

# Benchmark's ORBI-SHAKER™ JR. Orbital Shaker

## Model BT302 Instruction Manual

Benchmark's ORBI-SHAKER JR. is a digital orbital shaker with a 19mm (.75 in) orbit and the capacity to shake up to 4 x 1-liter flasks. The ORBI-SHAKER JR. has a speed range of 50 to 300 rpm in 10 rpm increments and a digital timer for settings up to 99 hours in 1 minute increments. The unit can operate in cold rooms down to 4C and in heated chambers up to 65C at relative humidity levels up to 80%RH.

### I. Product Specifications: ORBI-SHAKER JR model BT302

Speed: User adjustable from 50rpm to 300rpm      Orbit Size: 19mm (.75in) diameter

Motor: Brushless motor (no carbon brushes to replace)

Load Capacity: up to 4kg

Flask Capacity: 4 x 1L; 6 x 500ml; 8 x 250ml; 12 x 125ml; 20 x 50ml

Dimensions (wxdxh): 13.1 x 11.7x 4.7in (333 x 298 x 120mm)      Weight: 16.5lbs (7.5 kg)

Electrical: 100-240VAC, 50/60Hz, 1A **UL/CSA CE** compliant

Operating Environment: 4C (cold room) to 65C 80%RH      Warranty: 2 years

### II.Product Set-Up:

Place the shaker on a clean, flat, stable surface. Insure that the suction feet adhere to the bench surface. You may want to use a flat rubber mat under the unit and feet to help prevent the from shaker "walking" when operating. Mount the platform using the four included screws that come with the unit. Be sure to fully tighten the screws. Make sure that the power switch is in the OFF position. Plug the power pack/supply into the shaker then plug the electrical cord into a properly grounded outlet. Ensure that there is proper space surrounding the instrument so that nothing contacts the platforms orbital motion.

### III.Platform Loading and Balance:

It is very important to load the platform in a balanced manner to reduce vibration and walking during operation. If you are using flask clamps and flasks, be sure to position the flasks so they form a balanced load on the platform. If necessary, use flasks with water to counter balance flasks with samples to establish a balanced load on the platform.

### IV.Product Operation:

After loading the platform, turn the unit on using the switch on the back. The unit will go through a start-up routine by lighting each digit on the display. When complete, the display will show any pre-set time on the timer and the word **oFF** for speed. Turn the control knob to adjust the speed and time (press the control knob to toggle between the speed and time setting). Press and hold the control knob to start the shaker. The shaker will increase speed up to the set speed setting. The timer will start counting down if a prior time was set. The two dots in the center of the timer will blink as the unit times down and/or when the unit is shaking. When the set time has expired the unit will stop shaking and the timer will display the word **oVer**. If time was not set, the unit will continue shaking until stopped. The unit can be stopped at any time by pressing and holding the control knob down.

### IV.Setting SPEED and TIME

Shaker speed can be set between 50 and 300rpm. Setting the speed below 50rpm causes the display to show the word **oFF**. The timer can be set up to 99hrs in one minute increments. Setting the time to all zeros (00:00) will allow the shaker to operate continuously. To set shaker speed and time, press the knob briefly and release. You will see one of the **SPEED** digits flashing. Rotate the knob clockwise to increase the speed setting and counterclockwise to decrease the speed setting. Once the speed is set, press the knob briefly again and the **Time** minute digit will begin to flash. Rotate the knob to set the desired number of minutes then press the knob briefly again to set the desired number of hours. When done, press the knob briefly one more time and the display will show both the speed setting and the time setting. Press and hold down the knob to begin operation.

### V. Care and Maintenance:

No routine maintenance is required other then to keep the unit clean. When cleaning, use a mild detergent (such as isopropyl alcohol).