User Manual

PSM/PSA Series

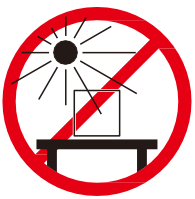
Please read this manual carefully and keep it safe for proper use

Table of content

1. INTRODUCTION

PSA/PSM series 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.

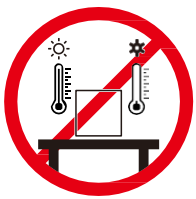
Safety Precautions



Avoid direct sunlight

Avoid vibrations

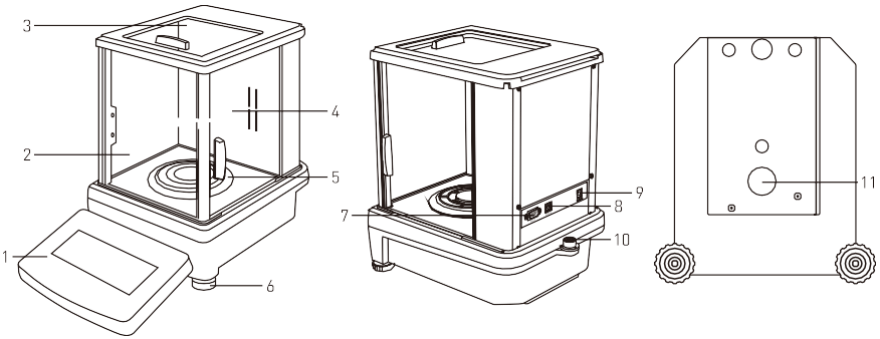
Avoid strong drafts



Avoid temperature fluctuations

*Verify that the AC Adapter input voltage matches the local AC power supply.
*Sufficient spacing for balances: >15cm all around the instrument.

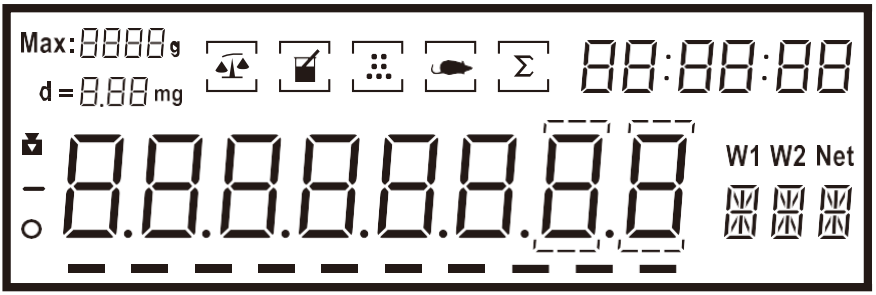
Diagram



1	Terminal	8	USB-B port
2	Front panel draft shield	9	Socket for power adapter
3	Top door draft shield	10	Bubble level
4	Side door draft shield(right/left)	11	Below weighing(optional)
5	Weighing pan		Press button
6	Leveling feet		Put weight or object on the pan
7	RS232 interface		Take off the weight or object

Button

Display information



No.	Display	Describe
1	Max:8888g d=8.88mg	Modeldisplay
2		Internal calibration sign
3	—	Negative weight value
4	○	Stable value
5		Weighing sign
6		Density determination
7		Piece counting
8		Dynamic weighing
9	Σ	Summation
10	— — — — — —	Progress bar
11	88:88:88	Time setting
12	W1 W2	W1: weight in air, W2: weight in liquid
13	8	Unauthenticated numbers
14		Unit display

Parameter

PSA Series Analytical Balance

Model	PSA120	PSA220	PSA320	PSA420	PSA520
Capacity:	120g	220g	320g	420g	520g
Readability:	0.1mg				
Linearity:	±0.2mg		±0.3mg		
Repeatability:	±0.1mg		±0.2mg		
Calibration:	Internal				
Stability time:	1,5s		2s		
Working Temp:	10-40℃				
Accuracy Class:	CLASS I				
Pan size:	Ø90mm				
Output Interface:	RS232 Serial,USB				
Dimensions:	40cm x 22cm x 31cm				
Net Wight:	6280g				
Power Supply	AC110-240V				

PSM Series Semi Micro Balance

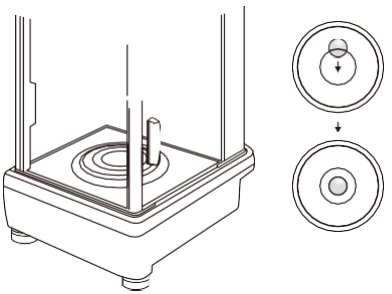
Model	PSM1055	PSM2055	PSM105	PSM125
Capacity:	100g/51g	220g/51g	100g	120g
Readability:	0.1mg/0.01mg		0.01mg	
Linearity:	±0.2mg/±0.05mg		±0.05mg	
Repeatability:	±0.2mg/±0.03mg		±0.03mg	
Calibration:	Internal			
Stability time:	≤4s			
Working Temp:	10-40℃			
Accuracy Class:	CLASS I			
Pan size:	Ø90mm			
Output Interface:	RS232 Serial,USB			
Dimensions:	40cm x 22cm x 31cm			
Net Wight:	6280g			
Power Supply	AC110-240V			

2. PREPARATION

Leveling the Balance

1 Put the balance on the stable desk, the desk can not be moved.

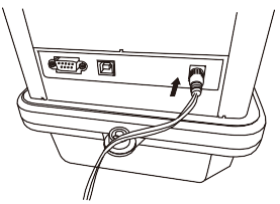
2 adjust the 2 Leveling Feet on the bottom, until the bubble is centered in the circle, then installing the scale pan:



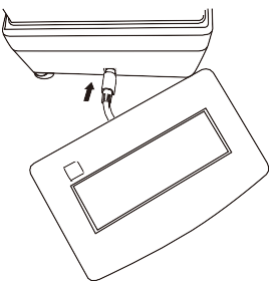
bubble right above	clockwise rotate two leveling feet
bubble right below	counterclockwise rotate two leveling feet
bubble left	counterclockwise rotate left leveling foot clockwise rotate right leveling foot
bubble right	counterclockwise rotate right leveling foot clockwise rotate left leveling foot

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.

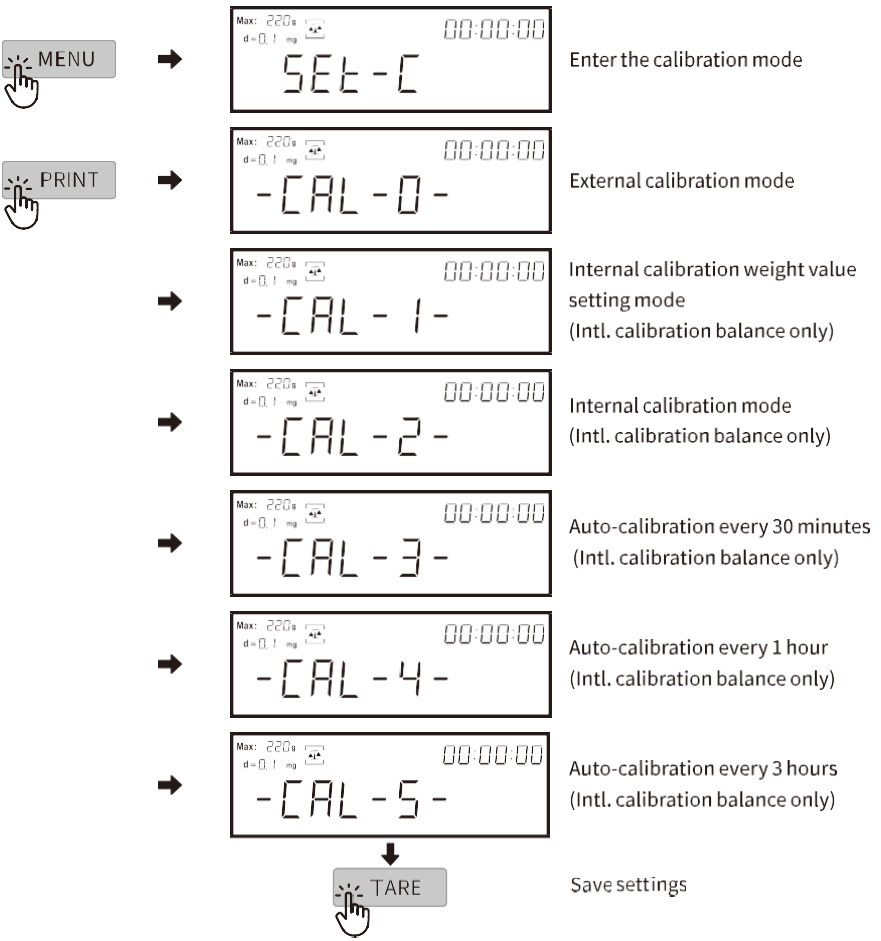
Attention: If the number on display is not stable in first boot, this occurred by operating temprature you can press ”TARE” botton repeatly and lay aside for 30 minutes

3. CALIBRATION

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

1. Before first use
2. Balance power off for long time or power error.
3. After changing the operating environment.
4. Perform regularly in weighing procedure.

