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PrincetonCryo.com
Cryogenic Delivery and Storage Systems

December 2013

MVE Chart Tech Tips

PRODUCT INFORMATION

MVE Chart LN2 Tx

The LN2 Tx is designed specifically to remove excess liquid nitrogen from one tank to another tank safely and easily. Instead of lifting tanks filled with LN2 and pouring from one tank to another, one may use the LN2 Tx to transfer the LN2. By using a pressurized nitrogen gas source, the LN2 Tx efficiently transfers liquid nitrogen without straining your back or causing structural damage from spills.

To order, use **PN 15098872**.

Note: Operating pressure of gaseous nitrogen source must be 22-50 psi (1.5-3.4 bar).



LN2 Tx Hose

Specifications	
Rigid Aluminum Tube Length ft (m)	4 (1.2)
Flex Hose Length ft (m)	8 (2.4)
Overall Weight lbs (kg)	8.5 (3.9)
Minimum Neck Opening in (mm)	3.5 (89)

Features:

- Safely, easily, quickly, and efficiently transfer LN2 from one open dewar to another
- Avoid having to lift and pour out heavy dry vapor shippers
- Can be used to empty LN2 freezers for maintenance, transport, cleaning, etc.
- Eliminates need to lift and pour dewar, reducing the chance of lower back strain
- Minimal transfer losses
- Reduce long-term LN2 usage - allows you to reuse by transferring between dewars
- Approximate flow rate up to 2 LPM

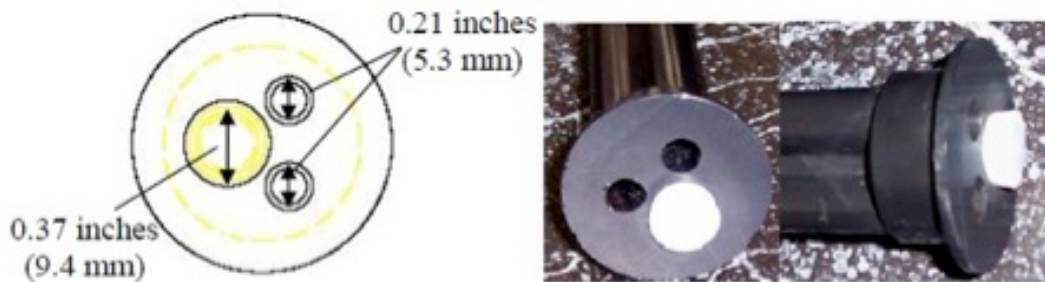
Note: One must use a source of compressed nitrogen from a cylinder or piping. Compressed air may not be used.

HELPFUL HINTS / FAQs

3-Tube Temperature Sensor Assembly

MVE Chart manufactures the 3-tube temperature sensor assembly. The sensor assembly is standard on all MVE High Efficiency and Vapor Series Freezers. Older freezers that use the dual tube assembly may use the 3-tube assembly as a replacement.

The 3-tube assembly is designed to house a third party temperature sensor. As validation and redundancy is becoming more vital to our customers, this change will make it easier to accommodate their needs. The assembly will come with a removable plug installed in the third hole.



Specifications: The injection molded XENOY material will provide thermal performance as well as lasting durability. Above are pictures of the new assembly and the inner diameters of the sensor tubes.

Service Part Numbers:

Part Number	Description	Freezer Models
14248744	3-Tube Sensor Assembly - 26" Long (660.4 mm)	MVE 1842P-150F
14248816	3-Tube Sensor Assembly - 39" Long (990.6 mm)	MVE 800 and 1500 Series
14248752	3-Tube Sensor Assembly - 44" Long (1117,6 mm)	MVE 1800 Series

Disabling and Enabling the TEC 2000 Audible Alarm

Q: How does one disable the audible alarm on the TEC 2000? A: The audible alarm can be disabled by pressing and holding the [Alarm Mute] key until the appropriate prompt is displayed. Next, use the [Down Arrow] key to toggle the arrow until it is positioned to the left of "Off" and press the [Enter] key to mute the audible alarm. To enable the audible alarm, press the [Down Arrow] key to toggle to "On" and press [Enter].

