

Incubator Shaker with Cooling

Cat. No. BT923

Thanks for choosing BT Lab Systems' Incubating Shaker. This operation manual describes the function and operation of the instrument. In order to use the instrument properly, please read this manual carefully.

IMPORTANT SAFETY INFORMATION

Users should understand how to use the instrument properly before operating it. Please read this operation manual carefully before using the instrument.

The operation, maintenance and repair of the instrument should comply with the basic guidelines and warning below. Ignoring these instructions will affect the life of the Instrument and safety precautions.

- This product is an indoor Instrument.
- These units are designed for laboratory use by persons knowledgeable in safe laboratory practices.
- The operator should never open or repair the instrument. Opening or repairing the instrument will void the guarantee and can cause accidents.
- The power plug should safeguard against an electric shock. The 3-pin plug supplied with the instrument should be matched with a suitable grounded socket.
- The instrument should be used in an area with low temperature, little dust, no water, no sunshine or hard light and with good air circulation. Do not use where there is corrosive gas or a strong magnetic field. Keep far away from central heating, camp stove and other hot sources. Do not put the instrument in a wet and dusty area. The vent on the instrument is designed for aeration. Do not wall up or cover the vent. The distance between each device should be more than 100cm when there is more than one instrument.
- Power off when not in use. If the instrument will not be used for a long period, unplug, and cover with a piece of cloth to protect it from dust.
- In case of the following, unplug the instrument at once and contact BT Lab Systems.
 - The instrument comes into contact with liquid
 - The instrument gets soaked or burned
 - The instrument emits an abnormal sound or smell
 - The instrument is dropped or the outer shell damaged
 - The instrument functions abnormally.

MAINTENANCE

The instrument should be cleaned with a cloth dampened by alcohol, If there are smudges on the instrument, clean it with a dry cloth.

INTRODUCTION

The incubator shaker is a temperature controlled biochemical instrument combining incubation and shaking function. It is used in cell culture, fermentation, hybridization, biochemistry, research of enzyme and cell tissue, etc. which require higher quality of temperature control and shaking speed. It can dynamically cultivate microbial cells and all kinds of strains.

KEY FEATURES

- Integrates incubator and shaker. Saves laboratory space.
- Compactly designed, good temperature uniformity, low noise.
- Micro-processor controls temperature and shaking speed. Built-in timing function.
- Cover can be opened at a wide-angle, convenient to watch the sample.
- Built-in cover switch. When the cover is open for air circulation, heating and shaking will automatically stop. No temperature overheating problem.
- Unique speed control to ensure shaker is smooth in starting and avoids spilling liquid.
- Speed of the circulation fan is adjustable.
- Independent temperature alarm system. Heating is cut off when temperature is over the limited value.
- Alarm when program completes.
- Brushless DC motor has long life is maintenance free.

NORMAL OPERATING CONDITIONS

Ambient Temperature: 4°C ~45°C

Relative Humidity: ≤70%

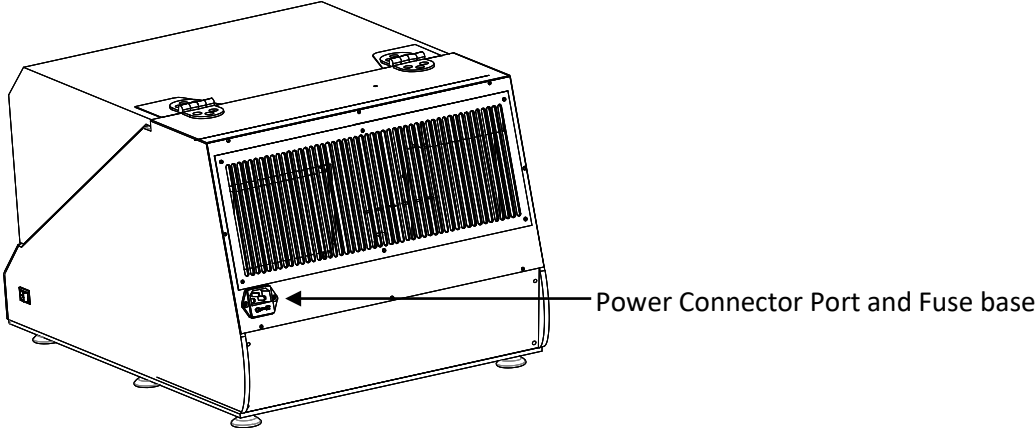
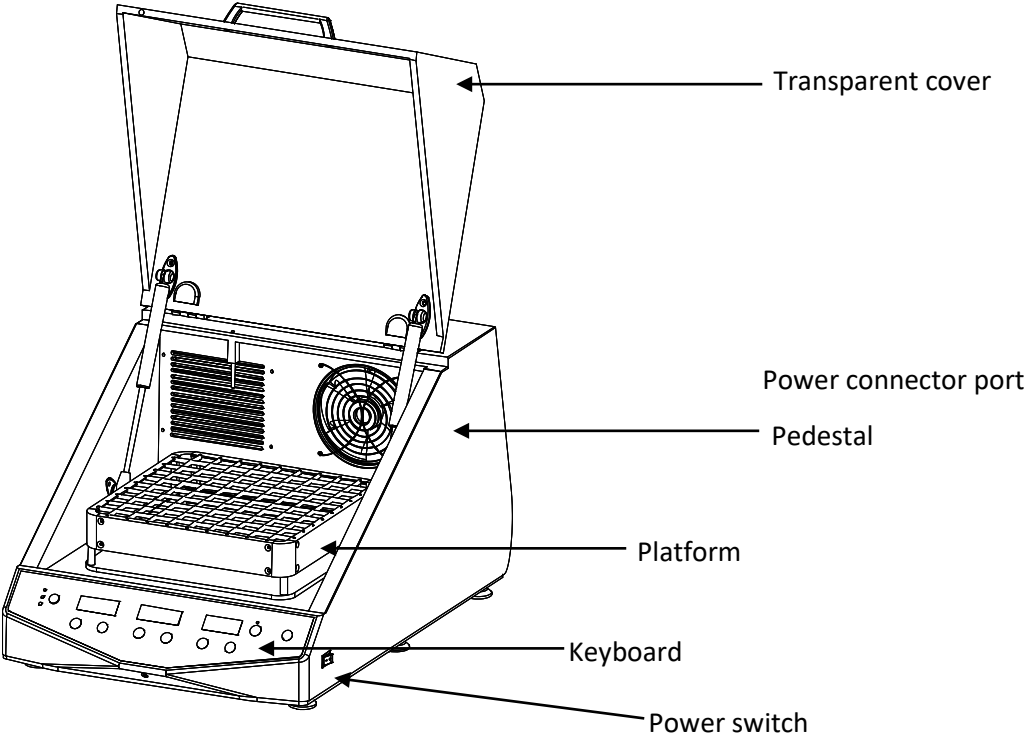
Power: AC110V/220V~50/60Hz

