A Geno Technology, Inc. (USA) brand name

Extreme Environment Shaker

Cat. No. BT2011

1-800-628-7730 ♦ 1-314-991-6034 ♦ info@BTLabSystems.com

Thanks for choosing Extreme Environment Shaker. This operation manual describes function and operation of the instrument.

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

INTRODUCTION

The BT2011 shaker is suitable for use in CO2 incubators, greenhouses, and refrigerators. The parameter display and controller are placed outside. There is no need to worry about humidity, high temperature and other factors affecting the performance and life of the instrument. It is very suitable for animal cell culture and suspension cell culture and high and low temperature chemical reaction. The controller can be attached to most incubators by magnets to optimize the operating space.

KEY FEATURES

- The controller can be placed outside the incubator, and the shaker is controlled by a ribbon cable, which is convenient for viewing and changing settings without disturbing the environment of the incubator
- The controller can be fixed on the incubator or placed on the workbench
- Suction cup machine feet, super shockproof, high speed and stable, no noise
- Large platform design, many samples can be placed, strong load-bearing capacity

NORMAL OPERATING CONDITIONS

Can be used in CO2 environment, incubator, or cold room
Operating environment temperature (shaker): -10~60°C
Operating environment temperature (controller): -10~50°C
Relative Humidity: 100%
Power: AC110V/220V, 50/60Hz

