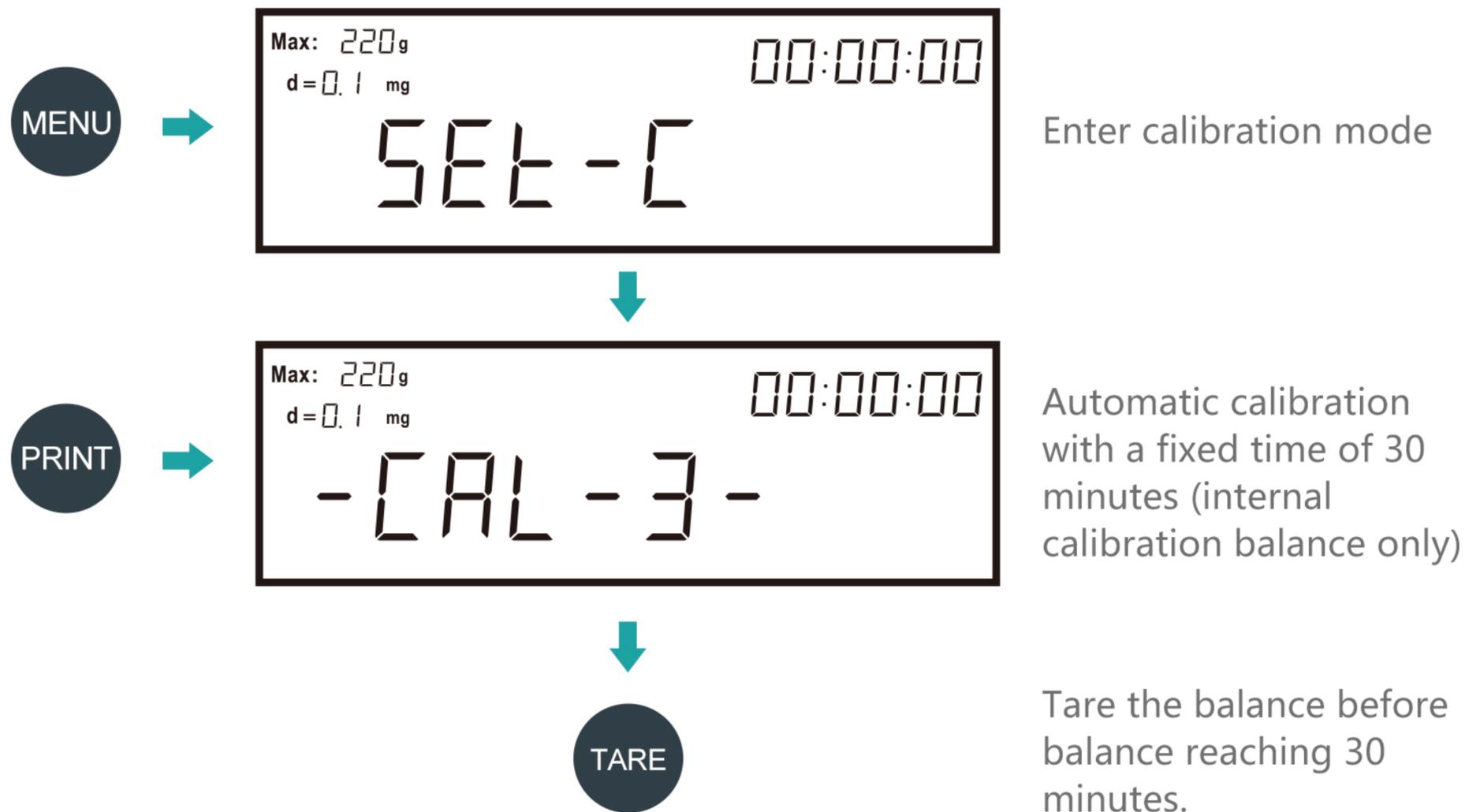


Finish the setting

## (5) Weight value setting

If the balance model is an internal calibration model, please directly press the calibration button to calibrate.

## (6) 自动校准



### Remark:

Balance should keep "0.0000", Tare the balance if balance not shown "0.0000" when reach 30minutes.

# 4.SET UP AND OPERATION

## (1)Balance set up

### 1).Unit conversion

TARE



Default unit "g"



Default unit "oz"



Default unit "ct"

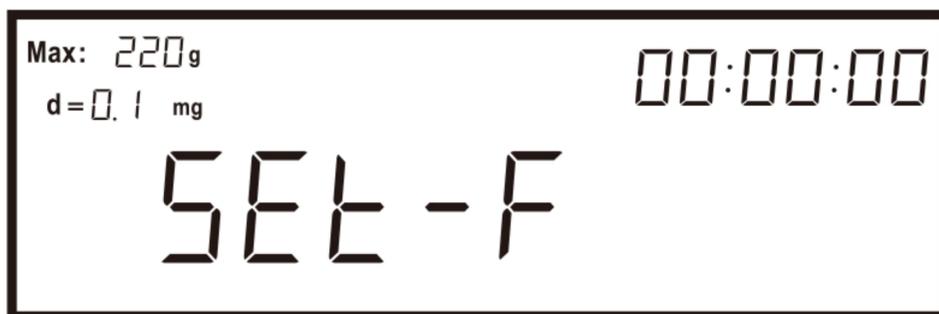


Default unit "mg"

