Organomation™

Laboratory Evaporators and Extractors

N-EVAP™

Nitrogen Evaporation System

Instruction Manual

For Models: 11106, 11155 and 11250 (all water bath configurations)

Your Partners In Sample Preparation since 1959

978.838.7300 • organomation.com

Organomation™

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Berlin, MA 01503-1699 USA
organomation.com
978-838-7300

Dear Customer,

Thank you for choosing a Sample Preparation Instrument from Organomation Associates. We appreciate your business and believe that the instrument and accessories you purchased will work very satisfactorily for many years to come. Whether you have added another instrument to your laboratory, or have purchased one for the first time, we will stand behind our equipment.

Should you have questions regarding the set up or operation of this instrument or questions regarding other Organomation products please contact us. The toll free telephone number for sales support and customer service is 888 838-7300. If you purchased the instrument through one of our dealers you should contact them first.

Any comments from you would be much appreciated. We listen to our customers which, in turn, enables us to provide the best instruments available. Please fill out the Warranty and Service Registration Form and return it within ten days of receipt of instrument. Once we have the completed form, your warranty will be activated as stated. The Warranty Form can be mailed or faxed to us at 978 838-2786.

The operating manual contains literature and product lists describing our complete line of laboratory instruments. It provides a convenient way to order new instruments, accessories or repair parts. If you need a verbal or written quote on specific items please call us at our toll free number or e.mail us at the address above.

Again, thank you for selecting ORGANOMATION ASSOCIATES products.

Sincerely,

Andrew McNiven
President

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.

Cat #	Instrument Size
11106	**6 Position N-EVAP Nitrogen evaporation system**
11155	**12 Position N-EVAP Nitrogen evaporation system**
11250	**24 Position N-EVAP Nitrogen evaporation system**

	Flowmeter Assembly with Mounting Bracket & Connector Tube
NA1124	0-10 LPM for 6 and 12 position N-EVAP
NA1221	0-20 LPM for 24 position N-EVAP
NA1110	Thermometer 0 - 100º Celsius
NA0603	19ga x 4" Stainless Steel Luer Lock Needles, blunt end 6 Needles for 6 Position N-EVAP 1 Dz for 12 Position N-EVAP 2 Dz for 24 Position N-EVAP
B1102	OA-HEAT Water Bath 500W, for 6 or 12 position N-EVAP
B1201	OA-HEAT Water Bath 800W, for 24 position N-EVAP
V11291	SS Gas Tube 1/4" (7mm) OD
	T-Handle Hex Key adjustment tools
V10127	1 ea. 1/8" x 6" Long, for 6, 12 & 24 position N-EVAP
V10128	1 ea. 5/32" x 6" Long, for 6, 12 & 24 position N-EVAP
	Manual for N-EVAP models 11106, 11155, 11250
NA0636	Pasteur Pipette Adapter, 1 Dozen per set (Optional)
NA0637	Pasteur Pipette Adapter, 1 Dozen per set (Optional)

V15.1

Option Codes and additional items shipped

The following list contains option codes and items which may have been shipped in conjunction with the standard parts shown on the previous page. Please check your packing list and order information carefully to determine if these items are included in your shipment. For a complete list of available accessories, please refer to the Accessories Section.

Your shipment may contain the following optional items:

Option	Description
-O	6, 12 or 24N-EVAP Instrument ordered without OA-HEAT water bath, includes a flowmeter mounting bracket (included with flowmeter) for direct mounting to stand base versus to the bath.
-P	Pasteur Pipet Adapters replace SS needles on the N-EVAP. 1 or 2 dozen are provided with the respective N-EVAP size ordered, reference part # NA0636.
-RT	6, 12 or 24 Position N-EVAP Instrument and OA-HEAT water bath are coated in PTFE Instrument is black in color. The water bath is blue on the outside and black on the inside.
-T	SS Needles 19 gauge x 4" (100mm) Long, are coated in PTFE and are black in color.
-Z	OA-HEAT water bath has been modified for the Type-Z Purge Intrinsically Safe bath option. Additional parts include: differential pressure gauge, mounting bracket, and tubing.
-2	OA-HEAT water bath is wired as a 240 Volt unit.

Instrument Description

The N-EVAP Nitrogen Evaporation System is designed for general evaporation and / or concentration of analytical or biological samples in a variety of test tube based glassware under controlled and reproducible conditions.

The instrument portion is circular and is designed to hold test tubes from 10 to 30 mm OD. The unit will rotate in any direction and may be raised or lowered at will. 24 position and larger units have spring lift assemblies. The instrument may be used with OA-HEAT or other heating baths or may be ordered as a standalone unit. Construction is primarily 304 and 314 stainless steel, anodized aluminum, chrome plated brass, and Delrin (Acetal). Unit may be used with SS needles or disposable glass pipets. Coating in PTFE is available for acidic applications. All tubing provided is phthalate free.

The complete instrument is shown below.

