PrincetonCryo.com
Cryogenic Delivery and Storage Systems

March 2000

MVE Tech Tips

A monthly publication for the MVE Biological Products Distributors

XLC 230 AND XLC 230 GEN 2

In January of 1999 MVE began manufacturing a new version of the existing XLC-230. Initially the XLC-230 GEN 2 was intended to replace the older version, but customer requests to keep the original design of the dewar have been too overwhelming to eliminate it. Some of the obvious differences of the two are: increase in overall height of the GEN 2 design brought about by taller inner bands and the built-in casters. Although both units can be purchased as basic models, only the GEN 2 can be retrofitted with a fully automatic fill system.

Basic Models	Older Design XLC-230	GEN 2 XLC-230
LN2 Capacity	63 liters	89 liters
Static Evaporation Rate	2.5 ltr/day	2.5 ltr/day
Neck Opening	16”	16”
Overall Height	30.25”	40.6”
Outside Diameter	18”	19.13”
Usable Height	19.38”	26.9”
Weight Empty	79#	125”
Weight Full	191#	283#
Storage Capacity:		
_ cc straws (10/cane)	6820	6820
1.2 and 2.0 ml Vials On Canes	3696	3696
SUC-1 Canister	22	22
Inventory Racks	6-9/2 ah	4-13/2 sq.
1.2 and 2.0 ml Vials In Racks	4374	5200
Features:		
Caster Base	Accessory	Built in
Lid	Lift off	Hinged
Optional Electronics	Level alarm	TEC-2000

OPERATING INSTRUCTIONS FOR LIQUID NITROGEN DEWARS

GENERAL DESCRIPTION

The SC, XC, & LAB series container is a vacuum insulated container of aluminum with fiberglass neck construction providing you with the highest efficiency possible in liquid nitrogen storage. Use the container for inert fluids only. Liquid oxygen is not compatible with fiberglass material and should not be stored.

A sharp blow to the outer vessel can damage the neck tube or start a vacuum leak. Use caution and common sense in handling the container.
Upon receipt of the container, examine it for any evidence of damage during shipping. Watch after the first fill for any signs of vacuum loss, such as frost or sweating on the outside jacket. (Some frost near the tip just after filling is normal.)

NOTE
Fill the container with a funnel or transfer line when possible. Avoid spilling liquid nitrogen over the vacuum cap near the neck as this can shrink the seal and allow air to leak into the vacuum space.

A. CAUTION (using aluminum SC, XC, LAB series)
To avoid injury by frostbite, use extreme care whenever handling liquid nitrogen, liquid nitrogen storage or transfer vessels or any objects, which have come in contact with liquid nitrogen.

- Leave no areas of skin exposed.
- Always wear proper safety attire over clothing: face shield, cryogenic gloves, cryogenic apron
- Never overfill liquid nitrogen vessels.
- Always keep liquid nitrogen vessel in an upright position.
- Do not tightly seal liquid nitrogen container or prevent nitrogen gas from escaping.
- Use extreme care to prevent spilling and splashing liquid nitrogen during transfer.
- Immediately remove any clothing or safety attire on which liquid nitrogen has been spilled.
- Get immediate medical attention for any frostbite injuries due to liquid nitrogen.

A. FILLING INSTRUCTIONS
To avoid damage to your aluminum cryogenic vessel which may result in premature vacuum loss it is important that the following procedure be used during the addition of liquid nitrogen to a warm vessel and on subsequent additions.

1. Slowly pour liquid nitrogen to new or warm vessels.
2. Allow liquid nitrogen to sit in covered vessel for 2 hours to completely cool inner
3. Fill your vessel to the desired level after the 2 settling (cooldown) time.
4. If you are filling your dewar from a pressurized source, make sure that the source tank is at a low pressure (22 PSI or below).
5. If transfer hose is used for extracting liquid nitrogen from a pressurized liquid source always use a phase separator on the end of the hose.
6. Remember to always wear proper safety attire over clothing; face shields cryogenic gloves and apron.

7. Never overfill your dewar with liquid nitrogen. Overfilling the tank may cause immediate or premature vacuum failure to occur.

A. MEASURING LIQUID NITROGEN QUANTITY

1. Use wooden or plastic dipstick. Never use a hollow tube to measure liquid nitrogen.
2. Level will be indicated by frostline, which develops when dipstick is removed.

A. LIQUID WITHDRAWAL

1. liquid withdrawal for the LAB units is always done by pouring or utilizing a withdrawal device. Withdrawal device pressurizes to approximately 5 psi and the pressure forces liquid up the withdrawal tube out the valve.
2. Always wear proper safety attire; shield, gloves and apron.

