

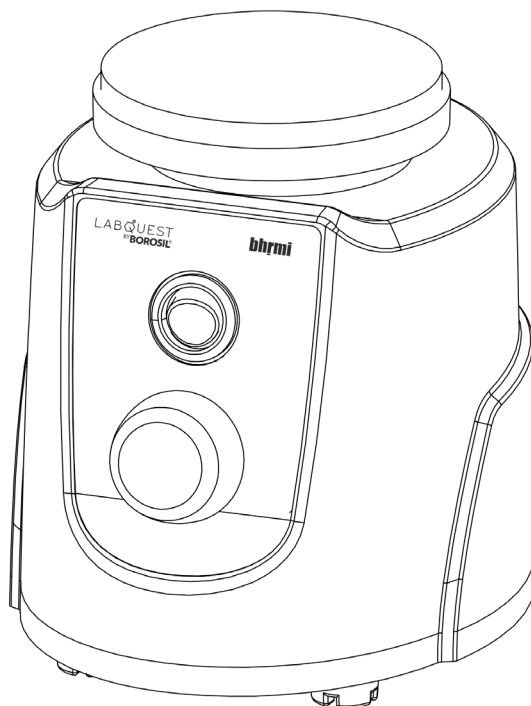
**LABQUEST**  
BY **BOROSIL®**

# VORTEX MIXER

**OPERATING MANUAL**

**BHRMI 1.0**

**BHRMI 2.0**



**DEALER :**



## THANK YOU NOTE

*We Borosil, one of India's most customer oriented brands truly appreciate your business and express our gratitude for the trust you have placed on us.*

*We hope your choice serves you well in your scientific endeavors and aspire to have the pleasure of doing business with you for years to come.*

## INTRODUCTION

The bhrmi Vortex Mixer is a general purpose laboratory vortexer. Mixing speed is adjustable up to 2800rpm. 2 modes allow 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.

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## PACKING LIST OF BHRMI 1.0

1. Bhrmi 1.0 Unit..... 1 No.
2. Operating Manual..... 1 No.
3. Rubber Cup Assembly..... 1 No.
4. Flat Foam..... 1 No.
5. Vial Holder Foam ..... 1 No.
6. Foam Attachment ..... 1 No.

## PACKING LIST OF BHRMI 2.0

1. Bhrmi 2.0 unit ..... 1 No.
2. Operating Manual..... 1 No.
3. Rubber Cup Assembly..... 1 No.
4. Flat Foam..... 1 No.
5. Vial Holder Foam ..... 1 No.
6. Foam Attachment ..... 1 No.

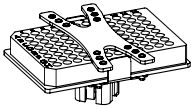
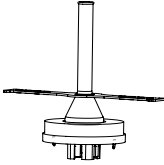
## PRODUCT SPECIFICATION

PARAMETERS	BHRMI 1.0	BHRMI 2.0
Unit External Dimensions (WxDxH)	132mmX160mmX180mm	132mmx160mmX180mm
Mains Voltage	220V-240V	220V-240V
Current consumption	0.6A	0.6A
Power consumption	55w	56w
RPM	2800 RPM	2800 RPM
Body material	ABS	ABS
Display	No	7 segment LED
Timer Display	No	Continuous ON Mode 999min Touch Mode 60sec
RPM Display	No	Low, Mid & High
Orbital diameter	6mm	6mm
Motor type	AC shaded pole motor	AC shaded pole motor
Modes	Touch stand-by & continuous mode	Touch stand-by & continuous mode
Mode Indicator LED	Yes	Yes
Weight	2.5 Kg	3 Kg
Speed controller using microcontroller	Yes	Yes

### NOTE:-

- During the continuous usage if the motor gets overheated, motor will cut off automatically.
- Motor will starts after cool down. To cooldown the motor will take 5 to 7 minutes.

