



WATER BATHS

GENERAL PURPOSE

MODELS: 1265PC, 1275PC, 1285PC

MICROPROCESSOR CONTROLLED

INSTALLATION AND OPERATION MANUAL

02/07
4861383V

These units are general purpose water baths for professional, industrial, or educational use where the preparation or testing of materials is done at approximately atmospheric pressure and no flammable, volatile or combustible materials are being heated. These units are not intended for hazardous or household location use.

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REVISION HISTORY

Manual	Revision	Updates
4861383V	03-03	Initial release
4861383V	04-04	IEC/EN 61010-1 2 ND EDITION UPDATES
4861383V	07-04	Additional information and corrections.
4861383V	10-04	Additional information and corrections.
4861383V	10-05	Additional information and corrections.
4861383V	12-06	Additional information and wiring diagram.
4861383V	02-07	Additional information and wiring diagram.

INTRODUCTION

Thank you for choosing a general purpose water bath. These units are not intended for use at hazardous or household locations.

Before you use the unit, read this entire manual carefully to understand how to install, operate, and maintain the unit in a safe manner. Your satisfaction with the unit will be maximized as you read about its safety and operational features.

Keep this manual on-hand so it can be used by all operators of the unit. Be sure all operators of the unit are given appropriate training before you put the unit in service.

Note: Use the unit only in the way described in this manual. Failure to follow the guidelines and instructions in this manual may be dangerous and illegal.

General Safety Considerations

Your water bath and its recommended accessories have been designed and tested to meet strict safety requirements.

For continued safe operation of your water bath, always follow basic safety precautions including:

- Read this entire manual before using the water bath.
- Be sure you follow any city, county, or other ordinances in your area regarding the use of this unit.
- Use only approved accessories. Do not modify system components. Any alterations or modifications to your water bath may be dangerous and will void your warranty.
- Always plug the unit's power cord into a grounded electrical outlet that conforms to national and local electrical codes. If the unit is not grounded, parts such as knobs and controls may conduct electricity and cause serious injury.
- Do not connect the unit to a power source of any other voltage or frequency beyond the range stated on the power rating overlay at the rear of the unit.
- Do not modify the power cord provided with the unit. If the plug does not fit an outlet, have a proper outlet installed by a qualified electrician.
- Avoid damaging the power cord. Do not bend it excessively, step on it, place heavy objects on it. A damaged cord can easily become a shock or fire hazard. Never use a power cord after it has become damaged.
- Do not position the equipment in such a manner as to make it difficult to disconnect power cord or coupler.
- Do not attempt to move the unit while in operation or before the unit has been allowed to cool.

RECEIVING YOUR UNIT

Before leaving our factory, all units are packaged in high quality shipping materials designed to provide protection from transportation related damage.

Once a unit leaves our factory, safe delivery becomes the responsibility of the carrier who is liable for loss or damage to your unit. Damage sustained during transit is not covered under your unit warranty.

When you receive your unit, inspect it for concealed loss or damage to its interior and exterior. Should you find any damage to the unit, follow the carrier's procedure for claiming damage or loss.

Inspection Guidelines

Carefully inspect the shipping carton for damage. If the carton is damaged, report the damage to the carrier service that delivered the unit.

If the carton is not damaged, open the carton and remove its contents. Verify that all of the following equipment is included in the crate:

- One (1) Magnetic thermometer clip
- One (1) Circulating Rack

Carefully check all packaging before discarding. Save the shipping carton until you are sure everything is in order.

Returning Shipment

If you must return the unit for any reason, first contact your service representative for authorization. You will be asked to provide the data plate information. See Recording Data Plate Information.

Recording Data Plate Information

Once you have determined the unit is free from damage, locate the data plate at the back of the unit. The data plate indicates your unit's model number and serial number. Record this information below for future reference.













Table 1. Data Plate Information

Model Number	
Serial Number	
Part Number	
Voltage	

GRAPHIC SYMBOLS

Your unit is provided with a display of graphic symbols that should help in identifying user adjustable components.

Table 2. Symbols

Symbol	Identification
	Indicates that you should consult your operator's manual for further instructions.
	Indicates "Temperature"
	Indicates "Over Temperature Protection"
	Indicates "AC Power"
	Indicates the power is "ON"
	Indicates the power is "OFF"
	Indicates "Protective Earthground"
	Indicates "Up" and "Down" respectively
	Indicates "Manually Adjustable"
	Indicates "Potential Shock Hazard" behind partition
	Indicates "Hot Surface"
	Indicates " Unit should be recycled " (Not disposed of in land-fill)

INSTALLATION

Your satisfaction and safety require a complete understanding of this unit. Read the instructions thoroughly and be sure all operators are given adequate training before attempting to put the unit in service.

