



# MVE Tech Tips



*A monthly publication for the MVE Biological Products Distributors*

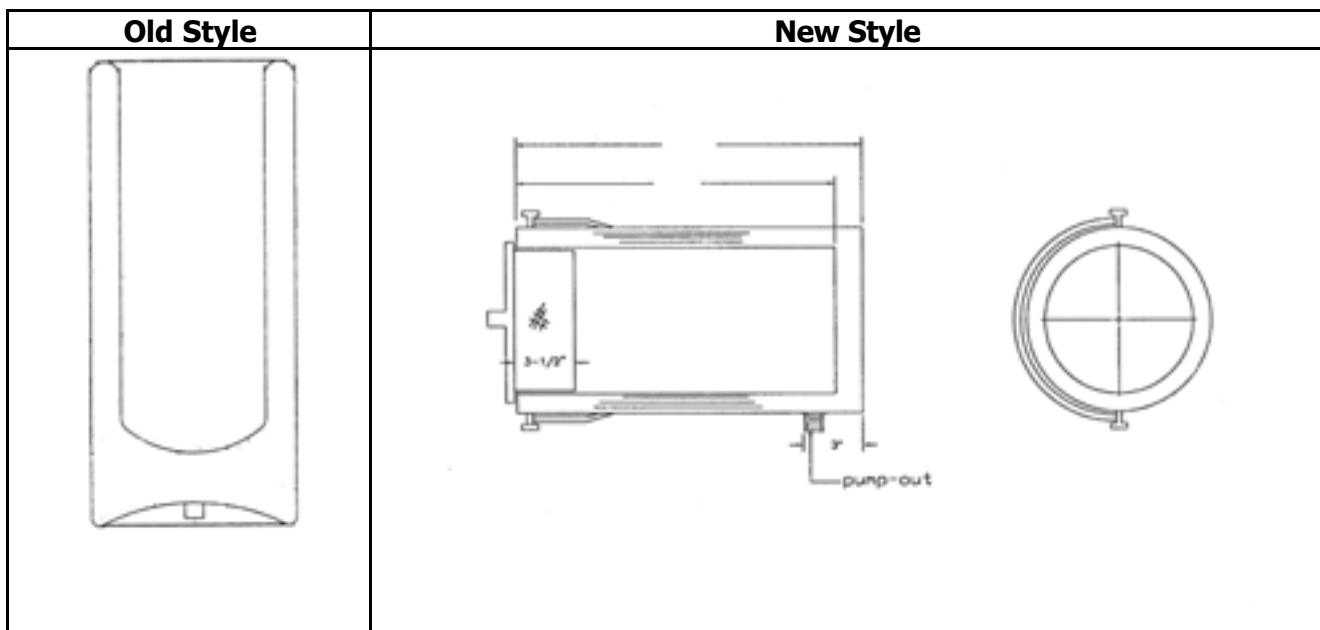
*October 2003*

## **Re-Designed Research Dewars**

MVE/Chart is announcing the change in design of research dewars. Basically this design has not changed in almost 40 years. Although there are 14 varying O.D. dewars, there are 3 height sizes to each of the different 14 O.D. dewars. That equates to 42 different size dewars. Add to this that each size dewar can have a plain top with a cover or an optional A, B, C, flange (ask customer service for print) allows for 42 various sizes at 168 different designs. To reduce costs and to make life a lot easier the design change we are planning is to eliminate the rounded top spinning and the domed inner and outer heads. We will replace the outer bottom and inner bottom with a stainless steel disc. The outer top will also be flat. The pumpout that was located beneath the outer bottom head will now be located on the outer shell toward the bottom. See attached sketch. The biggest change is that there are no longer any standard size dewar. Any dewar height or I.D. can be ordered. They can have optional covers or handles. However, dewars ordered with A,B, or C type flanges will still need to maintain one of the 14 original O.D.'s. The inner and outer material of all research dewars will be made entirely from stainless steel. When ordering a research dewar please indicate the following:

- Height dimensions
- Overall Height length
- Working height length
- O.D. dimension
- I.D. dimension
- Optional handle required
- Cork/cover required

Price sheet will be published within the month.