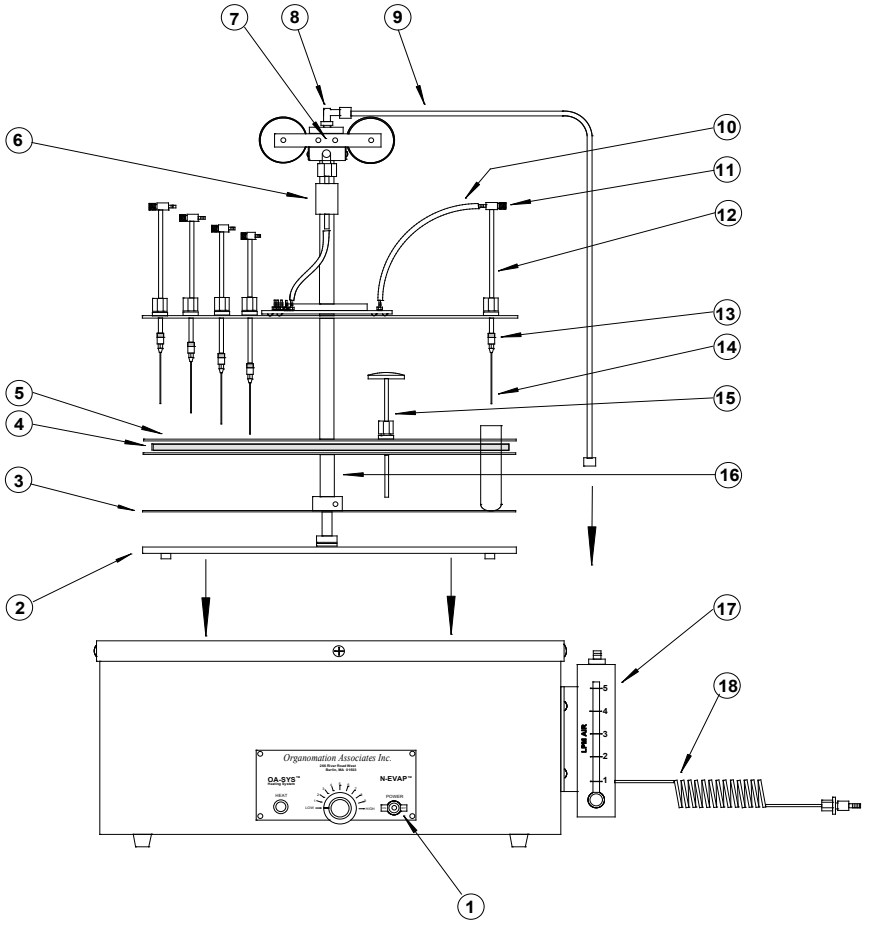

Figure 1 - Model 112 shown

PARTS LIST

Item	Part Name	11106	11155	11250	Description
(1)	Water Bath	B1102	B1102	B1201	Round water bath, provides heat.
(2)	Stand	P1125	P1125	P1225	Supports N-EVAP in bath or bench.
(3)	Support Tray	P1114	P1114	P1214	Supports test tube samples.
(4)	Sample Spring	P0614	P0614	P0614	Holds and centers samples.
(5)	Sample Holder	NA1113	P0628	P0715	Holds various sized samples.
(6)	Filter	NA0403	NA0403	NA0403	Removes particles from gas stream.
(7)	Hoist Pulley and Band Spring	P1224-M	P1224-M	P1224	Assists lifting of instrument.
(8)	Swivel Fitting	P1204	P1204	P1204	Connects gas tube for unlimited rotation.
(9)	Gas Tube	P1230	P1230	P1230	Delivers gas to rotating instrument.
(10)	Silicone Tubing	P0610	P0610	P0710	Delivers gas to each Valve Tube Assembly, Phthalate free.
(12)	Valve Tube Assembly	P0626	P0626	P0626	Delivers gas to each sample.
(13)	Luer Fitting	P0627	P0627	P0627	Connects needle or Pipet Adapter.
(14)	Blunt Needle	NA0603	NA0603	NA0603	Delivers gas into sample tube.
	PTFE coated (Optional)	NA0603-T	NA0603-T	NA0603-T	PTFE coated (Optional)
(15)	Thermometer	NA1110	NA1110	NA1110	Measures bath temperature.
(16)	Center Tube Assem.	P1117	P1117	P1205	Allows mounted hardware to rotate.
(17)	Flowmeter / Bracket	NA1221	NA1221	NA1521	Meters gas flow to all samples at one time.
(18)	Connector Tube	NA1101	NA1101	NA1101	Connects gas from source to the flowmeter.

Location

The N-EVAP Evaporator System should be located on a bench top or in a chemical fume hood if hazardous or flammable materials and solvents are to be used. The location should provide the necessary support services for the instrument. These include electrical power (unless it is a –O unit) and a clean inert gas source (Air or Nitrogen). Please review the Specifications Section for further information.

Bath Setup

1. Position the bath on a stable flat surface such as a lab bench or in a chemical fume hood.

2. Turn the bath toggle switch to the "OFF" position.

3. Turn the bath thermostat knob to its lowest position.

4. Plug the bath electrical cord into a 3 wire grounded electrical outlet rated for 110-120 VAC, 50-60 Hz, single phase, 15 amps.

   Optional 220 VAC baths are clearly marked and should be plugged into a 3 wire grounded electrical outlet rated for 220-240 VAC, 50-60 Hz, single phase, 15 amps.

5. Fill the bath with water to within 0.5 inch of the bath rim. The use of de-ionized water will reduce mineral build up and extend bath operational life and is recommended.

Bath Setup (Continued)

7. Type-Z Purge Intrinsically Safe Bath option - If you do not have this option, please proceed to the next section.

Procedures for operating this system may be found in the Operation Section. Quick start instructions are posted on the front of the bath. A copy of the NFPA (National Fire Protection Agency) guidelines for intrinsically safe equip-ment are in the appendix. Please refer to Figure 3 below for parts list and installation.

A. Install the Type Z Purge Gauge Assembly to the rear of the bath as shown. The bracket attaches to the rear of the bath and is held in place by a 6-32 x 1/4" screw on the shoulder spacer and by a 1/4" bulkhead hex nut on the gas inlet fitting.

B. Connect the small white silicone tube attached to the gauge to the gas inlet fitting using the compression nut provided.

C. Attach the filter with 5 foot tube to the plastic elbow fitting located at the base of the bath. Insert the filter into the fitting and tighten the nut. Connect the tube to a clean gas source.

D. Test the system by turning on the gas flow to the Z Purge System. Adjust the gas flow until the gauge reads 0.1 inches water pressure.

WARNING - If this unit is located in a hazardous area where volatile fumes are present, the Z-Purge System must be activated for a minimum of 10 minutes prior to activation of bath power. Please review the Safety and

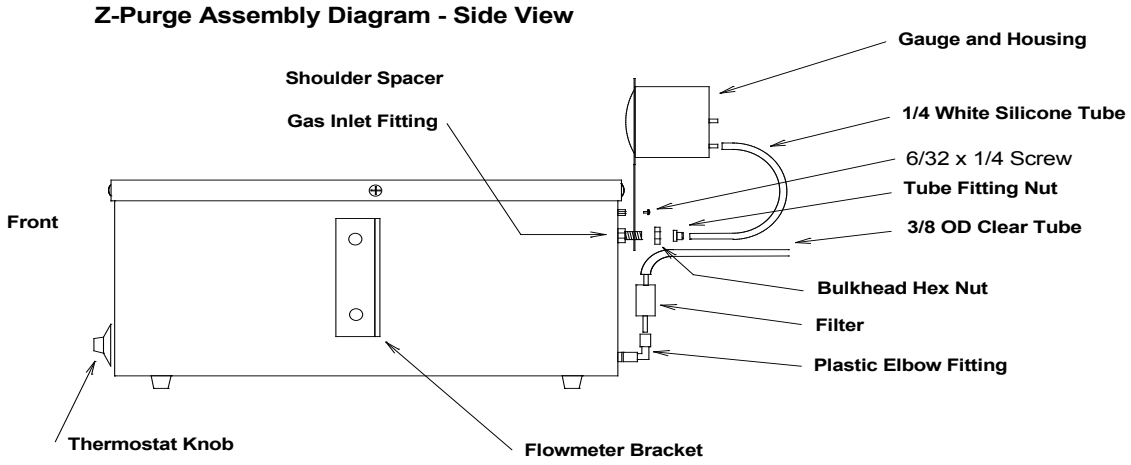

FIGURE 3

Bath Setup (Continued)

8. Flowmeter Assembly - If an OA-HEAT bath was purchased without an N-EVAP instrument, proceed to the next section.

A. Attach the flowmeter to the bracket mounted on the bath with the two 10/32 x 1/2" screws provided. The meter should be positioned with the needle valve facing forward and positioned closest to the bench.