Remark: Other units are customizable

2).Baud rate setting

MENU



Enter Baud rate setting mode



PRINT



Baud rate is 1200



Baud rate is 2400



Baud rate is 4800



Baud rate is 9600

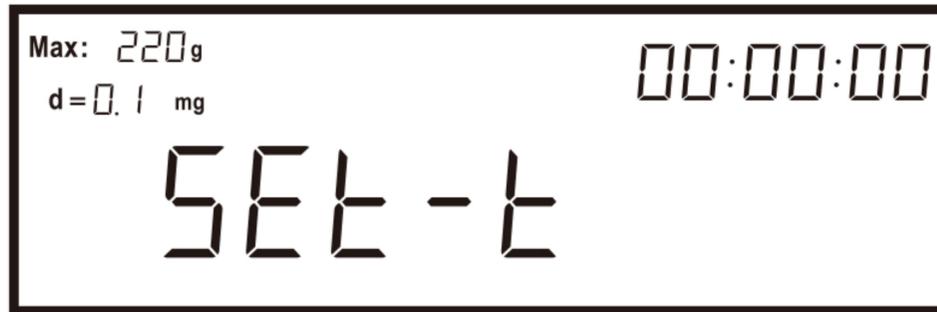


TARE

Save settings

### 3). Time setting

MENU



Enter time setting mode



PRINT



Set second

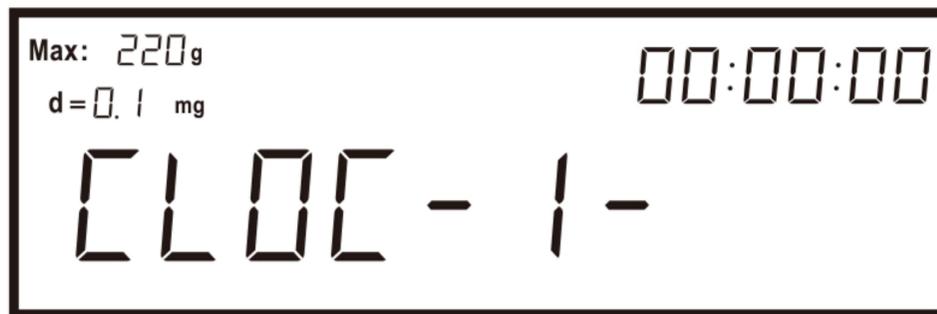


00:00:00

Set minute



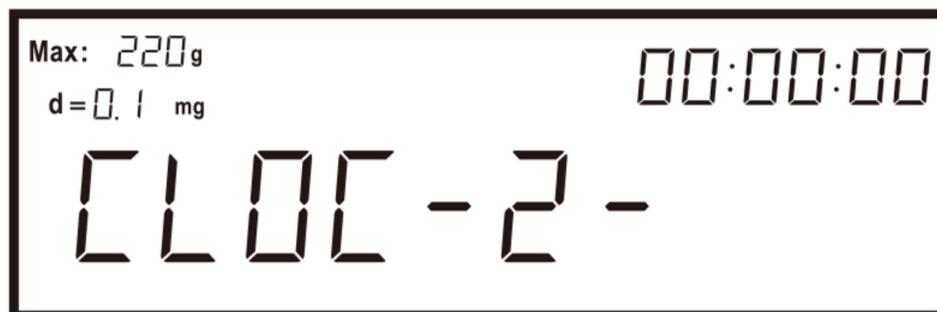
00:00:00



Set hour



00:00:00



CAL

1-2-3---9

MENU

9-8-7---1

CAL: increase  
MENU: decrease

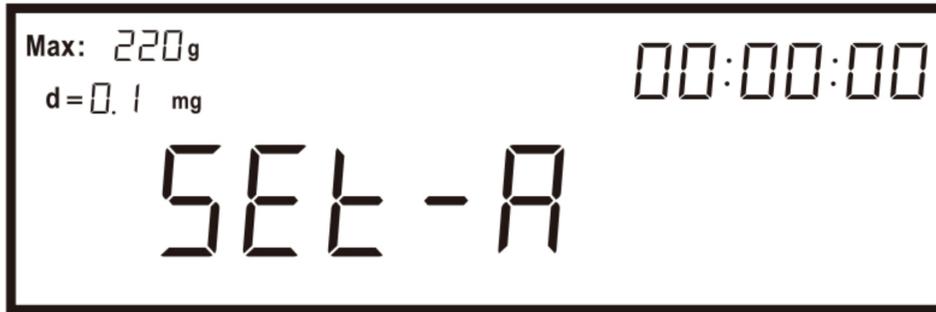


