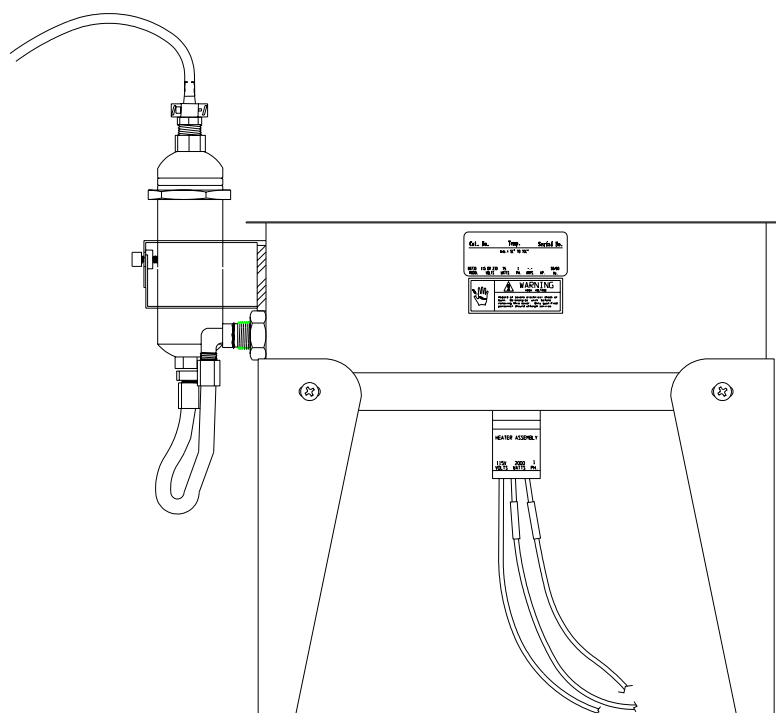


Installation/Service Manual

Concentric Ring Steaming Baths

Model (Precision Catalog) Numbers
2896 (51220041), 2897 (51220202)
2898 (51220042), 2899 (51220043)



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For repair information or replacement parts assistance from the manufacturer, call Technical Services using our toll free telephone number.

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REVISION STATUS

INDEX	DATE	AMENDED PAGES	NOTES
A			Initial release
C	3/99		Update part numbers and manual format
D	10/99	7	Update parts list for new kit no.'s
E	7/05	34002565(667309411)	new manual #, manufacture location
F	3/07	4 and 8	added note to add shrink tubing, updated heater illustration

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INTRODUCTION

Your satisfaction and safety are important to **Thermo** and a complete understanding of this unit is necessary to attain these objectives.

As the user of this apparatus, you have the responsibility to understand the proper function and operational characteristics of your bath. This instruction manual should be thoroughly read and all operators given adequate training before attempting to place this unit in service. Awareness of the stated cautions and warnings, and compliance with recommended operating parameters -- together with maintenance requirements -- are important for safe and satisfactory operation. The unit should be used for its intended application; alterations or modifications will **VOID THE WARRANTY**.

WARNING

AS A ROUTINE LABORATORY PRECAUTION, ALWAYS WEAR SAFETY GLASSES WHEN WORKING WITH THIS APPARATUS.

This product is not intended, nor can it be used, as a sterile or patient connected device. In addition, this apparatus is not designed for use in Class I, II or III locations as defined by the National Electrical Code.

UNPACKING AND DAMAGE

Save all packing material until unit is put into service. This merchandise was carefully packed and thoroughly inspected before leaving our factory.

Responsibility for safe delivery was assumed by the carrier upon acceptance of the shipment; therefore, claims for loss or damage sustained in transit must be made upon the carrier by the recipient as follows:

Visible Loss or Damage: Note any external evidence of loss or damage on the freight bill, or express receipt, and have it signed by the carrier's agent. Failure to adequately describe such external evidence of loss or damage may result in the carrier's refusing to honor your damage claim. The form required to file such claim will be supplied by the carrier.

Concealed Loss or Damage: Concealed loss or damage means loss or damage which does not become apparent until the merchandise has been unpacked and inspected. Should either occur, make a written request for inspection by carrier's agent within 15 days of the delivery date; then file a claim with the carrier since the damage is the carrier's responsibility.

If you follow the above instructions carefully, we will guarantee our full support of your claim to be compensated for loss or concealed damage.

DO NOT -- FOR ANY REASON -- RETURN THIS UNIT WITHOUT FIRST OBTAINING AUTHORIZATION. In any correspondence to **Thermo**, please supply the nameplate data, including catalog number and serial number.

