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Cryogenic Delivery and Storage Systems

CHART

MVE Tech Tips

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HL-120, HL-190

Those of you that remember the old MODS-119 will also remember the vent and mount kits that were used for that unit. The MODS-120 & 190 are now designed to ASME specifications and utilize the same plumbing assemblies. They are designed to operate at 100 psi but can be operated at much lower pressures with the appropriate relief valves. They each have dual fill valves, an over the road relief valve system and pressure building circuits. They are also fitted with a new CYL-TEL contents gauge replacing the pressure differential gauge. You will use the following part numbers regardless if the usage will be O2 or LN2.

Model	
HL-120	11818705
HL-190	11814721

You must decide which service the above units are to be used for.

Service Kit O2	11830211	
Service Kit LN2	11830237	
Vent Kit for installing into vans	11864277	This is used for both 120/190 and on the 119 as well.
Mount Kit	10591449	Used on 119, 120, 190
Adaptor 1" to 5/8"ODT	5518422	Used for O2 service
Adaptor 1" to _"ODT	5510562	Used for LN2 service

3 Probe Temperature Assembly

Although the 2-probe temperature assembly is standard on all automatic HE freezers, a 3-probe assembly is available for these. This consists of two tubes that would accommodate the TEC-2000 RTD probes and a third tube slightly larger ID tube for an independent probe.
Use part number 11793350 (39"lg) for the 810HE, 1520HE, and 1830-2T.
Use part number 11793368 (44"lg) for the 1830HE & 1830 Eterne.

QUESTION AND ANSWER

Remote alarm contacts

Q. Does the TEC-2000 have a volt-free contact?

A. I believe that they are asking whether it has "dry alarm contacts, which is how the domestic industry refers to switching contact with no voltage supplied by the device. Our remote alarm contacts are "dry" or "volt free".

LN2 Supply Pressures

Q. At our LN2 supply tank we have been using a pressure gauge (to measure LN2 supply pressure) that is not calibrated. According to our distributor, the pressure at the supply tank should be around 50 psi in order to be able to deliver the LN2 to the dewars. The supply tank is located outside the building housing the dewars, given that the dewars have a built in pressure relief valve. Is it necessary for the pressure gauge to be calibrated?

A. The gauge does need to be reasonably accurate, so calibration may be a good idea.
I disagree with the distributors 50 psi recommendation at the supply tank. The relief device built into the freezers is set at 50 psi. The relief device has a 10% tolerance, so the actual opening pressure could be as low as 45 psi, although most will be within 2 or 3 psi. When the supply system is static the freezers are not filling and the pressure in the supply piping will equalize with the supply tank pressure. If the supply pressure is high enough to open the relief device, the bulk supply could be emptied into the room. For this reason I recommend a maximum pressure of 45 psi at the supply tank to minimize the potential of dumping the supply into the freezer room.
I also suggest that the supply pressure at the freezers be no more than 35 psi. Our recommended supply pressure range at the freezer is 22 psi to 35 psi. Due to pressure drop in the supply piping when liquid is flowing through, it may be necessary for the supply tank pressure to be set above 35 psi to get 35 psi at the freezers when they are filling. Doing this may require some trial and error work and will require a second gauge located near the freezers.

I am assuming that the distributor has already set the supply pressure at 50 psi. If this is the case, I recommend installing the second pressure gauge near the freezers to see what the pressure is at the other end of the piping system. The pressure gauges should show equal pressure when the system is static and the freezers are not filling. When the freezers are filling, the gauge near the freezers will indicate a lower pressure due to the pressure drop through the piping. Ideally the pressure near the freezers should be no less than 22 psi. If this pressure is above 22 psi, you can reduce the pressure at the supply to something less than 50 psi.
My recommendation is that you set the supply pressure at no more than 45psi and see what the pressure is at the freezers when they are filling. If this pressure is no less than 20 psi, the system should work fine.

TIGHTWADS

Four retired guys are walking down a street in New Prague. Then they turn a corner and see a sign that says "Old Timers Bar"…" ALL DRINKS 10 CENTS" They look at each other then go in. On the inside they realize in this case, they should not judge the "book by its cover".

The old bartender says in a voice that carries across the room, "Come on in and let me pour one for you! What'll it be, gentlemen?"

There seems to be a fully stocked bar, so the men all ask for a martini.

In short order, the bartender serves up 4 iced martinis—shaken, not stirred—and says, "That'll be 10 cents each, please." They can't believe their good luck. They pay the 40 cents, finish their martinis, and order another round. Again, four excellent martinis are produced with the bartender again saying, ……."That's 40 more cents, please."

They pay the 40 cents, but their curiosity is more than they can stand. They've each had two martinis, and so far they've spent less than a dollar. Finally one of the men says, "How can you afford to serve martinis as good as these for a dime apiece?"

Here's my story. I'm a retired tailor from Minneapolis, and I always wanted to own a bar. Last year I hit the lottery for $25 million and decided to open this place. Every drink cost a dime, wine, liquor, beer, all the same.

"Wow. That's quite a story." Says one of the men. The four of them sipped at their martinis and couldn't help but notice three other guys at the end of the bar who didn't have a drink in front of them, and hadn't ordered anything the whole time they were there. One man gestures at the three at the end of the bar without drinks and asks the bartender, "What's with them?"

The bartender says, "Oh, they are from Wisconsin, they're waiting for happy hour."

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