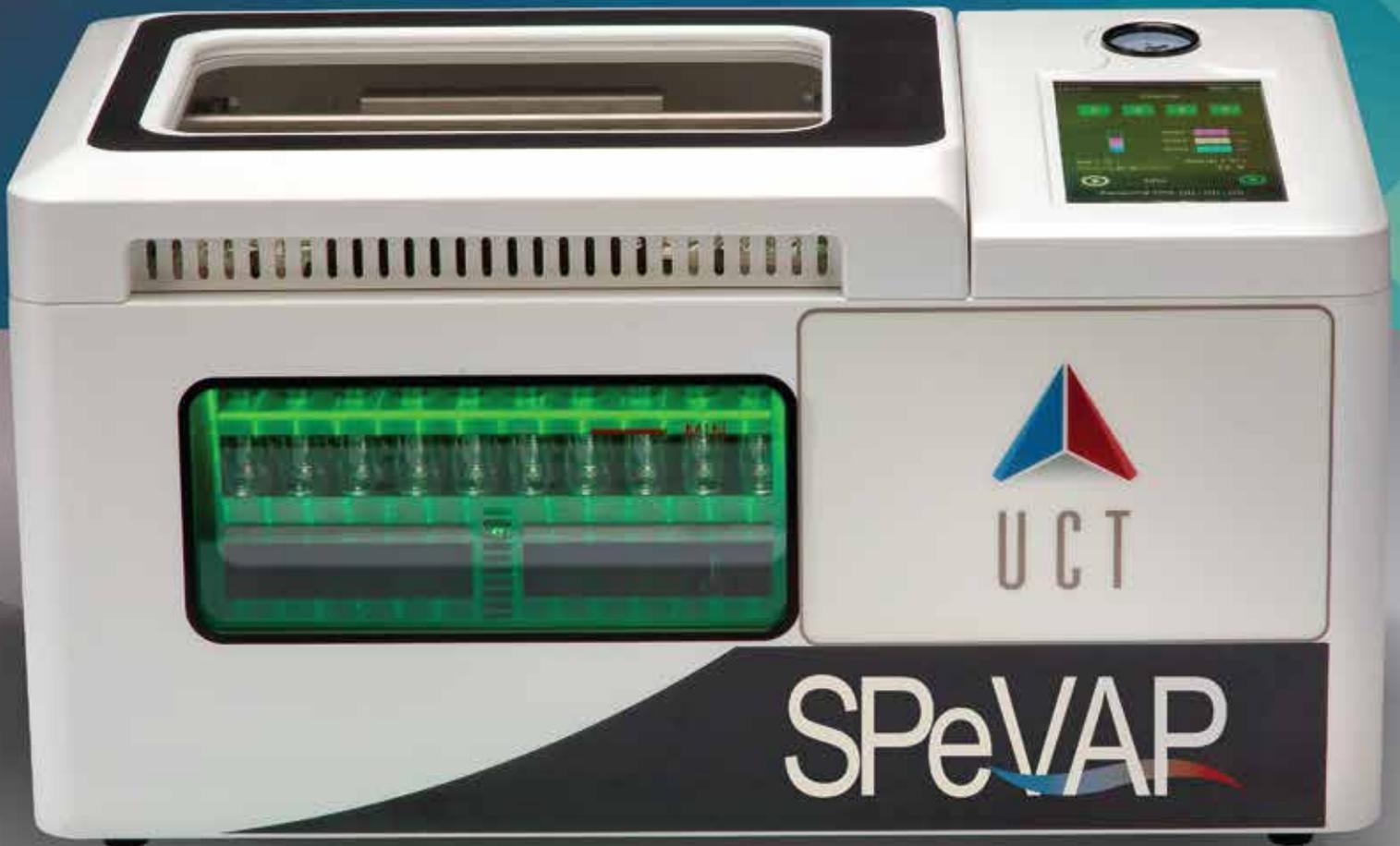




# SPeVAP<sup>®</sup>

32 and 48 Position Multi-function Solvent Evaporator



**OPERATING MANUAL**

Available online @ [unitedchem.com/SPeVAP](http://unitedchem.com/SPeVAP)