This equipment must be used only for its intended application; any alterations or modifications will void your warranty. Local city, county, or other ordinances may govern the use of this equipment. If you have any questions about local requirements, please contact the appropriate local agency. The end user may perform installation.

Environmental Conditions

Under normal circumstances these units are intended for use indoors, at room temperatures between 18° and 40°C, at no greater than 80% relative Humidity (at 25°C) and with a supply voltage that does not vary by more than 10% from the data plate rating. This equipment should not be operated at an altitude exceeding 2000 meters. Installation category is II, pollution degree 2. Customer service should be contacted for operating conditions outside of these limits.

Power Source

Check the data plate for voltage, cycle, and ampere requirements. If matched to your power source, plug the power cord into a grounded outlet.

Voltage should not vary more than $\pm 10\%$ from the data plate rating.

These units are intended for 50/60-HZ application. A separate circuit is recommended to prevent damage to the unit due to overloading or circuit failure.

Location

In selecting a location, consider all conditions that might affect performance, such as heat from radiators, ovens, autoclaves, etc. Avoid direct sun, fast-moving air currents, heating and cooling ducts, and high traffic areas. Allow a minimum of 10 cm between the unit and any walls or partitions that might obstruct free airflow.

Lifting and Handling

These units are heavy and care should be taken to use appropriate lifting devices that are sufficiently rated for these loads. Units should only be lifted from their bottom surfaces. Handles and knobs are not adequate for lifting or stabilization. The unit should be completely restrained from tipping during lifting or transport. All moving parts such as trays or covers should be removed during transfer to prevent shifting and damage.

Cleaning and Decontamination

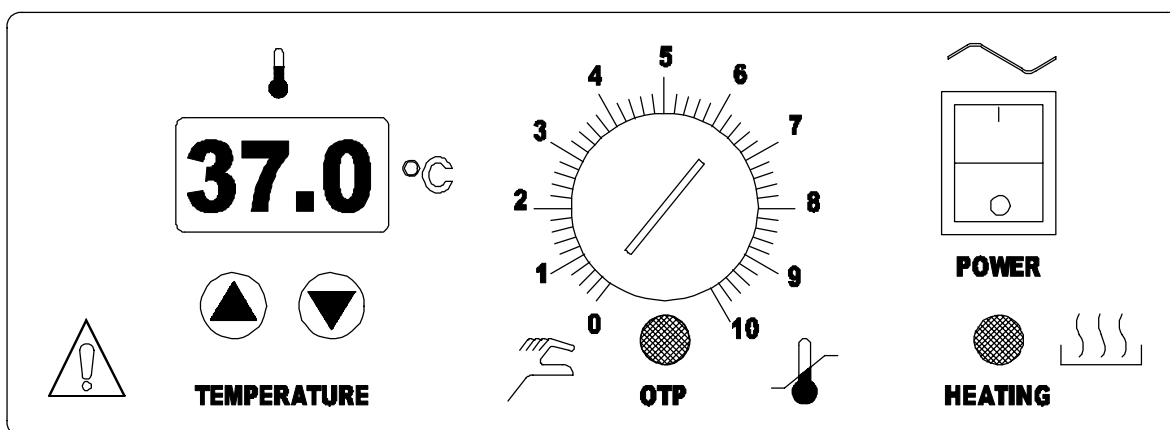
In the event hazardous material is spilled onto or into the equipment appropriate decontamination must be carried out. If there is any doubt about the compatibility of decontamination or cleaning agents with parts of the equipment or with material contained, please contact the manufacturer.

Units are cleaned at the factory, but not sterilized. Remove any racks if assembled and clean the bath with a disinfectant that is suitable for your application. See MAINTENANCE for cleaning instructions and precautions.

CONTROLS OVERVIEW

This section provides an overview of the panel controls. See Figure 1 for an illustration of the panel controls.

Figure 1. Control Panel



4500747M

Power Switch

The Green I/O (On/Off) power switch, located in the top right hand corner of the control panel, controls all power to the unit. It must be in the I position to be ON and illuminated before any systems are operational. The on/off switch must remain easily accessible at all times.

Main Temperature Controller

This control is marked TEMPERATURE and consists of the digital display and UP and DOWN arrow pads for inputting set point temperatures and calibration.

Fuses

The fuses are located at the back of the unit within the fuse holders. The fuses act as a circuit breaker and will cut off power to the unit if there is an electrical surge or malfunction. The fuses must be in place for the unit to operate. Please contact customer service for more information.

Over Temperature Safety Thermostat (OTP)

This controller is marked "Set Over Temperature" and is completely independent of the Temperature Controller. The Safety guards against any failure of the Temperature Controller that would allow the temperature to rise past set point. If the temperature rises to the safety set point, the Safety takes control of the heating element and allows continued use of the water bath until the problem can be resolved or service can be arranged. The Safety is manually adjusted with a screwdriver or coin so accidental adjustment cannot occur.

