# VTS SERIES

## FULL EN 13458

## Vertical Cryogenic Storage Tanks for Atmospheric Gases, Carbon Dioxide and Nitrous Oxide

**VTS 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.**

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

**VTS series are available in capacities from 3, 000 to 6,000 liters with pressure of 18, 22 and 37 bar.**

- in accordance with EN 13458 and conforming to directive 2014/68/EU
- modular plumbing (e.g. fill cluster)
- 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
- leg design provides better access to anchor bolts
- with durable environmentally friendly coating for industrial standards

Chart Vacuum Technology®

### 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.


CHART
Innovation. Experience. Performance.

**Chart Industries Group D&S**
**Chart Ferox, a.s.** • Ústecká 30 • CZ-405 30 • Děčín 5
Tel.: +420 412 507 111 • Fax: +420 412 510 200
ferox-sales@chartindustries.com
www.chart-ferox.com

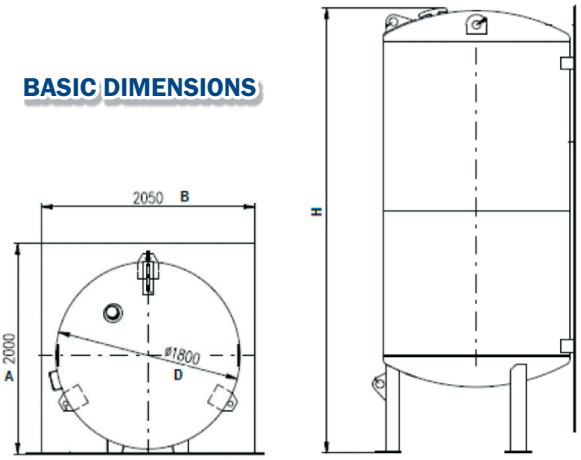
# VTS SERIES

## FULL EN 13458

## Specifications

| Type | | | VTS 3 | VTS 6 |
|---|---|---|---|---|
| **Gross volume**[7] | | Liters | 3 420 | 6 150 |
| **Net capacity (95% filling)**[1,7] | | Liters | 3 250 | 5 840 |
| | **LIN**[7] | Kg | 2 630 | 4 730 |
| | **LOX**[7] | Kg | 3 720 | 6 680 |
| | **LAR**[7] | Kg | 4 570 | 8 220 |
| | **$LN_2O$**[7] | Kg | 3 440 | 6 170 |
| | **$LCO_2$**[2,7] | Kg | 3 600 | 6 460 |
| **Daily evapopration rate LOX**[3] | **18 barg** | %/d | 0,37 | 0,26 |
| | **22 barg** | %/d | 0 ,37 | 0,27 |
| | **37 barg** | %/d | 0,39 | 0,29 |
| **Max. withdrawal rate LOX**[4,5] | | $Nm^3/h$ | 470 | |
| **Max. withdrawal rate $LCO_2$**[6] | | Kg/h | 115 | |
| **Weight, empty** | **18 barg** | Kg | 2 750 | 4 070 |
| | **22 barg** | Kg | 2 850 | 4 230 |
| | **37 barg** | Kg | 3 230 | 4 840 |
| **Diameter (D)** | | mm | 1 800 | |
| **Overall width (A)** | | mm | 2 000 | |
| **Overall depth (B)** | | mm | 2 050 | |
| **Height (H)** | | mm | 3 940 | 5 770 |

### BASIC DIMENSIONS

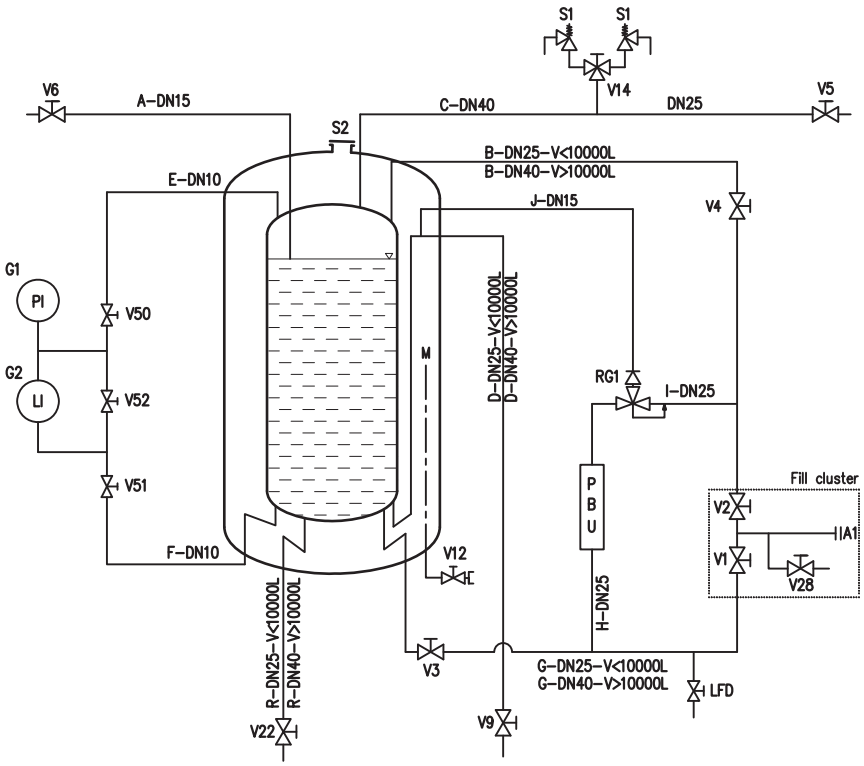



Notes:
1) Filling 95 % (equillibrium state at 1,013 bar)
2) Filling 95 % (equillibrium state at 10 bar)
3) Based on pressure EN12213 (100 kPa and 15 °C ambient temperature)
4) For $N_2$ and Ar stated withdrawal rates to be multiplied by: $N_2$=0,88 / Ar=1,01
5) Stated withdrawal rates are for short term 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
7) Valid for 18 bar tanks

### 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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