GENERAL INFORMATION

Precision Concentric Ring Steaming Baths are designed to gently warm, melt, or concentrate samples. Concentric rings accommodate various sizes of glassware or evaporating dishes. Stainless steel rings are flange-formed for a smooth fit. Four hole bath openings become progressively larger in 1" (25mm) increments, as each ring is removed, to a maximum diameter of 5-1/8" (130mm). Eight hole baths have maximum bath opening diameters of 4-1/8" (105mm), 5-1/8" (130mm), and 6-1/8" (156mm).

Adjustable water level regulator continuously maintains desired liquid depths when connected to a suitable supply source. Other construction features include stainless steel bath body, copper clad immersion heater, metal support stand, and 3-heat/off switch.

NOTE

DUE TO OPTIONAL RECESS-MOUNTING OF THE BATHS, SUPPORT STAND ASSEMBLY AND HEATER SWITCH WIRING MUST BE COMPLETED AT THE TIME OF INSTALLATION.

INSTALLATION

WARNING

INSTALLATION SHOULD BE COMPLETED BY QUALIFIED PERSONNEL ONLY.

Location: For maximum efficiency, the bath should be installed on a level surface, and free as possible from drafts or severe temperature changes which can affect the performance of the bath.

A convenient source of water and electricity facilities must be considered when choosing a location for electrically heated models.

Since these baths are suitable for flush or recess mounting in a bench top, table top, or hood, a dimensional drawing for table top openings is provided.

CAUTION

EXERCISE CARE WHEN USING ACIDIC OR CAUSTIC SOLUTIONS AS THEY WILL ATTACK THE STAINLESS STEEL BATH BODY, THE CONCENTRIC RING COVERS, AND ALSO THE COPPER HEATER IF SERIOUS SPILLAGE INTO THE BATH SHOULD OCCUR.

Catalog Number	Description	Volts	Hz	Watts	Amps
3166420	4-Hole Bath	115	50/60	1100	9.2
3166563	4-Hole Bath	230	50/60	1100	4.6
3166421	8-Hole Bath	115	50/60	2000	16.6
3166422	8-Hole Bath	230	50/60	2000	8.3

Technical Specifications		
Model Number	2896, 2897	2898, 2899
No. of Holes	4	8
Max Temp. (°C)	100	100
Time to 100°C (min.)	40*	58 *
Heating Characteristics	275W 550W 1000W	500W 1000W 2000W
Capacity, gal. (liters)	2 (7.6)	4 (15.1)
Dimensions Overall L in. (cm.) W D	17 (43) 14.5 (37) 4 (10)	31 (78) 15 (38) 4 (10)
Holes, Dia. in. (cm)	4 ea. 5 (13)	2 ea. 4 (10) 2 ea. 6 (15) 4 ea. 5 (13)
Shipping Weight lbs. (kg)	26 (12)	37 (17)

*Medium setting maintains boiling.

WARNING

FOR PERSONAL SAFETY, THIS APPARATUS MUST BE PROPERLY GROUNDED.

Electrical Connections: (Important, Please Read Carefully)

Determine the total amount of current being used by other apparatus connected to the circuit that will be used for this apparatus. It is critical that the added current demand (see nameplate) of this and other equipment used on the same circuit does not exceed the rating of the fuse or circuit breaker.

National Electrical Code should be observed for proper fusing and size of service wires. All wire connections should be completed by a qualified electrician.

CAUTION

BE SURE THAT THE POWER SUPPLY IS OF THE SAME VOLTAGE AS SPECIFIED ON THE NAMEPLATE.

The immersion heater service leads extend out through the bottom of the bath.

CAUTION

POWER MUST NOT BE SUPPLIED TO THE HEATER UNTIL UNIT IS ADEQUATELY FILLED WITH WATER; HEATER BURNOUT WILL OCCUR.

The bath, as supplied, is not completely wired. This procedure allows the customer to mount and wire the switch in a convenient location.

Slide the provided shrink tubing over the wires indicated in the illustration on Page 8. Wire the heater to the 3 heat switch provided and the switch to the power source. (See wiring diagram on page 8). The heater locknut contains a grounding terminal and a connection must be made to a well grounded conduit system.

A cover plate is supplied for mounting the switch in a standard electrical box (not provided) at a convenient location.

CAUTION

WHEN MOUNTING SWITCH TO SWITCH COVER PLATE, DO NOT OVERTIGHTEN SWITCH NUT, AS IT COULD CAUSE THE SWITCH TO FAIL.

