

Cryopreservation Technical Tips

Product Information

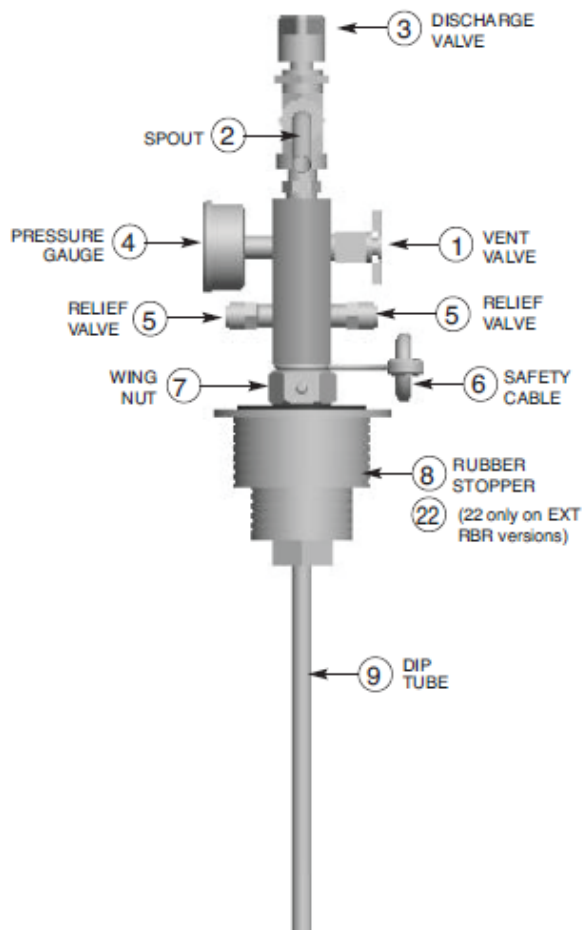
➤ Dewar Manual Discharge Device Tips

When changing the device, to ensure proper sealing, the wing nut once contact with the metal washer is made, should be tightened a minimum of 4-5 complete turns to hold the 5-psi operating pressure.

When installed, before pressure is built up, verify that both the valve for the discharge and the relief valve are both in the closed position.

The device can take up to 24 hours to build up full pressure to properly dispense liquid at the full rate. This is because it takes a while for the evaporation of the liquid into a gas pressure.

REPLACEMENT PARTS:



TEC 3000 Controller

- Q: The software CD that came with the TEC COM USB kit cannot be located; how can the software be retrieved? Does the CD have to be ordered?
- A: The TEC COM USB kit software is available online; it is posted on Chart's Website. Follow these steps:
 1. Open a web browser, type in Chartindustries.com/Life-Sciences
 2. Click on Distributor Marketing Services
 3. Click and download TEC COM Kit drivers (See below)

Distributor Access to Chart Marketing Services Website

Distributor Assets for download

Files

[TEC Com Kit Drivers](#)

(Zip file includes Windows 7 Drivers)

- Chart has received feedback from customers regarding certain conditions that have arisen in connection with some TEC 3000 controllers on Chart's autofill freezers, including:
 - One or both temperatures A&B may lock up or display -237C or -195.8C and calibration aborts; or temperature calibration aborts without the controller locking temperatures
 - Controller reads level "0" and level calibration aborts
 - Serial number may disappear and display "0"
 - The event log may show 255/255/-2001
 - Customer-defined level and temperature parameter set points are lost
 - Password may change to "0,0,0,0"

Customers experiencing these conditions should contact their distributor. The controller may need to be restored to defaults by an authorized technician; the distributor should contact Chart Technical Support for further instructions.

Chart does not recommend that its autofill freezers be operated without a controller or alarm.

➤ MVE Research Dewars

Chart offers Research dewars developed specifically for easy and safe transport of liquid nitrogen within a facility. The stainless steel dewars are vacuum insulated and offer superior thermal performance. Contact customer service to place your order.

Features include:

- All stainless-steel construction
- Optional Insulated lid (Cork and Cover are not included)
- Wide mouth for easy access
- Convenient carrying handle (except 0.5L)
- Meets laboratory safety requirements that prohibit glass lined dewars



	RD-6	RD-3	RD-2	RD-1	RD-1W	RD-0.5
RESEARCH DEWARS (LIDS SOLD SEPARATE)	0.5 Liter Dewar (NO LID)					13982242
	1.0 Liter Dewar (NO LID)					13982251
	1.0 Liter Dewar (Wide Mouth) NO LID					13982269
	2.0 Liter Dewar (NO LID)					13982277
	3.0 Liter Dewar (Stainless Lid not included)					13982285
	6.0 Liter Dewar (Stainless Lid not included)					13982293
RESEARCH DEWAR LIDS	Spare Cork and Cover for RD-0.5					13976344
	Spare Cork and Cover for RD-1					13976379
	Spare Cork and Cover for RD-1W and RD-2					13976387
	Stainless Steel Lid Only for RD-3 and RD-6					21007715

Safety Corner

➤ Cryogenic Liquid Safety

Liquid Nitrogen Safety

Liquid nitrogen (LN2) is used in Chart Cryogenic Freezers as a refrigerant. Understanding potential hazards and following safety precautions is important when handling LN2 and these freezers. Nitrogen is a colorless, odorless, and tasteless gas that makes up approximately 78.1% of the Earth's atmosphere in its gaseous state. LN2 becomes vapor at temperatures greater than -320.8°F (-196°C). In liquid state, nitrogen has a temperature range from -320.4°F to -346°F (-195.8°C to -210°C).



- Nitrogen vapor is a potential asphyxiant as it displaces Oxygen (O₂) in confined spaces. Rapid suffocation can occur without warning in an Oxygen-deficient atmosphere (less than 19.5% O₂). Chart Cryogenic Freezers must be installed and operated in well-ventilated areas.
- DO NOT vent container in confined spaces.
- DO NOT enter confined spaces where excess nitrogen gas may be present.
- If exposure has occurred move to ventilated area or fresh air. If breathing is difficult, supplement oxygen may be required. If not breathing, give artificial respiration. SEEK IMMEDIATE MEDICAL ATTENTION.



- Contact with liquid nitrogen or uninsulated equipment containing nitrogen can result in cold contact burns or tissue damage. Nitrogen vapor can cause damage to skin or eyes.
- In case of frostbite, warm area with warm water not exceeding 105°F (40°C) and SEEK IMMEDIATE MEDICAL ATTENTION.



- Never place LN2 in a sealed container without a pressure relief device. The expansion ratio of liquid nitrogen to gaseous nitrogen is 1 to 700 (1 cubic foot of liquid nitrogen becomes 700 cubic feet of gaseous nitrogen when evaporated).

Recommended protective clothing



- Cryogenic gloves (loose fitting)
- Full-face shield or chemical splash goggles
- Cryogenic apron
- Long sleeve shirt and cuffless pants
- Closed toe shoes (no sandals)

Helpful Hints/FAQ's Accessories

➤ **Chart/MVE Cryoshippers**

The MVE CryoShipper is available with a bloodbag rack and a square rack.

PN 10508967, CRYOSHIPPER (W/Shipping Container) with a blood bag rack
PN 20925284, CRYOSHIPPER (W/Shipping Container) with a 5-2 square rack

