



A Geno Technology, Inc. (USA) brand name

Microplate Incubator

Cat. No. BT1101, BT1102

Thanks for choosing BT Lab Systems' Microplate Incubator. 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.
- Before operation, read the manual carefully. 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 A.C. power plug is a safeguard against an electric shock. The 3-pin plug supplied with thermo-shaker's power cable is a safety device that should be matched with a suitable grounded socket.
- The temperature of the metal block will be very high during the normal operation. This will produce scalding or boiling liquid. Do not touch any part of the body to the instrument to avoid scalding.
- Close the test tube lid before putting the tube into the block. Liquids may spill out in the block or onto the device if the tube lid is opened, which will damage the block or the device.
- Make sure the outlet voltage complies with the voltage required. Make sure there is nothing else plugged into the same outlet. Hold the plug when pulling out the power line. Do not plug the cord in where it is a tripping hazard.
- 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 well in the block should be cleaned with a cloth dampened by alcohol to assure good heat conduction between the block and the test tube. If there are smudges on the instrument, clean it with a dry cloth.

Power off when cleaning the instrument. Do not drop the cleaning fluid in the well. Do not corrosive cleaning fluid.

INTRODUCTION

The Microplate Incubator is a micro processing techniques incubator. It is mainly used for solution incubation of ELISA plate (96-well/384-well) and cell culture plate (24-well / 48-well / 96-well).

KEY FEATURES

- LCD display. Setting temperature and actual temperature simultaneously displayed. Time is counted down in display.
- User friendly operation. Streamlined shape. Convenient for cleaning.
- Uniform heating for samples in micro plates.
- Microprocessor controlled time and temperature.
- Four standard plates. Audible signal when operation completes.

NORMAL OPERATING CONDITIONS

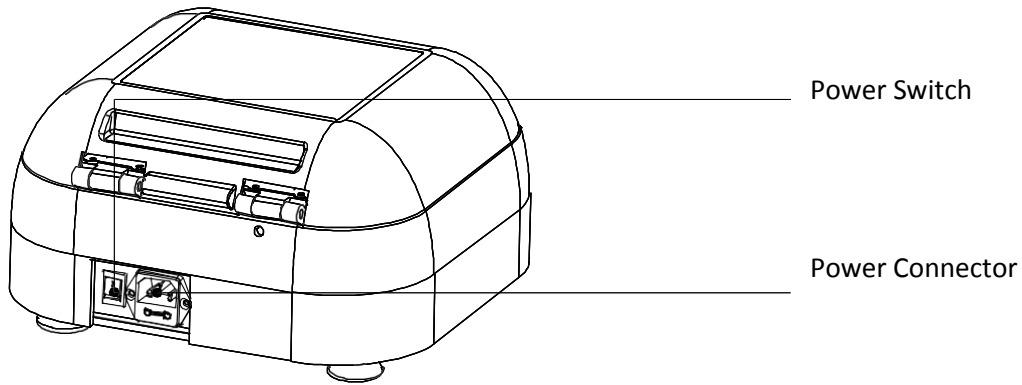
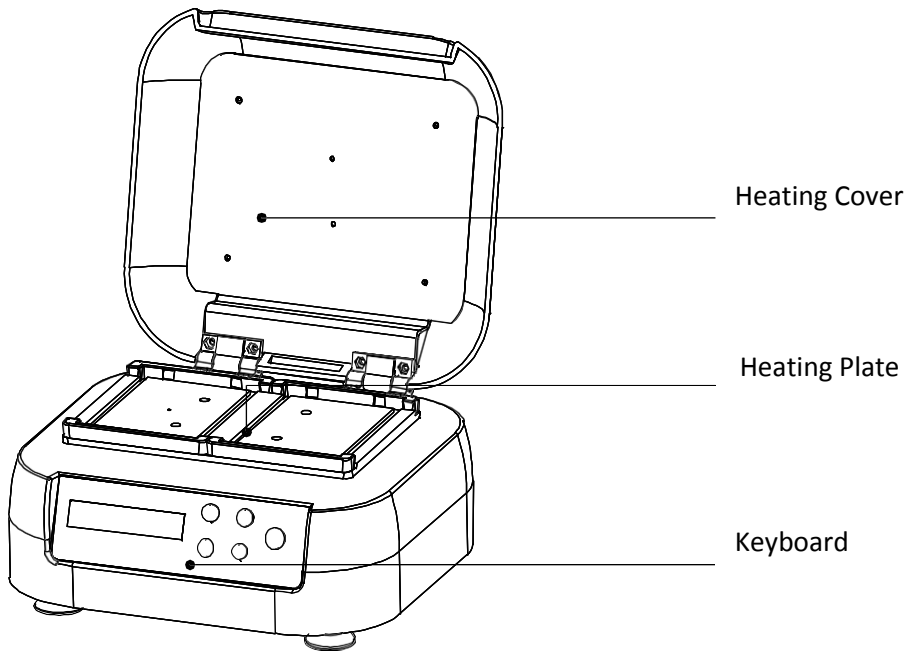
- Ambient Temperature: 5°C ~30°C
- Relative Humidity: ≤70%
- Power: AC90-230V