Heating Activated

This light is ON when the Temperature Controller has activated the heating element to reach and maintain set point.

Over Temperature Activated Light

This light is ON when the Over Temperature Safety Thermostat has been activated. Under normal operating conditions this light should never be on.

OPERATION

Warning: These baths are not intended for use as acid baths. Use as an acid bath will cause severe damage to bath components and void your warranty. Do not use deionized water, tap water, or chemicals. USE DISTILLED WATER ONLY.



Turning On the Unit

To turn on the unit, perform the following steps:

1. Check power supply against unit serial plate; they must match.
2. Plug service cord into the electrical outlet. If supplied with a detachable cordset, plug the female end into the unit inlet and the male plug into the power supply. Verify that units requiring a fuse have the fuse installed in the power inlet.
3. Fill bath to your required depth with DISTILLED WATER. DO NOT USE TAP WATER, DEIONIZED WATER, OR CHEMICALS. Normal depth is 5 ½ inches (14 cm), but depth must be at least 2 inches (5 cm) over the bottom of the rack. Check water level frequently, add water to appropriate levels if needed. At higher operating temperatures, or under circumstances where a cover cannot be used, it will be necessary to check the water level more frequently.
4. Push the Main power switch to the ON position and turn the Over Temperature Safety Thermostat to its maximum position, clockwise.

Setting Main Temperature Control

To enter set point mode on the control, push and release either the Up or Down arrow pad one time and the digital display will start to blink from bright to dim. While blinking, the digital display shows the set point that can be changed using the UP or DOWN arrow pads. If the arrow pads are not pressed for five (5) seconds, the display will stop blinking and will revert to reading the actual temperature in the bath. Allow at least two (2) hours for the temperature to stabilize.

Warning: If the tank boils dry while containing plastic ware, the plastic will melt. If you intend to use test tube racks, remember that plastic coated wire racks may wear and expose metal that can cause damage. Preferably, use all plastic racks.



Calibrating the Main Temperature Control

We recommend that you calibrate your unit once it has been installed in its working environment and the chamber temperature has been stable at the set point for several hours.

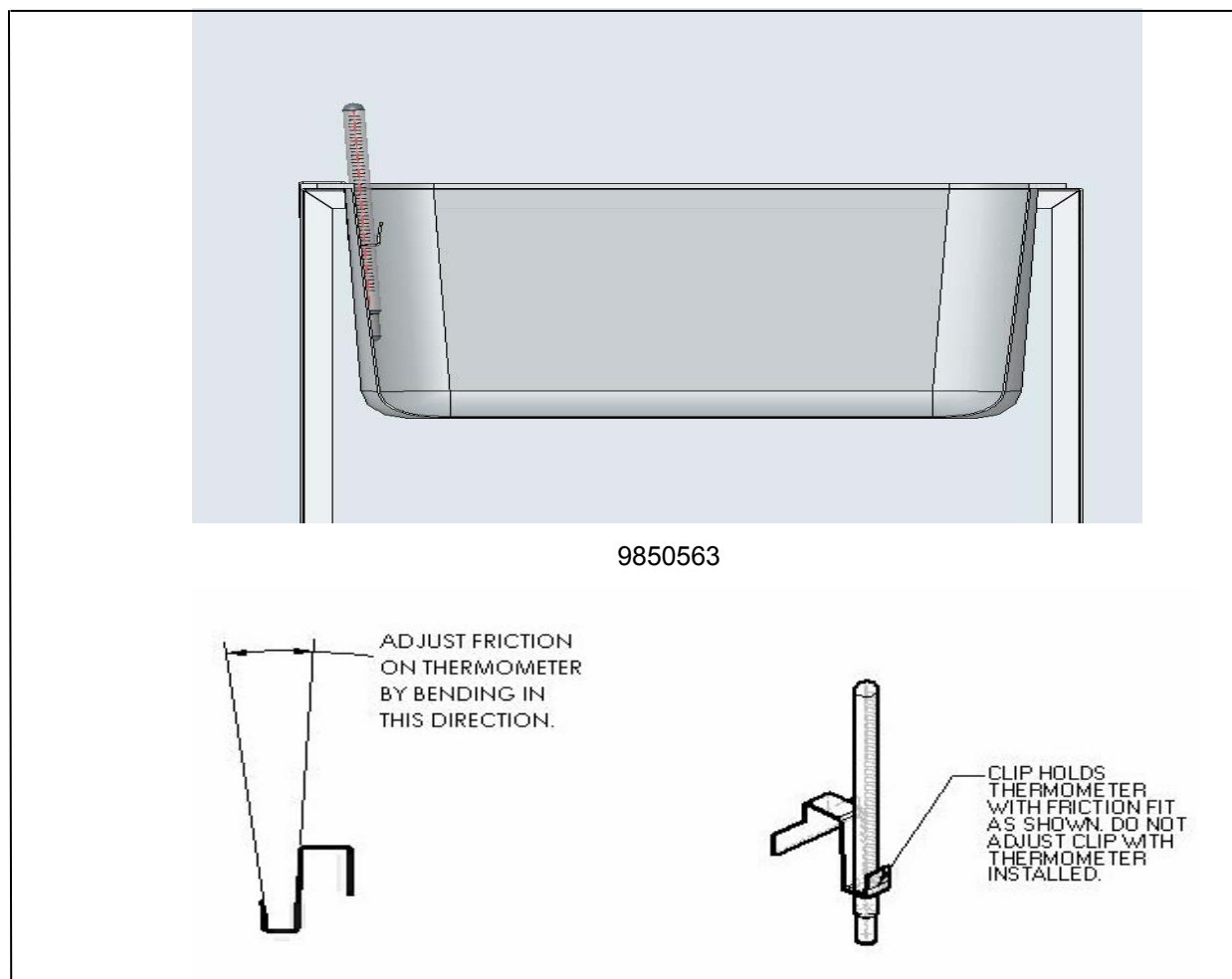
1. Place a calibrated reference thermometer in the bath (a thermometer clip is provided with the accessories package). (See Figure 2 for placement.) Allow the thermometer to reach temperature and remain stable for one (1) hour.

