Operator's Manual

Histology Bath

CE

110-827
09.12.11

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Introduction

Thank you for choosing this Histology Bath. Its low working temperature (-60°C / -76°F) freezes samples quickly, preventing microscopic ice crystals from developing and samples from distorting. It is ideal for fast-freezing tissues for enzyme studies. The Histology Bath is not a controlled cooling source; it is designed to run at maximum cooling.

Standard features include:

- Continuous cooling to -60°C / -76°F
- 1.9 liter stainless steel reservoir and reservoir cover
- Immersion basket and chuck holder
- Front-mounted reservoir drain
- DuraTop™ insulating top deck

General Safety Information

When installed, operated, and maintained according to the directions in this manual and common safety procedures, your Histology Bath should provide safe operation. Please ensure that all individuals involved in the installation, operation, or maintenance of this Histology Bath read this manual thoroughly prior to working with the unit.

	This symbol marks chapters and sections of this instruction manual that are particularly relevant to safety. When attached to the unit, this symbol draws attention to the relevant section of the instruction manual.
	This symbol indicates that hazardous voltages may be present.
	This symbol marks information that is particularly important.
	This symbol indicates alternating current.
	This symbol on the Power Switch / Circuit Breaker indicates that it places the unit into a fully powered state.
	This symbol on the Power Switch / Circuit Breaker indicates that it disconnects power to the unit.
	This symbol indicates a protective conductor terminal.

Read all instructions pertaining to safety, set-up, and operation.
Proper operation is the user's responsibility.

Safety Recommendations

To prevent injury to personnel and/or damage to property, always follow your workplace's safety procedures when operating this equipment. You should also comply with the following safety recommendations:

	**WARNING:** The Histology Bath uses isopentane as the bath fluid. Due to the flammability of this liquid, always use the Histology Bath under a fume hood.

	**WARNING:** • Always connect the power cord on this Histology Bath to a grounded (3-prong) power outlet. Make certain that the outlet is the same voltage and frequency as your unit. • Never operate the Histology Bath with a damaged power cord. • Always turn the Histology Bath Off and disconnect mains power before performing any maintenance or service.

	**WARNING:** • Never operate the Histology Bath without bath fluid in the reservoir. Periodically check the reservoir to ensure that the liquid depth is within acceptable levels. Always refill the reservoir using the same bath fluid type that is already in the reservoir. • Use compatible bath fluids only. • Always drain all fluid from the reservoir before moving or lifting your Histology Bath. Be sure to follow your organization's procedures and practices regarding the safe lifting and relocation of heavy objects.

	**WARNING:** Always allow the bath fluid to return to ambient temperature before draining.

	**WARNING:** It is the user's responsibility to properly decontaminate the unit in the event hazardous materials are spilled on exterior or interior surfaces. Consult manufacturer if there is any doubt regarding the compatibility of decontamination or cleaning agents.

Regulatory Compliance & Testing

CE

EC Low Voltage Directive 2006/95/EC
EC Electromagnetic Compatibility Directive 2004/108/EC
IEC 61010-1-2001
IEC 61010-2-2001
IEC 61326:2005 / EN 61326 : 2006

Unpacking Your Histology Bath

Your Histology Bath is shipped in a special carton. Retain the carton and all packing materials until the unit is completely assembled and working properly. Set up and run the unit immediately to confirm proper operation. Beyond one week, your unit may be warranty repaired, but not replaced. If the unit is damaged or does not operate properly, contact the transportation company, file a damage claim, then contact the company where your unit was purchased.