TECHNICAL SPECIFICATIONS

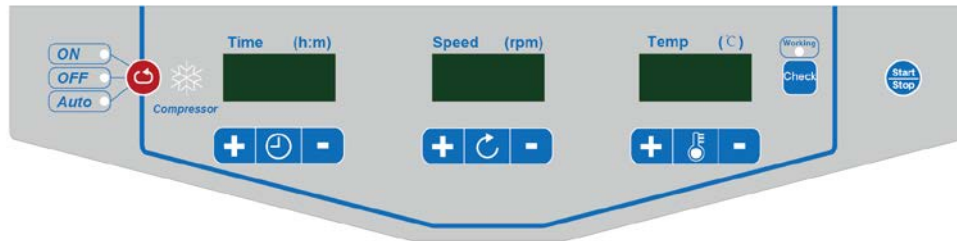
Temperature Control Range	4-60°C at ambient temperature ≤25°C
Temperature Display Accuracy	0.1°C

Temperature Control Accuracy@37°C	≤±0.3°C
Timing Range	0-99h59min
Shaking Speed	50-300rpm`
Orbit	20mm (circle)
Power Supply	AC110V/220V, 600W
Dimension	385x560x320mm
Platform	Refer to “Platform Option”

EQUIPMENT OVERVIEW



KEYBOARD AND DISPLAY PANEL



+ Increase the speed, temperature or time setting value

- Decrease the speed, temperature or time setting value

Check

In the process of control, you can press this button at any time to view the current set temperature



Compressor status control key, on for the compressor open button, off for the close button, Auto for the intelligent control key

Stop/Start

Key to start or stop operation. Press Start/Stop key to start the operation. Hold Start/Stop key for 2 seconds to stop operation.


KEY FUNCTION

Speed, Time and Temperature Setting

1. LED displays all "8" when powered on. The instrument enters into the initial program with a beep.

Press "UP" or "DOWN" arrow of speed key. It displays the last running speed. The unit digit flickers. Press "UP" or "DOWN" arrow of speed key to adjust the speed value. Continuously pressing makes the value to increase or decrease from unit digit, tens digit to hundreds digit. E.g., to set the speed to 250 rpm, continuously press "UP" arrow key until the speed

value displays "250" release the "UP" arrow key. The instrument confirms and saves the setting value.

2. Press "UP" or "DOWN" arrow of time key. It displays the last setting time. The last digit flickers. Press "UP" or "DOWN" arrow of time key to adjust the timing value. Hold the key to change the value and increase or decrease in X10 speed.
NOTICE: The time set at 00:00 means the operation time is ∞.
3. Press "UP" or "DOWN" arrow of temperature key. It displays last setting temperature. The last digit flickers. Press "UP" or "DOWN" arrow of temperature key to adjust the temperature value. Hold the key to increase or decrease the value in X10 speed.
4. Pressing the check button can view the set temperature, automatically quit after 3 seconds. Display the warehouse real-time temperature, then add A symbol ahead of temperature in order to distinguish.
5.  Compressor status control key, the system defaults to the Auto state, the compressor is automatically controlled by the system, and then press this button to switch to on state, compressor forced to open, then press this button again to switch off, the compressor forced to shut down.
6. When cooling for a long time, the box has a lot of water vapor, please open the insulation cover, and then press Speed key ▼ and Temp key ▲ for 3 seconds, the system will enter the fast dehumidification function.

