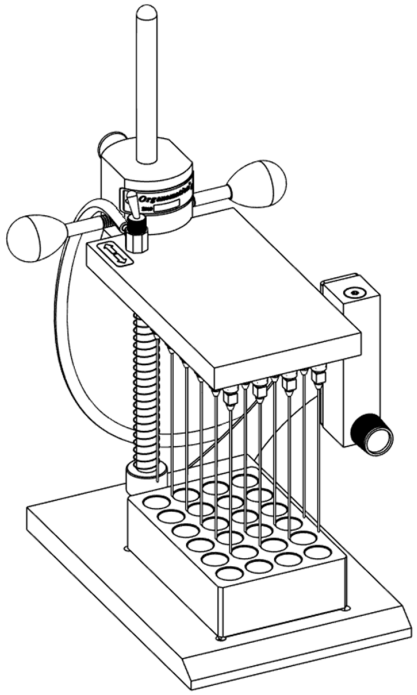
Organomation®

MICROVAP®

Nitrogen Evaporation System

Models

11801	(Single Plate)
11806	(6 Position)
11815	(15 Position)
11824	(24 Position)



INSTRUCTION MANUAL

266 RIVER ROAD WEST
BERLIN, MA 01503
U. S. A.

Tel: 888-838-7300 Fax: 978-838-2786

Email: sales@organomation.com

Items Shipped

Carefully check the contents of all cartons received for damage which may have occurred in transit. Retain all cartons and packaging materials until all components have been checked against the packing slip, the component list below, and the equipment has been assembled and tested. Contact Organomation immediately if any damage or discrepancies are found.

Your shipment should contain one or more of the instruments shown below. Option codes are listed on the next page.

ID #	Instrument Size
11801-O	**Single Plate N-EVAP Nitrogen evaporation system**
11806-O	**6 Position N-EVAP Nitrogen evaporation system**
11815-O	**15 Position N-EVAP Nitrogen evaporation system**
11824-O	**24 Position N-EVAP Nitrogen evaporation system**

	Flowmeter Assembly with Mounting Bracket & Connector Tube
NA1821	0-30 LPM for 1 position MICROVAP
NA1124	0-5 LPM for 6 position MICROVAP
NA1221	0-10 LPM for 15 and 24 position MICROVAP
NA1807	19ga x 2" Stainless Steel Needles, blunt end 96 each for 1 Position MICROVAP (pre-installed)
NA0603	19ga x 4" Stainless Steel Needles, blunt end 6 each for 6 Position MICROVAP 15 each for 15 Position MICROVAP 24 each for 24 Position MICROVAP
	T-Handle Hex Key adjustment tools
V10127	1 each 1/8" x 6" Long, for all MICROVAP units
V10128	1 each 5/32" x 6" Long, for all MICROVAP units
V10124-MTO	Manual for MICROVAP models 11801-O, 11806-O, 11815-O, 11824-O

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Instrument Description

The MICROVAP Nitrogen Evaporation System is designed for general evaporation and / or concentration of analytical or biological samples in 96 well micro plates or sample tubes under controlled and reproducible conditions. Other micro well plate configurations are available.

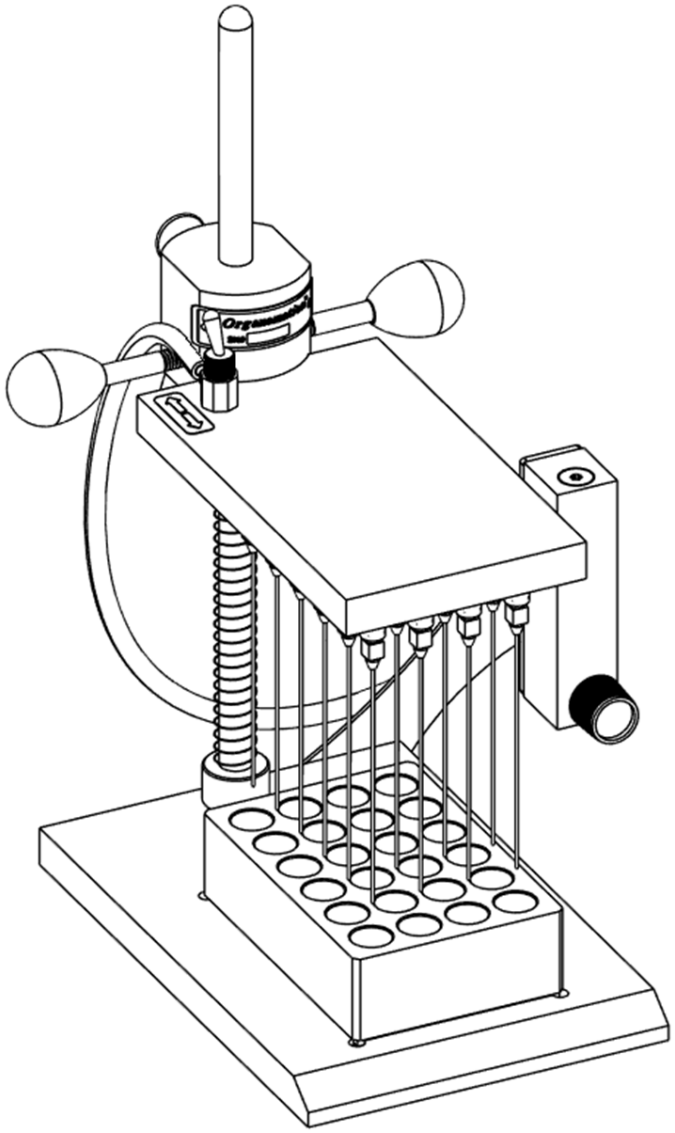


Figure 1:

Single Block MICROVAP;
11801, 11806, 11815, 11824

READ BEFORE OPERATION

Intent

This guide provides the technical information needed to operate and maintain the MICROVAP®. Product designs and documentation are subject to change without notice. For the most current information, contact Organomation at www.organomation.com.

Product Safety

This equipment is designed for use in the Analytical or Environmental Laboratory by trained laboratory personnel for evaporative applications. All service and maintenance work must be carried out by service personnel trained and authorized by Organomation.

Use of this equipment beyond its stated intended purpose and operating parameters is not recommended and will be the sole responsibility of the user. This equipment should not be modified or altered. Organomation assumes no liability for any misuse of or modification to this product and such misuse or modification will immediately void all warranties.

This equipment should be used in accordance with the operating instructions contained in this manual. For alternative uses not covered in this manual, please contact Organomation technical department for product suitability, safety, and alternative operating instructions.

Table of Symbols

The following symbols point out important information and alert you to potential hazards:

Symbol	Type	Description
	Note	Read manual before operating
	Caution	Eye protection required
	Caution	General caution, risk of danger

Safety Considerations

The following are general safety guidelines recommended when using this product. Please consult your laboratory safety officer for any additional safety steps which may be necessary for your specific application or material.