## YOU Wanted to know....

Q: Does the liquid level sensor have a method for calibrating the liquid level sensor or is that taken care of by the rezeroing on a nightly basis?

A: The zeroing operation is simply to keep the level readings from drifting out of calibration. The TEC-2000 level display is calibrated with the level offset in the maintenance menu. This is good enough for most applications, but we have received some calls from people wanting it to have 2-point calibration or zero and span adjustments so that it is more accurate over a larger range. This request is mainly from people who want to run a large differential between high and low fill settings. I do not know if there is really any benefit to providing that, since the majority of users check calibration using the measuring stick provided with the unit, which has a +/-0.5" tolerance.

Q: I am the blood bank supervisor at Memorial Hospital. Our surgical department maintains the tissue freezer with a TEC-2000 system monitor. We were just inspected by Joint Commissions on Accreditation for Healthcare Organization and received a Type 1 nonconformance for not having a 24-hour 7-day temperature chart recorder or readings 24 hours. Due to staffing issues it is nearly impossible to maintain 24-hour readings. My question to you is, "Do you have chart recorder available or adaptable to this nitrogen freezer?"

A: The supplier said that this was only the 2<sup>nd</sup> time this issue has come up across the entire US and their understanding is that a tissue freezer shouldn't require this but a mechanical frig with blood products would. Who knows? It's hard to tell JCAHO that they are misinformed. MVE/Chart offers a printer kit that would suffice for the requirement referenced above. The part number for this printer kit is 11544943.

Q. For the largest cord blood freezing, what should be the volume in cc of the cryovials used?

A. 5ml cryovials

Q. What racks are compatible with these larger vials (5ml)?

A. 3.75" racks will work well for the 5 ml vials. The largest we have available is the 7/3.75 rack. Available for both large and mini-boxes.

Q: Approximately what year did we go to EPROM version 1.6?

A: Early version of the TEC-2000 programming did not distinguish between a true bypass valve alarm and bypass sensor alarm. The bypass valve alarm display was initiated for both the true bypass valve alarm (bypassed time exceeding the fixed 5 minute time delay) and a bypass sensor alarm (open bypass sensor circuit). With revision to version 1.6, this was changed to differentiate the two distinctly different alarm conditions. Version 1.6 went into production in 1998. The by-pass time delay and temperature adjustment, along with the one-fill-all-fill option has been programmed to the 1.7 e-prom chip. This was put on production models beginning of April 2001.

Q: Customer is looking for a validation procedure for vapor shippers that cover temperature?

A: We do not have a validation procedure based solely on temperature. The end users will need to come up with one themselves. This can be accomplished using a data logger or other independent temperature probe. We do have temperature profiles that were done for each model. Weighing and saturation tests for determining hold times and NER are explained in the vapor shipper operator's manual.

Q: Customer wants to carry the item as a carry-on, can you give some advice?

A: All nitrogen-refrigerated liquid charged "dry shippers" fall within the regulation exception provided in 49 CFR. See attached letter. Even with all restrictions, labeling and certifications being followed, the pilot of the craft has final say if the dewar will be transported or not. It is advisable to check with the airline first.

### Shipping Instructions:

Dewar is charged for 24 hours for full absorption capacity. Generally dewar will be 60% charged at 8 hours, 80% charged at 12 hours and 100% charged at 24 hours. Prior to packaging dewar for shipment the entire contents of liquid nitrogen must be removed. This is usually done by pouring out excess liquid nitrogen until no liquid is visible on the bottom of the inner dewar. Place in bio-samples, package dewar and ship. The plastic-shipping container provided by MVE/Chart is recommended to help keep dewar in upright position. IF DEWAR IS SHIPPED ON ITS SIDE IT WILL ONLY PROVIDE 40% OF THE SPECIFIED HOLD TIME. IF SHIPPED UPSIDE DOWN IT WILL ONLY PROVIDE 10% OF HOLD TIME CAPACITY.

