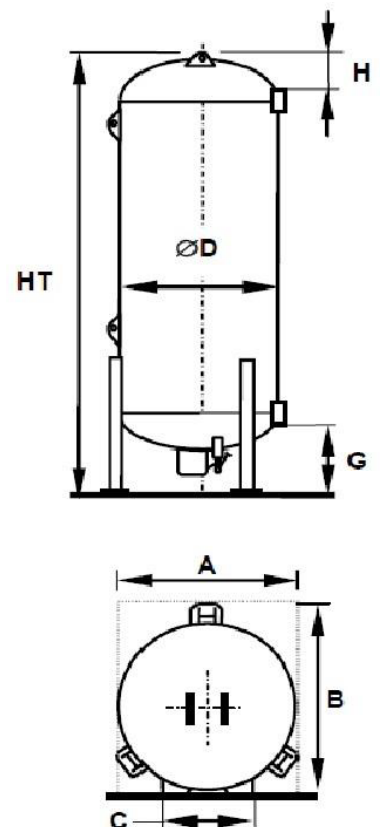
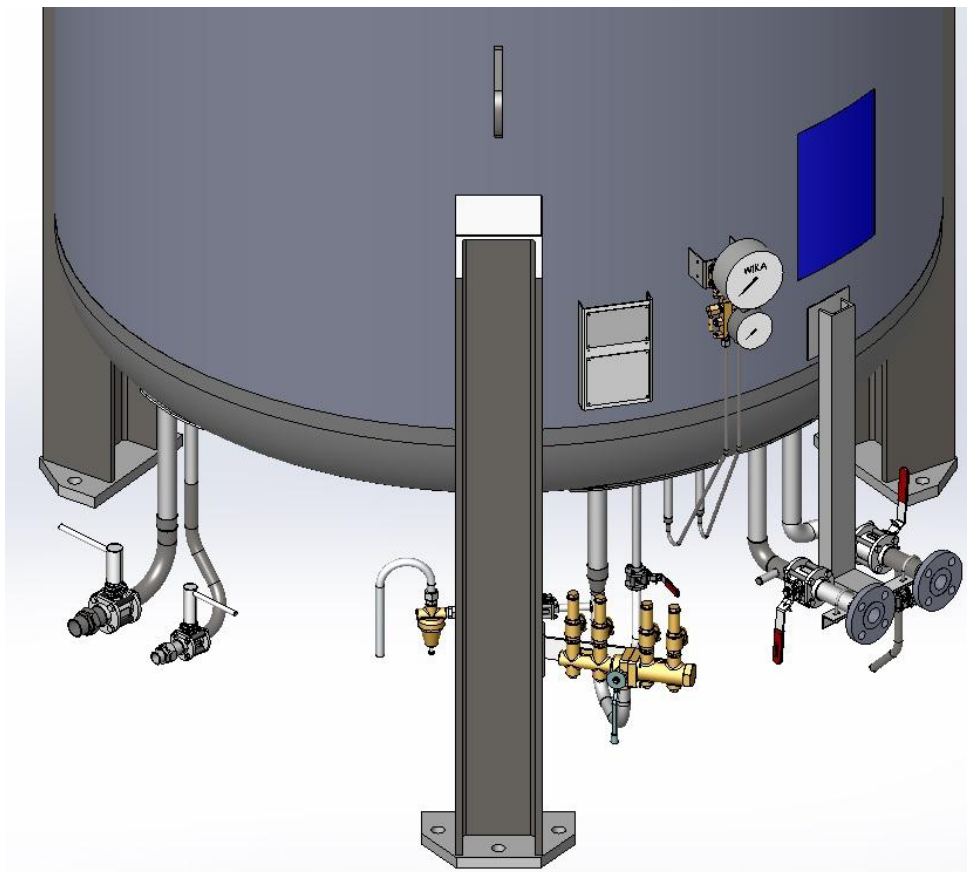


CRYOLOR ASIA PACIFIC introduces the latest generation vacuum insulated cryogenic tank, the **RCIA Céline 3**, for liquid CO₂ and N₂O service, with inner vessel in stainless steel. Available in a wide range of sizes with a Maximum Allowable Working Pressure of **24 bar** (≈350 psig), **RCIA Céline 3** is designed in accordance with **ASME Section VIII Division 1 + Mandatory Appendix-44 with ASME Certification mark with "U" designator**.

Moreover, the support legs used in the **RCIA tanks** are calculated to resist high winds and earthquakes according to **UBC & IBC**.