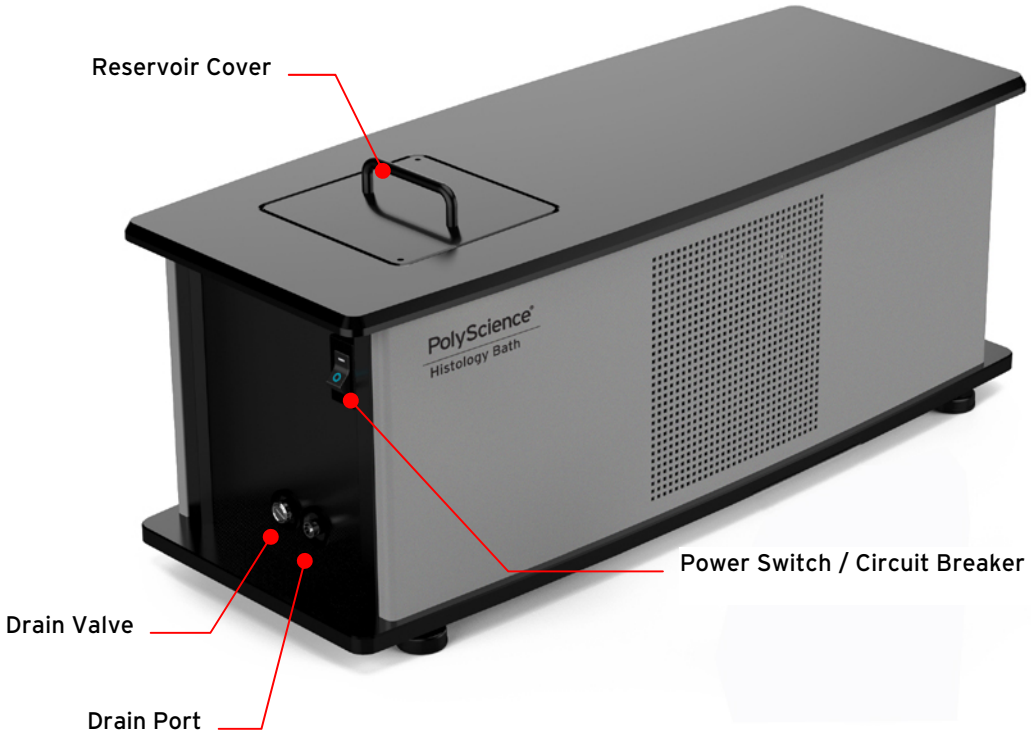
	**WARNING:** Keep unit upright when moving. Be sure to follow your company's procedures and practices regarding the safe lifting and relocation of heavy objects.

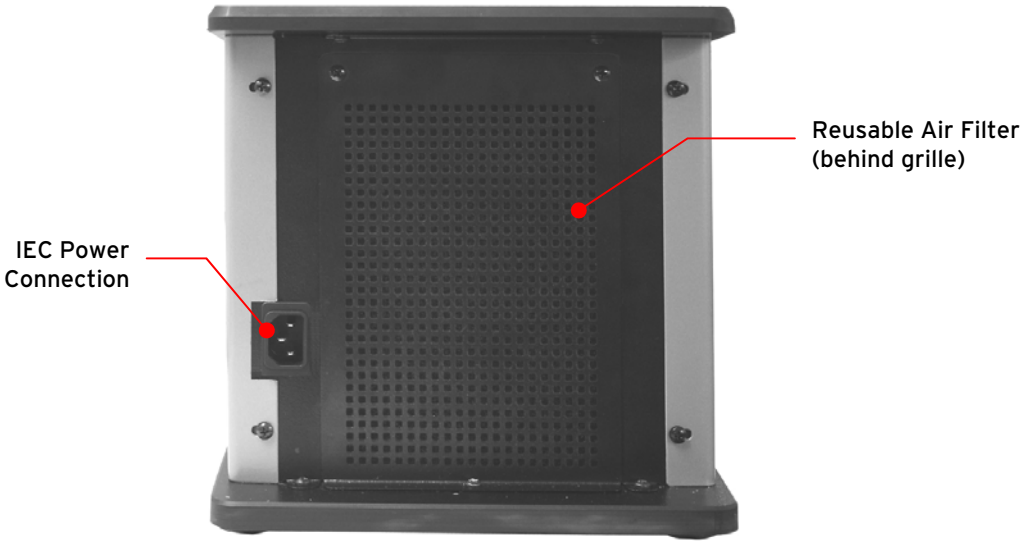
Contents

The items included with your Histology Bath are:

- Histology Bath
- Reservoir Cover
- Immersion Basket and Chuck Holder
- Power Cord
- Operator's Manual

Components & Controls





Installation

Your Histology Bath is simple to setup and install. The only tool required is a container for adding a suitable fluid to the bath reservoir.