2. Compare the reading on the reference thermometer with the temperature control display. If there is a difference, put the display into calibrate mode by pressing both the Up and Down arrow pads at the same time until the two (2) outside decimal points begin to blink.
3. When the decimal points are blinking, press the Up or Down arrow pad to adjust the display to match the reference thermometer. If the arrow pads are not pressed within five (5) seconds the display will revert to showing the temperature within the bath.
4. Allow the unit to stabilize again, and repeat calibration if necessary.

Setting the Overtemperature Safety Thermostat

To set the Over Temperature Safety Thermostat, perform the following steps:

1. Verify that the Safety Thermostat was set to its maximum position to allow the water bath to stabilize.
2. Turn the Safety Thermostat counterclockwise until the Safety indicator light turns on.
3. Turn the Safety Thermostat clockwise until the Safety indicator light turns off.
4. Turn the thermostat clockwise again, two (2) of the smallest divisions on its scale past the point where the indicator light went out. This will set the Safety Thermostat at approximately 1°C above the Main Temperature set point.

Figure 2. Thermometer Placement

Note: Water bath thermometer must be placed so that the bulb is always fully immersed. The thermometer must not touch the sides or the bottom of the bath tank.

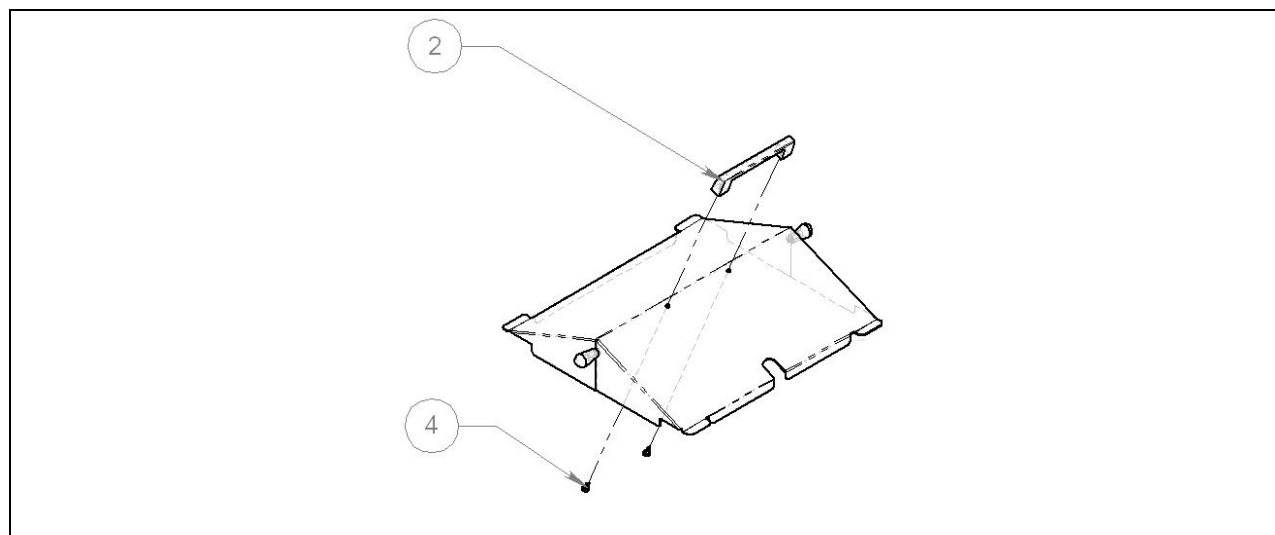
Bath Cover Assembly

To assemble the bath cover, perform the following steps:

1. Insert 2 (Item 4) self-tapping screws through the respective cover holes and into the holes in the handle (Item 2), leaving the first self-tapping screw loose to assure proper alignment. See Figure 3. Firmly fasten both screws into place. Do not over-tighten.

