

## Instruction Manual

### Standard & Advanced Heavy-Duty Vortex Mixer Microplate Vortex Mixer

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## PACKAGE CONTENTS

Heavy Duty Vortex Mixer, Standard or Advanced 183cm detachable power cord with Euro plug and UK plug or Swiss adapter* (1) cup head (1) universal holder (1) universal holder cover (1) foam insert (1,5-2,0 mL microtubes, holds 38) Instruction manual	<b>OR</b>	Microplate Vortex Mixer, Standard or Advanced 183cm detachable power cord with Euro plug and UK plug or Swiss adapter* (1) cup head (1) microplate holder, single Instruction manual
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## WARRANTY

*\*Dependent upon model*

Manufacturer warrants this product to be free from defects in material and workmanship when used under normal conditions for five (5) years. For your reference, make a note of the serial number, date of purchase and supplier here.

Serial Number: \_\_\_\_\_

Date of Purchase: \_\_\_\_\_

Supplier: \_\_\_\_\_

## INSTALLATION

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Upon receiving the Fisherbrand 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, remove the protective coverings from the feet and place the Vortex Mixer on a level bench or table, away from explosive vapors. Ensure that the surface on which the unit is placed is clean and free of dust. Always place the unit on a sturdy work surface.

The 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

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The 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 Fisherbrand representative.

## ENVIRONMENTAL CONDITIONS

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**Operating Conditions:** Indoor use only.

Temperature: 18 to 33°C

Humidity: 20% to 85% relative humidity, non-condensing

Altitude: 0 to 2000 M above sea level

**Non-Operating Storage:**

Temperature: -20 to 65°C

Humidity: 20% to 85% relative humidity, non-condensing

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

## EQUIPMENT DISPOSAL

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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 Vortex Mixer.



**WARNING! DO NOT** use the 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 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

Troemner, LLC hereby declares under its sole responsibility that the products comply with the requirements of the following directives and associated standards:

### Associated EU guidelines:

EMC directive 2014/30/EU

LVD directive 2014/35/EU

RoHS directive 2011/65/EU

### Safety standards:

IEC 61010-1

Safety requirements for electrical equipment for measurement, control and laboratory use. Part I: General Requirements.

IEC 61010-2-051

Part II: Particular requirements for laboratory equipment for mixing and stirring.

UL Std. No. 61010-1

### EMC standards:

EN61326-1

FCC Part 15 Subpart B

## HEAVY DUTY VORTEX MIXER SPECIFICATIONS

Overall dimensions (L x W x H):	24,1 x 16,8 x 16,5cm	
Electrical (50/60 Hz):	230V   0,13 amps   30 watts	
Fuses:	5mm x 20mm, 5 amp 250 volt quick acting	
Speed range	On Mode:	300-2500rpm
	Touch Mode:	300-3500rpm
Orbit:	4,9mm	
Duty rating:	Continuous duty	
Controls:	Standard:	Touch/off/on - rocker switch Speed knob: variable 1 to 10 dial marks
	Advanced:	See page 5
Capacity:	1,1kg	
Ship weight:	6,8kg	

## MICROPLATE VORTEX MIXER SPECIFICATIONS

Overall dimensions (L x W x H):	26,6 x 13,7 x 11,4cm	
Electrical (50/60 Hz):	230V   0,13 amps   30 watts	
Fuses:	5mm x 20mm, 5 amp 250 volt quick acting	
Speed range	On Mode:	300-2500rpm
	Touch Mode:	300-3500rpm
Orbit:	3,5mm	
Duty rating:	Continuous duty	
Controls:	Standard:	Touch/off/on - rocker switch Speed knob: variable 1 to 10 dial marks
	Advanced:	See page 5
Capacity:	2 Microplates	
Ship weight:	5,4kg	