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## ACCESSORIES

- Required space: 23" x 18"
- Suitable electrical supply
- Dedicated 20 Amp circuit / per every three SPeVAP® modules
- Purified compressed air or N2 source
- Flathead Screwdriver and Allen Wrench

## CONTENTS Included in Install Kit

- Exhaust Line and Clamp
- Drain hose and Air line
- Manual and Installation Specs
- Fuse and Power Cord



SPeVAP® Module

## TECHNICAL SPECIFICATIONS

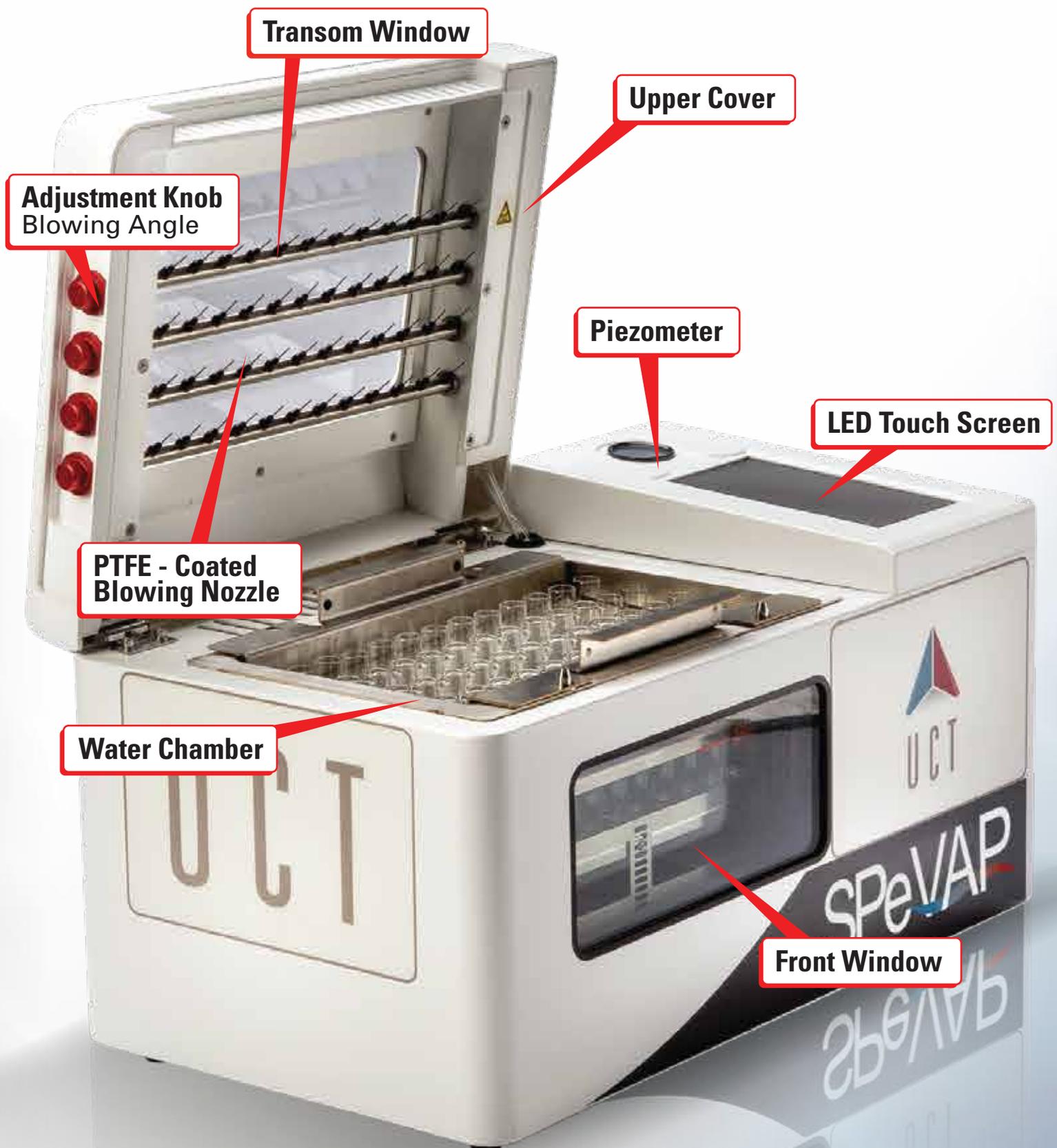
Supply Voltage	100-240 VAC. 50,60HZ
Power	Dedicated 20AMP circuit per 3 SPeVAP® units
Max Output Power	500W / Max Amperage – 6A
Fuse	5mm x 20mm, 10A Slow Blow
Gas Supply	Moisture Free inert Gas or compressed air filtered to 5µm < 60psi
Pressure	0-60psi / Max Supply Flow – 96L/min.
Water Temperature	Ambient up to 90°C
Water Bath Volume	6.5L / Use DI or Distilled Water
Interface	7.7' touch screen
Bench Space	23" x 18"
Ventilation	Exhaust hose that can be routed to a fume hood or other ventilation shaft
Paint	Acrylic Polyurethane which is resistant to Acetone, Ethyl Acetate, Cyclohexane, Hexane, and DCM