- **A maximum use of Stainless steel:** Only Céline 3 uses as much stainless in its construction to guarantee the lowest life cycle costs - valves, interconnecting piping, pressure raising coil and all welded connections are stainless steel.
- **Components selected for their operational reliability** - mono-bloc pressure building economizer - regulator, safety system with dual relief valves and burst discs as standard, stainless steel valves.
- **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 carefree operation.



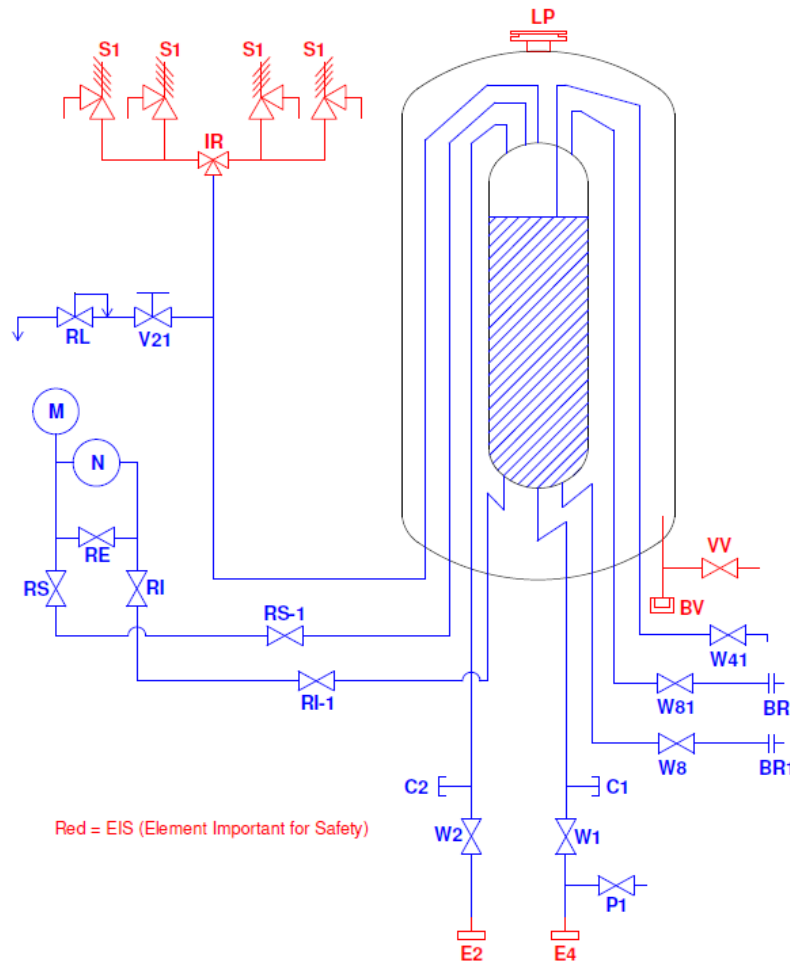
Disclaimer: The image shown above is just a representation of the tank, The actual product may vary on its appearance and size.

Type	RCIA06 (6 MT)		RCIA11 (11 MT)		RCIA14 (14 MT)		RCIA15 (16 MT)		RCIA19 (21 MT)		RCIA21 (26 MT)	
Gross capacity (liters / USG) *	6150	1625	10540	2784	12570	3321	14910	3939	19290	5096	23660	6250
Net capacity (liters / USG) *	5658	1495	9697	2562	11564	3055	13717	3624	17747	4688	21767	5750
Empty weight (kg / lbs)	4600	10141	6100	13448	7100	15653	8200	18078	9800	21605	11400	25133
Weight full Carbon dioxide (kg / lbs)	11282	24873	17552	38696	20757	45762	24400	53792	30759	67812	37107	81807
Weight full Nitrous oxide (kg / lbs)	11712	25821	18289	40321	21636	47699	25442	56091	32108	70786	38761	85454
Daily evaporation rate CO2 (%)	0.086		0.080		0.075		0.074		0.072		0.070	
∅ Diameter (mm / feet)	2200 / 7.2											
HT height (mm / feet)	4200	13.8	5200	17.1	6800	25.1	7385	24.2	8735	28.7	10235	33.6
H (mm / feet)	520 / 1.7											
G (mm / feet)	1055 / 3.5						980 / 3.2					
A (mm / feet)	2300 / 7.5											
B (mm / feet)	2500 / 8.2											
C (mm / feet)	1245 / 4.1											

