

VERTICAL HIGH PRESSURE CRYOGENIC STORAGE TANK

Stock tank USA

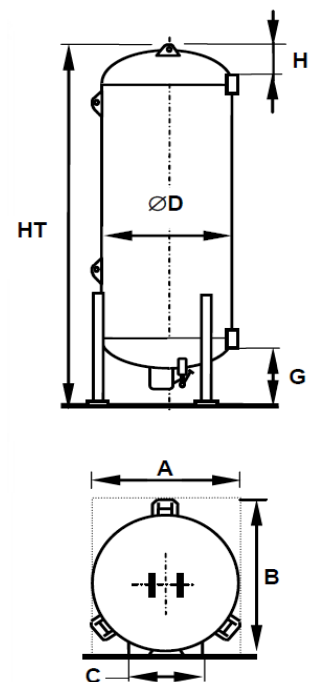
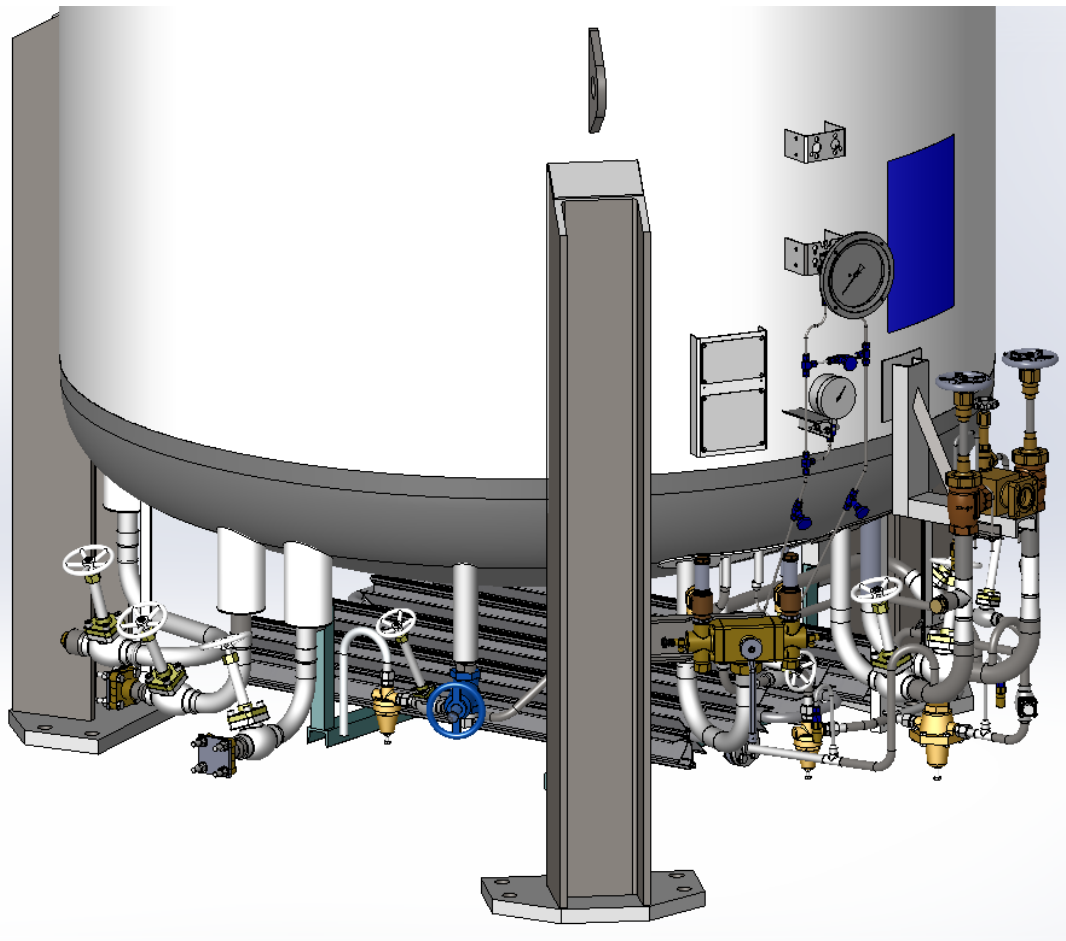


CRYOLOR ASIA PACIFIC introduces the latest generation vacuum insulated cryogenic tank, the **RHPA Céline 3**, for Liquid Nitrogen, Oxygen or Argon service. Available in a range of sizes with a Maximum Allowable Working Pressure of **390 psig** (≈ 27 bar) & 540 psig (≈ 37 bar). **RHPA Céline 3** is designed 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 with Ss 2.0 and wind speed 190 mph.