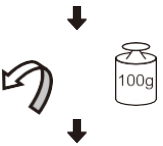
Chose the calibration methods (follow the sequence)



External calibration(single-point calibration)

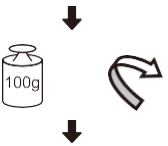
Balance back to Zero

Enter External calibration mode "CAL-100" flicker



Put 100g weight (e.g.:CEB124)

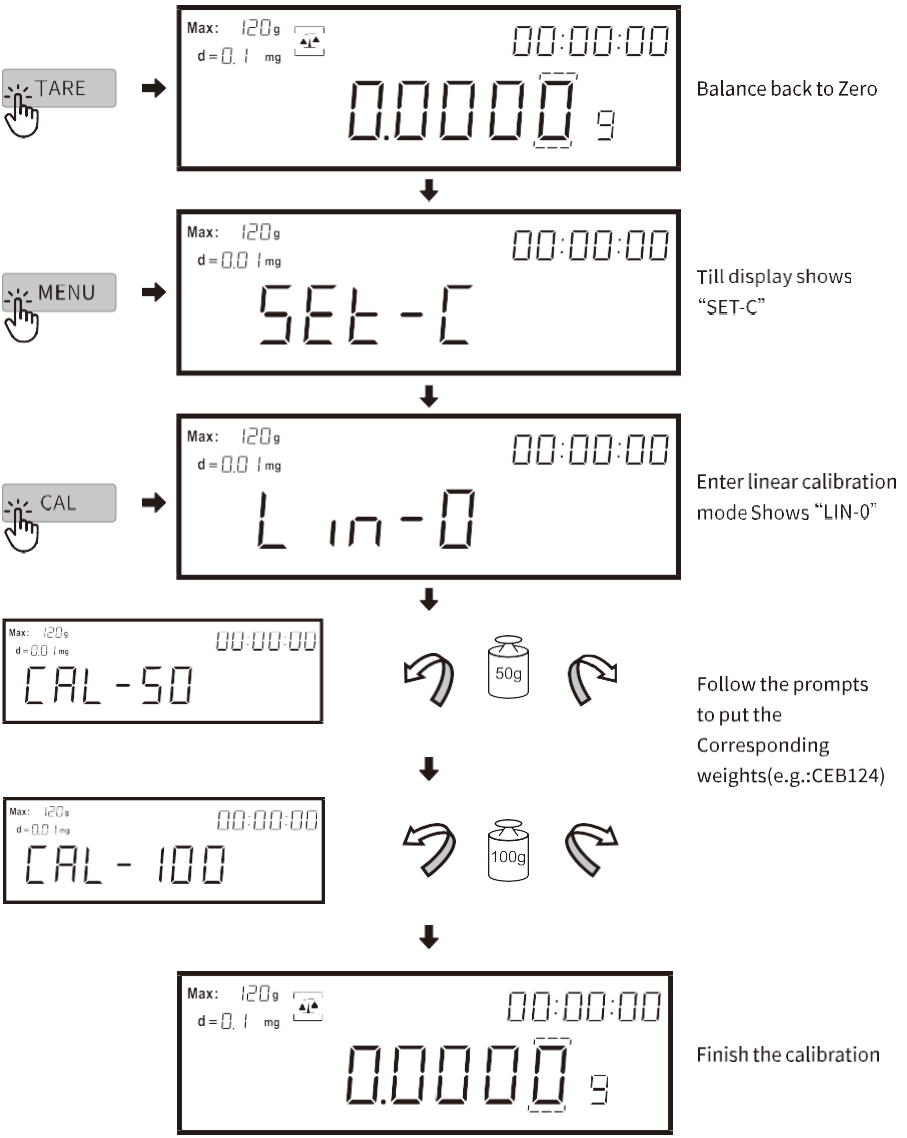
Shows "CAL-100"



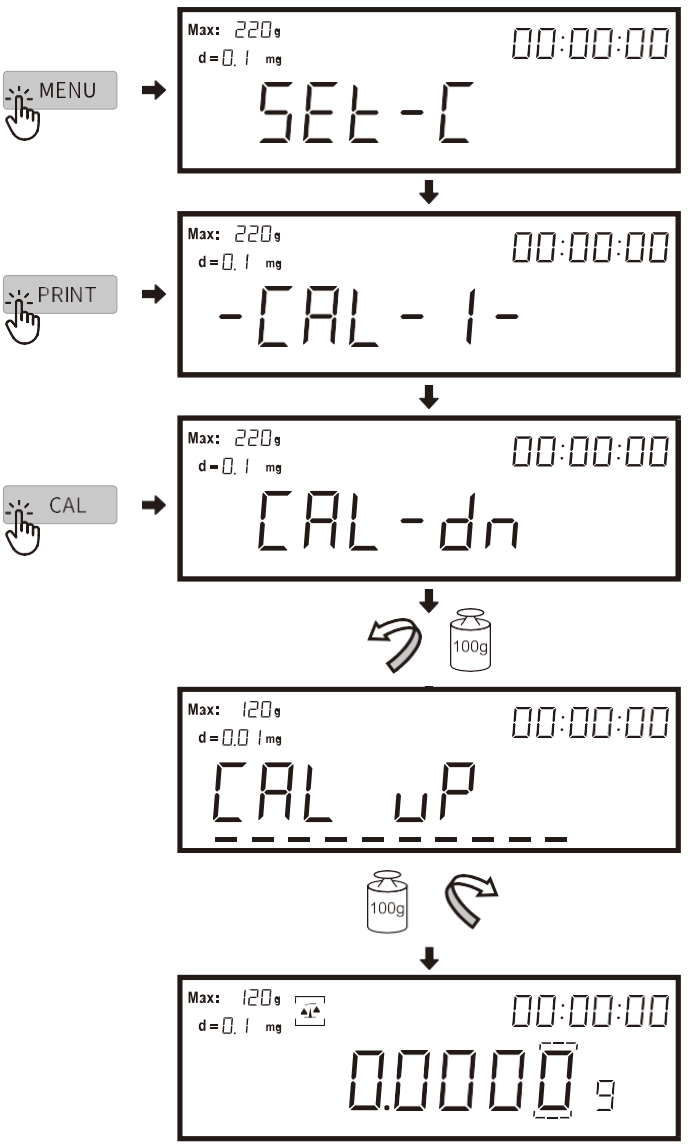
Remove the weight

Finish the calibration

Linear Calibration



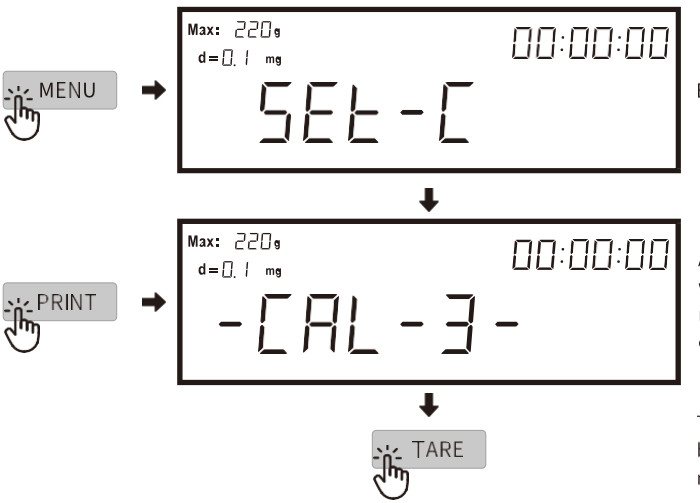
Internal calibration weight value setting (Intl. calibration balance only)



Weight value setting

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

Auto-calibration



Enter calibration mode

Automatic calibration with a fixed time of 30 minutes(Internal calibration balance only)

