OPERATING INSTRUCTIONS FOR SpinVessel® VP 418SVG1-96-CC

Patent No. US 11,623,188
Patent No. EU 3887049

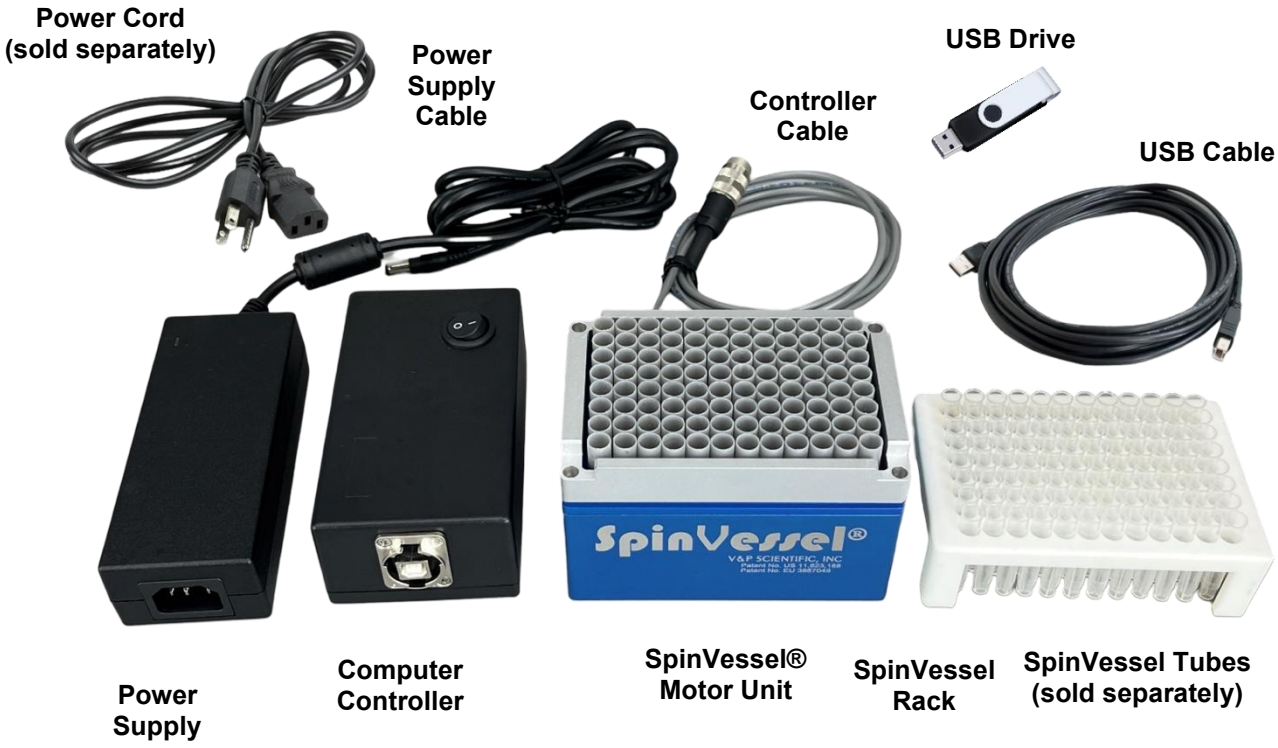
VP 418SVG1-96-CC SpinVessel® System for 1mL SpinVessel®, includes computer controller and external power supply. SpinVessel® Tubes VP 830SV-1ML are sold separately.

(858) 455-0643 ● Website: https://vp-sci.com/ ● email: sales@vp-scientific.com

Content

- Set Up 3
- Operation 4-5
- Maintenance 6

SET-UP



1. Place the Motor Unit on a sturdy lab bench, table, or robotic workstation. Note that the Z height with the tube is 115.8mm (rubber feet not included). The device is SLAS standard microplate footprint (X,Y) and format.

2. Since the Controller Cable is 6 feet long, the Controller and computer can be placed at a distance from the Motor Unit.

3. Connect the Power Cord from the Power Supply to an outlet.

4. Connect the Power Cable from the Power Supply to the Controller. Warning: Do not plug the Controller in while the power is on. Ensure that the Power Switch is in the off position ("0" is down). Always have the Controller plugged in before powering up.

5. Connect the Controller Cable from the Motor Unit to the Controller.

6. Connect the USB Cable from the Controller to the computer.

7. Place up to 96x VP 830SV-1ML SpinVessel® tubes into the SpinVessel rack. Place the SpinVessel rack filled with tubes onto the device, ensuring each tube is seated securely within the Spin Cup.

