

LN2 WITHDRAWAL DEVICE AND LAB SERIES DEWARs

SET-UP AND TECHNICAL MANUAL



Custom
BioGenic
Systems

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Leading the World with Innovative Cryopreservation Technology Solutions

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- 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

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- TESTING UNIT PRIOR TO USE -

Although every unit is factory tested it is recommended that dewars be tested again to ensure the viability and safety of stored media. Simply follow these steps before putting unit into service:

1. Unpack, open lid and remove foam plug.
2. Fill unit to approximately 1/3 full (see instructions on page 3).
3. Replace foam plug and let unit stand for 24 hours.
4. Measure the depth of the liquid nitrogen and make a note of this depth.
5. Let unit stand for another 24 hours.
6. Measure the depth a second time and make a note of this depth.
7. The depth should go down no more than approximately 1/4" in 24 hours.

During this initial testing watch for signs of excess frosting or sweating on outside of dewar. Also take note of excess nitrogen boil off especially after second weigh-in. Nitrogen should settle down (cease boiling) after an hour.

- SAFETY -

IMPORTANT! The following section on LIQUID NITROGEN SAFETY should be read carefully and followed completely, but is by no means a complete volume on the use of cryogenic liquids. All personnel should have a complete knowledge of the correct procedures, as well as the hazards of working with liquid nitrogen. Failure to do so could result in serious injury or death.

HANDLING & FIRST AID:

Personnel handling liquefied gases should be thoroughly instructed as to the nature of these materials. Proper training is essential to safety and will ensure the accident-free use of this equipment.

Because of their low temperatures, liquefied gases will burn the skin much the same way as hot liquids can. For this reason, always wear the proper protective clothing when handling these materials. It is advised that during use, handlers of liquid nitrogen should protect themselves by wearing goggles or face shields, heavy rubber gloves large enough to allow quick removal and a heavy rubber apron. It is preferable that shoes worn at these times have high tops as to not permit accidentally spilled liquid from entering as well as pant legs which come down over the tops of shoes for further protection.

Also because of the extremely low temperatures, liquid nitrogen should only be handled and transported in approved containers. Many materials become brittle and may shatter when put into contact with liquid nitrogen and other cryogenic liquids.

In the event a person is burned by liquefied gas, the following first aid treatment should be given while awaiting the arrival of medics or a doctor:

1. If the material has contacted skin or eyes, flood those areas with large quantities of unheated water and protect frozen areas with loose, bulky, dry and sterile dressings.
2. If the skin is blistered or there is a chance that the eyes have been affected, seek medical help immediately.

WARNING:

Liquefied gases are extremely cold liquids. Liquid nitrogen exists at -196°C . Because of these temperatures, liquefied gases will "burn" if they come into contact with skin. Never allow direct skin contact with liquid nitrogen or serious burns will result. Although liquid nitrogen itself is non-toxic, when released in to a confined space it can displace oxygen causing asphyxiation. Entering an oxygen deficient room can cause unconsciousness without warning. Always check air quality upon entering a room where cryogenic liquids are being used and if possible, have a respirator available. Introducing equipment which is at room temperature into liquid nitrogen is always somewhat hazardous. Beware of splashing and "boiling" which may occur. All personnel performing these operations should be fully informed of proper handling procedures and should always wear a face shield and protective clothing. Liquefied gases should never be used in combination with other substances without knowing what the result will be. When in doubt, contact a competent authority.



- LAB DEWAR FILLING INSTRUCTIONS -

Follow these steps for filling all the Laboratory Series Lab Dewars.

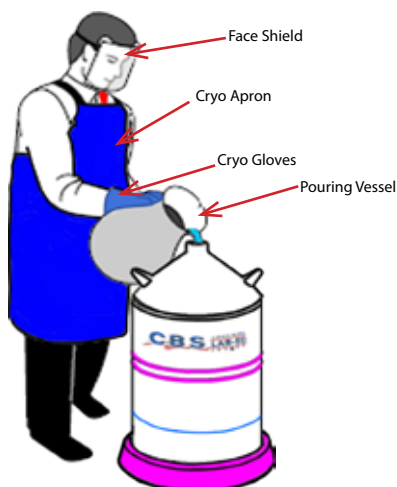
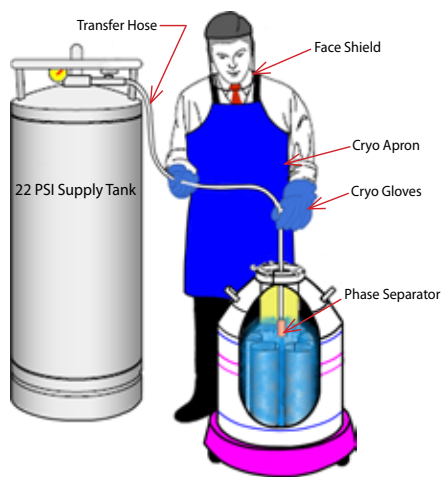
CAUTION: Always closely follow the instructions on containers and accessories when transferring liquid nitrogen. Refer to the safety section on page 2 of this manual for important information on the dangers of and proper first aid for liquid nitrogen accidents.

