



# Instruction Manual

## Standard High Volume Stirrers

## Advanced High Volume Stirrers



## TABLE OF CONTENTS

Package Contents	1
Warranty	1
Installation	2
Maintenance & Servicing	2
Environmental Conditions	2
Safety Instructions	3
Standards & Regulations	3
Specifications	4
Operating Instructions - Standard	5
Control Panel - Advanced	6
Operating Instructions - Advanced	7-8
Troubleshooting - Advanced	8
Replacement Parts	9

### PACKAGE CONTENTS

High Volume Stirrer  
92" (234cm) detachable power cord  
Spin bar  
Instruction manual

### WARRANTY

Manufacturer warrants this product to be free from defects in material and workmanship when used under normal conditions for five (5) years. Register your equipment or instrument online at: [www.vwrsp.com/warranty](http://www.vwrsp.com/warranty) for US residents and [www.vwrcanlab.com/warranty](http://www.vwrcanlab.com/warranty) for Canadian residents. For your reference, make a note of the serial number, date of purchase and supplier here.

Serial No.: \_\_\_\_\_ Date of Purchase: \_\_\_\_\_

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

## INSTALLATION

---

Upon receiving the VWR High Volume Stirrer, check to ensure that no damage has occurred in 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 High Volume Stirrer 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 and place the unit a minimum of six (6) inches from vertical surfaces. Always place the unit on a sturdy work surface.

The High Volume Stirrer is supplied with a power cord that is inserted into the IEC connector on the back of the unit first, then it can be plugged into a properly grounded outlet. The 120V unit plugs into a 120 volt, 50/60 Hz source. The 230V unit plugs into a 230 volt, 50/60 Hz source.

## MAINTENANCE & SERVICING

---

The High Volume Stirrer is built for long, trouble-free, dependable service. No lubrication or other technical user maintenance is required. It needs no user maintenance beyond keeping the surfaces clean. 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 or top plate 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 VWR representative.

## ENVIRONMENTAL CONDITIONS

---

**Operating Conditions:** Indoor use only.

Temperature: 5 to 40°C (41 to 104°F)

Humidity: 20% to 80% 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 80% relative humidity, non-condensing

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

## SAFETY INSTRUCTIONS

Please read the entire instruction manual before operating the High Volume Stirrer.



**WARNING! DO NOT** use the High Volume Stirrer 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 unit by the top plate.

Heavy walled glass or polypropylene container recommended when stirring at high speeds. If spin bar de-couples at higher speeds, thin walled glass containers may break.



**CAUTION!** To avoid electrical shock, completely cut off power to the unit by disconnecting the power cord from the unit or unplug 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 construction of this product conforms in accordance with the following standards:

### 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 Class A

FCC-B

EN61000-3-2/3-3

EN55011 Group 1, Class A

EN61000-4-2

EN61000-4-3

EN61000-4-4

EN61000-4-5

EN61000-4-6

EN61000-4-8

EN61000-4-11

### Associated EU guidelines:

EMC directive

2004/108/EC

LVD directive

2006/95/EC

RoHS directive

2011/65/EU

# HIGH VOLUME STIRRER SPECIFICATIONS

Overall dimensions (L x W x H):	17 x 11 x 4" (43.2 x 27.9 x 10.2cm)
Top plate dimensions (L x W):	12.5 x 11" (31.8 x 27.9cm)
Top plate material:	glass filled nylon
Electrical (50/60 Hz):	120 volts, 1.3 amps, 75 watts 230 volts, .65 amps, 75 watts
Fuses:	5mm x 20mm, 5 amp quick acting
Speed range:	60 to 1400rpm
Stability:	60 to 250 rpm +/-5% 250 to 1400 rpm +/-2%
Maximum capacity (H2O):	25L
Controls:	Standard series: stir knob, 1 to 10 dial markings Advanced series: see page 6
Ship weight:	14.6lbs (6.6kg)



## OPERATING INSTRUCTIONS - STANDARD MODEL

The Standard High Volume Stirrer is used for general laboratory stirring needs.

