

DEB Series Analytical Balance User Manual



Please read operating manual before installation and operation.

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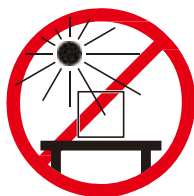
32 TROUBLESHOOTING

32 COMPONENTS LIST

1. INTRODUCTION

1024 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



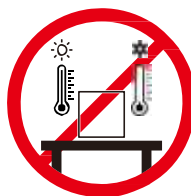
Avoid direct sunlight



Avoid vibrations



Avoid strong drafts

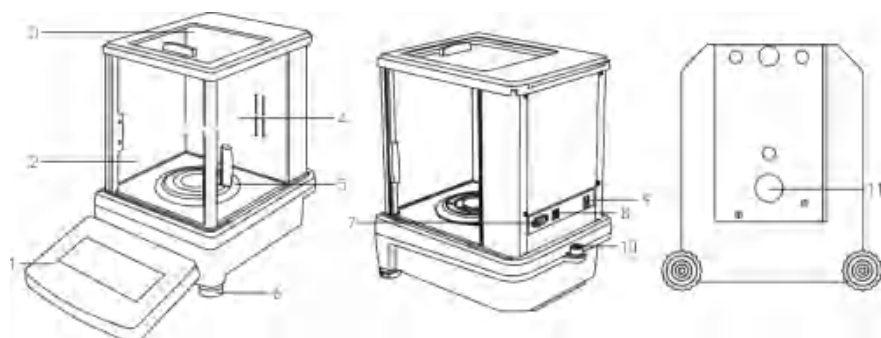


Avoid temperature
fluctuations

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

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

Diagram

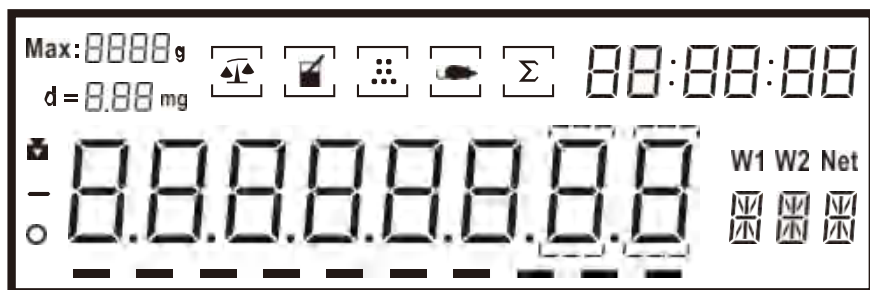


1	Terminal	8	USB-B port
2	Front panel draft shield	9	Socket for power adapter
3	Top door draft shield	10	Bubble level
4	Side door draft shield(right/left)	11	Be-low weighing(optional)
5	Weighing pan		Press button
6	Levelling feet		Put weight or object on the pan
7	RS232 interface		Take off the weight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

Button



Display information



No.	Display	Describe
1	Max: 8888 g d = 8.88 mg	Model display
2		Internal calibration sign
3	—	Negative weight value
4	○	Stable value
5		Weighing sign
6		Density determination
7		Piece counting
8		Dynamic weighing
9		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

DEB Analytical Balance(0.01 mg)

EN Model	DEB1035	DEB1035A	DEB1035B	DEB1035C	DEB1035D	DEB1035E	DEB1035F	DEB1035G	DEB1035H
U-Model	DEB1035M	DEB1035N	DEB1035O	DEB1035P	DEB1035Q	DEB1035R	DEB1035S	DEB1035T	DEB1035U
Capacity	120g/31g	120g/51g	120g/61g	220g/31g	220g/51g	220g/61g	100g	120g	
Readability	0.1mg/0.01mg						0.01mg	0.01mg	
Stabletime	2-3s						3s	3s	
Preheating time	30-60mins						30-60mins	30-60mins	
Weighing unit	g/oz/ct/mg/customizable						g/oz/ct/mg/customizable		
Min. weight	0.1mg/0.01mg						0.01mg	0.01mg	
Repeatability	±0.1 mg/±0.03mg						±0.03mg	±0.03mg	
Linearity	±0.2mg/±0.03mg						±0.03mg	±0.03mg	
Interface	RS232/USB								
Pan size	φ90mm								
Packing size	Inner box:430x320x415mm, Master carton:490x380x465mm								
N.W.	6280g								
Power	AC110V-240V								

DEB Analytical Balance(0.1 mg)

EN Model	DEB124	DEB224	DEB324	DEB424	DEB524
U-Model	DEB124N	DEB224N	DEB324N	DEB424N	DEB524N
Capacity	0-120g	0-220g	0-320g	0-420g	0-520g
Readability	0.1mg				
Stable time	1.5s		2.5s		
Preheating time	30-60min				
Weighing unit	g/oz/ct/mg/customizable				
Min. weight	0.1mg				
Repeatability	±0.1mg		±0.2mg		
Linearity	±0.2mg		±0.3mg		
Interface	RS232/USB				
Pan size	φ90mm				
Packing size	Inner box:430x320x415mm, Master carton:490x380x485mm				
N.W.	6280g				
Power	AC110V-240V				

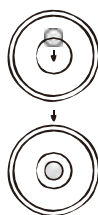
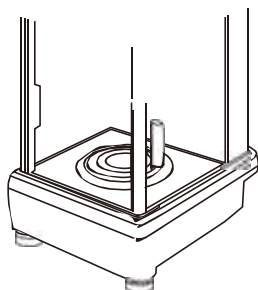
DEB Analytical Balance(1mg)

EN Model	DEB1003	DEB2003	DEB3003	DEB4003
U-Model	DEB1003N	DEB2003N	DEB3003N	DEB4003N
Capacity	0-520g	0-420g	0-1000g	0-2000g
Readability	1mg			
Stabletime	1-2s			
Preheating time	30-60min			
Weighing unit	g/oz/ct/mg/customizable			
Min. weight	1mg			
Repeatability	±1mg			
Linearity	±2mg			
Interface	RS232/USB			
Pan size	φ90mm			
Packing size	Inner box:430x320x415mm, Master carton:490x380x485mm			
N.W.	6280g			
Power	AC110V-240V			

2. PREPARATION

Leveling the Balance

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

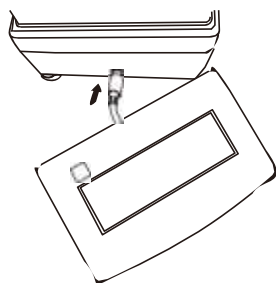
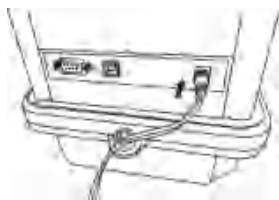
bubble right below counterclockwise rotate two leveling feet

bubble left clockwise rotate two leveling feet

bubble right counterclockwise rotate two leveling feet

Connecting and Switching on

- Plug in the AC/CD adapter
- Connect the terminal with the balance



- 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.

