

VTC SERIES

Vertical Storage tanks for Carbon Dioxide and Nitrous Oxide

■ Inner vessel

Fine-grained low-temperature carbon steel for cryogenic temperatures with optimized design for lower weight

■ Outer jacket

A system consisting of 4 legs with transport supports & lifting lugs for safe transport, easy lifting and low cost erection using a single crane.

■ Insulation

A proven high quality vacuum perlite system with absorbent to ensure long holding time and low evaporation rate

■ Piping

Stainless steel piping for reliability and long life, ergonomically arranged workplace, flow diagram and gauges at eye level

■ Valves

Stainless / bronze valves

■ Pressure control

An easy adjustable regulator for pressure control and aluminum pressure-building coil are standard (other types of PBUs, including electric PB heaters, are optional).

■ Instrumentation

A high quality cryogenic pressure gauge and differential pressure content gauge are standard with optional switches, transmitter and / or telemetry unit.

■ Safety

Tanks are equipped with dual relief system with a variety of options, accommodating relief valves and / or rupture discs. Easily accessible relief valves with outlets directed away from the operating area.

■ Option

Electrical pressure building heater

■ Outer finish

High-gloss white paint with excellent corrosion resistance, patented engineered Siloxan coating with low VOC content

■ Transport

Rugged internal supports for safe transportation by road, rail or container

Chart Ferox, a.s. VTC 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. They include a high performance, standard design and wide range of options to meet most special needs.

VTC series tanks are vertical, stationary, pressure vessels with perlite insulation for long term storage of cryogenic liquefied gases under pressure such as carbon dioxide (LCO₂) or nitrous oxide (LN₂O) and their withdrawal in gaseous or liquid state.

VTC series are available in capacities from 4,000 to 62,000 litres and maximum available working pressure 25 bar in accordance with and conforming to EC directive 97/23/EC (PED - pressure equipment directive).

Tank design is in accordance with AD 2000 Merkblatt and EN 13458-2.

In addition to 15 standard models, the VTC series also offers wide range of options for special applications. Chart Ferox's other series of tanks, the VT series, provides high-efficiency, economical vacuum-insulated storage of liquefied oxygen, nitrogen, argon, carbon dioxide or nitrous oxide.

Chart Ferox also offer specialized range of tanks for liquefied natural gas VT - LNG Series.

The newest Chart Ferox series, EVT series, are super-insulated tanks with 3 legs design in capacities 3,000 and 6,000 liters capacities.

Tanks outside VT, EVT and VTC range are also available upon request. Finally, Ferox manufactures customized vertical and horizontal storage tanks with capacities up to 700,000 liters, as well as supplies vaporizers, vacuum insulated pipeline and other components needed to create a complete "customer" installation.



Innovation. Experience. Performance.

Chart Ferox, a.s., Chart Industries Company

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VTC SERIES

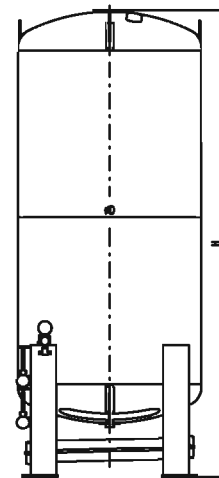
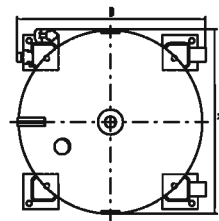
Specifications

Type		VTC4	VTC7	VTC10	VTC12	VTC17	VTC22	VTC27	VTC28	VTC34	VTC40	VTC46	VTC33	VTC43	VTC52	VTC62
Water volume	Liters	4100	7250	10400	12060	17120	22180	27240	27360	33550	39730	45910	33420	42900	52380	61860
Net capacity (95% filling)	Liters	3900	6890	9880	11460	16260	21070	25880	25990	31870	37740	43610	31750	40760	49760	58770
Weight of contents - LCO ₂ ¹⁾	kg	4320	7620	10930	12670	17980	23300	28610	28740	35240	41730	48220	35100	45060	55010	64970
Weight of contents - LN ₂ O ²⁾	kg	4130	7280	10440	12100	17180	22260	27330	27450	33660	39860	46060	33530	43040	52550	62060
Daily evaporation rate - LCO ₂ ³⁾	%/d	0,09	0,07	0,07	0,06	0,05	0,05	0,05	0,04	0,04	0,04	0,03	0,03	0,03	0,03	0,03
Max. withdrawal rate - LCO ₂ ⁴⁾	kg/h	1770			1770				1770				1770			
Stan. withdrawal rate - LCO ₂ ⁵⁾	kg/h	150			185				215				270			
Empty Weight	kg	3950	5670	7440	8510	10860	13150	15560	17780	20830	23810	26840	19970	23930	27970	31990
Outer jacket diameter (D)	mm	1800			2200				2500				3000			
Overall width (A)	mm	2050			2260				2500				3000			
Overall depth (B)	mm	2100			2260				2540				3040			
Overall Height (H)	mm	3990	5820	7650	6150 ⁶⁾	7980	9810	11640	9930	11770	13590	15420	8380	10210	12040	13870