TARE

Save settings

#### 4).Sensitivitysetting

MENU

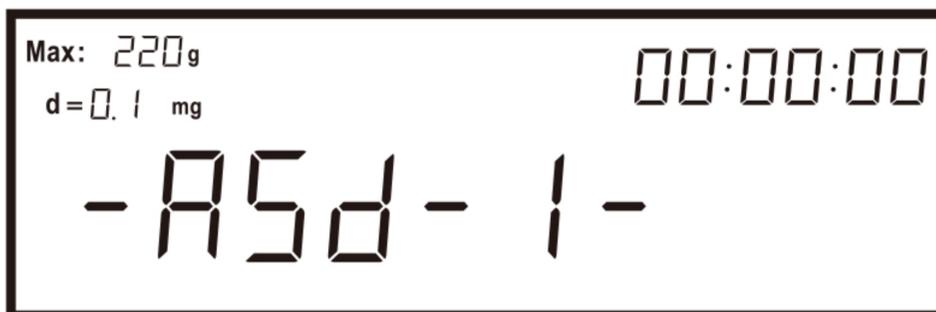


Entersensitivity setting mode

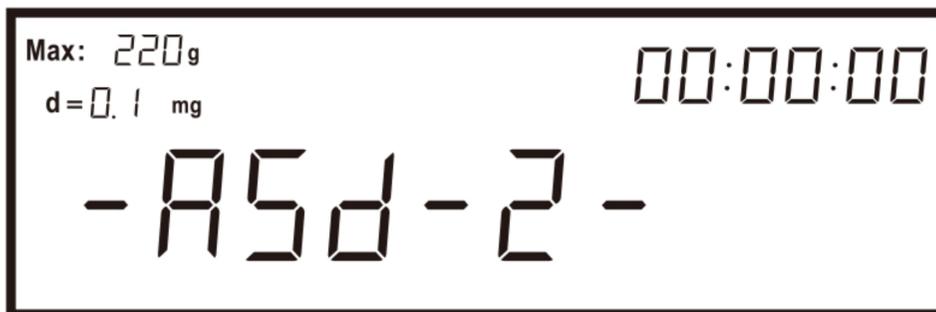
PRINT



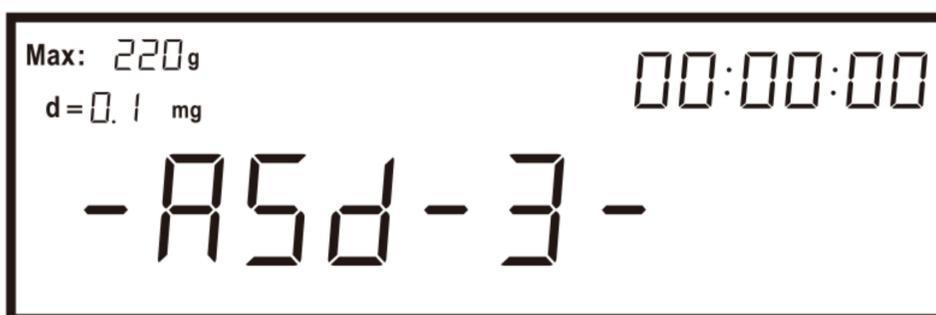
-ASD-0-highest sensitivity



-ASD-1-high sensitivity



-ASD-2-medium sensitivity



-ASD-3-LOW sensitivity



TARE

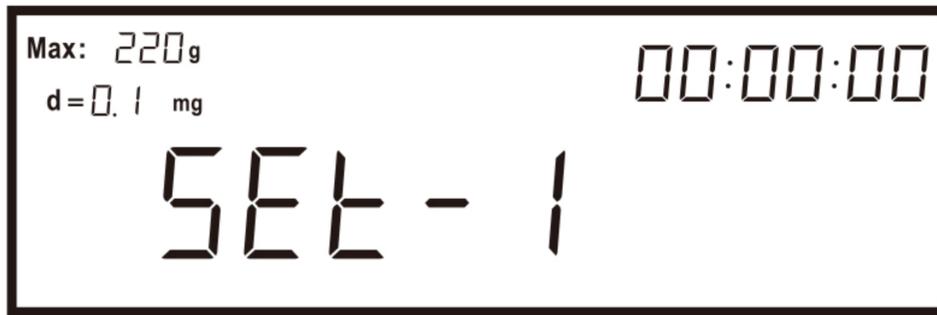
Save settings

REMARK:factory setting sensitivity“-ASD-3-”, suitable for most using environment.

Higher sensitivity required better environment, Do not adjust the sensitivity without consulting the factory.

