Labotronics

THERMOSTATIC WATER BATH LB-70TWB

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1. Safety Measures

1.1 Safety Warnings and Guidelines

1.1.1 Important Safety Operation Information

Before using the instrument, users must fully understand how to operate it safely. Kindly read this manual carefully before operating the instrument.

- No one should operate the instrument without first reading the manual.
- Failure to follow the instructions in the manual may result in overheating during operation, leading to severe burns or electrical shock.
- Kindly read and follow all safety tips and guidelines and implement all necessary precautions.

1.1.2 Security

When operating, maintaining, or repairing this instrument, the following basic safety precautions must be followed. Failure to adhere to the warnings outlined in the manual may affect the instrument's protection features and its intended use.

- Before operating this equipment, kindly read this manual carefully to avoid personal injury.
- Only qualified personnel who are trained in electrical equipment installation and inspection should operate the equipment.

- Operators should not attempt to open or repair the equipment, as doing so will void the warranty and may expose them to the risk of electric shock.

- Before connecting the power supply, verify that the supply voltage matches the instrument's required voltage. Ensure that the power outlet can support the instrument's rated load.

- If the power cord is damaged, replace it with one of the same type and specifications. Do not place anything on the power cord during use and avoid placing it in areas where people frequently walk.

- When inserting the power cord plug, hold the plug firmly and ensure it is fully inserted into the socket. When unplugging, always hold the plug itself, not the cord.

- Always turn off the power when not in use. When the instrument is idle for an extended period, unplug it and cover the power plug with a soft cloth or plastic cover to prevent dust from entering.

If any of the following situations occur, immediately unplug the power socket.

- Liquid has entered the instrument.
- The instrument has been damaged by rain or water.
- The instrument is not functioning properly, especially if there are any unusual sounds or smells.
- The instrument has been dropped or the casing is damaged.
- There are noticeable changes in the instrument's performance.

The instrument should be placed in a low-humidity, low-dust environment, away from water sources, and protected from direct sunlight and strong light. The area should be well-ventilated, free from corrosive gases and strong magnetic field interference, and away from heat sources such as stoves. Avoid using the equipment in wet or dusty environments.

2. Introduction

Thermostatic Water Bath LB-70TWB includes two separate tanks, each capable of holding up to 2 liters of water for efficient storage. It features a digital control system with a temperature setting range of 0°C to 100°C. This microprocessor control unit offers high precision and uniform temperature distribution. Each tank of our bath is equipped with independent LED displays for clear monitoring of temperature and time.

3. Features

- Stainless steel tank with leak prevention
- Independent drain system for easy cleaning
- Gabled lid offers rapid heating
- Overheating protection

4. Specifications

Model No.	**LB-70TWB**
Number of Tanks	2
Tank Capacity	2L × 2
Temperature Setting Range	0℃ to 100℃
Temperature Control Range	RT.+5℃ to 100℃
Temperature Accuracy	≤ ± 0.3℃ (at 37℃)
Display Accuracy	0.1℃
Temperature Uniformity	≤ ± 0.3℃ (at 37℃)
Timer Range	1min to 99h 59min/∞
Heating Time	≤ 30 min (from 25℃ to 100℃)
Power Consumption	600W
Power Supply	AC 110V-220V, 50/60 Hz
Each Tank Dimension	125 × 100 × 115mm
Dimension	397 × 254 × 310 mm
Weight	5.5 kg

5. Applications

Thermostatic Water Bath is used for precise temperature control and uniform heating in biological research, chemical synthesis, molecular biology, pharmaceutical testing, and environmental analysis.