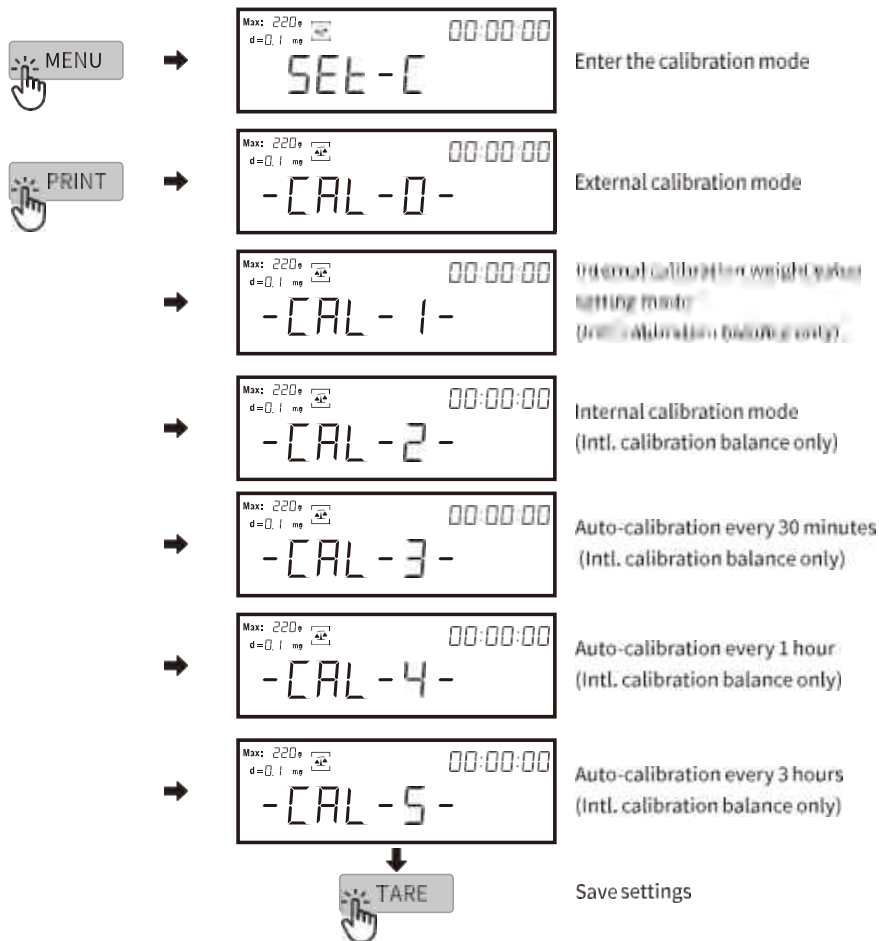
Attention: If the number on display is unstable or fluctuates, this occurred by operating temperature, you can press "TARE" button repeatedly, and lay scale for 30 minutes.

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 procedures

Choose 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"