## 5).Filter level setting

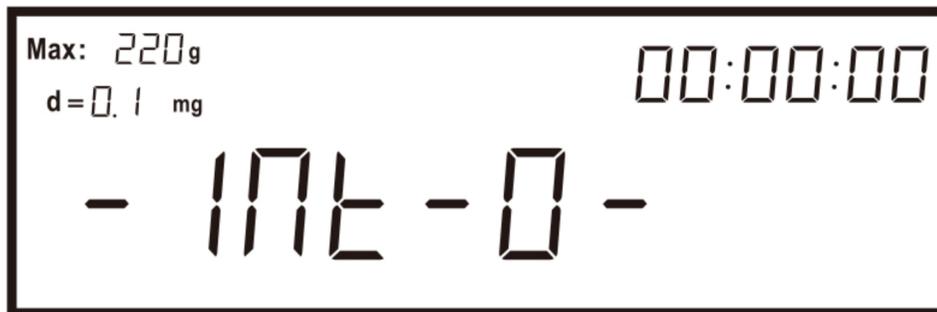
MENU



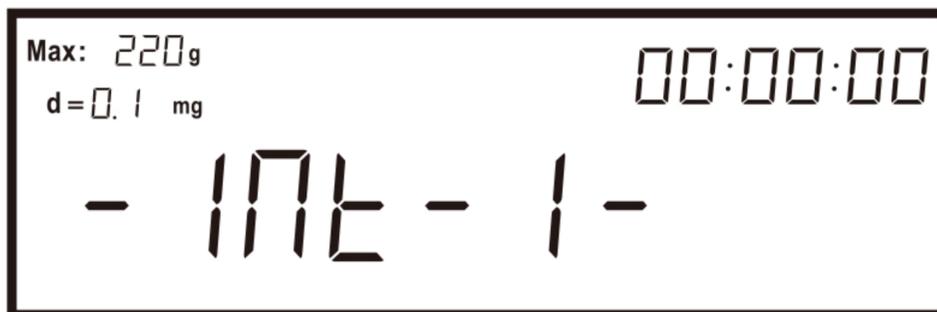
Enter Filter level setting mode



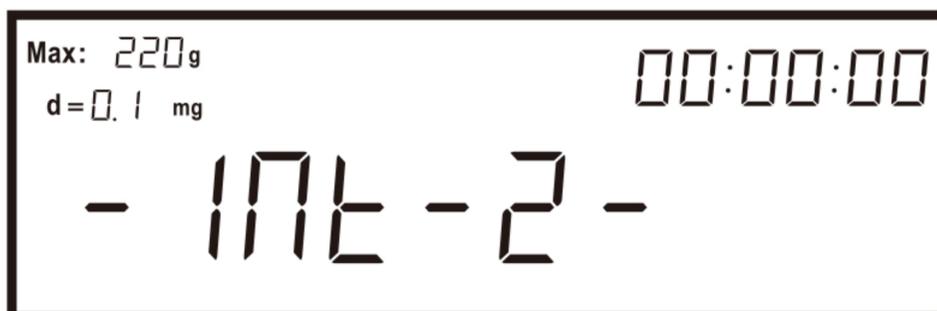
PRINT



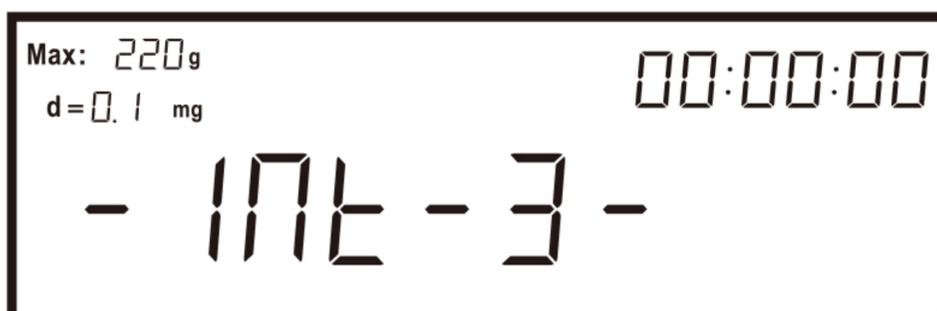
-Int-0- filter level highest



-Int-1- filter level high



-Int-2-filter level medium



-Int-3- filter level low



TARE

Save settings

REMARK: filter level is the internal calculating time of balance, factory setting is "-Int-3-", do not change by yourself without professional instruction.

## 6).Print setting

MENU



Max: 220g  
d=0.1 mg  
00:00:00  
SEt-F

Enter Print setting mode



PRINT



Max: 220g  
d=0.1 mg  
00:00:00  
-Prt-0-

-Prt-0-press "PRINT"  
printing



Max: 220g  
d=0.1 mg  
00:00:00  
-Prt-1-

-Prt-1-interval 0.5s  
printing



Max: 220g  
d=0.1 mg  
00:00:00  
-Prt-2-

-Prt-2-interval 1s  
printing



Max: 220g  
d=0.1 mg  
00:00:00  
-Prt-3-

-Prt-3-interval 2s  
printing



Max: 220g  
d=0.1 mg  
00:00:00  
-Prt-4-

-Prt-4-interval 3s  
printing



TARE

Save settings

## 7).Interface Parameters

Rs232 interface:

<Connection

Balance (9 pins)	PC/Printer(9 pins)
RXD(Input)2	2
TXD(Output)3	3
GND(Ground)5	5

<Output data format

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Type or data	Data	Data	Data	Data	Data or dot	Data or dot	Data	Data	Data	Unit	Unit	Unit	Return	Line feed

## (2)OPERATION

### 1).Simple weighing



Under weighing interface

Put object on the scale pan



Get object weight

### 2).Piece counting

MENU



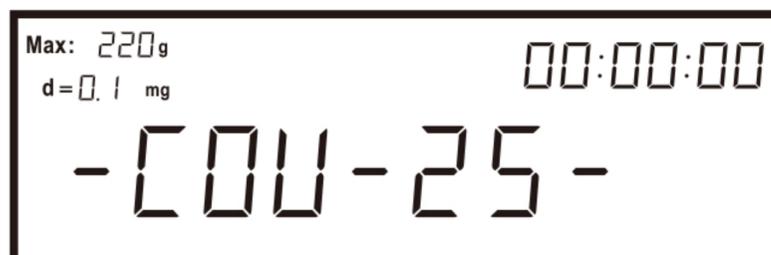
Enter piece counting mode



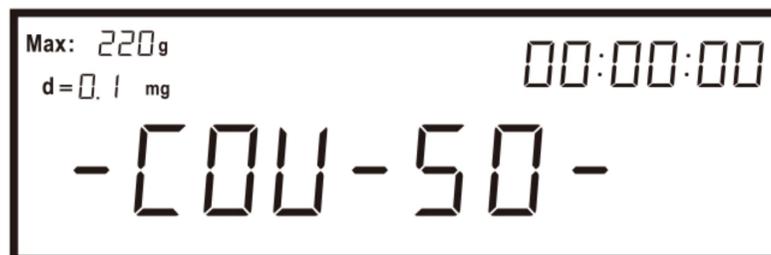
PRINT



-COU-10-sample quantity  
10PCS



-COU-10-sample quantity  
25PCS

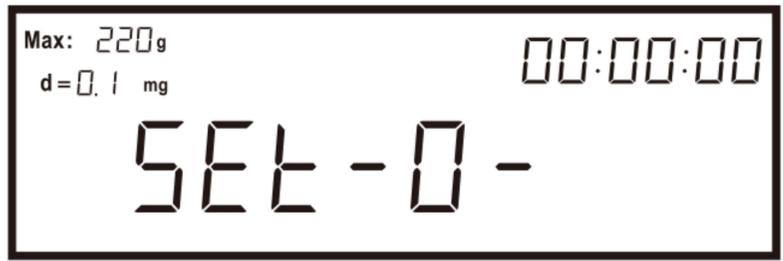


-COU-10-sample quantity  
50PCS



TARE

MENU



Enter piece counting mode

PRINT

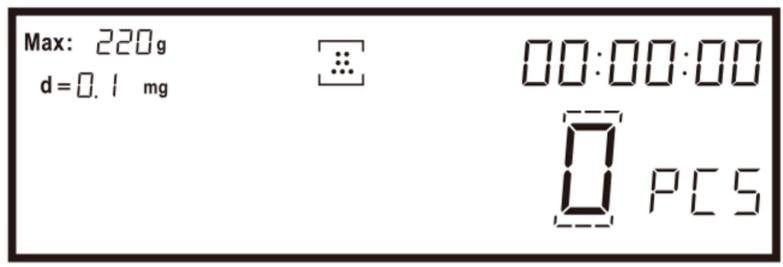


Sample quantity 10pcs(e.g.)

