VT SERIES

FULL EN 13458

Vertical Cryogenic Storage Tanks for Atmospheric Gases

VT series of cryogenic tanks are designed in accordance with the requirements for safe, easy and economical operation. Many of the features have been incorporated in close collaboration with leading industrial gas companies.

VT series tanks are vertical, stationary, pressure vessels with perlite insulation for long term storage of cryogenic liquefied gases under pressure.

VT series are available in capacities from 3,000 to 80,000 liters with pressures from 9,5 to 37 bar.

- in accordance with EN 13458 and conforming to directive 2014/68/EU
- modular plumbing (e.g. fill cluster)
- 4 legs design
- easy lifting and low cost erection using a single crane
- stainless steel inner vessel and piping
- bolted bonnet globe valves with stainless steel bodies
- easily accessible relief valves with outlets directed away from the operating area
- with durable environmentally friendly coating for industrial standards

Chart Vacuum Technology®

Providing the best insulation system to protect your valuable gases from harsh ambient conditions results in lower pressure rise and lower losses, yielding better gas utilization. Chart Vacuum Technology® is at the core of why Chart is recognized around the world as the premier supplier of cryogenic equipment.

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Chart Industries Group D&S

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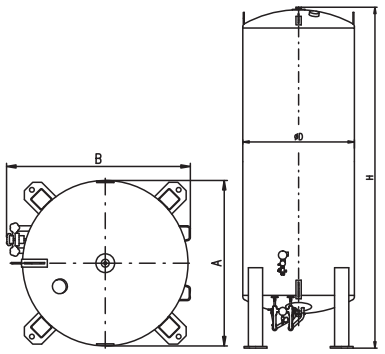
VT SERIES

FULL EN 13458

Specifications

Type		VT3	VT6	VT9	VT11	VT16	VT21	VT25	VT20	VT26	VT31	VT37	VT43	VT32	VT41	VT50	VT60	VT70	VT80
Gross volume	Liters	3 420	6 150	8 870	10 810	15 530	20 250	24 970	20 130	26 110	32 080	38 060	44 030	32 290	41 630	50 960	60 300	69 990	79 390
Net capacity (95% filling)[1]	Liters	3 250	5 840	8 430	10 270	14 750	19 240	23 720	19 120	24 800	30 480	36 160	41 830	30 680	39 550	48 410	57 280	66 490	75 420
LIN	Kg	2 630	4 730	6 810	8 300	11 930	15 550	19 170	15 460	20 050	24 630	29 220	33 800	24 790	31 960	39 120	46 290	53 460	60 620
LOX	Kg	3 720	6 680	9 630	11 730	16 850	21 970	27 090	21 840	28 330	34 810	41 300	47 770	35 040	45 170	55 290	65 420	75 560	85 680
LAR	Kg	4 570	8 220	11 850	14 440	20 740	27 040	33 350	26 880	34 870	42 840	50 820	58 790	43 120	55 590	68 050	80 520	92 990	105 450
LN_2O	Kg	3 440	6 170	8 900	10 850	15 580	20 320	25 050	20 200	26 200	32 190	38 190	44 180	32 400	41 770	51 130	60 500	73 140	82 930
LCO_2[2]	Kg	3 600	6 460	9 320	11 360	16 310	21 270	26 230	21 140	27 420	33 690	39 970	46 240	33 910	43 720	53 520	63 330	69 870	79 230
Daily evapopration rate LOX[3] 18 barg	%/d	0,37	0,26	0,23	0,21	0,19	0,17	0,17	0,15	0,14	0,13	0,13	0,13	0,13	0,12	0,11	0,10	0,11	0,10
22 barg	%/d	0,37	0,27	0,24	0,22	0,20	0,18	0,17	0,15	0,14	0,13	0,13	0,13	0,13	0,12	0,11	0,10	0,11	0,10
37 barg	%/d	0,39	0,29	0,25	0,23	0,21	0,19	0,18	0,16	0,15	0,14	0,14	0,14	0,14	0,13	0,12	0,11	0,11	0,11
Max. withdrawal rate LOX[4][5]	Nm^3/h	470			590				670					860					
Max. withdrawal rate LCO_2[6]	Kg/h	115			140				160					205					
Weight, empty 10 barg[7]	Kg	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	13 700	16 400	19 140	21 890	24 910	27 660
18 barg[8]	Kg	2 980	4 320	5 750	6 440	8 310	10 160	12 150	11 580	14 010	16 460	18 840	21 290	15 490	18 580	21 740	24 900	28 310	31 480
22 barg	Kg	3 090	4 500	5 980	6 720	8 690	10 640	12 730	12 070	14 640	17 210	19 730	22 310	16 220	19 520	22 870	26 230	29 590	32 950
37 barg	Kg	3 520	5 160	6 880	7 830	10 190	12 530	15 010	14 290	17 440	20 580	23 680	26 820	19 940	24 120	28 380	32 610	36 840	41 070
Diameter (D)	mm	1 800			2 100				2 500					3 000					
Overall width (A)	mm	2 000			2 100				2 500					3 000					
Overall depth (B)	mm	2 150			2 350				2 800					3 280					
Height (H)[9]	mm	4 030	5 840	7 650	6 430	8 430	10 430	12 430	8 110	9 940	11 770	13 600	15 430	8 400	10 230	12 060	13 890	15 660	17 490