- **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.

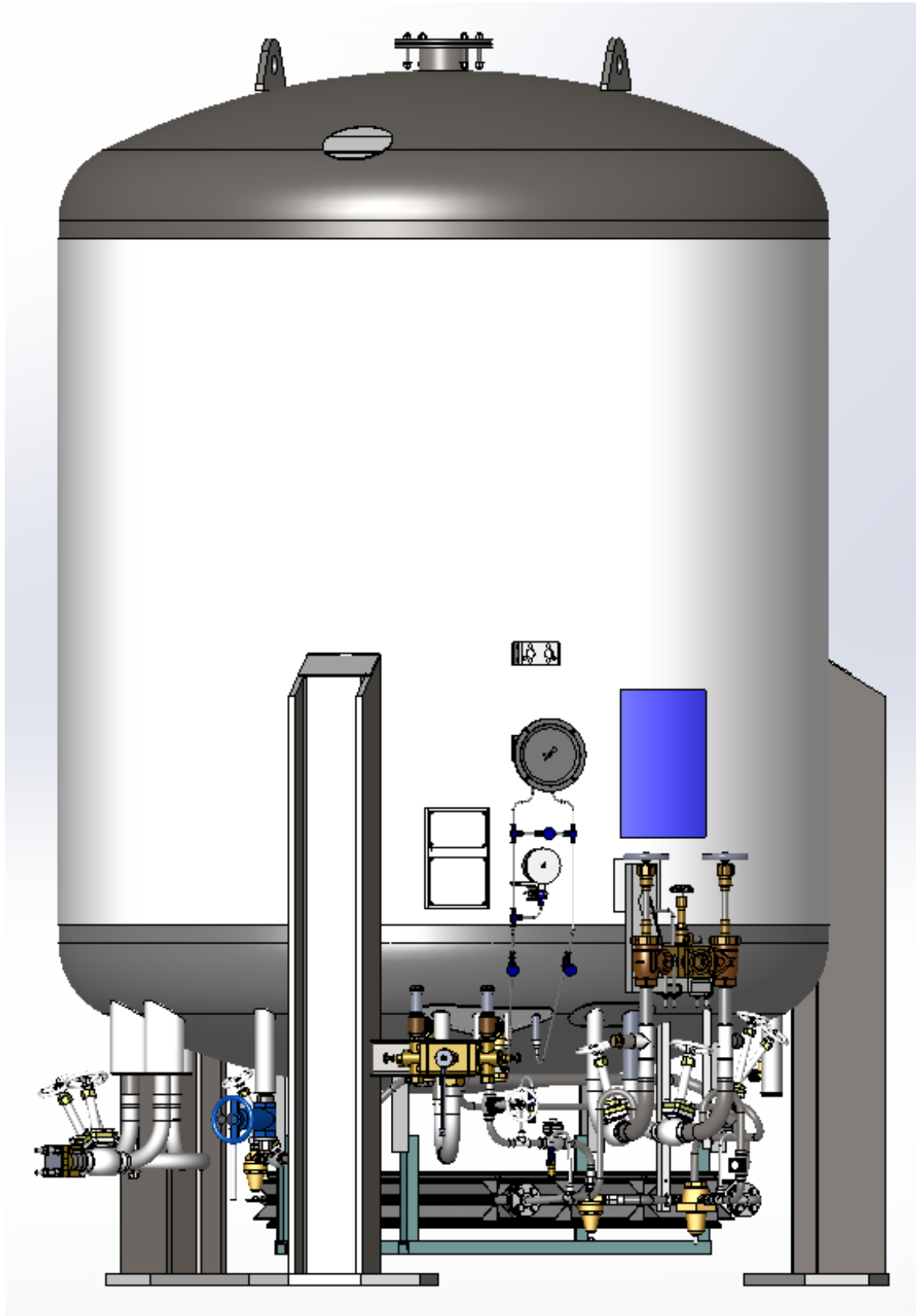


Disclaimer: The image shown above is just a representation of the tank, The actual product may vary on its appearance and size.

