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HPLC Column Heater

Instruction Manual

For Technical Service Call
1-800-4BIORAD
(1-800-424-6723)



Warranty

Unless otherwise specified, instruments sold by Bio-Rad Laboratories are warranted for 1 year against defects in materials and workmanship.

If any defects should occur in the instrument during this warranty period, Bio-Rad will repair or replace the defective parts without charge. However, the following defects are specifically excluded:

1. Defects caused by improper operation.
2. Repair or modification done by anyone other than Bio-Rad or an authorized agent.
3. Use of parts supplied by anyone other than Bio-Rad.
4. Damage caused by accident or misuse.
5. Damage caused by disaster.
6. Corrosion due to solvent or sample spills.

This warranty does not apply to the heater fuse.

For any inquiry or request for repair service, contact Bio-Rad Laboratories after confirming the model and serial number of your instrument.

Model _____

Serial No. _____

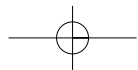
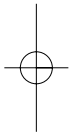
Date of Delivery _____

Warranty Period _____



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Section 1 Introduction

1.1 General Description

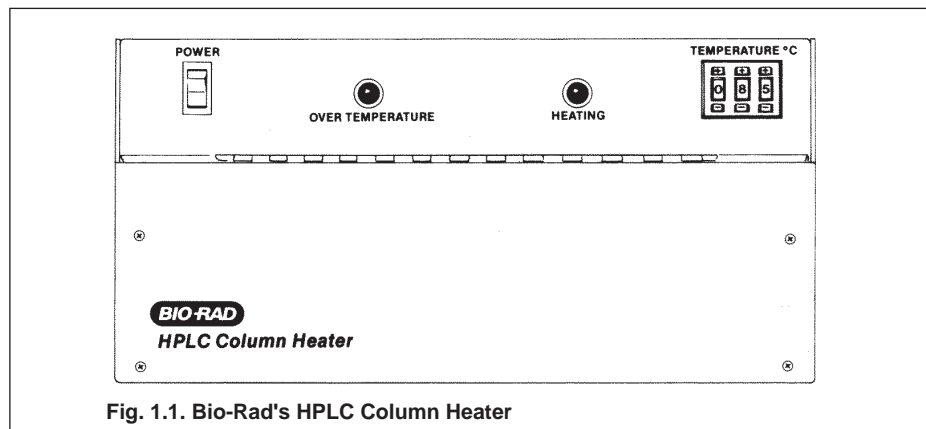


Fig. 1.1. Bio-Rad's HPLC Column Heater

Bio-Rad's HPLC Column Heater provides consistent, reproducible temperature control for HPLC columns. The heater will produce temperatures between ambient +5° C to 150° C with accuracy of $\pm 2^\circ$ C, while operating in environments with temperatures between -5° C to 50° C. A thermostat is set to turn off power automatically at 180° C, providing over-temperature protection. After a standard warm up period, the column heater will maintain temperatures with a stability of $\pm 0.1^\circ$ C.

The heater has a dual column capacity, and can accommodate columns from 5 to 30 cm in length and from 1/4 to 1/2 inch in diameter simply by attaching the appropriate column insert to the base plate.

A unique solvent preheat block, available as an accessory, provides a method for preheating solvent.

Features

- Accommodates two columns simultaneously.
- Column inserts attach easily.
- Pre-heat block available for solvent line.
- Heat-up time between 15 and 60 minutes.

1.2 Requirements and Specifications

Operating range	
Minimum temperature	Ambient +5° C
Maximum temperature	150° C
Temperature set point	
Accuracy	±2° C
Repeatability	±1° C
Stability (after 1 hour warm-up)	±0.1° C
Temperature sensor	Semi-conductor transducer
Temperature controller	Zero crossing proportional
Power consumption	435 watts @ 115 volts
Over-temperature protection	Maximum temperature 180° C ± 10° C
Case temperature only obtained if enough ventilation around the case)	Maximum temperature 70° C (this is is provided
Power requirements	115 volts 50/60 Hz 230 volts 50/60 Hz
Construction	
Heater dimensions	17 x 7.5 x 3.5 inches
Heater weight	12 pounds

1.3 Unpacking the Unit

Main Unit

After unpacking, verify that the serial number printed on the back of the unit and the number on the warranty card is the same.

Accessories

The standard accessories supplied with the unit include two spare fuses and the instruction manual. If any item is missing or damaged, contact Bio-Rad Laboratories immediately.

Note: Column inserts must be ordered separately. See Table 1.1.

