

VERTICAL CRYOGENIC STORAGE TANK

Stock Tank USA

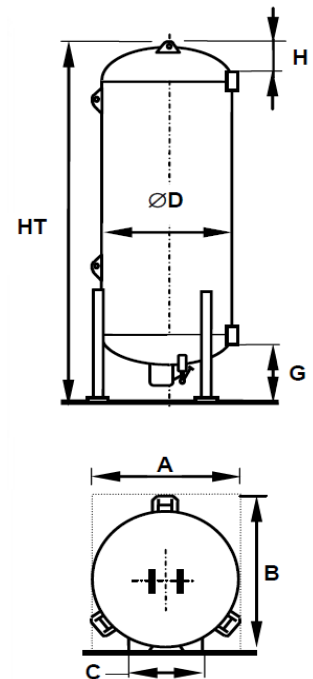
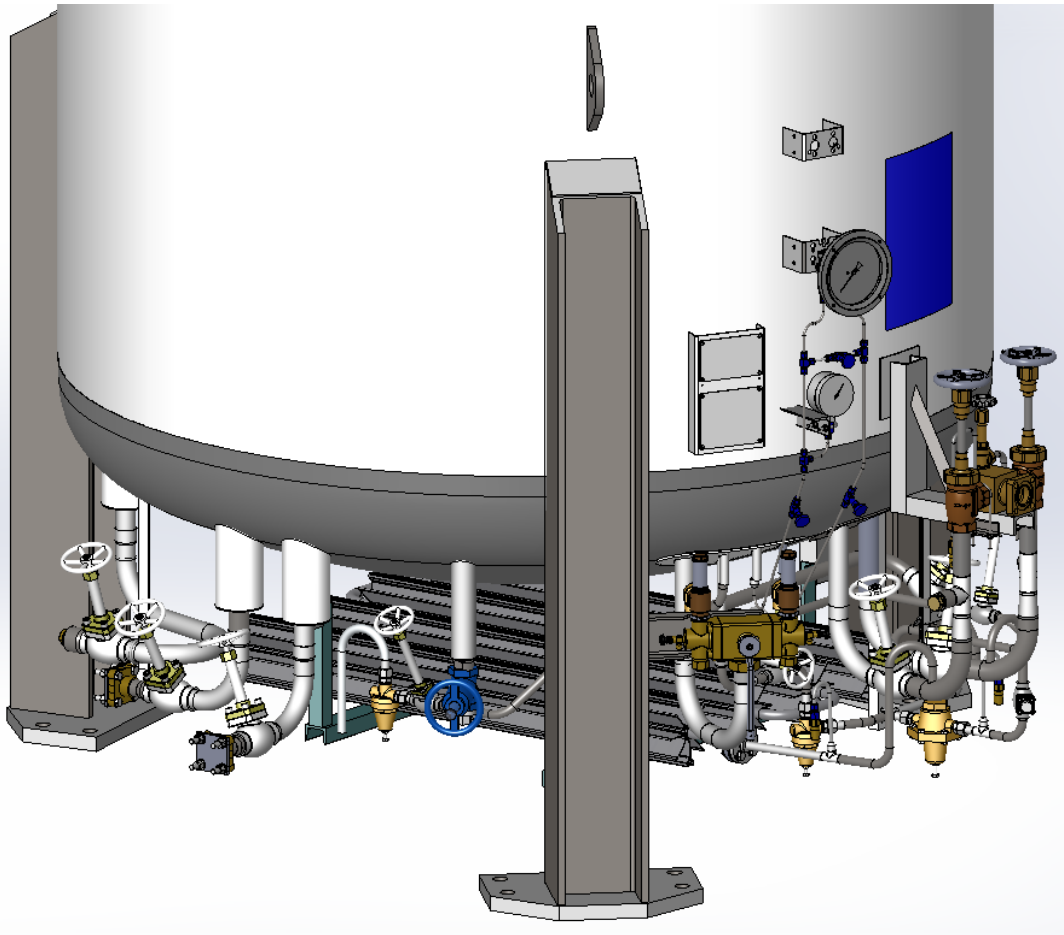


CRYOLOR ASIA PACIFIC introduces the latest generation vacuum insulated cryogenic tank, the **Céline 3**, for Liquid Nitrogen, Oxygen or Argon service. Available in a range of sizes with a Maximum Allowable Working Pressure of **250 psig** (≈ 17 bar), **Céline 3** is designed in accordance with **ASME Section VIII Division 1 + Mandatory appendix-44 (cold stretch) with 'U' stamp**.