Notes:

- 1) Filling 95% (equilibrium state at 10 barg).
- 2) Filling 95% (equilibrium state at 1,013 bar).
- 3) Based on pressure 15 barg and 15 °C ambient temperature.
- 4) Stated rate are with the 6 kW electrical heater at tank pressure 15 barg.
- 5) Stated rates are for mid term withdrawal (3-12 hrs) at tank pressure 10 barg and ambient temperature 20°C.
- 6) In case of container transport 200 mm shorter.
- 7) Design and specifications are subject to change without prior notice.

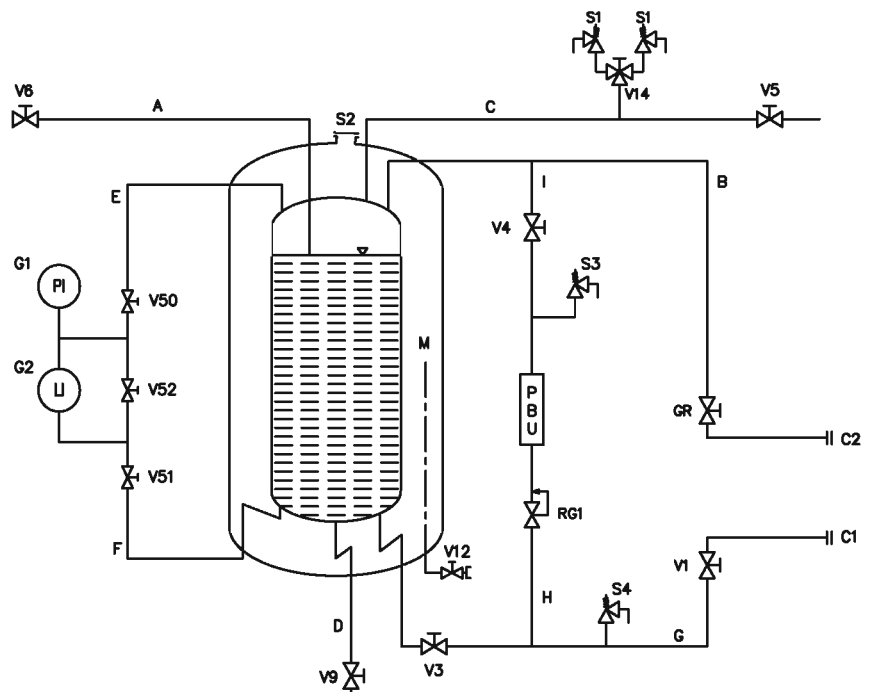
BASIC DIMENSIONS



Nomenclature*

- C1** Fill connection
- C2** Gas return connection
- GR** Gas return valve
- LI** Level indicator
- PBU** Pressure building vaporizer
- PI** Pressure indicator
- RG1** Pressure control valve / Economizer
- S1** Safety valves, inner vessel
- S2** Vacuum safety valve
- S3** Thermal relief valve, PB circuit
- S4** Thermal relief valve
- V1** Bottom fill valve
- V3** Isolation valve, bottom filling
- V4** Valve, PB outlet
- V5** Valve, vapor vent, gas outlet
- V6** Valve, trycock
- V9** Valve, liquid outlet
- V12** Vacuum pump down
- V14** Valve, safety relief section
- V50** Valve, LI vapor phase
- V51** Valve, LI liquid phase
- V52** Valve, LI equalization

* standard model - not all options shown



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