### 1. Getting ready:

- The stir knob has a built in on-off switch at its extreme counter-clockwise position. Turn the stir knob to the off position. Plug the power cord into a properly grounded outlet.
- Place a spin bar into the vessel to be stirred.
- Place the vessel to be stirred, with contents, onto the center of the stirring position on the top plate. This is important for stirring because the spin bar will be well within the magnetic field.

### 2. Turning unit on:

- From the off position, turn the stir knob clockwise until a click is heard, then continue turning until the desired speed is obtained. The microprocessor speed control slowly brings sample(s) to set speed to avoid splashing. The maximum speed is at the extreme clockwise position of the knob.

### 3. Setting speed:

- When stirring has begun, the desired speed may be obtained by carefully turning the knob clockwise or counter-clockwise until reaching the desired speed. The microprocessor also monitors and regulates the stirring speed, sensing your requirements whether stirring an aqueous, viscous or semi-solid solution.

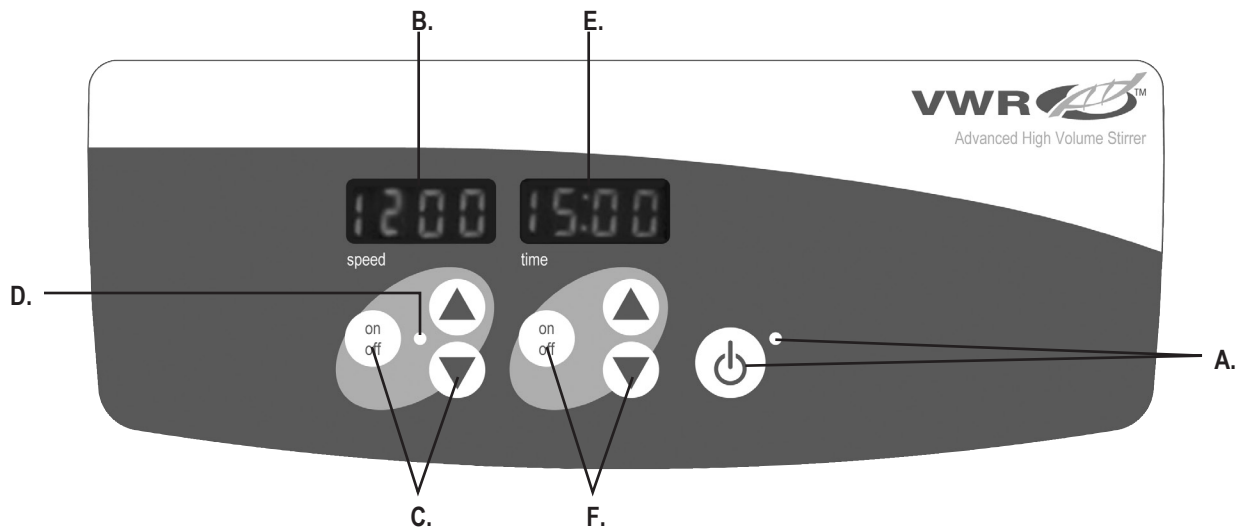
### 4. Turning unit off:

- To stop stirring function, turn the stir knob to the extreme counter-clockwise position. The stirrer should be kept in the off position when not in use. To completely cut off power to the unit, disconnect the power cord from the unit or un-plug from the wall outlet.

✎ **NOTE: Avoid cold starts:** The stirrers maximum speed will be limited until the unit warms up. **EXAMPLE:** Leaving the unit in a cold room and starting it at a later point will be a cold start.

## OPERATING TIPS

The stirrer increases speed at a steady rate until the set-point is reached. If the spin bar is too large or the liquid is too viscous, the stirrer may not reach its set-point. The set-point speed needs to be reduced. Use spin bar supplied with the unit for optimal performance.



## CONTROL PANEL - ADVANCED MODEL

The front panel of the Advanced High Volume Stirrer contains all the controls and displays needed to operate the unit.

**A. Standby button/standby indicator light:** The standby indicator light will illuminate when the unit is plugged in. The unit will be in standby mode. Press the standby button to activate the speed and time functions. The standby indicator light will shut off and the speed display and time display will illuminate. Press the standby button again and the unit will once again be in standby mode.