CAUTION

TO PREVENT LEAKAGE, BE SURE THE LARGE LOCKNUT HOLDING THE HEATER IN PLACE IS TIGHT.

WATER LEVEL REGULATOR INSTRUCTIONS

INSTALLATION INSTRUCTIONS

Use the following steps along with Fig. 1 & 2 shown on page 5.

--FOR UNITS USING TABLE WITH LEGS--

1. Place Water Level Regulator Bracket. Assembly between the bottom of the bath body & the top of the bath table frame. (Bracket should be flush with back edge of the bath body, see Fig. 1 Side View Note). You do not need to remove the backing of the double-sided adhesive tape. The weight of a filled bath will keep the bracket assembly in place.

-Proceed with Step 2.

FOR UNITS MOUNTED IN TABLETOP OR COUNTER--

1. After cutting out countertop see Fig. 3 on page 9, remove backing of double sided tape on bracket and attach to bath by pressing the bracket firmly against the side & bottom of bath body (Bracket should be flush with back edge of bath body, see Fig.1 Side View Note).

-Proceed with Step 2.

2. Insert the plastic tubing (coming from the bottom of the water level regulator) into the elbow connector (at the drain) & tighten the elbow connector fitting firmly to insure a good seal. (Tabletop unit can now be remounted into table opening).
3. Uncoil the flexible tubing & attach to 1/4" Hose Barb Fitting (located at the top of water level regulator) by using Hose Clamp.
4. After filling bath with water, attach the other end of the flexible tubing to water supply by using hose clamp & turn on water supply. (MIN is approx. 15 PSI, MAX is approx 75 PSI)

NOTE: Water line marking on the Water Level Regulator is an indicator of the approx. water level that will be maintained in bath. The assembly has been set to maintain approx. 1-3/4" of water. To raise the set water level, loosen thumbscrew & raise Water Level Regulator to desired level (coincide with Water Line mark) & tighten thumbscrew to hold Water Level Regulator in place.

NOTE: Air bubbles (created by steaming water in bath) may form in plastic tube between bath & water level regulator. This does not affect the operation of Water Level Regulator. If you wish to relieve air bubbles, loosen thumbscrew on bracket raise Water Level Regulator then lower to original position and tighten thumbscrew.