TEC 2000 Temperature Calibration

Q: How does one perform the temperature calibration on the TEC 2000?

A: There are two methods to perform the temperature calibration. The first method is the "Low Temperature Range" and the second method is the "Full Range" method. This edition of Technical Tips will cover the "Low Temperature Range" calibration. For the "Full Range" instructions, please reference page 89 in the TEC 2000 Manual. The TEC 2000 Manual may be accessed [here](#).

The "Low Temperature Range" calibration method allows for sensor accuracy near +/- 1.0°C from -150°C to 199°C. This method requires the temperature probe to be submerged in LN2. Step-by-step instructions are listed below. Chart recommends that the audible alarm be disabled prior to performing this calibration (directions above).

1. Enter the "Maintenance Menu" by pressing the following five keys in the order shown: [Liquid Usage][Up Arrow][Down Arrow][Up Arrow][Enter]
2. Verify the saturated LN2 temperature versus altitude reading is correct for your application. Reference page 34 of the TEC 2000 Manual [here](#).
3. Verify the "Use Ice Water" setting in the "Maintenance Menu" is set to "NO".
4. Exit the "Maintenance Menu" and press the [Temp A] key to display the temperature for probe "A".
5. Submerge temperature probe "A" in LN2 liquid along with three to four inches of the sensor cable. Press and hold the [Temp A] key until the display reads "Press Enter with the [Temp A] key until the display reads "Press Enter with Temp A at LN2".
6. Press the [Enter] key to finalize the calibration of sensor "A".
7. To perform the calibration of temperature probe "B", press the [Temp B] key to display the temperature of probe "B".

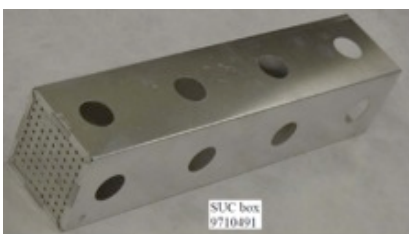
8. Submerge temperature probe "B" in LN2 liquid along with three to four inches of the sensor cable.
9. Press and hold the [Temp B] key until the display reads: "Press Enter with Temp B at LN2".
10. Press the [Enter] key to finalize calibration for sensor "B".

The temperature probes are now calibrated.

ACCESSORIES

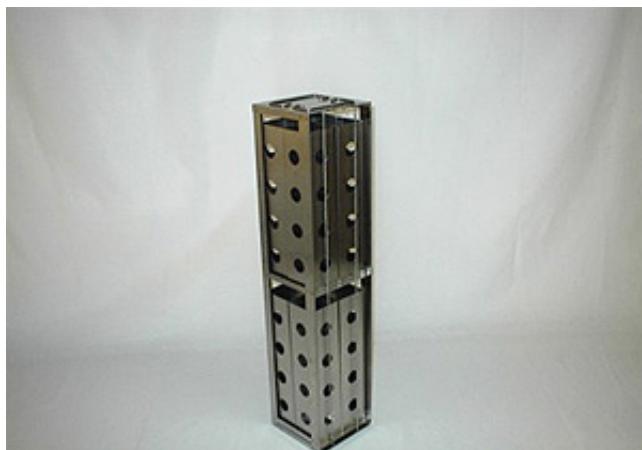
SUC Canister

MVE Chart offers rack systems that can hold single unit canisters (SUCs). An SUC can hold straws or vials on canes and can be conveniently placed into the rack system. Dimensions and part numbers for SUC canisters and racks are below:



SUC Canister: PN 9710491

SUC Canister Square Racks:



PN 11395896: Large SUC Square Rack
5.25" (133.35 mm) W x 25" (635 mm) H



PN 11392644: Mini-SUC Square Rack
3" (76.2 mm) W x 25" (635 mm) H