**B. Speed display:** Displays the speed of the stirrer. **C.** Up/down arrows for set-point control. On/off button starts/stops stir function. **D.** The stir indicator light will be illuminated when the unit is stirring.

**E. Time display:** Displays accumulated time (continuous mode) or how much time is remaining (timed mode). **F.** Up/down arrows for set-point control. On/off button starts/stops the time function. 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.

## OPERATING INSTRUCTIONS - ADVANCED MODEL

The Advanced High Volume Stirrer has been designed for the speed and time functions to work independently of one another. The speed can be re-set without re-setting the timer and the timer can be stopped and started without interrupting the stirring function.

### 1. Getting ready:

- Plug the power cord into a properly ground outlet. The standby indicator light will illuminate, verifying power to the unit.
- Place a spin bar into the vessel to be stirred.
- Place the vessel, with contents, onto the center of the stirring position on the top plate. This is important for stirring because the spin bar will be well within the magnetic field.
- Press the standby button to move the unit from standby mode. The standby indicator light will turn off and the speed/time displays will illuminate and display the previously used settings.



### 2. Setting speed:

- Press the up/down arrows below the speed display until you reach the desired speed. When you release the arrow button, the unit will blink off and then on indicating the new set speed has been accepted.
- Press the on/off button to start the stirring function. The indicator light below the speed display will illuminate to indicate the stirring function is in-use and will remain lit until stirring has ceased. The microprocessor controlled ramping feature slowly increases speed until the set-point is reached which helps to avoid splashing and provides excellent low end control. The microprocessor also regulates the stirring speed, sensing your requirements whether stirring an aqueous, viscous or semi-solid solution.
- Speed adjustments can be made without interrupting stirring by using the up/down arrows below the speed display. After the change has been made and you release the arrow button, the unit will blink off and then on indicating the new set speed has been accepted.
- To stop the stirring function, press the on/off button below the speed display.

### 3. Setting time to zero (0:00) and continuous mode:

Displays accumulated time.

- Press and hold the on/off button below the time display. After three (3) seconds, the display will indicate the previous set time.
- Simultaneously press both the up and down arrows, the display will indicate zero (0:00). The unit time is now set to zero (0:00) minutes. Alternately, you can use the up/down arrows to get to zero (0:00).
- Press the on/off button below the time display. The display will indicate the accumulated time. The up/down arrows will become inactive. To stop timer, press the on/off button again. **IMPORTANT:** This will NOT interrupt the stirring function. Press the on/off button below the speed display to interrupt the stirring function.
- To re-set, press and hold the on/off button below the time display. After three (3) seconds, the display will indicate the previous set time, which was zero (0:00).

### 4. Setting timed mode:

- Press the up/down arrows below the time display until you reach the desired time.
- Start this function by pressing the on/off button below the time display. The unit will run for the selected time, the up/down arrows will become inactive while the timer is running. The unit will stop stirring when the time display reaches zero (0:00). Four (4) audible beeps will indicate the time down function is complete. The time display will default back to the set time. To repeat for the same time, simply depress the on/off button again.



## OPERATING INSTRUCTIONS - ADVANCED MODEL (CONT'D)

- c. To interrupt an automatic timing cycle before it is completed, press the on/off button below the time display. The display will flash off and on to indicate the time function is "on hold". IMPORTANT: This will NOT interrupt the stirring function. Press the on/off button below the speed display to interrupt the stirring function. Restart the timer by pressing the on/off button below the time display, unit will continue counting down to zero (0:00). When the display reaches zero (0:00), you will hear the four (4) audible beeps that indicate the time down function is complete and stirring function will cease.

### 5. Turning unit off:

- a. To turn the unit off, press the standby button. The speed and time displays will be blank, the standby indicator light will illuminate. The stirrer should be kept in standby mode when not in use. To completely cut off power to the unit, disconnect the power cord from the unit or un-plug from the wall outlet.