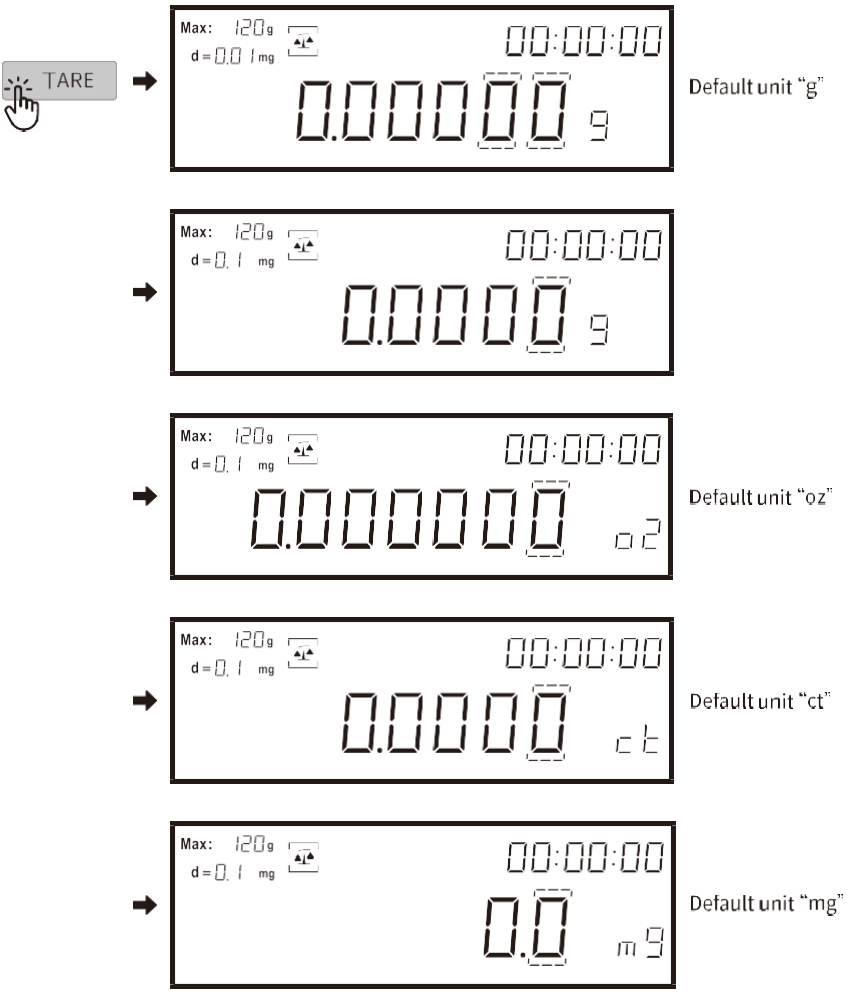
Tare the balance before balance reaching 30 minutes.

