VAPOR SHIPPER SERIES

TECHNICAL MANUAL



Custom BioGenic Systems

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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 Bruce Twp., 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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- UNIT PARAMETERS BY MODEL -

Use this section to become familiar with capacities, dimensions and normal liquid nitrogen use of your specific model.

	SC 2/1 V	SC 4/2 V	SC 4/3 V	XC 20/3 V	CRYO SHIPPER	DS-3
Storage Capacities						
Number of canisters	1	1	1	4+1 Center	1	1
Number of 1/2 cc straws (10/cane)	-	280	120	2500/2000*	-	-
Number of 1/2 cc straws (1 level bulk)	88	440	210	3750/3000*	-	-
Number of 1/4 cc straws (1 level bulk)	182	938	452	7410/6000	-	-
Number of 1.2 & 2.0 mL vials (5/cane)	-	95	40	675/560*	-	-
Number of 1.2 & 2.0 mL vials (6/cane)	9	106	48	840/672*	500	500
Number of blood bags stored	-	-	-	-	10/4R9953	10/4R9953
Liquid Nitrogen Usage & Capacities						
Liquid nitrogen capacity (liters)	1.5	3.9	4.3	6.8	8.5	10
Static evaporation rate (liters/day)	.19	0.26	2.0	0.3	5	.7
Static holding time (days)	8	13	21	23	10	14
Dimensions						
Neck opening (inches/mm)	1.4/35	2.75/70	2/51	3.81/97	8.5/216	8.5/216
Overall height (inches/mm)	13.5/343	18.4/468	19.4/492	25/635	21.5/546	23/584
Outside diameter (inches/mm)	7.25/184	8.7/222	8.7/222	14.5/368	14.5/369	15/381
Canister height (inches/mm)	5/127	11/278	11/278	11/278	- / -	12.5/317.5
Canister diameter (inches/mm)	1.2/31	2.62/67	1.81/46	3.2/80	- / -	- / -
Weight empty (lbs/kg)	6/2.7	11/5	13/5.9	23/10.5	24/10.9	30/13.6
Weight charged (lbs/kg)	8.8/4	17/7.7	20.6/9.3	35/16	37.5/17	47/21.4

* With center absorbent canister (3 week holding time)

- AVAILABLE ACCESSORIES 1-800-523-0072 1-586-331-2600 -



Low Level Alarm Multiplex

LN_2 Level Stick





Cryo Gloves



Roller Base



"Y" Connector



Phase Separator



LN_2 Transfer Hose



Canes and Straws



"T" Valve

- 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.

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.

- SAFETY -

HANDLING

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 accidently 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.

FIRST AID

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.

- PREPARATION FOR USE -

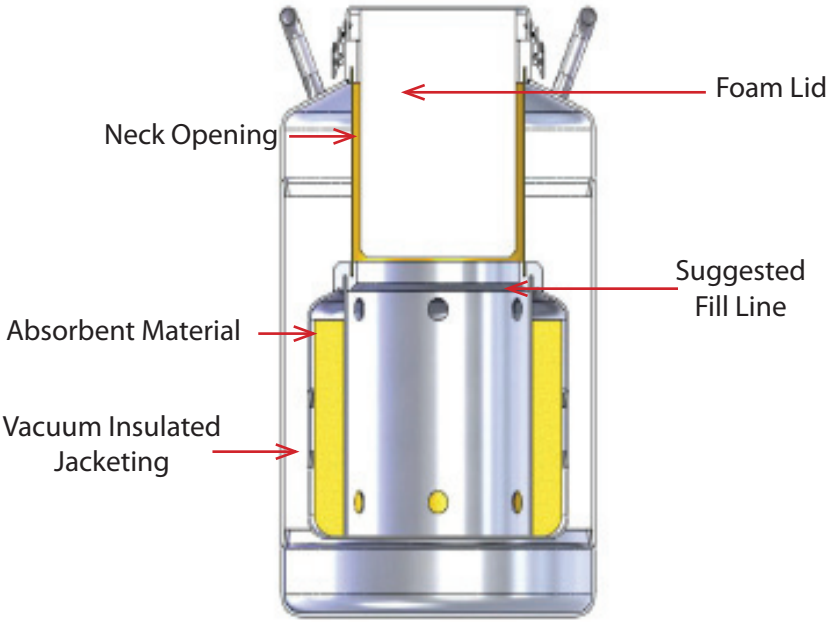
For the best possible results use the following steps to prepare your Vapor Shipper Unit to be used. Begin the fill process early in the morning and allow at least 24 hours for the entire procedure. Read the fill instructions on the following page for important information on filling the unit.

