

# VT SERIES

FULL EN 13458

**Vertical Cryogenic  
Storage Tanks  
for Atmospheric Gases**

**Chart Ferox, a.s. 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 97/23/EC (PED)
- 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



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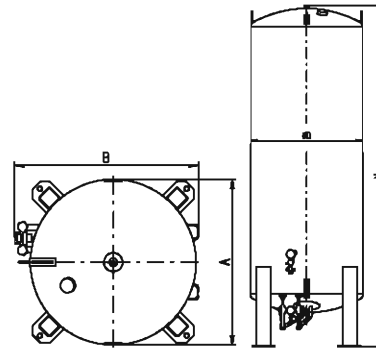
FULL EN 13458

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) <sup>1)</sup>	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		
	LN	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	31 980	39 120	46 290	53 480	60 620	
	LOX	Kg	3 720	6 680	9 630	11 730	16 850	21 970	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 <sub>0</sub>	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 <sub>2</sub> <sup>2)</sup>	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 evaporation rate LOX <sup>6)</sup>	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	0,12	0,11	0,10	0,11	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	0,11	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	0,11
Max. withdrawal rate LOX <sup>6)</sup>	Nm <sup>3</sup> /h	470			590			670			860										
Max. withdrawal rate LCO <sub>2</sub> <sup>6)</sup>	Kg/h	115			140			160			205										
Weight, empty	10 barg <sup>7)</sup>	Kg	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 <sup>8)</sup>	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) <sup>9)</sup>	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 % (equilibrium state at 1,013 bar)
- 2) Filling 95 % (equilibrium state at 10 bar)
- 3) based on pressure EN12213 (100 kPa and 15 °C ambient temperature)
- 4) For N<sub>2</sub> and Ar stated withdrawal rates to be multiplied by: N<sub>2</sub>=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<sub>2</sub>, 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 valve, 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

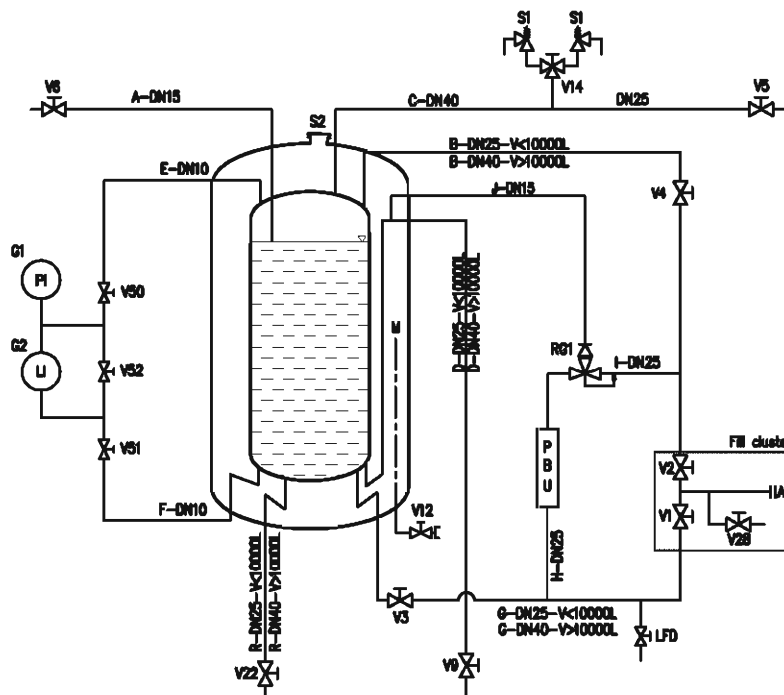


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