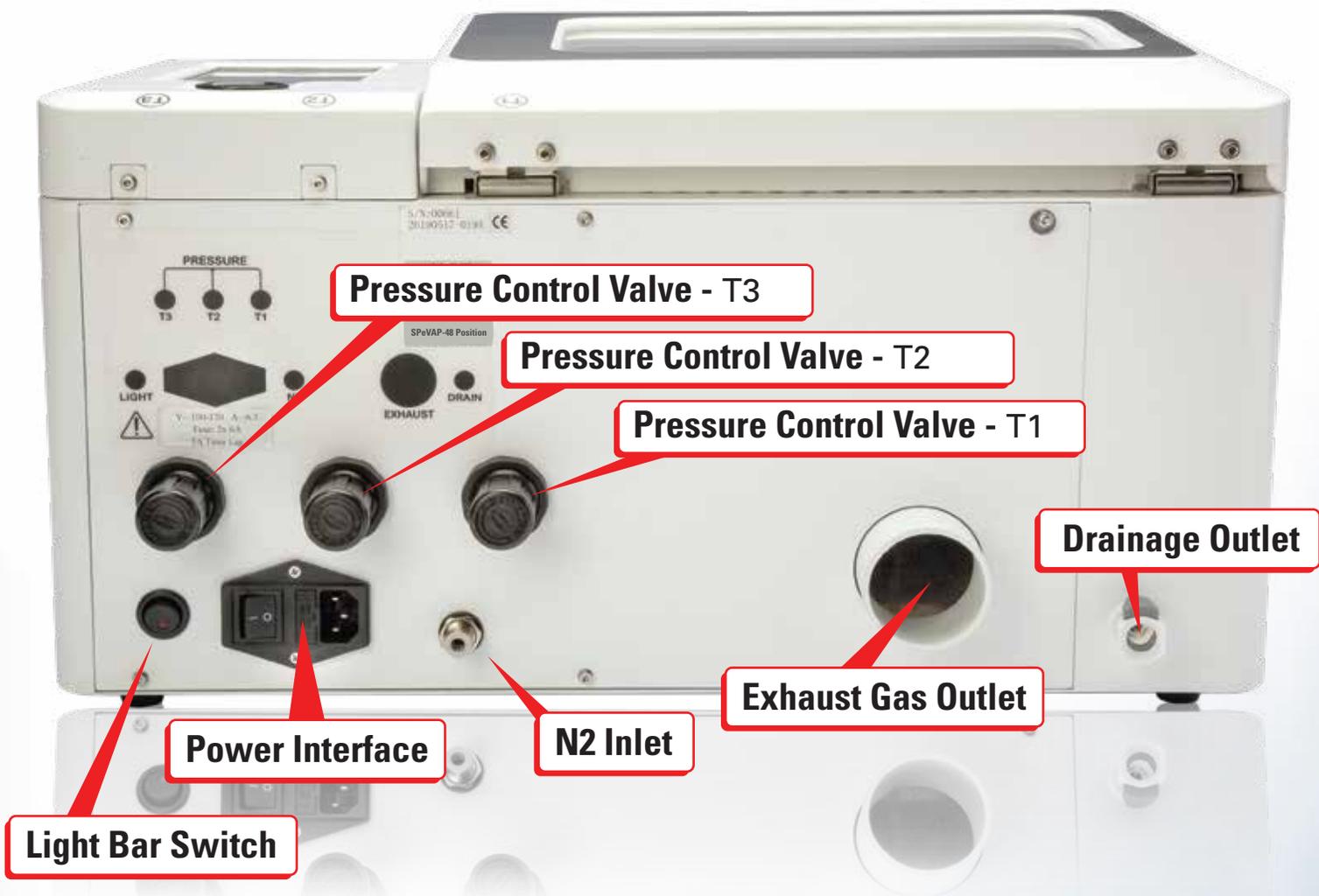
SPeVAP® 32/48 position solvent evaporator is a welcome addition to UCT's long-standing manifold arsenal. Featuring the same reliability and performance associated with our pneumatic extractors, it is designed to be more efficient and take up less space than a traditional evaporator. SPeVAP® has an exhaust port so it does not require fume hood space to operate.

