

OXFORD LAB PRODUCTS

Benchmate VM-MT



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1. PRODUCT DESCRIPTION

INTRODUCTION

This vortex mixer is designed for laboratory mixing. It assures the highest performance in terms of speed, reliability, precision and safety. The vortex mixer has a variable speed with digital control that allows low rpm start-up for gentle shaking and high speed mixing for vigorous vortexing of multiple samples.

INTENDED USE

This vortex mixer is a general laboratory vortex mixer. It is indented for application where vortexing of single or multiple tubes are required.

NOTE: Before using the instrument, please read this user manual carefully. This user manual is intended to assist with the operation and care of the unit only and not its repair. For repair please contact the supplier.

FEATURE

- Brushless DC motor for quiet operation and maintenance free long-life operation.
- Microprocessor controlled unit with the digital display.
- Adjustable speed ranging from 300-2500 rpm with increment of 10 rpm and accuracy of +/-5% rpm with option of selecting Clockwise (CW) and Counterclockwise (CCW) motion.
- Long timer setting from 1 to 999 mins & infinite mode.
- Programmable Pulse mode with selection of variable time, 30-99 seconds.
- Power Overload feature in which if the equipment consumes more power than its capacity, it automatically shuts down.
- Supplied with one off four attachments.

2. TECHNICAL SPECIFICATIONS

Motor	Brushless DC Motor
Orbital Diameter	4 mm
Speed	300-2500 rpm
Speed Accuracy	± 5%
Time	1 to 999 minute & infinite
Programmable Pulse Mode	Yes
Platform Size	295 x 200 mm
Dimensions (W x D x H)	440 x 400 x 249 mm
Weight	17.6 Kg
Input Voltage	24V --- 2A
Power Consumpton	45 W

2. TECHNICAL SPECIFICATIONS

ACCESSORIES

1. Power Adaptor: Input Voltage - 100-240V~50/60Hz.
Output Voltage 24V --- 3.0A.
2. Pre-installed attachment.
3. Product user manual & warranty card.

3. SAFETY PRECAUTIONS

- Do not use the unit if it shows any sign of electrical or mechanical damage.
- Do not use vortex mixer in a hazardous atmosphere or with hazardous material for which the unit is not designed.
- Always used the vortex mixer on a level & stable surface for best performance and maximum safety.
- Do not lift the vortex mixer by the attachments.
- 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 a damp cloth.
- Do not use accessories which are not recommended by the manufacturer as it may affect the performance.
- The instrument is designed to be used in a laboratory environment.
- Liquid spillage may harm the unit. Do not fill microtubes, microplates or flasks while they are attached to the vortex mixer.
- Refer to the recommended maximum speed for specific attachments for safe usage. (Refer table on page: 5)

4. INSTALLATION

Open the box, open the inner packaging and gently take the vortex mixer out of the box. Before the first use, ensure that all the packaging is removed. The user manual and accessories should be kept near the unit for at least two years for warranty purposes.

LOCATION

Take the unit out and place it on a level & stable surface near a grounded electrical outlet. The surface should be clean and free from dust to ensure that the feet grip the surface firmly. Keep a clearance of 10 cm on all sides of the unit for proper ventilation.

Keep the unit away from heat & direct sunlight to avoid sample temperature issues.

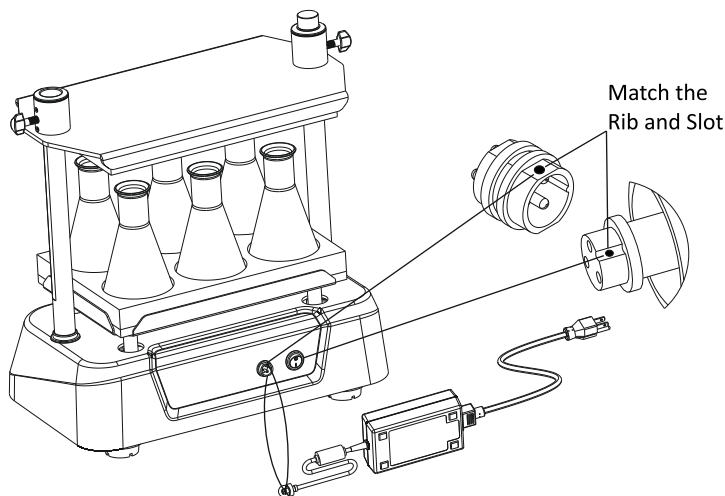
CONNECTING THE POWER ADAPTOR

- Connect one side of power adaptor to the rear side of the Vortex mixer and other to

4. INSTALLATION

the power supply as shown in the figure below.

