March, 2009

TEC 3000 Has a New Look

We have updated the bottom of the TEC 3000 controller to make it easier to read and understand.

-The alarm descriptions are encased in broken lines.
-The warning labels are bolder with thicker lines.
-The serial number of the controller can be found at the bottom of the new tracking barcode.

We will gradually integrate the new design.

NEW TEC 3000

OLD TEC 3000

Normal Evaporation Rate Test & Hold Time Procedure for Vapor Shippers

There has been some confusion as to the appropriate normal evaporation rate (NER) test procedure. Below you will find the procedure and calculations to estimate normal evaporation rate and hold time.

1. Weigh empty unit [W_{EMPTY}]
   a. With cork/cover on, but no racks or canisters inside
2. Fill unit to bottom of neck tube with LN2
   a. Refill after a half an hour so unit can reach equilibrium
3. Wait 24 hours
   a. This is a cool down period that allows the Cabosil to charge and the LN2 to reach a constant boil-off
4. Take a first weight [W_1]
   a. With cork/cover on, but no rack or canister inside
5. Wait another 24 hours
6. Take a second weight [W_2]
   a. With cork/cover on, but no racks or canisters inside
7. Dump LN2 out of unit
8. Take a Saturation weight [W_{SAT}]
   a. With cork/cover on, but no racks or canisters inside
9. Calculate NER (L/day)
   a. $NER = (W_1 - W_2) \times 0.5606$
10. Calculate Hold Time (days)
    a. $\text{HoldTime} = \frac{[(W_{SAT} - W_{EMPTY}) \times 0.5606]}{NER}$

MVE DataLogger Time Settings

The MVE Logger has two time settings: Current Time and Start Time.

The Current Time cannot be altered; it is derived from the computer's internal clock. If this time is incorrect, the computer's clock must be reset.
The Start Time is the time the MVE DataLogger will begin to record data. The time format for both is Day/Month/Year i.e. March 10, 2009, is 10/03/2009.

Lid Switch Harness

In our August, 2008 edition of Technical Tips we explored the attributes of the Fog Clear Lid Switch Harness (PN: 13296488). The lid switch can be used with MVE Series (open tops) and High Efficiency (HE) freezers to automatically perform a fog clear when the lid is opened.

MVE Series

Adding the Fog Clear Lid Switch Harness to MVE Series freezers is pretty straight forward.

1. Remove the UL Lid Switch harness (PN: 13296461S)
    a. Disconnect the white connectors from those labeled fill valves
    b. Disconnect the two prongs from the actual lid switch.
2. Replace UL Lid Switch Harness with the Fog Clear Harness (PN:13296488)
    a. Connect the white connector to the main wire harness connectors labeled lid switch.
    b. Connect the red prongs to the lid switch

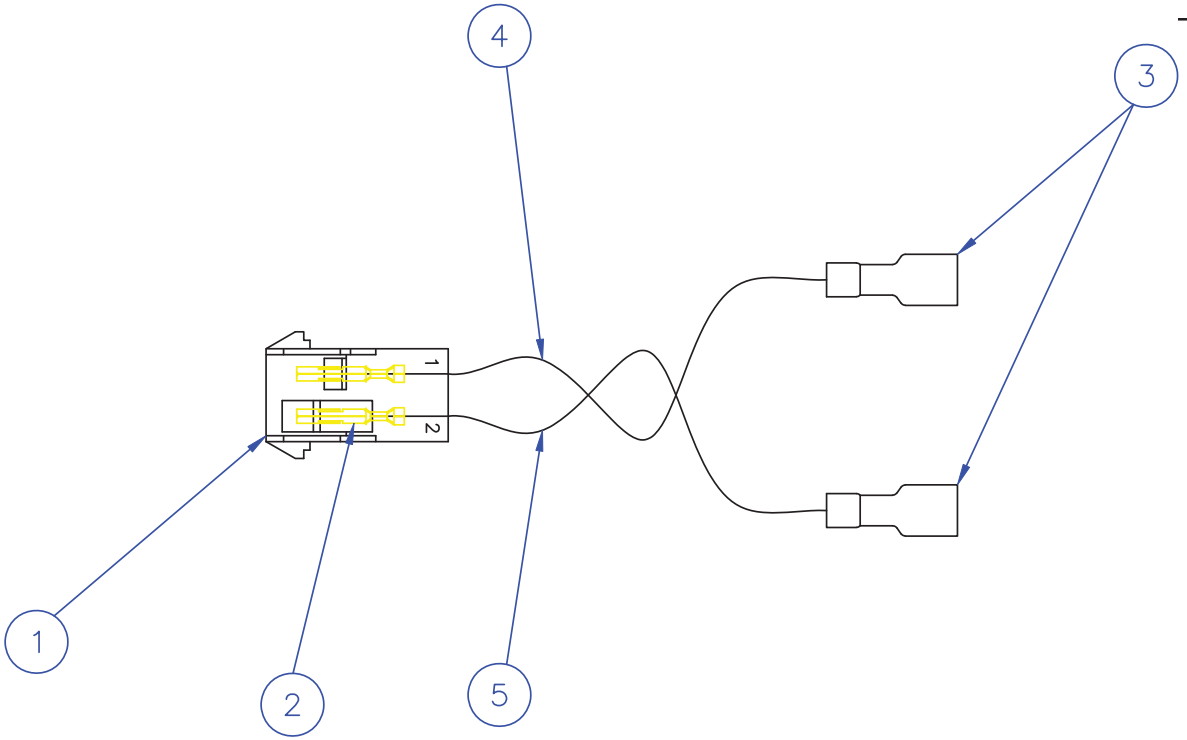
High Efficiency

The HE freezers are not equipped with pins 3 and 6 on the main wire harness.