The sleek design and touchscreen capabilities allow for easier use and expanded functionality. SPeVAP® possesses a smaller footprint than traditional evaporators, in addition to its self-exhaust allowing for operation outside of fume hood encapsulation.

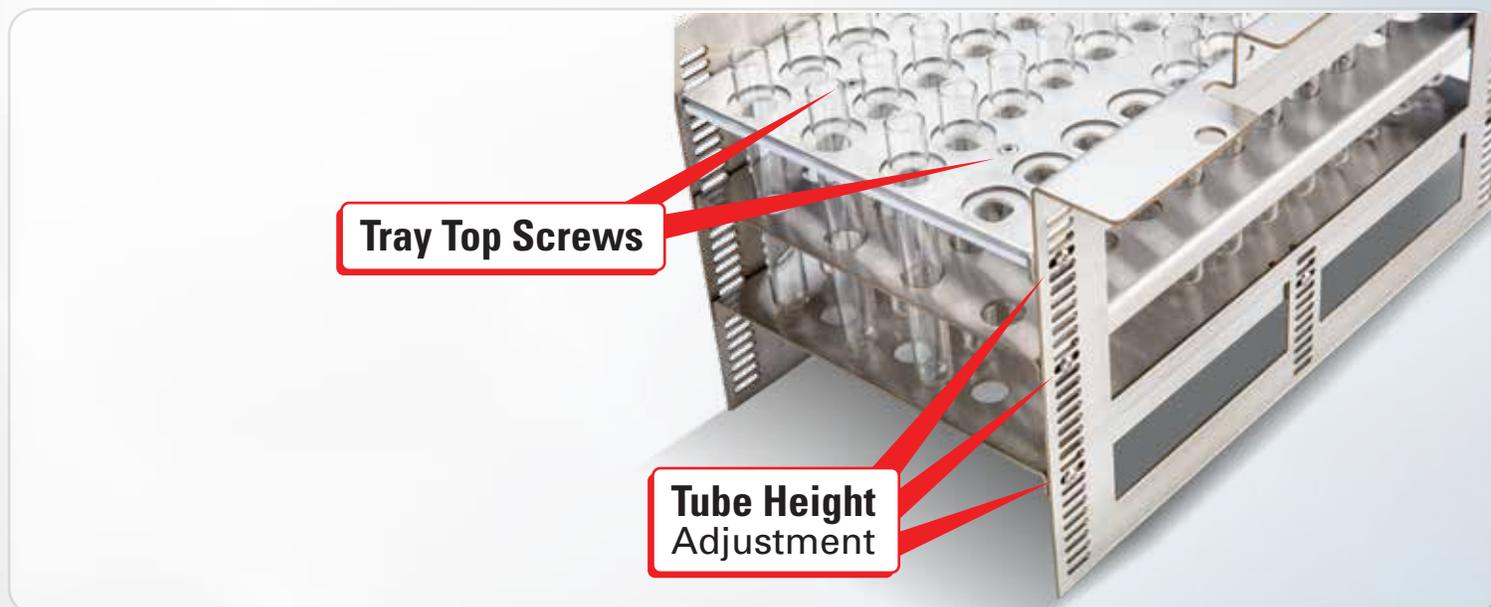
In addition, the extended programming provides for gradual increase of flow gradients in tube as evaporation occurs, ensuring targeted completion. Other features include an On-spot PTFE nozzle adjustment and/or replacement, an easily accessible drainage port, and a color-coded view window corresponding with the individualized stage of operation.