Figure 3. Bath Cover Assembly Step 1

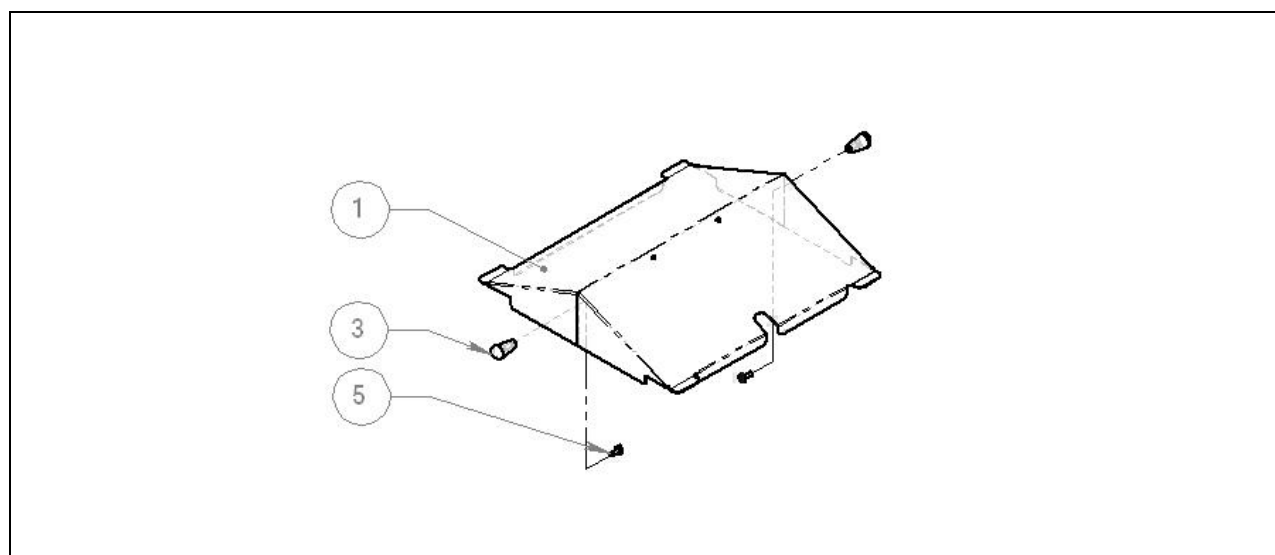
Handle Part#300110



2. Insert 2 (Item 5), 10/32 set screws through the respective holes in the bath cover and into the knob. See Figure 4. Firmly fasten both screws into place. The knobs are available on 14 Liter and larger bath covers. Do not over-tighten.

Figure 4. Bath Cover Assembly Step 2

Knob part# 4450517



MAINTENANCE

Warning: Prior to any maintenance or service on this unit, disconnect the power cord from the power supply and the drain water from the tank. Before reattaching the unit to its power supply, be sure all volatile and flammable cleaners are evaporated and dry.



Cleaning

To clean the water bath, perform the following steps:

1. Clean the water bath with mild soap and water solution. DO NOT USE chlorine-based bleaches, as they will damage the tank interior. DO NOT USE spray cleaners that may contain solvents, which could leak through openings and cracks and harm electrical part coatings. Failure to do this may permanently damage the unit.
2. Rinse the water bath with clean water and wipe dry with a soft cloth. Stainless steel does not rust, but foreign materials in the tank may rust or leave rust spots. If corrosion is seen, scrub out the stains with a mild abrasive, never steel wool.

Heating and Water Level

The heating element of this bath does not contact the tank bottom, thus will not burn out if the tank is allowed to run dry. However, a tank going dry during operation can strain interior surfaces so this should not be allowed to occur. During operation a minimum of 5cm (two inches) of distilled water should be in the tank. Check water bath water level frequently, add water as needed. Please note that at higher operating temperatures, or in applications where a cover is not used, more frequent water level checking is required.

Test-tube Racks

If the water bath tank boils dry while containing plastic-ware, the plastic will melt. If you intend to use test-tube racks that are wire or plastic-coated wire that may wear and expose metal, damage may occur to the tank. It is recommended that all-plastic racks be used, and that the tank never be allowed to boil dry.