B. Connect the Connector Tube to a clean gas source (Air or Nitrogen). Source should be capable of being regulated from 0 to 30 psig. If source is above 30 psig, then Organomation part # NA0630 Pressure Reducing Regulator will be required. Please consult Organomation Technical Support for assistance.

9. Pressure Reducing Regulator Option - If you do not have this option, proceed to the next section. When purchased with an N-EVAP System, this item is pre-installed onto the flowmeter, between the flowmeter and the Connector Tube. Refer to Figure 4 below.

A. Remove the flowmeter from the bracket.

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

C. 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.

D. Connect the Connector Tube to the regulator.

E. Re-connect the flowmeter to the bracket.

Presure Reducing Regulator Diagram - Side View

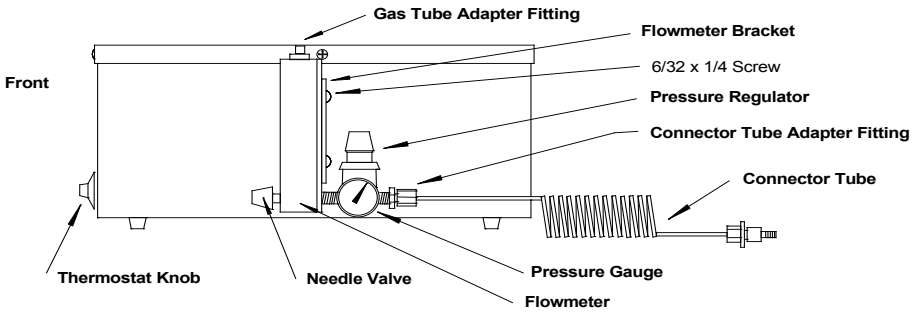

Figure 4

Instrument Setup

1. Place the instrument and stand into the water bath or on a flat level surface. The stand is loose relative to the instrument and must be held in place while placing the assembly into position.

2. Flowmeter Assembly - N-Evap Systems purchased without an OA-HEAT water bath. **Please proceed to the next section if you have already set up a water bath.**

   A. Position the stand base so that one foot screw is positioned to the right and centered (at approximately 3 o'clock).

   B. Remove the cap nut, position the flowmeter bracket over the foot screw, and replace the cap nut. Position the flowmeter so that it faces forward and tighten the cap nut with a wrench.

3. Loosen the Thumb Screw at the top of the unit. Raise the instrument to its highest position, then retighten the Thumb Screw to hold the instrument in place.

4. Connect the SS gas line as follows:

   A. Connect the SS Gas Tube into the swivel fitting at the top of the instrument. Insert the tube into the fitting as far as it will go, approximately 1/2 inch (13mm).

   B. Pull the hoist assembly upright so that instead of being at a right angle to the center rod, it is sitting straight on top of it.

   C. Connect the lower end of the SS Gas Tube to the fitting on the top of the flowmeter. Secure with a wrench. (To release the gas tube, depress the gray metal ring on the swivel fitting.)

5. Install the SS Thermometer into the fitting on the Sample Holder Assembly. Tighten the nut to secure in place.

6. Adjustments for test tube sizes above or below 100mm length as follows:

   A. Model 111, for test tube sizes between 25 and 100mm length, the lower support tray may be raised by loosening the set screws in the collar. Raise the

Instrument Setup (Continued)

tray to the correct height, align the slots on the tray to match the test tubes, and retighten the set screws. For tubes less than 25mm, the tray may be removed and flipped over so that the collar is underneath the plate.

B. Model 112, for test tube sizes between 25 and 100mm length, the lower support tray may be raised by turning each of the three thumb screws located on the upper surface of the sample holder plate. Rotate clockwise to raise the support plate and counterclockwise to lower it. For mixed test tube sizes, the support plate may be adjusted in a "tilted" position.

C. For test tubes greater than 100mm length or if Pasteur pipet adapters are used, the top plate may be adjusted upwards to its second position on the center tube. Locate the small hole approximately 35mm above the manifold in the center tube. Loosen the set screws in the manifold and slide the top plate assembly upwards until one set screw is over the upper hole. Retighten the set screws.

D. Sample Holder Plate Adjustment - This item may need to be adjusted from time to time as follows:

1. Loosen the set screws located in the collar above the plate for Models 11106, 11155 & 11250.

2. Raise the sample holder to the desired height, align with the Valve Tubes to center the needles, and secure in place with the set screws.

7. Needles and Pipets - SS Luer Lock Needles are supplied with the standard N-EVAP system. Optional Pasteur Pipet Adapters allow the use of glass pipets. These fittings replace SS Needles on the N-EVAP. Pasteur Pipet Adapters allow the use of both needles and pipets.

A. SS Needles - Install into the luer fitting at the bottom of the Valve Tube assembly by rotating the needle 1/2 turn. Do not over tighten, finger tight only.

B. Pasteur Pipet "Push-On" Adapters - Push the pipet onto the end of the adapter. The tubing on the end of the adapter will make a gas seal. Two sizes of tubing are provided for larger or smaller diameter pipets. Once the pipet is on the adapter, screw the adapter into the luer fitting on the instrument just like a needle.

Instrument Setup (Continued)

8. Raise all Valve Tubes to their highest position. The plastic tube nuts on the top plate should be adjusted so that the Valve Tubes slide easily by hand, but do not fall when released.

8. Turn all needle valves on the Valve Tube Assembly off by rotating clockwise.

9. Close the valve on the flowmeter by rotating clockwise.

Safety Considerations

READ THIS SECTION BEFORE EQUIPMENT OPERATION!

This equipment is designed for use in the Analytical or Environmental Laboratory by trained laboratory personnel for evaporative applications. 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 Support at 978-838-7300 for product suitability, safety, and alternative operating instructions.

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. Do not use this equipment with materials with autoignition points below 100 ºC.

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

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

5. Do not move the product when hot. Scalding from bath water may result.

6. Do not open bath enclosure while energized - **SHOCK HAZARD**!

7. Repairs of electrical components should be conducted by a trained electrical technician. Incorrect replacement parts or assembly may damage the product and create a serious safety hazard for the user. Factory repair is strongly recommended.

8. Highly flammable materials such as Petroleum Ether or Hexane should not be used with this product unless the Type-Z Purge intrinsically safe bath option is installed and operating.

9. Use of acidic or base materials may damage this product and are not recommended unless the product was ordered with the optional protective coating in PTFE .

Instrument Controls

Toggle Switch - Located on the front right bath label. Turns power to the bath on and off.

Thermostat Knob - Located on the front center bath label. Adjusts the bath temperature.

Amber Light - Located on the front left bath label. Indicates heating when heaters are energized, will cycle at temperature set point.

Planning and Preparation

It is important to thoroughly 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, bath 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 N-Evap 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 N-EVAP System is designed to handle multiple samples simultaneously up to the capacity of the equipment. Glass or plastic tubes from 10 to 30mm OD and up to 150mm height may be accommodated. Centrifuge tubes, scintillation vials, small beakers and Erlenmeyers (50 ml) may also be used. Choice of SS needles or disposable glass pipets (adapters) are available.