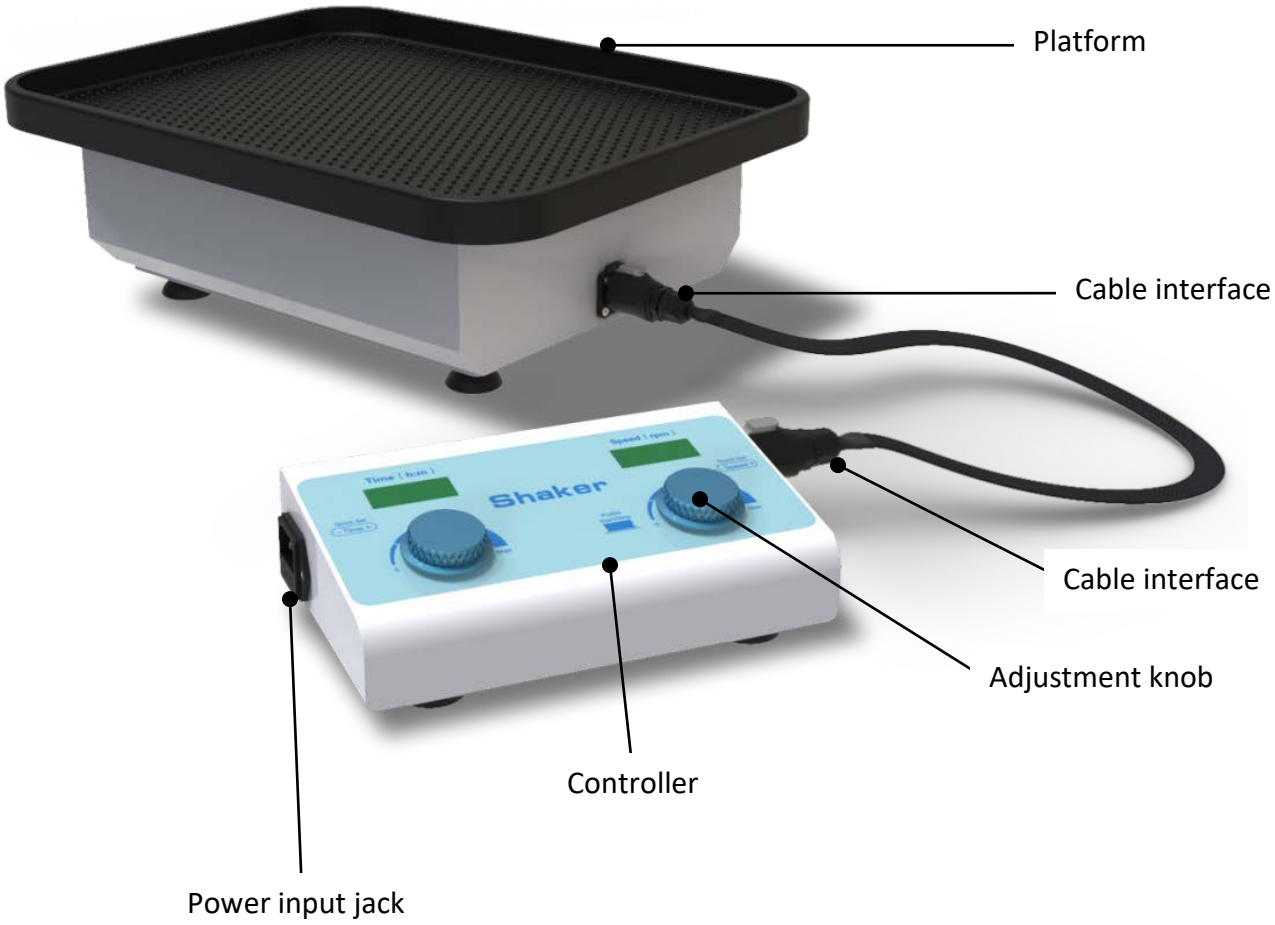
TECHNICAL SPECIFICATIONS

Model	BT2011
Speed Range	50~300rpm
Time Range	1min~99h59min
Digital Display	Time/Speed Display
Radius of gyration	10mm
Max Load Capacity	2.5kg
Motor Parameters	Brushless DC motor
Platform Size	330 x 430mm
Beep Alarm	Yes
Voltage	100~240V AC 0.75A 50/60Hz
Power	30W
Fuse	250V, 1A, φ5x20
Controller Size (W x D x H)	220 x 132 x 57mm
Shaker Size (W x D x H)	270 x 320 x 88.5mm
Net Weight	8kg

OVERVIEW

This section mainly describes the instrument's mechanical structure, the keyboard, and functions of each key. Please learn this chapter well before the Extreme Environment Shaker is operated for the first time.

EQUIPMENT OVERVIEW



KEYBOARD AND DISPLAY PANEL

KEY FUNCTION

Left Knob  Rotate to the right increases time, rotate to the left to decrease it

Right Knob  Rotate to the right increases speed, rotate to the left reduces it

Press the knob to start/stop the instrument

PLATFORM INSTALLATION

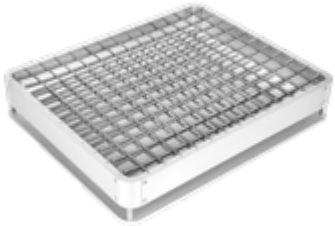
There are four different kinds of platforms compatible with the Extreme Environment Shaker.

BT934-A
Flat Platform

BT934-B
12 x 250ml Flasks Platform

BT934-C
20 x 100ml Flasks Platform

BT934-D
Universal Platform with Springs



Platform Installation Steps

Take the rubber pad out of the platform.

Attach the platform with 4 screws.

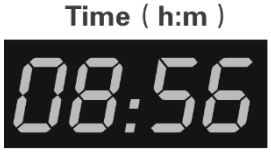
Put the pad back in the platform

OPERATION GUIDE

Setting Speed and Timing

1. Turn on the unit using the power switch. When the power is turned on the LED display reads all "8". The instrument starts the initial program with a beep.
2. Set the unit to the desired speed and time
    a. Turn the ***right*** knob to set the speed value. Stop turning the knob when the desired speed is displayed, and the instrument will automatically save the new set value

    b. Turn the ***left*** knob to set the timer. Stop turning the knob when the desired time is displayed, and the instrument will automatically save the new set value



    When the timer has finished, there will be a buzzer prompt
    NOTE: If the timing value displays 00:00 this means the running time is ongoing.

Stop / Start

1. Press in the ***right*** knob to run the program after speed and timing have been set. When the time is up, the instrument stops running, and the buzzer alarm will sound.
2. After the operation is complete, the unit will display OVER. Turn any knob to have the instrument enter a standby mode
3. During operation, the unit can be stopped by pressing in the ***right*** knob. Press the knob again to restart the operation. If no adjustments to the speed or time was made, the instrument will operate the program at the most recent setting.

TROUBLESHOOTING

Issue	Possible Causes	Solution
No signal display when the power is on.	No power	Check the power
	Broken switch	Contact BT Lab Systems
	Other	Contact BT Lab Systems
Shaking heavily	Samples placed out of balance	Place the samples evenly
Actual speed and displayed speed are not matching	Broken controller	Contact BT Lab Systems
Err displays	Speed not working	Contact BT Lab Systems
Knob does not work	Broken Button	Contact BT Lab Systems

WARRANTY

Our company guarantees that this unit is warranted against defective material and workmanship for a period of one year from the date of shipment. We will repair or replace the defective equipment returned during the warranty period free if the equipment has been used under normal laboratory conditions and in accordance with the instruction in this manual. The following defects are specifically excluded:

1. Damage caused by accident, misuse, or abuse
2. Damage caused by disaster
3. Repair or modification by anyone else without our authorization
4. Corrosion due to the use of improper solvent or sample
5. Defects caused by improper operation
6. Use of fittings or other spare parts supplied by different manufacturers

This warranty does not apply to platinum wire and all the accessories.

A return authorization must be obtained from us before returning any product for repair on a freight prepaid basis.

For any inquiry or request for repair service, please contact BT Lab Systems via the email below.

E-Mail: info@BTLabSystems.com

TECHNICAL SUPPORT

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

E-Mail: info@BTLabSystems.com