General Site Requirements

	**WARNING:** The Histology Bath uses isopentane as the bath fluid. Due to the flammability of this liquid, always use the Histology Bath under a fume hood.

Locate your Histology Bath on a level surface in an area that is free from drafts and wide ambient temperature variations, such as near heater or air conditioning vents. Do not place it where there are corrosive fumes, excessive moisture, or in excessively dusty areas.

Position the unit to allow for unobstructed air flow through the side and rear vents. A space of at least 4 inches (10.2 cm) should be provided behind the unit.

Avoid voltage drops by using properly grounded power outlets wired with 14 gauge or larger diameter wire and if possible, be close to the power distribution panel. The use of extension cords is not recommended; this will reduce the potential for problems caused by low line voltage.

Adding Liquid to the Bath Reservoir

	**WARNING:** Fill reservoir with fluid before applying power to the unit.

	**WARNING:** Read the safety data sheet for the bath fluid being used carefully before filling reservoir.

The Histology Bath is designed for use with isopentane (also known as 2-methlybutane).

Fill bath so that the liquid level is approximately 1 inch (2.54 cm) from the top for best refrigeration performance. Be sure to allow for the fluid displacement that will result when the immersion basket and samples are placed in the reservoir.

	**WARNING:** Always drain all fluid from the reservoir before moving or lifting your Histology Bath. Be sure to follow your organization's procedures and practices regarding the safe lifting and relocation of heavy objects.

	**WARNING:** To avoid the potential for burns, allow the Histology Bath to return to ambient temperature before cleaning or performing any maintenance.

Electrical Power

	**WARNING:** The Histology Bath's power cord must be connected to a properly grounded electrical receptacle. Make certain that this electrical outlet is the same voltage and frequency as your unit. The correct voltage and frequency for your Histology Bath are indicated on the identification label on the rear of the unit.

	**CAUTION:** The use of an extension cord is not recommended. If one is necessary, it must be properly grounded and capable of handling the total wattage of the unit. The extension cord must not cause more than a 10% drop in voltage to the unit.

Plug the Histology Bath's power cord into a properly grounded electrical outlet of the correct voltage and frequency.

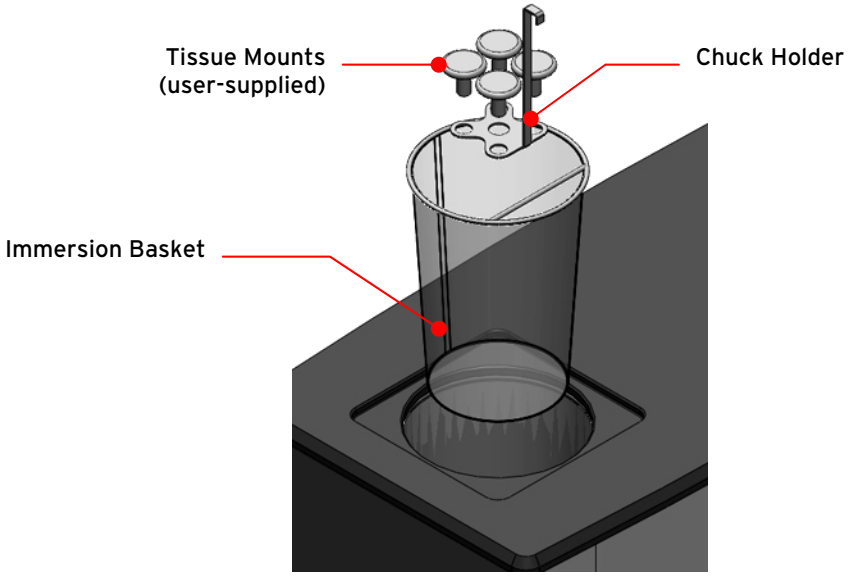
Normal Operation

	**WARNING:** Due to the flammable nature of isopentane, the Histology Bath should always be used under a fume hood. Be sure to wear appropriate protective equipment, such as splash goggles and gloves.

	**NOTE:** The Histology Bath operates at maximum cooling performance.

Place the Power Switch / Circuit Breaker on the front of the Histology Bath in the On position. The compressor will start up and the unit will begin cooling. It will take about one hour for the unit to achieve a -60°C / -76°F working temperature.