Moreover, the support legs used in the Céline 3 range are calculated **to resist high winds and earthquakes according to IBC code Zone 0 to Zone 4**.

- **A maximum use of Stainless steel:** Only Céline 3 uses as much stainless in its construction to guarantee the lowest life cycle costs.
- **Components selected for their operational reliability** - mono-bloc pressure building economizer - regulator, safety system with dual relief valves and bursting discs as standard, aluminium star fin pressure building unit.
- **Reduced overall operational costs** - optimized pipe work layout with fewer connections minimize potential

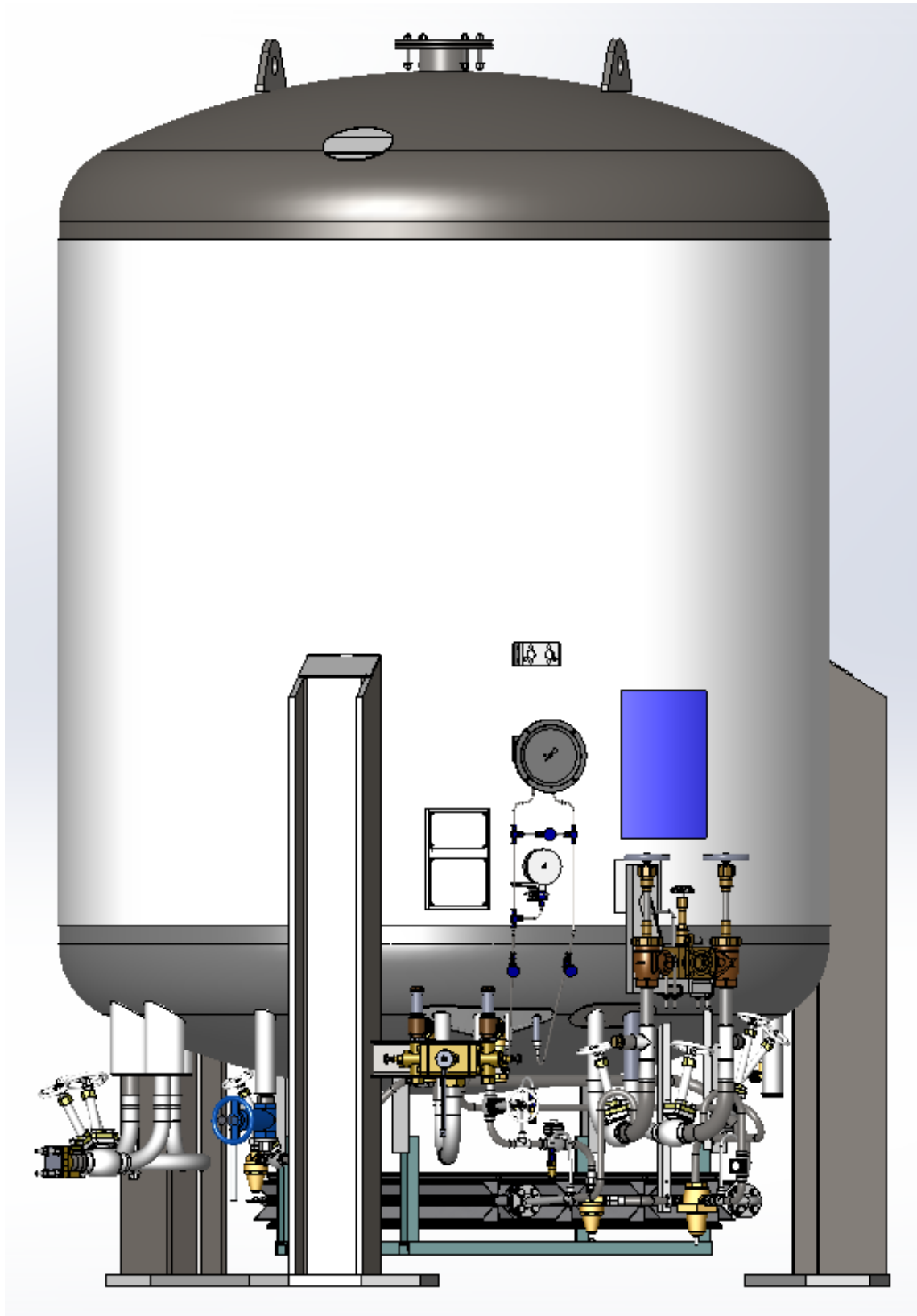
leaks and facilitate operation & servicing, filling assembly isolation valves, proven painting techniques guarantee years of problem free operation.