Type	RCIA30 (30 MT)		RCIA33 (37 MT)		RCIA41 (45 MT)		RCIA50 (50 MT)		RCIA53 (60 MT)		RCIA63 (69 MT)		
Gross capacity (liters / USG) *	28040	7407	34340	9072	41300	10910	47530	12556	56270	14865	63750	16841	
Net capacity (liters / USG) *	25797	6815	31593	8346	37996	10037	43728	11552	51768	13676	58650	15494	
Empty weight (kg / lbs)	13000	28660	16000	35274	18500	40786	21200	46738	23800	52470	26300	57982	
Weight full Carbon dioxide (kg / lbs)	43466	95827	53311	117531	63373	139714	72843	160591	84938	187256	95566	210686	
Weight full Nitrous oxide (kg / lbs)	45427	100149	55712	122825	66261	146080	76166	167917	88872	195930	100023	220513	
Daily evaporation rate CO2 (%)	0.060		0.054		0.053		0.045		0.040		0.030		
∅ Diameter (mm / feet)	2200	7.2	2840 / 9.3										
HT height (mm / feet)	11740	38.5	8850	29.04	10510	34.5	11545	37.9	13510	44.3	15025	49.3	
H (mm / feet)	520	1.7	650 / 2.2									3660	12
G (mm / feet)	980	3.2	1100 / 3.6										
A (mm / feet)	2300	7.5	3000 / 9.8										
B (mm / feet)	2500	8.2	3350 / 11										
C (mm / feet)	1245	4.1	1530 / 5										

* Manufacturing tolerance : ± 4%
Note: Trycock level is 92%.

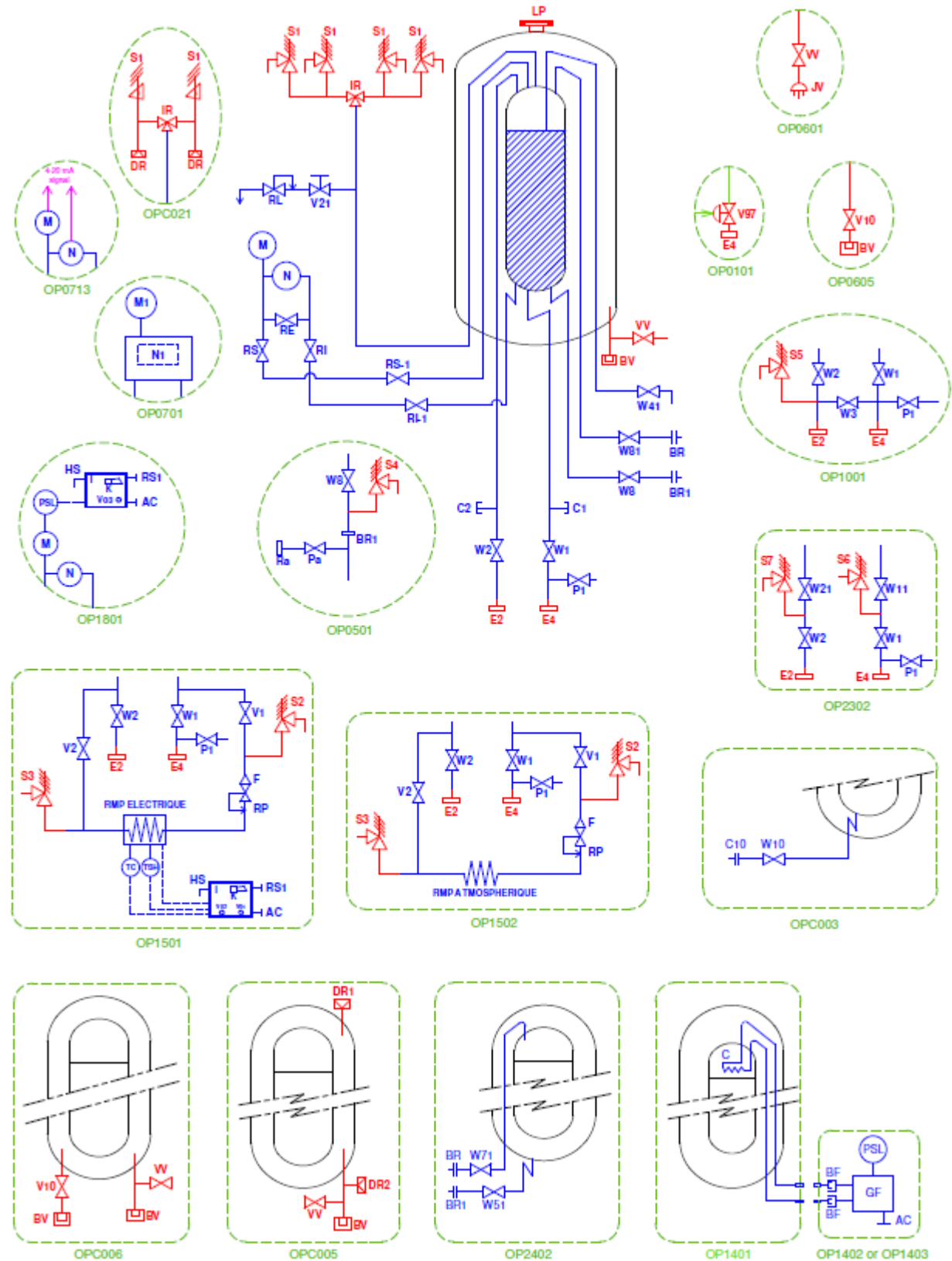
FLOW DIAGRAM (Standard)