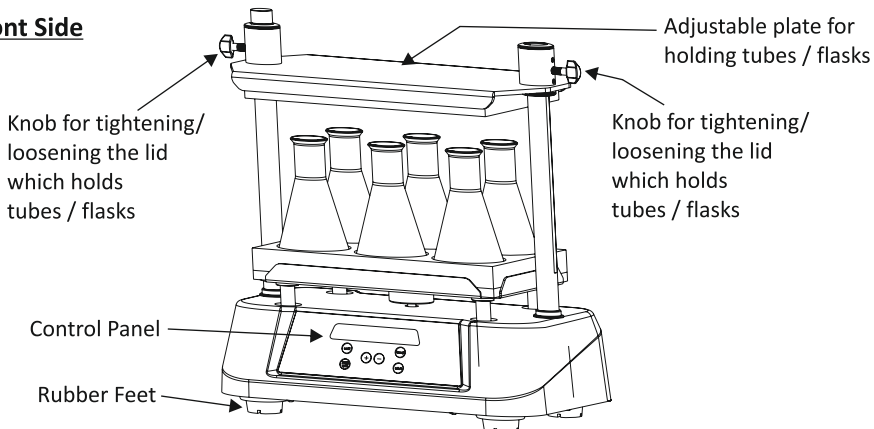
- Rotate the adaptor nut clockwise to tighten the adaptor to the instrument. Ensure the power switch is OFF while connecting the power adaptor.
- The sticker on the body & jack indicate the position of the rib on the jack. While fitting the adaptor to the unit-please match the sticker position as shown in the figure below & gently push it in.



- If matched correctly the plug will go in easily without much force (do not try to force the plug in if it is not matched properly). Once the plug is inserted into position, turn the loosened upper ring clockwise until it is tight to secure the fitment.

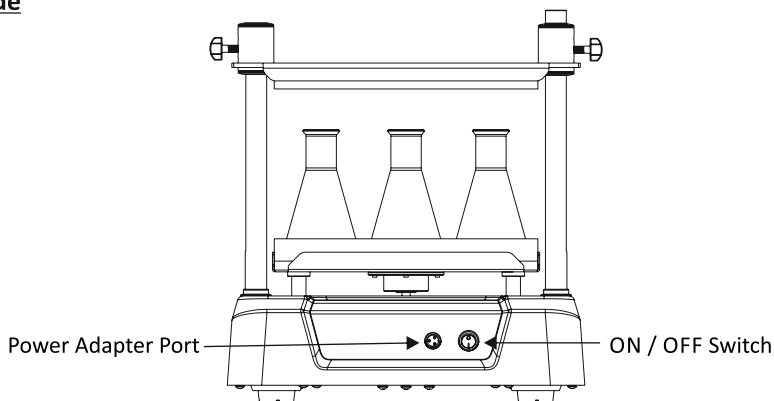
5. STANDARD PART LISTING

Front Side

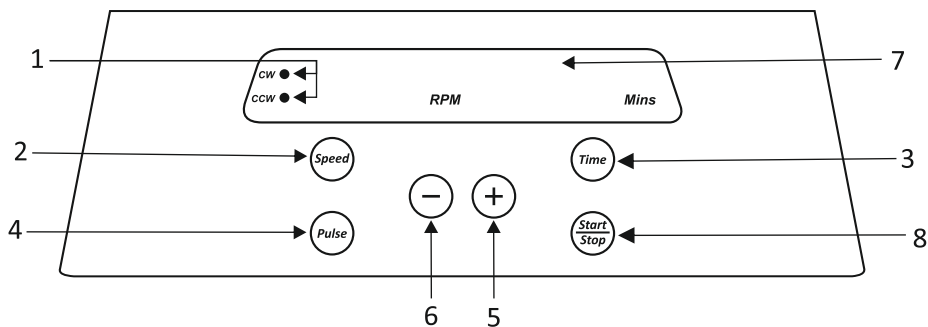


5. STANDARD PART LISTING

Back Side



6. USER INTERFACE & DISPLAY



No.	Name/Symbol	Function
1	CW/CCW	LED shows the Clockwise motion and Counterclockwise motion
2	Speed	Press SPEED button to select speed by Increment / Decrement
3	Time	Press TIME button to select time by Increment / Decrement buttons
4	Pulse	Press PULSE button to activate pulse mode
5	+	Press this button to increase the values of parameters i.e., Speed, Time & Pulse
6	-	Press this button to decrease the values of parameters i.e., Speed, Time & Pulse

6. USER INTERFACE & DISPLAY

7	Display	The digital Display shows speed value, time value and pulse parameters
8	Start / Stop	Press "START / STOP" to start the operation or stop the ongoing operation