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

4. SET UP AND OPERATION

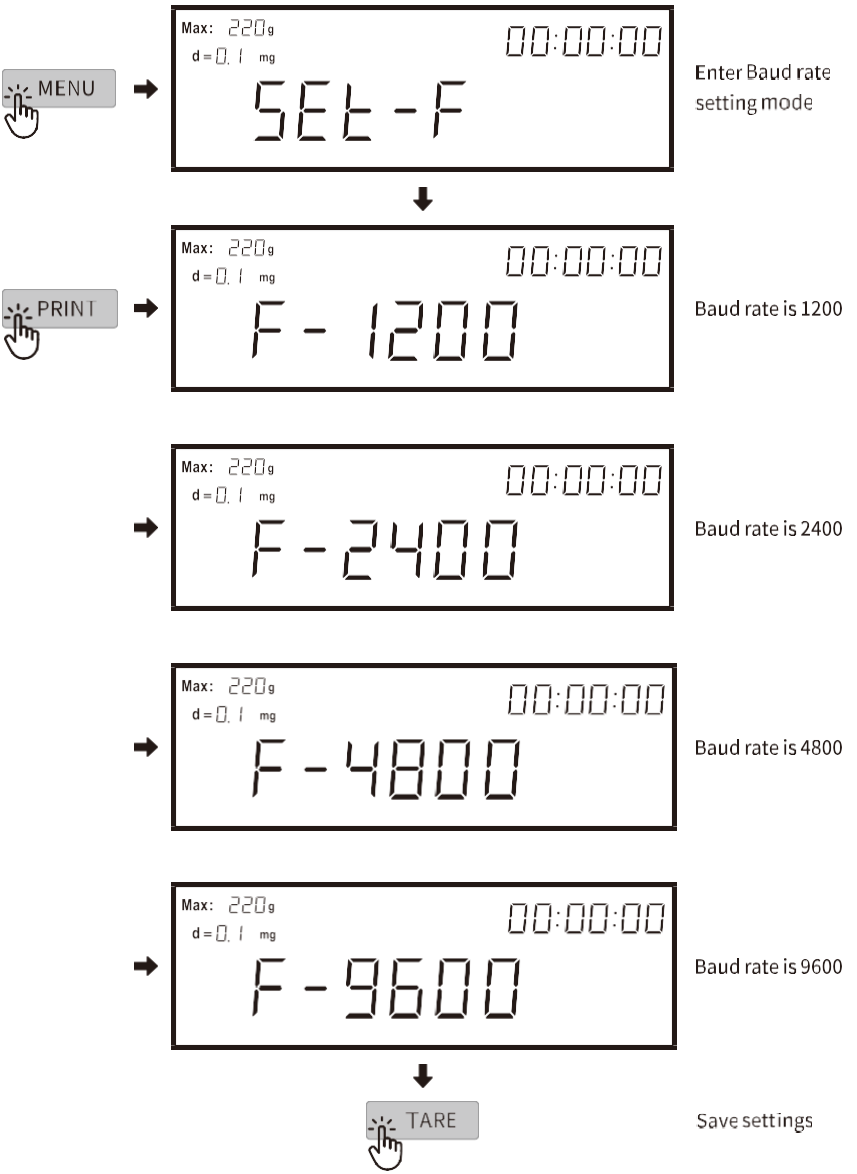
Balance set up

Unit conversion

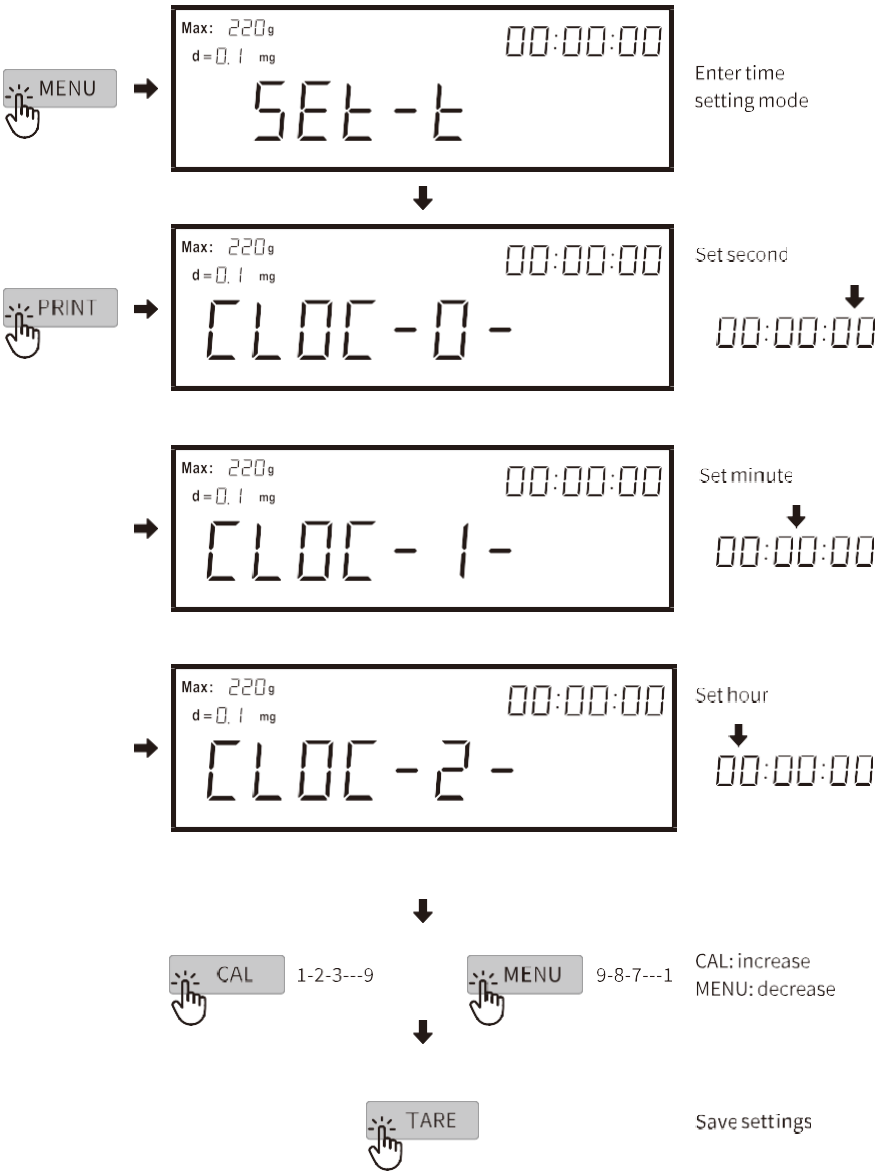


Remark: Other units are customizable

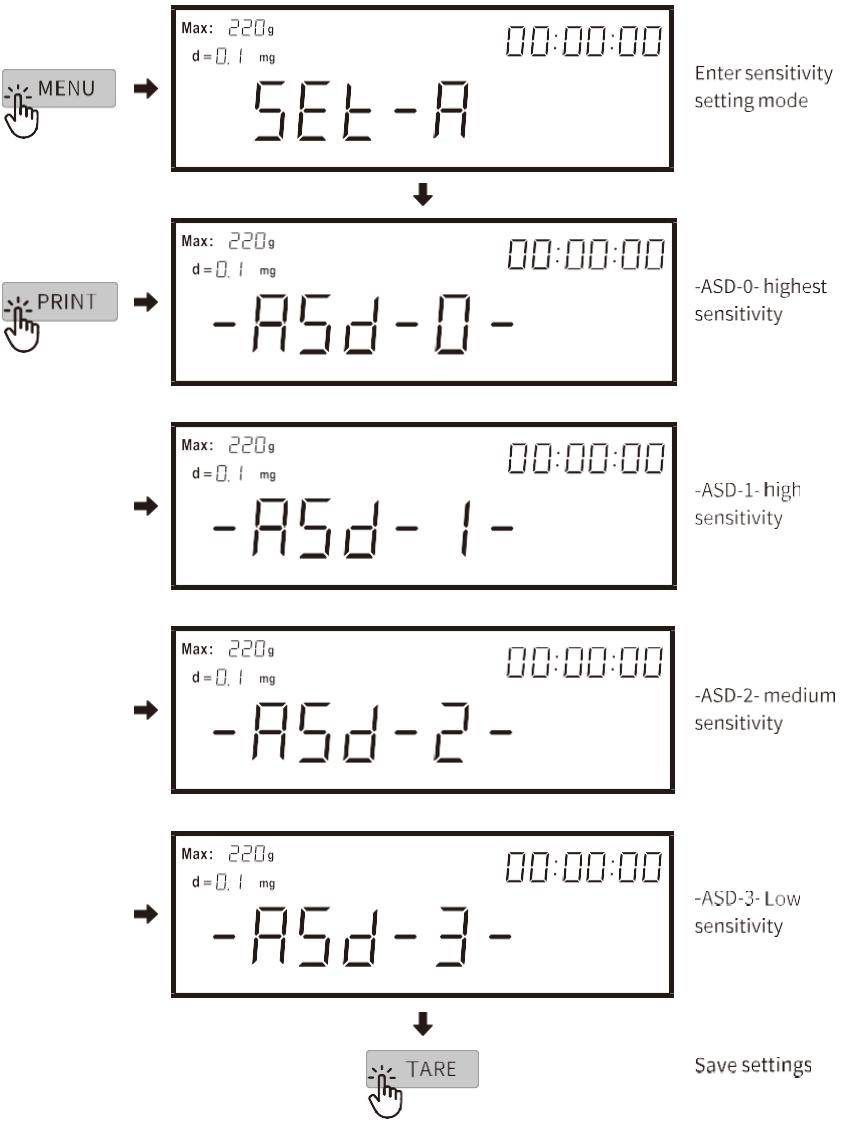
Baud rate setting



Time setting

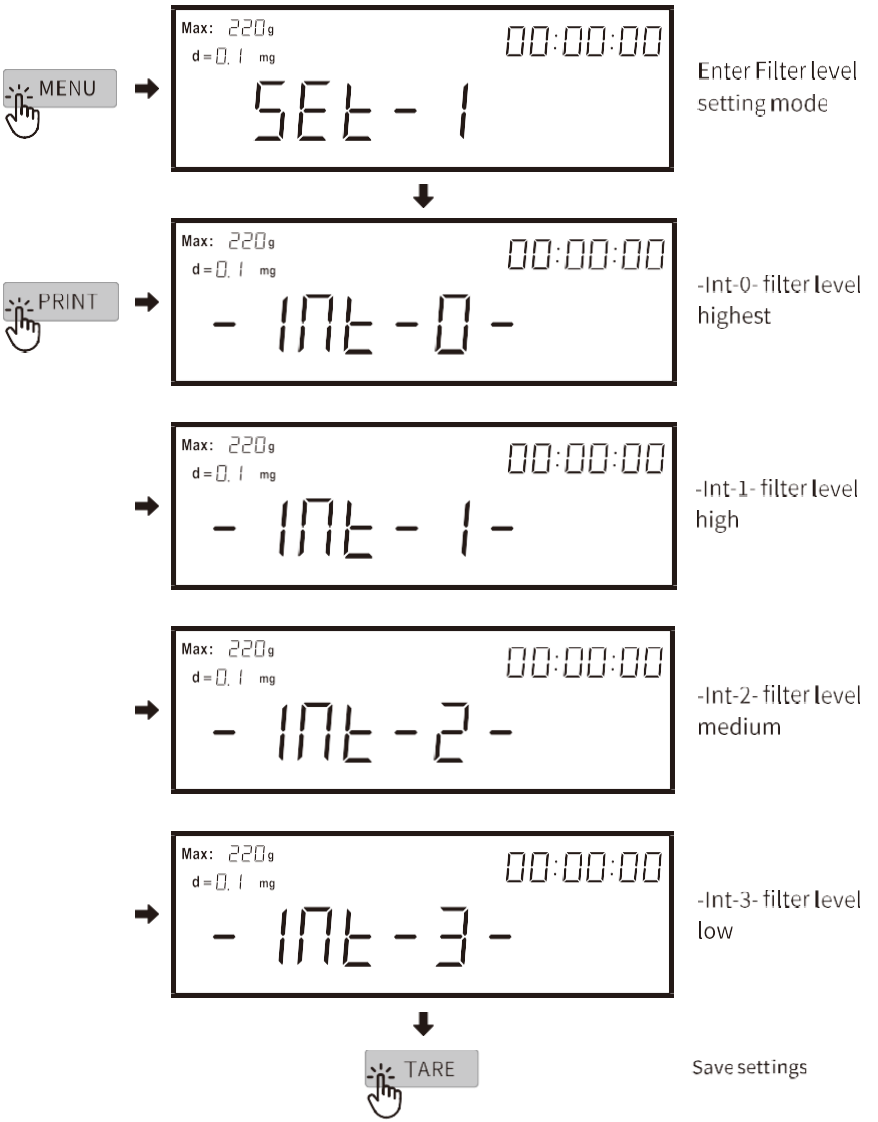


Sensitivity setting



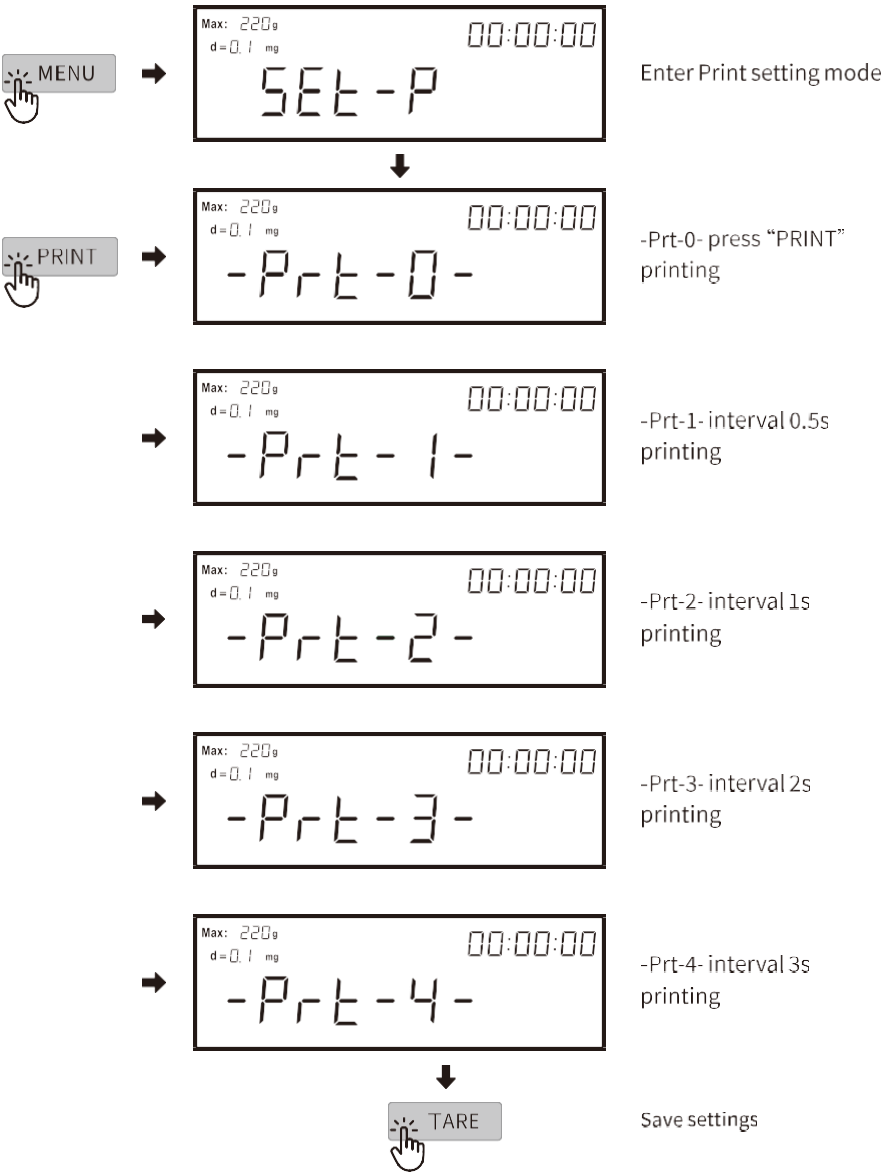
REMARK:factory setting sensitivity “-ASD-3-”, suitable for most using environment.
Higher sensitivity required better environment. Do not adjust the sensitivity without consulting the factory.

Filter level setting



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

Print setting



Rs232 interface

- Connection

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

- The baudrate by default is 9600 bps (see Baudrate setting)
- Data format: 10 bits, 0 as start bit, 1 as stop bit, 8 digits (ASCII code) - No odd and even numbers adjusting