Notes:
1) Filling 95 % (equillibrium state at 1,013 bar
2) Filling 95 % (equillibrium state at 10 bar)
3) based on pressure EN12213 (100 kPa and 15 °C ambient temperature)
4) For N_2 and Ar stated withdrawal rates to be multiplied by: N_2=0,88 / Ar=1,01
5) Stated withdrawal rates are for short term withdrawal (up to 3 hrs) at tank pressure 10 barg
6) Stated withdrawal rates are with the standard flat fin PBU vaporizer at tank pressure 15 barg and 10 °C optionally in case of higher withdrawals of CO_2, electric vaporizer needed to be ordered
7) Tanks VT70 and VT80 with MAWP 9,5 bar
8) Tanks VT70 and VT80 with MAWP 17 bar
9) Tanks with thermosiphon are app. 790 mm higher

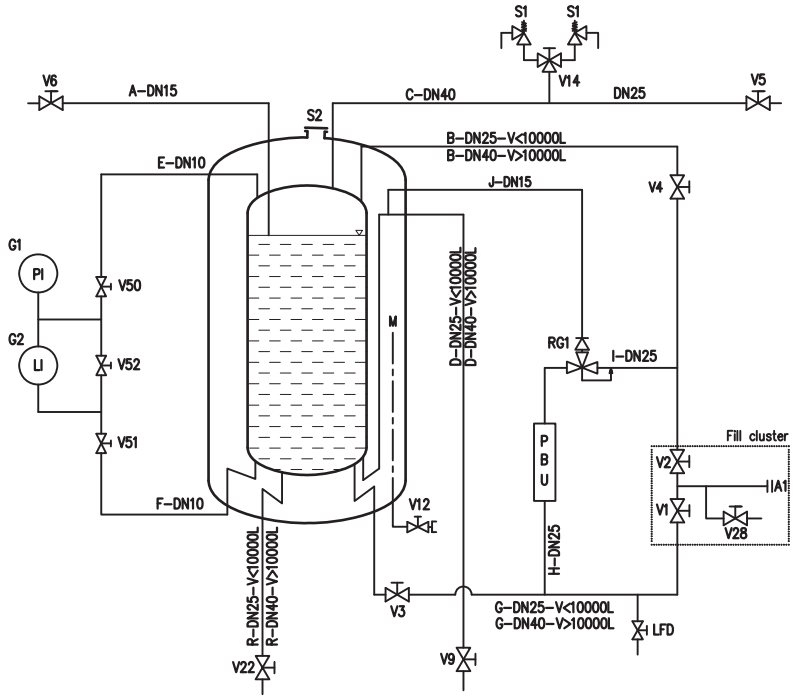


BASIC DIMENSIONS

Nomenclature

A1	Fill connection
V1	Bottom fill valve
V2	Top fill valve
V28	Valve, fill line drain
LFD	Liquid outlet (VT3 – VT9)
LI	Level indicator
PBU	Pressure building vaporizer
PI	Pressure indicator
RG1	Pressure control valve / Economizer
S1	Safety valves, inner vessel
S2	Vacuum safety valve
S5	Thermal relief valve
V3	Isolation valve, bottom filling
V4	Isolation valve, top filling
V5	Valve, vapor vent, gas outlet
V6	Valve, trycock
V9	Valve, external vaporizer
V12	Vacuum pump down
V14	Valve, safety relief section
V22.1	Valve, liquid outlet (VT11 – VT60)
V50	Valve, LI vapor phase
V51	Valve, LI liquid phase
V52	Valve, LI equalization

* standard model – not all options shown



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