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TANK VIEW



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RHPA 390 psig

TYPE	RHPA06 (1.5 KUSG)		RHPA11 (3 KUSG)		RHPA14 (4 KUSG)		RHPA19 (5 KUSG)		RHPA21 (6 KUSG)	
Gross capacity (liters / USG) *	6150	1625	10540	2784	14910	3939	19290	5096	23660	6250
Net capacity (liters / USG) *	5535	1462	9486	2506	13419	3545	17361	4586	21294	5625
Boil off Rate O2 (%)	0.28		0.26		0.24		0.23		0.22	
Empty weight (kg / lbs)	4850	10692	6550	14440	8550	18850	10400	22928	12200	26896
Weight full Nitrogen (kg / lbs) - LIN	9322	20552	14215	31338	19393	42753	24428	53854	29406	64828
Weight full Oxygen (kg / lbs) - LOX	11165	24616	17374	38302	23861	52605	30209	66599	36496	80461
Weight full Argon (kg / lbs) - LAR	12560	27691	19764	43572	27243	60060	34584	76244	41863	92291
Continuous flow rate for 8 Hours at 232 psi (SCFH) - LIN	7060		7060		7060		7060		14120	
∅ Diameter (in / feet)	86.6 / 7.2									
HT height (in / feet)	165.3	13.8	204.7	17.1	301.6	25.1	338.6	28.2	402.9	33.6
H (in / feet)	20.5 / 1.7									
G (in / feet)	41.5 / 3.5									
A (in / feet)	90.5 / 7.5									
B (in / feet)	98.4 / 8.2									
C (in / feet)	49.0 / 4.1									

TYPE	RHPA27 (7.5 KUSG)		RHPA33 (9 KUSG)		RHPA41 (11 KUSG)		RHPA47 (13 KUSG)		RHPA53 (15 KUSG)	
Gross capacity (liters / USG) *	28040	7407	34340	9072	41300	10910	47530	12556	56270	14865
Net capacity (liters / USG) *	25236	6667	30906	8165	37170	9819	42777	11300	50643	13378
Boil off Rate O2 (%)	0.20		0.18		0.16		0.15		0.15	
Empty weight (kg / lbs)	13900	30644	17000	37479	19700	43431	22350	49273	25500	56218
Weight full Nitrogen (kg / lbs) - LIN	34291	75598	41972	92533	49733	109643	56914	125473	66420	146430
Weight full Oxygen (kg / lbs) - LOX	42694	94125	52264	115222	62111	136931	71159	156878	83284	183609
Weight full Argon (kg / lbs) - LAR	49054	108145	60052	132392	71478	157582	81938	180643	96046	211745
Continuous flow rate for 8 Hours at 232 psi (SCFH) - LIN	14120		14120		14120		14120		14120	
∅ Diameter (in / feet)	86.6 / 7.2		111.8 / 9.3							
HT height (in / feet)	462	38.52	348	29.04	414	34.48	454	37.87	532	44.32
H (in / feet)	20.5 / 1.7		25.6 / 2.2							
G (in / feet)	41.5 / 3.5		43.3 / 3.6							
A (in / feet)	90.5 / 7.5		118.1 / 9.8							
B (in / feet)	98.4 / 8.2		131.9 / 11							
C (in / feet)	49.0 / 4.1		60.2 / 5							

* Manufacturing tolerance : ± 4% & Trycock level is 90%.

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RHPA 540 Psig

TYPE	RHPA06 (1.5 KUSG)		RHPA11 (3 KUSG)		RHPA14 (4 KUSG)		RHPA19 (5 KUSG)		RHPA21 (6 KUSG)	
Gross capacity (liters / USG) *	6150	1625	10540	2784	14910	3939	19290	5096	23660	6250
Net capacity (liters / USG) *	5535	1462	9486	2506	13419	3545	17361	4586	21294	5625
Boil off Rate O2 (%)	0.28		0.26		0.24		0.23		0.22	
Empty weight (kg / lbs)	5350	11795	7350	16204	9350	20613	11600	25574	13700	30203
Weight full Nitrogen (kg / lbs) - LIN	9822	21654	15015	33102	20193	44517	25628	56499	30906	68135
Weight full Oxygen (kg / lbs) - LOX	11665	25718	18174	40066	24661	54368	31409	69245	37996	83768
Weight full Argon (kg / lbs) - LAR	13060	28793	20564	45336	28043	61823	35784	78890	43363	95598
Continuous flow rate for 8 Hours at 435 psi (SCFH) - LIN	4590		4590		4590		4590		9880	
Ø Diameter (in / feet)	86.6 / 7.2									
HT height (in / feet)	165.3	13.8	204.7	17.1	301.6	25.1	338.6	28.2	402.9	33.6
H (in / feet)	20.5 / 1.7									
G (in / feet)	41.5 / 3.5									
A (in / feet)	90.5 / 7.5									
B (in / feet)	98.4 / 8.2									
C (in / feet)	49.0 / 4.1									

