OPERATING MANUAL

DRYING OVEN

BOGP-301 BOGP-302 BOGP-303 BER-510 BOGP-304 BOGP-305

CE ISO9001 CERTIFIED

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INDEX

1. Safety warning before use


Must prohibit items

1. Do not store volatile, flammable, or explosive materials in this device, as it may cause explosions or fires.
2.Do not place this device in a place that is exposed to rain, moisture, or may splash water, otherwise it may cause accidents such as leakage, short circuit, or electric shock.

professional technicians are not allowed to disassemble, repair, or modify equipment, otherwise improper operation may cause fire or electric shock accidents to personnel。


Must comply with items

1.This device should be installed on a solid ground. If the ground is not solid enough or the installation location is not suitable, personnel may be injured due to equipment overturning.
2. Please use the dedicated power supply indicated on the nameplate of this device, and the power socket must be grounded. This device must be reliably grounded to prevent accidental electrical leakage that may cause electric shock or fire.
3. Before carrying out any repairs or maintenance on this equipment, be sure to disconnect the power supply to prevent electric shock or personal injury.
4. When repairing or maintaining equipment, it is necessary to wear gloves to prevent personal injury caused by touching edges or sharp corners.
5.If any abnormalities are found in the operation of the device, immediately unplug the power plug and stop the device from running. Operating under abnormal conditions may cause electric shock or fire.

2. Main features of product

1. Unique vertical dual duct circulating horizontal air supply, with uniform temperature distribution in the studio.
2. Digital tube display microcomputer intelligent PID temperature controller.
3. Standard fan switch, high brightness LED instrument operation indicator light, and high-temperature resistant blower motor.
4. New anti scald handle.

The BE series also features:

1. The temperature controller's color LCD screen displays the set value, measured value, and timing simultaneously on the screen.
A 2.4 speed 3-speed speed adjustable fan can adjust the required air volume according to different sterilization requirements of users, thereby sterilizing various types of samples.
3. Independent over temperature protection system: When the temperature in the studio exceeds the alarm value set by the instrument, cut off the main heating circuit to improve safety.
4. Independent temperature limiter: High precision digital display independent temperature limiter, set to limit the temperature of the studio, providing dual safety protection for the product.

3. Technical Specification

Model		BER-501	BER-502	BER-503	BER-504	BER-505	BER-506
		BOGP-301	BOGP-302	BOGP-303	BER-510	BOGP-304	BOGP-305
Cycle Mode		Forced convection					
Function	Temp. range	RT+10-300°C					
	Temp. Resolution Ratio	0.1°C					
	Temp. Motion	±1°C					
	Temp. Uniformity	±2.5%					
Structure	Inner Chamber	Mirror Stainless Steel					
	Outer Shell	Cold rolling steel electrostatic spraying exterior					
	Insulation layer	High quaility rock wool board (with CE)					
	Heater	stainless steel heater					
	Power rating	0.8kW	1.2kW	1.6kW	2.0kW	2.3kW	3.0kW
	Exhaust hole	φ35mm top(with function of test hole)					
Controller	Temp. control mode	Two temperature section PID intelligent					
	Temp. setting mode	Touch button setting					
	Temp. display mode	B model:LED Digital Display					
		BE model: LCD Digital display					
	Timer	0-9999min(with timing wait function)					
	Operation function	Fixed temperature operation, fixed timing function, auto stop.					
	Additional Function	B model: Sensor deviation correction, temperature overshoot self-tuning, internal parameter locking, power-off parameter memory					
		BE model: High precision digital independent temperature limiter, 4 grades 3 speed adjustable-speed fan (GX230BE without fan speed adjustor), sensor deviation correction, temperature overshoot self-tuning, internal parameter locking, power-off parameter memory					
	Sensor	Pt100					
	Safety Device	B type: Over temperature sound-light alarm; BE type: Digital Independent Temp. limiter. over temperature sound-light alarm.					