1. Thoroughly review your MSDS (Material Safety Data Sheets) for all chemicals to be used with this equipment.

2. Hand and eye protection are required when using this product. Additional protection may be required with respect to the materials being used. Please consult your laboratory safety officer.

3. This product should only be used in a chemical fume hood with adequate ventilation.

4. Incorrect replacement parts or assembly may damage the product and create a serious safety hazard for the user. Factory repair is recommended.

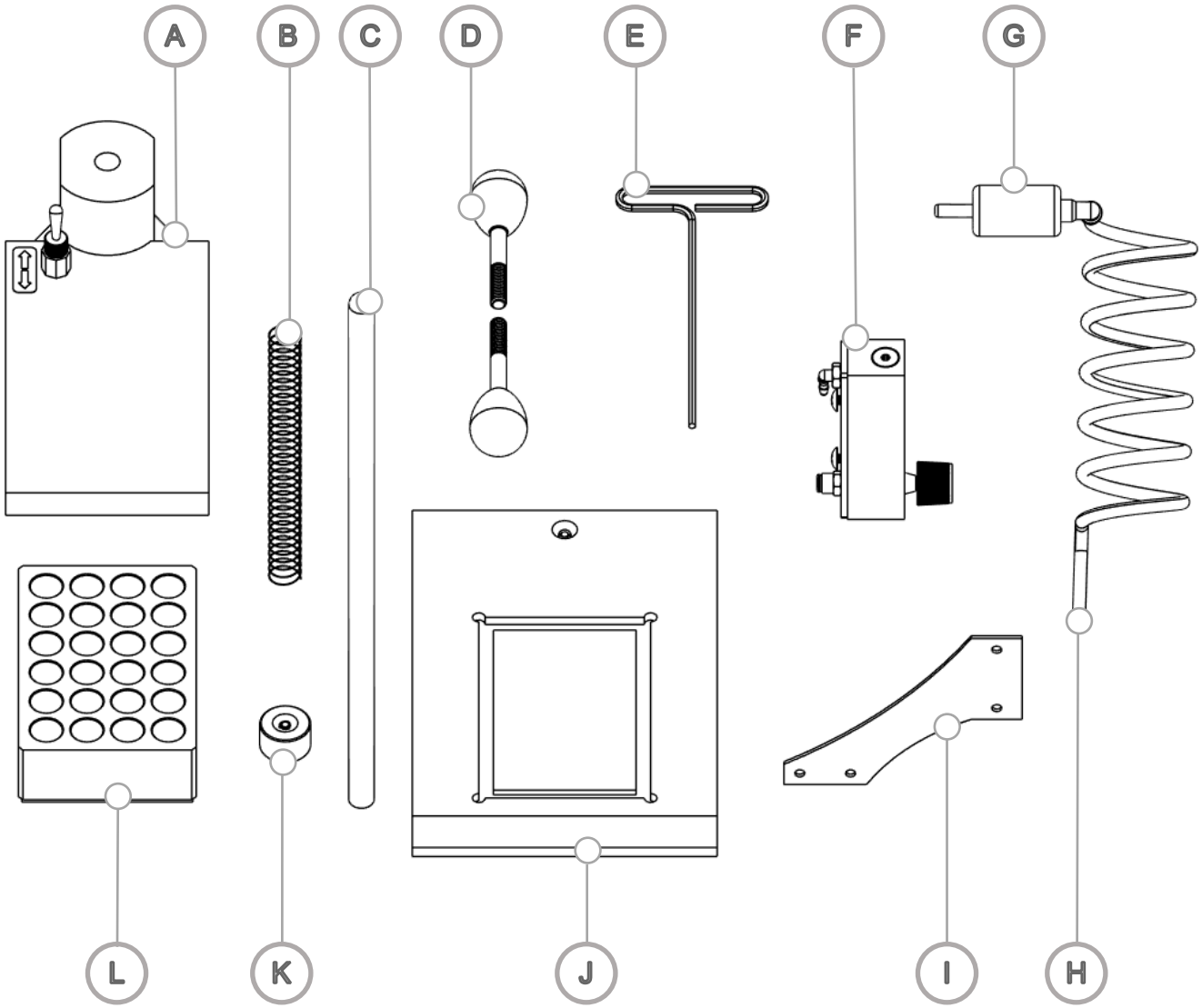
5. Use of acidic or base materials may damage this product and is not recommended unless the product was ordered with the optional corrosion resistant coating.

Assembly Instructions: Single Plate; 6, 15 & 24 POSITION MICROVAP

1

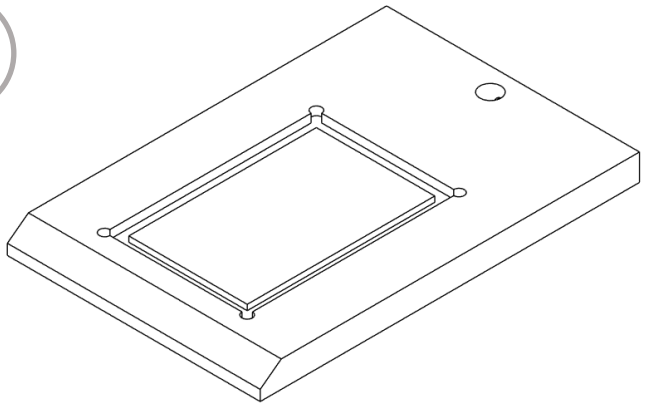
Gather and identify all components.

A.	Instrument Manifold	**G.**	Air Filter
B.	Compression Spring	**H.**	Coiled Connector Tube Assembly
C.	Stainless Steel Rod	**I.**	Flowmeter Bracket
D.	Manifold Thumb Screws	**J.**	Base Plate
E.	Hex Keys [1/8” and 5/32”]	**K.**	Stop Collar
F.	Flowmeter	**L.**	Sample Block



Assembly Instructions: Single Plate; 6, 15 & 24 POSITION MICROVAP

2



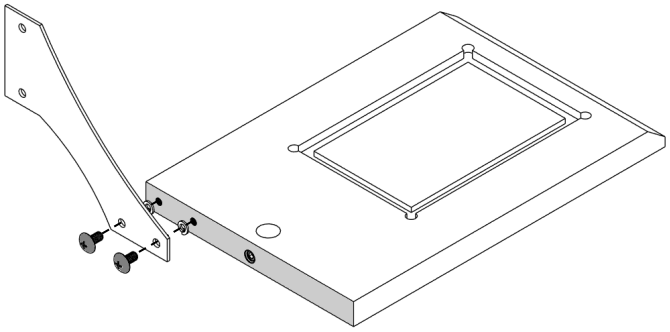
Position base plate [J] on a flat surface.

