



# MVE Tech Tips



*A monthly publication for the MVE Biological Products Distributors*

*May 2002*

The very first publication of Tech Tips appeared in September 1997. For those of you who actually saved each monthly edition, you have accumulated a pile of technical and new product information. After wading through all of the Tech Tip publications, we have decided that an index would actually make finding the information a lot easier and less time consuming. So with that in mind, we have included in this month's publication the alphabetical subject listing for all of the past monthly Tech Tips. It is listed by subject matter and will direct the user to the month and year of publication. Also currently working on putting all of the Tech Tip volumes on a compact disc that can be updated annually. I will announce the completion of that project in an upcoming Tech Tip.

## **I. TECH TIPS TABLE OF CONTEXT ALPHABETICAL LISTING ACCORDING TO SUBJECT**

	<u>Subject</u>	<u>Month/Year Published</u>
A.	Aluminum Replacement Parts	3/2000
	Aluminum LN2 Dewars	8/2001
B.	Brakes-Caster XLC-1830	8/2001
	Battery Backup	1/2001
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D.	Decontamination	2/1998, 8/1998, 1/1999 6/1999, 7/1999, 5/200
	Damaged Shipments	8/1998, 5/2000, 3/2003
	Dewars, Research	11/1999
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	Download Data-TEC-2000	12/2000, 1/2001, 4/2003

E.	E-Prom Chip	2/2000
	Edwards, Gil Intro	8/2001
	ETERNE	10/2002
	Event Log Download	4/2003
F.	Fill Valve	11/1997
	Filter In-Line	2/2002
	Full Auto Cryo-6000	3/2002, 6/2002
	Fuses-Controller TEC-2000	3/1999
G.	Gas By Pass	7/1998, 1/2001
	Gordinier Electronics	4/2000
H.	Handles	10/2002
	Hazmat Regs	7/1998
	HE Vs CBS Freezers	5/2001
	HE Freezers -190C	7/2001
	Hinge Replacement	6/2000, 10/2002
	HL-119, HL-190	8/2002
	HyperTerminal Upgrade	12/2000
I.	Imploding Inner	3/1998
	Inventory Sale	10/2000
	Inventory Refurbished	4/2001
	Isotherm Vs 1520HE -190C	8/2001
L.	Lid Replacement	11/1997
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	Liquid Usage Calculation	4/2003
M.	Maintenance Preventive	12/1999, 2/2003
	Manual Corrections	1/2002
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	N.E.R.	3/2003
O.	Operating Instructions A.I.	3/2000
	Operating Instructions	11/2000, 7/2001, 8/2001
	OFAF	1/2003
	Overfilling Dewars	4/2002
P.	Parts Sale XLC	1/1998
	Excess Parts Sale	12/1998, 4/1999
	Power Supply/Fill Valve Case Problem	6/1999
	Paint System	3/2002
	Power Cords	10/1999
	Parts Replacement	11/2000
	Phase Separator For Discharge Device	8/2002
	Pricing 2003	11/2002

Q.	Question & Answer Question-Trouble Shooting Empty Cyl.	8/1999, 11/2001 2/2003
R.	Rental Vapor Shipper Rental Program Recorder For TEC-2000 Repair Program Replacement Kit-Plumbing Parts Rust Removal	6/1999, 7/1999 8/2000, 3/2002 7/1999 5/2000, 4/2002, 8/2000,4/2001 4/2000 2/2002
S.	Sale-Refurbished Inventory Sanitizing Settings For XLC Units Spare Parts Shipping Cartons SUC Box W/Handle	11/2000, 2/2003 4/2001 7/2000 10/1997 1/2002 8/2000
T.	Tank Switcher Temp Curve Silicon Diodes TEC-2000 Refurbished Controller Tee Assembly Temp Module Ampules Tray Table Access HE Units 3 Way Purge Valve Tools For Servicing XLC Tool Box	7/2000 5/2001 10/2000 6/1998 10/1998 2/2002 9/1997 5/1998, 8/2002 1/2000
U.	Upgrade Program Termination LSCI Update User Manual Update Phone And Address CS & TS	11/1998 3/1999 5/1999
V.	Valve-Purge Valve Case Problem	9/2001
W.	Warranty Change Warranty Water In Units	4/1999 5/2000 10/1999
X.	XLC-230 & 230 GEN II XLC-810HE GEN II	3/2000 11/2002
Y.	Y2K Protection	2/1998

## NEW REPAIR PROGRAM PRICING

### II. SPARE PARTS LIST FOR TEC-2000 FREEZERS AND CRF 560-750 AND PRICE

SPARE PARTS LIST		TEC-2000		
PN	List price	PART DESCRIPTION		List price
10712933	\$70	Purge Valve		
10712925	\$184	Fill Valve		
10713418	\$102	RTD Temp Probe 44"		
10883169	\$269	Stand Alone Power Supply		
9713109	\$130	6ft. Transfer Hose		
10502741	\$.25/ft	Vinyl Tube		
10713434	\$275	Front Panel		
11035495	\$1.50	Fuse For Stand Alone Controller		
10717486R	\$519	Stand Alone Controller		
11058494	\$116	Extension Cord Hospital Grade		
11648945	\$12.00	In-Line LN2 Supply Filter		
10753946	NC	User's Manual		
10883361	\$5	Measuring Stick		
11081299	\$294	Tool Box		
1810032	\$27.94	22 PSI Relief Valve		
1210212	\$1.28	1/4 Cplg Brass		
11178453	\$57.20	E-Prom Chip 1.71		
11087666	\$46	Hinge Kit		
PARTS LIST		CRF		
560			750	
11723474	\$7.30	Graph Paper MRV Controller	NA	
11723626	\$36	Lithium Battery	11723626	\$36
11723562	\$19.75	Battery Ni-Mh	11723562	\$19.75
10834800	\$483	Solenoid Valve 110V	10834800	\$483
11724021	\$88	Thermal Cutout	10835044	\$103
11723870	\$249	Sample PRT	11723010	\$310
1810032	\$25	Safety Relief	1810032	\$25
NA		Fan Belt	11723706	\$37.75
11723052	\$345	Hose	11723052	\$345
11754692	\$115	Hose Adaptor	NA	

