



Instruction Manual

Vortex Mixer, Mini Analog, VXMNAL

Vortex Mixer, Mini Digital, VXMNDG

Vortex Mixer, Mini Fix Speed, VXMNFS

Vortex Mixer, Mini Pulsing, VXMNPS

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PACKAGE CONTENTS

- Fixed Speed, Analog, Digital or Pulsing Mini Vortex Mixer
- Power Cord
- * (1) cup head
- * (1) 3" (7.6cm) head
- * (1) 3" (7.6cm) rubber head cover
- Instruction manual
- Warranty card
- * These accessories come with all units except the Pulsing Mini Vortex Mixer which is also supplied with a 1.5 to 2mL Micro-Tube Holder with built-in cup head.

SERVICE INFORMATION

If the troubleshooting section does not resolve or describe your problem, contact your authorized OHAUS service agent. For service assistance or technical support in the United States. An OHAUS product service specialist will be available to provide assistance. Outside the USA, please visit our web site, www.ohaus.com to locate the Ohaus office nearest you.

Serial Number: _____

Date of Purchase: _____

Supplier: _____

INSTALLATION

Upon receiving the Ohaus Mini Vortex Mixer, check to ensure that no damage has occurred during shipment. It is important that any damage that occurred in transport is detected at the time of unpacking. If you do find such damage the carrier must be notified immediately.

After unpacking, place the Mini Vortex Mixer on a level bench or table, away from explosive vapors. Ensure that the surface on which the unit is placed will withstand typical heat produced by the unit. Always place the unit on a sturdy work surface.

The Mini Vortex Mixer is supplied with a power cord that should be plugged into a properly grounded outlet. If the supplied power cord does not meet your needs, please use an approved power cord that suits local codes and electric supply. Replacement of the plug must be made by a qualified electrician.

MAINTENANCE & SERVICING

The Mini Vortex Mixer is built for long, trouble-free, dependable service. No lubrication or other technical user maintenance is required.

The unit should be given the care normally required for any electrical appliance. Avoid wetting or unnecessary exposure to fumes. Spills should be removed promptly. **DO NOT** use a cleaning agent or solvent on the front panel which is abrasive or harmful to plastics, nor one which is flammable. Always ensure the power is disconnected from the unit prior to any cleaning. If the unit ever requires service, contact your Ohaus representative.

INTENDED USE

The Ohaus Mini Vortex Mixers are intended for general laboratory use. Safety can not be guaranteed if used outside of the intended use.

ENVIRONMENTAL CONDITIONS

Operating Conditions: Indoor use only.

Temperature:	4 to 40°C (39.2 to 104°F)
Humidity:	20% to 85% relative humidity, non-condensing
Altitude:	0 to 6,562 ft. (2000 M) above sea level

Non-Operating Storage:

Temperature:	-20 to 65°C (-4 to 149°F)
Humidity:	20% to 85% relative humidity, non-condensing

Installation Category II and Pollution Degree 2 in accordance with IEC 664.

EQUIPMENT DISPOSAL

This equipment must not be disposed of with unsorted waste. It is your responsibility to correctly dispose of the equipment at life-cycle-end by handing it over to an authorized facility for separate collection and recycling. It is also your responsibility to decontaminate the equipment in case of biological, chemical and/or radiological contamination, so as to protect the persons involved in the disposal and recycling of the equipment from health hazards.



For more information about where you can drop off your waste of 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.

SAFETY INSTRUCTIONS

Please read the entire instruction manual before operating the Mini Vortex Mixer.

 **WARNING! DO NOT** use the Mini Vortex Mixer in a hazardous atmosphere or with hazardous materials for which the unit was not designed. Also, the user should be aware that the protection provided by the equipment may be impaired if used with accessories not provided or recommended by the manufacturer, or used in a manner not specified by the manufacturer.

Always operate unit on a level surface for best performance and maximum safety.

DO NOT lift the Mini Vortex Mixer by the head. All heads, including cup head, are removable. They can pop off if lifted by them.

 **CAUTION!** To avoid electrical shock, completely cut off power to the unit by disconnecting the power cord from the wall outlet. Disconnect unit from the power supply prior to maintenance and servicing.