TROUBLESHOOTING

Should the unit malfunction, use this section to determine the problem and resolution. Troubleshooting topics include:

- Temperature
- Mechanical
- Miscellaneous

Warning: Troubleshooting procedures involve working with high voltages that can cause injury or death. Troubleshooting should be performed only by trained personnel.

Table 3. Temperature Troubleshooting

Problem	Possible Cause	Solution
Temperature too high	Main controller set too high	See Setting Main Temperature Control
	Main controller failed on	Call customer service.
	Wiring error	Call customer service.
Display reads "HI" or "400"+	Probe is unplugged	Call customer service.
	Probe is broken or wire to the sensor is broken.	Call customer service.
Temperature spikes over set point, then settles to set point.	Calibration issue	Recalibrate. See Calibrating the Main Temperature Control.
Temperature is too low	Over Temperature Safety is set too low.	See Setting the Overtemperature Safety Thermostat. See Setting Main Temperature Control.
	Bath temperature not recovered from water being added.	Wait for display to stop changing.
	Unit not recovered from power failure or being turned off.	Bath will need a minimum of 2 hours to warm up and stabilize.
	Element failure	Compare current draw to data plate.
	Main controller failure	Confirm with front panel lights that controller is calling for heat.
	Wiring problem	Check all functions and compare wiring to the wiring schematic, especially around any areas recently worked on.
	Loose connection	Call customer service.

Problem	Possible Cause	Solution
Display reads "LO" but heating all the time	Control failure	Call customer service.
Display reads "LO" and not heating	Sensor plugged in backwards	Call customer service.
Unit will not heat over a temperature that is below set point	N/A	Confirm that amperage and voltage match data plate.
	N/A	Confirm that set point is set high enough and that the Over Temperature Safety is not activated.
	N/A	Check calibration. Using independent thermometer, follow instructions in Calibrating the Main Temperature Control.
	N/A	Put the cover on.
Unit will not heat up at all	N/A	Check amperage. Amperage should be virtually at maximum rated (data plate) amperage.
	N/A	Do all controller functions work? Amperage should be virtually at maximum rated (data plate) amperage.
	N/A	Set the Over Temperature Safety higher.
	N/A	Has the fuse or circuit breaker blown?
Indicated bath temperature unstable	Fluctuating by ± 0.1 ?	May be normal, especially without the use of bath cover.
	Ambient room temperature is radically changing	Temperature fluctuation due to door opening or room airflow from heaters or air conditioning. Stabilize ambient conditions.
	Calibration sensitivity	Recalibrate. See Calibrating the Main Temperature Control. Call customer service if recalibration does not resolve fluctuation.
	Bath not full	Assure that the bath is at least 1/3 full.
	Electrical noise	Remove nearby sources of RFI including motors, arcing relays or radio transmitters
	Bad connection on temperature sensor or faulty sensor	Call customer service.
Will not maintain set point	N/A	Assure that set point is at least 5 degrees over ambient room temperature.
	N/A	See if ambient is fluctuating.
Display and Reference thermometer do not match	N/A	See Calibrating the Main Temperature Control.
	Temperature sensor failure	Call customer service.
	Controller failure	Call customer service.
	N/A	Allow at least two hours to stabilize.
	N/A	Verify the reference thermometer is calibrated.

Problem	Possible Cause	Solution
Can not adjust set points or calibration	N/A	Turn entire unit off and on to reset.
	N/A	If repeatedly happens, call Customer Service.
Calibrated at one temperature, but not at another	N/A	This can be a normal condition when operating temperature varies widely. For maximum accuracy, calibration should be done as close to the set point temperature as possible.

Note: N/A is not available.

Table 4. Mechanical Troubleshooting

Problem	Possible Cause	Solution
Water leaking	Leak	Dry bath and check the tank with flashlight to see if leak is noticeable. Fill tank again and see if leak repeats and find source of leak. Sources may include: fittings that need tightening, crack in outlet tube, or crack in tank. Call customer service if these things are noted.
Holes or rust in water bath tank	N/A	Assure that clean, distilled water is used. Deionized water, tap water, and chemicals should never be used in the tank. USE DISTILLED WATER ONLY.
	N/A	Assure that no test sample has leaked into bath water.
	N/A	No metallic products should be in the tank with exception of the oscillation rack.

Note: N/A is not available.

Table 5. Miscellaneous Troubleshooting

Problem	Possible Cause	Solution
Controller on at all times - "locked-up"	N/A	Turn unit off and on to reset.
	N/A	If you cannot change any condition on the front panel, call customer service.
Front panel displays are all off	Unit or wall fuse/circuit breaker is blown.	Check for wire damage.
	N/A	Check wall power source.
	N/A	Compare current draw and compare to specifications on data plate.
	N/A	See what other loads are on the wall circuit.
Unit will not turn on	N/A	Check wall power source.
	N/A	Check fuse/circuit breaker on unit or in wall.
	N/A	Check all wiring connections, especially around the on/off switch.
Unit is smoking out of the box	N/A	This is not an uncommon occurrence for new units. The elements will burn off protective coatings. Run the bath in a well ventilated area at high temperature for one hour until smoke dissipates.

