

# Operating Instructions

## Bio-Rad BR-2000 Vortexer

1660610, 1660611, 1660621



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## Introduction

The Bio-Rad BR-2000 Vortexer is a general purpose laboratory vortexer. Mixing speed is adjustable up to 3,400rpm. A three position switch allows the mixer to be operated continuously or by "touch" activation. The shaking mechanism is specially designed to offer enhanced stability under various loads. The metal baseplate and rubber feet provide additional stability and prevent the unit from "walking" across the bench, even at maximum speed.

Read this manual thoroughly before attempting to operate the Vortex Mixer. All persons operating this piece of equipment should review the Safety Precautions section of this manual.

**Specifications:** The Bio-Rad Vortexer is designed to be safe at least when operated under the following conditions:

|                         |                                                             |
|-------------------------|-------------------------------------------------------------|
| Speed Range             | 3400rpm (60 Hz) / 2850rpm (50 Hz)                           |
| Operating Modes         | Touch; Continuous                                           |
| Ambient Operating Range | +5°C to 40°C, up to 85% RH, non-condensing; Indoor use only |
| Altitude                | Up to 2,000 m                                               |
| Dimensions (w x d x h)  | 14 x 16 x 12 cm                                             |
| Weight                  | 2.2 Kg                                                      |
| Electrical              | 120V $\pm$ 10%, 60Hz, 0.6A; 230V $\pm$ 10%, 50Hz, 0.3A      |
| Pollution Rating        | Pollution Degree 2                                          |

## Unpacking the Vortex Mixer

Upon receipt of the BR-2000 Vortexer, examine the exterior carton for damages. In the event of shipping damage, a claim must be filed with the transportation carrier within 10 days of receipt. Save all packaging for inspection by the carrier.

Carefully unpack the unit and check for completeness. Included in the carton should be the following:

- BR-2000 Vortexer with cup head
- Line cord
- Instruction manual

If any of these items are missing, contact Bio-Rad immediately. Save the original packaging until the unit has been shown to be operating properly.

Verify that the unit is rated for the proper voltage by checking electrical / serial no. label on the back.

**Installation:** Locate the mixer on a level, stable surface near a grounded electrical outlet. The surface should be clean and free of dust to ensure that the feet grip the surface firmly. Allow sufficient clearance on all sides of the unit for proper ventilation.

With the power switch in the OFF position, plug the power cord into a grounded receptacle.

## Operating the BR-2000 Vortexer

All operating controls are located on the front panel. The power switch, located on the left side of the panel, has three positions – ON, OFF and TOUCH. When set to the TOUCH position, the mixer is activated by depressing the mixing head. When pressure is released from the mixing head, operation will stop. When set to the ON position, the mixer will operate continuously until the switch is moved to either the OFF or TOUCH position.

The speed control, located on the right side of the panel, is continuously adjustable. **Oscillating speed increases at a non-uniform rate** to a maximum of 3,400rpm as the knob is turned clockwise. Before turning on the mixer, set the speed control to the minimum.

To begin operation, move the power switch to either the TOUCH or ON position and turn the speed control to the desired setting. If the power switch is in the ON position, the shaking head will begin moving immediately. If the power switch is in the TOUCH position, operation will begin when an object is placed on the shaking head and slight pressure is applied to depress the head. Shaking will cease when the object is removed and pressure released.

### **Safety Precautions**

The following precautions should be taken when operating or working near the Vortex Mixer:

- **CAUTION, A PINCH POINT EXISTS BETWEEN CUP HEAD AND ENCLOSURE!**
- **Never operate the unit without a shaking head securely attached.**
- **Always wear shatterproof eye protection.**
- **Do not use or mix solvents and flammables on or near the mixer.**
- **Shake hazardous samples in appropriate containment vessels.**
- **Repair should be performed only by qualified individuals**
- **Protection impairment may result if used in a manner not specified by the manufacturer.**

### **Accessories**

Several additional shaking heads are available for the Vortex Mixer. To change heads, remove the cup head by holding the housing securely while pulling up on the head. An optional head can then be placed on the drive post and secured by pressing down firmly on the head. **When removing the accessory heads, pull up on the black plastic connector only.** Pulling up on the foam or metal plate can cause damage to the accessory head.

**When using the accessory heads the maximum speed of the Vortexer will be limited due to the larger head diameter and mass distribution. Generally the vortex mixer will be able to operate at speeds of up to 1/3 of the maximum speed depending on the accessory head and sample load.**

**If the Vortexer begins to “walk” on the bench or vibrate excessively, reduce the operating speed. Failure to do so can cause damage to the vortex mixer.**

Optional shaking heads are as follows:

1660622 Flathead Dimpled platform head, 3.25 inches (8.26 cm)

### **Care and Maintenance**

**Warning: Disconnect the vortexer from power source before attempting any cleaning or maintenance procedures.**

After each use, wipe down the mixer with a soft cloth. Do not immerse the unit or pour liquids over it as electrical shock may occur. Clean up any spills immediately taking the proper precautions. If required, the shaking head may be removed. First, disconnect the vortexer from the power source and then remove the combo-cup head by holding the housing securely while pulling up on the head. The head may then be cleaned with a mild detergent. Be sure the head is thoroughly dry before replacing it on the unit.

The motor and shaking mechanism in the Vortex Mixer require no routine maintenance or lubrication.

## Warranty

The manufacturer warrants that the BR-2000 Vortexer you have received meets its published specification. The BR-2000 is guaranteed to be free of defects in materials and workmanship for a period of one year from the date of purchase. This guarantee is valid only if the unit has been used in accordance with the instructions in this manual and for its intended purpose. This warranty does not cover consequential damages or damages resulting from the abuse or misuse of this equipment. Liability shall be limited to the repair or replacement of the unit or refund of the purchase price at the manufacturer's discretion.

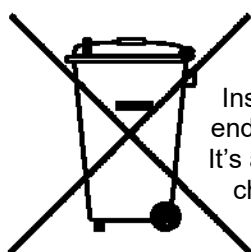
In the event that service is required, contact Bio-Rad Laboratories to receive a return authorization number.

## Symbols and Conventions

The following chart is an illustrated glossary of the symbols that may be used in this manual or on the product.

|                                                                                     |                                                                                                                                                                                                                                               |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|    | The electrical warning indicates the presence of a potential hazard which could result in electrical shock.                                                                                                                                   |
|    | <b>CAUTION</b> This symbol refers you to important operating and maintenance (servicing) instructions within the product Instruction Manual. Failure to heed this information may present a risk of damage or injury to persons or equipment. |
|  | This symbol identifies a Protective Earth (PE) terminal, which is provided for connection of the supply system's protective earth (green or green/yellow) conductor.                                                                          |

## EQUIPMENT DISPOSAL



This equipment is marked with the crossed out wheeled bin symbol to indicate that this equipment must not be disposed of with unsorted waste.

Instead it's your responsibility to correctly dispose of your equipment at lifecycle-end by handing it over to an authorized facility for separate collection and recycling. It's also your responsibility to decontaminate the equipment in case of biological, chemical and/or radiological contamination, so as to protect from health hazards the persons involved in the disposal and recycling of the equipment.

For more information about where you can drop off your waste equipment, please contact your local dealer from whom you originally purchased this equipment.

By doing so, you will help to conserve natural and environmental resources and you will ensure that your equipment is recycled in a manner that protects human health.

## Legal Notices

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