Spills should be removed promptly. **DO NOT** immerse the unit for cleaning.

DO NOT operate the unit if it shows signs of electrical or mechanical damage.

 Earth Ground - Protective Conductor Terminal
 Alternating Current

STANDARDS & REGULATIONS

Compliance to the following standards and regulations is indicated by the corresponding mark on the product.

Mark	Standards and Regulations
	OHAUS Corporation declares that the VXMN series mixers comply with directives 2011/65/EU, 2014/30/EU, 2014/35/EU and standards EN 50581, EN 61010-1, EN 61010-2-051, EN 61326-1. The full text of the EU declaration of conformity is available at the following internet address: www.ohaus.com/ce .
	This product complies with directive 2012/19/EU. Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment. For disposal instructions in Europe, refer to www.ohaus.com/weee .
	EN 61326-1
	CAN/CSA C22.2 61010-1, CAN/CSA C22.2 61010-2-051 UL 61010-1, UL 61010-2-051

Global Notice
Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Canada Notice
This Class A digital apparatus complies with Canadian ICES-003.

FCC Notice
NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Changes or modifications not expressly approved by Ohaus Corporation could void the user's authority to operate the equipment.

FIXED SPEED VORTEXER MIXER SPECIFICATIONS

Overall dimensions (L x W x H):	8.3 x 4.8 x 6.5" (21.0 x 12.3 x 16.5 cm)
Electrical (50/60 Hz):	120V: 1.2 amps, 135 watts 230V: 0.6 amps, 135 watts
Speed range:	120V: 3200rpm 230V: 2500rpm
Orbit:	4.9mm (0.194")
Duty rating:	intermittent duty
Controls:	none
Ship weight:	10lbs (4.5kg)

ANALOG VORTEXER MIXER SPECIFICATIONS

Overall dimensions (L x W x H):	8.3 x 4.8 x 6.5" (21.0 x 12.3 x 16.5 cm)
Electrical (50/60 Hz):	120V: 1.2 amps, 135 watts 230V: 0.6 amps, 135 watts
Speed range*:	120V: 300 to 3200rpm 230V: 300 to 2500rpm
Orbit:	4.9mm (0.194")
Duty rating:	intermittent duty
Controls:	auto/off/on rocker switch, speed knob: variable 1 to 10 dial marks
Ship weight:	10lbs (4.5kg)

DIGITAL VORTEXER MIXER SPECIFICATIONS

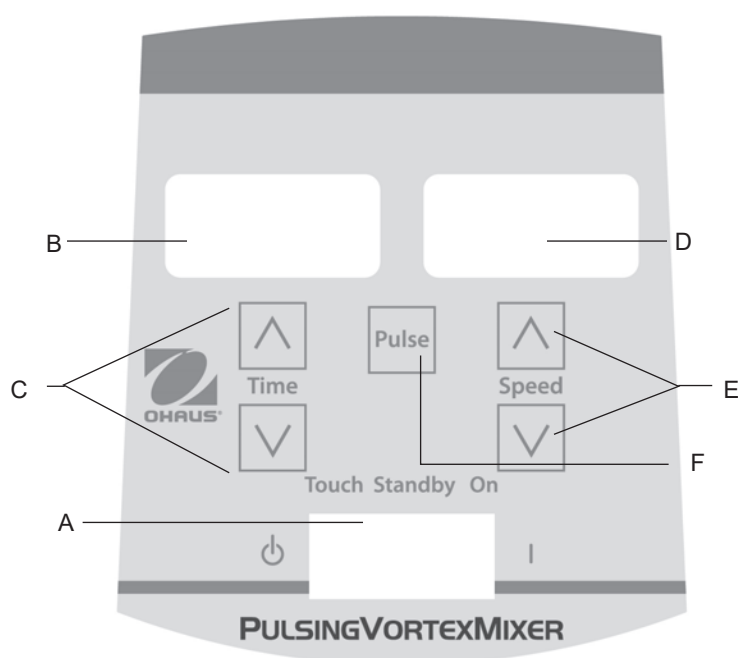
Overall dimensions (L x W x H):	8.3 x 4.8 x 6.5" (21.0 x 12.3 x 16.5 cm)
Electrical (50/60 Hz):	120V: 1.2 amps, 135 watts 230V: 0.6 amps, 135 watts
Speed range*:	120V: 500 to 3000rpm 230V: 500 to 2500rpm
Timer:	1 second to 9999 minutes
Orbit:	4.9mm (0.194")
Duty rating:	intermittent duty
Controls:	see page 5
Ship weight:	10lbs (4.5kg)

