



A Geno Technology, Inc. (USA) brand name

Orbital Shaker

Cat. No. BT909

Thanks for choosing BT Lab Systems' BT909 Orbital 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.
- 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 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 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 Orbital Shaker is a powerful variable speed shaker which provides efficient orbital motion. It is a microprocessor controlled instrument with a long-life brushless motor. It is applicable in different laboratories in microbiology, chemistry, immunology, biochemistry and molecular biology.

KEY FEATURES

- Microprocessor controlled digital speed and time.
- Low voltage.
- Gentle, reliable mixing with long-life brushless motor.
- For use with universal platforms, flat platforms or platforms with clamps.

NORMAL OPERATING CONDITIONS

Ambient Temperature: 4°C ~45°C

Relative Humidity: ≤70%

Power: AC100-240V~ 1.5A

TECHNICAL SPECIFICATIONS

Mixing Range: 50 ~300rpm

Orbit: 20mm

Timing Range: 1min ~99h59min

Max. Capacity: 2.0kg

Power: 50W

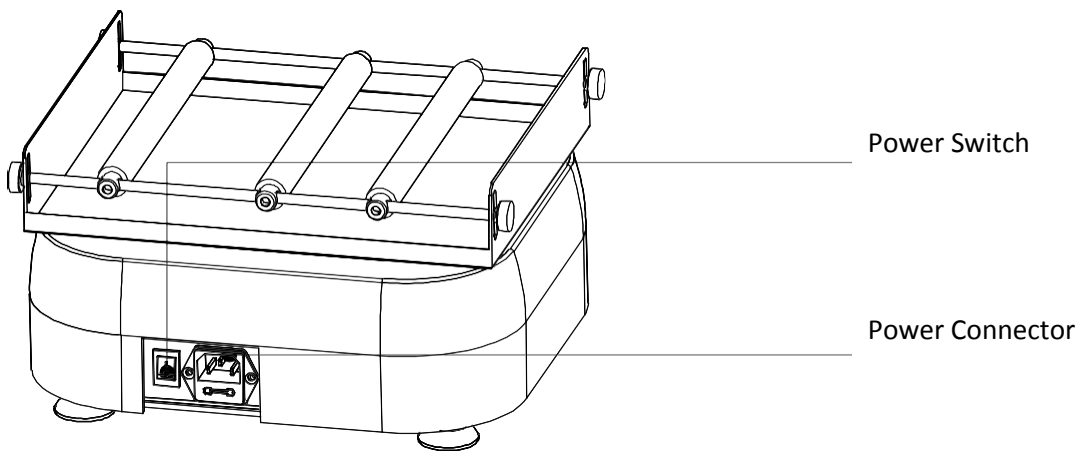
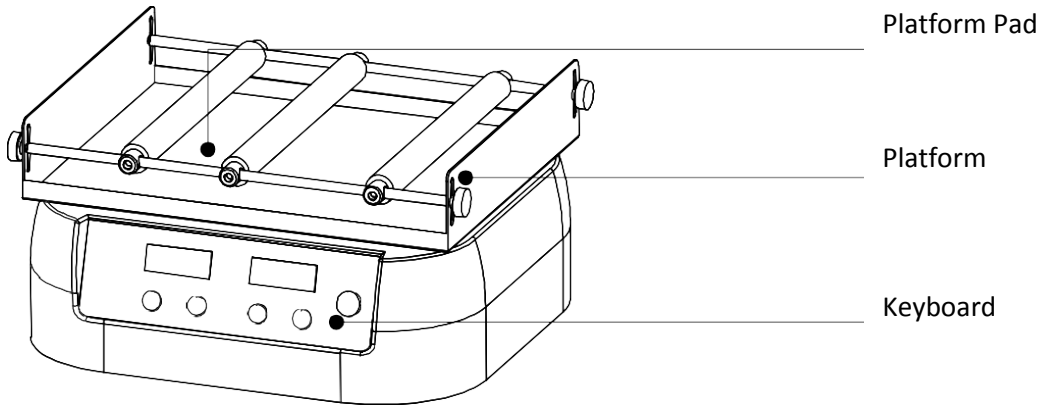
Dimension (mm):284x264x108