Red = EIS (Element Important for Safety)

REF.	NOMENCLATURE	SIZE	Valve Make	Remarks
W1 / W2	Bottom Filling / Top Filling Valve	DN 40	Meca-Inox*	Ball valve*
E4 / E2	Filling Connection - Liquid / Gas	DN 40	-	ANSI Flange,#300
S1	Inner Vessel Safety Valve	1/2"	Herose	Safety valve
IR	3-Way valve	DN 20	Herose	Ball type
M	Pressure Indicator	-	Wika	712.15.160
N	Level Indicator			
RI	Level Gauge Manifold, Liquid			
RE	Level Gauge Manifold, Equalizer			
RS	Level Gauge Manifold, Gas			
RI-1 & RS-1	Isolation valve	OD 1/4"	Swagelok / Parker	SS-1RS4-SC11 / 4A-V4LR-SS-C3
RL	Back pressure regulator	1/2"	Cash Acme	FRM2 type
V21	Isolation valve	DN 15	Meca-Inox*	Ball valve*
W41	Full trycock Valve	DN 15	Meca-Inox*	Ball valve*
LP	Lift plate	-	Cryolor	-
BV	Vacuum Connection	-	-	-
W8 / BR1	Liquid withdrawal valve + Connection	Below 25 MT : DN 25 Above 25 MT: DN 40	Meca-Inox*	Ball valve* + ANSI Flange connection
W81 / BR	Gas return valve + Connection	DN 25	Meca-Inox*	Ball valve* + ANSI Flange connection
P1	Purge valve	DN 15	Meca-Inox*	Ball valve*
VV	Vacuum probe isolation valve	-	Hoke	4551-F2B-1/8"
C1 & C2	Connection for PBU	DN15	-	Dummy plug welded

FLOW DIAGRAM (with Options)



Red = EIS (Element Important for Safety)

REF.	NOMENCLATURE	SIZE	MAKE	REMARKS
OP0101 : OVER PRESSURIZATION PROTECTION				
V97	Over pressurization protection valve	DN40	Herose	-
C6	MG 97 valve connection	1/4"	-	-
OP0501 : LIQUID ANALYSIS CONNECTION				
Pa	Liquid analysis valve	DN15	Meca-Inox*	Ball valve*
Ra	Quick connection	DN15	-	-
OP0601 : ANNULAR SPACE VACUUM DETECTION / VACUUM SENSOR / VACUUM MEASURING PROBE				
JV	Vacuum Thermocouple Connection	1/8"	HASTINGS	DV-6-R
OP0605 : VACUUM ISOLATION VALVE-Edwards				
V10	Vacuum isolation valve	-	Edwards	SP10K & SP25K
OPC045 : VACUUM ISOLATION VALVE - Saunders				
V10	Vacuum isolation valve	-	Saunders	2205-S-11R-E2
OP0701 : TELEFLO DIVA				
-	Digital Level indicator & Analog Pressure indicator	-	-	-
OP0713 : WIKA WITH TELEMETRY (4-20 mA) OPTION				
-	4-20 mA Telemetry provision with wika gauge	-	-	-
OP1001 : EQUALISING / FILLING VALVE				
W3	Equalising valve between Top & Bottom filling valves	DN 40	Meca-Inox*	Ball valve*
S5	Thermal relief valve	1/4"	Bestobell	-
OP1401 : CONDENSING COIL				
C	Condensing coil placed inside tank to convert gas into liquid	DN 15	-	-
OP1402 : REFRIGERATION UNIT (Countries with ambient temperature < or = 30° C during a long time)				
OP1403 : REFRIGERATION UNIT (Countries with ambient temperature > 30° C during a long time)				
BF	Connection to coil	DN15	-	-
PSL	Pressure switch, increasing pressure shutdown indicator, setting 20 bar	-	-	-
GF	Refrigerating Unit: 250 W	-	-	-
AC	Power source required : 230 V	-	-	-
OP1501 : ELECTRIC PRESSURE RAISING COIL (Continuous flow rate at 16 BAR : 400 Kg/hr) (Not recommended for LN2O service)				
V1, V2	Isolating valves	DN15	Meca-Inox*	Ball valve*
S2, S3	Thermal relief valve	1/4"	Bestobell	-
F-RP	Filter & Pressure regulator	1/2"	Samson	Type 2357-1
RMP	Pressure raising coil : 2000 W - 400 V AC	DN15	-	-
I	Electrical control box with alarm light & manual general power stop	-	-	-
TC-TSH	Safe & regulation thermostatic units	-	-	-