## SAMPLE TRAY SPeVAP® Multi-Function Solvent Evaporator



# Attaching the Exhaust and N2 Supply

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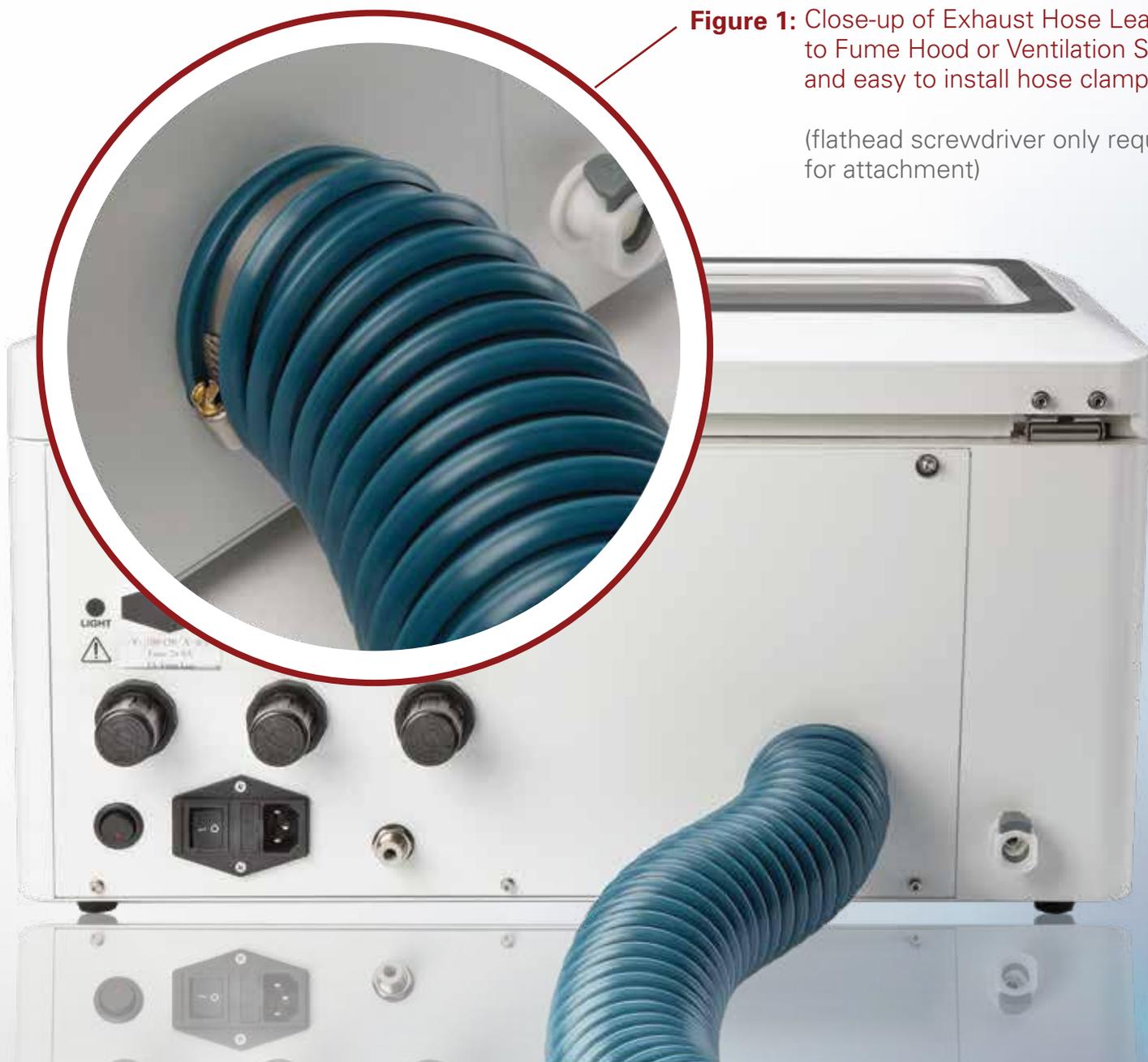
- Attach the Exhaust hose making sure to fix with exhaust hose clamp. Do not overtighten!
- Put the outlet side of the Exhaust hose under a fume hood or similar exhaust vent.
- Attach the supply line to the N2 inlet.
- Supply gas must be moisture free and filtered to 5µm
- Add either DI or distilled water to the water tank. The height of the water should be 1/2~3/4 the height of the sample tubes being used.