3

Remove screws from rear top surface.

Position flowmeter bracket [I] over holes as shown.

Replace screws.



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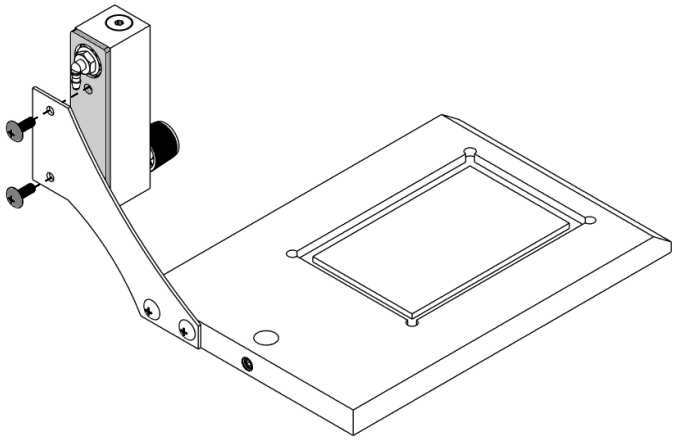


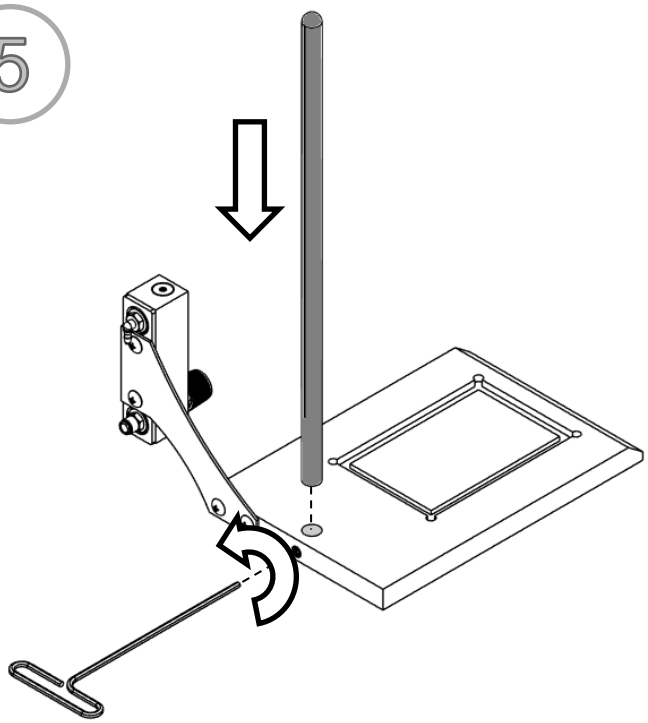
Remove screws from rear of flowmeter [F]

Position flowmeter over bracket holes as shown.

Replace screws.

Assembly Instructions: Single Plate; 6, 15 & 24 POSITION MICROVAP

5

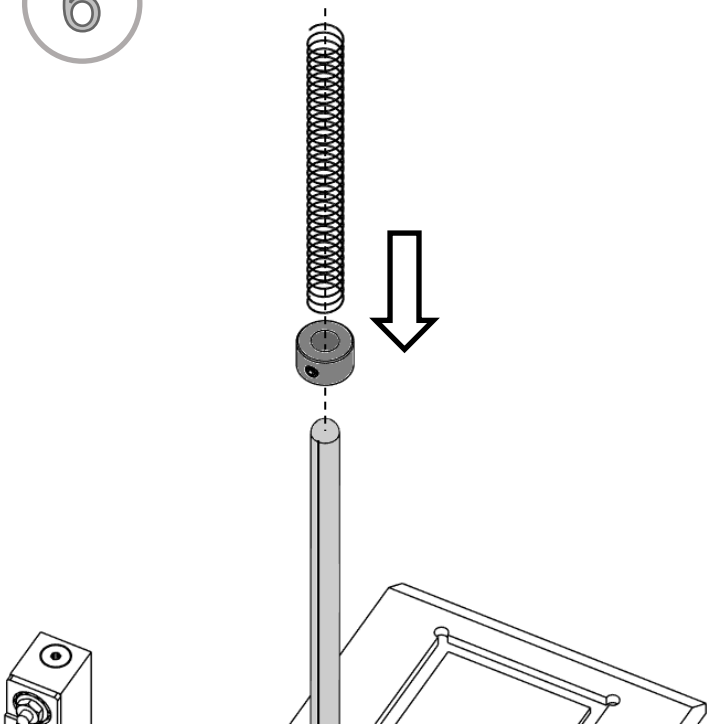


Use the 1/8” hex key [E] to loosen set screw on base rear.

Insert the stainless steel rod [C] into the block with the ball end facing up.

Center the alignment groove on the rod to the back face of the base, facing away from the heating unit.

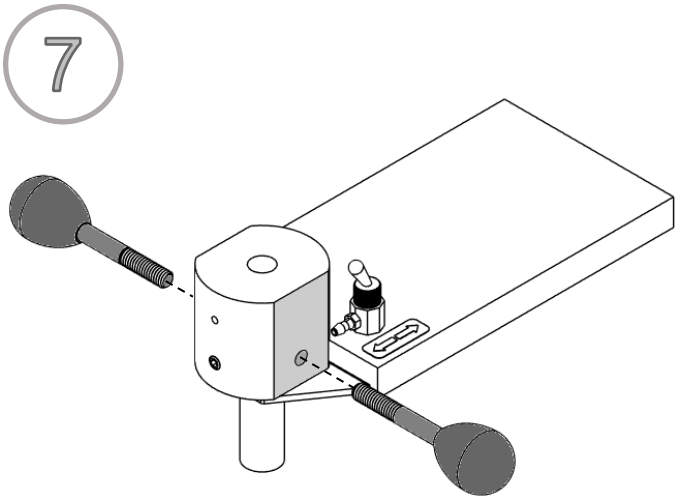
6



Place the offset collar [K] over the rod and lower until seated on the mounting block.

