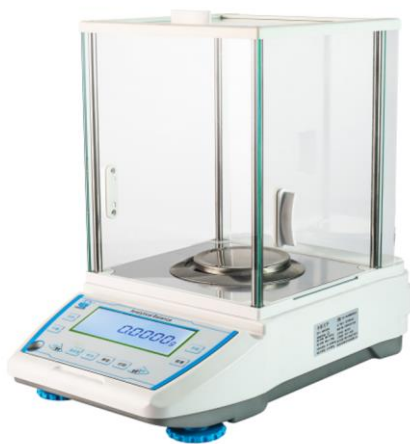


MP series Analytical Balance

User's Manual



Contents

Content

Warning and Safety use Instruction.....	1
Overview.....	2
Basic weighing operation.....	5
1. Preparation.....	5
2. Operation.....	5
3. Power on.....	5
4. Calibration.....	6
5. Unit conversion.....	7
6. INT adjustment.....	7
7. Stabilization adjustment.....	7
8. Counting function.....	7
9. Weighing.....	8
10. Tare.....	8
11. Print.....	8
Technical Specification.....	9
Repairing and Maintenance	11

Warning and Safety use Instruction

Safety

- To avoid damage of the balance , please read the operation manual carefully before use .
- ☆ Please do not use it in dangerous environment .
- ☆ Please cut off the electricity without use for more than one week .
- ☆ Please power off the balance when it connects with output device or before cut off the connection .
- ☆ Magnet or static interference will affect the accuracy of balance , when these interference removed, balance will recover to normal use .

Spare Parts

- ※ The spare parts we used are the most compatible with the balance .
Any revision to the balance or use the third party's cable and other device , it's end user's responsibility to check and correct the power and voltage .
- ※ Please do not open the out case , if the safety label is damaged , no warranty will be offered .

Overview

These series analytical balance was designed and developed by our company. Utilized the advanced microcomputer controlled technology and high precision sensor technology (magnetic balance) , it is the ideal device for fast accurate weighing , widely used in medical research institute、 schools 、 enterprise 、 road construction and defense department etc.

- ▶ LCD backlight display, easy and clear ;
- ▶ Operator-friendly ,direct weigh ,directly read the weighing result ;
- ▶ Highly smart , tare and back to zero within the whole weighing scope , overload display .
- ▶ Multi-mode choice : counting 、 percentage weigh 、 density weigh .
- ▶ With RS-232C interface, easy to connect with printer、 computer and other output device .

1. Open the package

- ☆ Once open the package , please check any visible damage on the balance .
- ☆ Please keep all the packing material until successful installation , to avoid any balance return . When pack the balance , please remove all the cables to avoid any unnecessary damage .

2. Packing list

- balance
- operation manual
- power adapter
- weights ($\leq 500\text{g}$)
- Conformity certificate
- warranty card

3. Preparation before Use

Put the balance in a level position before use. Use the level adjust feet under the front plate to adjust the level until the bubble move to the center of the circle.

Put the balance on the stable and flat table , not on the shaking or vibrating plate , to make the balance stable . (Recommend to use aseismic marble)

Avoid to put balance in the place with big temperature change or air flow , such as the place with direct sunlight or cold air outlet .

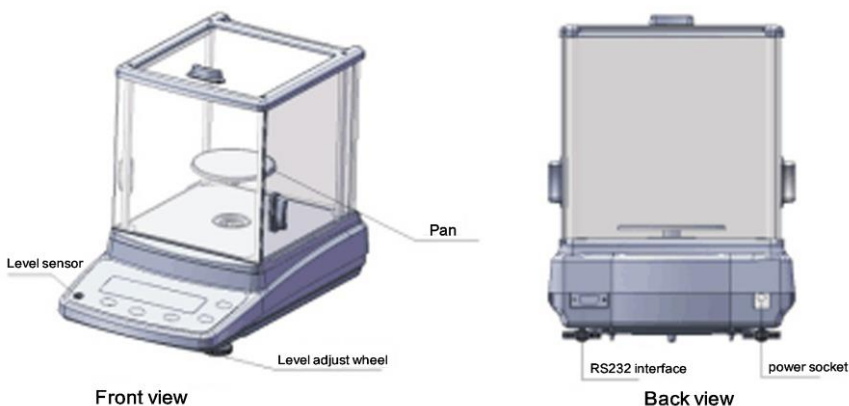
Please use the separate power socket to avoid the interruption by other device .

