

BD Viper™

Lysing Heater Manual

(for BD Viper System)



2008/04
Document Number: 8018634



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Change History

Revision Date	Pages	Reason
2005/04	All	New product release
2005/08	i, ii, iii, 9	Add instructions to reunite separated mercury
2006/10	i, ii, 1, 4, 9	Reflect minor design changes
2008/02	All	Updates for digital thermometer
2008/04	Preface, 2, 12	Add blue tube caution; add statement to p. 12

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Unpacking Instructions

Examine the carton, blocks and heater(s) for damage. If damage is apparent, contact your BD representative. Retain all packaging material in the event that the unit must be returned.

Remove the top layer of packing material from the shipping box.

Unpack and verify the contents of your package.

Remove the suction cups from the packaging. The lysing heater packaging includes two sets (8 total) of suction cups. Keep the second set in a safe location in the case of damage to the first set.

The Lysing Heater carton should contain: Lysing Heater with heater block, power cord, two sets of suction cups, Lyse Cover, and User's Manual. A digital thermometer for use with the lysing heater will be provided separately.

Summary of Warnings and Cautions

- ❑ **WARNING!** The protection provided by this product may be impaired if the equipment is used in a manner not consistent with the instructions in this manual.
- ❑ **WARNING!** Burn Hazard! The Lysing Heater reaches temperatures in excess of 100°C. Extreme caution should be exercised when the unit's power is on and until the temperature reaches 50°C after the unit is turned off. A lyse cover is provided to cover the heater when not in use.
- ❑ **WARNING!** The Heatblock units are designed for operation in dry conditions. DO NOT pour water, oil, or other fluids into the unit. This is a safety hazard. The chamber that the block sits in is not designed to be filled with liquid or other fluids. DO NOT place anything other than the module block in this cavity.
- ❑ **WARNING!** Wipe up spills immediately to prevent electrical shock. Biohazard spills should be cleaned up using approved laboratory procedures. Solvent spills are a fire hazard. Turn power off immediately and do not operate until clean up is complete and vapors have dissipated.
- ❑ **WARNING!** Do not operate the unit if it shows signs of electrical or mechanical damage.
- ❑ **WARNING!** To avoid danger of fire and/or explosion, do not heat fluids or compounds beyond their auto-ignition temperatures.
- ❑ **Caution!** Unit assumes previous setpoint when power is reapplied.
- ❑ **Caution!** The unit should not be used to lyse samples when the digital thermometer probe is in place.
- ❑ **Caution!** Do not place BD-supplied blue specimen tubes in the BD Viper Lysing Heater.



Summary of Specifications

Power

Heater	Model	Power Required	Watts
Lysing Heater	440975	108 – 132V / 50 – 60Hz	500
Lysing Heater	440976	220 – 240V / 50 Hz	500
Power Fuses	5mm x 20MM, 5 Amp quick acting 440975: One 7-Amp and one 1-Amp non-user serviceable fuse 440976: One 3.5-Amp and one .5-Amp non-user serviceable fuse		

Environmental Requirements

Non-Operating Storage	
Temperature	–20 ° to 65° C (–4° to 149° F)
Humidity	20% – 85% RH, non-condensing
Operating Conditions	
Temperature	18° – 33° C (64.4° to 91.4° F)
Humidity	20% – 85% RH, non-condensing
Indoor Use Only	
Altitude:	0 – 6,562 ft. (2,000 m) above sea level
Installation Category II and Pollution Degree 2 in accordance with IEC 664	

Initial Set-up

- 1 Place the heater in an area free of air currents. Air currents can affect temperature stability. Ensure that the surface on which the unit is placed will withstand typical heat produced by the unit.
- 2 If desired, hand-thread four suction cups to the bottom corners of the lysing heater housing. The suction cups are intended to maintain the position of the lysing heater on the lab bench. After installing the suction cups, position the lysing heater into the desired position and press downward to engage the suction cups.

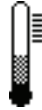
To prevent damage to the suction cups (if installed), disengage the suction cups with a flat object (such as a flat head screwdriver) before removing the lysing heater from the lab bench.

- 3 Hand-thread the side retaining screws until tight. The side retaining screws are intended to maintain the position of the inner lysing heating block within the lysing heater's housing.
- 4 The 120 volt units are supplied with a three prong line cord that should be plugged into a standard three prong grounded outlet (in the USA). The 220 volt units are supplied with 2 line cords to meet most countries' requirements. Ensure the power outlet is properly grounded.
- 5 Insert the thermometer probe into the thermometer well.

Instrument Controls

Each heater has its own **LED readout**. The display alternates between the **actual** and **setpoint** temperatures. The three controls are defined below:

Actual Temperature Indicator



The Actual temperature indicator is located at the front of the unit, at top left. It is marked with a "thermometer" icon. The indicator illuminates green when the actual temperature is displayed on the LED readout.

Setpoint Temperature Indicator



The Setpoint temperature indicator is located at the front of the unit, at the top right. It is marked with "thermometer" and "target" icons. When the setpoint temperature is displayed on the LED readout, the indicator illuminates green.