WATER LEVEL REGULATOR ASSEMBLY

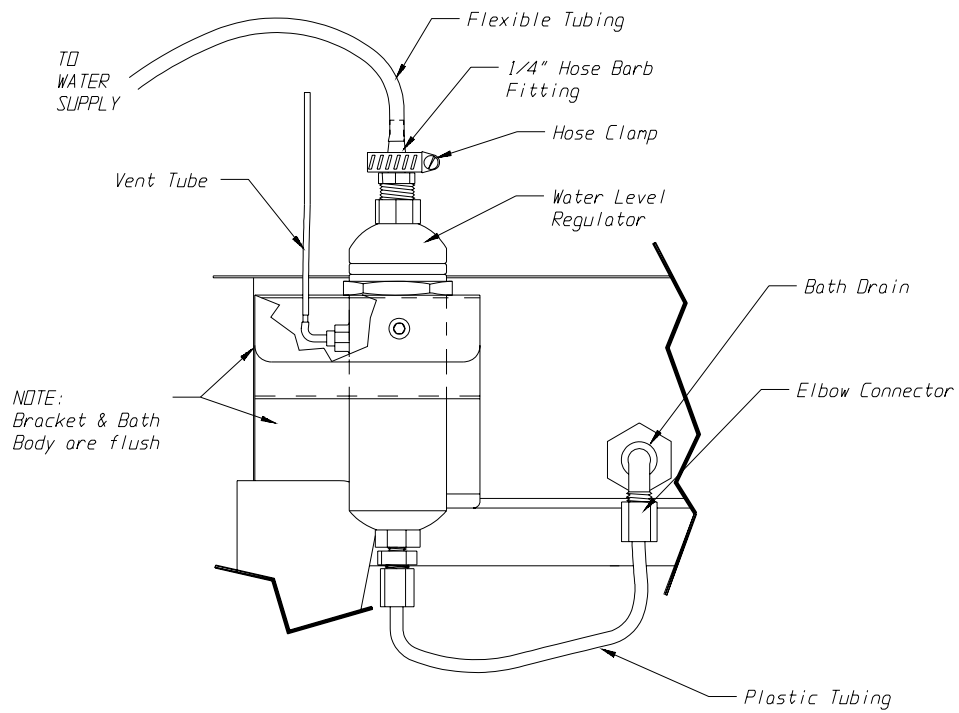


FIGURE 1
SIDE VIEW OF BATH

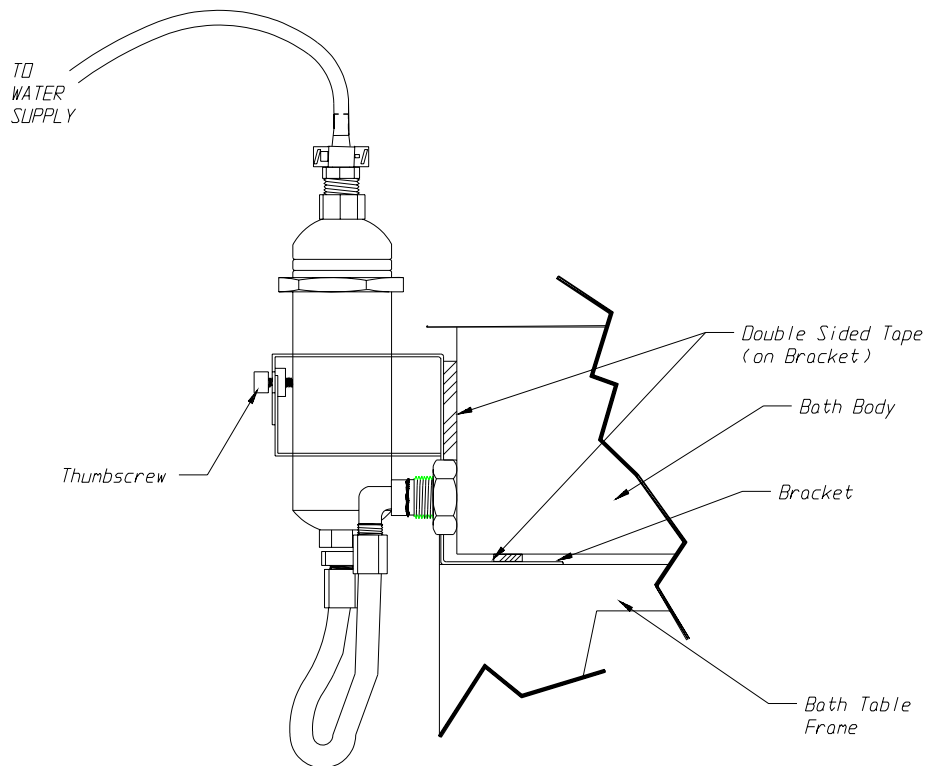


FIGURE 2
CUTAWAY FRONT VIEW OF BATH

OPERATION

Step 1: Turn water source "ON" and adjust Water Level Regulator to maintain water level (to replace water lost in the bath due to evaporation).

CAUTION

IF THE WATER LEVEL DROPS BELOW THE HEATING ELEMENT; HEATER BURNOUT WILL OCCUR.

Step 2: Turn switch knob to "high" position to bring water to a boil.

Step 3: Select switch position to maintain vaporization without violent boiling.

Cleaning and Care of Stainless Steel

Occasionally there is a misunderstanding with regards to the ability of stainless steel to withstand attack from various materials.

Stainless steel will resist corrosion, it is not impervious to it.

It is the most practical and economical, relatively speaking, material for fabrication of many lab items, but for full life it must receive a certain amount of care.

There are many chemical cleaners, but usually just changing the water in a bath, or a periodic cleaning with a non-scratching scouring powder such as Bon Ami is satisfactory.

Service and Maintenance

The predominant cause of heater element failure is operation without total immersion. When a heater is operated in such a fashion there is insufficient water to dissipate the large concentration of energy in the element. This will cause the copper sheath to become annealed soften and rupture. An electrical short and heater failure will occur. This condition is readily identified with a blue discoloration and actual melting of the copper at the point it is exposed to air. This failure IS NOT covered by the warranty.

