

# Operation Manual



**BBWA-102**

## Water Bath

Thank you for Choosing Biolab products. Please read the "Operating Instructions" and "Warranty" before operating this unit to assure proper operation.

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# 01 Summary

BBWA-102 Water Bath is applicable for distillation, concentration, drying and thermostatic heating of medical units, universities and colleges, scientific research units and laboratories of industrial and mining enterprises like chemical printing and dyeing enterprises and pharmaceutical enterprises.

# 02 Structure Features

1. The enclosure of the product is formed and machined by using high-quality steel plate. Static electric spraying process is adopted on the surface, which is sturdy and durable. The inner container is finished by the stainless steel stretching.
2. The liner and upper cover are made of high-quality stainless steel plate, featuring strong corrosion resistance.
3. U-shaped heating pipe is adopted for direct heating in water. The temperature rise is quick and the thermal loss is small.
4. Single-row digital display or intelligent temperature controller boasts simple operation and favorable application effect.

# 03 Main technical parameters

Model	BBWA-101 1 hole	BBWA-102 1 row and 2 holes	BBWA-103 2 rows and 4 holes	BBWA-104 2 rows & 6 holes
Supply voltage	200-240V/100-120V			
Power(W)	400	500	1000	1500
Tem-motion(°C)	±0.5			
Tem-range(°C)	RT+5 ~ 100			
Senility of Tem Control(°C)	≤±1			
Display error(°C)	≤±2.5			
Chamber Size	150x135x	300x150x150	325x300x150	500x300x15

(mm)	150			0
Products Size (mm)	170x154x210	318x168x210	350x318x210	524x322x210
Packing Size(mm)	240x230x280	390x240x280	420x390x280	600x390x280
N.W.(Kg)	3.3	4.5	6	7.5
G.W.(Kg)	4	5	7	9

## 04 Working Conditions

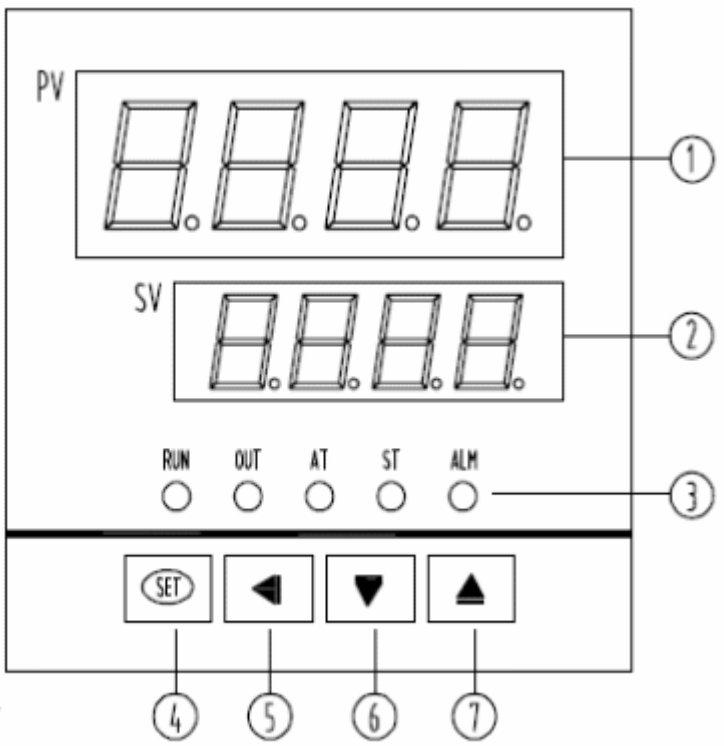
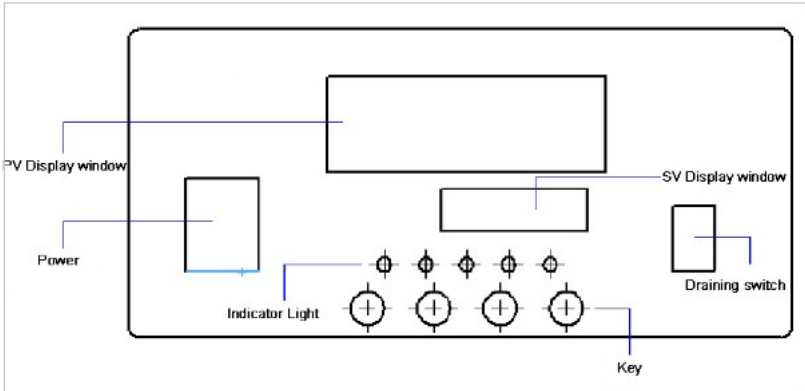
1. Temperature ranges between 5~40°C;
2. Relative humidity less than 85% RH;
3. Power: voltage 220-240v, frequency 50-60Hz;
4. No violent vibration and corrosive gas surround the equipment.