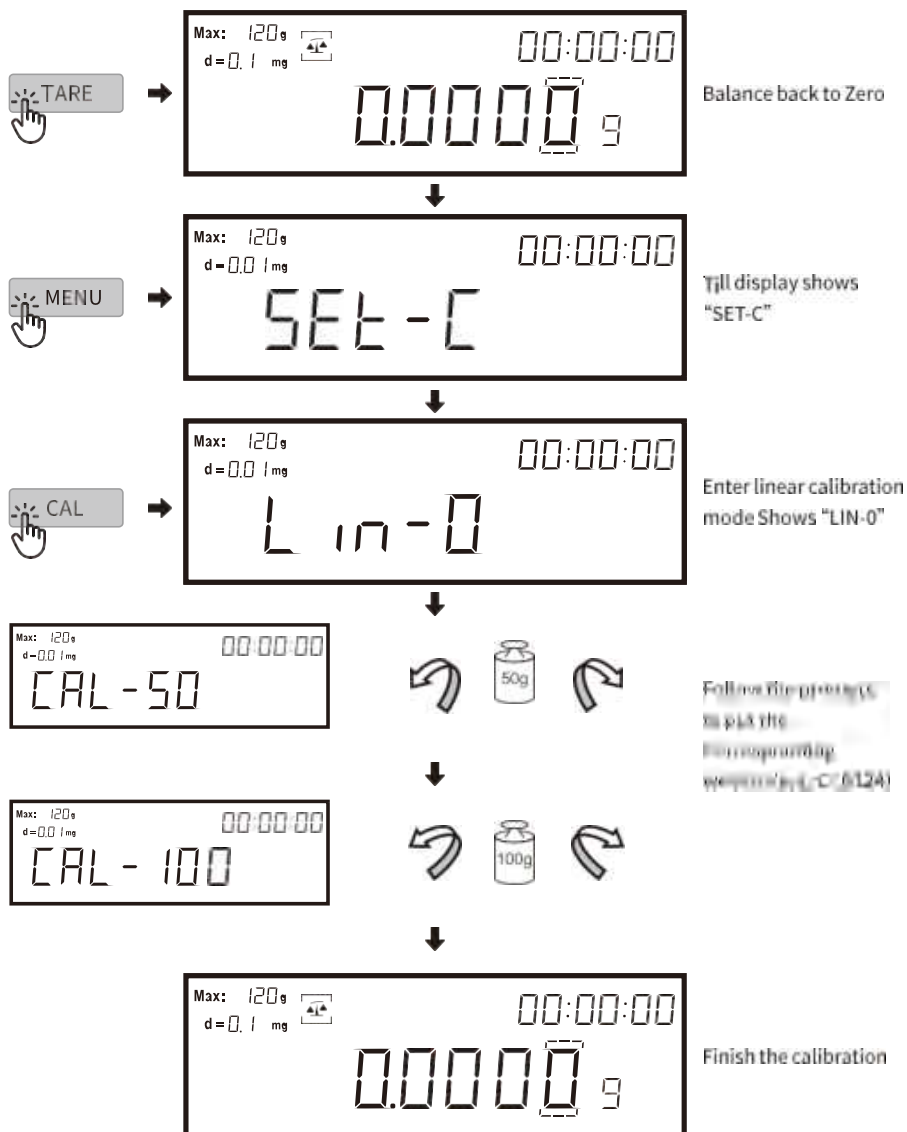


Remove the weight

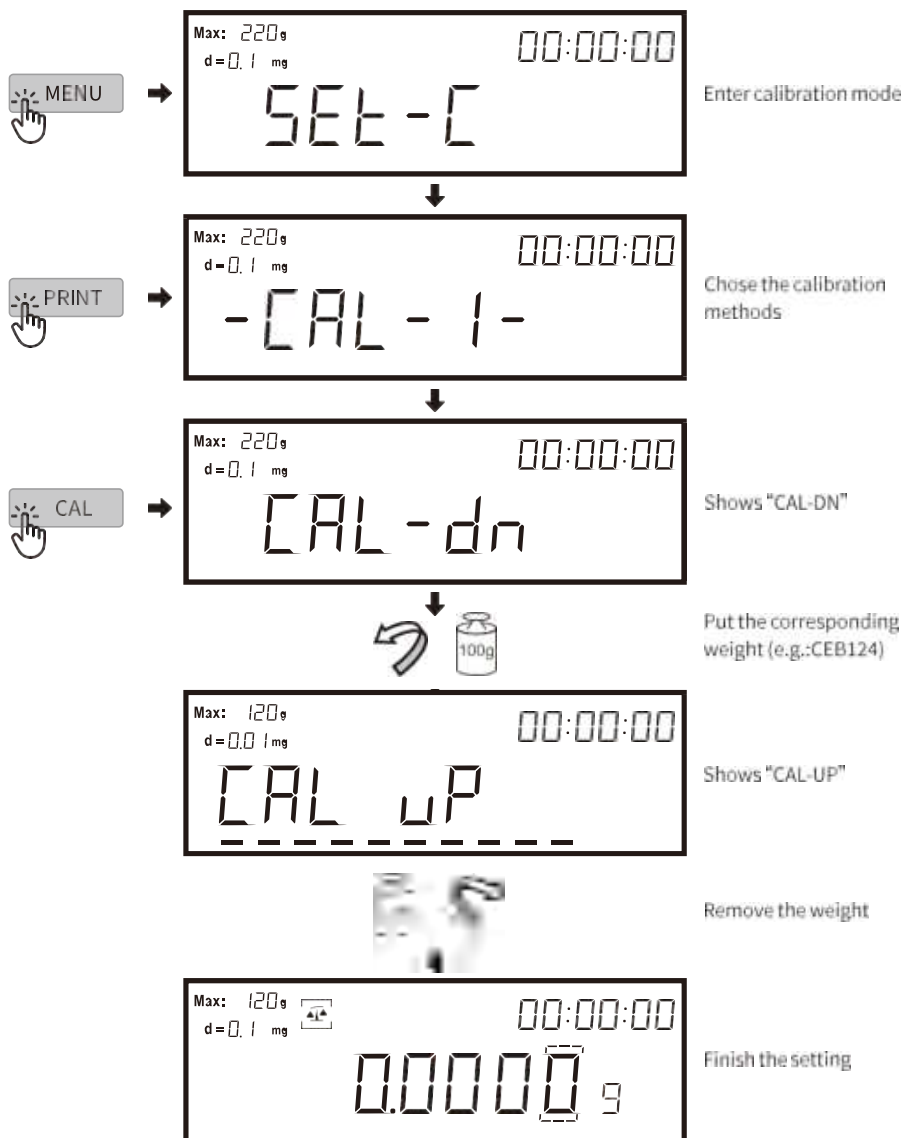


Finish the calibration

Linear Calibration



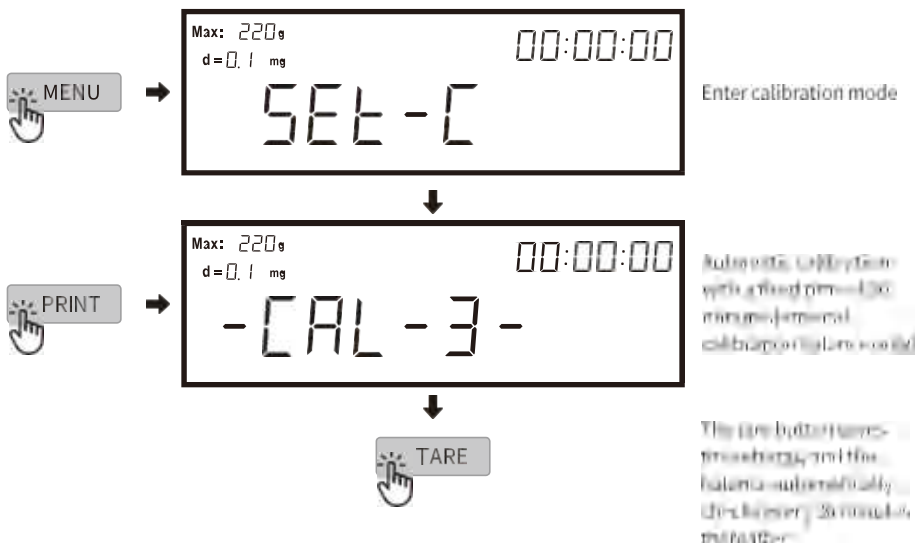
Internal calibration weight value setting (Intl. calibration balance only)



Weight value setting

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

Auto-calibration



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



Default unit "g"



Default unit "oz"



Default unit "ct"

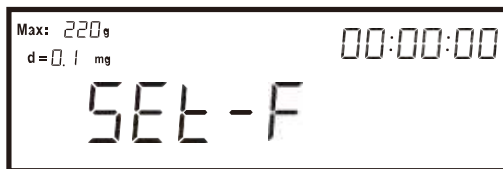


Default unit "mg"