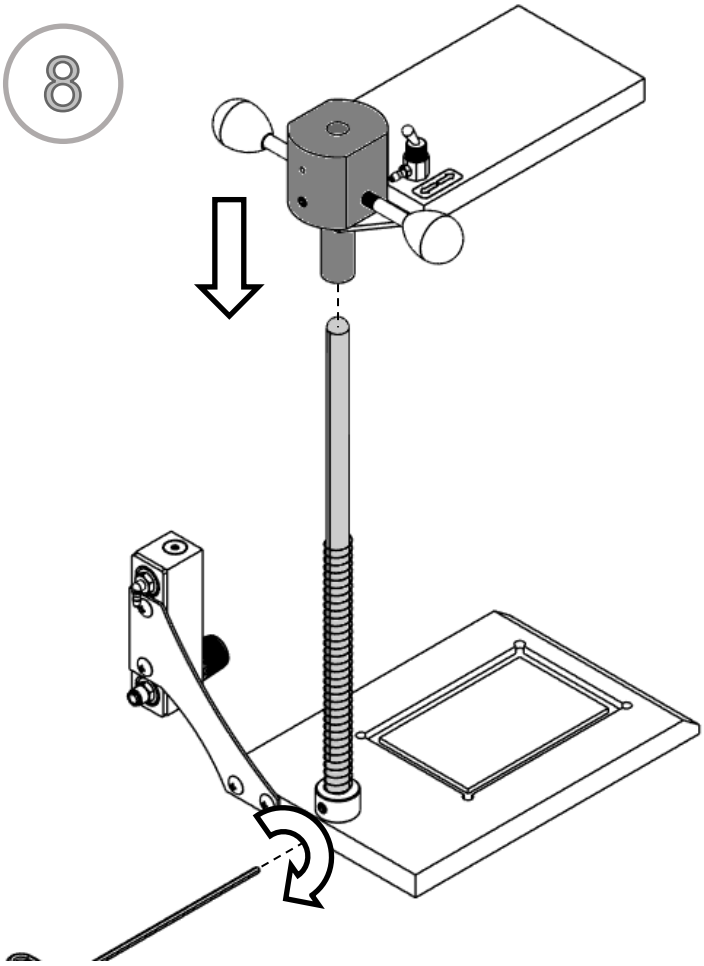
Place the compression spring [B] over the rod and lower until seated on the offset collar.

Assembly Instructions: Single Plate; 6, 15 & 24 POSITION MICROVAP



Screw the manifold thumb screws [D] into the sides of the instrument manifold [A].

*Do not over tighten. May damage the threads or the rod when seating.

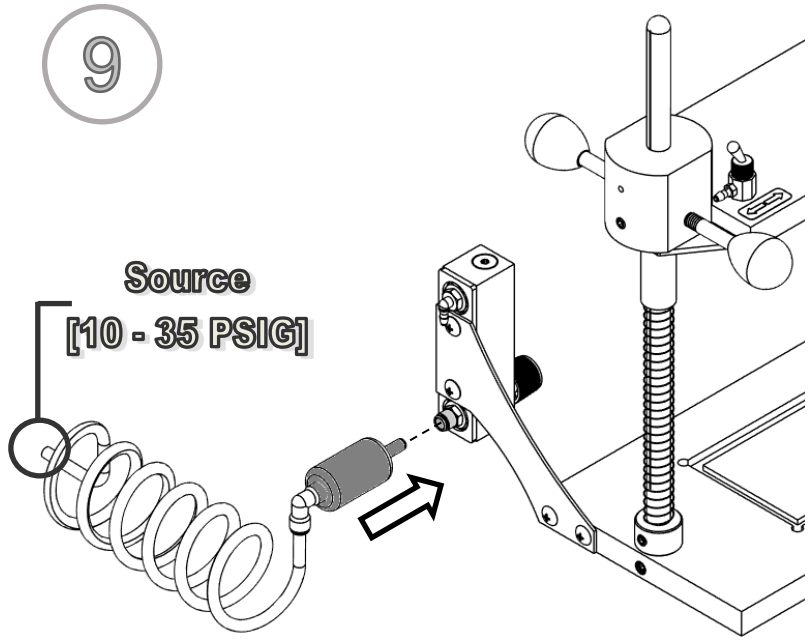


Tighten the set screw to secure rod in place.

Place the instrument manifold over the rod and lower until seated on the offset collar.

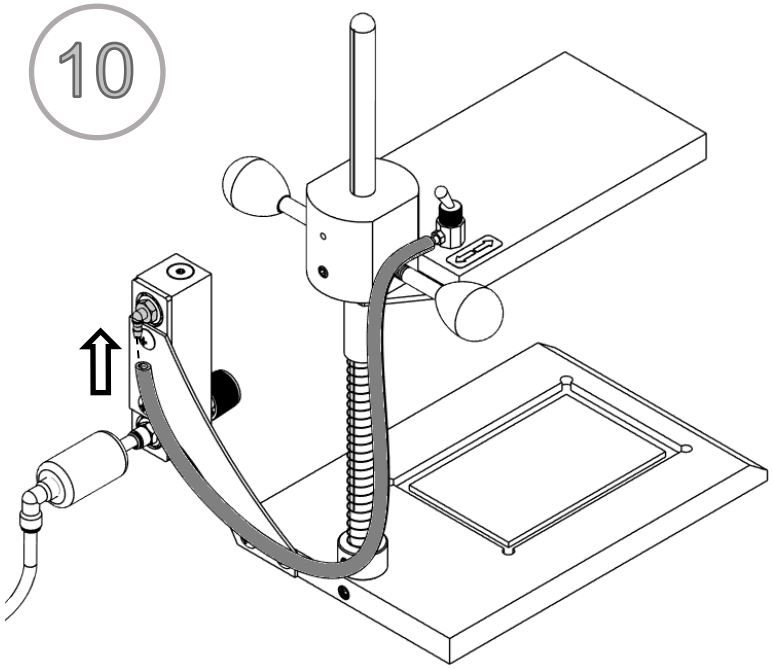
*Adjustment may be required for alignment pin in the back of the instrument manifold.

Assembly Instructions: Single Plate; 6, 15 & 24 POSITION MICROVAP



Attach the exposed end of the filter, in the coiled connector tube assembly [G,H], to the lower rear fitting of the flowmeter.

Attach the other end of the connector tube to a suitable gas source (10-30 PSIG).



Attach the manifold gas tube to the upper fitting on the rear of the flowmeter.

Location

The MICROVAP Evaporator System should only be used in a chemical fume hood with adequate ventilation. The location should provide the necessary support services for the instrument. This includes a clean inert gas source (Air or Nitrogen). Please review the Specifications Section for further information.

Unit Setup

1. Position the unit in a chemical fume hood.

2. **Pressure Reducing Regulator Option - If you do not have this option, proceed to the next section.**

   When purchased with a MICROVAP System, this item is pre-installed onto the flowmeter, between the flowmeter and the Connector Tube. To install a pressure reducing regulator, please follow the instructions and figure below:

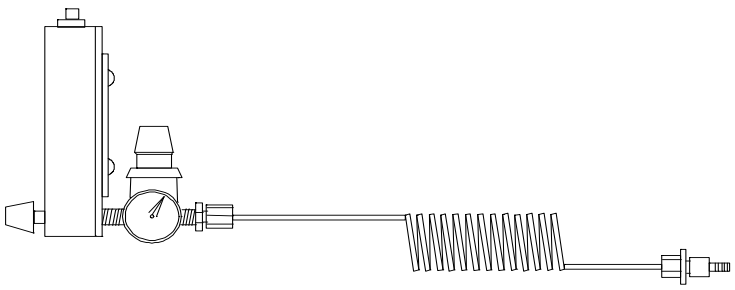
   A. Remove the flowmeter from the bracket.