✎ **NOTE:** Avoid cold starts: The stirrers maximum speed will be limited until the unit warms up. **EXAMPLE:** Leaving the unit in a cold room and starting it at a later point will be a cold start.

## OPERATING TIPS

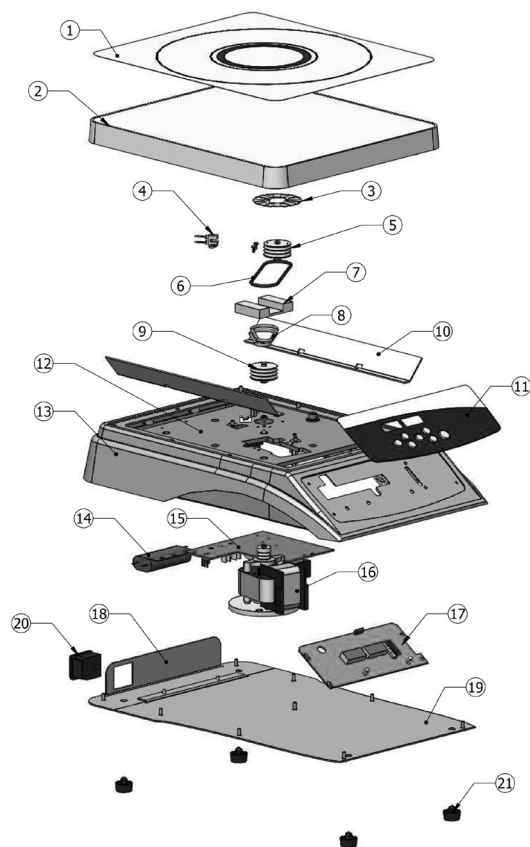
Built-in memory maintains the last used speed and time settings during a power interruption. The stirrer increases speed at a steady rate until the set-point is reached, if the spin bar is too large or the liquid is too viscous, the stirrer may not reach its setpoint. The set-point speed needs to be reduced. Use spin bar supplied with the unit for optimal performance.

## TROUBLESHOOTING - ADVANCED MODEL

The following errors should **NOT** be address by the user. If any of these errors appear, contact your VWR representative for repairs.

Error Code	Software Test	Cause
E03	motor system failure	<ul style="list-style-type: none"><li>- rotor locked</li><li>- motor failure</li><li>- motor sensor failure</li><li>- belt failure</li><li>- magnetic material placed near or on the top plate surface</li></ul>

## HIGH VOLUME STIRRER REPLACEMENT PARTS



DESCRIPTION	PART NUMBER
1. Top plate overlay	386440-00
2. Top plate	286400-00
3. Encoder disk	286430-00
4. Optical sensor cable assembly	386340-00
5. Pulley assembly sensor	886402-00
6. Belt, idler	586402-00
7. Magnet	286413-00
8. Drive belt	586400-00
9. Pulley assembly	886400-00
10. Side shield	286408-00
11. Front panel:	
Membrane switch:	Standard model 386448-00
Speed knob:	Advanced model 386452-00
12. Mounting plate	Standard model 287010-00
13. Housing	286402-00
14. Line filter:	280302-00
15. Main board:	
	230V models 387021-00
	Standard model 386300-00
	Advanced model 386401-00
16. AC motor	386457-00
17. Processor board:	
	Standard model 386303-00
	Advanced model 386407-00
18. Power entry module mounting plate	286409-00
19. Bottom plate	286410-00
20. Power entry module	386122-00
21. Feet (4)	149023-00
Detachable 92" (234cm) power cord:	
	120V 330100-00
	EURO 330101-00
	UK 330102-00
	SWISS 330103-00
2.75" (7cm) spin bar	586411-00

**NOTES:**

[illegible]

---

MANUFACTURED BY:

**TROEMNER, LLC**

201 Wolf Drive • PO Box 87 • Thorofare, NJ 08086-0087  
Phone: 856-686-1600 • Fax: 856-686-1601 • E-mail: [troemner@troemner.com](mailto:troemner@troemner.com)  
[www.troemner.com](http://www.troemner.com)

586408-00 (REV 7 - 8/16)