Specification	Inner Chamber size(W*L*H) (mm)	310*310 *310	350*350 *350	400*360 *450	450*420 *450	500*450 *550	600*500 *750
	Exterior size (W*L*H)(mm)	460*510 *695	500*550 *735	550*550 *840	590*610 *830	636*680 *915	735*835 *1115
	Packing size (W*L*H)(mm)	540*575 *855	580*615 *895	635*625 *995	680*685 *1000	710*730 *1100	857*885 *1287
	Volume	30L	45L	65L	85L	125L	230L
	Shelf number	5	6	8	8	11	17
	Load per rack	15kg					
	Shelf space	40mm					
	Current rating (50/60HZ)	AC220V/ 3.6A	AC220V/ 5.5A	AC220V/ 7.2A	AC220V/ 9.0A	AC220V/ 10.5A	AC220V/ 13.6A
	NW/GW (kg)	33/37	37/43	44/49	50/56	60/66	94/120
Accessory	Shelf	2					
	Shelf frame	4					
optional accessories		B model: Spare shelf; BE model: Spare shelf, RS485 interface, printer, program controller, U-disk storage; 3.5-inch color touch screen temperature controller					

Table 1

4. Instrument operation and display instructions

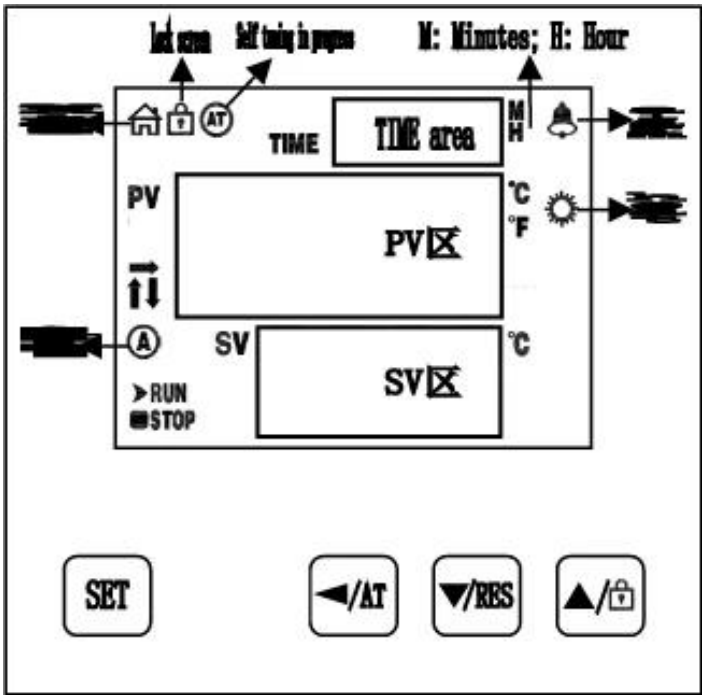


Figure 1

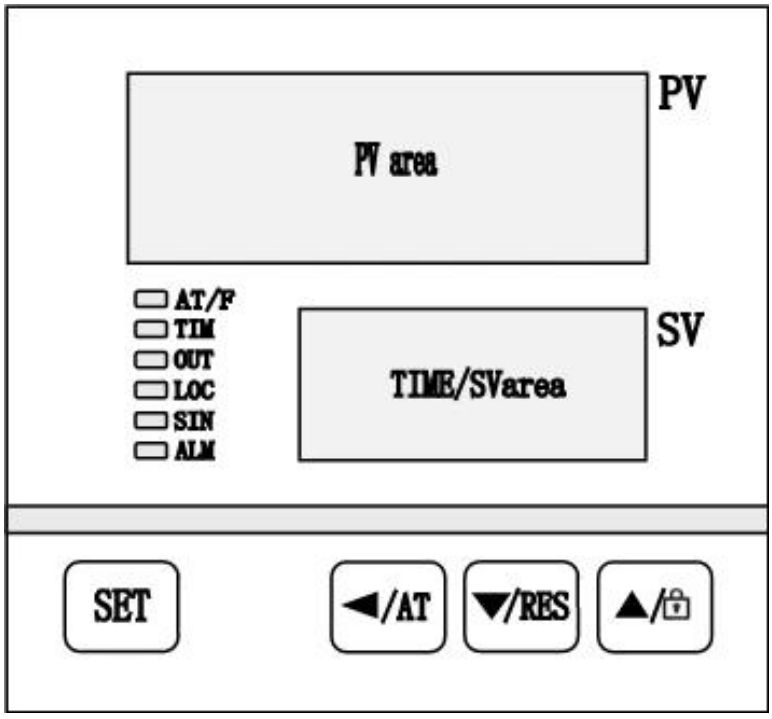


Figure 2

1.Instrument operation and usage

Key Definition

1. [SET]: Set button. When the main interface displays the status, click this button to enter the temperature and time target value setting state. Long press this button for 3 seconds to enter the internal parameter setting state.
2. { ◄/AT }: Shift/self-tuning key. Clicking this key in the set state can cause the set value to shift and