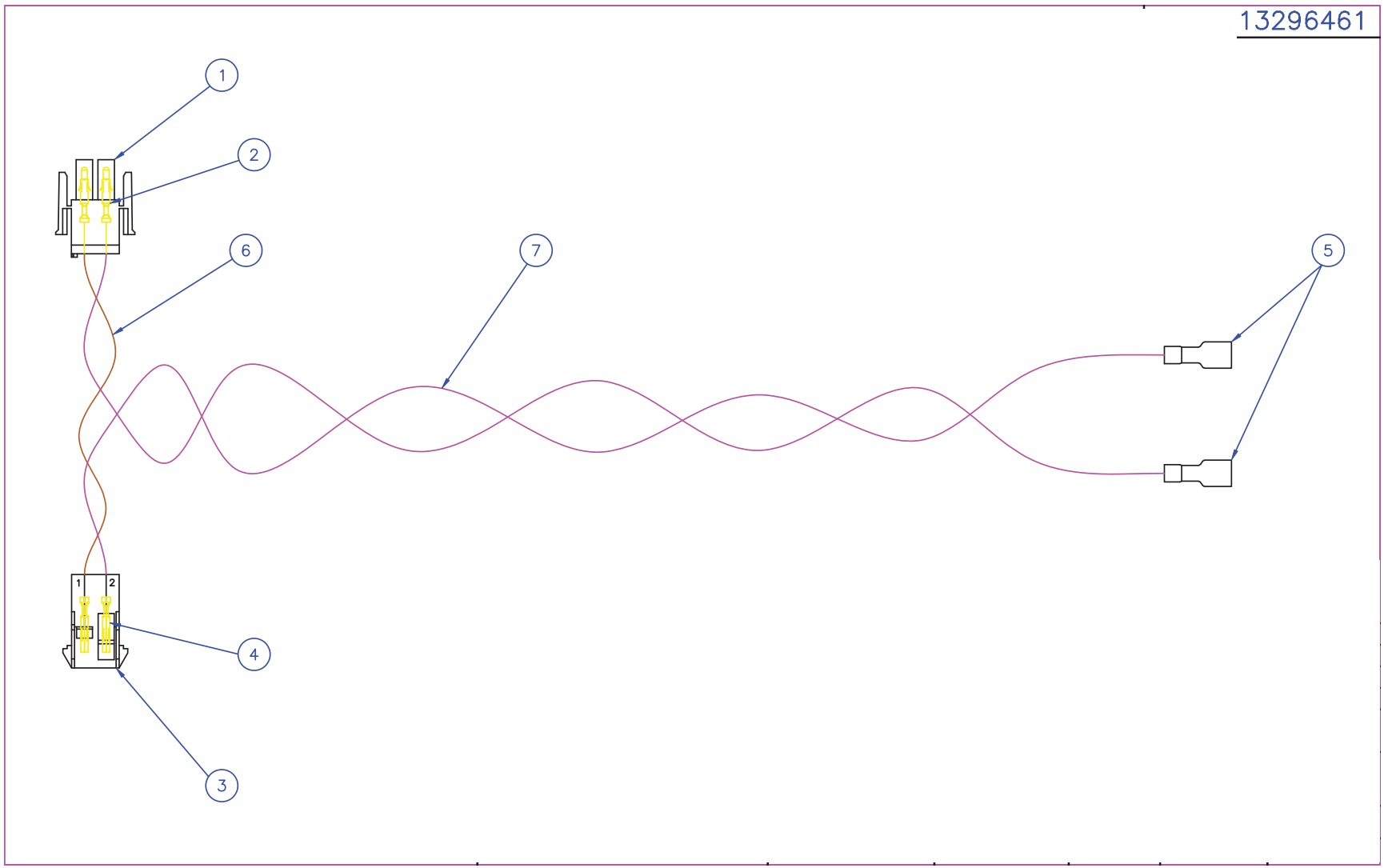
1. Add the lid switch function to pins 3 and 6 on the main wire harness with PN: 13701586.
2. Connect the Fog Clear Harrnass to a proximity switch and pins 3 and 6 of the main wire harness. Since we do not offer a proximity switch, this would have to be purchased from a third party and verified that its connectors are compatible with our fog clear harness. On the other hand, the end of our fog clear harness could be clipped and made to be compatible with the third party proximity switch connectors.

The drawings of these parts can be found at the end of this letter.

13296488



13296461



ALL COMPONENTS MUST BE RoHS COMPLIANT

13701594

WIRING TABLE		
POSITION	DESCRIPTION	WIRE COLOR
1	+24VDC BATTERY	DARK BLUE
2	−24VDC BATTERY	ORANGE
3	NOT USED	
4	+FILL VALVE	BROWN
5	−FILL VALVE	PURPLE
6	NOT USED	
7	+PURGE VALVE	YELLOW
8	−PURGE VALVE	RED
9	+BYPASS TEMP	RED
10	+BYPASS VALVE	BLACK
11	−BYPASS VALVE	GRAY
12	−BYPASS TEMP	WHITE