- Data output: by default is continuous mode. The data ouput mode can be changed into press output, timing output and continuous output (see Data output setting)

- 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

OPERATION

Simple weighing

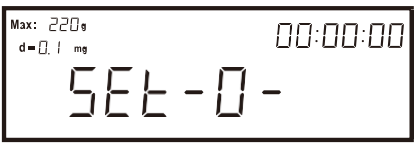
Under weighing interface

Put object on the scale pan

Get object weight

Piece counting

MENU



Enter piece counting mode

PRINT

-COU-10- sample quantity 10PCS

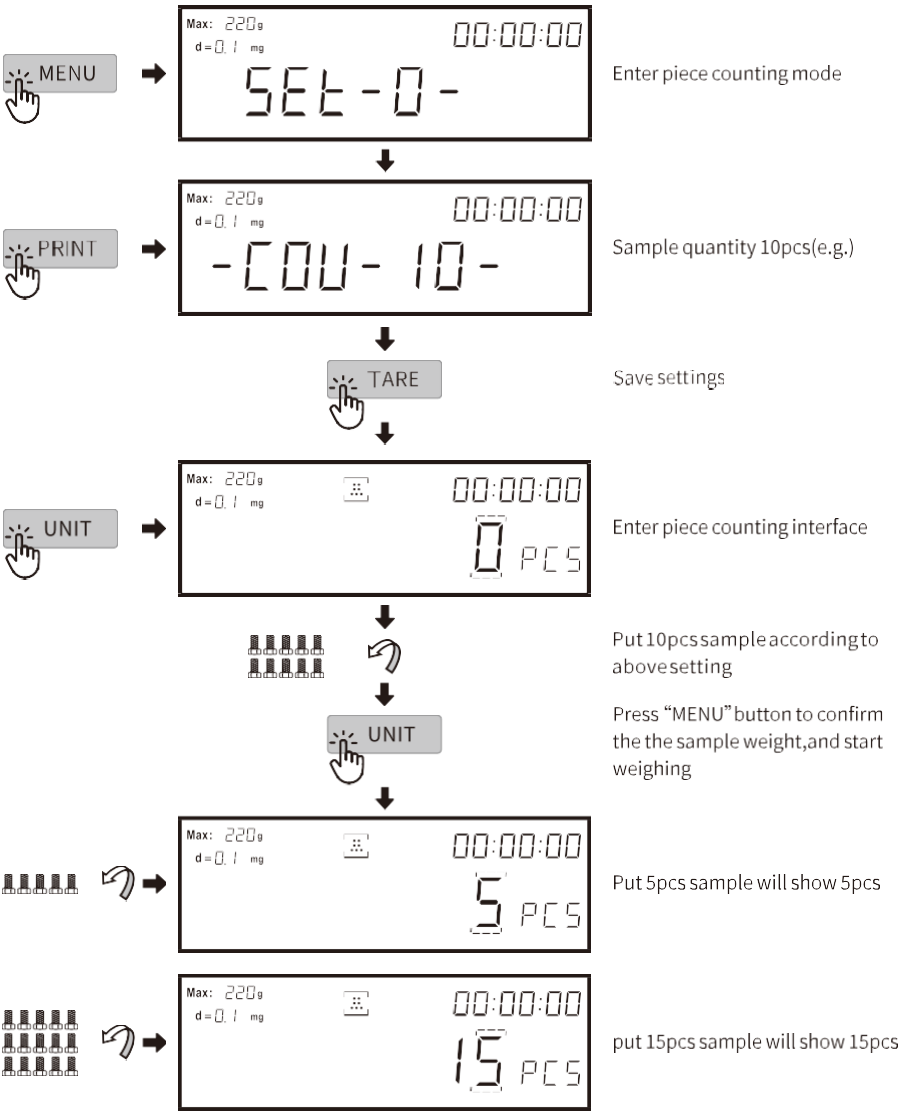
-COU-10- sample quantity 25PCS

-COU-10- sample quantity 50PCS

TARE

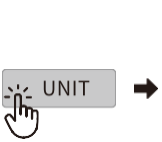
Save settings

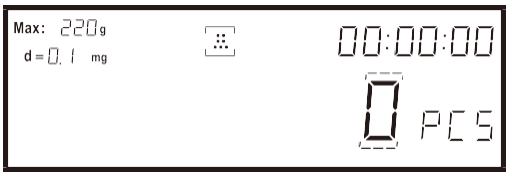
Piece counting



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

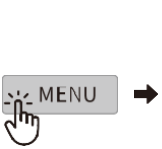
Percent weighing





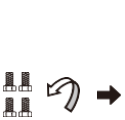
Enter percent weighing mod

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



Save the sample weight Shows “100.00”(100%)