TARE

Save settings

UNIT

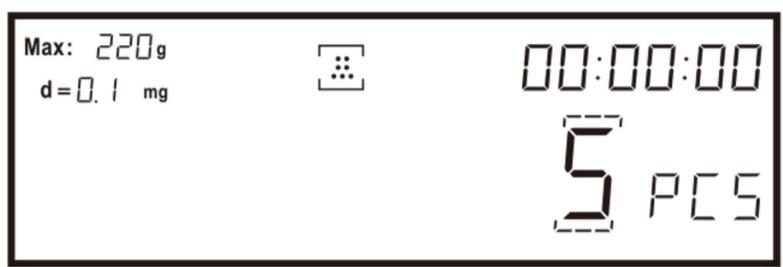


Enter piece counting interface

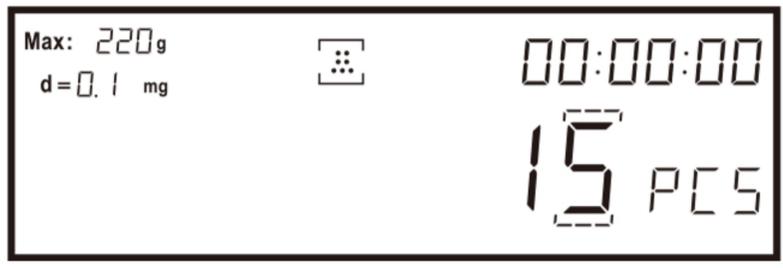
MENU

Put 10 pcs sample according to above setting

Press "MENU" button to confirm the the sample weight, and start weighing



Put 5pcs sample will show 5pcs

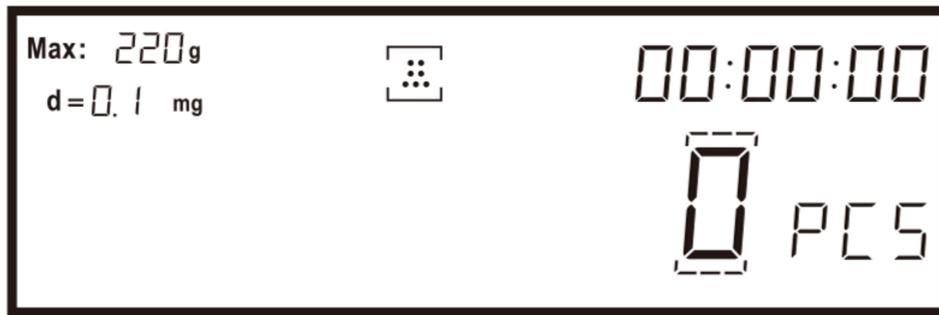


put 15pcs sample will show 15pcs

Remark: If test the same sample second time, don't need re-sampling.

### 3).Percent weighing

UNIT



Enter percent weighing mod



Put the contrast target sample e.g.: 2pcs screws

MENU



Save the sample weight Shows "100.00"(100%)



Put the contrast sample e.g.: 1pc screw, shows 50.00(50%)

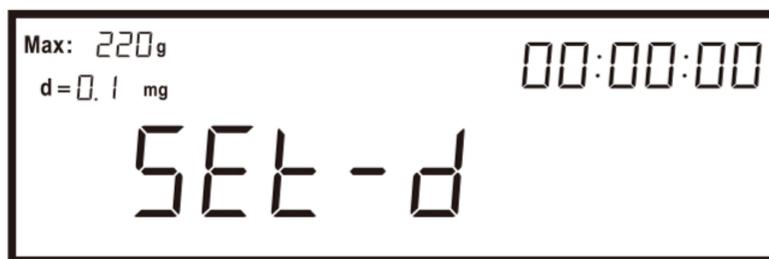


Put the contrast sample e.g. 1pc screw, shows 200.00(200%)

Remark: If use the same contrast second time, don't need re-sampling

#### 4). Density determination (need gravity kit - optional)

MENU



Enter density determination mode



PRINT



-dEn-0-Close density weighing



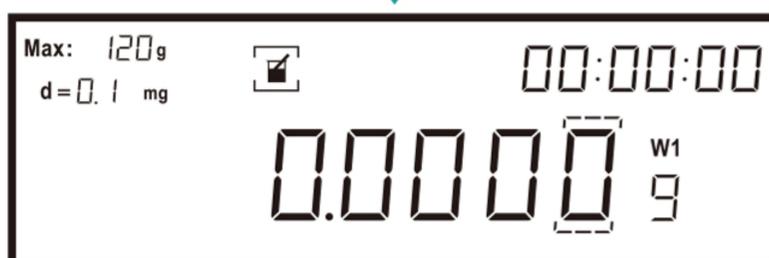
-dEn-1-Open solid density weighing



-dEn-2-Open liquid density weighing



TARE



Save settings, shows  and "W1"

MENU



Enter density determination mode

PRINT



-dEn-1-Open solid density weighing



TARE



Save settings, shows  and "W1"

MENU



Press "MENU" when shows 

CAL



Enter auxiliary liquid density value setting if the auxiliary liquid is water, set 1 g/cm<sup>3</sup>