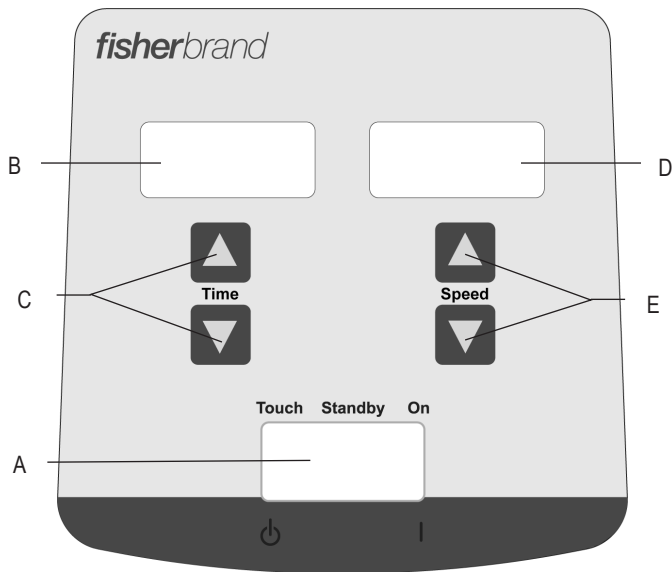
## STANDARD VORTEX MIXER CONTROL PANEL



The front panel of the Standard Vortex Mixer contains all the switches and control knob needed to operate the unit.

- A. 3-way rocker switch:** touch/off/on rocker switch starts/stops the vortexing function.
- B. Speed control:** The speed control knob controls the vortexing speed. User should turn knob clockwise until the vortexer reaches the desired speed.

## ADVANCED VORTEX MIXER CONTROL PANEL



The front panel of the Advanced Vortex Mixer contains all the switches, controls and displays needed to operate the unit.

**A. 3-way rocker switch:** touch/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 Vortex Mixer.

**E. Up/down arrows for set-point control.**

## VORTEX MIXER INTRODUCTION

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

## TOUCH MODE OPERATION

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**NOTE:** Due to the robust mechanical design of this unit, more downward force is required to operate this unit in Touch Mode to mix single tubes as compared to other models. Another option is to set your unit to the ON mode for mixing a single tube.

## OPERATING TIP

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To ensure the stability of your vortex mixer, it is very important to start with a smooth, clean work surface and the mixers (4) feet. If the mixer starts to “walk”, remove the power to the unit and clean the work surface and the (4) feet with isopropyl alcohol. Press the unit down firmly on the work surface to ensure the feet are properly bonded.

## STANDARD VORTEX MIXER OPERATING INSTRUCTIONS

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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, touch position.
3. In either case, turn the speed knob to the desired setting. In the on position, you will see the head in motion immediately. In the touch 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/touch operation, return rocker switch to the center, off position.
5. The continuous, on mode is for the accessories.
6. The intermittent, touch mode is intended for short mixing times of one (1) minute or less at full speed.
7. To completely cut off power to the unit, disconnect the power cord from the wall outlet.

## ADVANCED VORTEX MIXER OPERATING INSTRUCTIONS

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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, touch position.
3. In either case, set the speed. In the on position, you will see the head in motion immediately. In the touch 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.
5. When finished with either continuous or intermittent/touch mode, return rocker switch to the center, standby position.
6. The continuous, on mode is for accessories.
7. The intermittent, touch mode is intended for short mixing times of one (1) minute or less at full speed.
8. To completely cut off power to the unit, disconnect the power cord from the wall outlet.

### **Beeper Reference:**

To silence the beeper operation (except for error codes), with the unit in standby mode, remove accessories or cup head. Press and hold the head mount. Press the time down arrow. Release the time down arrow. Release the head mount. To restore to factory setting, repeat procedure.

### **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 300 to 2500rpm
  - Speed while running in the touch position is 300 to 3500rpm
4. Time operation works in both touch and on positions.

### **Setting time:**

- To run in timed mode (programmed time), start by pressing the rocker switch to the left, touch 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.



## ACCESSORY INSTALLATION INSTRUCTIONS (ALL UNITS)

### **Installing the cup head, microplate trays, universal holder or other head attachments:**

1. Move the 3-way rocker switch to the center, off/standby position.
2. Place accessory on head mount of the unit, aligning the square on the bottom of the accessory with the square on the top of the unit. Lower accessory until it is sitting on the head mount.
3. Turn the accessory counter-clockwise until it snaps into place (approximately 1/8 of a turn). Add samples to attachments after the accessory is secured onto the Vortex Mixer. Be sure samples are secure before turning unit on.
4. To remove an installed accessory, move the 3-way rocker switch to the center, off/standby position. Turn the accessory clockwise (approximately 1/8 of a turn) and then lift the accessory straight up. Remove samples before removing the accessories.
  - To load a microplate into the microplate tray, position the microplate against the foam bumpers first, then push down the other side to ensure a secure fit. To release a microplate, push it against the microplate tray's foam bumper and lift to remove.
  - Maximum speed may vary when vortexing microplates. Speed may be dependant on the height of the skirt on the microplate or material of the microplate.
  - Rubber vibration dampeners on the bottom of the microplate tray and universal holder may need to be reinserted into the proper position when vortexing at high speeds. Squeeze firmly as you maneuver it back into position.