Caution: If SPeVAP® is left on for long periods of time, the water in the tank will evaporate. Observe water level and add as needed to prevent dry burning

**Figure 1:** Close-up of Exhaust Hose Leading to Fume Hood or Ventilation Shaft and easy to install hose clamp.

(flathead screwdriver only required for attachment)



## Adjustment of Pressure Steps

- Turn on the external supply gas and set to no higher than 60psi.
- Power on the module and select all four channels.
- Set the time for each stage at one minute.
- Press the “play” button to initiate concentration.
- While the first stage is running adjust the pressure using the corresponding regulator on the rear of the module until the gauge reads the desired pressure.
- Repeat for the second and third stages with their corresponding regulators.



**Figure 2:**  
Left Side of SPeVAP® with adjustment knobs



**Figure 3:**  
SPeVAP® tube rack with nozzles

## Tray Assembly and Adjustment\*

- Take the gasket for the desired vial size and lay on top of the gasket brace. Make sure to line up the small thru holes in the gasket with the threaded holes in the gasket brace.
- Take the sheet metal tray top for the tray and set on top of the gasket and gasket brace.
- Use the eight tray top screws and secure all three pieces together.
- Line up the holes on the side of the tray top with the tray side. Using the side screws secure the tray top in place.
- Take the second tray side and repeat step 4 on the opposite side.
- Install the second “tray top” to act as the tube guide. The guide is attached in the same manner as step 4. Vertical placement will vary with the vial size intending on being used.
- Adjust the tray to match the height and support needed for the selected sample tube. See Figure 3 for adjustment locations.

\*See tray assembly guide for additional assembly details.

Power on SPeVAP<sup>®</sup> using the power switch on the module.

Make sure when powering on the module to select the appropriate side to match the correct voltage.

Press the corresponding channel button to select the desired row(s). The selected channel will turn green, and the unselected channels will turn gray. Gas will not pass through the unselected channels. The arrangement of rows is from front to rear with channel 1 being the row at the front of the module and channel 4 being the row at the rear of the module.

Adjust the nozzles to line up with the inside rim of the sample tubes. Red knobs for each row may be turned to adjust nozzles laterally.

Turn knob clockwise to adjust to left, Turn knob counterclockwise to right

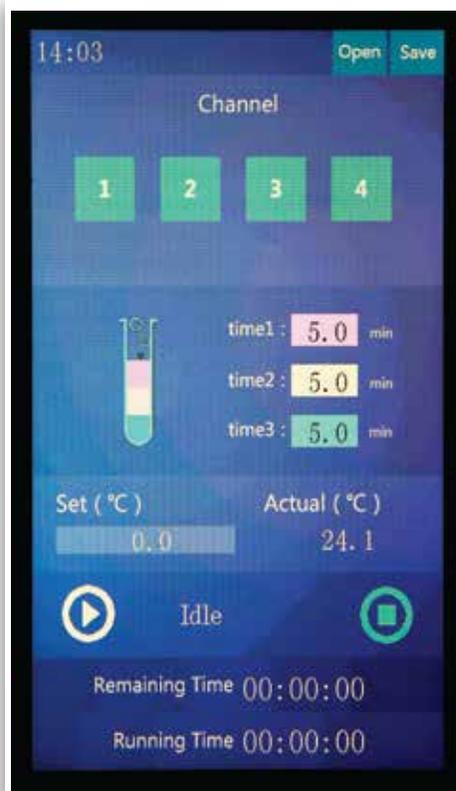


Figure 4: Method Processing Screen

See Figure 2 for location of adjustment knobs.