6. Instrument Introduction

6.1 Structure Description

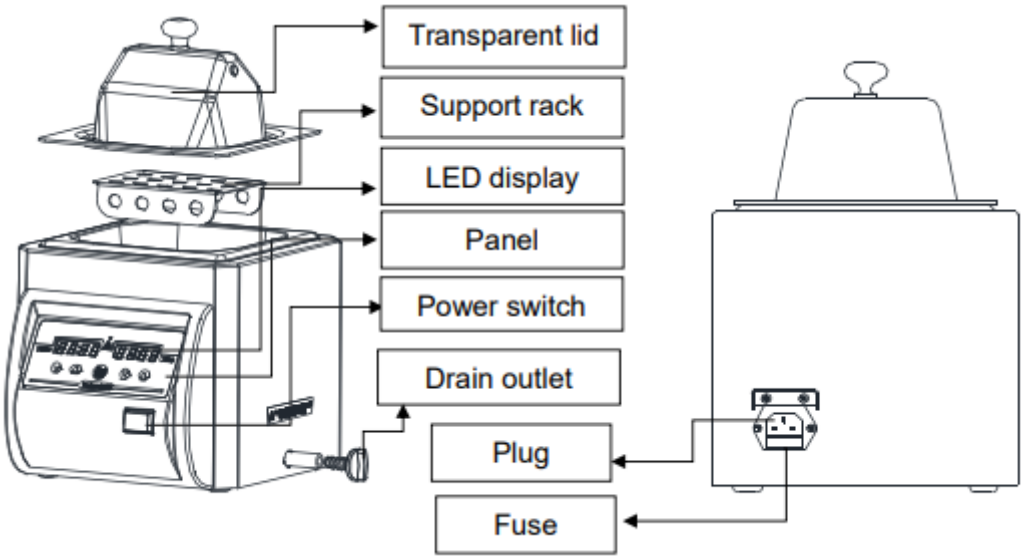


Figure 1

6.2 Control Panel

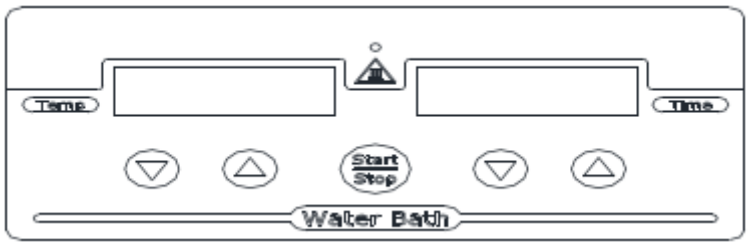


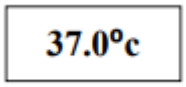
Figure 2

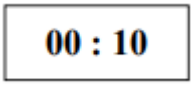
Key	Function
Start/Stop	Press momentarily to start. Press continuously (>2 sec) to stop.
Temp▲▼	Short press to adjust temp. value, long press to move the cursor.
Time▲▼	Short press to adjust time value, long press to move the cursor.

7. Operations

7.1 Parameters Setting

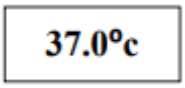
1. **Parameters in LED display**
   When the instrument powers on, the system will enter the parameters setting interface with the sound of "di…"





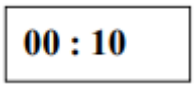
   The left LED display shows the temperature value.
   The right LED display shows the timer value.

2. **Temp. setting**



   In **STOP** status, short press **Temp**'s ▲/▼ to adjust temperature value, long press **Temp**'s ▲/▼ to move cursor, and set temperature rapidly.

3. **Timer setting**



   In **STOP** status, short press **Time's** ▲/▼ to adjust speed value, long press Time's ▲/▼ to move cursor, and set time rapidly.
   If you want to keep running with setting temperature value, press Time's ▼ to "------".

   Note: "------" means the procedure will keep running unless there is an outage, or you stop running.

4. **Start/Stop**

   After setting parameters and pressing Start/Stop, the system will run automatically. At that time, the indicating light flickers. It means that the system is heating to the setting temperature value. When the system reaches the setting temperature value, indicating light will be on. The system starts to countdown.

   During running, long press Start/Stop, and the system will stop running and return to the parameters setting interface.

   When the time is over, the system stops running. The value of temperature in LED displays the current temperature. The value of time in LED displays "FINISHED", which means running is over. After finishing running, the user presses any key to enter the parameters setting interface.

Note: After finishing running, the temperature of the tank inside is still quite high. Kindly be careful, wait for a while to take out the samples.

7.2 Tank Drain Operation Guide

When the temperature is below 40°C, pull the drain outlet, open the sealing cap, and drain the water. After the water is drained, screw on the sealing cap and plug the drain back.