The N-EVAP System is manufactured utilizing inert materials. The translucent silicone rubber tubing used in the gas distribution system is certified 100% Phthalate free.

Type Z-Purge Bath Operation - Optional

1. Turn on the gas flow to the Z-Purge System.
2. Adjust flow to 0.5 inches water pressure.
3. Purge bath for 10 minutes.
4. Adjust gas flow to 0.1 inches water pressure.
5. Proceed to next section

Bath Operation

1. Press the reset button on the GFCI (if present).

2. Turn the bath toggle switch on.

3. **Thermostat Control** - Adjust the bath thermostat to the desired temperature, reference Figure 5 for approximate dial settings versus temperature.

4. Allow the bath to heat to the desired temperature and stabilize, see figure 6.

5. Bath water level should be checked at the beginning of operation and every three hours thereafter. Water level should be maintained at 0.5" from bath rim.

Over-Temperature

Temperature is controlled by Thermostat or Digital Temperature Controller. All Organomation heating systems utilize a High Temperature Protection Switch to protect against temperature control failure. In the event of temperature control failure, the heating unit will operate at maximum temperature levels. Equipment should be monitored periodically during use to ensure user selected parameters are being maintained. Should abnormal temperature values be observed, turn the unit off. Unplug it from the wall. Contact Organomation Technical Department at your earliest opportunity.

Do not operate the equipment if loss of temperature control is detected.

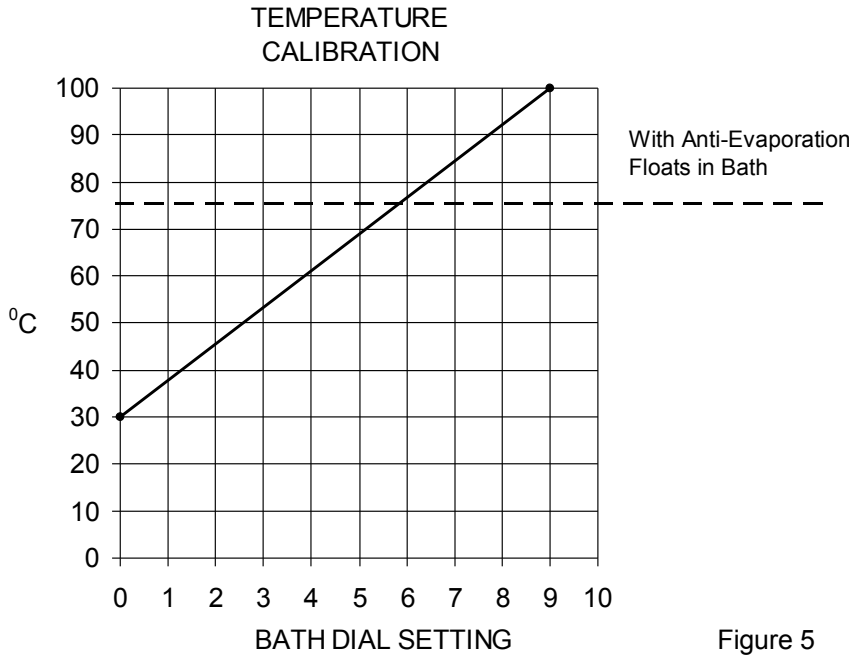

Figure 5

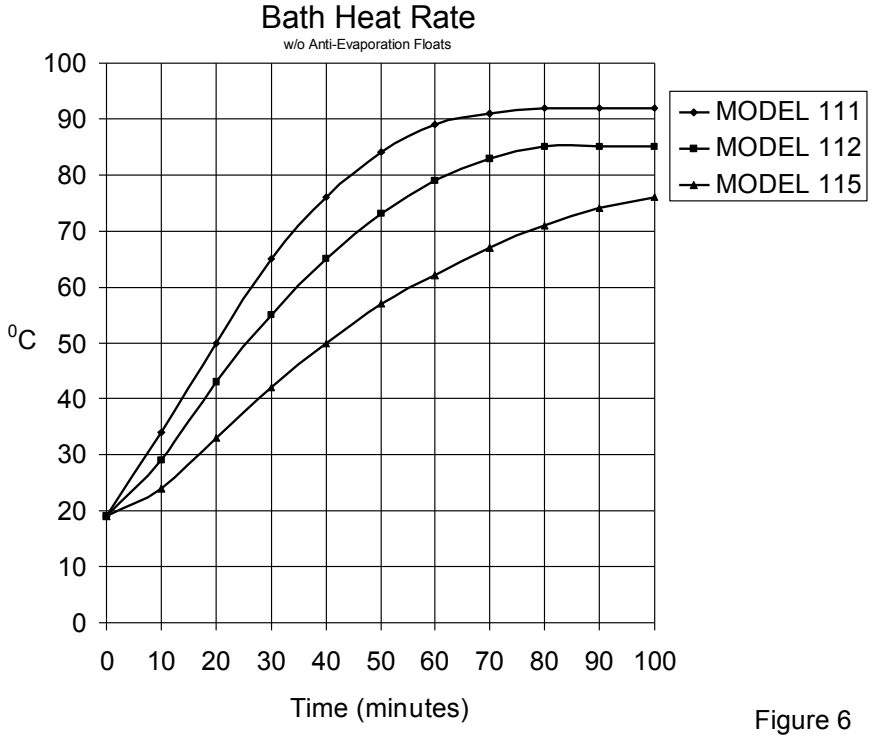

Figure 6

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Instrument Operation

1. Raise the instrument to its highest position and secure.

2. Place the test tubes with samples into the sample holder plate assembly. The positions are numbered for sample identification. The sample holder spring will hold the test tube firmly in place. The test tube bottom should rest on the support tray. If the support tray assembly is too low, adjust it upwards as follows:

   For Model 111 N-Evaps only (6 and 12 position units).

   A. Loosen the two set screws in the support tray assembly collar.

   B. Raise the support tray upwards until the test tubes being used both rest on the support tray and extend a minimum of 0.5 inch (13mm) above the sample holder assembly.

   C. Align the slots on the support tray plate with the test tubes.

   D. Secure the support tray in place by re-tightening the set screws.

   For Model 112 N-Evaps (24 Position units)

   A. Adjust the support tray up or down by turning the three thumb screw knobs located on the sample holder assembly. Rotate clockwise to raise the support tray and counterclockwise to lower it.

3. Install the SS needles or pipets for the number of positions to be used. Reference the instrument setup instructions for detailed needle or pipet installation instructions.

4. Open the needle valve at the top of the valve tube one revolution for each position to be used.

5. Lower the needle/valve tube assembly until the needle or pipet tip is 1/4 inch (6mm) from the solution surface.

   Adjustment:

   The valve tube assembly will slide up or down through the retaining nut on the top plate assembly by applying even pressure from the top. Tension may be adjusted by tightening or loosening the retaining nut.