PRINT

Value increase **CAL** Value decrease

TARE



Save density value setting

Put on pan 1



e.g. weighing screw

UNIT



Put on pan 2



PRINT



Show result of density

MENU



If do not measure, enter density determination mode again

PRINT

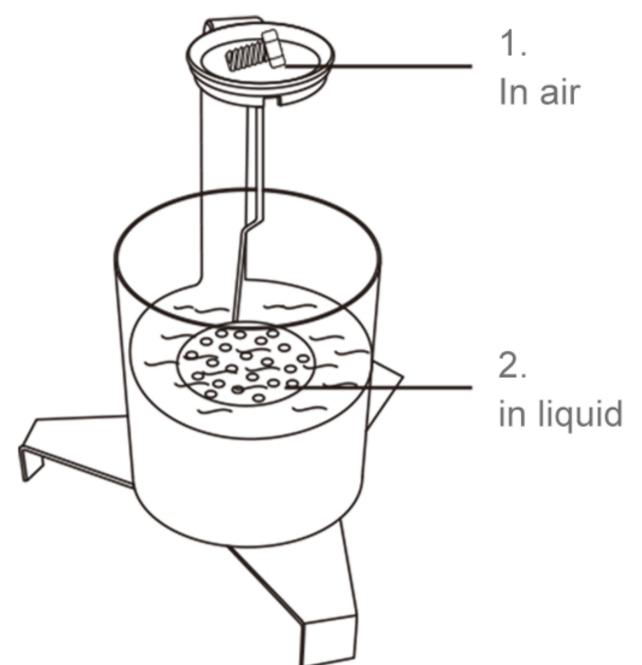


-dEn-0-Close density weighing



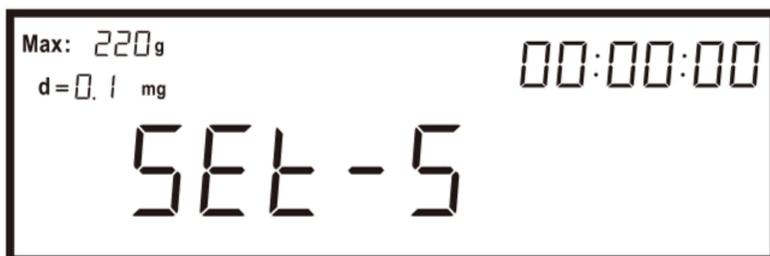
TARE

Exit density determination



## 5).Dynamic weighing

MENU



Enter dynamic weighing mode

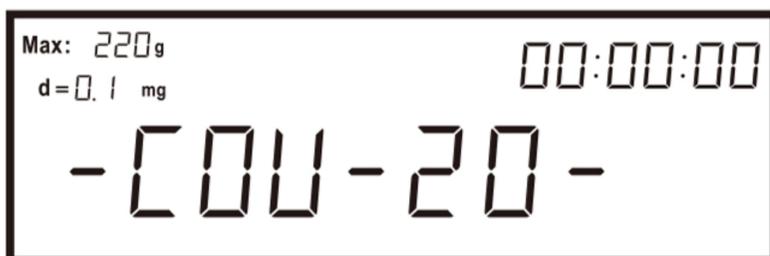
PRINT



-COU-0-close dynamic weighing



-COU-10-data sampling  
10 times



-COU-20-data sampling  
20 times

TARE



Save setting. display shows



Put the sample on the scale pan

PRINT



flicker,  
dynamic weighing starting



stop flickering,  
weighing finish display  
shows the final result



## 6).Summation Function

MENU



Max: 220g  
d=0.1 mg  
00:00:00  
SET-E

Enter summation function mode



PRINT



Max: 220g  
d=0.1 mg  
00:00:00  
-Add- 0-

-Add-0-close summation function



Max: 220g  
d=0.1 mg  
00:00:00  
-Add- 5-

-Add-5- accumulate 5 times weighing value



Max: 220g  
d=0.1 mg  
00:00:00  
-Add- 10-

-Add-10-accumulate 10 times weighing value



Max: 220g  
d=0.1 mg  
00:00:00  
-Add- 15-

-Add-15-accumulate 15 times weighing value



Max: 220g  
d=0.1 mg  
00:00:00  
-Add- 20-

-Add-20-accumulate 20 times weighing value



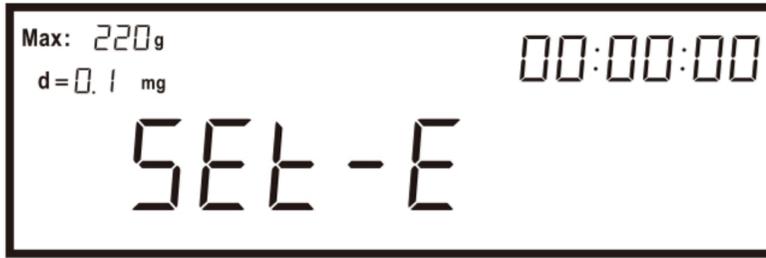
TARE



Max: 220g  
d=0.1 mg  
Σ 00:00:00  
0.0000 g 0

Save setting, display shows Σ

MENU



Entersummation function mode



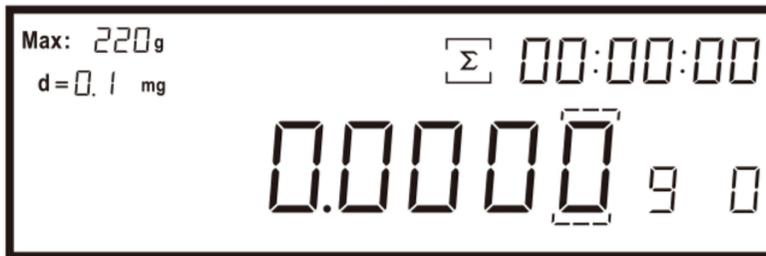
PRINT



-Add-5-accumulate 5 times weighing value(e.g.)