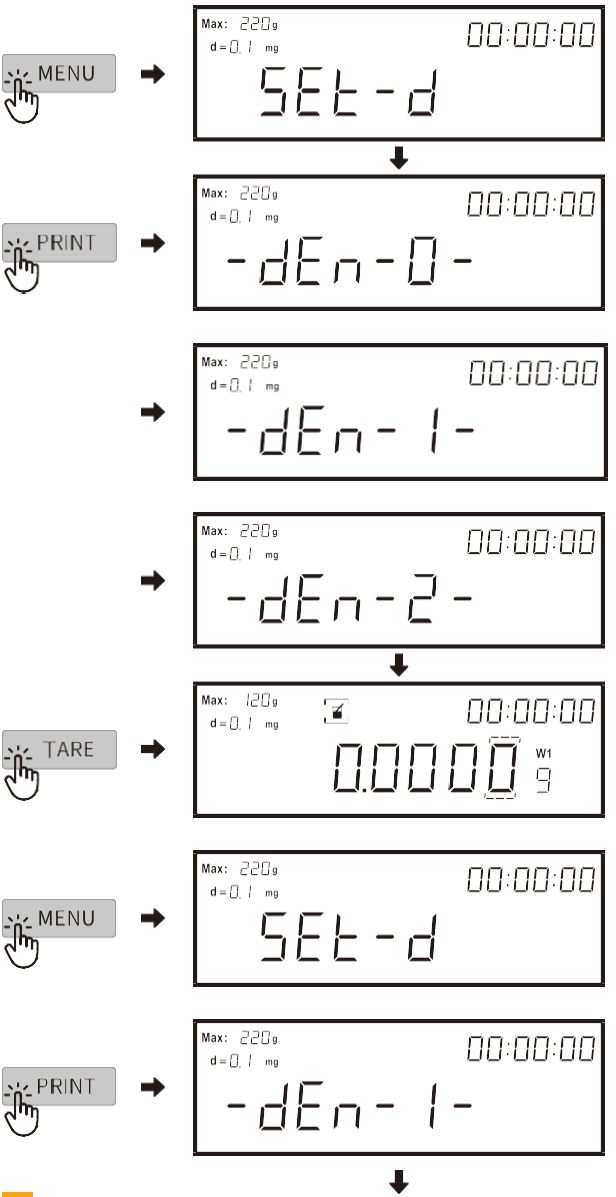
Put the contrast sample e.g.: 1pc screw, shows 50.00(50%)



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

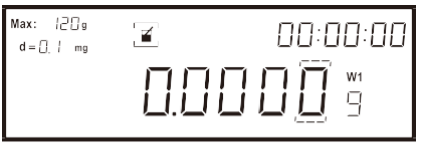
Remark: If use the same contrast second time, don’ t need re-sampling.

Density determination (need gravity kit - optional)



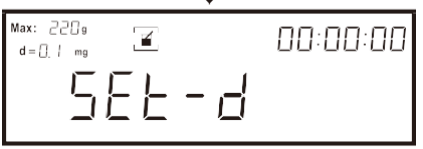
Density determination (need gravity kit - optional)

TARE



Save settings, shows and "W1"

MENU



Press "NENU" when shows

CAL

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

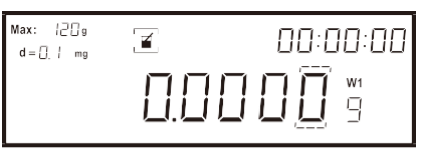
PRINT

Value increase

CAL

Value decrease

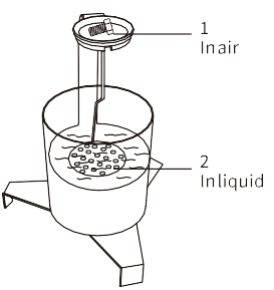
TARE



Save density value setting

Put on pan 1

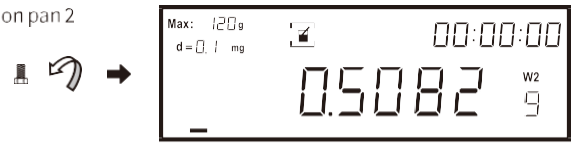
e.g. weighing screw



UNIT

Density determination (need gravity kit - optional)

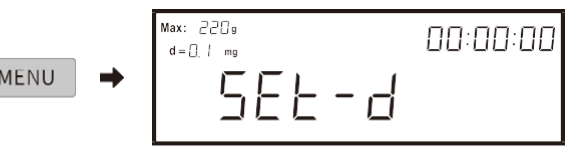
Put on pan 2



UNIT

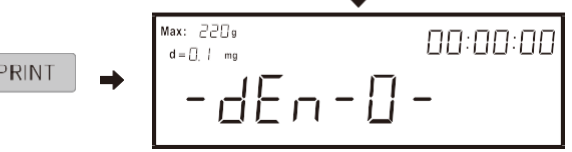
Show result of density

MENU



If do not measure, enter density determination mode again

PRINT



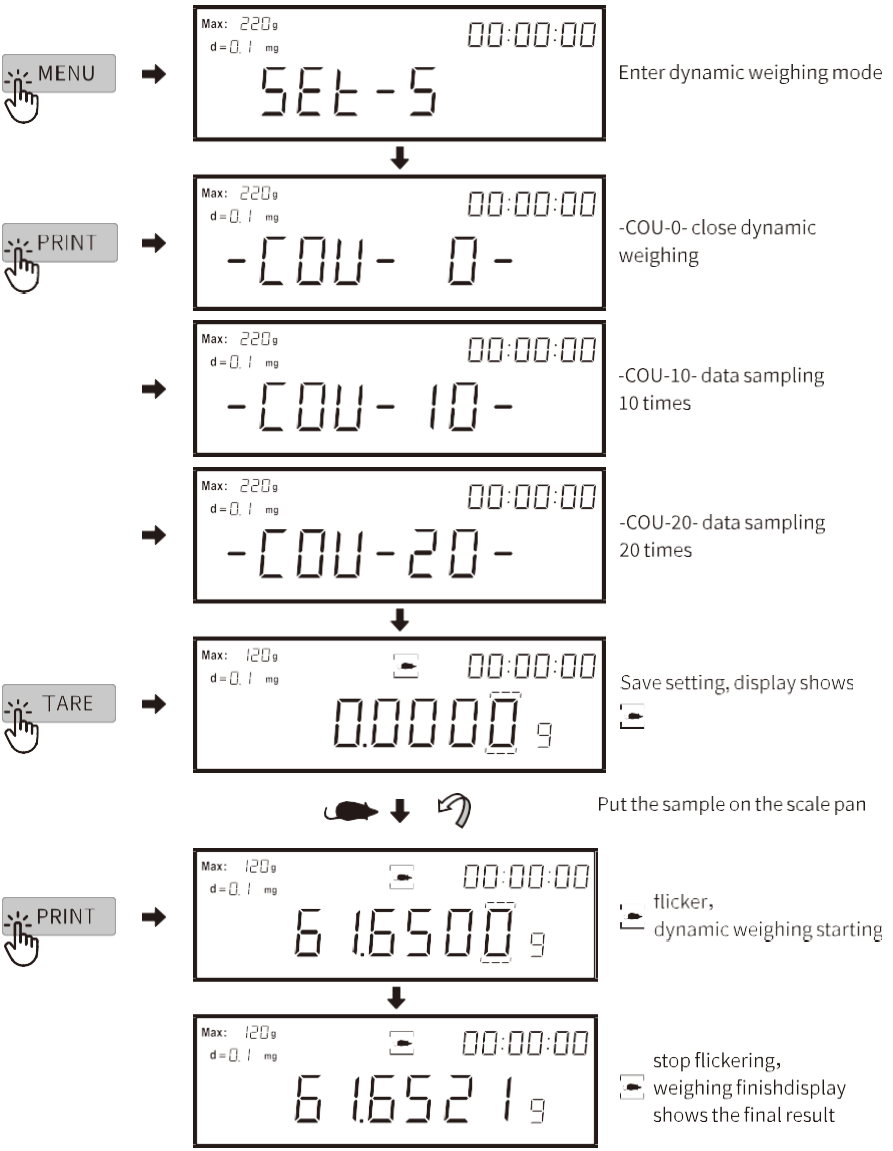
-dEn-0- Close density weighing

TARE

Exit desity determination

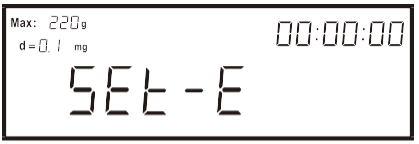
Remark：Liquid density weighing, need particular density kit, please consult manufacturer of operating instruction.