TECHNICAL SPECIFICATIONS

	BT1101	BT1102
Temperature Range	R.T.+5°C ~ 70°C	R.T.+5°C ~ 70°C
Timing	1 min ~ 99h59 min	1 min ~ 99h59 min
Temperature Control Precision	≤ ± 0.5°C	≤ ± 0.5°C
Display Accuracy	0.1°C	0.1°C
Module Temperature Uniformity	≤ ± 0.5°C	≤ ± 0.5°C
Heating time	≤25 min (R.T. to 70°C)	≤25 min (R.T. to 70°C)
Capacity	2 plates	4 plates
Power	150 W	250 W
Dimension	248 x 264 x 157 mm	345 x 310 x 178 mm
Net Weight	3.0 kgs	5.0 kgs

EQUIPMENT OVERVIEW

This section introduces the structure, keyboard and functions of each key. You should be familiar with this section before using the instrument.



DISPLAY PANEL



	Current Temperature	Remaining Time
PV	37.1	10:30
SV	37.0	15:00
	Temperature Setting	Time Setting

KEY FUNCTIONS

Temperature setting key

1. Press the “UP” or “DOWN” arrow key to set the target temperature. Keep pressing the “UP” or “DOWN” arrow key to set value.
2. Keep pressing the “DOWN” arrow key until “OFF” is displayed to shut off the temperature.

Timing key

1. Press the “UP” or “DOWN” arrow key to set the target timing value. Keep pressing the “UP” or “DOWN” arrow key to raise or decrease the timing value quickly.
2. Keep pressing the “DOWN” arrow key until "OFF" is displayed to shut off the timing function.

Stop/Start button

1. Press the key to start the program. Keep pressing (1 second) to stop the program.

TEMPERATURE AND TIME SET

1. Switch on the device, the instrument turns on with a beep.
2. After 2 seconds, the instrument begins to operate. The reading after PV is the block current temperature. The reading after SV is the former setting temperature value. The reading on the lower right is the former setting time. Temperature unit is ° C. Timing unit is H:M
4. Press up or down arrow temperature key to set temperature. Hold the “UP” or “DOWN” arrow of temperature to quickly raise or decrease the value.

5. Setting the time is the same as setting the temperature by pressing the “UP” or “DOWN” time arrow key. The instrument will confirm setting and save the value.
6. Press Start/Stop to run the program.