TARE



Save setting, enter weighing mode



Put on target object 1 (e.g.:screw)



UNIT



Record value of target object 1, bottom right corner shows "1" time

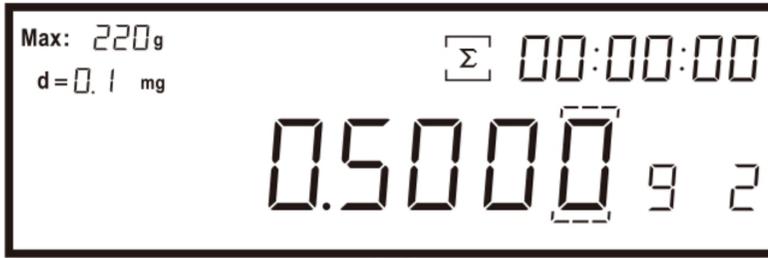


Remove target object 1, balance back to zero



Put on target object 2

UNIT

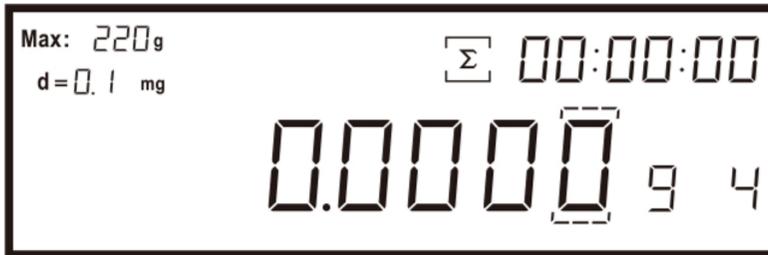


Record value of target object 1  
bottom right corner shows "2"  
times



Remove target object 2,  
balance back to zero

Repeat 4 times



Remove target object 4,  
balance back to zero



Put on target object 5

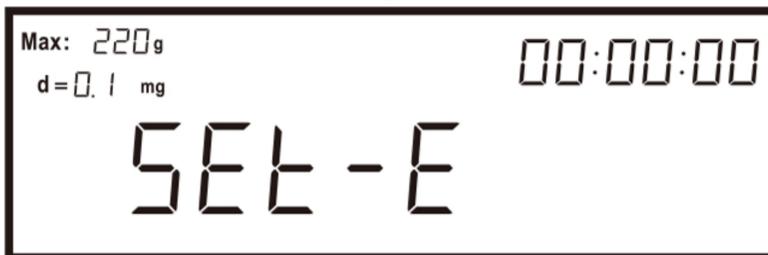
UNIT



Auto display 5 times  
accumulated weighing value



MENU



If do not measure, enter  
summation function mode  
again



PRINT



-Add-0-close summation  
function

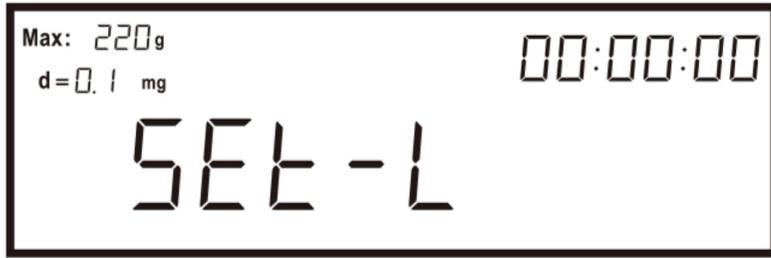


TARE

Exit summation function

7).Pipette calibration

MENU



Enter pipette calibration mode

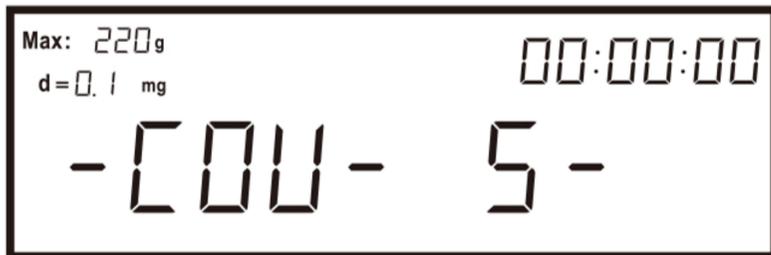
PRINT



-COU-0-close pipette calibration



-COU-2- get 2 times weighing value as reference



-COU-5- get 5 times weighing value as reference



-COU-7- get 7 times weighing value as reference



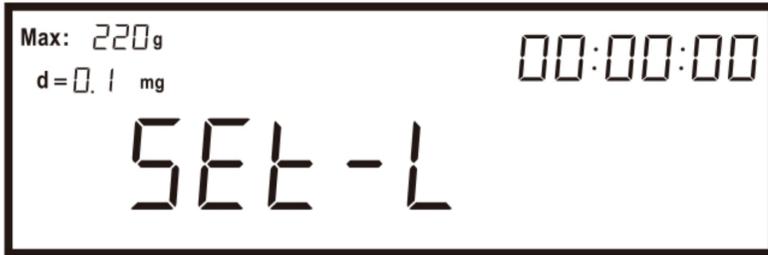
-COU-10-get 10 times weighing value as reference

TARE



Save settings, enter calibration mode

MENU



Enter pipette calibration mode

PRINT



-CoU-5 get 5 times weighing value as reference

TARE



Save settings, enter calibration mode

Drop 100ul 1st



Absorb 100ul by pipette, drop into the container 1st time

UNIT



Record 1st titration value

TARE



Remove 1st value Balance back to zero

Drop 100ul 2nd



Absorb 100ul by pipette, drop into the container, 2nd time

MENU



Record 2nd titration value

TARE



Remove 2nd value Balance back to zero

Repeat 4 times

Drop 100ul 4th



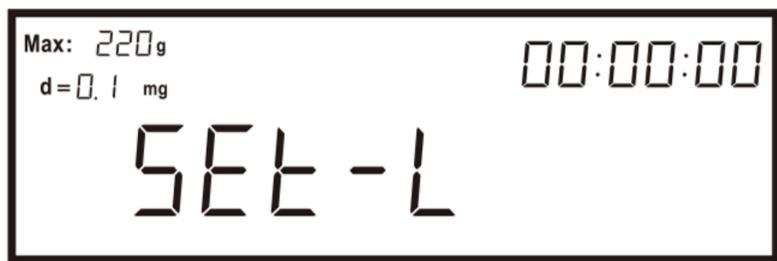
Absorb 100ul by pipette, drop into the container, 4th time