Remark: Other units are customizable



Baud rate setting



Enter Baud rate
setting mode



Baud rate is 1200



Baud rate is 2400



Baud rate is 4800

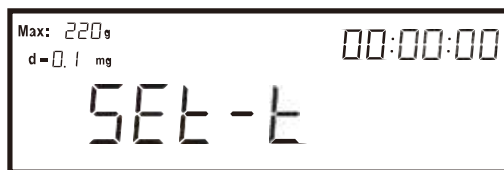


Baud rate is 9600

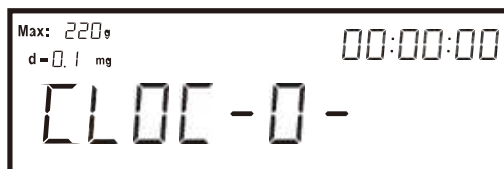


Save settings

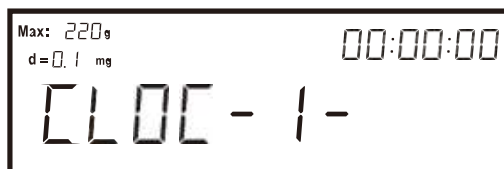
Timesetting



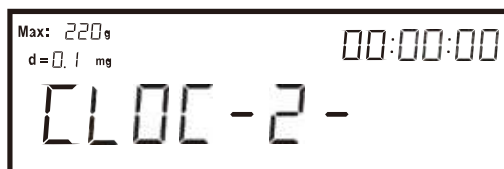
Enter time
setting mode



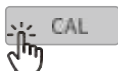
Set second



Set minute



Set hour



1-2-3---9

CAL: increase
MENU: decrease



9-8-7---1



Save settings



Sensitivity setting



MENU

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

Enter sensitivity setting mode



PRINT

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

-ASD-0- highest sensitivity



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

-ASD-1- high sensitivity



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

-ASD-2- medium sensitivity



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

-ASD-3- Low sensitivity

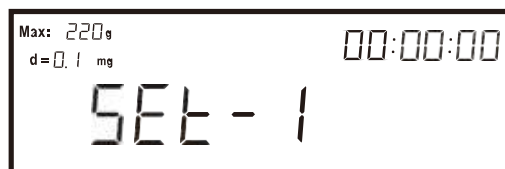


TARE

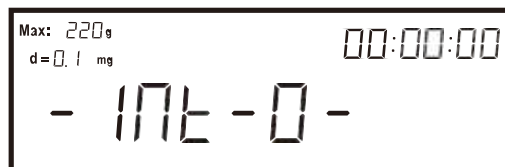
Save settings

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.

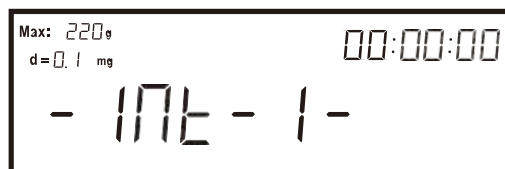
Filter level setting



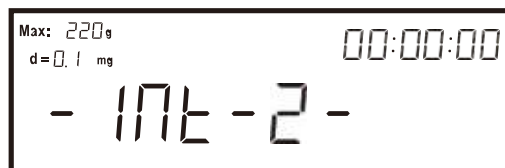
Enter Filter level setting mode



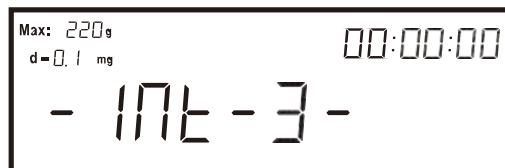
-Int-0- filter level highest



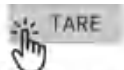
-Int-1- filter level high



-Int-2- filter level medium



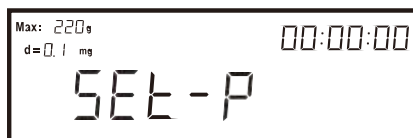
-Int-3- filter level low



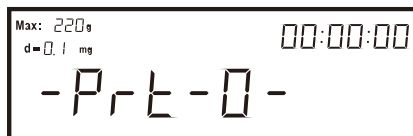
Save settings

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

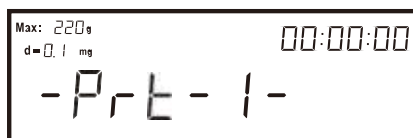
Print setting



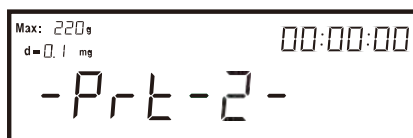
Enter Print setting mode



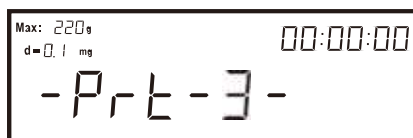
-Prt-0- press "PRINT"
printing



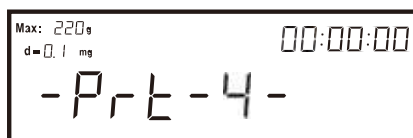
-Prt-1- interval 0.5s
printing



-Prt-2- interval 1s
printing



-Prt-3- interval 2s
printing



-Prt-4- interval 3s
printing



Save settings

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 output 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

