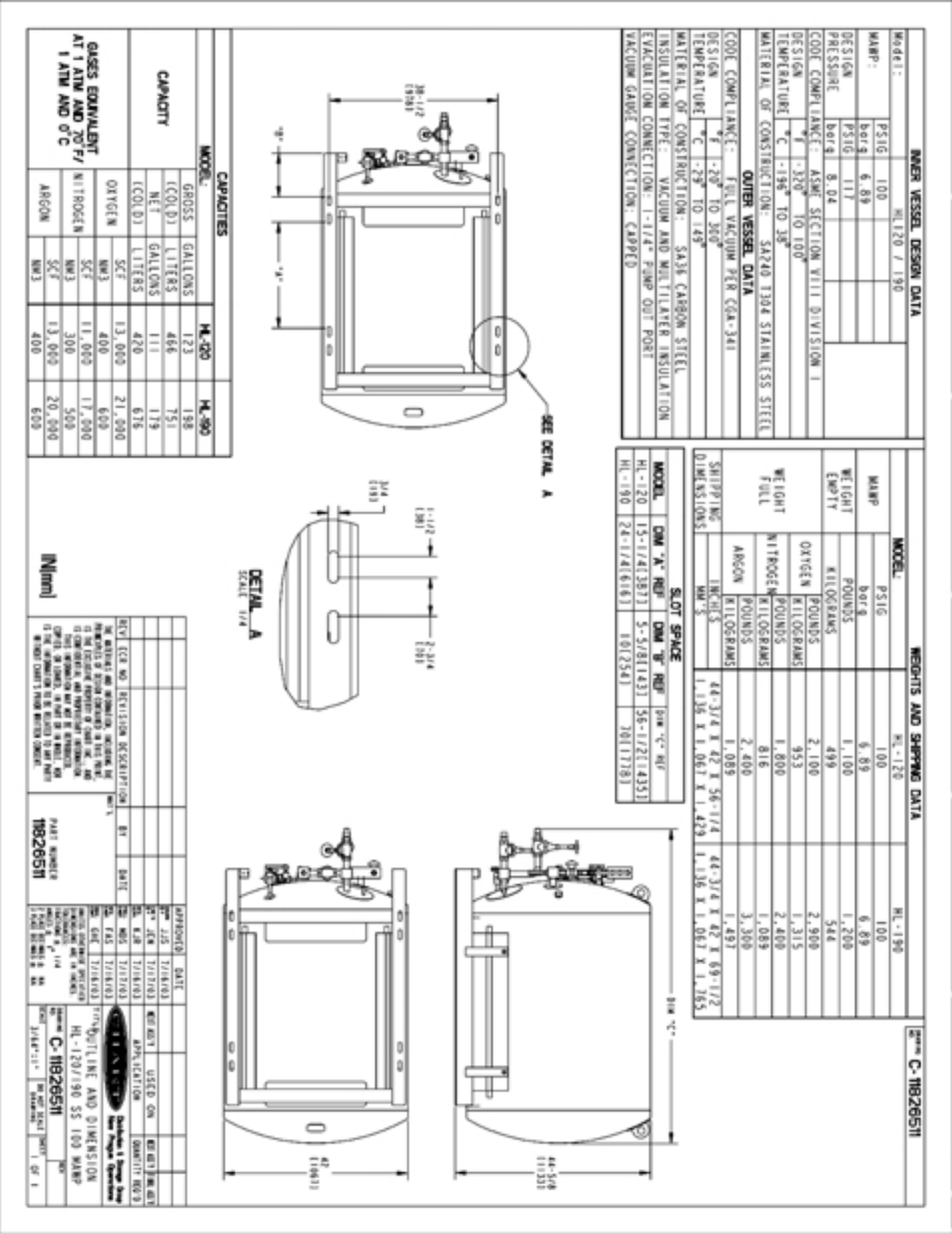## Re-Designed HL-120 and HL-190

The MDS 119 as we have come to know will shortly be a model of the past. It will be entirely replaced with a newly designed HL-120. This new model will have the same O.D. as the HL-190. The plumbing has also been redesigned and the HL-120 and the HL-190 will be interchangeable. Although the tank O.D. and plumbing is the same, the difference is in the length of the two. The newly designed models feature 1" nom. fill valves, dual fill valves, road relief valves and exterior pressure builder coils.   It utilizes the Cyl Tell level indicators so you can choose which capacity mode you require.

The HL-300 will also feature the same plumbing as the HL-120/190.