## 05 Attentions

1. Before use, add water 50mm until the water reaches above the clapboard, then connect to power supply and heat. It is not allowed to heat with insufficient water.
2. During use, do not touch the heating pipe by your hands to avoid being scalded.
3. After use, timely discharge the water, dry it and keep it clean in order to extend the service life.

## 06 Temperature Controller Operation

- i . Meter panel instruction



**Display and Key:**

- ① PV: Measure value
- ② SV: SET VALUE
- ③ LED:
  - RUN: WORK LIGHT
  - OUT: HEAT LIGHT
  - ST: SET TIME LIGHT

- ALM: ALARM LIGHT
- ④ SET KEY: SET VALUE
- ⑤ MOV KEY: SET VALUE CHANGE BIT
- ⑥ DOWN KEY: SUB 1
- ⑦ ADD KEY: ADD\_1

**ii. parameter:**

TABLE 1 COMMON PARA

PAR	NAME	DEF	RANGE	NOTES
SV	SETVAL	X	SV_L~SV_H	
ST	SETTIME	0	0~9999	0:NO ST,UNIT:MIN
AT	AUTO	0	ON/OFF	
MAN	MAN_V	0	0~100	NO_USE

## USE\_PARA

PAR	NAME	DEF	RANGE	NOTES
ET	ST_MOD	0	0~1	0:ST WHEN TEMP NO CHANGE 1:ST AT ONCE
DF	DF	2.0	0~9999	
DP	POINT	1	0~2	
PK	OFF_K	1.0	0~2	
PB	OFF_B	0	-199.9~999.9	
DHAL	ALM_OFF	9999	0~9999	
ADDR	NUM	1	1~32	
BAUD	BAD	0	0~3	NO USE