6. Open the needle valve on the flow meter to the correct flow rate for the number of positions being used. 0.33 LPM for small diameter test tubes (10 - 16 mm OD) and 0.66 LPM for large diameter test tubes (16 - 30 mm OD).

Instrument Operation (Continued)

7. Adjust the needle valve for each sample as needed so that a dimple in the surface of the sample is created by the gas flow. Avoid splashing, as this may cause sample loss and possible contamination. Adjust the needle tip distance from solution upwards as needed.

8. Continue the evaporation until complete. For non-dryness endpoint requirements, it will be necessary for a technician to monitor the evaporation and to remove the samples manually once the desired endpoint is reached. Refer to the next section for refinements and operating tips for these procedures.

9. At the end of the evaporative process, rinse the needle or pipet tips with one or two drops of solvent using a clean pippet. This step is optional, but should be used if the following conditions apply: sample splashing occurs, needle or pipet tip is accidentally immersed in the sample, or micro quantities of material are to be recovered.

10. Remove samples when done by sliding the valve tube assembly upwards and lifting the sample from the sample holder.

11. When evaporation is complete and all samples are removed, proceed as follows:

    A. Turn off the gas source.
    B. Close the needle valves and the flow meter valve.
    C. Turn off the bath power (toggle switch).
    D. Remove and clean the needles. Pipets should be disposed of properly.
    E. Refer to Maintenance Section for bath and instrument care and upkeep.

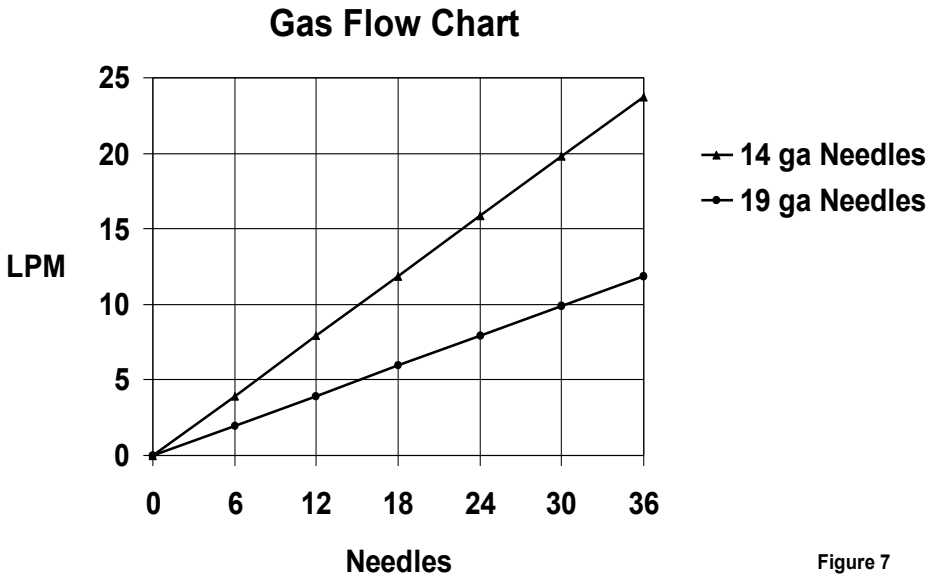

Figure 7

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Maintenance and Cleaning

The N-EVAP 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 N-EVAP systems.

Heating Media - Tap water, distilled water, de-ionized water, and bath heating oils may be used. Distilled and de-ionized water are preferred as they reduce scale and mineral buildup on bath walls.

Paraffin (wax) may be used with the Z-Purge option.

Do not use organic solvents as a heating medium.

Algaecide - The use of algaecide in the bath water poses no threat to the water bath and will keep biological materials under control. Algaecide should not be acidic. Verify type of algaecide used to insure that it will not adversely affect the samples being processed.

Recommended Algaecides:

VWR brand - Clear Bath®
Fisher Scientific Brand - Bath Clear®

Follow manufacturer instructions concerning use and disposal of these materials.

Water Changes - The bath water should be changed once per week (recommended), but not less than once per month.

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 rinse. Prolonged contact with acidic materials will damage the instrument unless precautions are taken.

Needles - Needles should be solvent cleaned after every use to reduce the chance of contamination. Solvent rinsing, autoclaving, and Soxhlet Extracting are viable techniques.

Maintenance and Cleaning (Continued)

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. SHOCK HAZARD!**

Cleaning - **The stainless steel components** may be cleaned with a cleaner approved for use with Stainless Steel. Non abrasive cleaners are recommended to preserve the surface finish, however an abrasive material may be used on areas with heavy mineral buildup. Non abrasive scouring pads are recommended. Steel wool may be used on heavily soiled areas. Rinse all cleaned areas with water using a sponge or towel.

PTFE coated parts (black in color) and **Epoxy coated parts** (blue in color) should be cleaned with non-abrasive materials only, otherwise scratching will result and the coating will be compromised. Rinse with clean water using sponge or towel.

NOTE: Do not rinse electrical equipment under running water!

Recommended Cleaning Agents:

Sheila Shine® - Stainless Steel cleaner and polish	non-abrasive
Simple Green® - All Purpose Cleaner	non-abrasive
Orange Clean® - All Purpose Cleaner	non-abrasive
CameO® - Aluminum & Stainless Steel Cleaner	abrasive
AJAX® Cleanser	abrasive
Comet® Cleanser	abrasive

Decontamination - No hazardous materials are used in this equipment. In the event of a hazardous material spill by the user or outside source, immediately contact your laboratory safety officer for instruction. Reference your Material Safety Data Sheets (MSDS) for instructions on proper cleanup and handling procedures.

Contact Organomation Technical Department at (978) 838-7300 or sales@organomation.com concerning any issue regarding decontamination and / or for alternative cleaning procedures.

SYMPTOMS	CAUSES	SOLUTIONS
No Power to bath.	Electrical outlet not energized. Bath power cord not plugged in. GFCI not reset (option). Internal electrical fault.	Energize electrical outlet. Plug in bath power cord. Reset light gray switch on GFCI. Contact factory for instructions.
Bath does not heat. (heat light is on)	Bad wire connection. Defective high temperature protection switch. Defective thermostat control	Bath will require service, contact factory for instructions.
No temperature control. (temperature continues to rise)	Defective thermostat control	Replace thermostat, contact factory for instructions.
Bath will not heat above 65 - 75 C.	Open faced bath, no coverdisk. One of two heaters defective. Defective high temp. switch Defective thermostat	Purchase anti-evaporation floats. Replace heater, switch, or thermostat, contact factory for instructions.
GFCI trips or will not reset.	Water in bath causing leakage. Defective GFCI.	Refer to “water in bath” section. Replace GFCI.
Water inside bath.	Water floods in hood. Leaky bath drain fitting. Bath surface spill. Pinhole in bath pan.	Consult factory, do not disable GFCI - serious safety hazard. Disassemble bath, dry all contents thoroughly. Return for service highly recommended.
Rust in bath or equipment.	Use of acidic materials in or near equipment.	Clean carefully with steel wool. Remove source of acidic presence. Return unit to factory to be coated in PTFE.
Phthalate Contamination	Human error	All tubing is Phthalate free. Exercise better handling procedures, avoid latex gloves, hand cream, rubber tubing.
Inconsistent evaporation rates. (or excessive Nitrogen use)	Nitrogen leaks. Incorrect needle valve adjustment	Check all connections, soap/water. Close needle valves - open valves one revolution and adjust flow using flowmeter.
Biological growths in bath	Algae, molds, etc. in bath water	Use algaecide, change bath water once per week. Clean all wetted surfaces.

