

## New TEC 3000 Manual

The newest TEC 3000 Technical Manual\*, revision C, is available online at [www.chart-biomed.com](http://www.chart-biomed.com). This revision includes several new features:

- Freezer Dimensional Specifications
- Updated Menu Maps
- Preventative Maintenance Procedures
- Troubleshooting Quick Reference

\*PN: 13289499

## Checking Freezer Electrical Components

If it is suspected that one of the electrical components is not operating properly, an evaluation may be in order. Below is a list of specifications for select items normal resistance values.

1. Fill Valves (Dual 24VDC): 30 – 35 ohms
2. Fill Valve (Singular 24VDC): 60 – 70 ohms
3. Bypass Valve: 60 – 70 ohms
4. Bypass Sensor:
  - a. Room Temp: 1000 – 1100 ohms
  - b. Cryogenic Temp: 200 – 300 ohms
5. Humphrey 3 way: 140 – 145 ohms
6. Temperature Probes
  - a. Room Temp: 1000 – 1100 ohms
  - b. Cryogenic Temp: 200 – 300 ohms



## CryoSystem Lids

All CryoSystems will now come standard with a plastic lid. This will replace the painted, spun metal lid previously used.

## New MVE Freezer Options

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As of January 4, 2010, MVE freezer options are changing. Full auto freezers with the TEC 3000 controller will now come equipped with Hot Gas Bypass as standard equipment. Battery backup will be an optional accessory that will have to be added to a purchase order. Full auto freezers without hot gas bypass will no longer be available for purchase. Part number changes and options are reflected in the 2010 Biological Equipment Price List (PN 10795610).

### MVE Freezer Options

- o Basic Freezer

  - Manual fill freezer without plumbing or level and temperature monitoring

- o Full Auto Freezer with Hot Gas Bypass

  - Includes TEC 3000 controller, plumbing, and hot gas bypass

  - Optional battery backup add-on

- o MDD Freezer

  - For European use only

  - Complies with the European Medical Device Directive (MDD)

  - Includes TEC 3000 controller, plumbing, hot gas bypass, and battery backup

The hot gas bypass feature allows the warm nitrogen gas in the supply line to be vented when a fill is initiated. This stops warm gas from entering the freezer storage space and helps maintain a stable temperature gradient while increasing the efficiency by reducing unnecessary liquid nitrogen evaporation during fills. This feature will increase the efficiency of any supply system whether using liquid cylinders or a large bulk tank and vacuum insulated piping.

For specific part numbers, pricing, or questions, please contact your authorized MVE Distributor or Chart BioMedical Customer Service.

## Customer & Technical Info

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For ordering information contact

Customer Service:

<b>Europe:</b>	+44 1344 403100
<b>Australia/New Zealand:</b>	+61 2 9749 4333
<b>US Toll Free:</b>	800.482.2473
<b>Asia/ Pac Rim:</b>	770.721.7759
<b>The Americas:</b>	770.721.7759

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