



Constant Temperature Circulating Water Bath

LB-11CCB

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1. Safety Measures

- 1) When opening the package, check whether there are any damages to the equipment's appearance.
- 2) After the equipment has been placed in the right position, it should be leveled, with its rearside 300mm (at least) away from the wall and with good ventilation around it.
- 3) If the environmental temperature is too high, the indoor air-conditioner should be used to improve the environmental temperature.
- 4) When the temperature of the chamber is approaching the preset temperature, the heating indicator flashes several times, and this is a normal phenomenon.
- 5) When the chamber temperature is higher than the preset temperature, the heating indicator should be off.
- 6) Pay attention to the liquid medium of the chamber. Different liquid mediums must be filled according to different operating temperatures.

2. Introduction

Constant temperature circulating water bath LB-11CCB is unit with pressure suction pump that allows constant temperature supply to external tank. Safety alarm indicates deviation from set temperature and liquid level thus ensuring sample protection.

3. Features

1. Microprocessor controlled
2. Environmental safe refrigeration
3. Audio visual alarm
4. Digital display of temperatures

4. Specifications

Model No.	LB-11CCB
Inner dimension	240 × 170 × 150 mm
Temperature Range	5 °C ~ 100 °C
Capacity	10.9 L
Pump (flux)	4 L/min
Power	2000 W
Temperature Tolerance	± 0.1 °C
Time setting	0 ~ 9999 min
Voltage	220 V; 50 Hz
External dimension	330 × 280 × 350 mm
Weight	7 kgs

5. Applications

Used in research laboratories for enzymatic, serologic experiments and Industrial applications.

6. Instrument Introduction



- 1) **TEMP:** Showing measured temperature.
- 2) **SET:** Showing set temperature.
- 3) **RUN:** When working it lights up, off when it's stopping.
- 4) **Heating indicator:** It lights up the heating output.
- 5) **Cooling indicator:** It lights up when the cooling output, and water level indicator, which shows the indicating high and low water levels.
- 6) **Alarm indicator:** It lights up when it alarms.
- 7) **Mute indicator:** It is an alarm, that lights up when the buzzer has been silenced.
- 8) **TIME Zone:** Display operation time or parameter value.

Description of keys

- ① **MODE key:** Used for modifying setting value; bring up the parameter, confirm the modification of the parameters.
- ② **Shift key:** In setting mode, press it could move the digits.
- ③ **Decrease key:** In setting mode, press the number minus one, and press it for a long time the number will decrease continuously.
- ④ **Add key:** In setting mode, press the number increase one, press it for a long time the number will continuously increment.
- ⑤ Press it no release more than 4 seconds, to control the START/STOP of the program.

7. Operations

- 1) **Timing function:** Press the “**Mode**” key, when time is set as 0, the timing function will be canceled, if time is not set as 0, the controller will perform the timing function.
- 2) Press the “**MODE**” key, “**TIME**” value will flash, indicating temperature can be set as required.
- 3) Using the add key, decrease key, and shift key, set the required temperature,
- 4) When the set time is up, “**END**” will be displayed on the “**TIME**” screen and the buzzer sounds, it can be silenced by pressing any key.
- 5) **Temperature setting:** Pressing the MODE key once again, the “**TEMP SET**” value is flashing, indicating temperature can be set as required.
- 6) Using the add key, decrease key, and shiftkey, set the required temperature.
- 7) Press MODE once more, and it will go back to standard display mode.

Note:

- For each change of a parameter, it is necessary to press the “**MODE**” key for confirmation to validate the change.
 - After all the parameters are set, press the “**START/STOP**” key for about 4 seconds to start running.
- 8) **Setting of upper deviation alarm:** A good setting of upper deviation can protect the system from out-of-tolerance temperature control or loss of control and must be put into use when the instrument works.

Example: If AL=3.0 when the product leaves the factory, this means the alarm temperature (set temperature value +AL) °C

9) Calibration of temperature control accuracy

- The 0.1°C graduation mercury thermometer (or digital thermometer with a resolution of 0.1°C) is placed in the working chamber of the product.
- The mercury temperature-sensing head of the thermometer should be in the geometrical center of active space in the working chamber.
- Any point within the scope of temperature control of the product is chosen when the measured temperature value is equal to the set value, keep it thermostatic for another hour and make sure the difference between the measured value from the mercury thermometer and that shown in the temperature controller should be $\leq \pm 0.5^\circ\text{C}$

8. Troubleshooting

Symptoms	Possible Causes	Remedies
No power supply after starting (the indicator is not ON)	No voltage on the power supply socket or bad contact with the plug or socket.	Plug again or repair
	The incoming feeder is broken, or the power switch is damaged.	Replacement or repair
	The fuse blows up.	If the fuse blows up again after being replaced, it is necessary to check the instrument, pump, heater, refrigerating unit, and lamps. Only after repair, then users can start the equipment.
No display from the instrument.	The power supply transformer of the instrument is damaged, or the wiring terminal is loosened.	Replace the instrument or reconnect the incoming feeder again.
PV screen displays.	Sensor Pt100 is damaged, or something is wrong with the instrument input.	Replace Pt100 or instrument.
	Wrong setting of the instrument's full measuring range, the measured value out of range.	Set again.
	Instrument failure or conductive controlled silicon and the uncontrollable temperature out of range.	Replace the instrument or BTA16-controlled silicon.
No heating.	The HEAT lamp on the thermostat is not ON with a failure.	Replace instrument.
	HEAT lamp is ON, flip-flop or controlled silicon is damaged.	Check optical-coupler 3041 or BTA16.
	T1 (timing) \neq 0, after timing, heating is stopped.	Reset T1=0.
Alarm lamp AL1 is ON.	The liquid medium in the chamber is not enough.	Fill liquid medium.

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The error of control temperature is too big.	Pt is not connected correctly, and the error is too big.	Replace.
	Correct parameters SL and HL (too big error).	Refer to this manual.
	Adjust parameters such as PID (steady-state error).	Refer to this manual.
The liquid medium is not circulating.	The booster pump is damaged.	Replace.



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