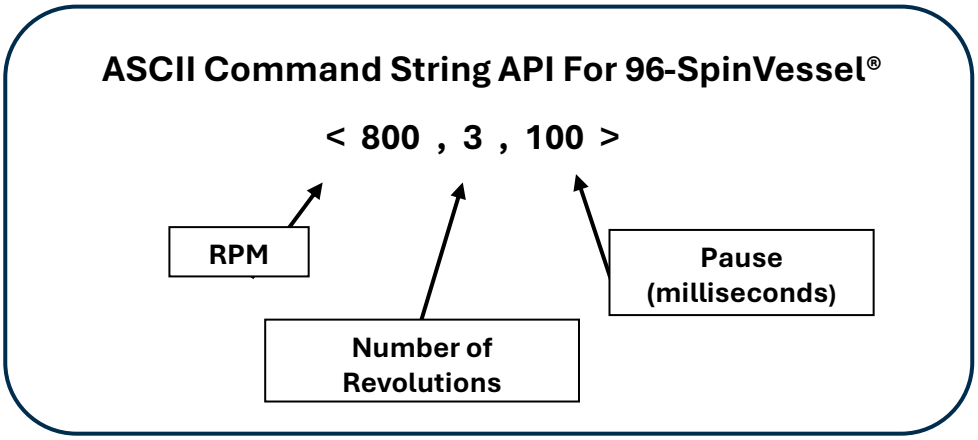
Operation

POWERING UP THE SpinVessel® SYSTEM

1. The Power Switch (I/O) is located on the top of the Controller.
2. To power up the Controller, depress the “I” of the switch.

OPERATING THE SpinVessel® SYSTEM WITH COMPUTER CONTROL

1. Set up the system as described in the Set-Up section with the USB cable connected to the computer to be used.
2. Download and open the “Serial Terminal.exe” file from the provided USB drive.
3. Turn on the SpinVessel® instrument as described above.
4. Select the appropriate COM port and click CONNECT to establish a line of communication between the instrument and the computer.
    a. Windows computer may already have the needed USB driver installed so that the SpinVessel® instrument can be recognized automatically.
    b. The SpinVessel® instrument should be listed under “Ports” in the computer’s Device Manager as "USB-SERIAL CH340 (COMx)" where x is the COM number.
    c. If the SpinVessel® instrument does not show up, download from the provided USB flash drive the “H340 USB DRIVER” and run “CH341SER.exe” to install (Windows typically auto-installs once downloaded).
5. To control the instrument, create ASCII command strings as outlined in the diagram shown below.
6. Hit ENTER to send the command and start the rotation of the SpinVessel® instrument.
7. To stop, type <0> and hit ENTER.



USING A 96-SpinVessel® SYSTEM

The optimal stirring mode depends on the application and must be empirically determined. Factors to consider in determining optimal 96x 1ml SpinVessel® operation are the density of the particulates, their size and shape, as well as the volume and viscosity of the liquid. Start with (800 RPM) and 3 rotations before reversing direction, then work up to the appropriate RPMs and number of rotations for your particulate's density, fragility, and solution viscosity. We have found that smaller circumference SpinVessels® require higher RPMs than larger circumference SpinVessels do, because the critical factor is the linear speed generated at the circumference, not the RPMs. See page 501 of our SLAS Technology paper (https://journals.sagepub.com/doi/10.1177/24726303211008864) for a full discussion of this phenomenon.

The following settings are ones to use when starting out using an aqueous solution with the VP 418SVG1-96-CC and VP 830SV-1ML SpinVessels®:

Speed: **800 RPM** Rotate: **3** Pause: **0 milliseconds**

It is always a good idea to practice with water in your SpinVessel to determine safe RPM, Rotation, and Pause numbers before you use expensive reagents.

GENERAL PRODUCT CARE

When not in use, turn the power switch off.

Do not place the control unit in chambers with temperatures above 40°C.

To clean the stirrer, wipe down with a cloth and mild detergent followed by a water wipe. Do not immerse SpinVessel® Motor or Control in liquid.

The motor of the SpinVessel® is a stepper motor, 100-240 Volts, 50/60 Hz, CE compliant

SAFETY PRECAUTIONS

The use of motor controls, like that of all utilization of concentrated power, is potentially hazardous. The degree of hazard can be greatly reduced by proper design, selection, installation, and use, but all hazards cannot be completely eliminated.

The following safety precautions must be observed during all phases of installation, operation, service, and repair of this motor control product. Failure to comply with these precautions or with specific warnings elsewhere in this manual violates safety standards of design, manufacture and intended use of the products. V&P Scientific assumes no liability for the customer's failure to comply with safety requirements and practices.

WARNING

To avoid personnel injury caused by electrical shock, do not remove the cover of the controller when the power is ON.

CAUTION

Do not disconnect the motor during operation. Otherwise, overcurrent breakdown may result.

WARRANTY

V&P Scientific, Inc. warrants this product to be free from defects in material and workmanship when used under normal laboratory conditions for one year. This warranty begins from the date of delivery by V&P Scientific.

In the event this product fails under normal laboratory conditions within the specified period of time because of a defect in material or workmanship, V&P Scientific will, at its option, repair or replace the product. Damage to the product caused by user negligence is not covered.

Please keep the special shipping carton in case the unit needs to be shipped back to V&P Scientific. Please contact V&P Scientific at the address below for return authorization and shipping instructions.

This warranty is made in lieu of other warranties expressed or implied including the warranties of merchantability and fitness for a particular purpose. V&P Scientific shall not be liable for loss or damages arising from the use of these products nor for consequential damages of any kind.

If assistance is required, contact:

V&P Scientific, Inc.
8810 Rehco Rd. Suite B
San Diego, CA 92121
Ph: 858-455-0643
sales@vp-sci.com