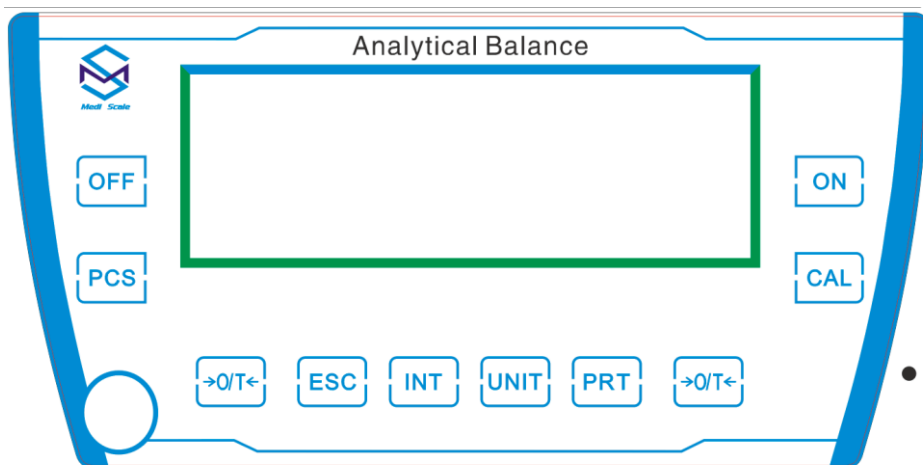
Please do not put anything on the scale when power on the balance.

※ Make balance adjust itself to the change of temperature

When change the balance from lower temperature to higher temperature or reverse , please put the balance in the new environment for about 2 hours , then pre-heat the balance , make it conform with the new temperature.

4. Out looking and Installation Adjustment





Button	Name	Function
ON/OFF	ON/OFF	Short press: Switch on/off the balance .
Cal	Cal	Long press: enter calibration within 5 seconds
Zero	Zero	Short press : When it ≤ 6 gram ,back to zero ;
Tare	Tare	Short press: Tare the weight
Print	Print	Short press: data output, change the position when set the numbers ;
ESC	Stability	Short press: change the stability grade
INT	Speed	Short press: change the response speed
Unit	Unit	Short press: unit conversion

Basic Weigh Function

1. Preparation

*unpack the box and removing all packing, install the pan

*place the balance on a stable work surface, sunshine and air flow

* $20^{\circ} \pm 2.5^{\circ}\text{C}$ for first class balance with a fluctuation of temperature not greater than 1°C/h

*relative humidity: first class balance 50%-75%

*working voltage: 100-240V 50~60HZ 0.5A

2. Operation

*check level indicator before use it, if bubble is not in center, adjust the level feet and make it in center

*balance uses touch button, can carry out multiple keyboard control, operation flexibility, can press corresponding button for conversion and select each function simply.

3. Power on

A: External calibration balance

*after plugin, the balance start electrify, normally power on the display and start operation after warm up the machine.

*press power to let display on, the display will show all symbol, after 2 seconds, will show the max weight on the display, then it will enter weighing mode:0.0000g, press OFF button again for power off

B: Internal calibration balance

*after plug in, the balance start electrify, turn on the balance, the display will start warm up(30 minutes), it will auto-calibration once warm up finished. You could start weighing after displaying 0.0000g.

*for an urgency use. Power on and press the "ON" button again in the warm-up time. It will auto-cal and you could start weighing after displaying 0.0000g on the screen.

4. Calibration

The high accuracy analytical balance with two kinds of style: automatic internal calibration and external calibration

A: Automatic Internal- cal balance Method 1:

When the balance is displayed as 0.0000g, press the "CAL" button. When the display shows "CAL INT", release the "CAL" button. The balance enters the automatic internal calibration state and displays "CAL". Waiting for a dozen seconds and the calibration is over. The balance shows 0.0000g and the balance returns to the weighing state.

*For quick enter the weighing mode

Turn on the scale by press the button of "ON", normally it will automatic start to warm up 30minutes. When it in warm up state, the display will appear t-00-01(02/03/04...), in this state, press the button of "ON", then press the "TARE" button, after a few seconds, the 0.0000g will show on the display, then you can start weighing.

When the scale in the sleep mode, the display will show "Close" if you want quick enter weighing mode, press the button of "ON", the screen will display "INT-CAL", after it disappeared, it will in the state of "•", then press the button of "TARE", after a few seconds, the 0.0000g will show on the display, then you can start weighing.

Method 2:

External-cal (Calibrate with calibration weight)

Pressing the button of "ON" and "CAL" in the same time. The screen will display "--CAL-" and please wait a few seconds until the calibration weight value to be displayed. Place the corresponding value weight on the weighing pan and wait for the value displayed stable, then remove the weight and calibration finished.

*Noted: In normal use, the balance should be calibrated using internal calibration.

B: External calibration balance

*long press Cal button until the display show CAL

*place corresponding value weight on the pan which shown the display

*remove the weight, then the calibration is finished.

5. Unit conversion

Long press Unit button and the unit will show on display, choose the unit you want for weight

6. INT adjustment

*four modes can be choose

INT-0 fastest

INT-1 fast

INT-2 slow

INT-3 slowest

Factory suggest use INT-2 slow

7. Stabilization adjustment

*four modes can be choose

ESC-0 best

ESC-1 better

ESC-2 good

ESC-3 normal

Factory suggest use ESC-2 good

8. Counting function

The items used for counting must be standard parts, individual unit weight difference should not big.