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TANK VIEW



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Type	CA6 (1.5 KUSG)		CA11 (3 KUSG)		CA21 (6 KUSG)	
	Gross capacity (liters / USG) *	6 150	1 625	10 540	2 784	23 660
Net capacity (liters / USG) *	5 843	1 543	10 013	2 645	22 477	5 938
Boil off Rate O ₂ (%)	0.28	0.28	0.26	0.26	0.22	0.22
Empty weight (kg / lbs)	4 300	9 480	5 800	12 787	10 500	23 149
Weight full Nitrogen (kg / lbs) - LIN	9 021	19 887	13 891	30 623	28 661	63 188
Weight full Oxygen (kg / lbs) - LOX	10 966	24 177	17 225	37 974	36 146	79 689
Weight full Argon (kg / lbs) - LAR	12 439	27 422	19 748	43 537	41 810	92 176
Continuous flow rate for 8 Hours at 8 bar (Nm ³ /h)	500	500	500	500	500	500
Ø Diameter (mm / feet)	2 200	7.2	2 200	7.2	2 200	7.2
HT height (mm / feet)	4 200	13.8	5 200	17.1	10 235	33.6
H (mm / feet)	520	1.7	520	1.7	520	1.7
G (mm / feet)	1 055	3.5	1 055	3.5	980	3.2
A (mm / feet)	2 250	7.4	2 250	7.4	2 300	7.5
B (mm / feet)	2 450	8.0	2 450	8.0	2 500	8.2
C (mm / feet)	1 245	4.1	1 245	4.1	1 245	4.1

Type	CA33 (9 KUSG)		CA41 (11 KUSG)		CA47 (13 KUSG)		CA53 (15 KUSG)	
	Gross capacity (liters / USG) *	34 340	9 072	41 300	10 910	47 580	12 569	56 270
Net capacity (liters / USG) *	32 623	8 618	39 235	10 365	45 201	11 941	53 457	14 122
Boil off Rate O ₂ (%)	0.18	0.18	0.16	0.16	0.16	0.16	0.15	0.15
Empty weight (kg / lbs)	14 600	32 187	17 130	37 765	19 370	42 703	21 920	48 325
Weight full Nitrogen (kg / lbs) - LIN	40 959	90 300	48 832	107 656	55 892	123 221	65 113	143 549
Weight full Oxygen (kg / lbs) - LOX	51 823	114 250	61 897	134 460	70 944	156 405	82 914	182 794
Weight full Argon (kg / lbs) - LAR	60 044	132 374	71 784	158 257	82 335	181 518	96 385	212 492
Continuous flow rate for 8 Hours at 8 bar (Nm ³ /h)	1000	1000	1000	1000	1000	1000	1000	1000
Ø Diameter (mm / feet)	2 840	9.3	2 840	9,3	2 840	9,3	2 840	9,3
HT height (mm / feet)	8 850	29,03	10 510	34,5	11 500	37,72	13 510	44,3
H (mm / feet)	650	2,2	650	2,2	650	2,2	650	2,2
G (mm / feet)	1 100	3,6	1 100	3,6	1 100	3,6	1 100	3,6
A (mm / feet)	2 950	9,7	2 950	9,7	2 999	9,8	2 999	9,8
B (mm / feet)	3 300	10,8	3 300	10,8	3 350	11	3 350	11
C (mm / feet)	1 530	5	1 530	5	1 530	5	1 530	5