## MAX RECOMMENDED SPEED TABLE

Attachment	Image	Max Fill	Recommended Speed
Micro plate attachment	 A technical drawing of a micro plate attachment, which is a rectangular tray with multiple wells, designed to be mounted on the vortex mixer.	75%	Mid Speed
Volumetric flask holding attachment	 A technical drawing of a volumetric flask holding attachment, featuring a central vertical rod and a horizontal arm to support a flask.	Recommended flask 25, 50, 100 ml	Mid Speed

## SAFETY AND WARNING



Important operating and maintenance instructions. Read the accompanying text carefully.



### Potential Electrical Hazards

- Only qualified persons should perform procedures associated with this symbol.
- Equipment being maintained or serviced must be turned off and locked off to prevent possible injury.

## SAFETY PRECAUTIONS

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

- Do not operate the unit without a shaking head securely attached.
- Do not use the product if there is any electrical or mechanical damage.
- Always wear shatterproof eye protection.
- Do not use or mix solvents and flammables on or near the mixer.
- Liquid spillage may harm the unit. Do not fill microtubes, microplates or flasks while they are attached to the vortex mixer.
- Shake hazardous samples in appropriate containment vessels.
- Repair should be performed only by qualified individuals.
- Do not use accessories which are not recommended by the manufacturer as it may affect the performance.
- Do not use the vortex mixer in hazardous atmosphere or with hazardous material for which the unit is not designed.

- Always use the vortex mixer on a level & stable surface for best performance and maximum safety.
- The instrument is designed to be used in the laboratory environment.
- Do not use the lift of vortex mixer with the attachments, as every attachment including the rubber cup head are designed to be pulled off for interchanging.
- Do not push hardly on the attachments (rubber cup head, flat head etc).
- Clean the unit with a damp cloth using a mild detergent only. Do not use chemical cleaning agents.
- If liquid is spilled on the unit, first disconnect the unit from the external (main) power supply and then clean the unit with damp cloth.



### **CAUTION**

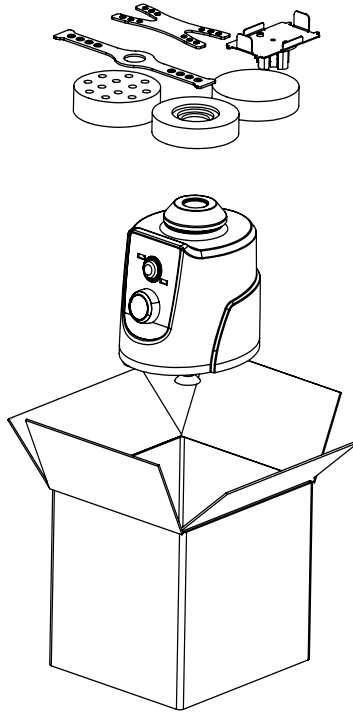
- Always use proper protective equipment. (Clothing, gloves, goggles, etc.)
- Always follow good hygiene practices.
- Each individual is responsible for his / her own safety.



### **WARNING**

Inadequate earthing at the installation facility can lead to hazardous electrical shocks. The manufacturer is not liable for any injury or death resulting from electrical hazards due to faulty earthing in the lab.