## FAC\_PARA

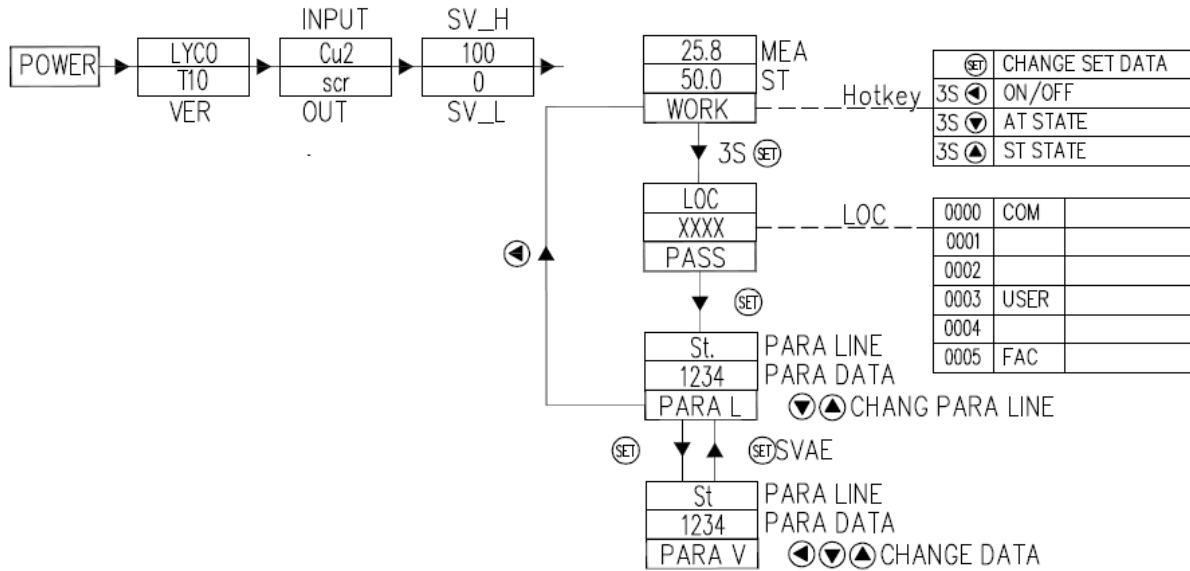
PARA	NMAE	DEF	RANGE	NOTES
SYS	SYS_NUM	0	0~7	
CTRL	CON_MODE	2	0~4	2:PID
SN	SEN	4	0~6	
P	PID_P	4	0~1200	
I	PID_I	280	1~2000	
D	PID_D	70	0~1000	
MR	HAND_O	0.3	0~1	
CP	CON_K	0.25	0~100	
OUT	O_TYPE	0	0~4	
SV_L	SET_LOW	0.0	0~9999	
SV_H	SET_HIG	100.0	0~9999	
P_H	MEA_HIG	0.0	0~9999	
P_L	MEA_LOW	100.0	0~9999	
PV_F	FILTER	5	1~99	
OC	OUT_T	2	1~60	
OH	PID_HIGH	100	0.1~100	
OL	PID_LOW	0	0.0~99.9	
SF	SF	40	0~100	
HIAL	ALM_HIG	9999	0~9999	
HT1	ALL_OUT	9999	0~9999	OVER THIS ALL OUT
ACT	ACT	0	0~1	0:HEAT 1: COOL

**iii. Operation:**

1. Put the instrument horizontally.
2. Open the cover and add the pure water or distilled water to the water tank, the water level must be higher than the heating pipe and temperature sensor.
3. Connect the suitable power, open the switch and the electricity supply.
4. The upper row of the instrument shows test temperature and setting temperature is showed in the lower row.
5. Shot pressing the setting key can enter the setting state. Shift, plus and minus keys can adjust the temperature.
6. Press the upper key to set time, when the upper row shows ST and the lower row shows OFF, to press the upper key again then the lower row shows the time. The shift key is used to change the numerical which unit is minute. There are two kinds of timing modes which are timing after temperature constant and timing after setting finished. When the time arrived, heating output stopped. If need to start the operation again, the power switch must be shut and open again.

7. Automatic tuning function · If the test temperature fluctuation, the self-tuning function can adjust. Press the plus & minus key till the indicator light on.

## 07 Wiring



## 08 Fault Analysis

Failure	Cause	Handling method
No power supply	1. Bad contact between plug and socket 2. The fuse is burnt.	1. Replace the plug or socket tube. 2. Replace the fuse with same specification.
No temp. rise	1. The temp. Controller is broken 2. The sensor is broken 3. The set temperature is lower than water temperature	1. Replace the instrument 2. Replace the sensor 3. Reset the temperature 4. Replace the heating pipe



	4. The heating pipe is burnt	
The big difference between display temp. and actual temp.	<ol style="list-style-type: none"><li>1. The temp. controller</li><li>2. The temp. sensor is broken.</li></ol>	<ol style="list-style-type: none"><li>1. Replace the temp. controller</li><li>2. Replace the temp. sensor.</li></ol>



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