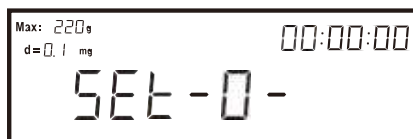


Put object on the scale pan

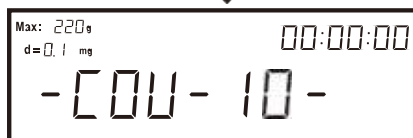


Get object weight

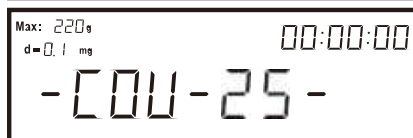
Piece counting



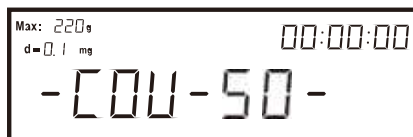
Enter piece counting mode



-COU-10- sample quantity
10PCS



-COU-10- sample quantity
25PCS

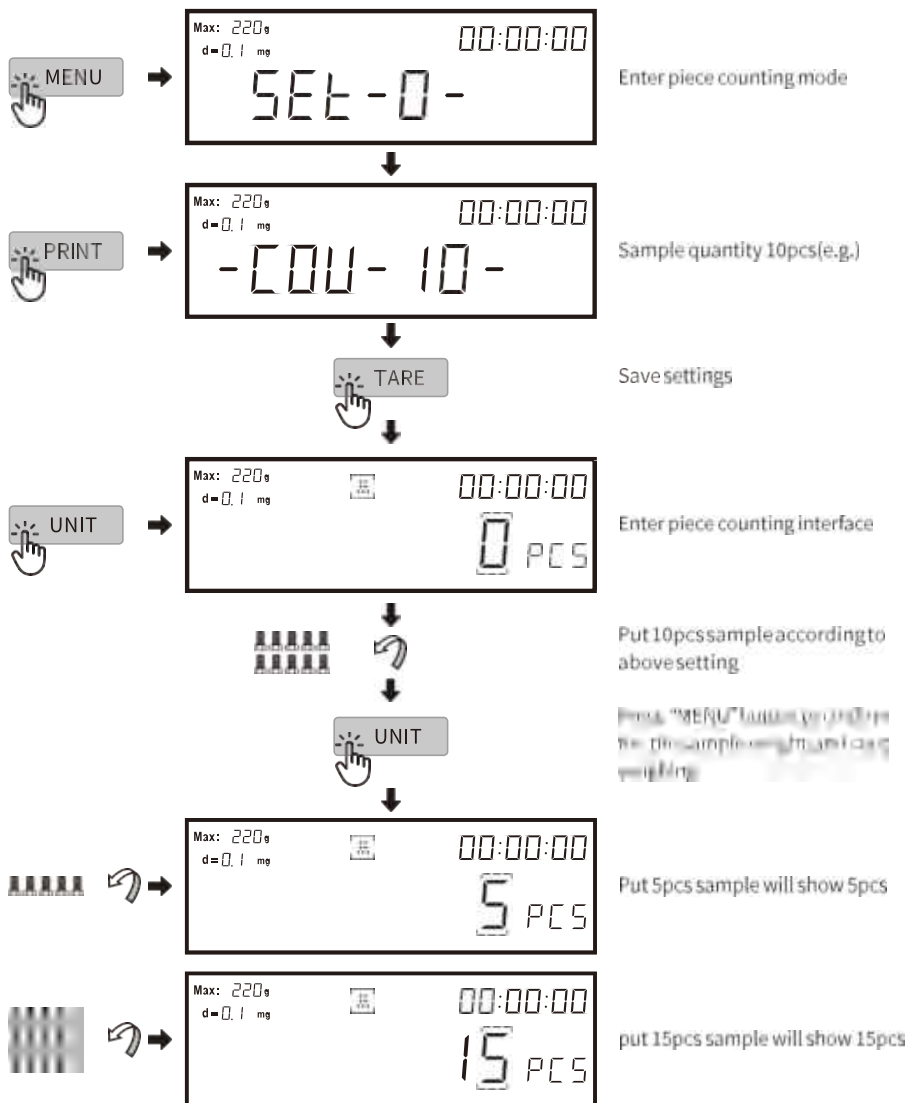


-COU-10- sample quantity
50PCS



Save settings

Piece counting



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

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%)



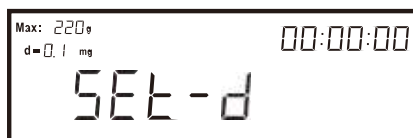
Put the contrast sample
e.g.: 2pcs screws
in 50% mode



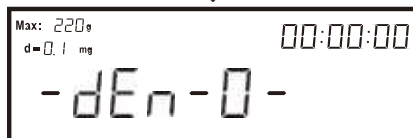
Put the contrast sample
e.g.: 4pcs screws
in 100% mode

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

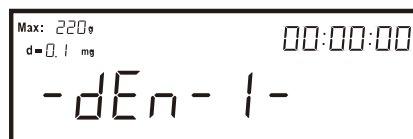
Density determination (need gravity kit - optional)



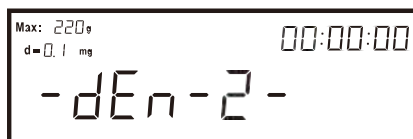
Enter density determination mode



-dEn-0- Close density weighing



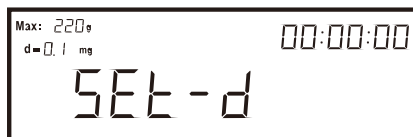
-dEn-1- Open solid density weighing



-dEn-2- Open liquid density weighing



Saves settings, shows and "W1"



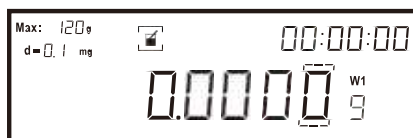
Enter density determination mode



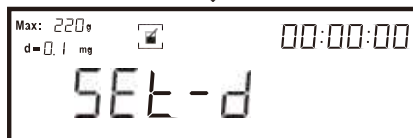
-dEn-1- Open solid density weighing



Density determination (need gravity kit - optional)



Save settings, shows and "W1"



Press "MENU" when shows



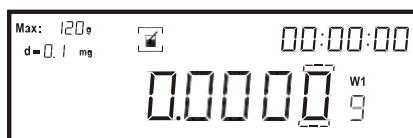
For density determination, the only calibration step is to set the density of the liquid to be measured.