By pressing “Time”, set the desired running time for the three stages of gas pressure. The time corresponds to the liquid level shown in the picture (*pictures showing time adjustment*). Three stages of gas pressure are elevated in turn. The factory settings are 15psi (Time 1: pink), 29psi (Time 2: white) and 44psi (Time 3: blue). See Figure 4.

The top liquid level (pink) on the display corresponds to low pressure, medium liquid level (white) corresponds to medium pressure, and low liquid level (blue) corresponds to high pressure. During operation, the LED lamp will flash the corresponding color according to the liquid level, so the concentration state can be observed from a distance.

To set the bath temperature, select the temperature setting from the main menu and enter the desired value. Once established, press enter and ensure the lid of the instrument is closed.

## Operation Continued

Select start from the menu to begin concentration. The module will display the residual time as well as the running time for current run settings. Concentration can be paused and re-started whenever needed during operation.

The start button becomes a pause button while run in progress and can be pressed to halt a run. Also, opening the lid will pause the run automatically.

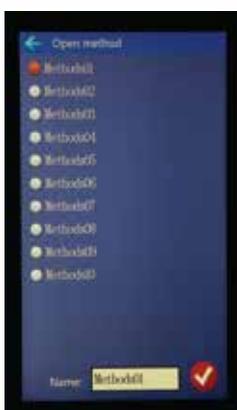
The module alarm will sound along with pink flashing LED to signal that the concentration is finished. The display will show “Complete” above residual and running time display. Pressing the “Stop” button from the menu will silence the alarm.

When finished leave power on and open the lid to prevent condensation on the transom window while the bath cools to room temperature. Shut off the external gas supply and turn off the module.

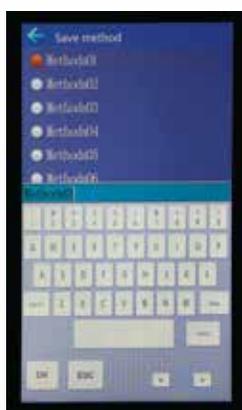


Caution: Do not remove samples until the water has reached room temperature to avoid any burns.

## Methods and Storage



**Figure 5:**  
Method Processing  
Screen



**Figure 6:**  
Method Processing  
Screen

The SPeVAP® has an OPEN and SAVE button at the top right of the status screen. Both are used in running and/or editing a method.

- Press the “Open” selection to choose a method to run or edit. Select the method by pressing on the name. The option button of the chosen method should turn red.
- When pressing in the field at the bottom of the method list, an alpha-numeric pad will pop up to enter the name. Enter a method name and click OK when done.

There is an 18-character limit for the method name.

- Make any necessary changes to the method parameters as directed in the “Operation” section. Be sure to save the method following any changes.

# Maintenance

- Avoid dry burning of samples, especially when the lid is open.
- Regularly replace the water in the water chamber to stay clean.
 

**To replace water:** Attach the quick disconnect onto one end of the drain line. Prepare a suitable liquid waste container. Put the empty end of the drain line in the waste container and plug the quick disconnect into the drain port on the module.
- There is a pressure relief feature that activates if the supply gas pressure is higher than the initial pressure in the module. If this occurs there will be a notification on the screen. Select start and the pressure will equalize automatically.

## Trays and Vial Compatibility

Part Number	Description	Position	Allowed Length	Vial Diameter Range	Compatible Vials
VMFSPEVAPCR 3252	27-29mm VOA Vial	32 Position	Up to 150mm	27-29mm	40ml VOA 60ml VOA
VMFSPEVAPCR 4849	12-14mm Vial	48 Position	Up to 150mm	12-14mm	13mm x 100-125ml
VMFSPEVAPCR 4850	16-18mm Vial	48 Position	Up to 150mm	16-18mm	16mm x 100-125ml
VMFSPEVAPCR 4851	10.42-12.92mm AS Vial	48 Position	Up to 150mm	15-18mm	1.5-2ml Autosampler