flash for modification.
In the main interface display state, long press this button for 6 seconds to enter the temperature self-tuning selection state.
3. [▼/RES]: The decrease/rerun button can be used to decrease the set value by clicking or long pressing it in the set state.
Press and hold this button for 3 seconds in the main interface and at the end of the run state to restart the operation.
4. [▲/🔒]: Add/lock screen button, click or long press this button in the set state to gradually increase the set value.
If the lock screen function is selected, in the main interface display state, click this button to lock or unlock the screen.

Definition of digital tube display type instrument indicator lights:
1. [AT/F] indicator light: This light comes on when the temperature unit is Fahrenheit, flashes during the temperature self-tuning process, and goes off in other states.
2. [TIM] indicator light: It lights up when there is a timing setting, flashes during the reservation timing process, and goes off when there is no timing function.
3. [OUT] indicator light: When there is heating output, this light will turn on, and vice versa, it will turn off.
4. [LOC] indicator light: lights up in lock screen mode, otherwise goes off.
5. [SIN] indicator light: Invalid reservation.
6. [ALM] indicator light: When there is a temperature deviation alarm or abnormal temperature measurement, this light will turn on. When there is a temperature deviation alarm, this light will flash. Under normal conditions, this light will turn off.

Definition of LCD instrument indicator lights:
1. [Main interface] Indicator light: This light will light up in normal working state (not set state), and turn off in reverse.
2. [Lock] indicator light: It lights up in the lock screen state, and goes off in the opposite direction.
3. [AT] indicator light: During the temperature self-tuning process, this light flashes, otherwise it goes out.
4. [Alarm] Indicator light: When there is a temperature deviation alarm or abnormal temperature measurement, this light will turn on. When there is a temperature deviation alarm, this light will flash. Under normal conditions, this light will turn off.
5. [Heating] Indicator light: When there is heating output, this light will turn on, and vice versa, it will turn off.
6. [A] Indicator light: This light flashes during the reservation timing process, and goes off if not.
7. [RUN/STOP] indicator light: STOP will only light up after the timer ends, and RUN will light up in other states.
8. [↑/→/↓] Indicator lights: They flash respectively during heating, constant temperature, and cooling.

2.Operation and usage methods
In the main interface display state, click the [Set] button to enter the temperature setting state. The PV area displays the prompt SP, and the SV area displays the temperature setting value. The modification method is the same as above; Click the [Set] button again to enter the time setting state. The PV area displays the prompt ST, and the TIME area displays the time setting value; Click the [Settings] button again to exit this setting state, and the set values will be automatically saved.

Explanation: LCD type, "symbol" represents "time unit";
Digital type, with the symbol "TIME display area decimal point".
3, Reference and setting of internal temperature parameters
In the main interface display state, long press and hold the [Set] button for 3 seconds. The password prompt Lc will be displayed in the PV area, and the password value will be displayed in the SV area. Use [Increase], [Reduce], and [Shift] to modify the desired password value. Then click the [Set] button. If the password value is incorrect, the instrument will automatically return to the main interface display state. If the password value is correct, enter the internal parameter setting state, and click the [Set] button to modify each parameter in sequence. During this process, long press the [Set] button for 3 seconds to exit this state, and the parameter values will be automatically saved. Please refer to the table below for details:
Explanation: In the parameter table, the temperature setting value is abbreviated as SP, and the temperature measurement value is abbreviated as PV.