Value increase

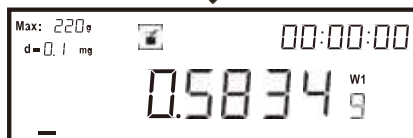


Value decrease

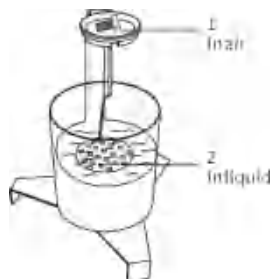


Save density value setting

Put on pan 1

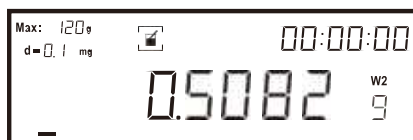


e.g. weighing screw

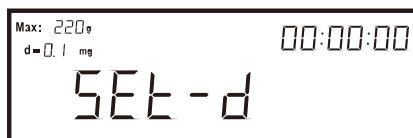


Density determination (need gravity kit - optional)

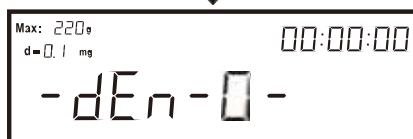
Put on pan 2



Show result of density



If do not measure, enter density determination mode again



-dEn-0- Close density weighing

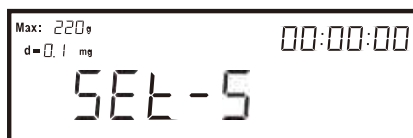


Exit desity determination

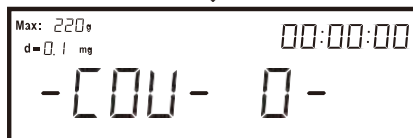
Remark: Liquid density weighing, need particular density kit, please consult manufacturer of operating instruction.



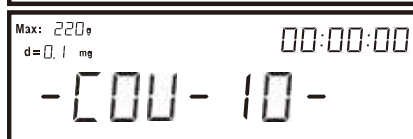
Dynamic weighing



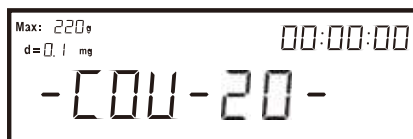
Enter dynamic weighing mode



-COU-0- close dynamic weighing



-COU-10- data sampling 10 times



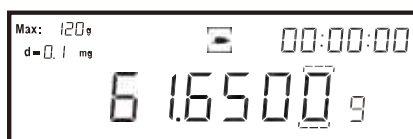
-COU-20- data sampling 20 times



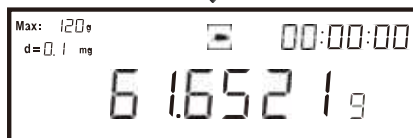
Save setting, display shows



Put the sample on the scale pan



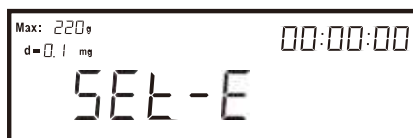
flicker, dynamic weighing starting



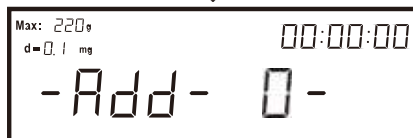
Display flicker, dynamic weighing starting



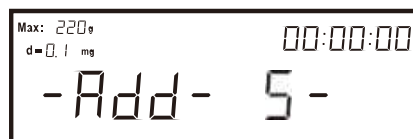
Summation Function



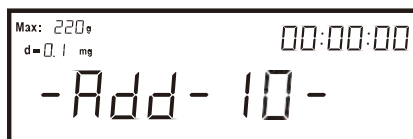
Enter summation function mode



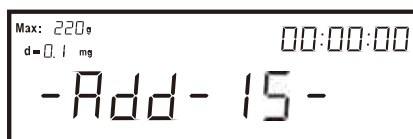
-Add-0- close summation function



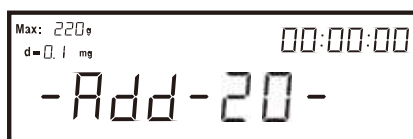
-Add-5- accumulate 5 times weighing value



-Add-10- accumulate 10 times weighing value



-Add-15- accumulate 15 times weighing value



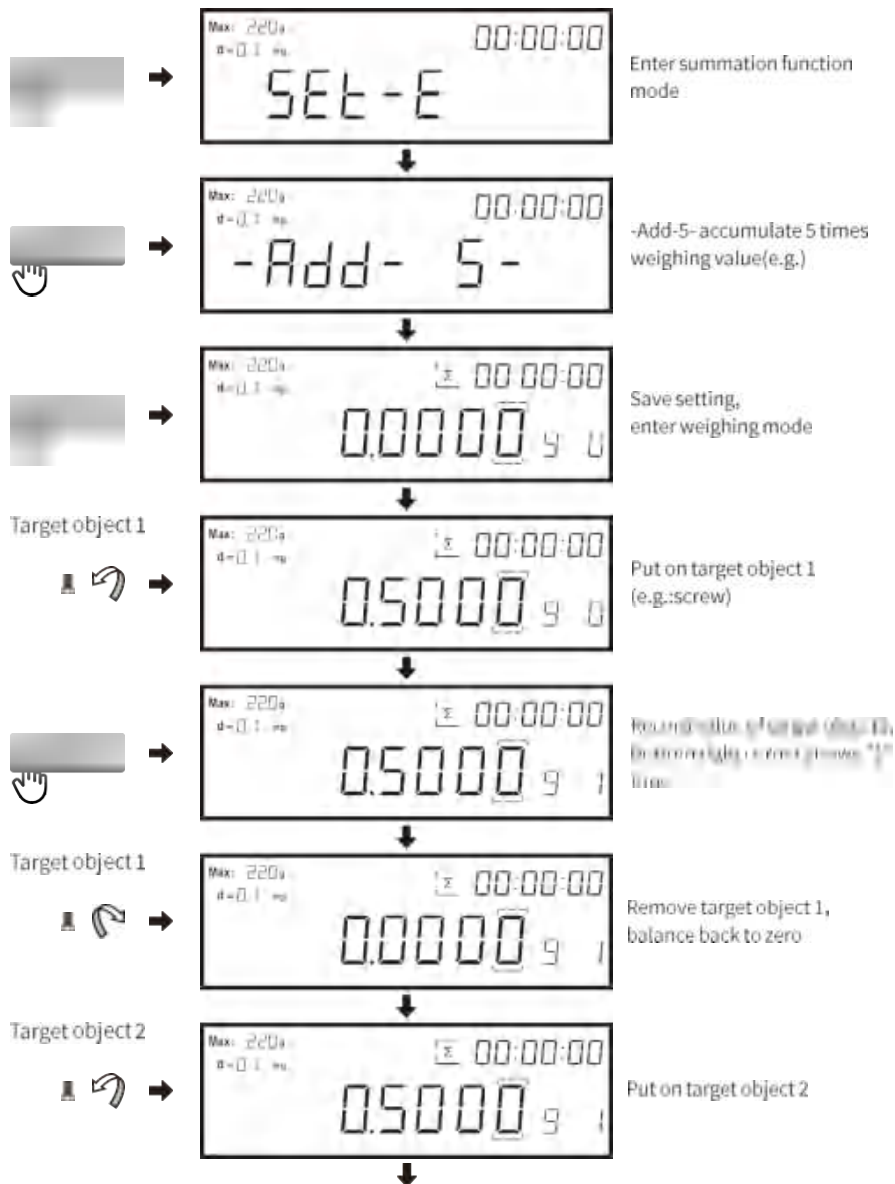
-Add-20- accumulate 20 times weighing value