Four modes can be choose

---Cou-05

---Cou-10

---Cou-15

---Cou-20

*long press PCS button, and the display will show "5"

"10" "15" "20" in turn, then put the goods to be counted onto the weighing pan, the quantity must same as the display showed, then press CAL, it will appear the line

"--- ", after several seconds, it will show the weighing number on the screen, take out the weighing product and zero will shown on display, then you could

counting the same goods with the quantity you want.

9. Weighing

*power on enter weighing mode

*after calibration, the weight show in display is the weight of weighing objects

10. Tare

put the container on the pan, it will display the weight value

press TARE until zero show in screen, put the weighing objects in the container to weight the net weight.

11. Print

There are 5 modes could be choose:

-prt-0: print by press PRINT key

-prt-1: print every one minute

-prt-2: print every two minutes

-prt-3: print every three minutes

-prt-4: print continuously

Technical Parameter

Technical Parameter

Model	MP100	MP120	MP200	MP220	MP300	MP320
Max weigh scope	100g	120g	200g	220g	300g	320g
Precision level	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
CAL mode	External CAL					
value of scale division	0.0001g					
Standard weights value	100g	100g	200g	200g	200g	200g
Repeatable tolerance (standard tolerance)	$\pm 0.0003\text{g}$					
Linear tolerance	$\pm 0.0003\text{g}$					
Stable time	$\approx 4\text{s}$					
Pre-heat time	60-120 minutes					
Operation temperature	$20 \pm 2.5^{\circ}\text{C}$					
Pan diameter	$\Phi 90\text{mm}$					
Overall dimensions	360mmX220mmX320mm (L*W*H)					
Weigh chamber dimensions	180mmX175mmX200mm (L*W*H)					
Net weight	$\approx 8.3\text{kg}$					
Gross weight	$\approx 9.3\text{kg}$					
Adapter power supply	AC 100-240V、50/60Hz, DC 5V/2500mA					
Package size	475mmX365mmX475mm (L*W*H)					

Technical Parameter

Model	MP100A	MP120A	MP200A	MP220A	MP320A
Max weigh scope	100g	120g	200g	220g	320g
Precision level	Ⓢ	Ⓢ	Ⓢ	Ⓢ	Ⓢ
CAL mode	Internal CAL				
value of scale division	0.0001g				
Standard weights value	100g	100g	200g	200g	200g
Repeatable tolerance (standard tolerance)	$\pm 0.0003\text{g}$				
Linear tolerance	$\pm 0.0003\text{g}$				
Stable time	$\approx 4\text{s}$				
Pre-heat time	60-120 minutes				
Operation temperature	$20 \pm 2.5^{\circ}\text{C}$				
Pan diameter	$\Phi 90\text{mm}$				
Overall dimensions	360mmX220mmX320mm (L*W*H)				
Weigh chamber dimensions	180mmX175mmX200mm (L*W*H)				
Net weight	$\approx 8.3\text{kg}$				
Gross weight	$\approx 9.3\text{kg}$				
Adapter power supply	AC 100-240V、50/60Hz, DC 5V/2500mA				
Package size	475mmX365mmX475mm (L*W*H)				

Repair and Maintenance

Repairing

Repairing must be done by the trained technicians.

Cleaning

- ✧ Unplug the power adapter from the socket , if there is cable connecting with the balance interface , unplug the cable as well .
- ✧ Clean the balance by a cloth soaked in neutral flush (soap) .
- ✧ After cleaning, wipe the balance by a soft dry cloth .
- ✧ Taking up the bracket to check the weighing system not damaged.

Don't make the liquid flow into the shield of balance; Don't use the corrosive flush(solvent) to clean the stainless steel surface . All the stainless steel parts need to be flushed frequently , take out of all the stainless steel parts and flush them completely , use the wet cloth or sponge to clean the stainless steel parts . Only use the homely flush suitable to clean stainless steel parts .

Warranty

Please do not ignore the warranty right you should enjoy .

We offer one year warranty for the balance from the date it sold out, Damages not caused by misuse or vandalism all belong to warranty exclude the following case :

- ✧ Balance out of warranty .
- ✧ Damage caused by misuses such as long time under sunshine or receive corrosion .
- ✧ The user does not obey the operation manual such as overloading the balance .
- ✧ Without our authorized department or technician repairing, the user disassembly the balance on his own .
- ✧ Any brute force application caused the damage of balance . E.g. throw the heavy loads to the pan , open or shut the chamber door violently .

Repair and Maintenance

If you have any quality problem, please pack the product well together with the warranty card , then send it to the local agent or distributor . We will repair it immediately and send it back within one week , other wise , we will replace the product . The sensor is not within warranty range .

Any product out of warranty or caused by misuse will be charged a reasonable repairing fee .

