

Incubator Shaker with Cooling

Cat. No. BT933



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, which conforms to Standard B style- I type- GB9706.1.
- 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.
- When using the instrument for the first time or after the instrument is moved, it must be put to stand for at least 4 hours before starting to use, so as not to damage the compressor
- 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

- PID speed control technology
- 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 and continuous
Shaking Speed	50-300rpm
Orbit	20mm (circle)
Power Supply	AC110V/220V, 1200W
Dimension	385x560x320mm

KEYBOARD AND DISPLAY PANEL



1. Use the left knob to adjust both temperature and time and the right knob to adjust the speed.



2. Use this button to switch between the programs



3. Press the fan button and the right knob can be used to adjust the fan speed.



4. This controls the compressor status, select between ON, Off and Auto for computer control.

PLATFORM

410x420x65mm

- 4 x 2L flasks
- 12 x 0.5L flasks
- 20 x 250ml flasks
- 35 x 100ml flasks



OPERATION GUIDE

Speed, Time and Temperature Setting

1. Turn on the power switch and with the sound of “di...”, the screen will display the main interface.
2. The right knob is used to set the speed, clockwise plus counterclockwise decrease.
3. The left knob is used to adjust the temperature or time, default temperature adjustment. The user can switch the temperature or time by pressing the left knob, clockwise plus counterclockwise decrease.
4. During the operation of the instrument, the speed can be adjusted to facilitate user operation.

Start / Stop

1. Press the right knob to run the current program. The timer ends, the operation stops, and the buzzer sounds an alarm.
2. After the end of the operation, the instrument waits for the command at the end interface. At this time, adjust the left knob to reset the temperature or time; directly press the right knob to start the program according to the last set parameter.
3. During operation, long press the right knob to stop. Press this button again to restart the operation.
4. When the insulation cover is opened during operation, the speed, temperature and timing will all stop, and the speed of the fan will also drop to half of the original. The system will automatically enter the normal operation state when the thermal insulation cover is closed again.
5. The temperature control or motor cannot be started when the insulation cover is not closed.

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