   B. Remove the Connector Tube and fitting from the flowmeter.

   C. Re-connect the flowmeter to the bracket.

   D. Connect the Pressure Reducing Regulator to the lower fitting on the back of the flowmeter. Position the regulator such that the adjustment knob is straight up and the gauge points away from the bath.

   E. Connect the Connector Tube to the regulator.



Flowmeter Regulator Assembly shown with Gas Connector Tube.

Planning and Preparation

It is important to understand the procedures and equipment operation prior to the use of the equipment. High speed nitrogen evaporation requires a balance of sample volume, nitrogen flow, temperature, needle position and adjustment. Improper use can impair performance, contaminate samples or result in loss of samples. Environmental conditions are also important, examples include use of dry or wet heating media, hood airborne contaminates, gas purge purity, and sample handling procedures. If you are unfamiliar with the use of the MICROVAP System or are working with a new procedure, it is recommended that a trial run be made using a sample blank to determine optimal operating conditions.

The MICROVAP System is designed to handle one to three 96 well plates simultaneously up to the capacity of the equipment. 96 position deep well plates may also be used. Other well plates of different capacities can also be accommodated, consult Organomation for details.

The MICROVAP System is manufactured utilizing inert materials. The white translucent and black coiled tubing used is free of phthalate presence.

Instrument Controls Diagram: Single Plate, 6, 15 & 24 POSITION MICROVAP

Picture ID	Description	Function
A	Thumb Knobs	Locks manifold position when tightened
B	Flow Meter Valve	Controls flow rate of gas from supply
C	Sample Block	Medium for evaporating samples
D	Offset Collar	Alters stopping height for manifold
E	Manifold Gas Valve	Open or close gas flow to distribution manifold

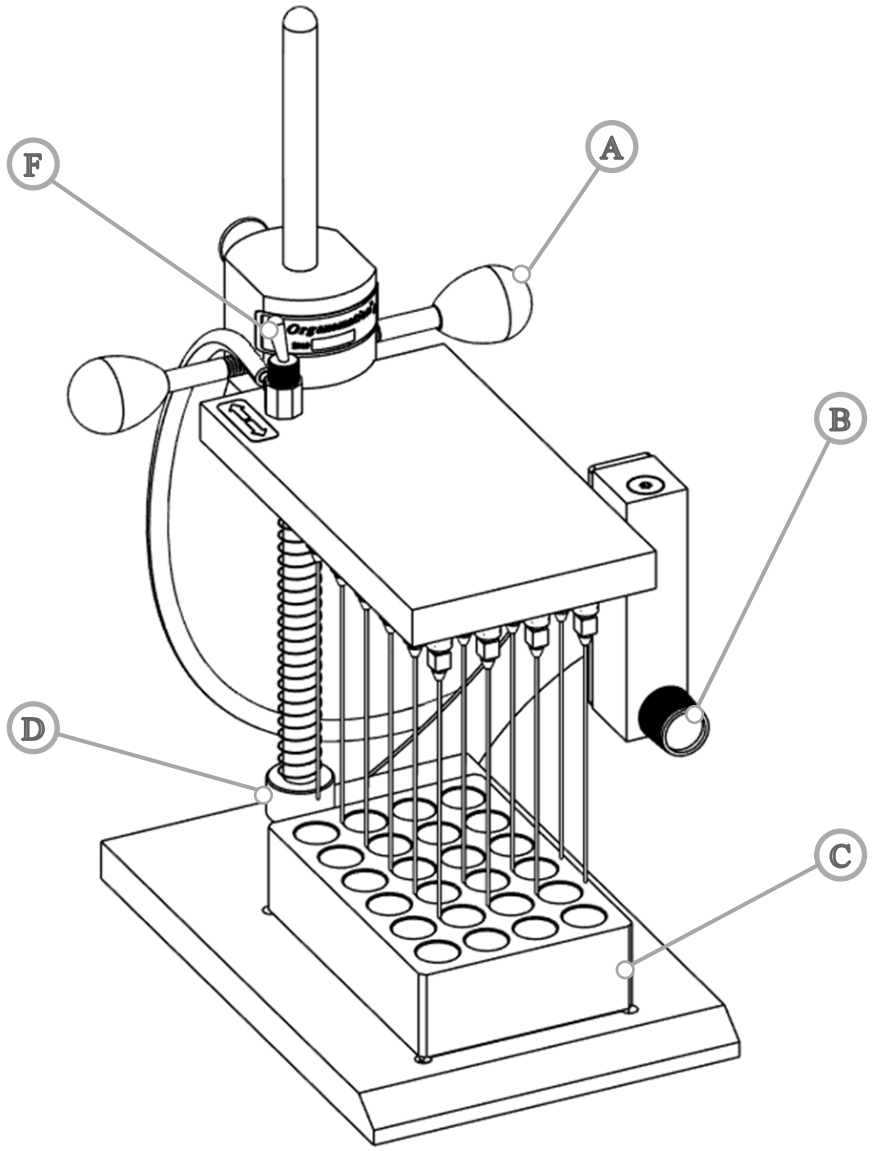
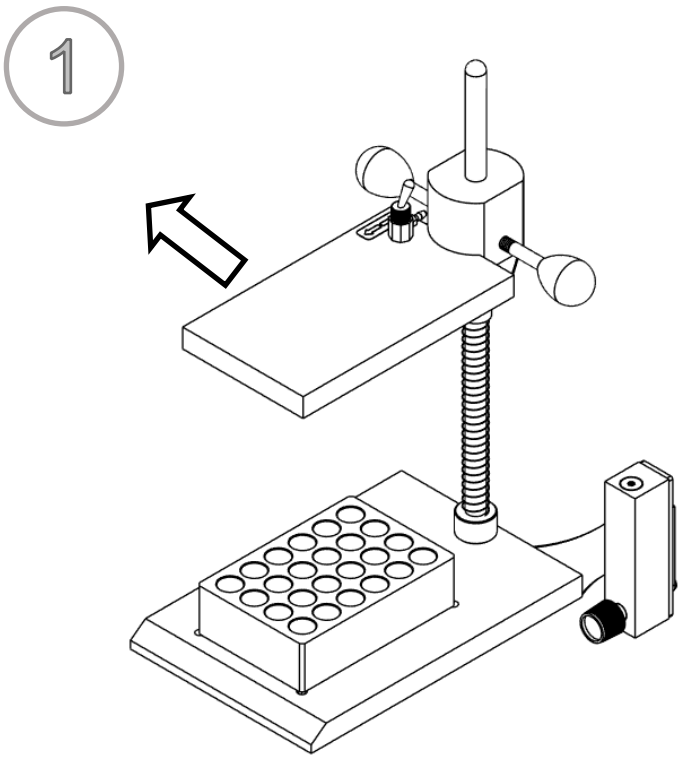
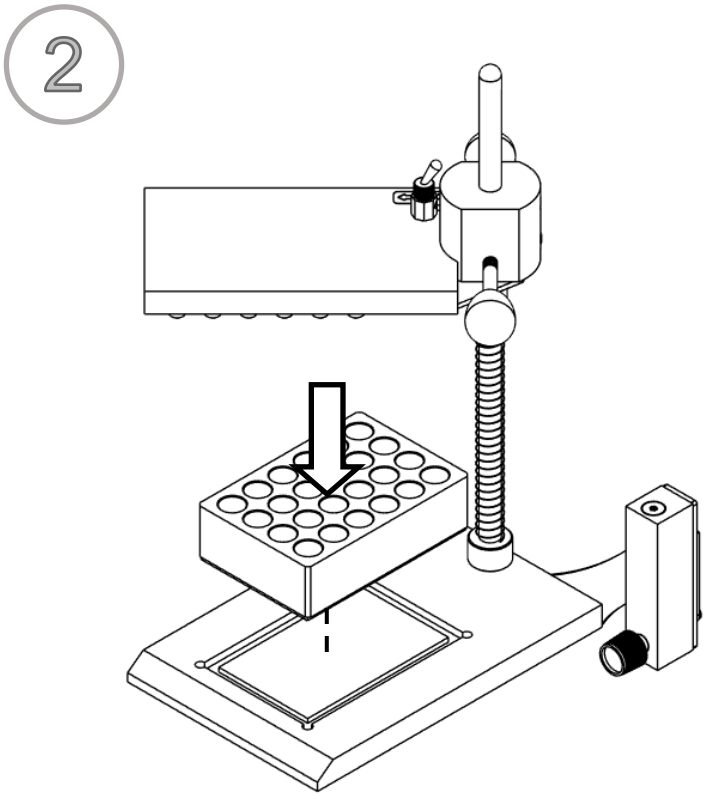