Dynamic weighing



Summation Function

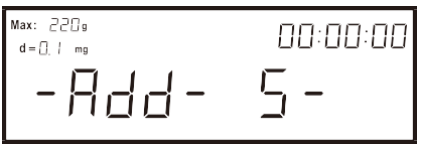
MENU



Enter summation function mode

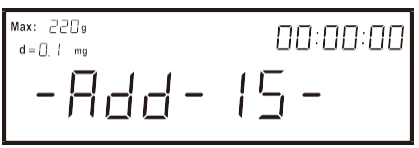
PRINT

-Add-0- close summation function



-Add-5- accumulate 5 times weighing value

-Add-10- accumulate 10 times weighing value



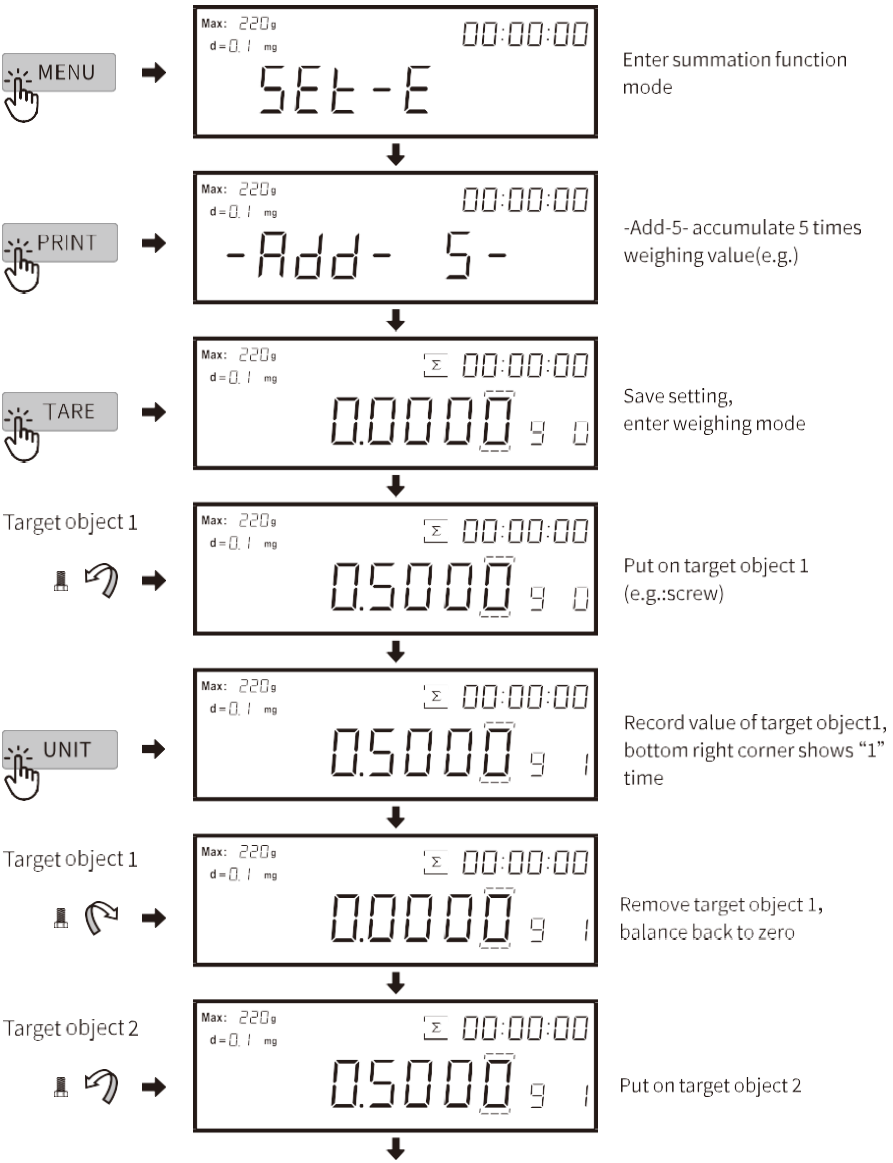
-Add-15- accumulate 15 times weighing value