## UNBOXING BHRMI 1.0 & BHRMI 2.0

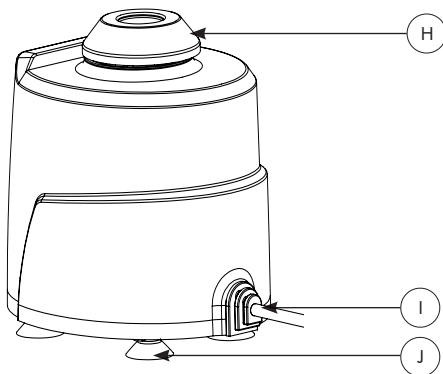
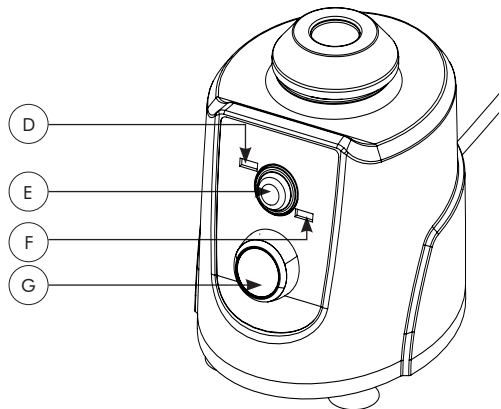
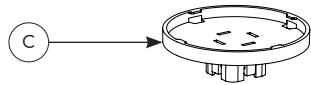
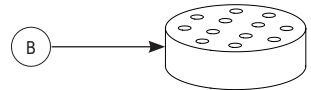
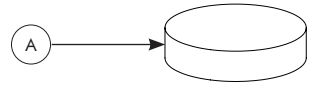


1. Place the carton box in the proper direction.
2. Check the box exterior for any damages.
3. Unbox the carton box from the top. If there is any physical damage found on the product, report to the dealer / delivery agent.
4. Remove the accessories and the unit from the box safely.
5. Compare the in box items with the packaging list. If any of the items are missing, contact Labquest's Customer Service Department immediately.

**(Read Manual before installation on the lab bench.)**

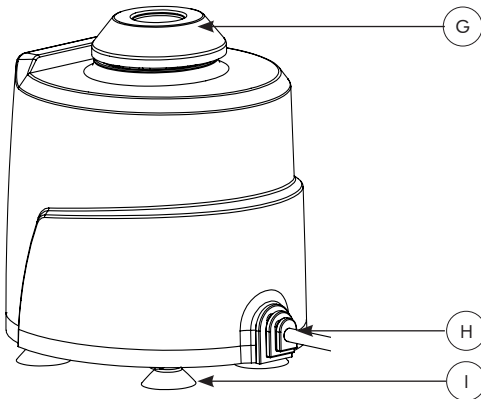
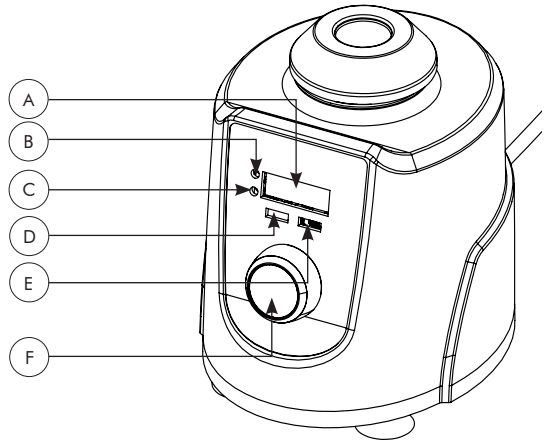
## PRODUCT IDENTIFICATION OF BHRMI 1.0

- A. FLAT FOAM
- B. VIAL HOLDER FOAM
- C. FOAM ATTACHMENT
- D. TOUCH MODE INDICATOR
- E. TWO WAY MODE SWITCH
- F. CONTINUOUS ON MODE INDICATOR
- G. RPM REGULATOR KNOB
- H. RUBBER CUP
- I. POWER CABLE
- J. SUCTION SHOES

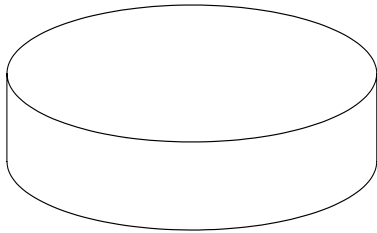


## PRODUCT IDENTIFICATION OF BHRMI 2.0

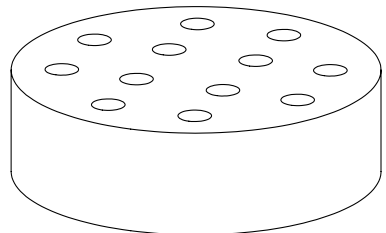
- A. LED DISPLAY
- B. SPEED INDICATOR
- C. TIMER INDICATOR
- D. TOUCH MODE INDICATOR
- E. CONTINUOUS ON MODE INDICATOR
- F. FUNCTION SELECTOR KNOB
- G. RUBBER CUP
- H. POWER CABLE
- I. SUCTION SHOES