Note: N/A is not available.

Service

If this product should require service, contact your customer service representative.

PARTS LIST

Table 6. Parts

Description	115v.	220v.
Circulating Pump	102086	102088
Cooling Fan	110026	110024
Element - 1265PC	9570582	9570583
Element- 1275PC	NA	9570584
Element - 1285PC	9570743	9570744
Fuse, 6.3 Amp 1265PC	3300515	3300515
Fuse, 12.5 Amp 1275PC	NA	3300520
Fuse, 6.3 Amp 1285PC	3300520	3300515
Gable Covers - 1265PC	9750510	9750510
Gable Covers - 1275PC	NA	9750512
Gable Covers - 1285PC	9750511	9750511
Main Temperature Control	1750591	1750592
On/Off Switch	103351	103351
Over Temperature Safety Control	1750595	1750595
Pilot Light, Green	200021	200021
Pilot Light, Red	200020	200020
Power Cord	100014	101990
Power Cord - European	1800500	1800500
Tank - 1265PC	7930508	7930508
Tank - 1275PC	NA	9550653
Tank - 1285PC	7930511	7930511

***Please note that the 1275PC is only available in 220V configuration.**

UNIT SPECIFICATIONS

These units are 115V or 220V. Please refer to the unit data plate for its individual specifications.

Table 7. Weight

Model	Shipping	Net
1265PC	36 lbs.	30 lbs.
1275PC	170 lbs.	78 lbs.
1285PC	48.2lbs.	37.1 lbs.

Table 8. Dimensions

Model	Exterior WxDxH	Interior WxDxH
1265PC	14 x 29 x 9.5	11.5 x 19.5 x 6
1275PC	51 x 26.5 x 24.5	18 x 36 x 9
1285PC	16 x 23.5 x 15.5	12 x 14 x 11

Table 9. Capacity

Model	Liters
1265PC	20
1275PC	100
1285PC	30

Table 10. Temperature

Model	Range	Uniformity	Sensitivity
1265PC	Amb. +5°C to 90.0	+ .2°C @ 37°C	+ .07°C
1275PC	Amb. +5°C to 70.0	+ .2°C @ 37°C	+ .07°C
1285PC	Amb. +5°C to 90.0	+ .2°C @ 37°C	+ .07°C