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 to receive a Return Authorization document. Support is available Monday through Friday from 9:00 AM to 4:30 PM EST. Support is free of charge to customers of Organomation in good standing, and for all products manufactured by Organomation.

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

Please include your Return Authorization form inside your shipment so that the item returned can be easily identified. 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 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. Return for credit items will be evaluated and your account credited after the item is received and evaluated for damage. 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.

All items should be returned to:

Organomation Associates, Inc.
266 River Road West
Berlin, MA 01503

Parts Identification

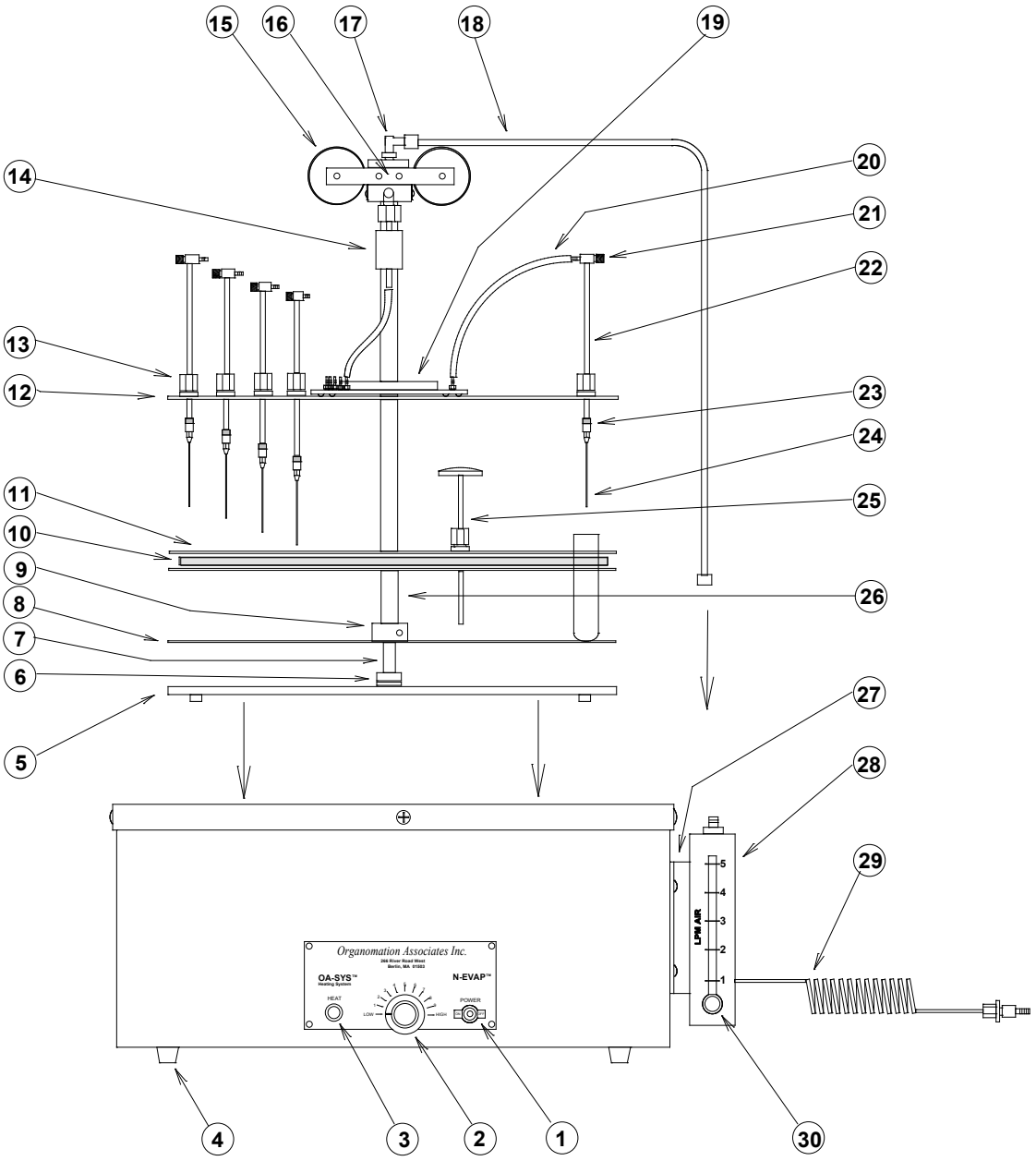


Figure 8

Parts List (See Figure 8)