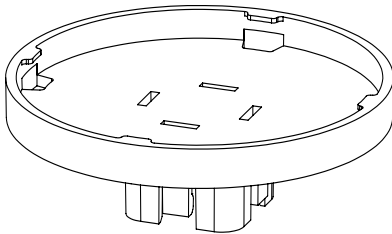
## ACCESSORIES OF BHRMI 2.0



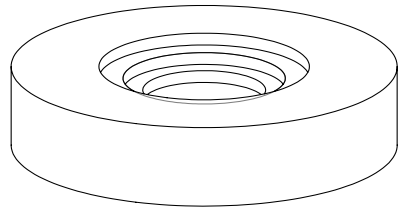
FLAT FOAM



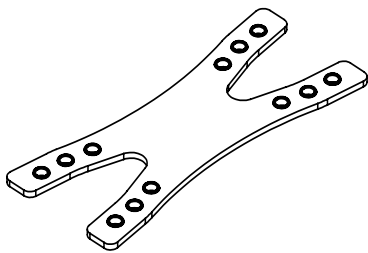
VIAL HOLDER



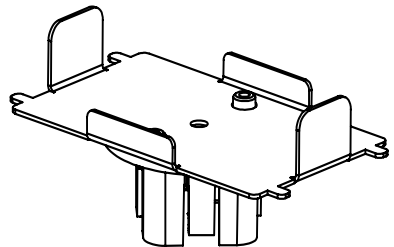
FOAM ATTACHMENT



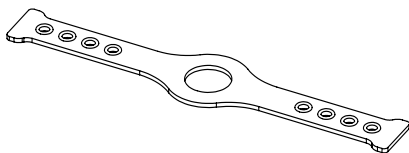
VOLUMETRIC FLASK BASE FOAM



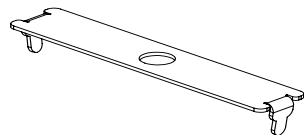
MICRO PLATE LOCKING BELT



MICRO PLATE HOLDER



25, 50, 100ML VOLUMETRIC FLASK  
LOCKING BELT



VOLUMETRIC FLASK BELT LOCKER

## **PRODUCT INSTALLATION**

- Locate the mixer on a level, stable surface near a grounded electrical outlet.
- The surface should be clean and free of dust, ensure that the feet grip are fixed with the surface firmly.
- Allow sufficient clearance on all sides of the unit for proper ventilation.
- Keep the power switch off the unit in OFF position, then plug the power cord into a grounded receptacle.
- Since it transmits low vibration to the floor. Do not keep any fragile material nearby.

## OPERATING INSTRUCTIONS OF BHRMI 1.0

- All operating controls are located on the front panel.
- The power switch is located on the middle of the panel, it has three positions TOUCH, OFF and Continuous ON.
- When set to TOUCH position, the mixer gets activated by pressing the mixing head.
- When pressure is released from the mixing head, operation will stop.
- When set to the Continuous ON position, the mixer will operate continuously until the switch is moved to either OFF or TOUCH position.
- The speed control, located below the Switch, is continuously adjustable for required RPM.
- Oscillating speed increases at a non-uniform rate to a maximum of 2,800rpm 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 Continuous ON position and turn the speed control to the desired speed.
- If the power switch is in the ON position, the shaking head will rotate 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.