NOTE:

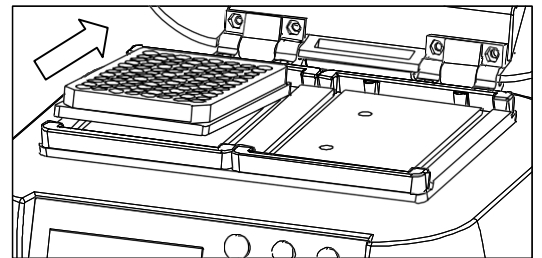
1. The temperature will automatically move to the setting value after pressing the “UP” or “DOWN” arrow temperature key.
2. Without pressing the “UP” or “DOWN” arrow temperature key, press “Start/Stop” key to run the device at the setting temperature.
3. After setting the temperature and time, press “Start/Stop” key to run the device. When the program completes, the device will sound a beep. The device will keep the temperature at the setting value.

NOTE:

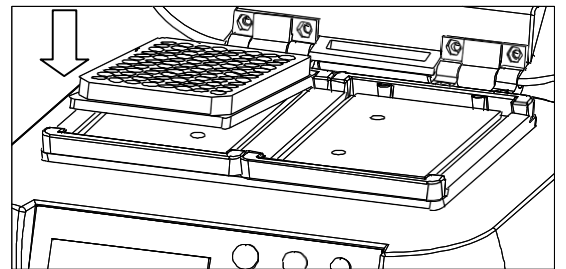
- 1) A time display of “∞” indicates the timing function is ongoing.
- 2) When the device is operating, “CON” will be displayed.

PLATE INSTALLATION

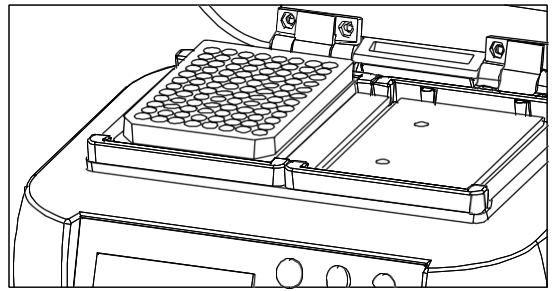
- 1) Open the lid. Slightly angle downward one side of the plate close to the metal tabs. Press the metal tabs according to the arrow in the drawing at right.



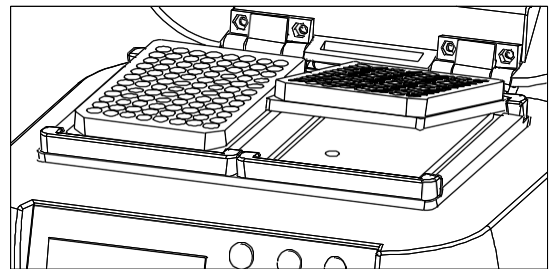
- 2) Refer to the drawing at right, press the other side of plate down according to the arrow.



- 3) After the plate is put into the tablet, press the plate again to make good contact with the heating tablet.



- 4) Position the other plates the same way as above.



TROUBLE SHOOTING

Issue	Possible Causes	Solution
No signal display when the power is on.	No power	Check the power
	Broken adapter	Exchange adapter
	Broken switch	Contact BT Lab Systems
	Other	Contact BT Lab Systems
The actual and display Temperature are different	Broken sensor	Contact BT Lab Systems
“OPE.1” in the temperature display with alarm sounding	Cover temperature sensor is disconnected	Contact BT Lab Systems
“OPE.2” in the temperature display with alarm sounding	Heating plate temperature sensor is disconnected	Contact BT Lab Systems
“SHO.1” in the temperature display with alarm sounding	Cover temperature sensor has a short	Contact BT Lab Systems
“SHO.2” in the temperature display with alarm sounding	Heating plate temperature sensor has a short	Contact BT Lab Systems
“HHH.1” in the temperature display with alarm sounding	Cover temperature not working	Contact BT Lab Systems
“HHH.2” in the temperature display with alarm sounding	Heating plate temperature not working	Contact BT Lab Systems
Heating block not heating	Broken sensor or heater	Contact BT Lab Systems
Pressing key does not work	Button broken	Contact BT Lab Systems

WARRANTY

The Microplate Incubator 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. The following defects, however, are specifically excluded:

1. Defects caused by improper operation.
2. Repair or modification done by anyone other than BT Lab Systems or an authorized agent.

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