# Replacement Parts and Accessories

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Part Number	Description
VMFSPEVAP-32	SPeVAP® 32 Position
VMFSPEVAP-48	SPeVAP® 48 Position
VMFSPEVAP-2102	Replacement Nozzle, PTFE Coated
VMFSPEVAP-2103	Nozzle O-ring, Pack of 50
VMFSPEVAP-TB309	Exhaust hose, extension (multiples of 5 ft)
VMFSPEVAP-PN0199	Air Filter
VMFSPEVAP-SC1277	Exhaust line clamp
VMFSPEVAP-TB311	Air line (multiples of 25 ft)
VMFSPEVAP-FT512	Air line quick-disconnect fitting
VMFSPEVAP-TB310	Drain hose
VMFSPEVAP-FT256	Replacement barb fitting for water bath drain
VMFSPEVAP-TB312-4	Exhaust hose coupler
VMFSPEVAP-FO4811	Gasket, 48-position, 12-13mm or Autosampler Vials
VMFSPEVAP-F04812	Gasket, 48-position, 15-18mm
VMFSPEVAP-F03211	Gasket, 32-position, 12-13mm or Autosampler Vials
VMFSPEVAP-F03212	Gasket, 32-position, 15-18mm

## Prices And Terms

Our prices are subject to change without notice. The price in effect when we receive your order will apply. All prices are in US Dollars and are F.O.B. Lewistown, PA 17044. Terms of payment are net 30 days.

## Minimum Orders

We welcome all orders; therefore, we do not have a minimum order requirement. When ordering, please include your purchase order number, complete "Ship To" and "Bill To" address, catalog number, quantity, and description of product(s). Also include your name and a phone number where you can be reached should we have any questions concerning your order.

## Shipments

Normal processing is within 24 hours after receipt of an order. Unless special shipping requests have been made, our trained staff will send all orders by UPS Ground service. The appropriate shipping charges (freight & insurance costs) will be added to the invoice, unless otherwise instructed by the customer.

## Special Pricing

We offer special pricing for volume purchases and standing orders. These discounts apply to bonded phase extraction column purchases only. Please call a sales representative for more information on special pricing qualifications.

## Return Policy

Our Quality Manager will handle all returns. Before returning merchandise, please call to obtain a return authorization number from the quality manager. We will need to know the reason for the return, date of purchase, purchase order number and invoice number to issue a return authorization number. Return merchandise must be received before a credit can be issued. Returns will not be accepted after 90 days. A restocking fee of 25% of the price paid, or a minimum of \$25.00 (whichever is greater) will be charged on all returns.

## Safety

This equipment, when used properly, is safe. Proper PPE, as determined by your organization, should always be worn while using this equipment. Proper handling techniques for chemicals and biological agents should always be followed. Compressed gas or nitrogen is used to operate the equipment. Compressed gas or nitrogen tubing should be securely fitted and locked into the equipment to prevent the compressed gas or nitrogen tubing from loosening and potentially striking the operator. Compressed gasses and equipment should be handled under proper ventilation to prevent oxygen displacement or toxic atmospheres. Operators of this equipment must be aware of the possible pinch points. Pinch points are located on the restrictor plate, as it is raised and lowered and on the waste tray and extraction plate points of connection.

## Warranty Program

UCT offers a 1 year warranty on electronics, regulators, valve flowpath up to but not including the water bath chamber. Parts damaged by vapors are not covered. Exposed parts are protected under a 90 warranty program but does not include spills and misuse. After the initial 1 year period, a service agreement with UCT can be arranged.

### **The service agreement will entail the following:**

Upon the need for repair, the owner of the SPeVAP® will submit an open PO to UCT. UCT will ship a 'temporary loaner' SPeVAP® (at no charge) to the customer to be used until their SPeVAP® can be repaired. The total cost of shipping to and from UCT's facility for the customer's SPeVAP® will be the responsibility of the customer. The total cost of parts needed to repair SPeVAP® (s) will be the responsibility of the customer. The total cost of shipping of the loaner SPeVAP® will be incurred by UCT. UCT will perform a thorough inspection of the SPeVAP® which at minimum will include: Each position of the individual (4) rows with nozzles of the SPeVAP® will be checked for flow through. If there is significant restricted flow to any of the positions, the row will be cleaned and re-tested. The regulators will be inspected for proper response and accurate measurement of air pressure. Accurate selection of rows and evaporation times will be examined and verified through operation of the unit through the touch-screen panel. Any additional maintenance or repair beyond the scope of this agreement will be charged at the discretion of UCT, Inc.





## **UCT, Inc.**

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