## OPERATING INSTRUCTIONS OF BHRMI 2.0

Bhrmi 2.0 has 2 modes of operation. Touch Mode & Continuous ON mode. To select a mode turn ON the unit the display will show  $\text{Touch}$  (touch mode) and  $\text{Cont}$  (continuous ON mode), rotate the knob to change from one mode to another and single press the knob to select the mode.

### Mode 1 :- (Touch Mode)

- The stirring will start after applying pressure on the rubber cup head.
- If the user requires a timer, user can set the time in seconds to stir the solution
- Set the time (max 60 sec), if required by rotating the knob.
- Then apply the pressure to the rubber cup head to start the stirrer for the set time. If the pressure released in between the timer restart from 0 seconds.
- If the time is kept to zero, it will stirred until the pressure is released from rubber cup head.

### Mode 2 :- (Continuous ON Mode)

- In this mode the user can set SPEED and TIME.
- User can set three speeds i.e.  $\text{Low}$  (Low Speed),  $\text{Med}$  (Medium Speed),  $\text{High}$  (High Speed) and time upto 999 minutes.
- To switch between time and speed settings, single press the knob.
- Single press the knob after setting time to start the stirring. The stirring will happen until the time ends.
- If the time is set to zero the stirring will be continuously ON until the user stops it manually by long pressing the knob.
- User can see the countdown of the remaining time for the stirring to stop.
- If the user needs to stop the stirring, manually long press the knob when in between the stirring process.

To exit from the existing mode long press the knob

## ACCESSORIES INSTALLING DETAIL

### 1. RUBBER CUP ASM

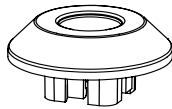


Fig 1.1

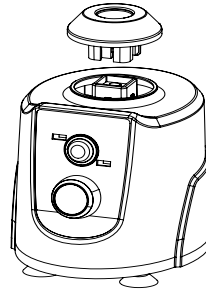


Fig 1.2

This is the default accessory that comes attached with the product. Fix this directly on the unit. As shown in image (1.2) then it is ready to use.

### 2. EVA FLAT FOAM ASM

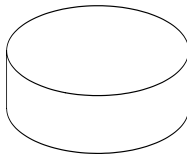


Fig 2.1

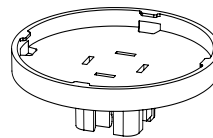


Fig 2.2

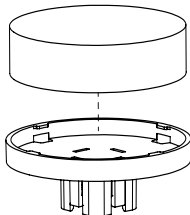


Fig 2.3

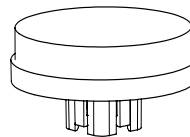


Fig 2.4

If the user wants to replace the accessory with a flat foam Assembly, the user needs to follow the below steps.

- (2.1) shows the flat foam which needs to be fixed in the foam holder (2.2).
- Take foam holder align the flat foam as shown in image (2.3).
- Then by pressing from the top fix the foam in the holder as shown in image (2.4)
- Then remove any pre attached accessory in the unit by pulling up. If not, place the flat foam assembly on the accessory holder of the unit and press it gently from the top, it will fix by snap fit.

### 3. VIAL HOLDER ASM

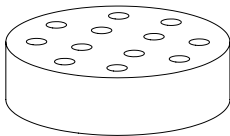


Fig 3.1

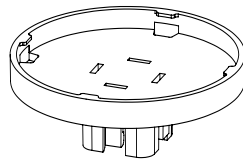


Fig 3.2

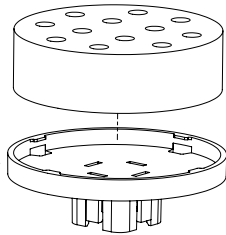


Fig 3.3

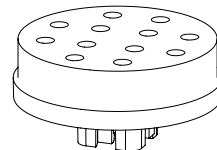


Fig 3.4

- (3.1) shows the vial foam which needs to be fixed in the foam holder (3.2).
- Take foam holder align the vial foam as shown in image (3.3)
- Then by pressing from the top fix the foam in the holder as shown in image (3.4)
- Then remove any pre attached accessory in the unit by pulling up. If not, place the Vial holder assembly on the accessory holder of the unit and press it gently from the top, it will fix by snap fit.