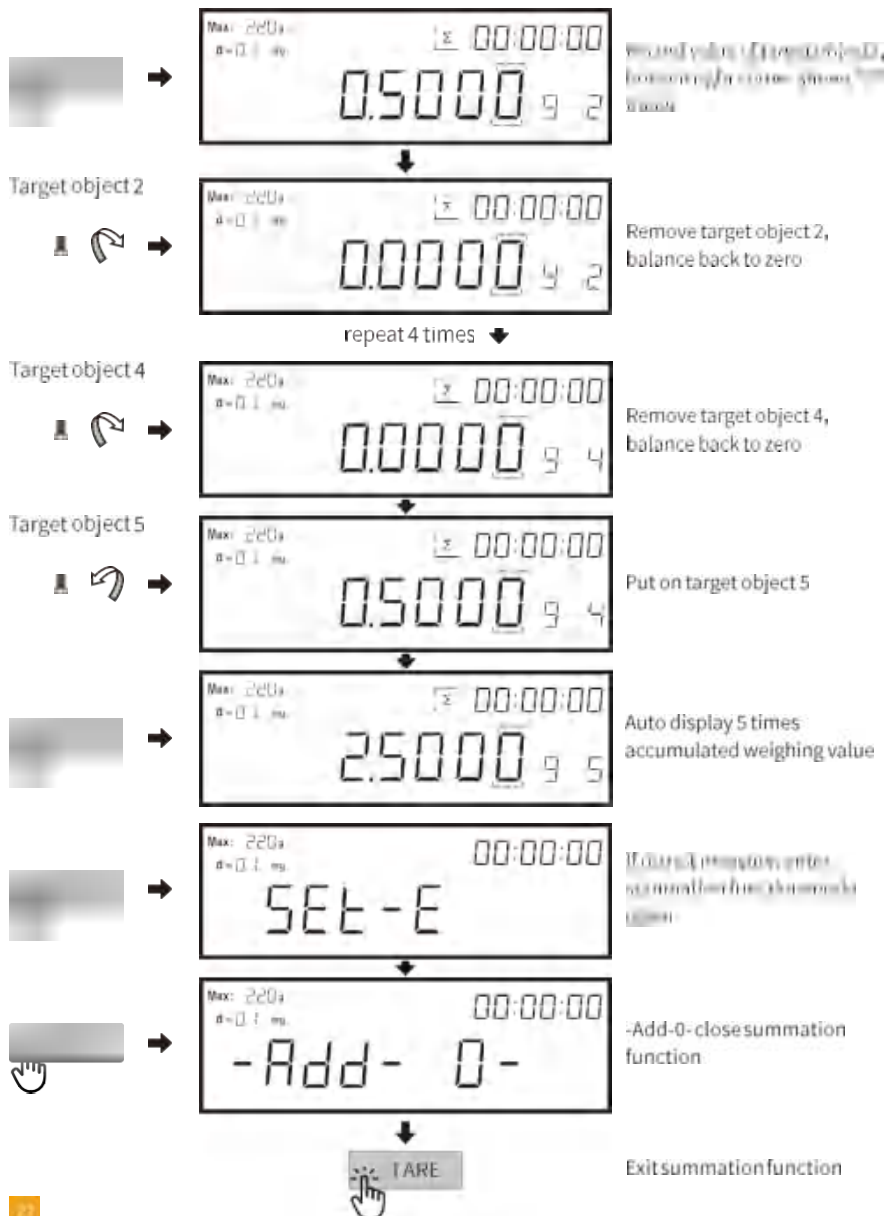
Save setting, display shows



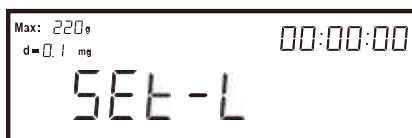
Summation Function



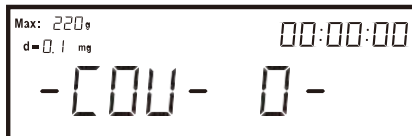
Summation Function



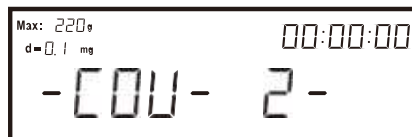
Pipette calibration



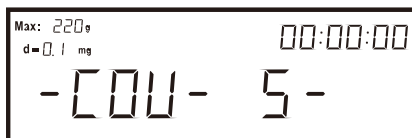
Enter pipette calibration mode



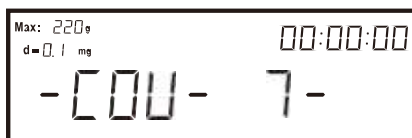
-COU-0- close pipette calibration



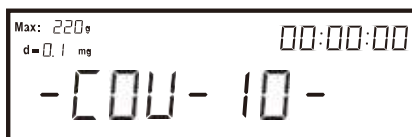
-COU-2- get 2 times weighing value as reference