REF.	NOMENCLATURE	SIZE	MAKE	REMARKS
OP1502 : ATMOSPHERIC PRESSURE RAISING COIL (Continuous flow rate at 16 BAR : 230 Kg/hr)				
V1, V2	Isolating valves	DN15	Meca-Inox*	Ball valve*
S2, S3	Thermal relief valve	1/4"	Bestobell	-
F-RP	Filter & Pressure regulator	1/2"	Samson	Type 2357-1
RMP	Atmospheric Pressure raising coil	DN15	-	-
OP1801 : PRESSURE SWITCH + ALARM				
PSL	Pressure switch, decreasing pressure shutdown indicator, setting 8 bar	-	-	-
K	Sound & light alarm	-	-	-
AC	Power source required 230 AC	-	-	-
OP2302 : DOUBLING FILLING VALVES				
W11	Doubling filling valve - Liquid	DN 40	Meca-Inox*	Ball valve*
W21	Doubling filling valve - Gas	DN 40	Meca-Inox*	Ball valve*
S7, S8	Thermal relief valve	1/4"	Bestobell	-
OP2402 : ADDITIONAL PUMP WITHDRAWAL & RETURN OUTLET				
W71 + BR	Pump return valve	DN 25	Meca-Inox*	Ball valve* + Flange connection
W51 + BR1	Pump inlet valve	Below 25 MT : DN 25 Above 25 MT: DN 40	Meca-Inox*	Ball valve* + Flange connection
OPC003 : ADDITIONAL LIQUID WITHDRAWAL LINE				
W10	Liquid withdrawal valve	Below 25 MT : DN 25	Meca-Inox*	Ball valve*
C10	Liquid withdrawal connection	Above 25 MT: DN 40	-	Flange connection
OPC005 : RUPTURE DISC FOR OUTER VESSEL SAFETY RELIEF				
DR1 & DR2	Rupture disc for outer vessel safety relief (Instead of lift plate)	-	-	-
OPC006 : ADDITIONAL VACUUM PUMPING LINE FOR VACUUM VALVE				
BV	Vacuum Connection	-	-	-
V10	Vacuum pump shut-off valve	-	-	-
OPC008 : METAL P&ID				
-	Metal plate P&ID (Instead of laminated sheet P&ID)	-	-	-
OPC017 : CUSTOMER LOGO				
-	Customer requirement LOGO on tank	-	-	-
OPC021 : 2 Nos. of Safety relief valve + 2 Nos. Bursting disc (Instead of standard 4 Nos. of safety relief valve)				
S1	Inner Vessel Safety Valve	1/2"	Herose	-
DR	Bursting disc	1/2"	BS&B	-
OPC022 : HEROSE GLOBE VALVE (INSTEAD OF MECA-INOX BALL VALVE)				
-	Operating valves are Herose make globe valves, Instead of Meca-Inox ball valves.	-	-	-
OPC042 : BESTOBELL GLOBE VALVE (INSTEAD OF MECA-INOX BALL VALVE)				
-	Operating valves are Bestobell globe valves, instead of Meca-Inox ball valves.	-	-	-

Note (*):

- For LCO₂ tanks : All operating valves are "Meca-Inox make Ball valves".
- For LN₂O tanks : All operating valves are "Bestobell make Globe valves".
- 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.