From a Pressurized Supply Tank (figure A.)

1. Using the proper equipment as shown in the diagram, connect all the fill hardware to the supply tank.
2. User should dress in the appropriate safety gear.
3. Place Phase Separator into neck opening and hold in place while opening supply valve with the free hand.
4. Continue until Lab Dewar is filled to desired level, then close valve to stop the flow of liquid nitrogen and carefully remove hose from the neck opening.

From a Pouring Vessel (Figure B.)

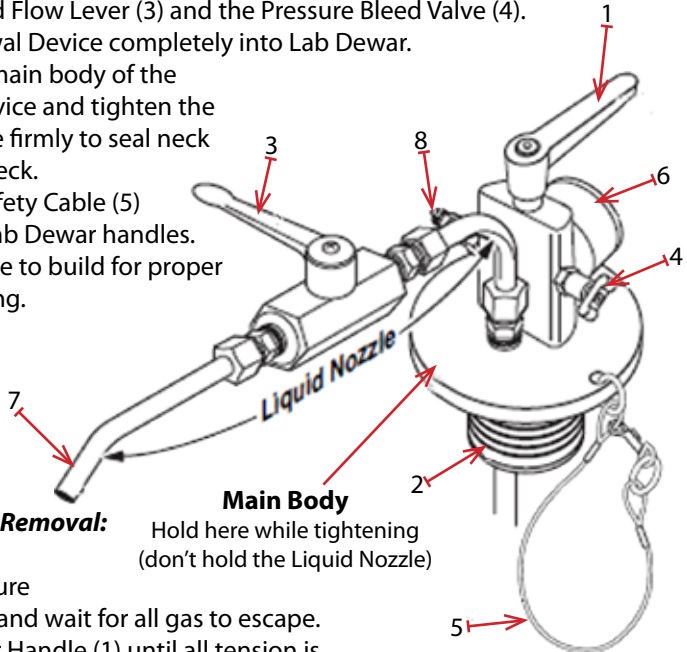
1. Dress in all appropriate safety gear and fill the pouring vessel using all safety guidelines supplied with that equipment.
2. Carefully lift pouring vessel into place at the neck opening of the Lab Dewar.
3. Slowly and gently tilt pouring vessel until liquid nitrogen begins to flow into the neck opening of the Lab Dewar.
4. Continue until Lab Dewar is filled to desired level, then gently tilt pouring vessel back to stop the flow of liquid nitrogen.



- WITHDRAWAL DEVICE INSTALLATION -

Use the following steps to properly install the Withdrawal Device on a Lab Dewar. The instructions are the same for all models of Withdrawal Device and Lab Dewar. **NOTE: DO NOT HOLD ON TO THE LIQUID NOZZLE WHEN INSTALLING. HOLD ONLY THE MAIN BODY TO TIGHTEN!**

1. Loosen Stopper handle (1) so the Stopper Plug (2) is not collapsed.
2. Close the Liquid Flow Lever (3) and the Pressure Bleed Valve (4).
3. Insert Withdrawal Device completely into Lab Dewar.
4. Hold onto the main body of the Withdrawal Device and tighten the Stopper Handle firmly to seal neck in the dewar neck.
5. Connect the Safety Cable (5) to one of the Lab Dewar handles.
6. Wait for pressure to build for proper liquid dispensing.



1. Open the Pressure Bleed Valve (4) and wait for all gas to escape.
2. Loosen Stopper Handle (1) until all tension is gone from Stopper Plug(2).
3. When it is clear that all gas has been released, un-clip Safety Cable (5).
4. Carefully lift Withdrawal Device from Lab Dewar.

- USING THE WITHDRAWAL DEVICE -

When the Pressure Gauge (6) shows sufficient pressure, place a container approved for liquid nitrogen use under the liquid nozzle (7). Slowly turn the Liquid Flow Lever (3) anti-clockwise to start the flow of LN2. When the dispensing is complete, turn the Liquid Valve back to the closed position and then remove container from under the Liquid Nozzle.

The pressure Vent (8) will maintain a pressure level adequate for liquid dispensing. If there isn't sufficient pressure, check that the Pressure Bleed Valve (4) is closed (turn anti-clockwise) and that the Stopper Plug (2) is firmly seated in the dewar neck.

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



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