### III. GAS BYPASS TEMPERATURE ADJUSTMENT

When LN2 is discharged from the Gas Bypass muffler, before the TEC2000 switches from bypass cycle to fill cycle, the switchover temperature for the bypass is set too cold. When this happens during function testing at the factory, the temperature is adjusted to eliminate it. However, if the freezer is supplied at a pressure higher than what is used here for function test, the problem can resurface because the LN2 is flowing by the sensor faster than it would at a lower pressure.

Because the response of the bypass temperature sensor is not instantaneous, (it does not read LN2 temperature [~-196C] at the instant that LN2 first touches it) the required temperature setting will always be warmer than LN2 temperature.

To properly adjust the switchover temperature for the gas bypass, perform the following procedure:

When LN2 is discharged from the Gas Bypass muffler, before the TEC2000 switches from bypass cycle to fill cycle, the switchover temperature for the bypass is set too cold. When this happens during function testing at the factory, the temperature is adjusted to eliminate it. However, if the freezer is supplied at a pressure higher than what is used here for function test, the problem can resurface because the LN2 is flowing by the sensor faster than it would at a lower pressure. Because the response of the bypass temperature sensor is not instantaneous, (it does not read LN2 temperature [~-196C] at the instant that LN2 first touches it) the required temperature setting will always be warmer than LN2 temperature.

To properly adjust the switchover temperature for the gas bypass, perform the following procedure:

1. It is best to start when the plumbing assembly is at or near room temperature.
2. Make sure that the level in the freezer is below the high fill set point.
3. Press and hold the #1 Lo Level Fill key for 5-10 seconds.
  - a. The display should change to read "Bypass Probe" in the upper line and show the temperature of the probe in the second line. Let go of the key when this display appears. If the plumbing assembly is at room temperature, it should read around +20C.
1. Confirm that a temperature reading is displayed, then press escape.
  - a. If the sensor reading indicates "OPEN", the sensor is either defective or disconnected; this must be corrected before completing this procedure.
1. Press the fill start key.
2. Press and hold the #1/Lo Level Fill key until the bypass probe temperature is displayed again, and let go of the key,
3. Observe the indicated temperature of the bypass probe. The display will continue to show the bypass temperature for ~40 seconds. If it reverts back to the normal display before the bypass cycle is complete, redisplay the bypass temperature per #6 above.
4. Also observe the discharge from the bypass muffler. With some freezers an assistant may be required to observe both the display and the muffler.
5. Note the temperature displayed when LN2 begins to discharge from the muffler.
  - a. Add 10 deg. C to this value to determine the required bypass temperature setting.  
Please Note that, if the observed temperature at discharge were -100C, the bypass temperature setting would be -90C. You will be adding to the actual temperature, not the magnitude of the temperature.
1. Press fill stop.
2. Enter the maintenance menu by pressing the following keys in sequence: Liquid usage, up arrow, down arrow, up arrow, Enter.
  - a. "Entered Maintenance" will be displayed, followed in a few seconds by "LN2 Temp".
1. Press and release the "Enter" key to move to the next display of the maintenance menu until "Bypass Temp" appears in the display.
2. Change the temperature setting to the value that you determined in #9 above.
3. Press "Enter" to accept the change.

4. Press and release the "Enter" key to move to the next display of the maintenance menu until the normal display returns.
5. Allow the plumbing assembly and transfer hose to warm to room temperature.
6. Press the Fill Start key.
7. Observe the discharge from the bypass muffler.
8. If any LN2 is discharged from the muffler, adjust the bypass temperature to a warmer value as described in #11 through # 15 above. (Adjust in 5 deg. Increments at this point to get as close as possible to the optimum setting). Then repeat #16 through #18 above.
9. When no LN2 discharge is observed from the muffler, the set up is complete.

## NEW CRYOBIO INSIDE SALES REP

Please welcome Peter McGee as the new Inside Sales Rep for Cryobio Systems, Biomedical team. Peter comes to us from the Cryogenic Systems Division of Chart Industries and his background in the systemization of our low temperature end user applications provides another resource to call on when you encounter your next System opportunity. Please call Pete with any questions and quotation requirements for tank and piping projects that will compliment your freezer sales. He will be focusing his immediate actions on learning the freezer products more intimately as well as working with other team members focusing on the day-to-day actions for providing our customers and distributors the highest level of customer support. The addition of Pete to the Biomedical team further strengthens our commitment to Security Through Systems!



Numbers required for contacting Bio-Medical customer service and technical service:

Customer Service      888 683-2796 toll free  
                                  952 882-5000  
                                  800 232-9683 fax

Technical Service      952 641-6115  
                                  866 819-5897 toll free  
                                  612 889-7810 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) 882-6115, Pager (612) 579-8367, Fax (952) 882-5172.