Parameter Table-1

Indicator	Parameter Name	Indicator	(Scope) Factory value
Lc	password	When Lc=3, parameter values can be viewed and modified.	0
ALH	upper deviation over temperature alarm.	When PV>SP+ALH, there is an upper deviation over temperature alarm.	(0~100.0°C) 20.0
ALL	Lower deviation over temperature alarm	When PV < SP-ALL, there is a lower deviation over temperature alarm. Explanation: When ALL=0, the lower deviation alarm is invalid.	(0~100.0°C) 0
Pb	Correction of measurement temperature deviation	Used to correct errors generated during temperature measurement. Pb=actual temperature value - PV	(-50.0~50.0°C) 0
PL	Correction of Measurement temperature slope deviation	Usually used to correct errors generated during high-temperature measurements. PL=1000 * (actual temperature value - PV) ÷ PV	(-999~999) 0
ndT	Timing method	0: No timing; 1: Constant temperature timing; 2: Run timing	(0~2) 1
Tdn	Timing direction	0: Positive timing; 1: Countdown	(0~1) 0
Hn	Timing unit	0: minutes; 1: Hour	(0~1) 0
SPd	Constant temperature deviation	When SP SPd ≤ PV ≤ SP+SPd, enter a constant temperature state	(0.1~50.0°C) 0.5
EST	End Timing Prompt Time	When the timing ends, the buzzer indicates the time. Note: when the EST = 9999, said a permanent reminder	(0~9999) 60
EH	End Timing Constant Temperature Controller	0: Turn off the heating output after timing; 1: Keep constant temperature controlling after timing	(0~1) 0

LF	Lock Screen Function	0: Lockless screen function; 1: Lock screen function, unlock without password. 2: Lock screen function, need password to unlocked.	(0~2) 0
LdT	Lock Screen Delay	In the main screen state, if no key is pressed in the delay LDT time, the controller will automatically lock the screen. Description: LDT = 600, the delay screen locking function is invalid	(10~600s) 30
PAd	Unlock Password	The password must be entered to unlock it.	(0~9999) 1
Add	Mail Address	Local Address Description: PC-E9000 has no communication function.	(1~32) 1

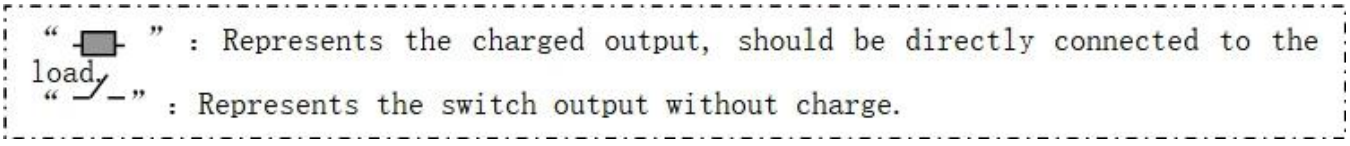
Table 2

Parameter Table-6

Indicator	Parameter Name	Parameter Function Description	(Scope) Factory value
Lc	password	When Lc=567, parameter values can be viewed and modified.	0
rST	factory reset	0: Cancel; 1: Confirm.	(0~1) 0