## ACCESSORY INSTALLATION INSTRUCTIONS (HEAVY DUTY VORTEX MIXER)

### **Installing the vessel holders:**

1. Attach the Universal Holder to the vortex mixer.
2. Place the Grip Mat in the bottom of the Universal Holder.
3. Place the flask on top of the Grip Mat, in the center of the holder.
4. Pull the center hole of the Vessel Holder over the sample container.
5. With the arrow on the Vessel Holder close to the front of the unit, the straps should line up with the posts of the Universal Holder.
6. Push the hole on the strap over the posts on the holder. Secure the strap so that it fits into the slot on the holder. Repeat this for the remaining two straps.
7. Be sure the sample is secure before turning unit on.

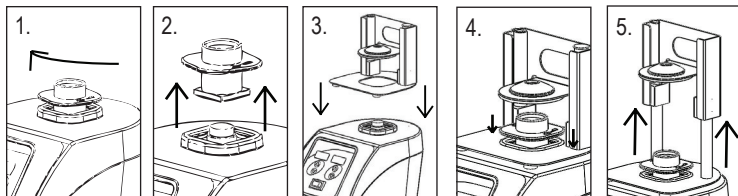
### **Installing the Universal Holder Cover:**

1. Place the Foam Insert into the Universal Holder.
2. Lay the Universal Holder Cover on top of the foam, and align the edges.
3. Push the hole on the cover down over the post on the holder. Squeeze the strap so that it fits into the slot on the holder, leaving the cover sitting flat on the foam. Repeat this process for the remaining two posts.
4. To remove the accessory cover, secure the straps and pull straight up.

## ACCESSORY INSTALLATION INSTRUCTIONS (HEAVY DUTY VORTEX MIXER)

### Installing Single Tube Holder:

1. Move the 3-way rocker switch to the center, off/standby position.
2. Remove cup head, or any other accessory from the Vortex Mixer. Turn the cup head clockwise, approximately 1/8 of a turn, (see figure 1) and then lift the accessory straight up (see figure 2). Remove samples before removing the accessories.
3. Align the base plate of the Single Tube Holder over the head mount of the Vortex Mixer with the two Single Tube Holder alignment posts at the back of the unit. Lower Single Tube Holder onto Vortex Mixer, (see figure 3) 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. Now that the Single Tube Holder is in place, attach the cup head on the head mount of the unit. Turn the cup head counter-clockwise until it snaps into place, approximately 1/8 of a turn. (see figure 4)
5. Lift up on the spring loaded upper portion of the Single Tube Holder and slide a 6,4 to 11,4cm long tube on the cup head so that the tube is aligned in the middle (see figure 5). You are now ready to mix your sample.



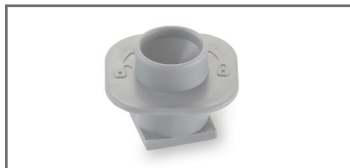
## TECHNICAL SERVICE

For more information or technical service contact your local Fisherbrand representative or visit [www.fishersci.com](http://www.fishersci.com).

### TROUBLESHOOTING (ALL UNITS)

Error	Cause of Error	How to Fix
<p><b>Standard Models</b> Motor does not run in the touch or on mode</p> <p><b>Advanced Models</b> E3 Error</p>	<p><b>Standard and Advanced Models</b> There is no motion on the motor or the motor is not working properly</p>	<p><b>Standard and Advanced Models</b></p> <ol style="list-style-type: none"> <li>1. Turn the rocker switch to the center off/standby position</li> <li>2. Check to verify the load has not been exceeded</li> <li>3. Check and clear any possible obstructions of the head mount</li> <li>4. If the unit still does not work, please contact your Fisherbrand representative</li> </ol>

## ACCESSORIES FOR THE HEAVY DUTY VORTEX MIXER



### Cup Head

Replacement for cup head supplied with Heavy Duty Vortex Mixer. Designed for mixing one tube at a time.

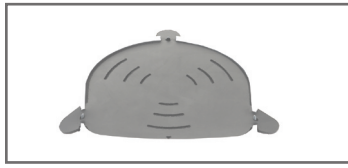
Fisherbrand Part No. 15-559-014



### Universal Holder

Replacement for Universal Holder supplied with Heavy Duty Vortex Mixer to mix irregularly shaped objects when Universal Holder Cover is in place. Also used as a holder for the foam tube inserts. Measures 15,5x15,0x7,6cm.