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



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

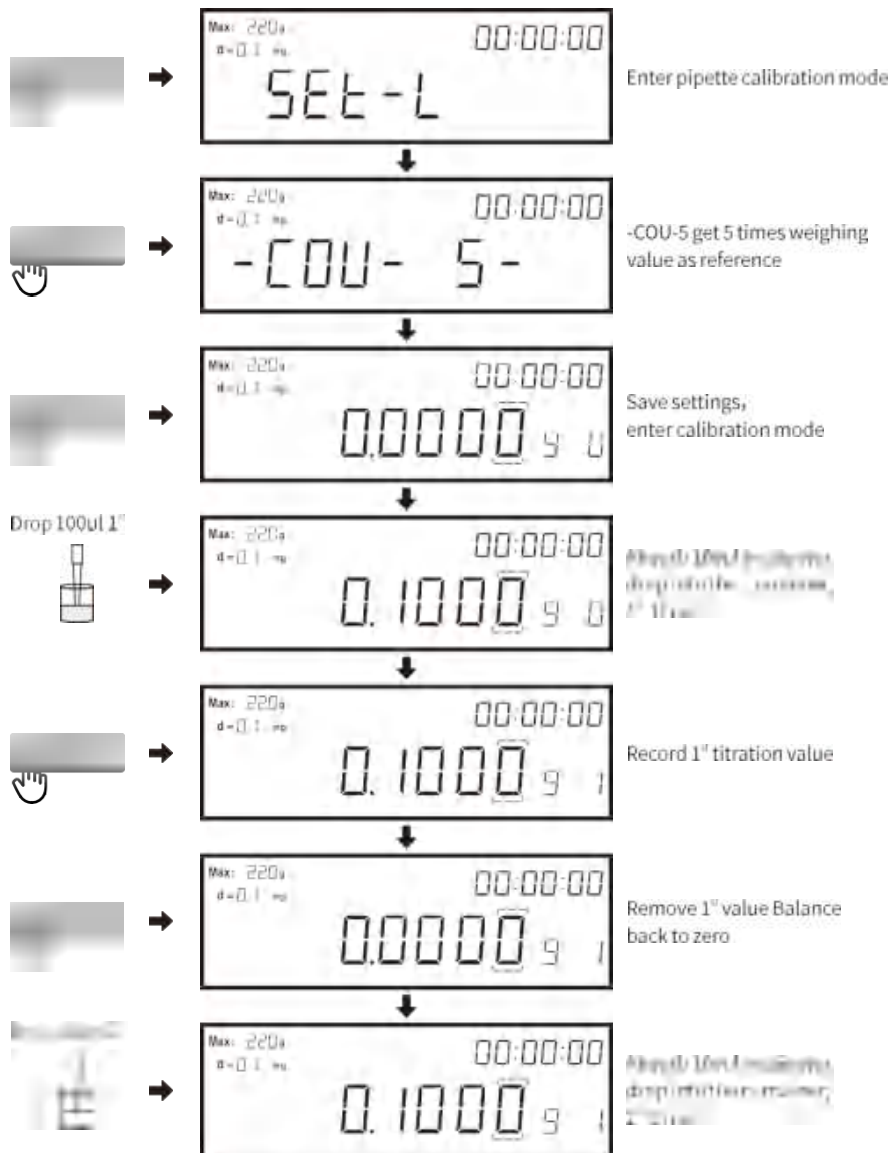


-COU-10- get 10 times weighing value as reference

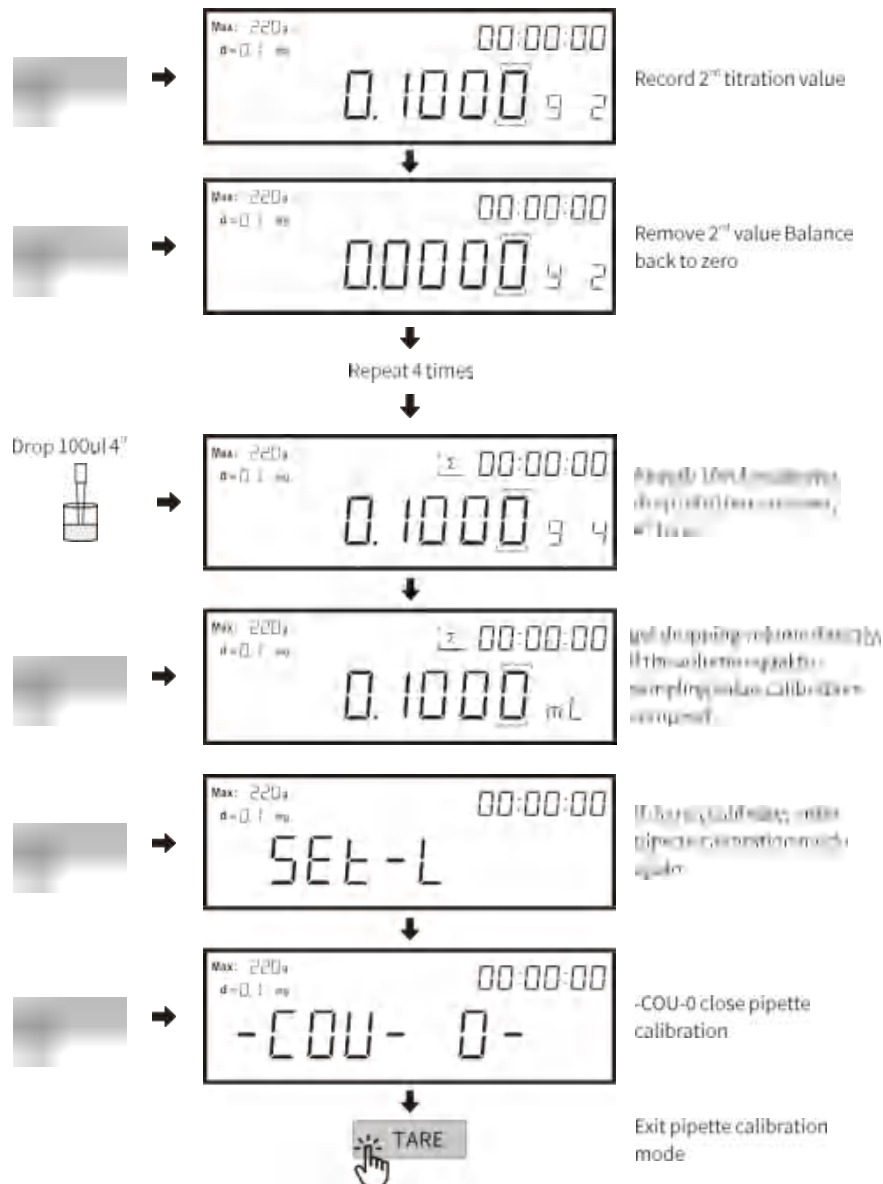


Save settings, enter calibration mode

Pipette calibration



Pipette calibration



Dual program switching



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

Enter dual program switching



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

Balance default program



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

The standby-program



Save settings

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) 100g	1

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