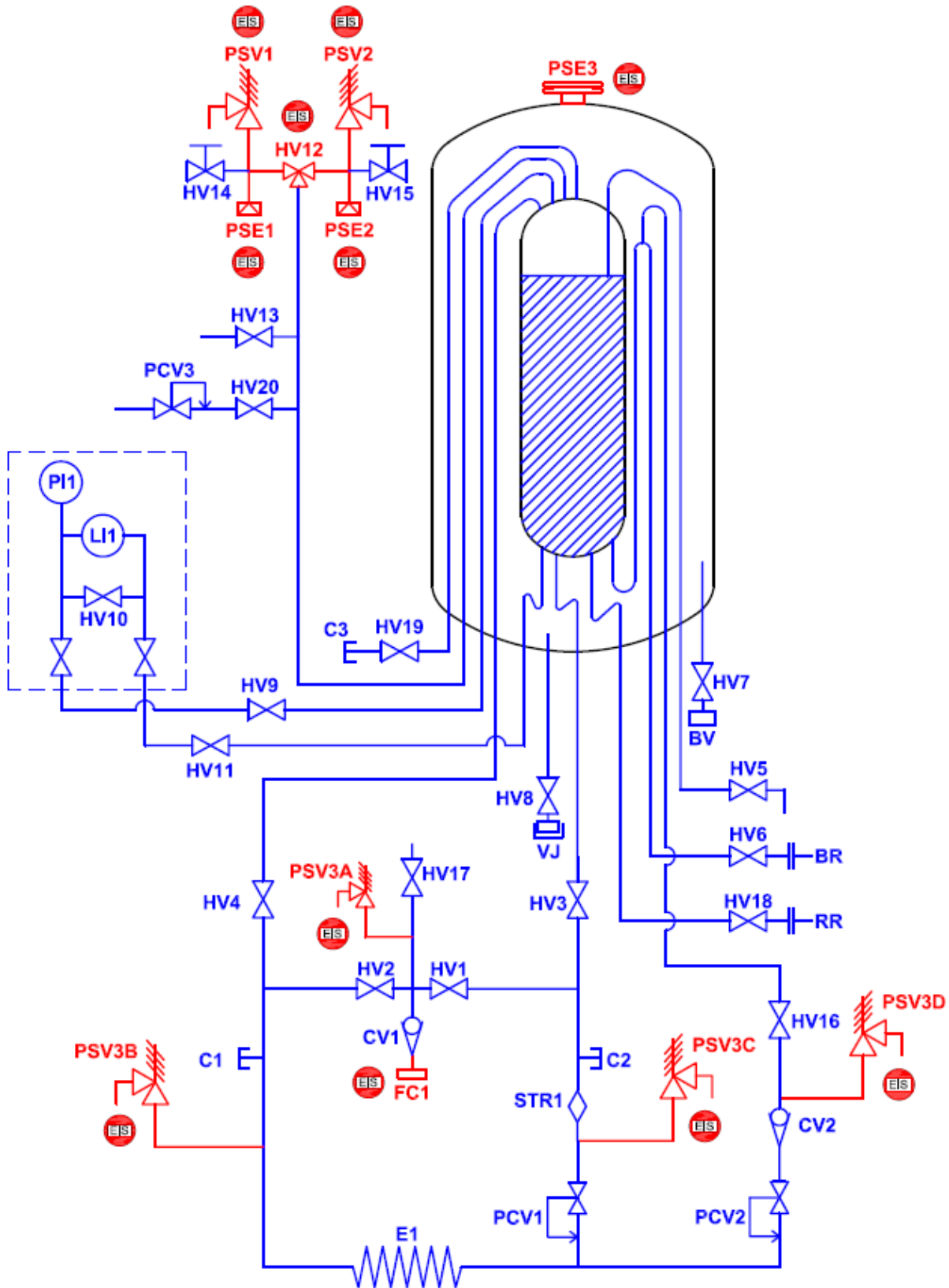
TYPE	RHPA27 (7.5 KUSG)		RHPA33 (9 KUSG)		RHPA41 (11 KUSG)		RHPA47 (13 KUSG)		RHPA53 (15 KUSG)	
Gross capacity (liters / USG) *	28040	7407	34340	9072	41300	10910	47530	12556	56270	14865
Net capacity (liters / USG) *	25236	6667	30906	8165	37170	9819	42777	11300	50643	13378
Boil off Rate O2 (%)	0.20		0.18		0.16		0.15		0.15	
Empty weight (kg / lbs)	15750	34723	18550	40896	21850	48171	24400	53793	28300	62391
Weight full Nitrogen (kg / lbs) - LIN	36141	79677	43522	95950	51883	114383	58964	129993	69220	152603
Weight full Oxygen (kg / lbs) - LOX	44544	98203	53814	118639	64261	141671	73209	161397	86084	189782
Weight full Argon (kg / lbs) - LAR	50904	112224	61602	135809	73628	162322	83988	185163	98846	217917
Continuous flow rate for 8 Hours at 435 psi (SCFH) - LIN	9880		9880		9880		9880		9880	
Ø Diameter (in / feet)	86.6 / 7.2		111.8 / 9.3							
HT height (in / feet)	462	38.52	348	29.04	414	34.48	454	37.87	532	44.32
H (in / feet)	20.5 / 1.7		25.6 / 2.2							
G (in / feet)	41.5 / 3.5		43.3 / 3.6							
A (in / feet)	90.5 / 7.5		118.1 / 9.8							
B (in / feet)	98.4 / 8.2		131.9 / 11							
C (in / feet)	49.0 / 4.1		60.2 / 5							

