



# User Instructions

711 HULMAN STREET  
PO BOX 2128  
TERRE HAUTE, IN 47802  
812-235-6167  
FAX 812-234-6975  
E-MAIL: [pinnacle@glascol.com](mailto:pinnacle@glascol.com)  
WEBSITE: [glascol.com](http://glascol.com)

## OPERATING AND SAFETY INSTRUCTIONS for MULTI-PULSE VORTEXER

Model: 099A VB4, 1.5 amps, 120 volts, 50/60 Hz.  
099A VB424, 2.0 amps, 240 volts, 50/60 Hz.



Locate and identify parts shipped:

Vortexer (1)  
12-13mm tube cartridge top (1)  
12-13mm tube cartridge bottom (1)  
15-17mm tube cartridge top (1)  
15-17mm tube cartridge bottom (1)  
Aluminum Top Tray (1)  
¼" Foam Pad (1)  
Allen wrenches (1)  
8-32 Allen head screws (2)  
Black Knobs (2)

The Multi-Pulse Vortexer is designed to vortex the contents of multiple tubes and well as individual tubes, flasks, bottles, and a variety of vessels. Place the vortexer on a sturdy bench that is clean and dust free. There are also holes on each end of the chassis for permanently mounting the vortexer. Be sure the foam feet are resting flat and not bent, or distorted when placing on the bench.

The Multi-Pulse Vortexer is furnished with two standard sizes of test tube cartridges (12-13mm and 15-17mm). It also comes with an aluminum top tray and ¼" foam insert. After the size has been chosen, remove the adjustable top cartridge holder and attach the cartridge bottom to the drive plate with the allen wrench provided. There are four screws inserted in the foam that need tightened to this plate. Next, attach the cartridge foam top (on aluminum) with the two allen screws provided.

**NOTE: Due to the knobs being damaged in shipping please screw in the knobs. The knobs should always align to the back of the vortexer; perpendicular to the flats to the supports.**

Replacement or different cartridge sizes are available for the Big Vortexer, and includes both top and bottom cartridge. See the chart below for sizes available. For custom cartridge sizes consult the factory.

CARTRIDGE SIZES (mm)	CAPACITY	CARTRIDGE NUMBER
12-13	22	099A VC13100
15-17	22	099A VC17150
18-20	19	099A VC20150
25	12	099A VC25300
28-29	10	099A VC29135
BLANK		099A VC10000

## FRONT PANEL FEATURES:

1. *SPEED POSITION KNOB*: This allows adjustable speed of the vortexer drive plate from 0 to 2000 rpm.
2. *(2) POWER SWITCH'S*: On-Off-Momentary power positions.
3. *PULSER KNOB*: When turned on, this turns off the motor for a brief moment and then back on. The rate of on-off is adjustable by turning the knob. An increase in the clockwise direction increases the number of on-off cycles. Pulse rate varies from 60 to 80 pulses per minute.

## SPECIFICATIONS:

Ambient Temperature:	77°F/25°C +/-5°
Operating Environment:	0 to 90% relative humidity 32 to 100°F/0 to 37°C

## PULSING FEATURE:

The pulser knob can adjust the vortexing action of a liquid and periodically interrupt it. This provides an upper and lower mix as well as vortexing.

Increasing the speed may tend to throw a few drops out of the tube if they are not capped. Tube volume should not exceed one half of the overall tube height.

The motor Speed Control Knob may be left at any setting. Larger diameter tubes, bottles, or flask require a slower speed than test tubes. Start the vortexing for these a minimum speed and increase until mixing occurs.

## OPTIMIZING VORTEXING ACTION:

For best vortexing action, the adjustable cartridge should be positioned so that it is near the top of the tube. This can be done by loosening the two knobs and sliding the cartridge to correct location. The versatility of this cartridge allows various heights of tubes to be used. Also make sure the tubes are recessed in the bottom cartridge before starting the vortexer.

## **Limited Warranty**

Glas-Col warrants products of its manufacture to be free from defects in material and workmanship for one year and agrees to repair or replace without charge any products found defective upon examination at the factory. With proper care and operation, Glas-Col products will give long and efficient service. Chemical spillage, overheating, overloading, and general misuse will greatly reduce the service life. Glas-Col is not responsible for damage to apparatus due to improper installation or through attempts to operate the apparatus beyond its rated capacity, intentional or otherwise. Normally expendable parts are not covered by this warranty.

## **LIMITATION OF WARRANTIES**

APART FROM SUCH WRITTEN STATEMENT OF WARRANTY, THERE ARE NO WARRANTIES, EXPRESSED, IMPLIED OR STATUTORY, WHICH EXTEND BEYOND THE DESCRIPTION OF THE PRODUCTS ON THE FACE HEREOF.

Glas-Col products are intended only for legal and legitimate purposes in commercial laboratory and industrial settings.

Glas-Col reserves the right to make product refinements without prior notice.

## **Spare Parts**

Spare parts for Glas-Col shakers are generally available from the factory. Consult Glas-Col for part numbers and pricing.

## **Returns:**

Call or fax Customer Service for a Return Merchandise Authorization (RMA) number before returning the product.

Reference the RMA number on the shipping box and on a written description of the problem.

**A 20% restocking charge of the net price is charged for all standard products returned to stock.**

### **Glas-Col, LLC**

711 Hulman Street, P.O. Box 2128, Terre Haute, IN 47802-0128

Phone. (812) 235-6167, Fax. (812) 234-6975

E-mail: [pinnacle@glascol.com](mailto:pinnacle@glascol.com)

Web: [www.glascol.com](http://www.glascol.com)