WARNING
KEEP OPEN FLAMES & COMBUSTIBLES AWAY
NO SMOKING

OUTLINE AND DIMENSION HL-120/190 SS 100 MAWP

DETAIL A
SCALE 1/4

SEE DETAIL A

INNER VESSEL DESIGN DATA

Model:		HL-120 / 190
MAWP:	PSIG	100
	barg	6.89
DESIGN PRESSURE	PSIG	117
	barg	8.04
CODE COMPLIANCE:		ASME SECTION VIII DIVISION I
DESIGN TEMPERATURE	°F	-320° TO 100°
	°C	-196° TO 38°
MATERIAL OF CONSTRUCTION:		SA240 T304 STAINLESS STEEL

OUTER VESSEL DESIGN DATA

CODE COMPLIANCE:		FULL VACUUM PER CGA-341
DESIGN TEMPERATURE	°F	-20° TO 300°
	°C	-29° TO 149°
MATERIAL OF CONSTRUCTION:		SA36 CARBON STEEL
INSULATION TYPE:		VACUUM AND MULTILAYER INSULATION
EVACUATION CONNECTION:		1-1/4" PUMP OUT PORT
VACUUM GAUGE CONNECTION:		CAPPED

WEIGHTS AND SHIPPING DATA

MODEL:			HL-120	HL-190
MAWP	PSIG		100	100
	barg		6.89	6.89
WEIGHT EMPTY	POUNDS		1,100	1,200
	KILOGRAMS		499	544
WEIGHT FULL	OXYGEN	POUNDS	2,100	2,900
		KILOGRAMS	953	1,315
	NITROGEN	POUNDS	1,800	2,400
		KILOGRAMS	816	1,089
	ARGON	POUNDS	2,400	3,300
		KILOGRAMS	1,089	1,497
SHIPPING DIMENSIONS	INCHES		44-3/4 X 42 X 56-1/4	44-3/4 X 42 X 69-1/2
	MM		1,136 X 1,067 X 1,429	1,136 X 1,067 X 1,765

SLOT SPACE

MODEL:	DIM "A" REF	DIM "B" REF	DIM "C" REF
HL-120	15-1/4[387]	5-5/8[143]	10[254]
HL-190	24-1/4[616]		70[1778]

CAPACITIES

	MODEL:		HL-120	HL-190
CAPACITY	GROSS (COLD)	GALLONS	123	198
		LITERS	466	751
	NET (COLD)	GALLONS	111	179
		LITERS	420	676
GASES EQUIVALENT AT 1 ATM AND 1 ATM AND 0°C 70°F/	OXYGEN	SCF	13,000	21,000
		NM3	400	600
	NITROGEN	SCF	11,000	17,000
		NM3	300	500
	ARGON	SCF	13,000	20,000
		NM3	400	600
		[N](m)		

PART NUMBER
118265111

DRAWING C-118265111

TITLE: OUTLINE AND DIMENSION HL-120/190 SS 100 MAWP

Turntable won't turn (Customer inquired with a freezer problem)

Q: The tray in our most recently purchased storage tank/freezer no longer turns. This was noticed recently with no known cause. What do we need to do to get it moving again?

A: The most likely culprit is ice. However, it is unlikely for units with liquid already in it that was working to "suddenly" freeze. If it was allowed to run out of liquid, and liquid was reintroduced without it being completely thawed and dried out, it is very likely to freeze. Most similar incidents are caused this way. For example, a unit is set up and put through validation. On completion of validation, the freezer is not needed immediately for storage, so they shut it off to "conserve" liquid and power. Later, after it has run out of liquid and warmed up, they are ready to use it for storage, so they start it up again without drying it out. It will freeze. The fix is to warm it up and dry it out.

Customer with an XLC-1520HE (97 vintage) wants to liquid store samples.

Q: How can I get controller to monitor level to that height?

A: The distance from the bottom of the turn tray to the bottom of the freezer on the 1520HE is approximately 9". This means that the total liquid level that may be achieved in the unit is 27.5"-9"=18.5" (the maximum allowable liquid level on the TEC 2000 then is 27.5", with a high level alarm setting of 28"). It is possible to alter the offset value of the TEC 2000 to achieve higher levels, but doing so will cause the level display to be incorrect by the amount that the offset level is changed. For example, in this case, you would like for the liquid level to increase to 23" – 18.5" = 4.5". So your will want to increase the offset level by a factor of 4.5" Use caution when doing this, as **THE OFFSET VALUE SHOULD NEVER EXCEED 5.5**. Doing so will cause the liquid level to exceed the measurement capabilities of the TEC 2000 and will cause an overfilling condition. In a liquid full situation, I recommend that a 4" interval be maintained between fill settings and alarms. This will prevent false alarms when inventory is added or removed from the freezer. The values I recommend that will achieve the maximum SAFE level are as follows:

Offset:	-5.5"
High-level alarm:	28"
High-level fill stop:	24"
Low level fill	20"
Low level alarm	16"

The above setting will not quite achieve the high level settings that you desire, but it will be very close, and the freezer should operate normally with minimum chance of false alarms. You can adjust the above settings lightly to meet your needs, but doing so may hinder the performance of the freezer. Again, do not exceed –5.5" on the offset level. Finally, keep in mind that if you alter these settings, the value displayed on the TEC 2000 will no longer be accurate

Remember that this only applies to MDC controllers on freezers manufactured between 1996 and July of 2003. Today's version has a high alarm limit of 48" and 47.5" for the high level fill point.

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