PULSING VORTEXER MIXER SPECIFICATIONS

Overall dimensions (L x W x H):	8.3 x 4.8 x 6.5" (21.0 x 12.3 x 16.5 cm)
Electrical (50/60 Hz):	120V: 1.2 amps, 135 watts 230V: 0.6 amps, 135 watts
Speed range*:	120V: 500 to 3000rpm 230V: 500 to 2500rpm
Timer:	1 second to 9999 minutes
Orbit:	2.5mm (0.098")
Duty rating:	intermittent duty
Controls:	see page 5
Ship weight:	10lbs (4.5kg)

* Maximum speed will vary depending on accessory being used.

DIGITAL & PULSING MINI VORTEX MIXER CONTROL PANEL



The front panel of the Digital/Pulsing Mini Vortex Mixer contains all the switches, controls and displays needed to operate the unit.

- A. 3-way rocker switch:** Auto/standby/on rocker switch starts/stops the vortexing function.
- B. Time display:** Displays accumulated time (continuous mode) or how much time is remaining (timed mode). The display range is from 0 to 9,999 minutes in one (1) second increments. The display will indicate minutes and seconds until the timer reaches 99 minutes and 59 seconds (99:59), then the display will automatically display minutes up to 9,999.
- C.** Up/down arrows for set-point control.
- D. Speed display:** Displays the speed of the Mini Vortex Mixer.
- E.** Up/down arrows for set-point control.
- F. Pulse button:** Starts the pulsing mode.

* Same controls for the Digital Mini Vortex Mixer but without the 'pulse' button.

MINI VORTEX MIXER INTRODUCTION

Your Mini Vortex Mixer is ready for most one-handed applications. The Mini Vortex Mixer operates by mixing tubes just prior to testing.

OPERATING TIPS

These units are not intended for continuous use over extended periods of time. A built-in temperature sensor will prevent the unit from overheating by shutting the motor down. If this occurs, allow the motor to cool down and the unit will be able to resume normal operation. Decrease the duration of the time unit is used between rest periods.

See page 8-9 for 'Head/Accessory Installation Instructions'.

FIXED SPEED MINI VORTEX MIXER OPERATING INSTRUCTIONS

The Fixed Speed Mini Vortex Mixer runs only at 3200rpm (2500rpm for 230V).

1. Plug the power cord into a properly grounded outlet. The unit is now on and in a standby mode.
2. The vessel you are using must be pushed down on the head attachment to achieve motion. To get the desired mix, vary the angle of contact and pressure against the head.
3. The mixer will return to standby mode when the vessel is lifted off the head.
4. The unit can become warm to the touch with constant use. There is nothing wrong with it. At high performance settings the motor (UL recognized component) simply puts out more heat. **IMPORTANT: DO NOT** use large accessories on the Fixed Speed Mini Vortex Mixer. This unit is designed for use with cup head or 3" (7.6cm) head with 3" (7.6cm) rubber head cover only.
5. To completely cut off power to the unit, disconnect the power cord from the wall outlet.

ANALOG MINI VORTEX MIXER OPERATING INSTRUCTIONS

1. Make sure the 3-way rocker switch is in the center, off position. Plug the power cord into a properly grounded outlet.
2. For continuous operation, push the rocker switch to the right, on position. For intermittent/touch operation, push the rocker switch to the left, auto position.
3. In either case, turn the speed knob to 1. In the on position, you will see the head in motion immediately. In the auto position, the vessel you are using must be pushed down on the head attachment to achieve motion. To get the desired mix, vary the speed, using the speed knob, and/or vary the angle of contact and pressure against the head.
4. When finished with either continuous or intermittent operation, return rocker switch to the center, off position.
5. The continuous, on mode is for the larger accessories. In continuous on mode, **DO NOT** run the unit above 900rpm (analog speed setting of approximately 5).
6. The intermittent, auto mode is intended for short mixing times of one (1) minute or less at full speed. A rest period of two (2) minutes is recommended to minimize the possibility of overheating the motor. The unit can become warm to the touch with constant use. There is nothing wrong with it. At high performance settings the motor (UL recognized component) simply puts out more heat. **IMPORTANT:** When using larger accessories (Insert Retainer with foam inserts or Ampule Tube Holders), **DO NOT** run the unit above 900rpm, (analog speed setting of approximately 5). **UNIT DAMAGE WILL OCCUR.**
7. To completely cut off power to the unit, disconnect the power cord from the wall outlet.