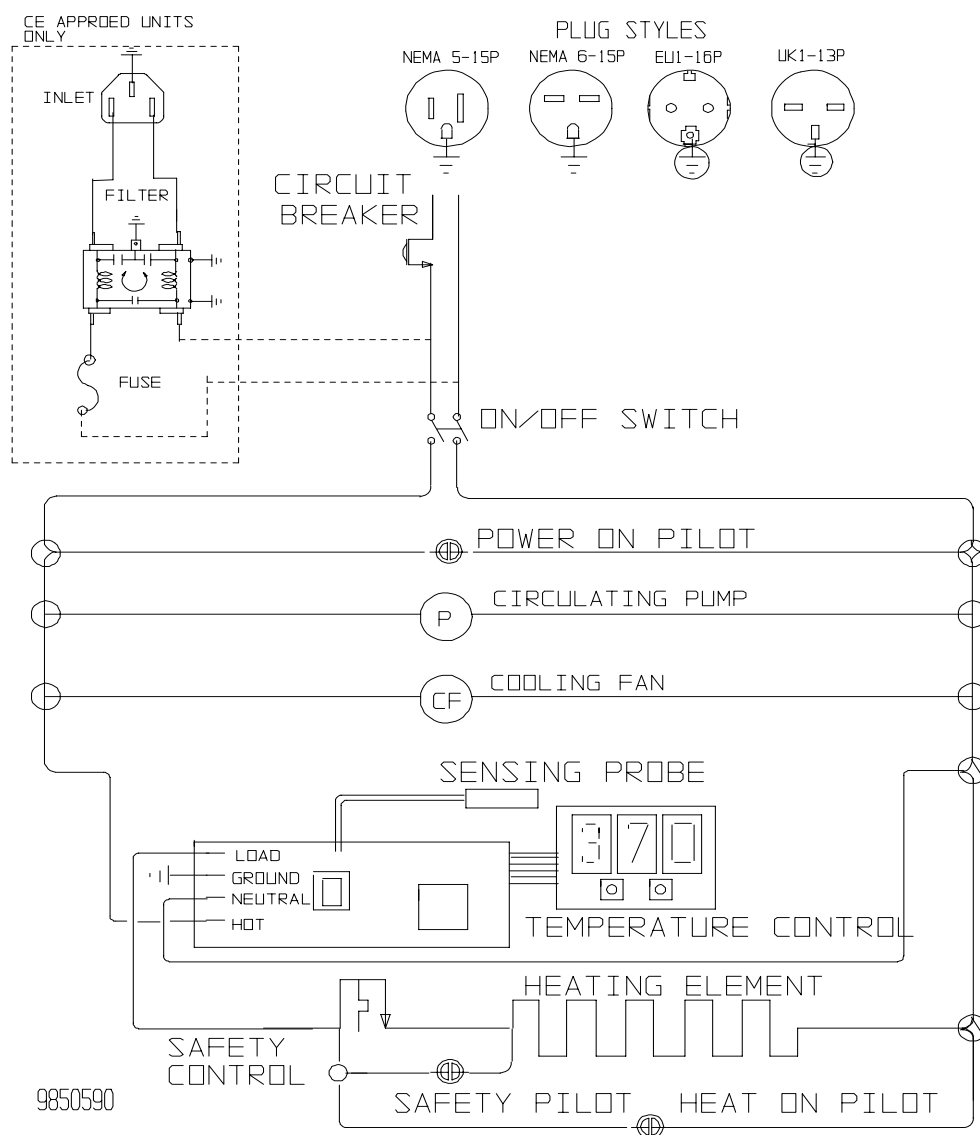
Table 11. Power Requirements

Model	Voltage	Voltage -2 Models
1265PC	Volts 110-120V, Amps 6A, 50/60 Hz	Volts 220-240V, Amps 3A, 50/60Hz
1275PC	N/A	Volts 220-240V, Amps 9A, 50/60Hz
1285PC	Volts 110-120V, Amps 6.5A, 50/60 Hz	Volts 220-240V, Amps 3.5A, 50/60Hz

For all units you will find a label specifying the fuse rating and type, near the fuse holder. All units of this type should be replaced with fuse of the proper type and amperage. If there are any questions regarding the correct fuse, please call customer support.

SCHEMATICS

Figure 5. Wire Diagram 1265-1285



SHELDON MANUFACTURING, INC.
LIMITED WARRANTY

Sheldon Manufacturing, Inc., ("Manufacturer") warrants for the original user of this product in the U.S.A. only that this product (parts only if outside of the U.S.A.) will be free from defects in material and workmanship for a period of two years from the date of delivery of this product to the original user (the "Warranty Period"). During the Warranty Period, Manufacturer, at its election and expense, will repair or replace the product or parts that are proven to Manufacturer's satisfaction to be defective, or, at Manufacturer's option, refund the price or credit (against the price of future purchases of the product) the price of any products that are proven to Manufacturer's satisfaction to be defective. This warranty does not include any labor charges if outside of the U.S.A. This warranty does not cover any damage due to accident, misuse, negligence, or abnormal use. Use of Manufacturer's product in a system that includes components not manufactured by Manufacturer is not covered by this warranty. This warranty is void in the event that repairs are made by anyone other than Manufacturer without prior authorization from Manufacturer. Any alteration or removal of the serial number on Manufacturer's products will void this warranty. **Under no circumstances will Manufacturer be liable for indirect, incidental, consequential, or special damages.** The terms of this warranty are governed by the laws of the state of Oregon without regards to the principles of conflicts of laws thereof. If any provision of this limited warranty is held to be unenforceable by any court of competent jurisdiction, the remainder of this limited warranty will remain in full force and effect.

This warranty is in lieu of and excludes all other warranties or obligations, either express or implied. Manufacturer expressly disclaims all implied warranties, including without limitation, the warranties of merchantability and fitness for a particular purpose.

.....

For fast and efficient support, please have the following information available anytime you request service:

Model _____

Serial No. _____

Part No. _____

Order From VWR

Call 800-932-5000

from anywhere in the U.S. and Canada

Sales & Inventory Locations:

Pacific Area Anchorage, AK Salt Lake City, UT San Francisco, CA Seattle, WA Tualatin, OR	Northwest Area Albuquerque, NM Denver, CO Phoenix, AZ San Diego, CA San Dimas, CA	Midwest Area Chicago, IL Detroit, MI Indianapolis, IN Minneapolis, MN St. Louis, MO	Northeast Area Boston, MA Cincinnati, OH Cleveland, OH Pittsburgh, PA Rochester, NY	Southeast Area Atlanta, GA Oak Ridge, TN
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Or Call Direct for Specialized Service Locations:

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Puerto Rico Carr. #869 Km. 1.5 M4 Royal Industrial Park Catano, PR 00962 (787) 788-3222 fax: (787) 78804320	VWR Direct 911 Commerce Ct. Buffalo Grove, IL 60089 (800) 444-0880	VWR National Accounts 1310 Goshen Pkwy W. Chester, PA 19380 (610) 431-1700



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