REPLACEMENT PARTS

MODELS	SC3/3	SC8/5	SC11/7	SC16/11	SC20	SC36
Canister	9710601	9710611	9710091	9721489	9710101	9710101
Cork/cover	10507059	10507059	10507059	10507438	10726817	1072681
Pumpout caps	3911217	3911217	3911217	3911217	3911217	3911217

MODELS	XC20/20	XC21/6	XC22/5		XC32/8	XC33/22	XC34/18
Canister	11006344	9721469	9719349	9719339	9719319	9719309	
Cork/cover	11028236	10507024	10506996	10507454	10507067	10507489	
Pumpout caps	3911217	3911217	3911217	3911217	3911217	3911217	

MODELS	XC35/12	XC43/28	XC47/11-6	XC47/11-10	XC47/11-6 SQ.
Canister	10854966	9719319	9719299	9719289	9723199
Cork/cover	10855723	10507067	10721397	10726711	10721397
Pumpout caps	3911217	3911217	3911217	3911217	3911217

MODELS	LAB 4	LAB 5	LAB 10	LAB 20	LAB 30	LAB 50
Cork./cover	10588362	10580299	10580299	10580475	10580459	10580459
Pumpout caps	3911217	3911217	3911217	3911217	3911217	3911217

WARNING: the venting of nitrogen vapors will create a dilution of the air's oxygen concentration necessary to support life. Exposure to this diluted atmosphere can cause asphyxiation or even death. DO NOT store or use liquid container in areas that have poor ventilation. Place liquid container outdoors or in a well-ventilated area. Failure to comply with this warning may cause serious personal injury including death.

PROCEDURE FOR HANDLING LOST/DAMAGED SHIPMENTS

The F.O.B. point would determine who is responsible to file the freight claim in the event of loss or damage. Essentially, the party who owns title to the product at the time of loss or damage is responsible for filing claim with the carrier.

Product sold with terms **F.O.B. ORIGIN** means the **buyer** owns the goods in transit, and files claim.

MVE Tech Tips March 2000

Product sold with terms **F.O.B. DESTINATION** means the **seller** owns the goods in transit, and files claim.

Shortage(loss) or damage must be notated on the carriers delivery receipt at time of delivery. This will ensure that a claim will be paid. Shipments that have shortages, or are damaged and are not notated on the delivery receipt, greatly diminish the chances of collecting a claim.

If you receive a shipment that is short or damaged, make a notation on the carriers delivery receipt- “short 1 box”, or “1 tank dented”.**Failure to do so may result in declination of your claim.**

Shortages in most cases are rather obvious, I.E.: the delivery receipt calls for 6 boxes, but the carrier only delivers 5. In the vast majority of instances, a shortage of this nature usually results in the carrier finding the missing piece, and it is usually delivered within a few days. If you receive a shipment short, notate the delivery receipt and contact your Chart/MVE customer service representative immediately. Chart/MVE will assist in trying to locate the missing product and resolve the issue promptly.

Damages can be obvious and not so obvious. It is important to perform a cursory inspection of the shipment before signing the delivery receipt. Carefully look at the shipment and look for any signs of damage- tears or punctures to outer packaging, evidence of repackaging, dents in the tank, or anything that appears to be out of the ordinary.
Even if a puncture to the outer packaging of a tank results in no damage,you should still notate the delivery receipt as a protective measure to ensure that a claim would be paid.

Concealed damage: a shipment is delivered with no apparent damage, but damage is in fact discovered upon closer inspection **after** the delivery driver has left: you have **15 days** in which to notify the carrier of the discovered damage. If more than 15 days elapse before notifying the carrier, any claim will be denied.

Whether damage is notated upon delivery, or is discovered later (concealed damage), the carrier **must** be notified immediately. Depending on the extent of the damage,the carrier may want to inspect the damaged product. It is important that you retain the packaging materials for the inspector. The carriers inspector, usually an independent inspection service, will make a report of the of the damage which is merely a statement of fact. A copy of this report will be left with the receiver of the goods, as one of the supporting documents for the claim.
Usually, if the damage is less than $300.00, the carrier will **waive** inspection. Make note of the person waiving inspection, and go ahead and file your claim.

Support your claim with the following documents:

- Copy of delivery receipt
- Copy of suppliers invoice
- Copy of inspection report
- Copy of repair invoice(if damage claim)

To summarize: inspect product carefully and notate any damage or shortage on the delivery receipt. Contact Chart/MVE customer

For copies of past Tech Tips or for more information on maintaining your nitrogen storage dewars please contact Jim Bachman at (612) 758-8520, Pager (612) 579-8367, Fax (612) 758-8224.