## 4. VOLUMETRIC FLASK HOLDER ASM

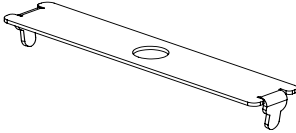


Fig 4.1

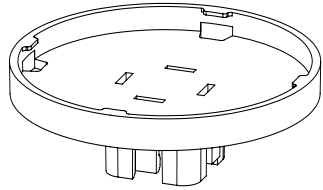


Fig 4.2

- (4.1) shows the belt locker which needs to be fixed in the foam holder (4.2).

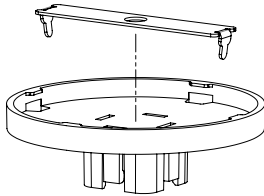


Fig 4.3

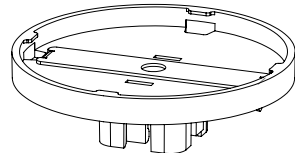


Fig 4.4

- Align belt locker as shown in image. (4.3) and fix it by pressing from the top as shown in the image (4.4)

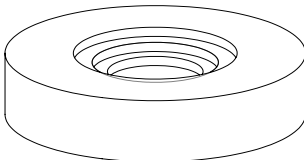


Fig 4.5

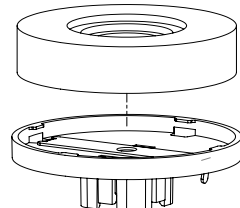


Fig 4.6

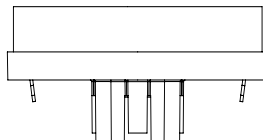


Fig 4.7

- Then align the foam (4.5) on the foam holder as shown in the image (4.6)
- Then by pressing from the top fix the foam in the holder as shown in the image 4.7.

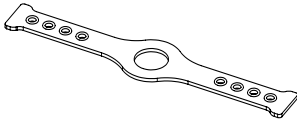


Fig 4.8

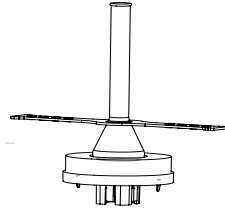


Fig 4.9

- Place any one from 25, 50, 100 ml volumetric flask on the foam.
- Then insert the silicon belt (4.8) as shown in image (4.9).
- Then stretch the belt on both the side and lock it with the belt locker.
- Then remove any pre attached accessory in the unit by pulling up. If not, place the volumetric flask holder assembly on the accessory holder of the unit and press it gently from the top, it will fix by snap fit.

## 5. 96 WELL PLATE OR MICROPLATE HOLDER ASM

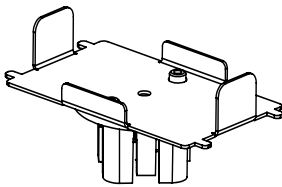


Fig 5.1

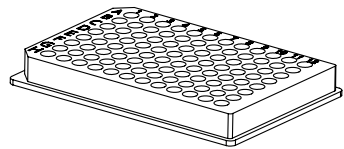


Fig 5.2

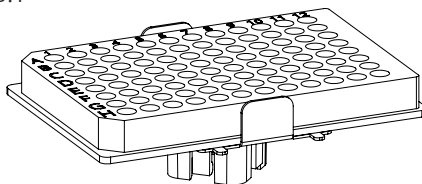


Fig 5.3

- (5.1) shows the microplate holder. Take it and place the microplate(5.2) on the holder as shown in image (5.3).