Once the unit has reached working temperature, remove the reservoir cover and slowly submerge the immersion basket in the reservoir. Use the tissue mounts (not supplied) and chuck holder to position the samples properly in the sample basket. Replace the reservoir cover.



Routine Maintenance & Troubleshooting

	**WARNING:** Hazardous voltages may be present. Disconnect power before performing maintenance.

Draining the Reservoir

To drain fluid from the bath, attach a short length of suitable 11.5 mm ID / 0.45 inch ID tubing to the drain port and secure it using a hose clamp with a minimum ID of 18 mm / 0.7 inch. Open the drain valve using a flat blade screwdriver. When closing the valve, do not over tighten.

	**WARNING:** Be sure to close the drain valve before refilling the bath reservoir. Do not over tighten.

Cleaning the Bath

Thoroughly clean the bath before each use. Use only mild soap and water when cleaning. Do not use steel wool as damage to the unit may result. Non-steel scouring pads are acceptable.

The entire unit is housed in a tough, well-insulated stainless steel casing that is corrosion and chemical resistant.

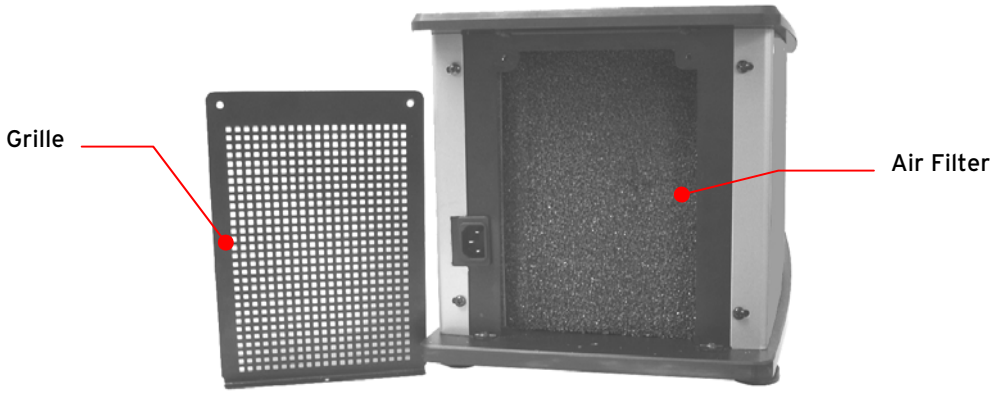
Air Vents

The unit draws air through the rear and exhausts it through the side vents. The vents should be inspected regularly for the accumulation of dust and cleaned as required.

Air Filter

To keep the refrigeration system operating at optimum cooling capacity, the reusable filter located at the rear of the unit should be kept free of dust and dirt. It should be checked on a scheduled basis and cleaned as required.

To access the air filter, remove the three screws securing the grille cover to the unit's housing, detach the grille, and then gently remove the air filter from the filter compartment. Use a mild detergent and water solution to wash off any accumulated dust and dirt and then rinse and dry thoroughly before reinstalling.



Troubleshooting Chart

Problem	Cause	Corrective Action
No power to unit	Electrical power disconnected	Check that electrical cord is secure and plugged into an operating electrical outlet.
	Power Switch / Circuit Breaker in Off position	Place Power Switch / Circuit Breaker in On position.
	Compressor overload switch has tripped	Allow approximately 10 minutes for unit to restart.
No or insufficient cooling	Blocked air flow	Check air vents for blockage.
	High ambient temperature	Check that air flow around unit is not restricted and that room temperature does not exceed 95°F / 35°C.
	Improper line voltage and/or frequency	Verify that Mains voltage during start cycle is within 10% of rated voltage.
Gradual loss of cooling	Blocked air flow	Check air vents for blockage.
Compressor shakes, stalls, or continually restarts	Compressor cycling or overload	Check air vents for blockage.
		Check that air flow around unit is not restricted and that room temperature does not exceed 95°F / 35°C.
		Verify that Mains voltage during start cycle is within 10% of rated voltage.
		Check compressor fan for operation (listen for fan noise, check airflow through unit).