Remember that all MVE vapor shippers can also be used for liquid nitrogen storage as well, so it is imperative that all liquid nitrogen be removed so dewar remains classified as a vapor shipper. If liquid nitrogen is visible in the bottom of the inner it then becomes a liquid shipper and the exception status is void. The liquid inside is now classified as hazardous material.

### Letter Explaining Exception:

This is concerning the applicability of the Federal Hazardous Material Regulations to the shipment of refrigerated samples in the "Dry Shipper" container.

A "Dry Shipper" package consists of an outer container that is lined with an absorbent material. The container is charged with nitrogen-refrigerated liquid which is absorbed into the container lining.

The charged, completed package serves as a refrigerated container for the shipment of samples.

Because of the manner in which it is absorbed and because there is no free liquid present in the packaging, the liquid nitrogen does not exhibit the characteristic of a "cryogenic liquid" as defined in 49 CFR 173.115(g) and does not pose a hazard in transportation. Therefore, it is not subject to regulation under the Department of Transportation's Hazardous Material Regulations.

However, if the packaging were improperly offered for transportation WITH free liquid present, it would be subject to regulation when offered for transportation by air (see 49CFR 173.320) and

must be offered in accordance with the International Civil Aviation Organization's (ICAO) Technical Instructions. Note the packaging does not conform to ICAO Packaging Instruction 202 and therefore, is not an authorized packaging when containing free liquid.

In consideration of the above. Consultation with the Research and Special Programs Administration of the DOT has determined that the use of nitrogen refrigerated liquid charged "dry shipper" containers for the shipment of samples falls within the regulation exception provided in 49CFR 173.320 paragraph (a) of the section states the requirements of this subchapter do not apply to atmospheric gases and helium when used in the operation of the process system' such as a refrigeration system. Paragraph (c) of 173.320 pertains to air transport of same refrigeration system.

For exception status of air shipments please refer to IATA-Dangerous Goods Regulations fore nitrogen-refrigerated liquid. This falls in the class of 2.2 non-flammable gas, packing instructions 202 with special provisions A-800. For answers to questions regarding shipping regulations contact MVE, AI-Cryo-Biological Tech Service Representative @ 888 683-2796.

### **Do Not Try This At Home Department:**

David Beckham, an English football chap widely known in the soccer circles of Europe was out and about shopping one fine afternoon. Fancying himself as a man's man he has a compulsive buying habit for items that no one else has but every man wants. Seeing an unidentifiable object on the top shelf he points, "What is that item up there?" asking the store clerk. "Why, that is what we call a thermo flask." She answered. And what is it for?" he inquired. "Well," the clerk said, "You use it to store hot and cold foods." Thinking to himself, "I must have one" He proceeds to purchase it. The very next day, he is walking to his house and is proudly displaying around his neck his prize thermo flask. A would be admirer walked up him and asked, "What is that thing around your neck?" It's a thermo flask." David answered. "What does it do?" inquired the onlooker. "It's for keeping cold foods cold and hot foods hot." He replied. "What do you have in it?" asked the fan. "Two cups of coffee and a scoop of ice cream."

### **Upcoming Show Dates:**

ASH (American Society of Hematology)  
San Diego CA  
Dec 5-9, 2003

### **Bio-Medical Customer and Technical Service**

Customer Service	888 683-2796 toll free / 952 882-5000 Burnsville receptionists 800 232-9683 fax
Technical Service	952 641-6115 direct line 866 819-5897 toll free 612 382-6678 cell 800-232-9683 fax

For copies of past Tech Tips or for more information on maintaining your nitrogen storage dewars please contact Jim Bachman at (952) 641-6115, Fax (800) 232-9683.