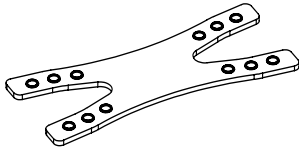


Fig 5.4

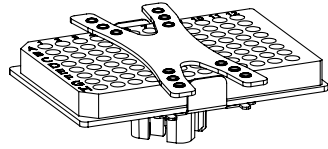


Fig 5.5

- Take the microplate holding belt (5.4) and place it on the microplate as shown in image (5.5). Then stretch the belt on both the side and lock it with the belt locker (5.6).

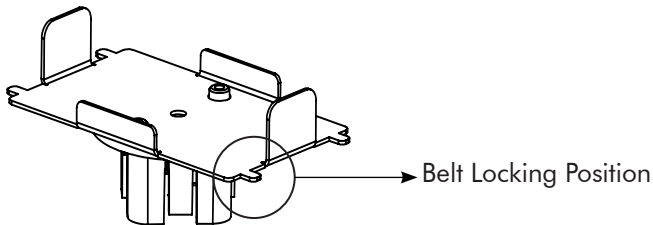


Fig 5.6

- Then remove any pre attached accessory in the unit by pulling up. If not, place the microplate holder assembly on the accessory holder of the unit and press it gently from the top, it will fix by snap fit.



## WARRANTY REGISTRATION

Please handover this Registration form to the distributor from where you have purchased this product. The warranty is valid only when this warranty registration card is received by us within 30 days from the date of purchase.

Product: VMX010  VMX020

Product Sr. No.: \_\_\_\_\_

Date of Invoice : \_\_\_\_\_

Invoice No.: \_\_\_\_\_

### Customer name & address

Name : \_\_\_\_\_

\_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

E-mail: \_\_\_\_\_

### Customer sign & seal

### Dealer name & address

Name : \_\_\_\_\_

\_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

E-mail: \_\_\_\_\_

### Dealer sign & seal



# **BOROSIL<sup>®</sup>** **Scientific**

STATEMENT OF WARRANTY

Borosil confirms that this product has been manufactured in accordance with our technical specifications and quality requirements.

- Borosil warrants the product from manufacturing and workmanship defects for a period of 12 months from the date of invoice.
- Warranty void if apparatus is not operated as prescribed in Vortex Mixer operating manual.
- To be covered under warranty.
  - Units have to be connected to standard 230V, 50Hz, 5A wall sockets with proper earthing for bhrmi 1.0 & bhrmi 2.0.
  - The units should never be run with wet or dripping glassware.
  - Warranty does not cover replacement of heating element more than once.
  - Warranty does not cover rust and physical damage to metal parts due to corrosive environment in the lab.

### **Terms:**

- In the event of malfunction due to defect, the buyer will have to follow the Borosil's service process.
- Certain units can not be serviced / rectified at the buyer's place and the units may have to be brought to Borosil's service center as advised by Borosil's representatives.
- In no event shall Borosil be liable for consequential or incidental damages.

<b>INVOICE DATE</b>	<b>BUYER</b>	<b>AFFIX SERIAL NUMBER</b>
<b>INVOICE#</b>		
<b>Dealer name &amp; address</b>		<b>Dealer sign &amp; seal</b>

### **BOROSIL SCIENTIFIC LIMITED**

Corporate Office : 1101, Crescenzo G-Block, Opp. MCA Club, Bandra Kurla Complex, Bandra (E), Mumbai-400051, India.

**VORTEX MIXER**

**: MANUFACTURED BY :**

**Borosil Scientific Limited**

Plot No.7, Sr. No. 234, 235 & 245,  
Indialand Global Industrial Park,  
Hinjewadi Phase 1, Pune - 411057

*Write to us on above address.*

**: MARKETED BY :**

**Borosil Scientific Limited**

1101, G-Block, Parinee Crescenzo,  
BKC, Bandra East, Mumbai - 51

Maharashtra, India

**: CUSTOMER CARE CONTACT :**

Phone : 1800 22 4551 | Email : [lab.support@borosil.com](mailto:lab.support@borosil.com)

Website : [www.borosilscientific.com](http://www.borosilscientific.com)