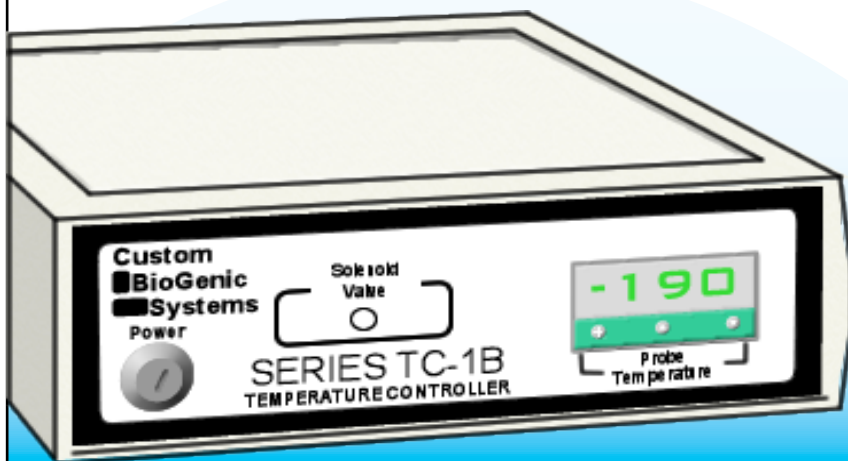


# TC-1B

## TEMPERATURE CONTROLLER

### SET-UP AND TECHNICAL MANUAL



**Custom**  
**BioGenic**  
**Systems**

[www.custombiogenics.com](http://www.custombiogenics.com)

150 Shafer Drive ♦ Romeo, MI 48065 ♦ USA

1.800.523.0072 ♦ Tel: 1.586.331.2600 ♦ Fax: 1.586.331.2588



Leading the World with Innovative Cryopreservation Technology Solutions

## - IMPORTANT INFORMATION -

We at Custom BioGenic Systems are proud of our work, and appreciate your purchase of this product. With proper care, this equipment will be trouble-free for many years to come. Before setting up and using your new cryogenic system, first check to see that all parts are accounted for and that no damage has occurred during shipping. Also, read this manual completely before proceeding to set-up. If at any time you are unsure of the procedures for set-up and use of this product, please contact CBS or your CBS representative.

### PRODUCT WARRANTY

Custom BioGenic Systems warrants all manufactured cryogenic equipment to be free from defects in workmanship and materials for a period of one year. Custom BioGenic Systems' liabilities under the warranty shall be limited to correcting or replacing the defective workmanship or materials. A claimant under the warranty must notify Custom BioGenic Systems within ten (10) days after discovery of the defect and immediately discontinue use of the defective equipment. Custom BioGenic Systems reserves the right, at their discretion, to correct the defect(s) in the field without return shipment to Romeo, Michigan. This warranty does not cover defects on cryogenic equipment resulting from abusive handling and subsequent failure.

Serial Number \_\_\_\_\_

Model number \_\_\_\_\_

For Technical Assistance Call: 1.800.523.0072 (U.S. Only)

Phone: 586.331.2600 Fax: 586.331.2588

[www.custombiogenics.com](http://www.custombiogenics.com)

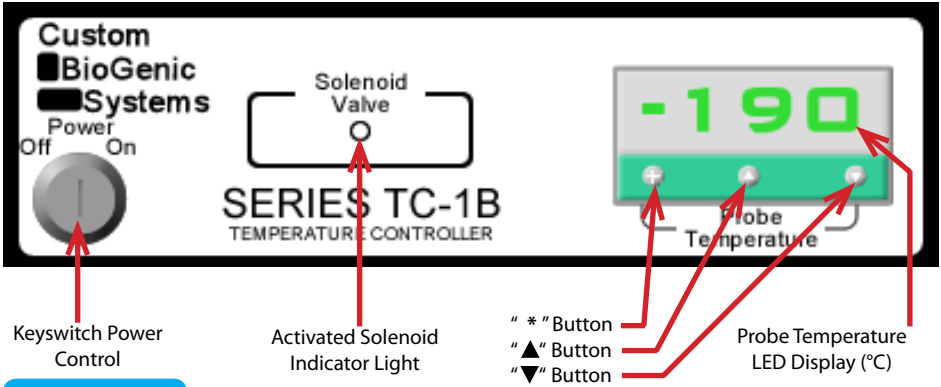


## - BEFORE USE -

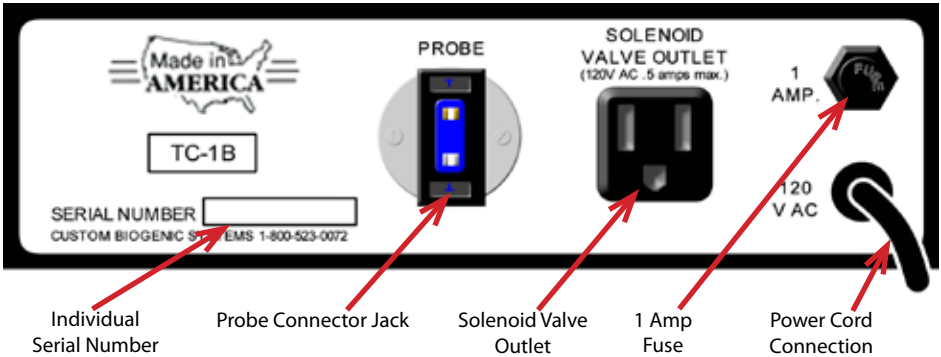
**Caution:** Do not plug in the AC power plug before completing initial set-up. Check to see that all parts are accounted for and are damage-free.