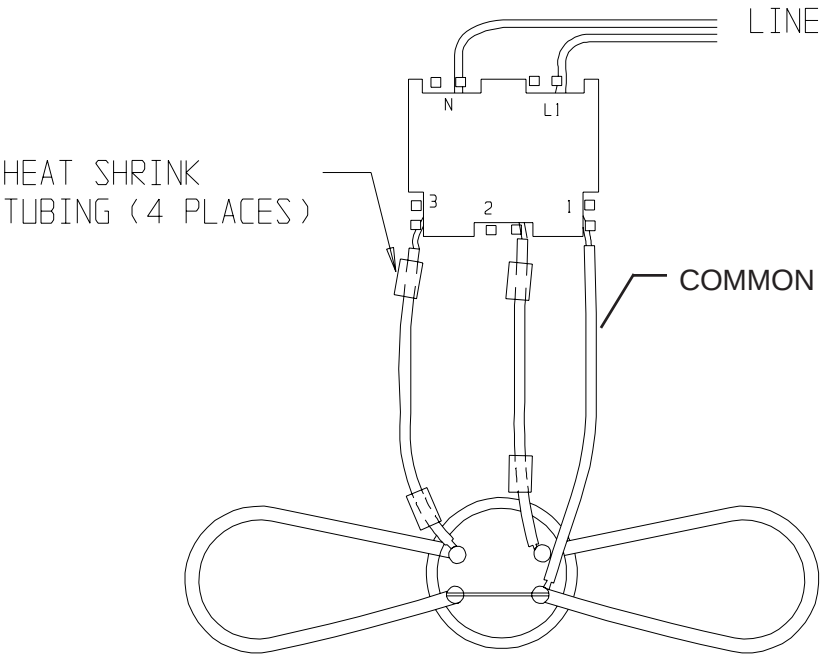
The heater element is extracted by removing the locknut retaining the heater to the bottom, and then removing the heater coil by pushing up through the hole in the bath bottom. It is then removed through one of the large holes in the top of the bath. A new element is replaced in like manner. Replace the O-ring on the inside of bath bottom.

Switch: When replacing, care should be taken to tape wires, assuring proper replacement.

PARTS LIST

Part Number	Qty.	Description
3167048	1	Heater Assembly Kit 120 Volt, 1100 Watts, 4 Hole Bath
3161568	1	Heater Assembly Kit 240 Volt, 1100 Watts, 4 Hole Bath
3166980	1	Heater Assembly Kit 120 Volt, 2000 Watts, 8 Hole Bath
3166974	1	Heater Assembly Kit 240 Volt, 2000 Watts, 8 Hole Bath
3167276	1	Switch Assembly
3174885	1	Knob, Switch
3166211	1	Water Level Regulator Kit
3166186	1	Concentric Ring Kit, 4" Dia., Stainless Steel
3166187	1	Concentric Ring Kit, 5" Dia., Stainless Steel
3166215	1	Concentric Ring Kit, 6" Dia., Stainless Steel