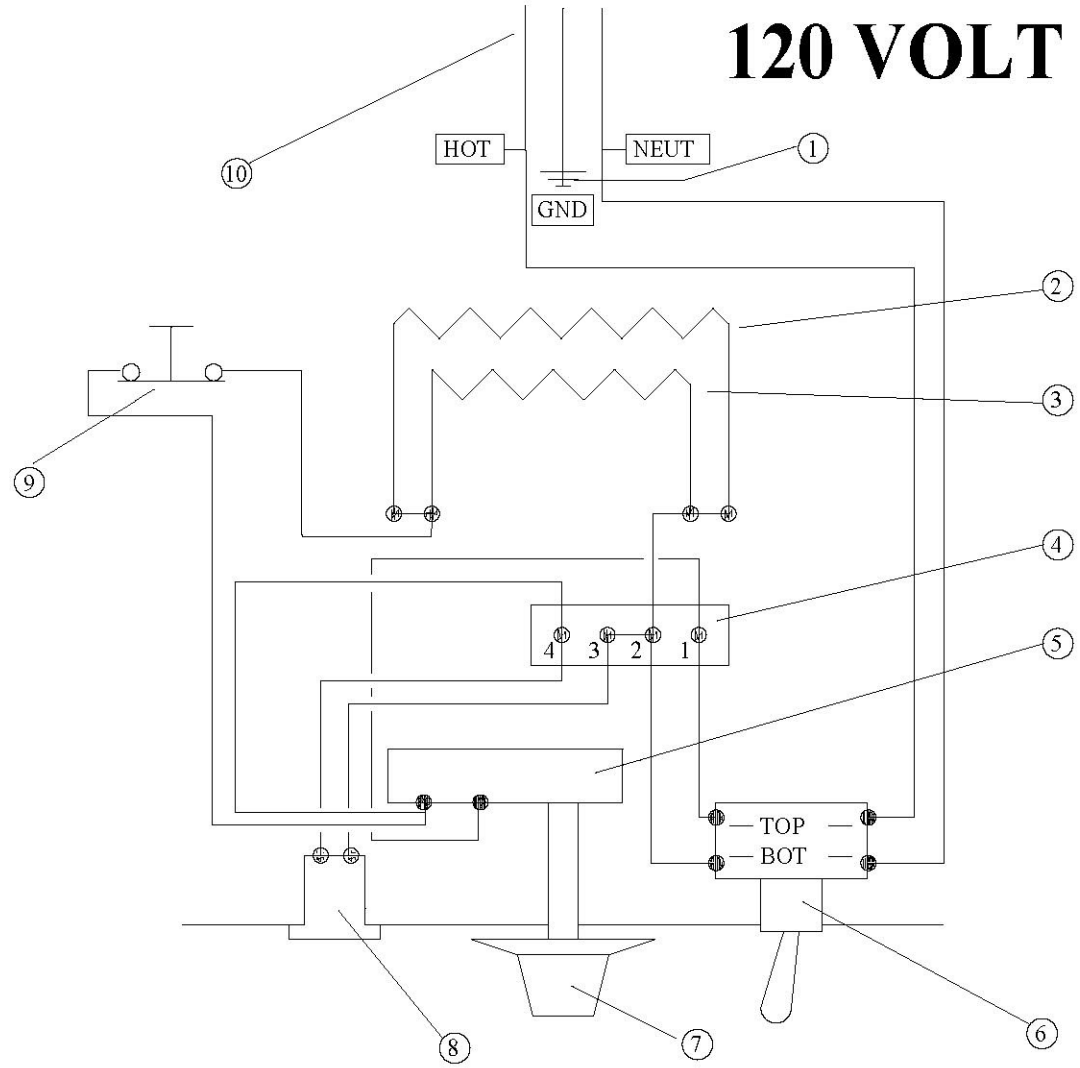
Item	Part Name	Description
(1)	On/Off Toggle Switch	Turns on bath power.
(2)	Thermostat adjustment knob	Controls bath temperature.
(3)	Amber heat light	Indicates when bath is heating.
(4)	Bath Feet	Polypropylene, lifts bath from bench.
(5)	Base Plate	Sits in bath pan, holds instrument upright.
(6)	SS jam nut and lock washer	Holds rod to base plate.
(7)	SS Rod	Supports center tube and allows to spin.
(8)	Support Tray	Prevents samples from falling into the bath.
(9)	Support Tray Collar	Secures support tray to the center tube.
(10)	Sample Holder Spring	Holds various size test tubes in the sample holder.
(11)	Sample Holder plate assembly	Holds various size test tubes in the instrument.
(12)	Top Plate	Holds the valve tube assemblies.
(13)	Valve Tube Fitting	Allows each valve tube assembly to be adjusted.
(14)	Filter	Filters incoming gas and removes particulates.
(15)	Band Spring	Constant force lifting spring.
(16)	Hoist Assembly	Lifting mechanism which helps lift the instrument.
(17)	Swivel Fitting	Rotating gas fitting allows unrestricted rotation.
(18)	SS gas tube assembly	Delivery tube to rotating unit.
(19)	Manifold with hose barbs	Parallel gas delivery manifold with hose fittings.
(20)	Silicone Tubing for Valve Tube	Tubing for valve tube gas flow.
(21)	Valve Stem	Needle valve adjustment for valve tube.
(22)	Valve Tube Assembly	Individual gas injector for each sample, adjustable.
(23)	Luer with Washer	Adapter between valve tube and needle or pippet.
(24)	SS Blunt End Needle	Gas injector.
(25)	Thermometer	Indicates bath water temperature in degrees C.
(26)	SS Center Tube	Allows rotation of instrument around stand rod.
(27)	Flow Meter Bracket	Mounts flow meter to bath.
(28)	Flow Meter	Measures gas flow to the instrument, adjustable.
(29)	Connector tube with fitting	Flexible tube to connect instrument to gas source.
(30)	Flow Meter Needle Valve	Adjusts overall gas flow to the instrument.

Specifications

Environmental:	Humidity 0-90%, Temperature 0-40°C, Indoor Use Only.
Electrical Requirements:	120 or 240 VAC single phase, non switchable, 50 - 60 Hz. 3 wire grounded outlet required. GFCI (Ground Fault Circuit Interrupter) optional. Model 111 12 Position Bath 500 W* Model 112 24 Position Bath 800 W* * 240V units divide wattage by 2.
Electrical Compliance's:	Underwriters Laboratories Listed 2D93, E163892. Underwriters Laboratories Canadian Listed 2D93, E163892. Optional EC compliance EN55014.
Water Services Required:	Regular tap, distilled, or de-ionized water required. Manual addition, optional bath water level maintenance configuration available. Fill to 0.5 inch (12mm) from rim.
Gas Services Required:	Nitrogen, clean air, or other inert gas, 5 - 30 Psig, adjustable. Flow indication standard with all complete N-EVAP™ systems. Quiet air compressor available.
Sample Sizes Accepted:	Glass or Plastic Test Tubes, 10-30mm Dia. x 10-150mm Long Scintillation Vials Centrifuge Tubes (size range above) Autosampler vials (size range above) 50ml Erlenmeyer Flasks 50ml Beakers Consult factory for optional smaller & larger sizes.
Sample Types Utilized:	Organic Solvents with Boiling Point range 30 - 140 Celsius. Water and aqueous solutions. Strong acidic or base materials, PTFE coating required - consult factory.
Safety Provisions	3 wire grounded power cord. High Temperature Protection Switch Stainless Steel construction. Thermostatically controlled bath. Optional PTFE Coating Optional GFCI. Optional Type-Z intrinsically safe bath purge.