* Manufacturing tolerance : ± 4% & Trycock level is 90%.

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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	
		RHPA 06 -RHPA 11	RHPA 21 - RHPA 47	MANUFACTURER	MODEL NUMBER
BV	Vacuum pump down connection	-	-	-	-
BR	Vaporizer connection	1"	1 1/2"	-	Groove type Mueller 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"		SAUNDERS	2205-S-11R-E2 / 2205-S-11R-CV
HV8	Vacuum probe isolation Valve	-		HOKE	4551-F2B-1/8"
HV9	Level gauge manifold, Gas	-		SWAGELOK / PARKER	SS-1RS4-SC11 / 4A-V4LR-SS-C3
HV11	Level gauge manifold, Liquid	-		SWAGELOK / PARKER	SS-1RS4-SC11 / 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
HV19	Vapor Return line	1"	1 1/2"	HEROSE	1" : 01321.2533.0014 1 1/2" : 01321.4048.0014

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NOMENCLATURE (HEROSE valves with REGO fill cluster)

REFERENCE	DESCRIPTION	SIZE		VALVE	
		RHPA 06 -RHPA 11	RHPA 21 - RHPA 47	MANUFACTURER	MODEL NUMBER
HV20	Ext. Economizer isolation valve	1/2"		HEROSE	01321.1521.0014
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	G60 type; Set at 290 psi (For 390 psi tank) Set at 435 psi (For 540 psi tank)
PCV2	Economiser regulator	1/2"		CASH ACME	FR-6 type; Set at 297.5 psi (For 390 psi tank) Set at 442 psi (For 540 psi tank)
PCV3	Back pressure regulator to atmosphere	1/2"		CASH ACME	FR-6 type; Set at 377 psi (For 390 psi tank) Set at 522 psi (For 540 psi tank)
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 Mueller flange
VJ	Vacuum gauge	-		TELEDYNE HASTINGS	DV-6R
E1	Pressure build-up vaporizer	-	-	ALUMINUM FIN	RHPA 06-21KL: 13000 SCFH RHPA 33-47 KL: 26000 SCFH
LI1	Liquid level gauge	-		WIKA	MODEL: 712.15.160
PI1	Pressure gauge				
HV10	Level gauge manifold, Equalizer				

Note (*):

- This technical specification is purely an indication, It can't be considered as a contractual document.
- This technical specification is subject to change without prior intimation.