Up And Down Arrow Keys



The UP and DOWN Arrow Keys are used to increase (UP arrow) or decrease (DOWN arrow) the Setpoint temperature. Press and release a key to change the temperature in the desired direction by 0.1° C. If the key is pressed and held, the temperature changes rapidly. Release the key when the desired temperature is reached. NOTE: The Setpoint is adjusted at the factory. You typically will not need to adjust the setpoint.

Operation

- 1 Turn the power switch on the back of the heater to "ON" or "I". The display alternates between the actual temperature and the setpoint temperature.
- 2 To set the desired temperature, use the up arrow and down arrow keys. Holding either key down will cause the setpoint temperature to change rapidly. A single pressing of either key will move the setpoint temperature by 0.1° C. There are no "set" or "enter" keys to press. Once the setpoint temperature is programmed, it is accepted. While the keys are depressed, the display shows the setpoint. Once the setpoint is programmed and the keys are not depressed, the display alternates between setpoint and actual temperatures. (See assay specific package inserts for appropriate set temperatures.)
- 3 Allow time for the temperature to stabilize (approximately 90 minutes).
- 4 After verifying the temperature with the digital thermometer, remove the thermometer from the lysing heater.

Maintenance and Servicing

Disconnect the power to the unit before servicing. Your Heaters are built for long, trouble free, dependable service.

NOTE

No user serviceable components are inside the unit

For Service in North America Call:

Technical Service: 1-800-638-8663

Field Service: 1-800-544-7434

For a complete list of International Contacts, see your *BD Viper Instrument User's Manual*.

Heater Calibration

For Lysing Heaters with serial numbers less than or equal to 3299:

- 1 Insert the thermometer probe into the thermometer well.
- 2 Enter Calibration mode by pressing the up and down arrow keys simultaneously. The word "CAL" is displayed for approximately 5 seconds and continues to flash the word "CAL" every 5 seconds. The temperature is now fixed in Actual Temperature mode and the small green indicators no longer flash from Setpoint to Actual temperature.
- 3 Use the small flathead screwdriver (included in BD Viper System Start-up Kit) to turn the calibration control screw to adjust the temperature readout to match the measured (thermometer) temperature.
- 4 Exit Calibration mode by pressing both arrow keys simultaneously. The word "CAL" will be displayed for approximately 5 seconds. The readout will then alternately display Setpoint and Actual temperatures in correspondence with the green indicators.
- 5 Allow 60 minutes for temperature equilibration.
- 6 After equilibration, verify that the thermometer reads within $\pm 2.0^{\circ}\text{C}$ of the Setpoint Temperature.
- 7 Remove the thermometer probe from the lysing heater.

For Lysing Heaters with serial numbers greater than or equal to 3300:

- 1 Insert the thermometer probe into the thermometer well.
- 2 Enter Calibration mode by pressing the up and down arrow keys simultaneously. The word "CAL" is displayed for approximately 5 seconds and continues to flash the word "CAL" every 5 seconds. The temperature is now fixed in Actual Temperature mode and the small green indicators no longer flash from Setpoint to Actual temperature.
- 3 Push the up or down arrow keys to adjust the temperature readout to match the measured (thermometer) temperature.
- 4 Exit Calibration mode by pressing both arrow keys simultaneously. The word "CAL" will be displayed for approximately 5 seconds. The readout will then alternately display Setpoint and Actual temperatures in correspondence with the green indicators.
- 5 Allow 60 minutes for temperature equilibration.
- 6 After equilibration, verify that the thermometer reads within $\pm 2.0^{\circ}\text{C}$ of the Setpoint Temperature.
- 7 Remove the thermometer probe from the lysing heater.

NOTE

The heater temperature must be stabilized prior to starting the calibration procedure. To ensure stability, wait 90 minutes after instrument is turned ON. Wait 30 minutes after an incubation.

Cleaning Procedure

WARNING

DO NOT POUR WATER, OIL, OR OTHER FLUIDS INTO THE UNIT.
REVIEW SUMMARY OF WARNINGS SECTION.

- Wipe each unit with paper towels wetted with 1% (v/v) sodium hypochlorite solution. Re-wipe the unit with paper towels dampened with water. Dry the unit by wiping with clean dry paper towels.
- In the event of a spill within the lysing heater, unthread the side retaining screws by 1/2 inch and remove the inner lysing heating block. After cleaning, replace the inner block and hand-thread the side retaining screws until tight.

To prevent damage to the suction cups (if installed), disengage the suction cups with a flat object (such as a flat head screwdriver) before removing the lysing heater from the lab bench.

Failure Indications

If the unit display flashes “SSSS” it may mean there is a faulty temperature sensor or a break in the wiring from the sensor. If the unit display flashes “HHHH” it is exceeding the maximum allowable temperature. In either case, switch the unit off and contact your BD representative for repairs.

Manufacturer’s Manual Part Number: S5 3037-00