ITEM	DESCRIPTION	QTY
1	GROUND POST	1
2	BAND HEATER	1
3	FLAT HEATER	1
4	TERMINAL STRIP	1
5	THERMOSTAT	1
6	TOGGLE SWITCH DPST	1
7	THERMOSTAT KNOB	1
8	PILOT LIGHT AMBER	1
9	HIGH TEMP. SWITCH	1
10	GFCI (Optional)	1

120 VOLT



BATH MODEL HEATER CHART		
BATH MODEL	BATH HEATERS BAND WATTS	FLAT WATTS
5085	250	250
8105	400	400
8125	400	400
10125	550	550
10129	550	550
12145	600	600
14169	700	700
14185	700	700

ORGANOMATION ASSOC. INC.
266 RIVER ROAD WEST
BERLIN, MA 01503
TEL: (508) 838-7378 FAX: (508) 838-2786

TITLE 110V WIRING DIAGRAM STD

DWG. # N-WIR-120-B | DATE 1/3/97 | C

SPECIFICATIONS

WIRING DIAGRAM FOR WATER BATHS

Rev. C L 0 1

240 VOLT

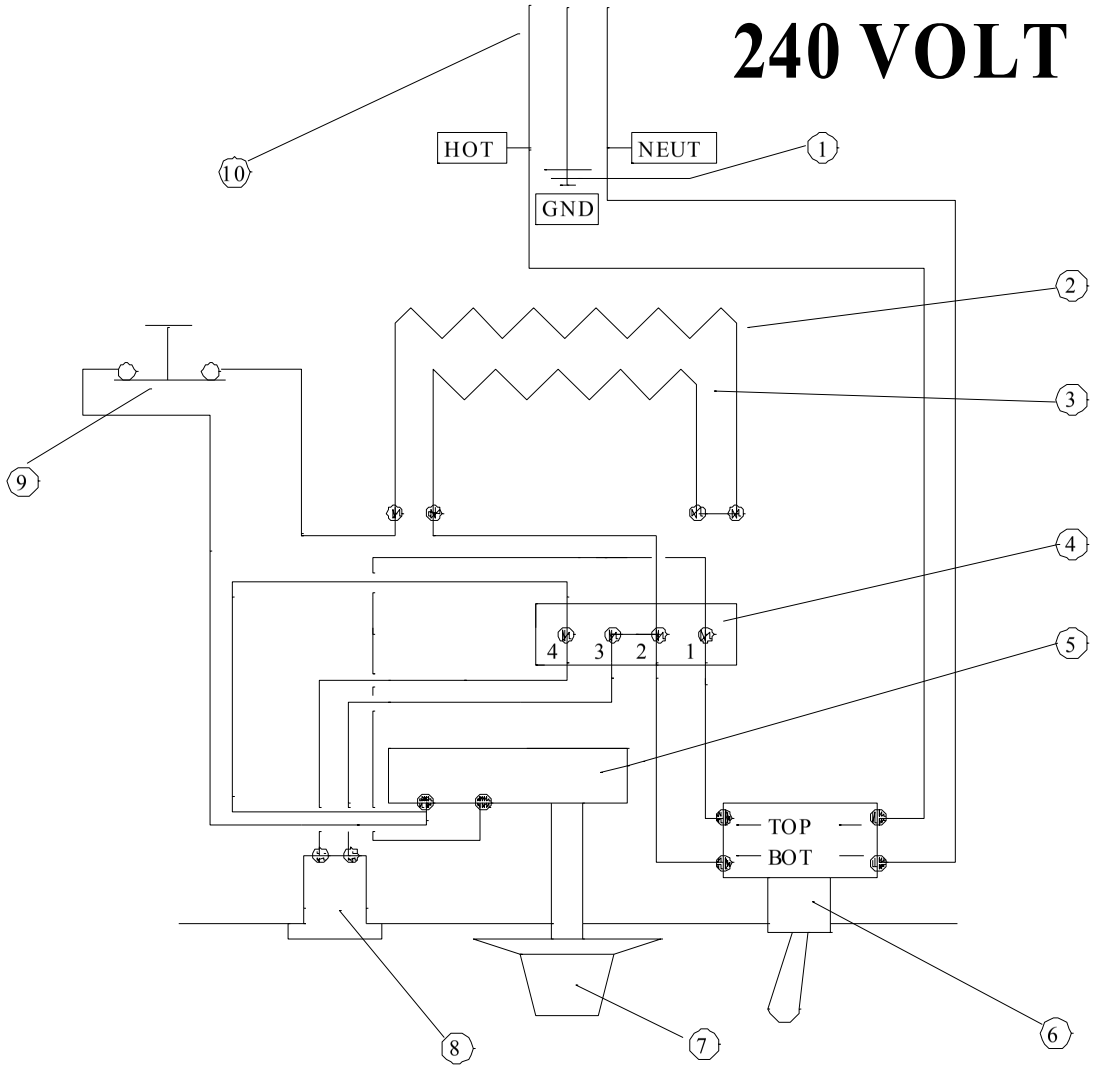
ITEM	DESCRIPTION	QTY
1	GROUND POST	1
2	BAND HEATER	1
3	FLAT HEATER	1
4	TERMINAL STRIP	1
5	THERMOSTAT	1
6	TOGGLE SWITCH DPST	1
7	THERMOSTAT KNOB	1
8	PILOT LIGHT AMBER	1
9	HIGH TEMP. SWITCH	1
10	GFCI (Optional)	1

BATH MODEL HEATER CHART

BATH MODEL	HEATER VALUES @ 120V	
	BAND WATTS	FLAT WATTS
5085	250	250
8105	400	400
8125	400	400
10125	500	500
10129	500	500
14145	700	700
14169	700	700
14185	700	700

ACTUAL SYSTEM WATTAGE AT 240 VOLTS

240 Volt units are wired in series. For total watts at 240 volts, add heater wattage together and divide by two.



ORGANOMATION ASSOC. INC.
266 RIVER ROAD WEST
BERLIN, MA 01503
TEL:(978) 838-7378 FAX:(978) 838-2786

TITLE 240V WIRING DIAGRAM STD

DWG.# N-WIR-240-C | DATE 02/26/03 | D

SPECIFICATIONS

WIRING DIAGRAM FOR WATER BATHS

Rev. C L 01

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

CE Declaration of Conformity
Revised June 1, 2015

We, Organomation Associates Inc a corporation registered in Massachusetts, United States of America, declare under sole responsibility that the following equipment to which this declaration relates, meets the principal protection requirements and is in conformity with relevant sections of the applicable CE standards and other normative documents. If changes are made to the products covered by this declaration then the declaration is no longer valid.

Equipment type:	Laboratory sample preparation instruments. Bench top size, multiple sample position. Analytical evaporators and extractors.
Model(s):	N-EVAP Nitrogen evaporator models: 11106, 11155, 11250, 11634, 11645 MULTIVAP Nitrogen evaporator models: 11364, 11300, 11809, 11830, 11848, 11880 11801, 11803, 11815, 11824 S-EVAP solvent evaporator models: 12060, 12080, 12008 12027, 12037, 12010, 12018, 12048 Rot-X-Tract-S solid-liquid extractor models: 13070, 13090, 13008 Rot-X-Tract-L liquid-liquid extractor models: 13318, 13308

All of the above wired for 110 and 220 volts (-2 option code).
All of the above with dry bath and aluminum beads (-DA option code).
All of the above with acid resistant coatings (-RT option code).
All of the above with intrinsically safe, purged bath case (-Z option code).

EC Directives and Amendments: 89/336/EEC - Electromagnetic Compatibility Directive (EMC).

Harmonized Standards and IEC publications used: EN61326, EN61010-1

Authorized signature	Title	Date
Andrew McNiven	President	June 1, 2015

CE Declaration of Conformity 2015