Figure 5: General MICROVAP Layout

Instrument Operation: Single Plate, 6, 15 & 24 POSITION MICROVAP



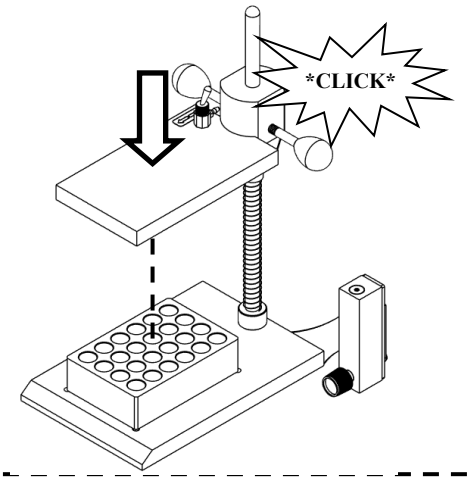
Swing the manifold away.



Place the well plate, or sample tubes, on the base plate.

Instrument Operation: Single Plate, 6, 15 & 24 POSITION MICROVAP

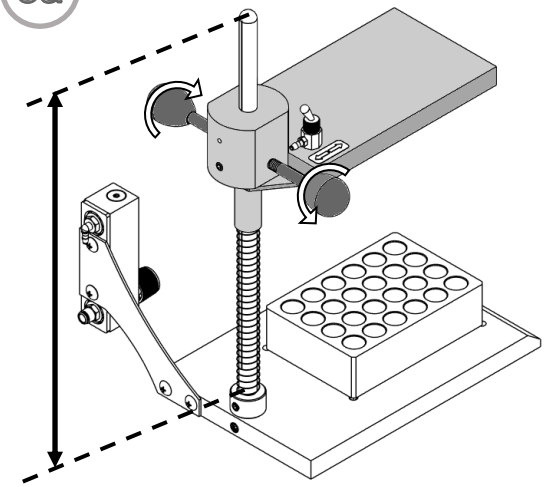
3



Re-center your manifold above the samples.

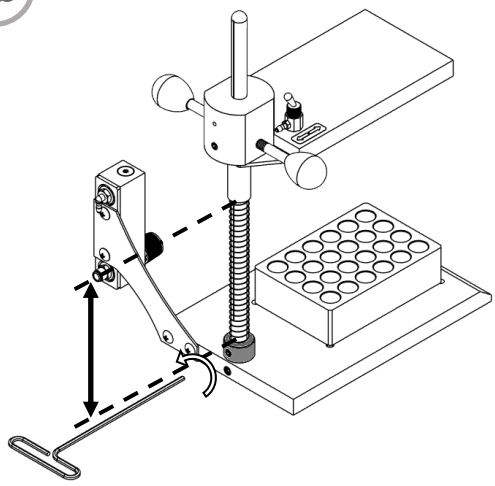
An audible sound will indicate that the manifold is positioned in the alignment groove of the rod.

3a

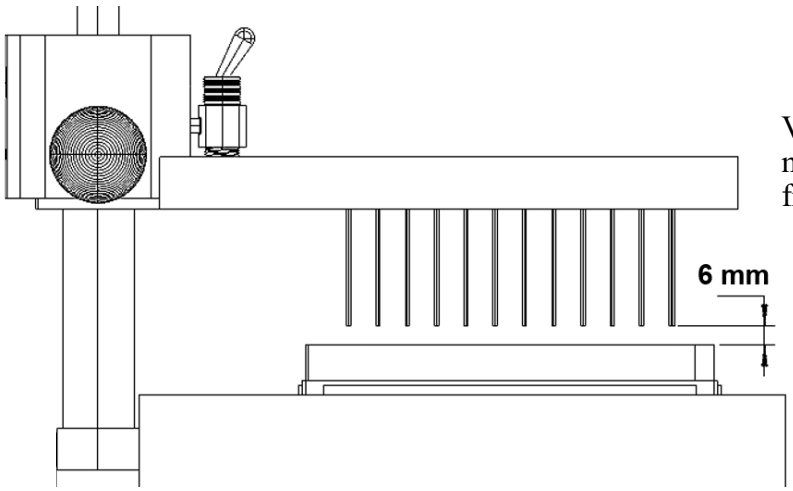


Loosen the manifold thumb knobs to adjust the instrument manifold along the rod.