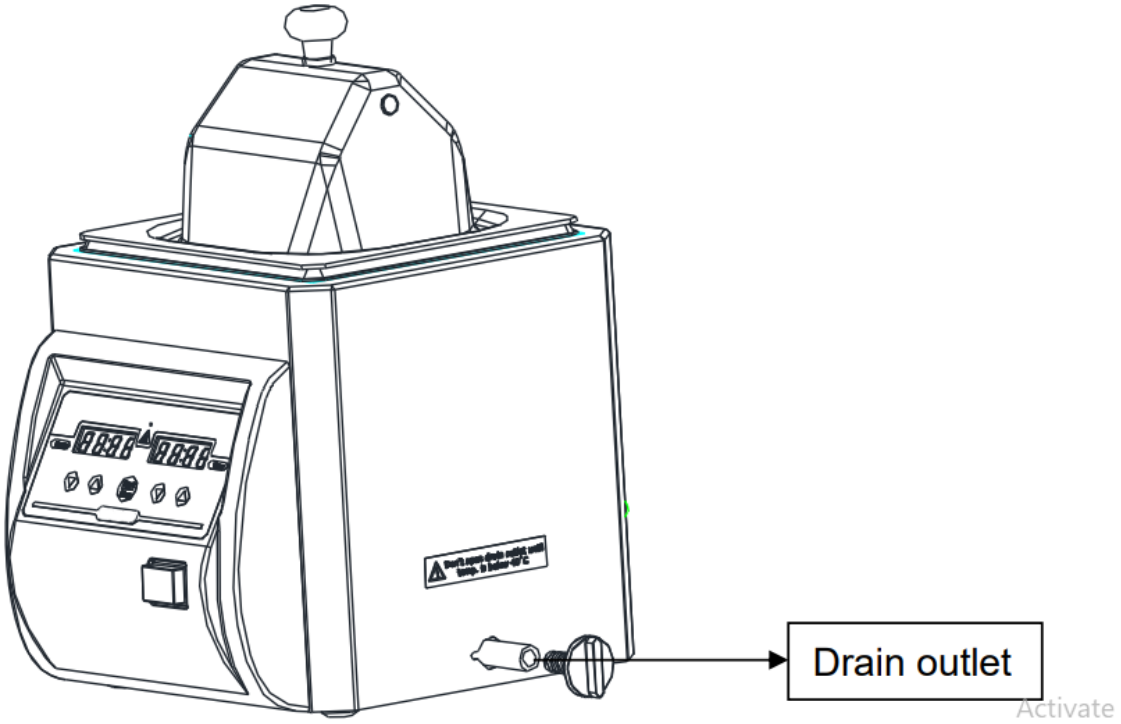


Figure 3

Note: Reaching water at high temperatures is forbidden to avoid burns!

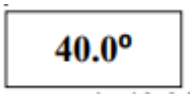
7.3 Temperature Calibration

The instrument's temperature has been calibrated before being shipped. However, if a discrepancy arises between the actual temperature and the displayed temperature due to certain factors, follow these steps to correct the error:

Note: In both circumstances, the temperature should be lower than 35°C.

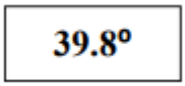
Adjustment methods are as follows:

1. Put a thermometer probe into a water bath which is with water. (make sure the precision of the thermometer sensor should be within ±0.1℃ and the thermometer probe should be immersed in the water). When calibration, kindly close the lid.
2. In Stop status, press "TEMP ▲ " and "TEMP ▼ " simultaneously, and power on the instrument at the same time. It will enter temperature calibration mode. The instrument will heat up to 40.0℃ automatically.



3. When the temperature reaches 40.0 ℃, the cursor position will flicker, and the thermometer will show the actual temperature.

4. If the actual temperature of the thermometer is 39.8 ℃. Press "TEMP ▲▼ " to adjust the temperature to reach 39.8℃, then press the Start/Stop key to confirm.



5. Then the system will automatically heat up to the next calibration. Users need to repeat the above steps and input data at each calibration. After calibration, the screen shows success and reminds users to reboot the system.

   Note: If users want to exit calibration, kindly power off and then restart the instrument. If the power is off or power outage during calibration, so this calibration is invalid.

8. Maintenance

The water bath should be cleaned by the cloth stained with a little alcohol. If there are smutches on the instrument, clean them with a soft cloth stained with cleaning cream.

9. Troubleshooting

Failure analysis and processing procedures

No	Phenomenon	Possible Causes	Processing Procedure
1	The display window doesn't respond after power-on.	No power	Check the connection of the power.
		Bad fuse	Exchange the switch
		Switch failure	Exchange the fuse
2	The actual and displayed temperatures are quite different.	Broken sensor	
3	No heating	Broken heating control IC	
4	Press invalid	Damaged key	
5	DErr in display	Abnormal sensor data	
6	IErr in display	Sensor initialization failed	
7	-Err in display	Low water or add water during running	Reboot or press the Start/stop key to remove the wrong indication.

10. Accessories

Standard Accessories

- Power line × 1
- Fuse 250V/3A × 3
- Support rack × 2
- Transparent lid × 2

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