1. Fill the dry shipper cavity to the recommended fill line (see below). The liquid nitrogen will be absorbed into the sides of the container where the absorbent material is located.

2. Wait at least three hours and re-fill the dry shipper cavity to the recommended fill line.

3. Re-fill again before leaving at the end of the day.

4. The next morning pour off excess liquid nitrogen. When draining excess, DO NOT shake the unit or hold inverted as this will limit the effectiveness of the refrigerant. The dry shipper is now ready for use.



Generic Vapor Shipper Diagram
The proportions and appearance of your unit may be different than these

- FILL INSTRUCTIONS -

Follow these steps for filling your Vapor Shipper with liquid nitrogen:

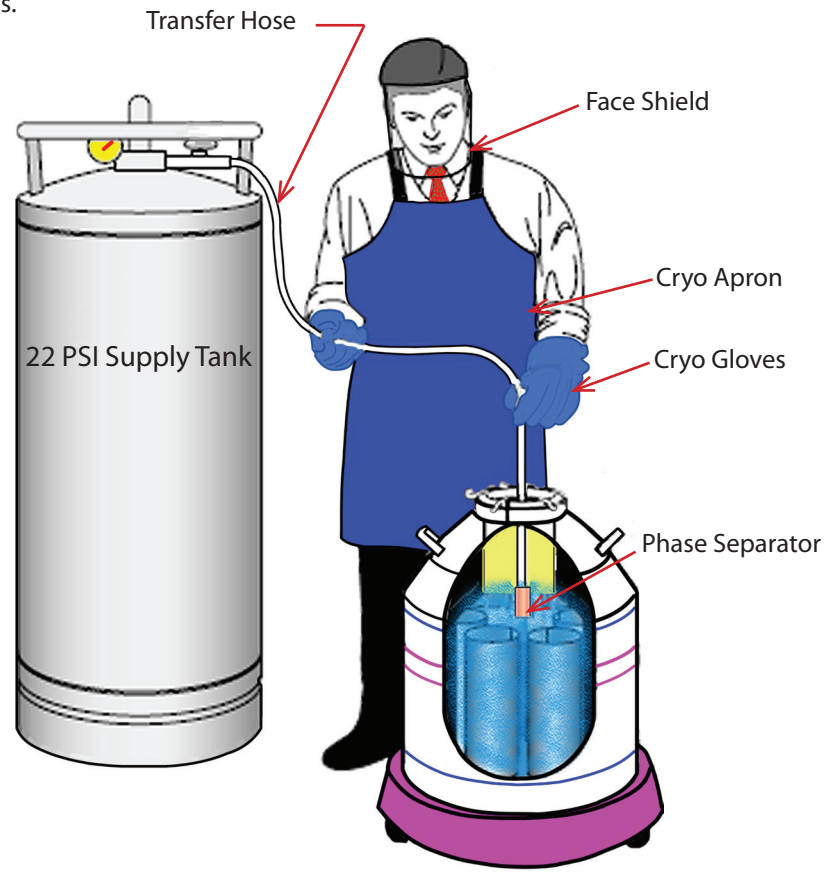
1. Using the proper equipment as shown in the diagram, connect all the fill hardware to the supply tank.

