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MVE Chart Tech Tips

PRODUCT INFORMATION

MVE HEco Series and Battery Backup

We are pleased to announce that when a customer wants to order the HEco Freezer with the Battery Backup option (BB) we can use one part number only. The PN is relative to the HEco Model and will notify the factory to automatically install the BB. This new process is part of Chart's continuous improvement.

Existing HEco freezer part numbers remain the same for customers who may not need/want the BB option. The HEco MDD Freezers (Medical Device Directive for Europe) PN's will also remain the same.



Instead of ordering:

MVE HECO 815P-190AF-GB, PN 20681330 & OPTIONAL BATTERY BACKUP, PN 11864171

Now order:

HECO 815P with BB = PN 20884098

Below are the PN's for HECO Models with BB for reference:

20884098	FNL MVE HECO 815P-190AF-GB-BB
20884099	FNL MVE HECO 818P-190AF-GB-BB
20884100	FNL MVE HECO 819P-190AF-GB-BB
20884101	FNL MVE HECO 1536P-190AF-GB-BB
20884102	FNL MVE HECO 1539P-190AF-GB-BB
20884103	FNL MVE HECO 1542R-190AF-GB-BB
20884105	FNL MVE HECO 1879P-190AF-GB-BB
20884106	FNL MVE HECO 1892P-190AF-GB-BB
20884107	FNL MVE HECO 1894R-190AF-GB-BB

HELPFUL HINTS / FAQ's

Q: Does PN 20582341 NER Certificate come standard with Vapor Shipper Series?

A: The NER Certificate is only available at the time the Vapor Shipper order is placed. Unfortunately it cannot be ordered after the Vapor Shippers have been built and shipped. The document is serial number specific and will have to be requested at the time the order is entered. Contact Customer Service or your Sales Representative for pricing.

Q: How can I tell if my liquid nitrogen dewar or vapor shipper is performing properly?

A: The procedure for testing MVE liquid nitrogen dewars is detailed below. The standard evaporation rate gives an indication of performance. For vapor shippers, both the hold time and the SER can be used as indications of performance. See catalog for hold time specifications on Vapor Shipper Series.

SER (Static Evaporation Rate) Test Procedure:

1. Fill unit to bottom of neck tube with LN2. Refill after two hours so unit can reach equilibrium.
2. Wait 24 hours. This is a stabilization period to allow the LN2 to reach a constant boil-off.
3. Weigh unit with cork/cover on, but no rack or canister inside. Ensure weight is recorded in lb or kg.

4. Record weight and time (1st Recorded Weight).
5. Allow unit to sit undisturbed for a minimum of 24 hours.
6. Weigh unit with cork/cover on, but no rack or canister inside. Ensure weight is recorded in lb or kg.
7. Record weight and time (2nd Recorded Weight).
8. Calculate SER using the following formula:

$$SER = ((2nd \text{ Recorded Weight} - 1st \text{ Recorded Weight}) * v_{LN}) * \left(\frac{24}{\text{Number of Hours}} \right)$$

Where $v_{LN} = 0.5611 \text{ L/lb} = 1.2385 \text{ L/kg}$

9. Compare the calculated SER rate to the listed rate. The approximate SER* values for MVE aluminum products:

<u>Lab Series</u>	<u>Static Evaporation Rate (L/Day)</u>
Lab 4	0.19
Lab 5	0.15
Lab 10	0.18
Lab 20	0.18
Lab 30	0.22
Lab 50	0.49
<u>SC Series</u>	
SC 3/3	0.13
SC 8/5	0.15
SC 11/7	0.16
SC 20/20	0.09
SC 33/26	0.13
SC 36/32	0.10
Super 2	0.09

<u>XC Series</u>	
XC 20 Millennium	0.10
XC 21/6	0.35
XC 22/5	0.35
XC 32/8	0.35
XC 33/22	0.14
XC 34/18	0.18
XC 34/18 PLUS	0.31
XC 43/28	0.14
XC 47/11-6SQ	0.39
XC 47/11-6	0.39
XC 47/11-10	0.39

<u>Vapor Shipper Series</u>	<u>Static Evaporation Rate (L/Day)</u>
SC 2/1V	0.19
SC 4/2V	0.26
SC 4/3V	0.20
SC 20/12V	0.09
XC 20/3V	0.35
Mini Moover	0.20
Cryomoover	0.35
Cryoshipper Mini	0.84
Cryoshipper	0.85
Cryoshipper XC	0.85
IATA Cryoshipper	0.80

<u>Doble Series</u>	
Doble 11	0.17
Doble 20	0.10
Doble 28	0.35
Doble 34	0.20
Doble 47	0.40
Doble 47-10	0.40

Static Evaporation Rate and static holding time are nominal. Actual rate and holding time will be affected by the nature of container use, atmospheric conditions, and manufacturing tolerances.

Q:What is the Preventive Maintenance for the Manual Discharge Device?

A: Chart's Discharge Device will provide many years of trouble free service following simple basic inspections. Periodic evaluation of the manual discharge device will enable to verify whether the device has a good seal to build pressure and a working relief valve to relieve pressure at 5 psi.

Inspection and replace if necessary:

1. Regularly check the safety cable, clamps and all of its components, replace if any components are broken. (Important safety factor)
2. Check for wear on the rubber plug, a noticeable indent or wear is normal but overtime may cause leaks, replace if suspect.
3. Check that the wing nut is tight, before and after transfer of LN2.
4. Check that the pressure gauge is actively reading pressure, 0 - 5 PSI is the norm.
5. Check both relief valves, vent valve, spout, discharge valve (Black knob that opens and closes controlling the flow of LN2); all related pipe fittings for any potential leaks using a soapy substance.
6. Verify the dip tube (long tube inserted into dewar) is not bent.
7. Replace parts only with the original manufacturer's specified part numbers.

****Please remember to consider important safety factors, using cryogloves, cryoapron, and protective eyewear when handling the Discharge Device in a dewar filled with LN2.**

If at any time it is determined that the Manual Discharge Device is not operating to specification, please feel free to contact Technical Support for assistance.

ACCESSORIES

The PDF logger is Chart's current offering for temperature monitoring of samples in vapor shippers during transit.

Chart MVE PDF Logger, Bracket, Temperature Probe, and Label

PN 20539220 will include the PDF Logger, bracket, temperature probe, and label. This part number can be ordered to replace the old dataloggers mounted to the Cryoshipper lid. For new lids the factory modifies the cork to enable insertion of the PDF temperature probe and use Velcro to attach the PDF Logger bracket.

Chart MVE PDF Logger Complete with Cork

The PDF Logger can be ordered factory installed to most of Chart MVE Vapor Shippers. Complete Cork and Cover with PDF Logger Assembly:

- CryoShipper / XC / Mini: PN 15086468
- Cryo Moover: PN 15086513
- SC 4/2V: PN 15086476
- SC 4/3V: PN 15086484
- SC 20/3V: PN 15086505



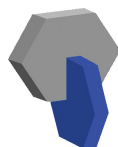
Fig. 1 - PDF Logger (left) and PDF Logger complete with bracket mounted to lid assembly (right)

MVE 800 2-Tier Step Assembly

MVE800 2-Tier Step assembly, PN 20820733. The 2-Tier step assembly enables easy access, insertion, and removal of taller rack systems on the HECO/HE 800 Series. The single step assembly, PN 13082551 is available and optional for the HE 800 Series; standard on the HECO 800 Series.



2-Tier Step



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