UNIT



get dropping volume directly. if the volume equal to sampling value, calibration complete

MENU



If do not calibrate, enter pipette calibration mode again

TARE

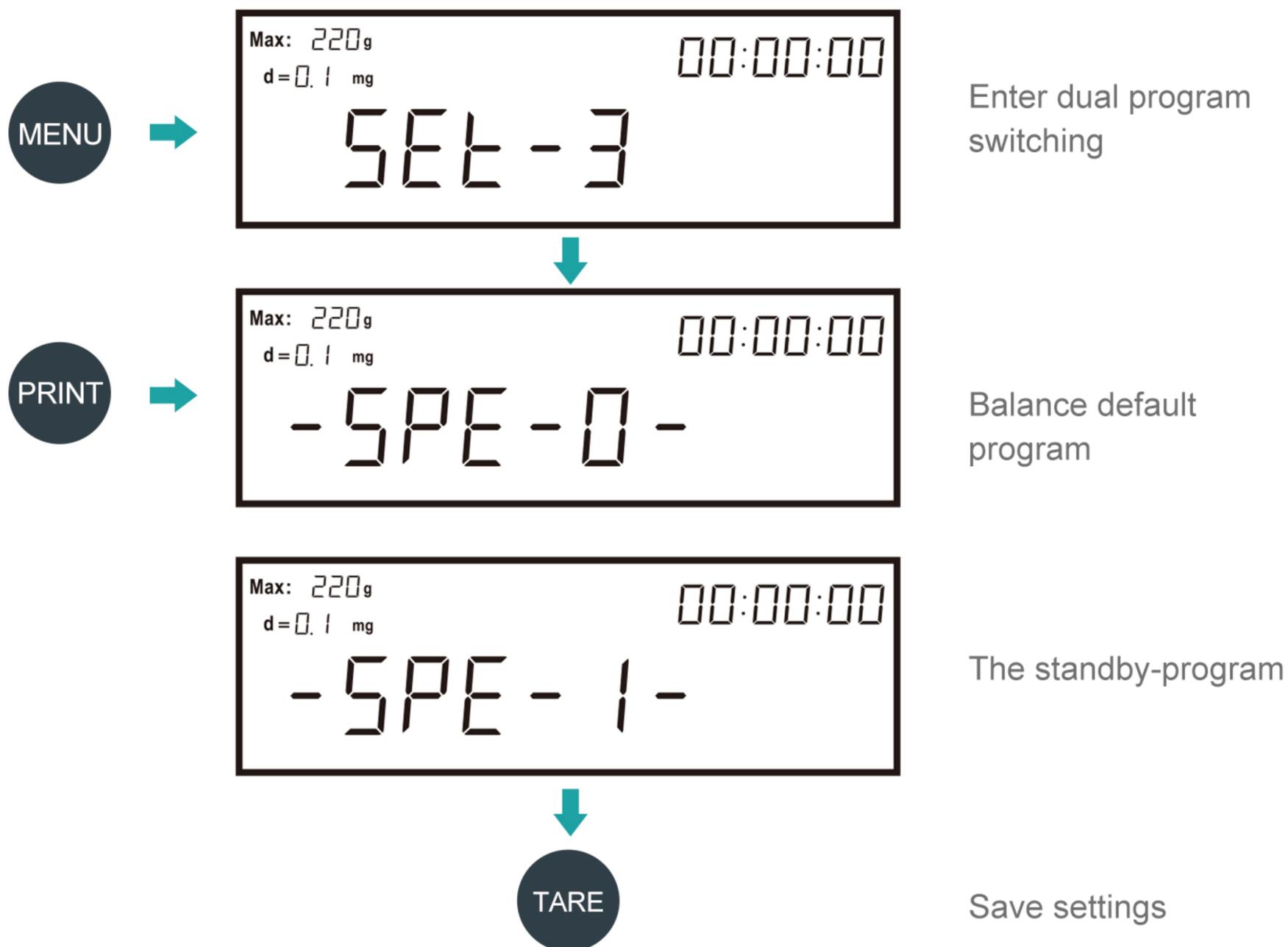


-COU-0 close pipette calibration

TARE

Exit pipette calibration mode

## 8). Dual program switching



**Remark:** when switch to another program, please make a linear calibration again to unlock the balance.

# Troubleshooting

Problem	Cause
No display	No power supply; Fuse damaged; Power transformer is damaged.
Unstable display	Bad working conditions; Air flow something between the scale pan and working table; The power exceeds its permissible value and is unstable; Static electricity.
Poor accuracy	Improper calibration; The weight of the recipient has not been tared; Big temperature difference; The balance is not horizontal.

## Components List

> Balance > Weighing pan > weight > Power adapter > Instruction manual



## Product Qualification Certificate

Product name: **0.01mg Dual Range Analytical Balance**

Product model:  CEB1035  CEB2055  CEB2055N

Production date : \_\_\_\_\_



Tel: 86-0572-2266665

Web: [www.joanlab.com](http://www.joanlab.com)

E-mail: [info@joan-lab.com](mailto:info@joan-lab.com)

NO.181 Gangfeng Road, Wuxing District, Huzhou City,  
Zhejiang Province, China