-Add-20- accumulate 20 times weighing value

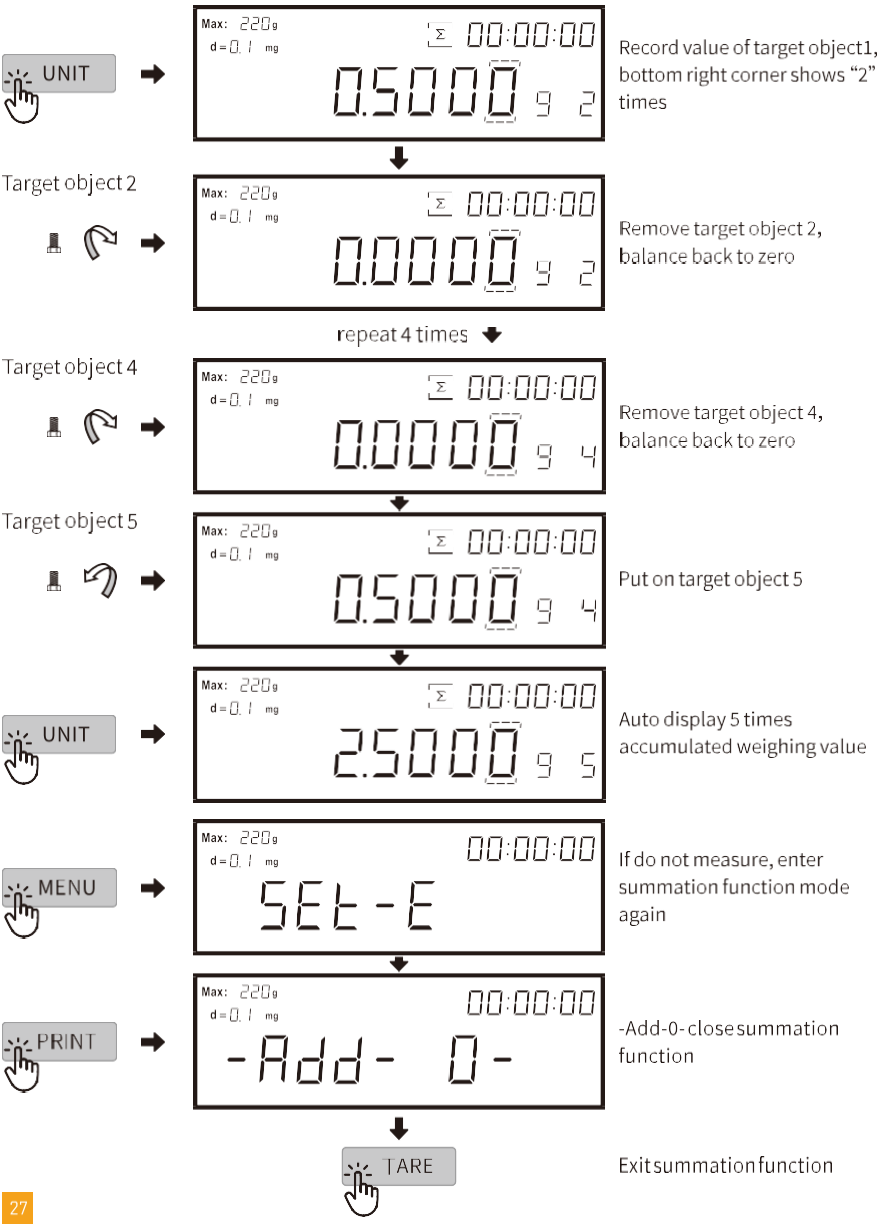
TARE

Save setting, display shows Σ

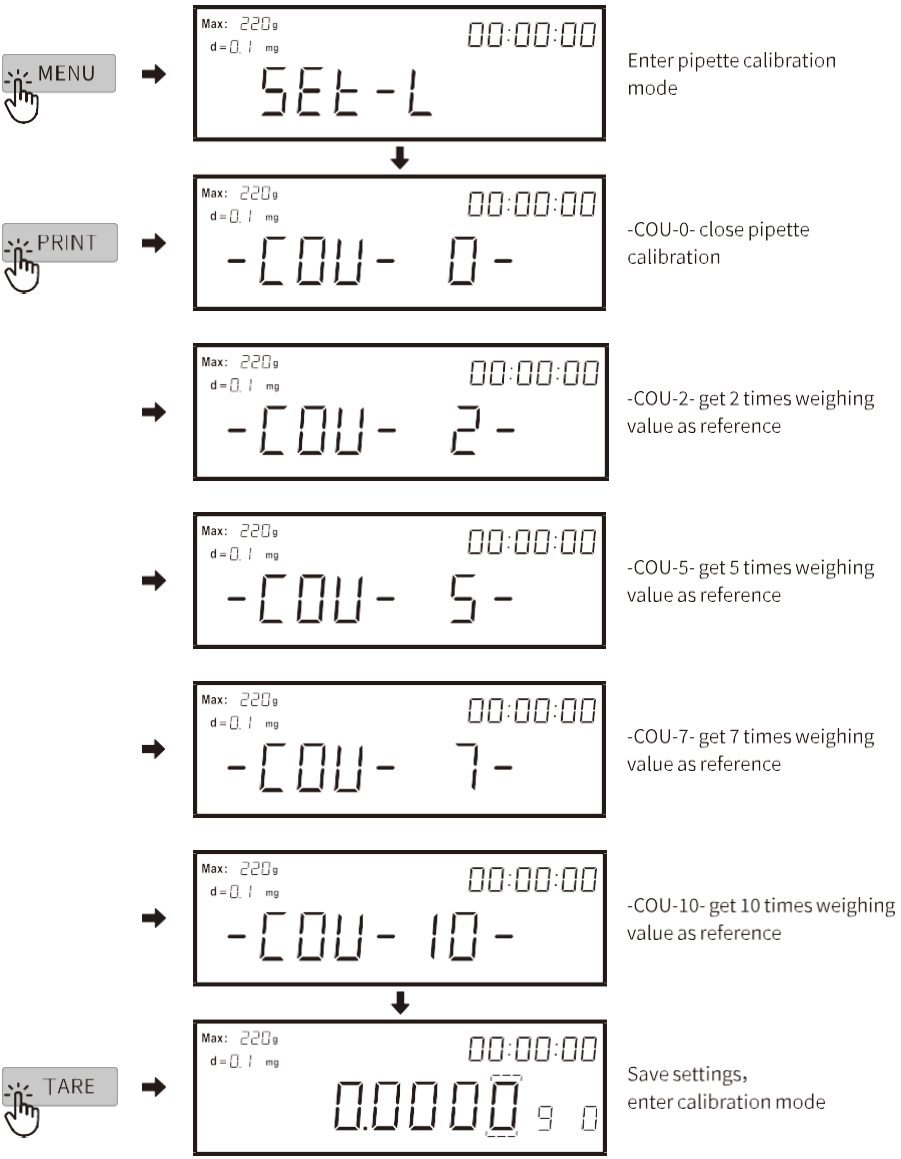
Summation Function



Summation Function

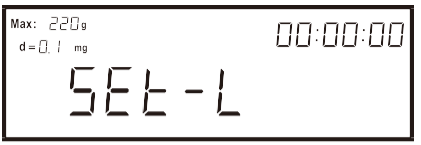


Pipette calibration



Pipette calibration

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 →

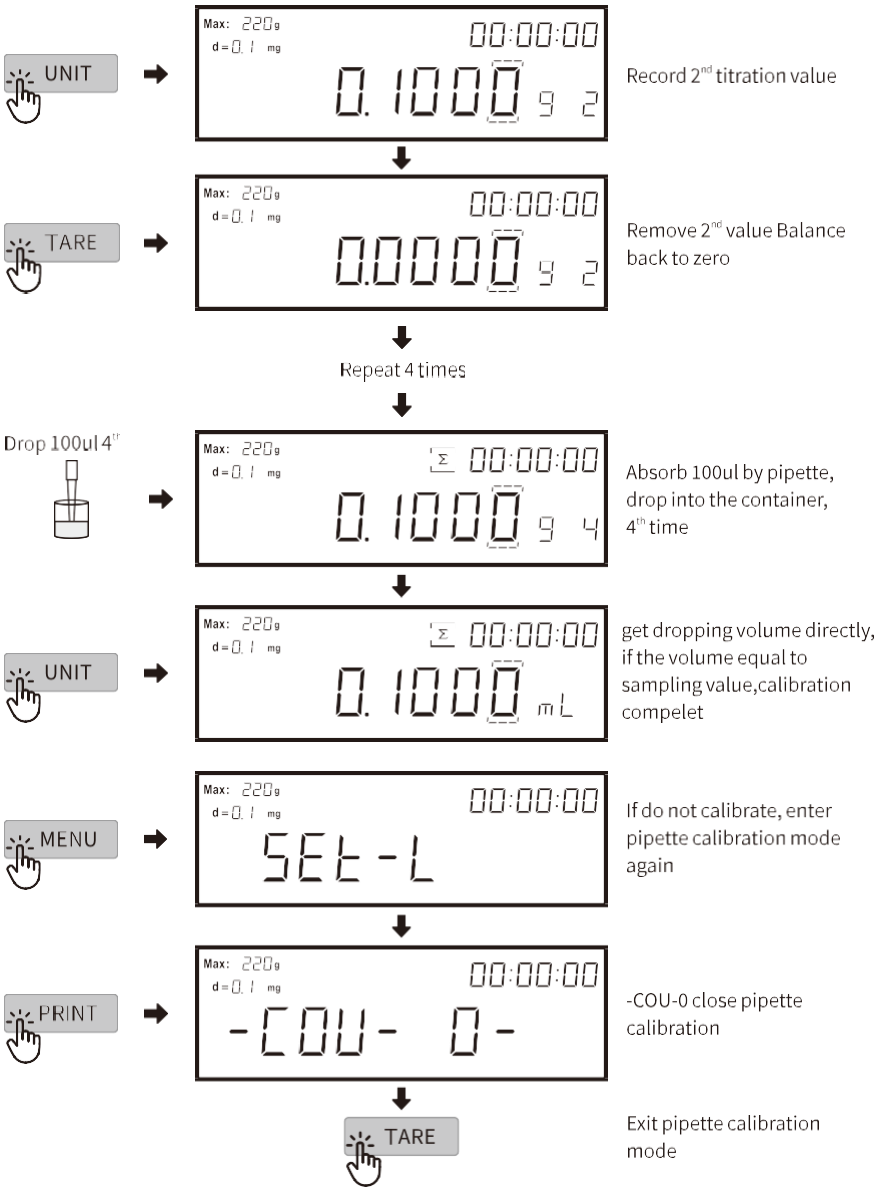
Remove 1st value Balance back to zero

Drop 100ul 2nd

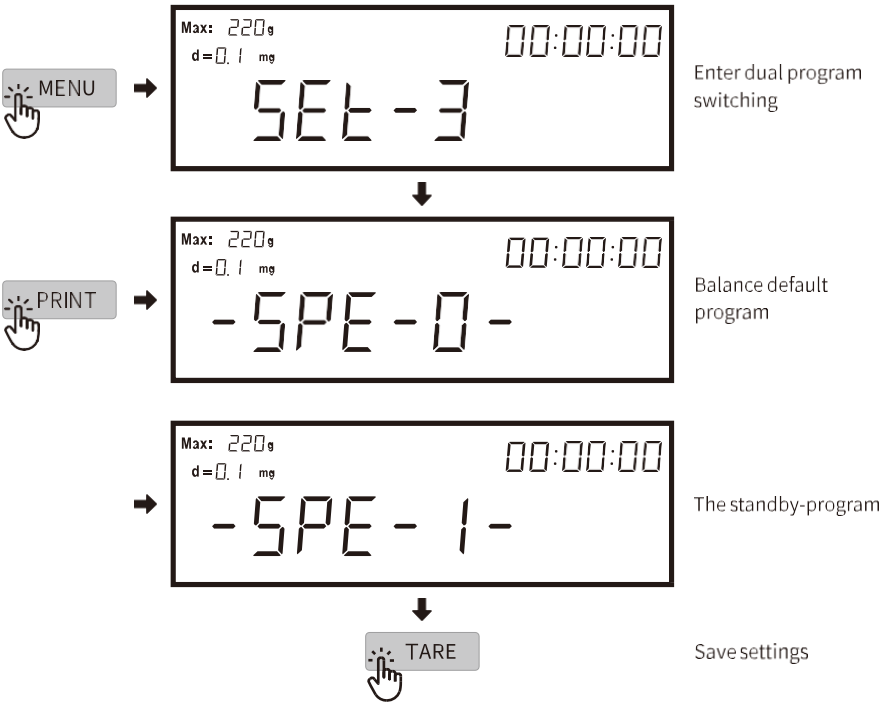
→

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

Pipette calibration



Dual program switching



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

5.TROUBLESHOOTING

Problem	Cause	Solution
No display	No power supply; Fuse damaged; Power transformer is damaged.	Plug in adapter; Change the fuse; Change the power transformer; If problem persists, send the balance to the technical service for repair.
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.	Improve the working condition, close the windshield; Remove the pan and clean well the balance surface; Connect the balance to power supply 110-220 V AC; Static elimination.
Poor accuracy	Improper calibration; The weight of the recipient has not been tared; Big temperature difference; The balance is not horizontal.	Make calibration; Make tare; Put into suitable environment; Adjust level of balance.

6.COMPONENTSLIST

Balance	1
Balance pan	1
Adapter	1
Instruction manual	1
Weight(external)	1
(calibration) glove	1