OPERATING TIP: Touch mode operation is most effective when used at settings of 4 or greater.

DIGITAL & PULSING MINI VORTEX MIXER OPERATING INSTRUCTIONS

1. Make sure the 3-way rocker switch is in the center, standby position. Plug the power cord into a properly grounded outlet. The unit is now on and in a standby mode.
2. For continuous operation, push the rocker switch to the right, on position. For intermittent/touch operation, push the rocker switch to the left, auto position.
3. In either case, set the speed. In the on position, you will see the head in motion immediately. In the auto position, the vessel you are using must be pushed down on the head attachment to achieve motion. To get the desired mix, vary the speed, using the speed up/down arrows, and/or vary the angle of contact and pressure against the head.

Setting speed:

To set the speed press the up/down arrows below the speed display until you reach the desired speed.

- Speed while running in the on position is 500 to 3000rpm (500 to 2500rpm for 230V).
- Speed while running in the auto position is 1000 to 3000rpm (1000 to 2500rpm for 230V).
- Speed while running in the pulse mode is 3000rpm, running for 30 seconds, resting 10 seconds (2500rpm for 230V).

Setting time:

Time operation works in both auto and on positions.

- To run in timed mode (programmed time), start by pressing the rocker switch to the left, auto position. Press the up/down arrows below the time display until you reach the desired time. While running unit in timed mode, the time display will show time remaining, counting down to zero (0:00).
- To run in continuous mode (accumulated time), reset the timer to zero (0:00) before running. Time display will show the accumulated time and run until you press the rocker switch to the center, standby position.

Pulse operation: (for Pulsing Mini Vortex Mixer only)

- Set the time if desired.
 - Move the rocker switch to the right, on position. Press the pulse button, in the center of the front panel. The speed display will show "PULSE". The unit will run at 3000rpm, cycling a run time of 30 seconds, followed by a resting time of 10 seconds. The unit will continue vortexing until the timer reaches zero (0:00) or you stop the unit by moving the rocker switch to the center, standby position.
4. When finished with either continuous, intermittent or pulse operation, return rocker switch to the center, standby position.
 5. The continuous, on mode is for the larger accessories. In continuous on mode, **DO NOT** run the unit above 900rpm.
 6. The intermittent, auto mode is intended for short mixing times of one (1) minute or less at full speed. A rest period of two (2) minutes is recommended to minimize the possibility of overheating the motor. The unit can become warm to the touch with constant use. There is nothing wrong with it. At high performance settings the motor (UL recognized component) simply puts out more heat. **IMPORTANT:** When using larger accessories (Insert Retainer with foam inserts or Ampule Tube Holders), **DO NOT** run the unit above 900rpm. **UNIT DAMAGE WILL OCCUR.**
 7. To completely cut off power to the unit, disconnect the power cord from the wall outlet.

NOTE: In the event of a power outage or hazard that will interrupt unit operation, the unit will restart at set speed and/or temperature when a power outage or hazard is restored.

OPERATING TIP: Displayed speed variation may be observed during initial use or when operated in a cold environment. The variations will reduce as the unit is operated and warms up.