Table 3

5. Instrument wiring diagram



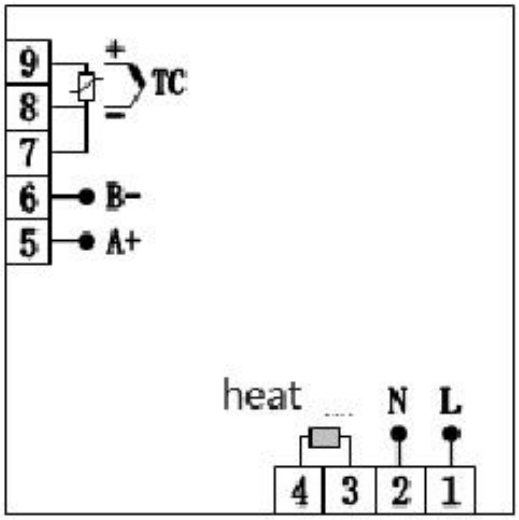


Figure 3

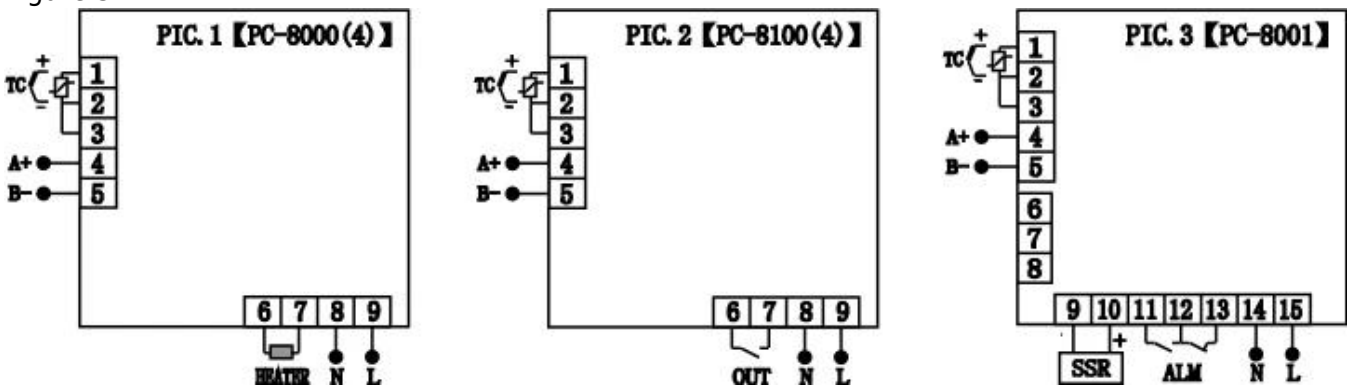


Figure 4

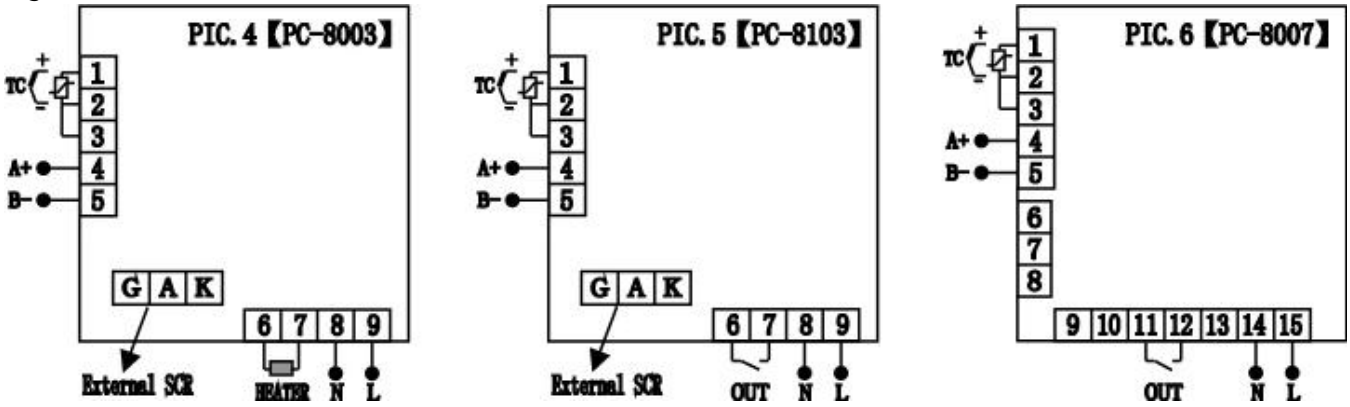


Figure 5

6. General faults and troubleshooting methods

Fault phenomenon	Fault inference	Fault handling methods
No display on startup The measured temperature is higher than the set temperature or the instrument enters a high temperature alarm state After turning on, the temperature does not display and does not rise Fault phenomenon	Power supply not connected	Check for voltage in the power socket
	The power plug is not properly plugged in	Check if the contact between the power plug and the socket is reliable
	The power switch is not turned on	Turn on the power switch on the right side of the instrument
	The fuse on the box is damaged	Replace the power fuse with the same specification
No display on startup The measured temperature is higher than the set temperature or the instrument enters a high temperature alarm state	The box door is not tightly closed	Close the box door tightly
	The instrument has not yet entered a constant temperature state	Wait for a moment before making an observation
After turning on, the temperature does not display and does not rise	The power cord is not properly plugged in	Insert the power cord properly
	Sensor malfunction	Notify the factory for repair
	The heater is broken	Notify the factory for repair

Table 4

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