Start/Stop

1. Press "start/stop" key to start the operation.
2. Press "start/stop" to run the program after adjusting the speed, time and temperature setting. When program completes, the instrument stops running and alerts.
3. Hold the "start/stop" key for 2 seconds to stop the program.

4. When the program completes, or the program is stopped by pressing the “start/stop” key, the instrument will be in stand-by mode. In stand-by mode, press “UP” or “DOWN” arrow of speed, time or temperature key to reset the value.
5. Press “start/stop” directly without adjusting any value in stand-by mode, the instrument operates the program the same as the last setting.

PLATFORM INSTALLATION

The following platforms are available.

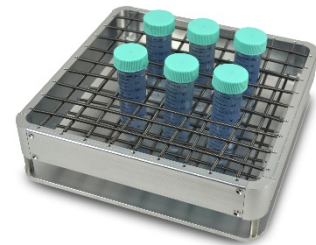
BT909-D



BT909-C



BT909-E



BT909-B



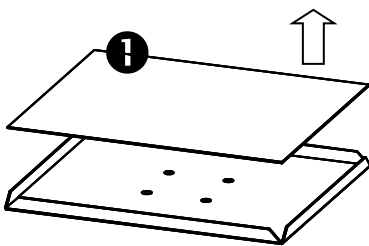
BT909-A



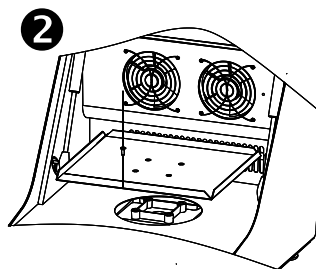
BT909-F



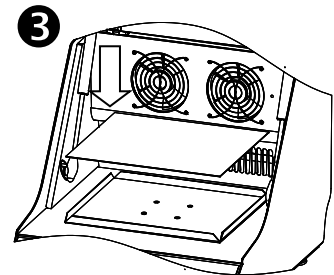
1) Installation for BT909-C or BT909-D or BT909-F



Take out the pad of the platform.

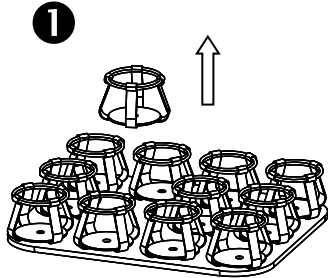


Fix the platform with 4 M4X8 screws.

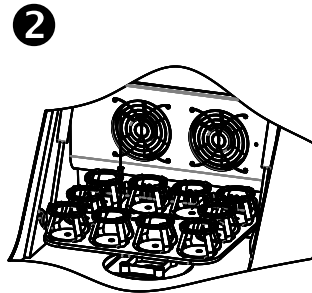


Put back the pad to the platform.

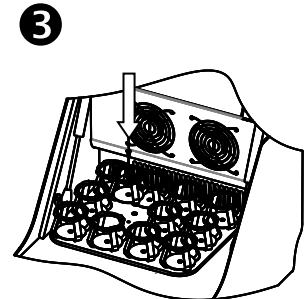
2) Installation for BT909-A and BT909-B



1
Remove the 2 flask clamps in the middle of the platform.



2
Fix the platform with 4 M4X8 screws.



3
Put back the 2 flask clamps to the platform.

TROUBLE SHOOTING

Issue	Possible Causes	Solution
No signal display when powered on.	No power	Check the power
	Broken fuse	Exchange the fuse (250V 3.0A Φ 5x20)
	Broken switch	Exchange the switch
	Others	Contact BT Lab Systems
The actual and displayed temperatures are different.	Broken sensor	Contact BT Lab Systems
“OPEN” in the temperature display with a beep alarm.	Temperature sensor is broken or ambient temperature is below 0°C	Contact BT Lab Systems
Sound but no shaking	Broken motor or broken connecting line.	Contact BT Lab Systems
Button doesn't work	Broken press button	Contact BT Lab Systems
No sound with a beep alarm.	Transparency cover is not closed	Close the transparency cover

WARRANTY

The instrument is warranted against defects in materials and workmanship for 1 year. If any defects occur in the instrument or accessories during this warranty period, BT Lab Systems will repair or replace the defective parts at its discretion without charge.

For any inquiry or request for repair service, contact your local BT Lab Systems office. Inform BT Lab Systems of the model and serial number of your instrument.

TECHNICAL SUPPORT

BT Lab Systems offers technical support for all of its products. If you have any questions about the product's use or, operation, please contact BT Lab Systems at the following:

E-Mail: info@BTLabSystems.com