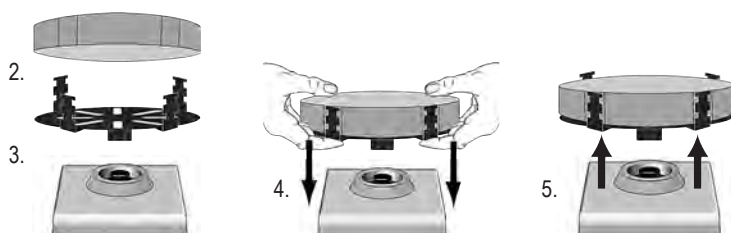
HEAD/ACCESSORY INSTALLATION INSTRUCTIONS

Installing the cup head, 3" head or other head attachments:

1. Move the 3-way rocker switch to the center, off/standby position. For the Fixed Speed Mini Vortex Mixer disconnect the power cord from the wall outlet.
2. If using an Insert Retainer with tube holder, insert foam tube holder into Insert Retainer by lining up the recessed notches of the foam with the fingers of the retainer. Push foam to the bottom of the retainer.
3. Place head on post of the unit, aligning the flat "alignment mark" inside of the head mounting hole with the flat "alignment mark" on the post.
4. Press center of head down firmly until it snaps into place. **DO NOT** use a 3" head without the 3" rubber head cover. Add samples to attachments after the head is secured onto the Mini Vortex Mixer. Be sure samples are secure before turning unit on.
5. To remove an installed head, hold the Mini Vortex Mixer housing with one hand and firmly pull the head straight up. Larger heads may require using both hands to force head off post. Remove samples before removing attachments.

Installing Vessel Harness:

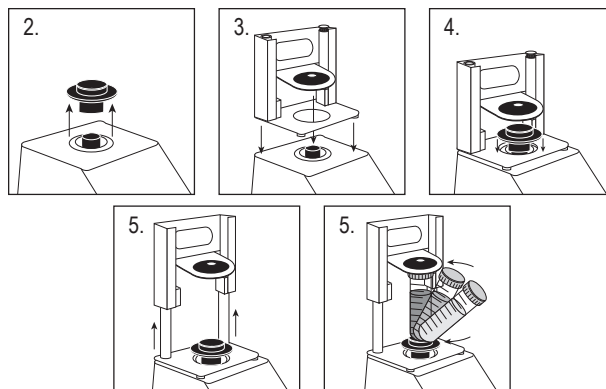
1. Install Insert Retainer without foam tube holder onto Mini Vortex Mixer.
2. Stretch vessel harness elastic bands over opposite fingers of the Insert Retainer. Place bands on either upper or lower notches of the retainer.
3. Place sample in center of the harness bands. Be sure sample is secure before turning unit on.



HEAD/ACCESSORY INSTALLATION INSTRUCTIONS

Installing Single Tube Holder:

1. Move the 3-way rocker switch to the center, off/standby position. Single Tube Holder should **NOT** be used on the Fixed Speed Mini Vortex Mixer.
2. Remove cup head, or any other accessory from the Mini Vortex Mixer.
3. Remove the adhesive backing from adapter plate and line up the opening of the adapter plate over the opening of the housing. Press down firmly to ensure a proper bond between the adaptor and the unit. Align the base plate of the Single Tube Holder with the adaptor plate from the previous step. Keep the center openings of the plates concentric to avoid mechanical interference. The magnets will hold the Single Tube Holder in place. To realign this attachment, pull up from the handle until the magnets release, check the alignment and place again.
4. Align the base plate of the Single Tube Holder over the post of the Mini Vortex Mixer with the two Single Tube Holder alignment posts at the back of the unit. Lower Single Tube Holder onto the adapter plate, the magnets will hold the Single Tube Holder in place. To realign this attachment, pull up from the handle until the magnets release, check the alignment and place again.
5. Now that the Single Tube Holder is in place, attach the cup head on the post of the unit, aligning the orientation arrow towards the rear of the unit.
6. Lift up on the spring loaded upper portion of the Single Tube Holder and slide a 2.5 to 4.5" (6.4 to 11.4cm) long tube on the cup head so that the tube is aligned in the middle. The 0.5mL Micro-Tube Holder or the 1.5 to 2mL Micro-Tube Holder will also fit into the Single Tube Holder. You are now ready to mix your sample.



TROUBLESHOOTING

Problem	Cause	Solution
Unit will not run	Mechanical obstruction or Motor obstruction	Remove obstruction and press down on cup head several times to confirm no obstruction exists. If problem persists, please contact your Ohaus representative for repair.
Unit is excessively noisy	Sensor fan misaligned or Motor misaligned	This error cannot be fixed by the end user. Please contact your Ohaus representative for repair.