## - PARTS IDENTIFICATION -

### Front Panel



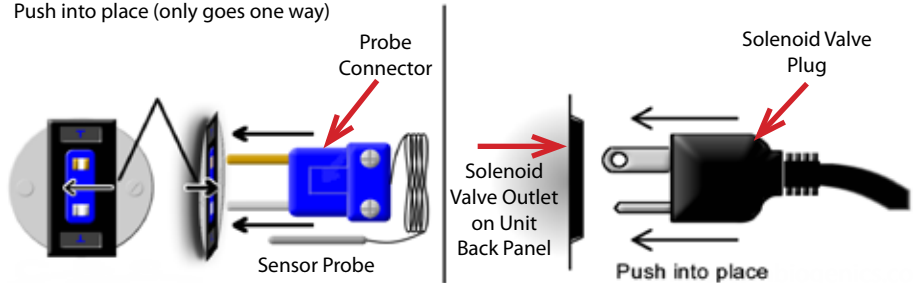
### Back Panel



## - CONNECTIONS -

Use the diagrams to ensure correct hook-up of all parts (drawings not to scale).

Push into place (only goes one way)



## - PROGRAMMING THE VALVE TIMER -

**Note:** Before beginning installation, be sure that power cords are unplugged from power sources and that LN2 supply valves are closed. Also, be sure a relief valve is installed to avoid LN2 pressure build-up.

1. Connect solenoid valve to LN2 supply and desired equipment application. Be aware of the flow direction of the solenoid valve when connecting to LN2 supply.
2. Secure probe in appropriate location to accurately monitor temperature.
3. Connect solenoid valve cord to solenoid outlet (splice into lines if necessary).
4. Plug probe connector into corresponding jack on unit back panel (see illustration).
5. Plug power cord into wall socket (120 V AC/properly grounded).
6. Open LN2 supply valve, and the equipment is ready to operate.
7. Turn key-switch to ON position (probe temperature display will light-up and go through self-diagnostic mode).

## - PROGRAMMING THE TEMPERATURE SET-POINT -

Refer to the Parts Identification section on page 3 for proper button I.D.


1. Press and hold down the \* button.
2. Press the "▲" button (while holding "\*\*") to increase set point temperature.
3. Press the "▼" button (while holding "\*\*") to decrease the set point temperature.

## - OPERATING PROCEDURE -

If the probe (actual) temperature rises above the set point temperature, the solenoid valve will energize allowing the coolant to flow. The solenoid valve will remain energized until the actual temperature matches the set point temperature.

## - TROUBLE SHOOTING GUIDE -

Use this chart to help correct any problems you may encounter. If further assistance is needed, contact your **Custom BioGenic Systems** representative.

CONDITION	CAUSES	SOLUTIONS
<ul style="list-style-type: none"> <li>◆ No Lights</li> </ul>	<ul style="list-style-type: none"> <li>◆ Blown fuse</li> <li>◆ No power at wall outlet</li> <li>◆ AC power cord not plugged in</li> <li>◆ ON/OFF switch in OFF position</li> </ul>	<ul style="list-style-type: none"> <li>◆ Replace with 1 amp fuse</li> <li>◆ Use live power source</li> <li>◆ Plug the AC power cord into a wall socket</li> <li>◆ Move power switch into the ON position</li> </ul>
<ul style="list-style-type: none"> <li>◆ LED display flashing</li> </ul> <div style="text-align: center; margin-top: 10px;">  <p><b>FAIL</b> <i>InPt</i></p> </div> <p style="text-align: center;">alternately</p>	<ul style="list-style-type: none"> <li>◆ Probe plug is disconnected</li> <li>◆ Probe is damaged</li> </ul>	<ul style="list-style-type: none"> <li>◆ Connect probe plug properly</li> <li>◆ Replace damaged probe</li> </ul>

## - CUSTOM BIOGENIC SYSTEMS INC. -

- ◆ Founded in 1989, Custom BioGenic Systems Inc. manufactures and sells state of the art cryopreservation freezers and full inventory control systems.
- ◆ In the year 2000, Custom BioGenic Systems Inc. patented the first  $-196^{\circ}\text{C}$  dry liquid nitrogen storage system.
- ◆ Today Custom BioGenic Isothermal Freezers are known worldwide for their ability to safely store a wide range of samples at liquid nitrogen temperatures without liquid nitrogen contact.

## - WHAT WE DO -

- ◆ CBS Isothermal  $-196^{\circ}\text{C}$  Dry Storage Freezers
- ◆ CBS Standard Liquid Nitrogen Freezers
- ◆ Controlled Rate Freezers
- ◆ Cryo-systems
- ◆ Vapor-shippers
- ◆ Lab Tanks
- ◆ Electronic Controls, Alarms and Data Recorders
- ◆ Freezer Racks
- ◆ Inventory Systems





**AVAILABLE FROM CBS**

**Liquid Nitrogen Equipment Including:**

- Freezers & Dewars**
- Controlled Rate Freezing Systems**
- Freezer Racks and Boxes**
- Transfer Lines**
- Solenoid Valves**
- Liquid Level & Temperature Alarms**
- Liquid Level & Temperature Controls**
- Temperature Recorders / Monitors**
- Cryogenic Accessories**



**Custom  
BioGenic  
Systems**

**150 Shafer Drive  
Romeo, Michigan 48065 U.S.A.**

**TC1B.TM0609**

**Revision: A**

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