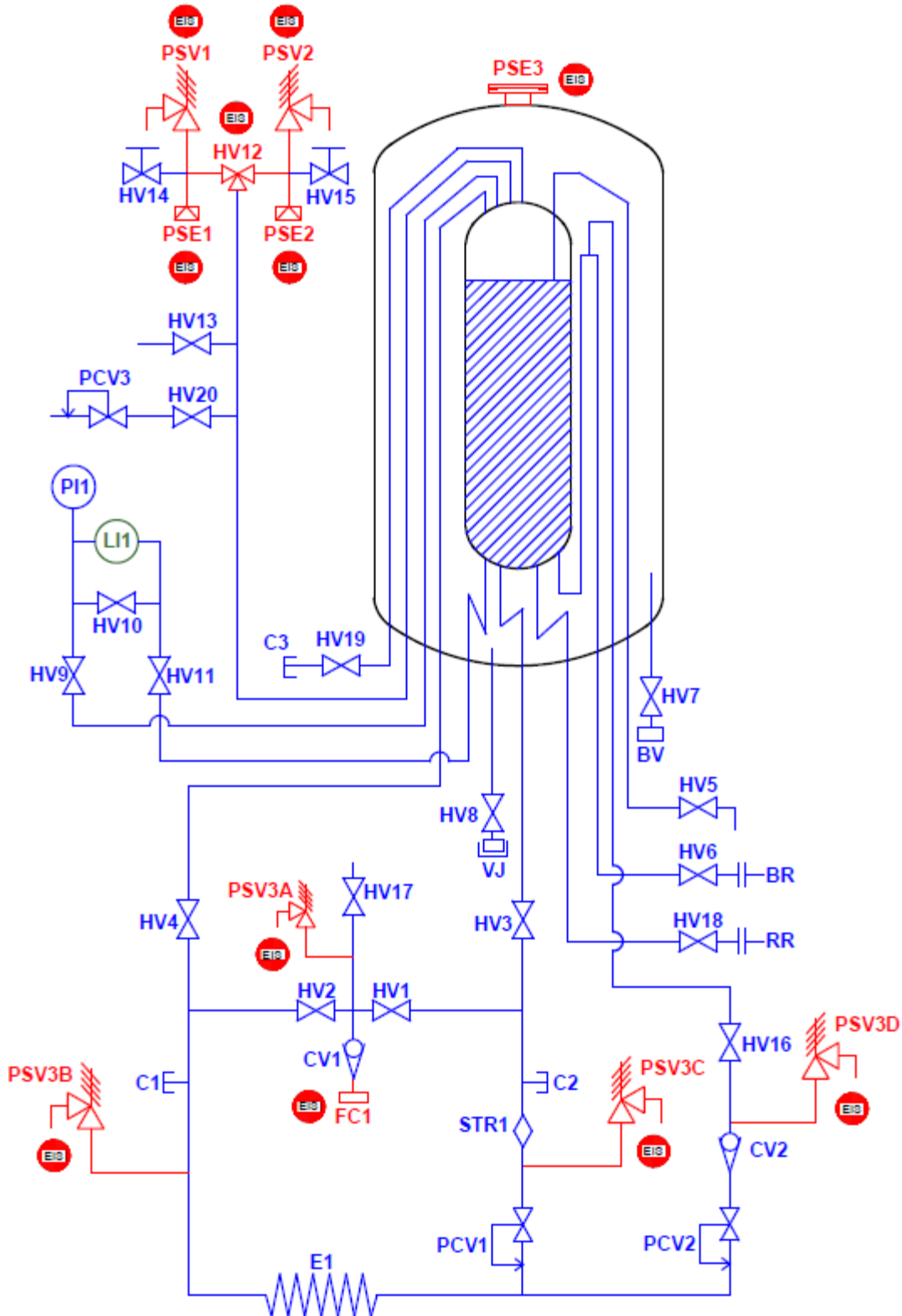
* Manufacturing tolerance : ± 4%

Note : Trycock level is 95%.