Technical Information

Performance Specifications

Working Temperature:	Fixed at -60°C / -76°F
Reservoir Capacity:	1.9 liters
Tank:	Insulated stainless steel
Bath Work Area:	4.8 ∅ x 6.6 inches deep / 12.2 ∅ x 16.8 cm deep
Overall Dimensions (L x W x H):	22.75 x 11 x 11 inches / 57.8 x 27.9 x 27.9 cm
Electrical Requirements:	60 Hz: 120V, 60Hz, 5.0A 50 Hz: 240V, 50Hz, 2.5A

Specifications subject to change without notice.

Environmental Conditions	Indoor use only	
	Maximum Altitude:	2000 meter
	Operating Ambient:	5° to 35°C (41° to 95°F)
	Relative Humidity:	80%, non-condensing
	Installation Category:	II
	Pollution Degree:	2

Replacement Parts

Description	Part Number
Immersion Basket	703-023
Holder	703-067
Air Filter	305-054
Operator's Manual	110-827

Equipment Disposal (WEEE Directive)

or

This equipment is marked with the crossed out wheeled bin symbol to indicate it is covered by the Waste Electrical and Electronic Equipment (WEEE) Directive and is not to be disposed of as unsorted municipal waste. **Any products marked with this symbol must be collected separately, according to the regulatory guidelines in your area.**

It is your responsibility to correctly dispose of this equipment at lifecycle-end by handing it over to an authorized facility for separate collection and recycling. It is also your responsibility to decontaminate the equipment in case of biological, chemical and/or radiological contamination, so as to protect the persons involved in the disposal and recycling of the equipment from health hazards. By doing so, you will help to conserve natural and environmental resources and you will ensure that your equipment is recycled in a manner that protects human health.

Requirements for waste collection, reuse, recycling, and recovery programs vary by regulatory authority at your location. Contact your local responsible body (e.g., your laboratory manager) or authorized representative for information regarding applicable disposal regulations.

Service and Technical Support

If you have followed the troubleshooting steps outlined previously and your Histology Bath still fails to operate properly, contact the supplier from whom the unit was purchased. Have the following information available for the customer service person:

- Model, Serial Number, and Voltage (from back panel label)
- Date of purchase and purchase order number
- Supplier's order number or invoice number
- A summary of the problem

Warranty

The manufacturer agrees to correct for the original user of the product, either by repair (using new or refurbished parts), or at the manufacturer's election, by replacement (with a new or refurbished product), any defects in material or workmanship which develop during the warranty period. The standard warranty is twenty-four (24) months after delivery of the product. In the event of replacement, the replacement unit will be warranted for the remainder of the original warranty period or ninety (90) days, whichever is longer. For purposes of this limited warranty, "refurbished" means a product or part that has been returned to its original specifications. In the event of a defect, these are your exclusive remedies.

If the product should require service, contact the manufacturer's/supplier's office for instructions. When return of the product is necessary, a return authorization number is assigned and the product should be shipped, transportation charges pre-paid, in either its original packaging or packaging affording an equal degree of protection to the indicated service center. To insure prompt handling, the return authorization number must be placed on the outside of the package. A detailed explanation of the defect should be enclosed with the item.

The warranty shall not apply if the defect or malfunction was caused by accident, neglect, unreasonable use, improper service, acts of God, modification by any party other than the manufacturer, or other causes not arising out of defects in material or workmanship.

EXCLUSION OF IMPLIED WARRANTIES. THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE WHICH EXTEND BEYOND THE DESCRIPTION AND PERIOD AS STATED IN THE OPERATOR'S MANUAL INCLUDED WITH EACH PRODUCT.

LIMITATION ON DAMAGES. THE MANUFACTURER'S SOLE OBLIGATION UNDER THE WARRANTY IS LIMITED TO THE REPAIR OR REPLACEMENT OF A DEFECTIVE PRODUCT AND THE MANUFACTURER SHALL NOT, IN ANY EVENT, BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND RESULTING FROM USE OR POSSESSION OF THIS PRODUCT.

Some states do not allow: (A) limitations on how long an implied warranty lasts; or (B) the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may have other rights that vary from state to state.

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