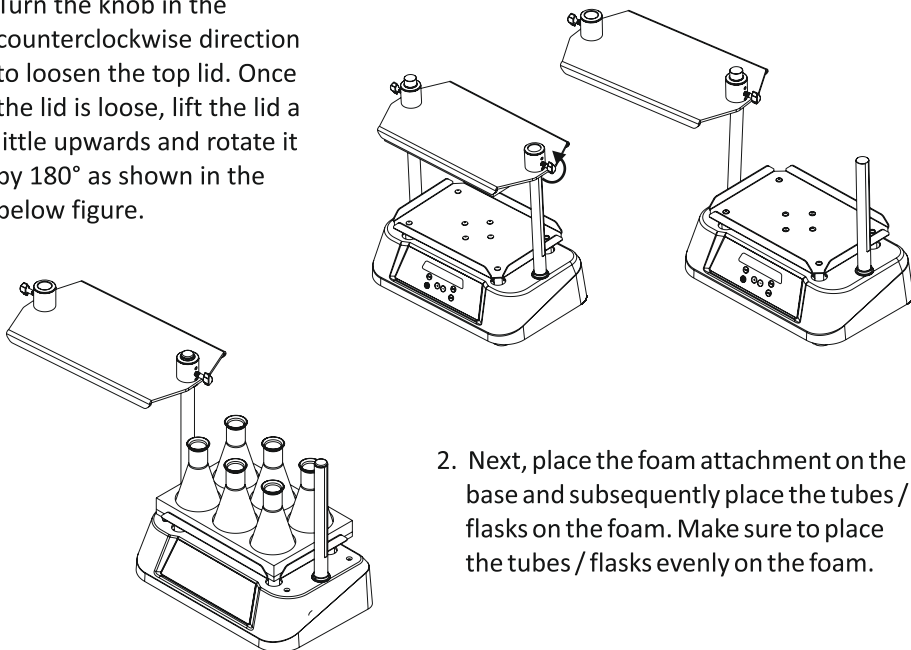
7. OPTIONAL ATTACHMENTS & THEIR INSTALLATION

There are 4 optional attachments that come with this high capacity multi-tube vortexer and it is supplied with any chosen one. Their details and compatibility with respect to rpm is mentioned below in the table.

Attachment Details	Capacity	Max. Recommended Speed	Max. Recommended Fill
7 mL tube foam	60 tubes	2500 rpm	Not more than 75%
15 mL tube foam	45 tubes	2500 rpm	
50 mL tube foam	18 tubes	2500 rpm	
250 mL flask foam	6 flasks	1200 rpm	

Procedure to install the foam attachment :

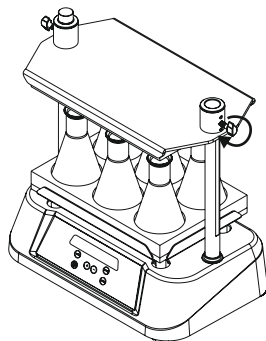
1. Turn the knob in the counterclockwise direction to loosen the top lid. Once the lid is loose, lift the lid a little upwards and rotate it by 180° as shown in the below figure.



2. Next, place the foam attachment on the base and subsequently place the tubes / flasks on the foam. Make sure to place the tubes / flasks evenly on the foam.

7. OPTIONAL ATTACHMENTS & THEIR INSTALLATION

3. Follow the exact reverse steps mentioned in Point 2 and Point 1 and make sure to firmly tight the knob. Double check the knob on the both sides as shown in the below figure before starting the operation.

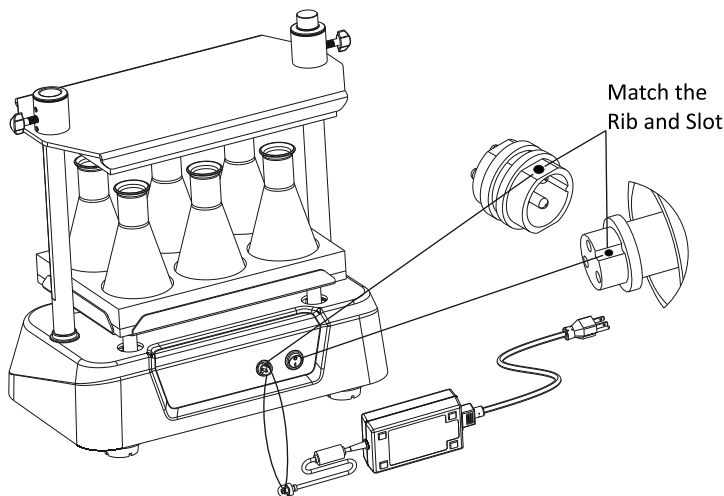


8. OPERATION

CONNECTING THE POWER ADAPTOR

After connecting the power adaptor, switch ON the power at the rear side of the vortex mixer. Make sure to check the top lid is tightened firmly before use. If the lid isn't tightened firmly, it may damage the tubes / flasks during operation.

