

# Multi-tube Vortex Mixer

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**Cat. No. BT931**

Thanks for choosing BT Lab Systems' BT931 Multi-tube Vortex Mixer. 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.
- Before operation, read the manual carefully. These units are designed for using in laboratory environments 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.
- Make sure the power supply voltage matches the voltage that the instrument uses.

If the power cord is damaged, it must be replaced. When replacing, it must be replaced with the same type and size of power cord. Do not put anything else on the power cord when you use the instrument. Do not put the power cord in place where it can be a tripping hazard.

Hold the plug when plugging in or pulling out the power cord. Ensure that the plug is fully inserted. Don't pull the power cord when pulling out the plug.

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

## **INTRODUCTION**

The BT931 Multi-tube Vortex Mixer is designed for mechanical and chemical cell lysis, mixing suspensions, and general sample agitation. It gives a distinctly different motion than shaking a sample. With vortexing, greater shearing forces are placed on materials in the bottom of a tube, thus promoting either disruption or solubility.

The multi-tube vortex mixer is a tool to provide that extra degree of mixing, however it accommodates full racks of tubes as opposed to a single tube. Consequently, this instrument is useful for higher throughput mixing of samples.

## **KEY FEATURES**

- Maximum process: 50 samples at the same time, makes the experiment more convenient and efficient
- Microprocessor control, simple design, LED displays the speed and time.
- Built-in short mix and timing operation modes. Operation stable and silent.
- With a large orbital vortex the performance is effective. Various types of foam tube frames and pads optional.

## **NORMAL OPERATING CONDITIONS**

- Ambient Temperature: 4°C ~45°C
- Relative Humidity: ≤70%
- Power: AC100-240V 15A

## **TECHNICAL SPECIFICATIONS**

Speed: 500 ~2500rpm

Orbit: 4mm

Time Setting: 1min ~9999min

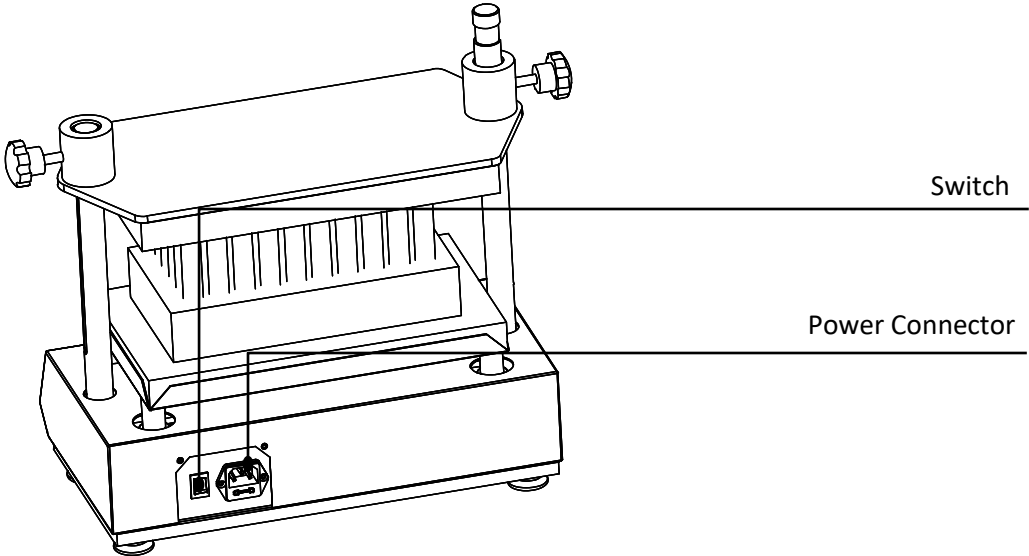
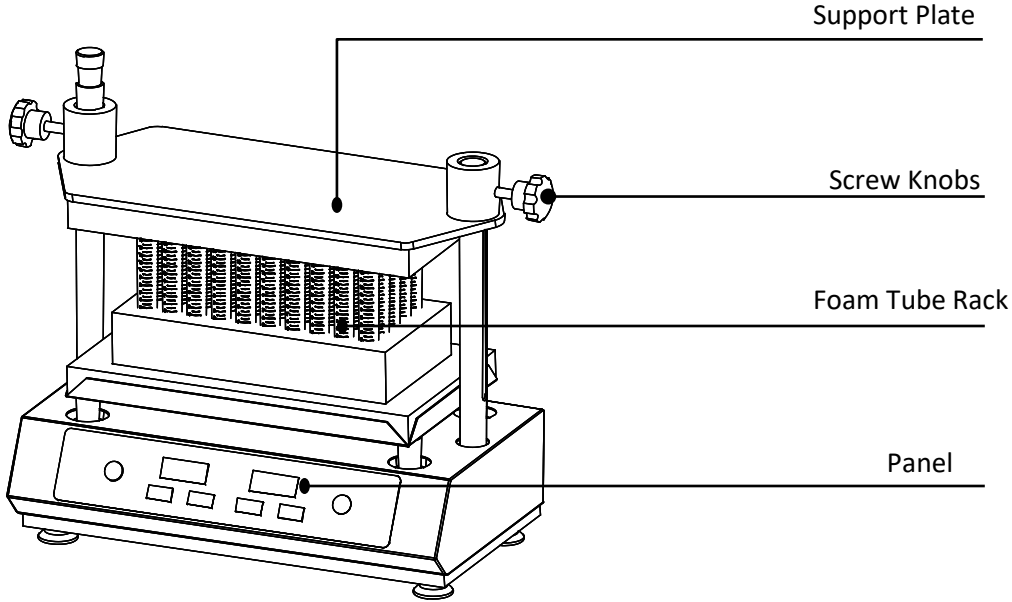
Max. Load: 4.5kg