Fisherbrand Part No. 15-559-034



### Universal Holder Cover

Replacement for Universal Holder Cover supplied with Heavy Duty Vortex Mixer. The cover allows for mixing irregularly shaped objects.

Fisherbrand Part No. 15-549-034



### Single Tube Holder

Single tube hands free mixing designed to fit on the Fisherbrand Heavy Duty Vortex Mixer. Easily attached to the top of mixer and is magnetically secured. Accepts tubes from 6,4-11,4cm tall. Minimum tube diameter is 19mm.

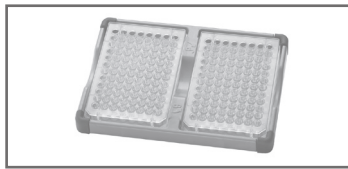
Fisherbrand Part No. 15-589-024



### Microplate Holder (single)

Designed to hold one microplate.

Fisherbrand Part No. 15-549-024



### Microplate Holder (double)

Designed to hold two standard microplates.

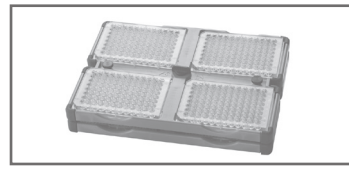
Fisherbrand Part No. 15-509-024



### Microplate Holder (quad)

Designed to hold four standard microplates.

Fisherbrand Part No. 15-539-024



### Stackable Microplate Holder Four

Designed to maximize the capacity of the Heavy Duty Vortex Mixer to eight microplates by stacking the tray on top of the Microplate Holder(quad).

Fisherbrand Part No. 15-599-014

## ACCESSORIES FOR THE HEAVY DUTY VORTEX MIXER



### Foam Insert for 0,5mL microtubes

Foam insert holds (52) 0,5mL microtubes.

Fisherbrand Part No.

15-559-024



### Foam Insert for 1,5 to 2,0mL microtubes

Foam insert holds (38) 1,5 to 2,0mL microtubes.

Fisherbrand Part No.

15-569-024



### Foam Insert for 12-13mm test tubes

Foam insert holds (34) 12-13mm diameter test tubes.

Fisherbrand Part No.

15-599-024



### Foam Insert for 15-18mm test tubes

Foam insert holds (20) 15-18mm diameter test tubes. Ideal for 15mL centrifuge tubes.

Fisherbrand Part No.

15-509-034

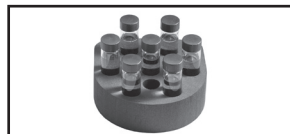


### Foam Insert for 19-21mm test tubes

Foam insert holds (18) 19-21mm diameter test tubes.

Fisherbrand Part No.

15-519-034



### Foam Insert for 22-25mm test tubes

Foam insert holds (13) 22-25mm diameter test tubes.

Fisherbrand Part No.

15-529-034



### Foam Insert for 26-29mm test tubes

Foam insert holds (4) 26-29mm diameter test tubes. Ideal for 50mL centrifuge tubes.

Fisherbrand Part No.

15-539-034



### Foam Insert Blank

Foam insert without tube openings.

Fisherbrand Part No.

15-549-014



### Small Vessel Holder

Rubber holder secures 125 and 250mL Erlenmeyer flasks. Vessel holder also includes a grip mat.

Fisherbrand Part No.

15-579-024



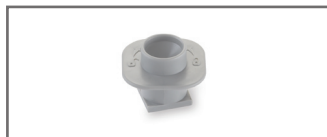
### Large Vessel Holder

Rubber holder secures 500 and 1000mL Erlenmeyer flasks. Vessel holder also includes a grip mat.

Fisherbrand Part No.

15-589-014

## ACCESSORIES FOR THE MICROPLATE VORTEX MIXER



### Cup Head

Replacement for cup head supplied with Microplate Vortex Mixer. Designed for mixing one tube at a time

Fisherbrand Part No.

15-559-014

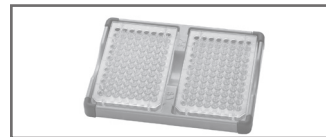


### Microplate Holder (single)

Replacement for Microplate Holder supplied with Microplate Vortex Mixer. Designed to hold one microplate

Fisherbrand Part No.

15-549-024



### Microplate Holder (double)

Designed to hold two standard microplates

Fisherbrand Part No.

15-509-024