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HPLC Column Heater

Instruction Manual

For Technical Service Call

1-800-4BIORAD

(1-800-424-6723)

BIO-RAD

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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

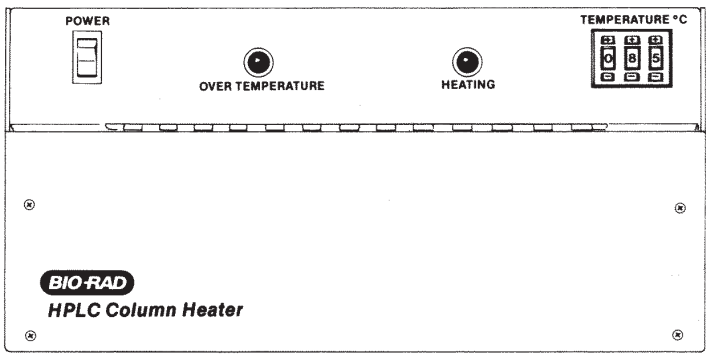


Fig. 1.1. Bio-Rad's HPLC Column Heater

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 ±2° 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 ±0.1° 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.

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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

Item	Catalog No.
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

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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.

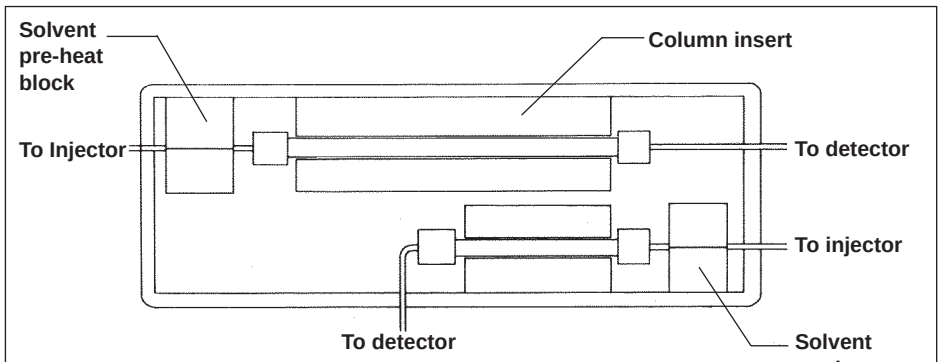


Fig. 2.1. Solvent line inlet and outlet.

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.

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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).

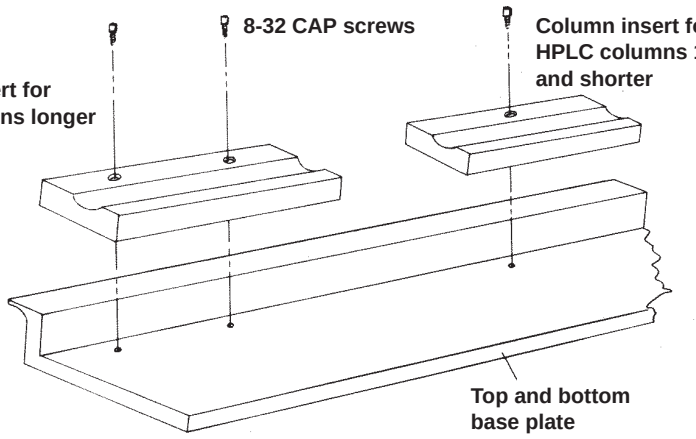


Fig. 2.2. Attaching column inserts.

Section 3
Troubleshooting Guide

Problem	Possible Cause
No power	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	1. Block temperature is over temperature selected. 2. Electronics circuit failed.
Over-temperature light on	1. Block temperature is about 150° C. 2. Electronics circuit failed.
Longer heating time	1. One heater is inoperative.
Temperature runs away and over-temperature light doesn't come on	1. Failure in over-temperature protection circuit.

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