Net Weight (kg): 7.5

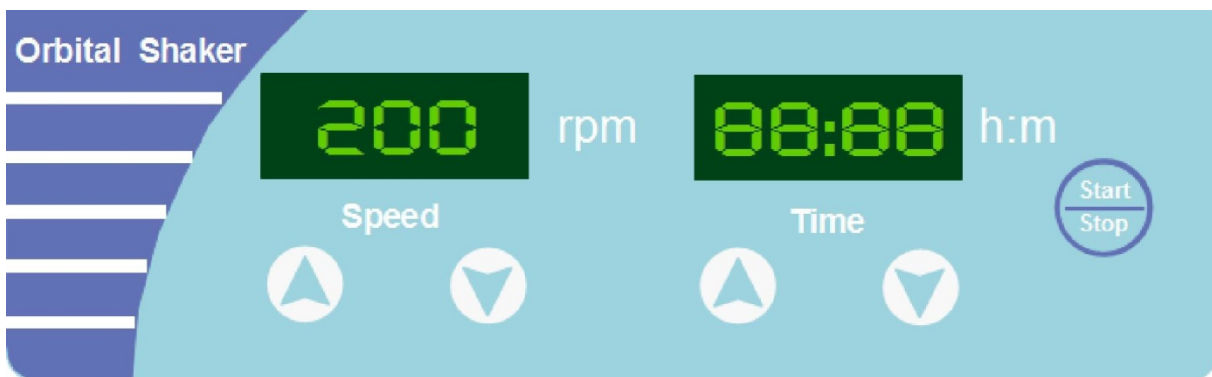
OVERVIEW

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

EQUIPMENT OVERVIEW



KEYBOARD AND DISPLAY PANEL

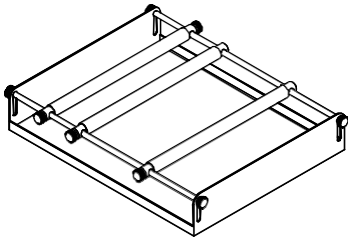


KEY FUNCTION

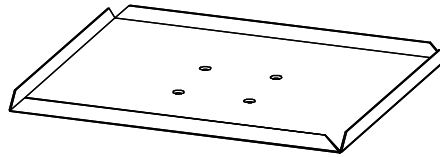
1. "DOWN" arrow key decreases the time value or speed value.
2. "UP" arrow key increases the time value or speed value
3. "Stop/Start" key. Press Start/Stop key to start or stop the program.

PLATFORM INSTALLATION

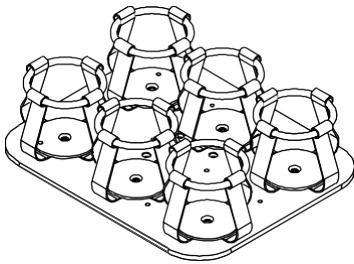
Four kinds of platforms BT909-C, BT909-D, BT909-B, BT909-A are optional for the Orbital Shaker.



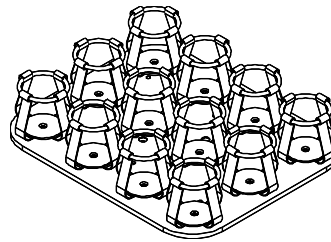
BT909-C



BT909-D

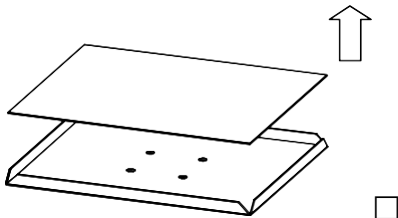


BT909-B

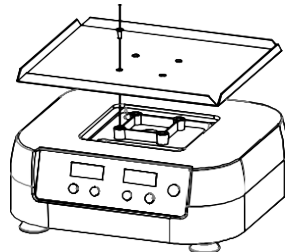


BT909-A

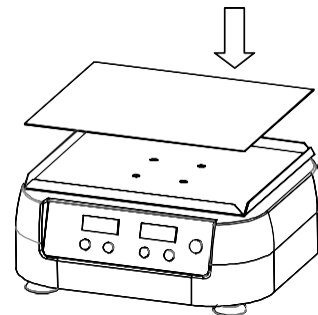
Installation for BT909-C or BT909-D



Take the pad out of the platform.

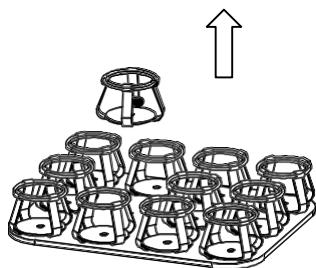


Attach the platform with 4 M4X8 screws.

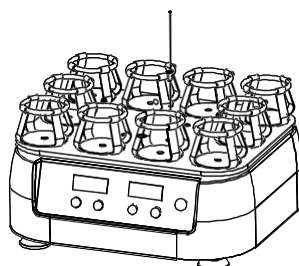


Put the pad back in the platform

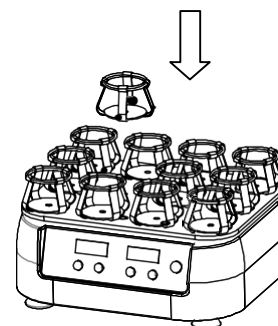
Installation for BT909-A or BT909-B



Take out the 2 flask clamps in the middle.



Attach the platform with 4 M4X8 screws.



Put the 2 flask clamps back on the platform

OPERATION GUIDE

Setting Speed and Timing

1. When the power is turned on the LED display reads all "8". The instrument starts the initial program with a beep.

Press the "UP" or "DOWN" arrow of speed key. The most recent running speed is displayed.

Example: The most recent running speed is "200" rpm. The last digit will flicker. Press the "UP" or "DOWN" arrow of speed key to adjust the speed. Holding down the key increases or decreases the speed quickly.

Example: to set the speed to 250 rpm, Hold down the key until speed value displays "250", then release the "UP" or "DOWN" arrow key. The instrument confirms and saves the setting value of "250".

2. Press the "UP" or "DOWN" arrow key of time. It displays the most recent time setting. Example: if the most recent time setting is 35 minutes the display reads "00:35". The last digit will flicker. Press the "UP" or "DOWN" arrow key of time to adjust the timing value. Hold the key to increase or decrease the value quickly.

Example: to set the timing at 1hour 20 minutes, press the "UP" arrow until the time value displays "01:20", release the "UP" arrow key. The instrument confirms and saves the setting value "01:20".

NOTICE: If the timing value displays 00:00 this means the running timing is ongoing.

Stop / Start

1. Press "start/stop" key to start or stop the program.
2. Press "start/stop" to run the program after speed and timing are set. When the time is up the instrument stops running and an alert sounds.
3. Press "stop/start" to stop the running program.
4. When the program completes, or the program is stopped by pressing "stop/start" key, the

instrument will be in ready mode. In ready mode, press the “UP” or “DOWN” arrow of speed key or timing key to reset speed and timing.

5. Press “start/stop” without adjusting speed or timing in ready mode, the instrument will operate the program as most recent setting.

TROUBLE SHOOTING

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

WARRANTY

The BT909 Orbital Shaker 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.

Breakdown due to improper use, operation in inappropriate conditions, maintenance or refitting without authorization are not in warranty coverage.

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