Input Power: 60W

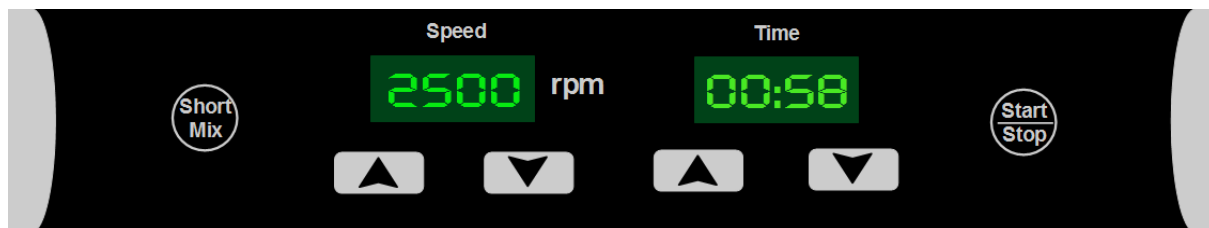
Outer Dimension: 426 x 250 x 480 mm

Weight: 21.5kgs

EQUIPMENT OVERVIEW



## KEYBOARD AND DISPLAY PANEL



1. Short mix key. Instrument mixes at the highest speed by pressing holding this key, release to stop running.
2. Start/Stop key. Pressing this key to start or stop the procedure.
3. “UP” arrow key. Key to increase speed or time setting value.
4. “Down” arrow key. Key to decrease speed or time setting value.

## OPERATION

### ***Shaking speed and time setting***

1. When the instrument is turned on, the display screen will show “ 8 ”. The instrument goes into the initial interface after flickering three times.
2. After 2 seconds the window displays the last setting time. Speed display shows the last setting speed.
3. Press the “UP” or “DOWN” arrow of the speed key, the value will increase or decrease. Hold for 2 seconds the value will increase or decrease in increments of 10, 100 and 1000.
4. Press the “UP” or “DOWN” arrow of the time key, the value will increase or decrease. Hold for 2 seconds the value will increase or decrease in increments of 10, 100 and 1000.
5. If you want to set the speed at 2400rpm and time at 2 minutes, press the “UP” arrow of speed key, the setting value will increase until the value reaches 2400rpm. Release the key, the device will save the value automatically. Press “DOWN” arrow of time key, the setting value will decrease until the value reaches 02:00. Release the key, the device will save value automatically. The speed and time setting are completed.

## TOUCH-VORTEX MODE

Keep holding “Short Mix”. The instrument starts to shake. Release “Short Mix”. Shaking stops.

## PULSE MODE

1. Keep press “UP” and “DOWN” arrow of time key simultaneously to enter into pulse mode setting.
2. Press “UP” or “DOWN” arrow of speed key to set intervals value from “00” to “10”, unit is second. “00” means pulse mode off.
3. Press “UP” or “DOWN” arrow key of time to set continuous working time. The setting value is from “00:00” to “99:59”, unit is minute:second.

4. Press “start/stop” key to confirm, and return to working interface. Press “start/stop” key to start operation.

### TROUBLESHOOTING

Problem	Cause	Solution
No display	No power	Check the connection of power
	Switch Failure	Exchange the switch
	Other	Contact BT Lab Systems
Shaking too heavily	Mixing samples are placed asymmetrically	Place the mixing samples symmetrically
The actual speed is different from the displayed speed	Failure in control board	Contact BT Lab Systems
“ERR” in the display	Shaking speed is out of control	Contact BT Lab Systems
Key does not work	Key failure	Contact BT Lab Systems

### 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](mailto:info@BTLabSystems.com)