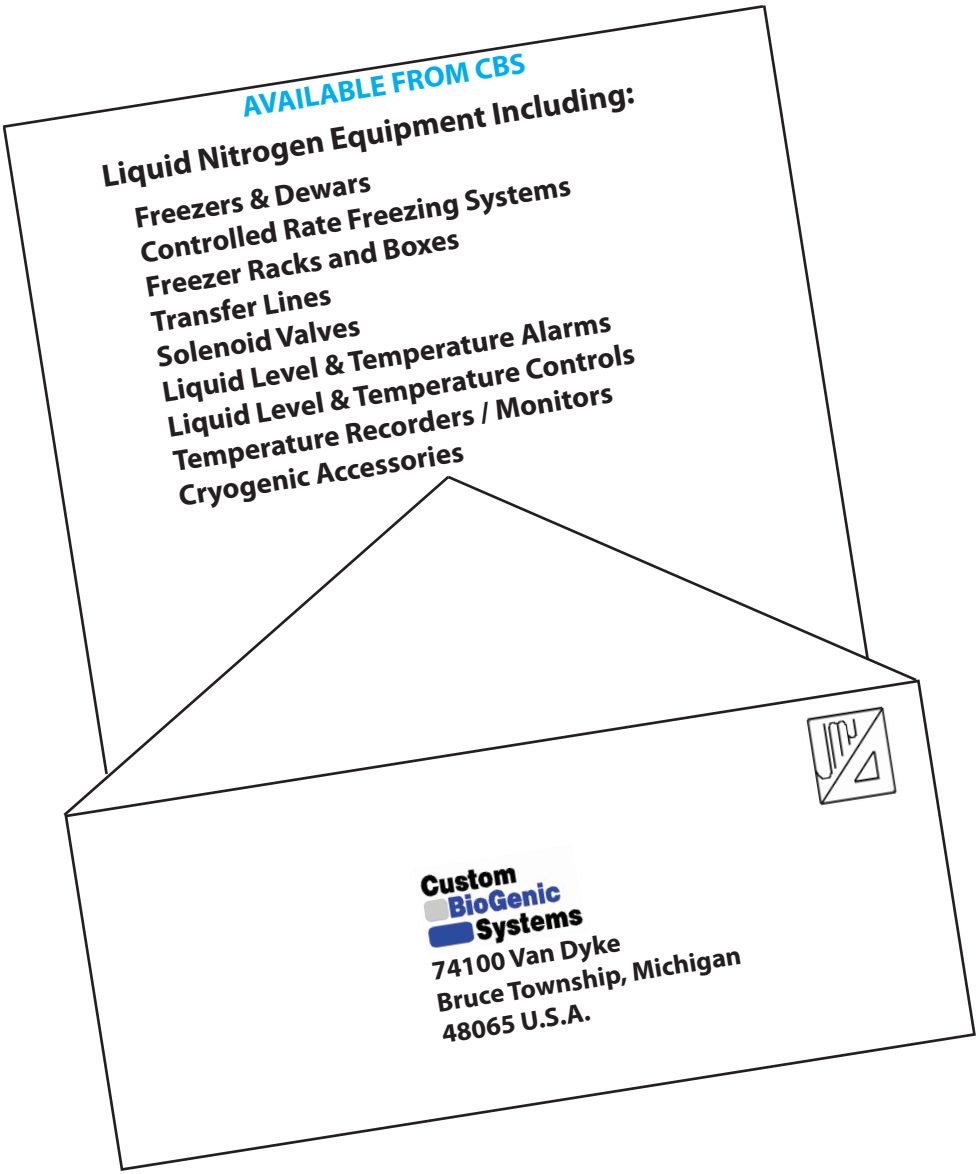
2. User should dress in the appropriate safety gear

3. Place Phase Separator into neck opening and hold in place while opening supply valve with free hand.

CAUTION:

Always closely follow the instructions on the containers and accessories when transferring liquid nitrogen. See the safety section of this manual on page 4 for important information on the dangers of proper first aid for liquid nitrogen accidents.





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