3b



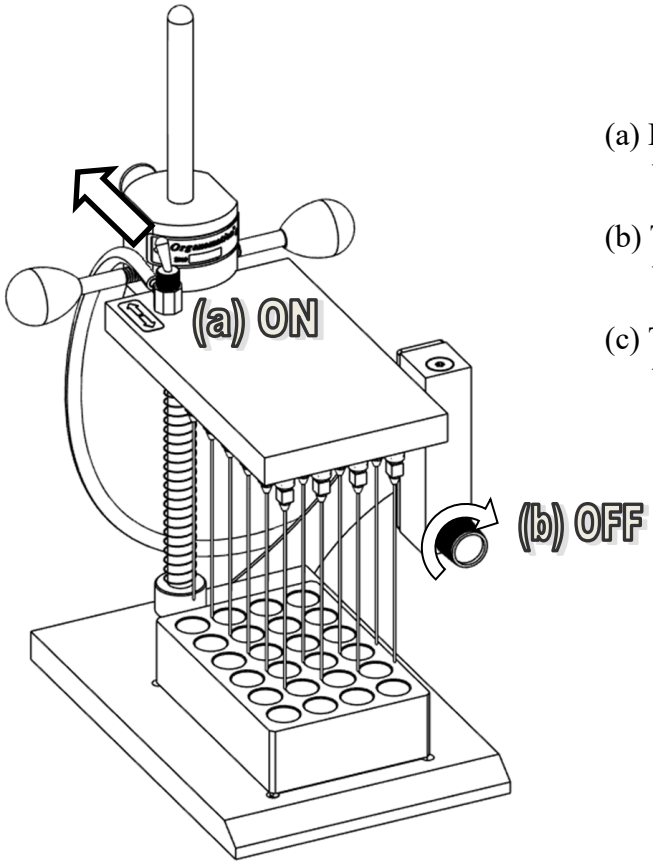
Loosen the offset collar to adjust the stopping height of the instrument manifold along the rod.



Vertically position the manifold 6mm away from the sample surface

Instrument Operation: Single Plate, 6, 15 & 24 POSITION MICROVAP

4

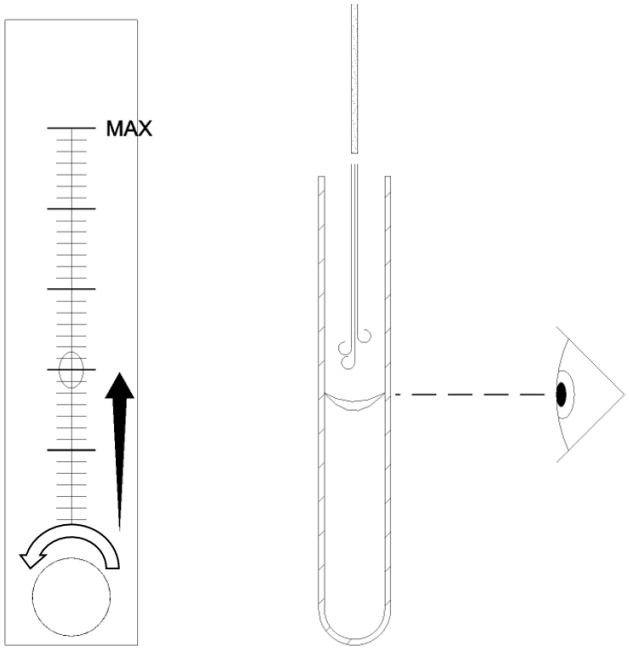


(a) Flip the manifold gas valve on.

(b) Turn the flow meter valve off.

(c) Turn on the gas supply to the MICROVAP.

5

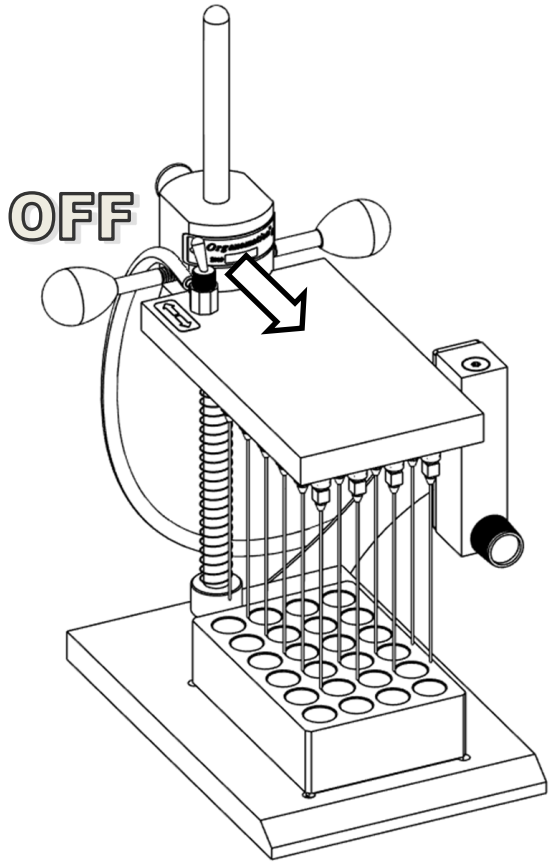


Using the flow meter valve:

Slowly increase the gas flow until a visible dimple appears on the surface of the solution.

Instrument Operation (Post-Evaporation): Single Plate, 6, 15 & 24 POSITION MICROVAP

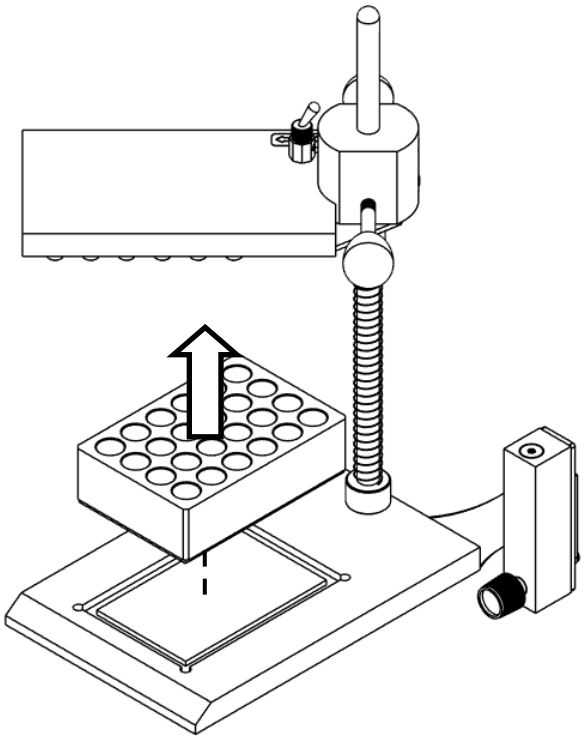
7



Evaporate as necessary.

Turn off the manifold gas valve.

8



Swing the manifold away.

Remove plate or samples.