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FLOW DIAGRAM



RED : EIS (Elements Important for Safety)
GREEN : Optional

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NOMENCLATURE (HEROSE valves with REGO fill cluster)

REFERENCE	DESCRIPTION	SIZE		VALVE REFERENCE	
		CA06 - CA11	CA21 - CA53	MANUFACTURER	MODEL / REFERENCE No.
BV	Vacuum pump down connection	-		-	-
BR	Vaporizer connection	1"	1 1/2"	-	Groove type Muller flange
C1, C2	Connections for additional PBU	1"		-	Threaded plug
C3	Connection of vapour return	1"	1 1/2"	-	Threaded plug
FC1	Filling coupling	1 1/2"		REGO	1" : CFM00002D 1 1/2" : CFM00004D
CV1	Filling check valve	1"	1 1/2"		
HV1	Filling liquid	1"	1 1/2"		
HV2	Filling gas	1"	1 1/2"		
HV17	Purge valve	1/2"			
HV3	Doubling filling liquid	1"	1 1/2"	HEROSE	1" : 01321.2533.0014 1 1/2" : 01321.4048.0014
HV4	Doubling filling gas	1"	1 1/2"	HEROSE	1" : 01321.2533.0014 1 1/2" : 01321.4048.0014
HV5	Full trycock	1/2"		HEROSE	01321.1521.0014
HV6	Gas use	1"	1 1/2"	HEROSE	1" : 01321.2533.0014 1 1/2" : 01321.4048.0014
HV7	Vacuum isolation valve	1 1/2"		ITT	1.5" - 2401-T-903-Vacuum
HV8	Vacuum probe isolation Valve	-		HOKE	4551-F2B-1/8"
HV9	Level gauge manifold, Gas	-		PARKER	4A-V4LR-SS-C3
HV10	Level gauge manifold, Equalizer	-		PARKER	4A-V4LR-SS-C3
HV11	Level gauge manifold, Liquid	-		PARKER	4A-V4LR-SS-C3
HV12	3 way diverter	3/4"	1 1/4"	HEROSE	3/4" : 06510-2040-6426 1 1/4" : 06510-3210-6227
HV13	Gas purge	1"		HEROSE	01321.2533.0014
HV14 & HV15	Vent valve for safety tree	1/4"		SWAGELOK / PARKER	B-4JNA2-SC11 / 4M-V4AR-B-C3
HV16	Economizer isolation valve	1/2"		HEROSE	01321.1521.0014
HV18	Liquid use	1 1/2"	2"	HEROSE	1 1/2" : 01321.4048.0014 2" : 01321.5060.0014

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NOMENCLATURE (HEROSE valves with REGO fill cluster)

REFERENCE	DESCRIPTION	SIZE		VALVE REFERENCE	
		CA06 - CA11	CA21 - CA53	MANUFACTURER	MODEL / REFERENCE No.
HV19	Vapour Return line	1"	1 1/2"	HEROSE	1" : 01321.2533.0014 1 1/2" : 01321.4048.0014
HV20	Ext. Economizer isolation valve	1/2"		HEROSE	01321.1521.0014
PI1	Mechanical pressure gauge	-		WIKA	232.54
PSE1, PSE2	Vessel bursting disk	1/2"	1"	BS&B	Plug Type
PSE3	Annular space pressure relief	-		CRYOLOR	Lift plate
PSV1 & PSV2	Vessel safety valve	1/2"	1"	HEROSE	1/2" : 06388-1004-5000 1" : 06388-1510-5000
PSV3A-PSV3D	Thermal expansion valve	-		GENERANT	CRB-250B-K-580
PCV1	Pressure build regulator	1/2"		CASH ACME	B type; Set at 116 psi
PCV2	Economiser regulator	1/2"		CASH ACME	FRM2 type; Set at 123 psi
PCV3	Back pressure regulator to atmosphere	1/2"		CASH ACME	FRM2 type; Set at 232 psi
STR1	Strainer	1/2"		HEROSE	8414.1521.0004
CV2	Economizer check valve	1/2"		HEROSE	05416.1521.0004
RR	Liquid use connection	1 1/2"	2"	-	Groove type Muller flange
VJ	Vacuum gauge	-		TELEDYNE HASTINGS	DV-6R
E1	Pressure build-up vaporizer	-	-	ALUMINIUM FIN	CA06-CA21 KL : 500 Nm3/hr CA33-CA53 KL : 1000 Nm3/hr
OPTIONAL					
LI1	Mechanical liquid level gauge	-		MIDWEST	MODEL - 116
HV18	Liquid use	-	* 3"	HEROSE	01321.8088.0014

Note: * 3" Liquid withdrawal is not a standard supply, it will be made to order.