NOTE: Maintain a gap of 3 seconds between turning off and turning on the instrument. DO NOT turn off and turn on the instrument instantly.



Connect the power adaptor at the rear side of the vortex mixer as shown in the above image.

SETTING SPEED

Press 'Speed' to select the speed value and then press 'Increment / Decrement'

8. OPERATION

to set the required speed. The speed of operation ranges from 300 rpm to 2500 rpm with incremental/decremental steps of 10 rpm.

The user can also select the type of motion to be used in an operation (clockwise & counterclockwise) by simply pressing the “SPEED” button which is indicated by the LED button. The speed values are saved after blinking 5 times.

SETTING TIME

Press “Time” to select the time value and use the increment or decrement button to set the run time. Run time for operation can be set between 1 minute and 999 minutes with the incremental/decremental steps of 1 minute. It can also be set for continuous or infinite mode, indicated by ‘] [’ in the time display. The value will be saved after 5 blinks. The Countdown timer will get activated as soon as the operation starts.

PULSE MODE

The pulse mode is used for intermittent shaking. Press “Pulse” to start pulse mode. In pulse mode, the vortexing direction will change between clockwise and counter-clockwise direction every 30 seconds which can be set from 30 to 99 seconds. Upon the selection of “PULSE”, the pulse button will glow. Again press the “Pulse” button to STOP the pulse operation.

PROGRAMMABLE PULSE MODE OPERATION

By default, the pulse mode cycle time is 30 seconds (i.e. 30 seconds clockwise and 30 seconds anti-clockwise). With programmable pulse mode, the user can modify cycle time from 30 secs to 99 secs. Long press the pulse button to select pulse mode cycle time. The time display will change to “S 30” where “30” means pulse cycle time in seconds - this indicates that the user can now modify pulse cycle time. Then press “+” or “-” button to modify cycle time between 30 secs and 99 secs.

9. MAINTENANCE & CLEANING

- Always keep the vortex mixer & its accessories in a safe storage location and clean periodically with a moist cloth. After cleaning, ensure that all parts are dry before re-use.
- Ensure that while cleaning the unit it is not plugged in.
- The brushless motor in the vortex mixer requires no routine maintenance. Any required service should be performed by authorized, qualified personnel only. Repairs performed by unauthorized personnel may void the warranty.
- Do not try to pull the vortex mixer with attached accessories.
- Do not try to rotate the attachments attached to modify the shaft body.
- Do not use the vortex mixer & its accessories in direct sunlight or under water.

10. WARRANTY STATEMENT

This product is warranted to be free from defects in material and workmanship for a period of two (2) years from date of purchase. Your product will be duly repaired upon prompt notification in compliance with the following conditions :

- This warranty is valid only if the product is used for its intended purpose and within the guidelines specified in this instruction manual. This warranty does not cover damage caused by accident, neglect, misuse, improper service, natural forces or other causes not arising from defects in original material or workmanship. This warranty does not cover any incidental or consequential damages, commercial loss or any other damages from the use of this product.
- The warranty is invalidated by any non-factory modification, which will immediately terminate all liabilities on us for the product or damages caused by its use. The customer shall be responsible for the product or use of products as well as any supervision required for safety. If requested the product must be returned to the distributor in well packed and insured manner and all shipping charges must be paid.

Note: Some states do not allow limitation on the length of implied warranties or the exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights. This warranty is given expressly in lieu of all other warranties, expressed or implied.

- The purchaser agrees that there is no warranty of merchantability or of fitness for any intended purpose and that there are no other remedies or warranties, expressed or implied, which extend beyond the description on the face of the agreement. This warranty is only applicable to the original purchaser.
- Product received without proper authorization will not be processed for warranty or service. All items returned for service should be sent with postage prepaid in the original packaging or other suitable packaging, padded to avoid damage. We will not be responsible for damage incurred by improper packaging.

Note: This warranty is valid only if the warranty is registered with the supplier within 30 days from the date of purchase.

For your reference, make a note of serial number, date of purchase and supplier here.

Serial No.:

Purchase Date:

Supplier:

11. PRODUCT DISPOSAL



By observing proper disposal of the equipment, you will help conserve natural and environmental resources along with protecting human health.

This equipment is marked with the crossed out wheeled bin symbol to

11. PRODUCT DISPOSAL

indicate that this equipment must not be disposed of with unsorted waste.

User is responsible for correctly disposing of the equipment by handing it over to an authorized facility for separate collection and recycling. Also, it's 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.

Please contact your local dealer from whom you originally purchased this equipment to get more information about where you can drop off your waste equipment.

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Call us at 800-554-4920 to schedule a product demonstration or to learn about the best consumables for your equipment.

Send warranty card information to:

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Thank You for choosing Oxford Lab Products for your research.