

Tech Tips

A monthly publication for the MVE Biological Products Distributors

August 2001

NEW TEAM MEMBER:

MVE/Chart would like to introduce the newest member to the Cryo-biological team. Gil Edwards is a recent graduate of Georgia Tech and will be stationed at our Canton facility. Gil's responsibilities will be, first and foremost, to provide technical service for the XLC storage line. This will include both the XLC and Bio-series models. He will be assisting in the engineering duties required as well as the technical service and training for our customer service group and distributors. Please join me in welcoming Gil to his new role.



Aside from his role as technical service Gil will also be doing field service and training. Gil's phone number is 770 479-6714 or you can contact him by e-mail at (gil.edwards@chart-ind.com).

XLC 1830 – BRAKING CASTERS:

Beginning in July the XLC-1830 will come equipped with braking casters. The front two casters only will have the braking mechanism. These castors are for the XLC 1830 model only and will not fit the HE or 2T models. The castors can be field retrofitable, please contact Jim Bachman if you have any questions.

OPERATING INSTRUCTIONS FOR LIQUID NITROGEN DEWARS:

The SC, XC, and 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 sign 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.

1. 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 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 nitrogen has been spilled
 - Get immediate medical attention for any frostbite injuries due to liquid nitrogen
1. 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.
 - Slowly pour liquid nitrogen to new or warm vessels.
 - Allow liquid nitrogen to sit in covered vessel for 2 hours to completely cool inner.
 - Fill your vessel to the desired level after the 2 settling (cooldown) time.
 - 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).
 - 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.
 - Remember to always wear proper safety attire over clothing; face shield, cryogenic gloves and apron.
 - Never overfill your dewar with liquid nitrogen. Overfilling the tank may cause immediate or premature vacuum failure to occur.

1. MEASURING LIQUID NITROGEN CAPACITY

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

2. LIQUID WITHDRAWAL

- 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 with the withdrawal tube out the valve.
- Always wear proper safety attire; shield, gloves, and apron

3. REPLACEMENT PARTS

MODELS	SC 3/3	SC 8/5	SC 11/17	SC 16/11	SC 20	SC 36
Canister	9710601	9710611	9710091	9721489	9710101	9710101
Cork/Cover	10507059	10507059	10507059	10507438	10726817	10726821
Pumpout Caps	3911217	3911217	3911217	3911217	3911217	9311217
MODELS	XC 20/20	XC 21/16	XC 22/5	XC 32/8	XC 33/22	XC 34/18
Canister	11006344	9721469	9719349	9719339	9719319	9719309
Cork/Cover	11028236	10507024	10506996	10507454	10507067	10507489
Pumpout Caps	3911217	3911217	3911217	3911217	3911217	3911217
MODELS	XC 35/12	XC 43/28	XC 47/11-6	XC 47/11-10	XC 47/11-6 Sq.	
Canister	10854966	9719319	9719299	9719289	9723199	
Cork/Cover	10855723	10507067	10721397	10726711	10721397	
Pumpouts 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 of 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.

MVE BIOLOGICAL SYSTEMS LAUNCHES NEW HE FREEZERS:

The best just got better!!! Available for delivery from August 1, there is a new option available for the HE freezer range. Both the 810HE and 1520 HE will be available in an enhanced performance model, which maintains a vapor temperature of -190oC under the lid. This incredible performance

is achieved without any measurable increase in LN2 consumption. For the time being both standard and –190 HE units will be available. You will find prices and part numbers below. We expect to offer the 1830HE with this new option in the fourth quarter of this year.

One further note, the 810HE in the new –190 version has also undergone some minor design and dimensional changes. These have been incorporated to increase accessibility to samples and general ease of use. These design changes will not be available in the standard version until January 2002. New literature for these units is at the printers and will be available very soon – look for the information pack launching these units to hit your in trays soon!

XLC 810 HE-190		
Full Auto Control	11369911	\$14,325.00
Full Auto, Battery Backup (BB)	11369920	\$14,845.00
Full Auto, Gas Bypass (GB)	11369938	\$14,845.00
Full Auto, BB, GB	11369946	\$15,365.00
Basic	11369225	\$12,037.00
XLC 1520HE-19		
Full Auto Control	11360212	\$18,200.00
Full Auto, Battery Backup (BB)	11360221	\$18,720.00
Full Auto, Gas Bypass (GB)	11360239	\$18,720.00
Full Auto, BB, GB	11360247	\$19,240.00
Basic	11359967	\$15,800.00
XLC 1830HE-19		
Full Auto Control	NA	\$31,683.00
Full Auto, Battery Backup (BB)	NA	\$32,203.00
Full Auto, Gas By Pass (GB)	NA	\$32,203.00
Full Auto, BB, GB	NA	\$32,723.00
Basic	NA	\$29,283.00

CBS ISOTHERM TESTS

We have been testing the largest of the Isotherm units for several weeks. The unit we have been working with is the VS5000EH. Although we have not completed all of our testing, we thought you might find a highlights reel useful. We will be issuing a complete test report and sales aid package in the next month.

- Lid lift over height 53.5" 1520HE is 40" with the step. No step is available for the Isotherm.
- Fill frequency with a 6" interval (18 to 24" is the factory setting) is 22 to 24 hours. This compares to an 1841 but is no where near the 810HE (91 hours) or the 1520HE (132 hours) and obviously massively increases transfer losses.
- Level sensor is differential pressure but has maximum resolution of 1 inch. So there can be no sensible usage measurement – in fact this is not even an option on the controller.
- Design prohibits calibration of the level display by direct measure. There is no access to the liquid compartment to enable a user to verify the liquid level by use of a measuring stick.
- Some statistics:

	Isotherm	1520HE -190
Last fill to exceed –190 at top box	30 hours	225 hours
Last fill out of liquid	100 hours	525 hours
Last fill to exceed –135 at top box	8.8 days	24.6 days
Nominal NER including transfer loss	14.9 L per day	4.5 L per day
Fill Interval	24 hours	156 hours

- Lid open tests:
 - Top box temperature exceeded –135 within 3 hours of lid opening
 - Top box temperature remained above –175 even at fill
 - Fill interval reduced to 5 hours from 24
 - Static recover after closing lid 3 hours

More information as we have it – and watch for the info packet in the next few weeks.

For copies of past Tech Tips or for more information on maintaining your nitrogen storage dewars please contact Jim Bachman at (952) 882-5168, Pager (612) 579-8367, Fax (952) 882-5175.



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