Maintenance and Cleaning

The MICROVAP Evaporation system is manufactured from extremely durable materials and may last for years if operated and maintained properly. The following guidelines are recommended for use with MICROVAP systems.

Cleaning - The metal components may be cleaned with a soft cloth or damp sponge.

Epoxy coated parts (blue in color) should be cleaned with non-abrasive materials only, otherwise scratching will result and the coating will be compromised.

Do not use decontamination or cleaning agents that could cause a hazard as a result of a reaction with parts of the equipment or with hazardous or flammable materials to which the equipment has been exposed. If in doubt, contact Organomation.

Acidic Environment - When in contact with or exposed to acidic materials, vapors, or samples. The instrument should be cleaned immediately after use and neutralized with a suitable mild base solution of sodium bicarbonate or similar material followed by a clean water wipe. Prolonged contact with acidic materials may damage the instrument unless precautions are taken.

Needles - Needles may be cleaned periodically as needed by rinsing the tips with a squirt bottle.

Immersion - The bath case is water resistant, not water tight. Under no circumstances should the bath be immersed in any liquid or placed in a location where this may occur.

SYMPTOMS	CAUSES	SOLUTIONS
Surface deterioration on equipment.	Use of acidic materials in or near equipment.	Clean carefully with soft cloth. Remove source of acidic presence.
Phthalate Contamination	Human error	Purchase Phthalate free tubing. Exercise better handling procedures, avoid latex gloves, hand cream, rubber tubing.
Inconsistent evaporation rates. (or excessive Nitrogen use)	Nitrogen leaks. Missing needles Incorrectly seated hoist assembly	Check all connections, soap/water. Use luer plugs for positions not in use (15& 24 Position only) Lift up assembly and reposition

Service and Returns

In the event a product purchased from Organomation needs service or must be returned please follow the outlined procedures below.

1) **Contact Organomation Technical Support Department**

Before returning any product to Organomation for any reason, please contact the Technical Support Department, toll free at 888-838-7300 or email sales@organomation.com Support is available Monday through Friday from 8:30 AM to 4:30 PM EST. Support is available free of charge to customers of Organomation in good standing for all products manufactured by Organomation.

2) **Pack the product for return shipment**

Please contact Organomation for packing instructions.

The product should be packaged in its original shipping carton if available. If other packaging is required, use a suitable shipping container which will allow a minimum of two (2) inches clearance between the product and the side walls of the shipping carton. Peanuts, semi rigid foam, cardboard, and other items may be used inside for packaging. Care should be taken when packaging heavy items. Some packaging, such as peanuts, will allow the item to shift in transit and may result in damage.

3) **Insurance**

Most common carriers offer insurance. UPS and Federal Express automatically insure your product up to $100.00 without charge. It is highly recommended that you insure your product. **Organomation is not liable for any return shipping damages.**

4) **Documentation**

When returning items to Organomation, a Return Authorization Form provided by Organomation must be included with the following information: Contact persons name and phone number, return address, and statement of the problem.

5) **How will your return be handled?**

Organomation will evaluate the returned item for damage. If the return is a repair, the product will be examined for problems and a repair estimate will be made. The contact person will be contacted, at which time a Purchase Order will be requested. After the PO is issued, the product will be repaired and return shipped. Most repairs are done within a 24 hour period. Items returned for credit will be evaluated and your account credited after the item is received. The contact person will be notified immediately in the event shipping damage has occurred.

Shipping - Claims for damage and shortage

Organomation makes a sincere effort to ensure your purchase is properly packed and all items listed on the packing slip are in fact enclosed with the shipment. In the event that your purchase is damaged or if any items are missing, please follow the procedures below.

1) All packaging materials must be retained until the issue is resolved.

2) Thoroughly search all packing materials for the missing items. Review your packing list for back ordered items and the manual for a list of items affiliated with your purchase.

3) Contact Organomation immediately at 888-838-7300 or sales@organomation.com

4) If a damaged item needs to be replaced, Organomation will send this item under warranty at no charge. The damaged item must be returned to Organomation. Please follow the instructions listed in the Service and Returns section. **Important - items not returned or which are further damaged or destroyed in transit are the responsibility of the customer and will be billable.**

5) No claims for shipping damage or shortage will be accepted after 15 days of receipt of the items by the purchaser.

6) **Please contact Organomation prior to making any returns.**

All items should be returned to:

Organomation
266 River Road West
Berlin, MA 01503

Specifications

Environmental Conditions: Indoor Use Only.
Temperature 5 °C - 40 °C;
Humidity 0% - 80%

Altitude up to 2 000 m.

Gas Services Required: Nitrogen, clean air, or other inert gas.
5 - 30 Psig, adjustable.
Flow indication standard with all complete MICROVAP® systems.
Quiet air compressor available.

Sample Sizes Accepted: Model 11801: 96 well standard and deep titer plates.

Model 11806: 10-30mm diameter test tubes

Model 11815: 10-22mm diameter test tubes

Model 11824: 10-17mm diameter test tubes

Consult factory for optional smaller & larger sizes.

Sample Types Utilized: Organic Solvents to be evaporated at ambient temperature.
Water and aqueous solutions.

Safety Provisions: Optional PTFE coating.

Notes:

Organomation®
266 River Road West
Berlin, MA 01503-1699 USA
organomation.com
978-838-7300

Declaration of Conformity

Organomation
266 River Road West
Berlin, MA 01503
United States

We, Organomation, declare under our sole responsibility that the following products

Cat# 11801;	MICROVAP for 96 well microplate, 230V
Cat# 11801-RT;	MICROVAP for 96 well microplate with acid resistant coating, 230V
Cat# 11806;	6 Position MICROVAP Evaporator, 230V
Cat# 11806-RT;	6 Position MICROVAP Evaporator with acid resistant coating, 230V
Cat# 11815;	15 Position MICROVAP Evaporator, 230V
Cat# 11815-RT;	15 Position MICROVAP Evaporator with acid resistant coating, 230V
Cat# 11824;	24 Position MICROVAP Evaporator, 230V
Cat# 11824-RT;	24 Position MICROVAP Evaporator with acid resistant coating, 230V

and all corresponding 230V models (option codes -2E, -2G, -2I, -2D) are in conformity with the following directives, standards, and other normative documents:

Directive 2014/35/EU	**Low Voltage Directive (LVD)**
Standard used:	EN 61010-1:2010/AMD1:2016, EN 61010-2-010:2010
Directive 2014/30/EU	**Electromagnetic Compatibility Directive (EMC)**
Standard used:	EN 61326-1:2013, EN 61000-3-2, EN 61000-3-3
Directive 2011/65/EU	**Restriction of Hazardous Substances (ROHS)**

Authorized Signature

Andrew McNiven

President
January 30th, 2024