Table 1.1. Accessories and Optional Equipment

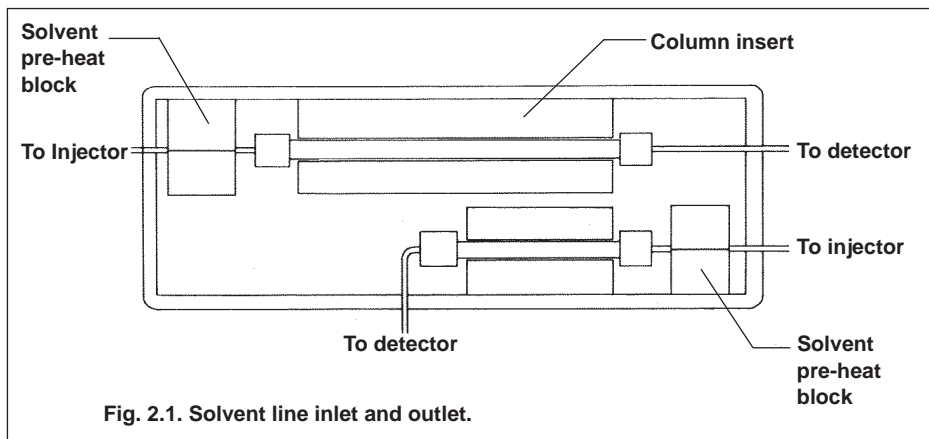
<u>Item</u>	<u>Catalog No.</u>
Column Inserts, supplied with 9/64 allen wrench and 4 8-32 x 3/8" socket head screws	
1/4" x 5 cm	125-0428
1/4" x 10 cm	125-0429
1/4" x 15 cm	125-0434
1/4" x 25 cm	125-0430
3/8" x 10 cm	125-0431
3/8" x 30 cm	125-0432
1/2" x 30 cm	125-0433

Table 1.1. (Continued)

Item	Catalog No.
Injector Bracket, right, supplied with 3 6-32 x 1/4" flat head screws	125-0438
Injector Bracket, left, supplied with 3 6-32 x 1/4" flat head screws	125-0439
Solvent Pre-Heat Block, supplied with 2 8-32 x 3/8" socket head screws	125-0440
Mounting brackets, supplied with 2 1/2" rod clamps	125-0441

Section 2 Installation and Operation

Bio-Rad's HPLC Column Heater operates at temperatures between +5° C and 150° C. The heater requires a minimum lab bench area 20 x 9 inches unless wall mounted. The column inserts can be mounted with a bias toward either end of the heating compartment, and injector brackets can be mounted on either side of the unit, to allow maximum flexibility. As shown in Figure 2.1, solvent line inlets and outlets may be installed in several configurations.



2.1 Start-up Procedure

The column heater can be used in the standard horizontal position, or it can be mounted vertically using the optional mounting brackets available as an accessory item.

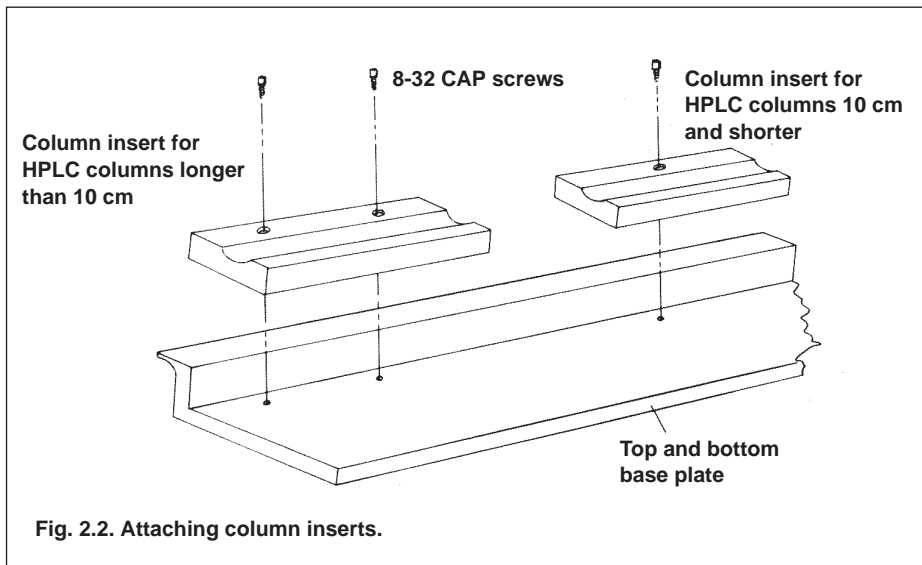
1. After unpacking and inspecting the column heater, place it in the area to be used and plug the power cord into a properly grounded electrical outlet.
2. Select a column insert that matches the size of the column to be used. Attach the insert to the column heater with the four 8-32 x 3/8 inch socket head screws supplied (see Figure 2.2). Make sure that the two halves of the insert are aligned exactly, using the base plate rail as a guide.
3. Connect the injector solvent line to the column.