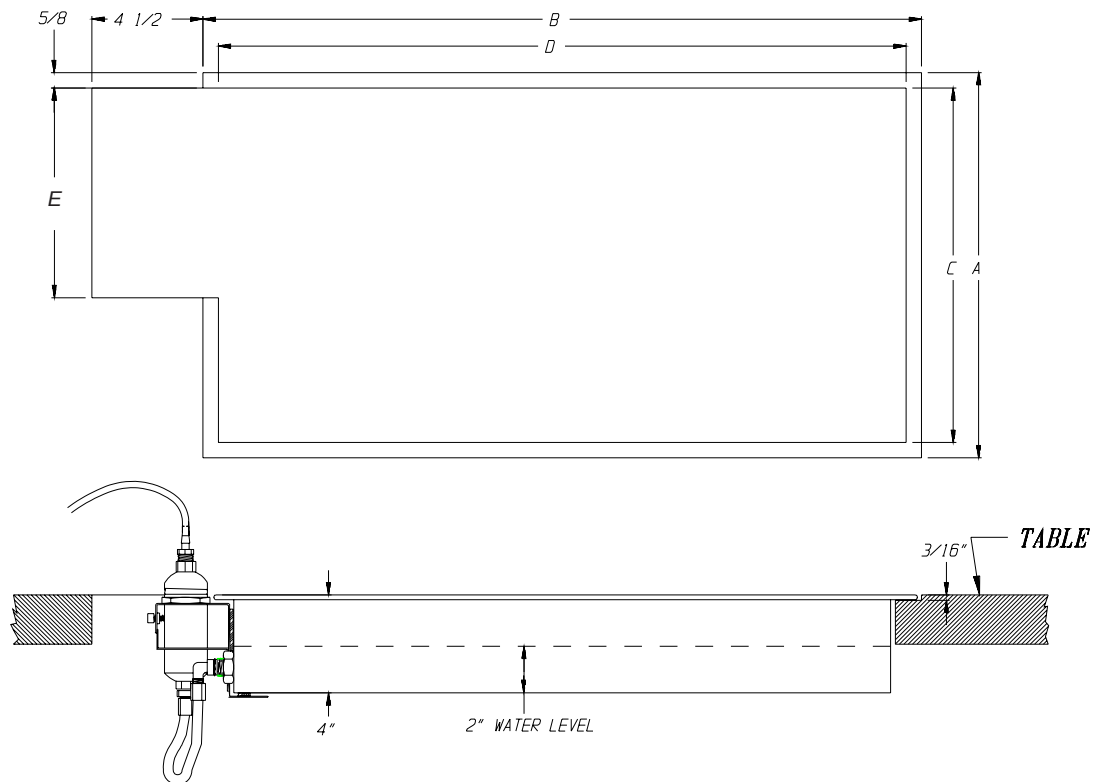
HEATER AND 3 HEAT SWITCH CONNECTIONS



SWITCH CIRCUIT

HIGH HEAT	1 & L1 2 & N 3 & N
MEDIUM HEAT	1 & L1 3 & N
LOW HEAT	2 & L1 3 & N
OFF	ALL OPEN

DIMENSIONAL DRAWING FOR 4 & 8 HOLE BATHS TABLE MOUNTING



DIMENSION CHART

BATH TYPE	BATH TOP SIZE		TABLE OPENING		
	A	B	C	D	E
4 HOLE	$14\ 3/8$	$14\ 1/2$	$13\ 7/8$	$13\ 7/8$	8
8 HOLE	15	$28\ 3/8$	$14\ 3/8$	$27\ 7/8$	$8\ 1/2$

FIGURE 3

THERMO FISHER SCIENTIFIC STANDARD PRODUCT WARRANTY

The Warranty Period starts two weeks from the date your equipment is shipped from our facility. This allows for shipping time so the warranty will go into effect at approximately the same time your equipment is delivered. The warranty protection extends to any subsequent owner during the first year warranty period.

During the first year, component parts proven to be non-conforming in materials or workmanship will be repaired or replaced at Thermo's expense, labor included. Installation and calibration are not covered by this warranty agreement. The Technical Services Department must be contacted for warranty determination and direction prior to performance of any repairs. Expendable items, glass, filters and gaskets are excluded from this warranty.

Replacement or repair of components parts or equipment under this warranty shall not extend the warranty to either the equipment or to the component part beyond the original warranty period. The Technical Services Department must give prior approval for return of any components or equipment. At Thermo's option, all non-conforming parts must be returned to Thermo Electron Corporation postage paid and replacement parts are shipped FOB destination.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL OR IMPLIED. NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY.

Thermo shall not be liable for any indirect or consequential damages including, without limitation, damages relating to lost profits or loss of products.

Your local Thermo Sales Office is ready to help with comprehensive site preparation information before your equipment arrives. Printed instruction manuals carefully detail equipment installation, operation and preventive maintenance.

If equipment service is required, please call your Technical Services Department at 1-888-213-1790 (USA and Canada) or 1-740-373-4763. We're ready to answer your questions on equipment warranty, operation, maintenance, service and special application. Outside the USA, contact your local distributor for warranty information.



Rev. 3 2/07

THERMO FISHER SCIENTIFIC INTERNATIONAL DEALER WARRANTY

The Warranty Period starts two months from the date your equipment is shipped from our facility. This allows for shipping time so the warranty will go into effect at approximately the same time your equipment is delivered. The warranty protection extends to any subsequent owner during the first year warranty period. Dealers who stock our equipment are allowed an additional six months for delivery and installation, provided the warranty card is completed and returned to the Technical Services Department.

During the first year, component parts proven to be non-conforming in materials or workmanship will be repaired or replaced at Thermo's expense, labor excluded. Installation and calibration are not covered by this warranty agreement. The Technical Services Department must be contacted for warranty determination and direction prior to performance of any repairs. Expendable items, glass, filters, reagents, tubing, and gaskets are excluded from this warranty.

Replacement or repair of components parts or equipment under this warranty shall not extend the warranty to either the equipment or to the component part beyond the original warranty period. The Technical Services Department must give prior approval for return of any components or equipment. At Thermo's option, all non-conforming parts must be returned to Thermo postage paid and replacement parts are shipped FOB destination.

THIS WARRANTY IS EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES, WHETHER WRITTEN, ORAL OR IMPLIED. NO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL APPLY. Thermo shall not be liable for any indirect or consequential damages including, without limitation, damages relating to lost profits or loss of products.

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