Note: If the optional solvent pre-heat block is to be used, attach the block in front of the column insert, and position the tubing through the solvent pre-heat block. This positioning provides efficient solvent pre-heating.

4. Connect the solvent outlet line and begin flow.

Warning: Check connection for leaks.

5. Close the top of the column heater, and latch to secure.
6. Turn column heater power on.
7. Select the desired temperature. The amber heating light will glow until the heat reaches the set temperature (about 20 minutes).



Section 3 Troubleshooting Guide

Problem	Possible Cause
No power	<ol style="list-style-type: none"> 1. Unit not plugged in. 2. Fuse blown; find reason for blown fuse before replacing. 3. Defective power switch.
Power light on but no heating	<ol style="list-style-type: none"> 1. Block temperature is over temperature selected. 2. Electronics circuit failed.
Over-temperature light on	<ol style="list-style-type: none"> 1. Block temperature is about 150° C. 2. Electronics circuit failed.
Longer heating time	<ol style="list-style-type: none"> 1. One heater is inoperative.
Temperature runs away and over-temperature light doesn't come on	<ol style="list-style-type: none"> 1. Failure in over-temperature protection circuit.

**BIO-RAD****Chemical
Division**

3300 Regatta Boulevard
Richmond, California 94804
Telephone 415 232-7000
Fax: 415 232-4257

Eastern Regional Office, P.O. Box 1229, 85A Marcus Dr., Melville, New York 11747 • Phone (516) 756-2575 • Fax (516) 756-2594
European Headquarters, Bio-Rad Laboratories, 19, Dreve du Senechal, B-1180 Brussels • Phone 32/2/375 59 70 • Fax 32/2/374 61 62
Canada, Bio-Rad Laboratories (Canada) Ltd., 5149 Brasco Boulevard, Mississauga, Ontario L4W 2A6 • Phone (416) 624-0713 • Fax (416) 624-3019
Australia, Bio-Rad Laboratories Pty Limited, P.O. Box 371, North Ryde, N.S.W. 2113 • Phone 61-2-805-5000 • Fax 61-2-805-1920
Austria, Bio-Rad Laboratories Ges.m.b.H., Auhofstrasse 78D, A-1130 Wien • Phone 43/222/82 89 010 • Fax 43/222/82 85 629
Belgium, Bio-Rad Laboratories S.A./N.V., Begoniastraat 5, B-9810 Nazareth • Phone 32/2/91 85 55 11 • Fax 32/2/91 85 65 54
France, Bio-Rad S.A., 94/96 rue Victor Hugo, 94200 Ivry Sur Seine • Phone 33/1/49 60 68 34 • Fax 33/1/46 71 24 67
Germany, Bio-Rad Laboratories GmbH, Heidemannstrasse 164, P.O. Box 450 133, D-8000 München 45 • Phone 8/89/318 84 0 • Fax 0/89/318 84 100
Pacific, Bio-Rad Laboratories, Unit 1109-1111, 11/F., New Kowloon Plaza, 38, Tai Kok Tsui Road, Tai Kok Tsui, Kowloon • Phone 852/789/3300 • Fax 852/789/1257
Italy, Bio-Rad Laboratories SRL, Via Morandi, 66, I-20090 Segrate Milano • Phone 39/2/213 87 51 • Fax 39/2/213 90 32
Spain, Bio-Rad Laboratories, S. A. Avda Valdelaparra 3, Pol. Ind. Alcobendas, E-28100 Alcobendas, Madrid • Phone 34/1/661 7085 • Fax 34/1/661 9698
Japan, Nippon Bio-Rad Laboratories, K. K., Sumitomo Seimei Kachidoki Bldg 5-3-6 Kachidoki, Chuo-Ku, Tokyo 104 • Phone 03-3534-7665 • Fax 03-3534-8497
The Netherlands, Bio-Rad Laboratories B. V., Fokkerstraat 10, 3905 KV Veenendaal • Phone 31/8385-40666 • Fax 31/8385-42216
Switzerland, Bio-Rad Laboratories AG, Kanalstrasse, 17, CH-8152 Glattbrugg • Phone 41/1/810 16 77 • Fax 41/1/810 19 33
United Kingdom, Bio-Rad Laboratories Ltd., Bio-Rad House, Maylands Avenue, Hemel Hempstead, Herts HP2 7TD • Phone 44/442/23 25 52 • Fax 44/442/59118
New Zealand, Bio-Rad Laboratories, P.O. Box 100-051, North Shore Mail Centre, Auckland 10 • Phone 64/9/443/3099 • Fax 64/9/443/3097

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