

# VSN<sub>2</sub>O

## VERTICAL BULK STATIONS

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Our VS-N<sub>2</sub>O Series of Bulk Nitrous Oxide Storage Tanks continues our pioneering of user-friendly engineered products. This design series offers strength and durability in an all-welded outer container, while maintaining lower life-cycle costs. Utilizing our Composite Super Insulation™ system along with superior Chart Vacuum Technology®, we are able to offer:

- An ultra-low heat leak, eliminating the need for a costly refrigeration system in most applications.
- No costly down time to refurbish water-soaked or deteriorated foam insulation.

Every VS-N<sub>2</sub>O pressure vessel is manufactured, tested and stamped in accordance with the latest edition of the ASME Boiler and Pressure Vessel Code, Section VIII, Division I, using SA612 normalized steel. Our VS-N<sub>2</sub>O Bulk Stations are equipped with an internal cleaning system operated externally, eliminating the need for costly manways.

### PRODUCT HIGHLIGHTS

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- Stainless steel piping for greater strength and durability
- Stainless steel ball valves standard on all fill and process lines
- Minimum number of piping joints, reducing potential piping leaks and maintenance costs
- CGA fill and return fittings standard on all models
- Optimum piping design results in flexible equipment connection
- Dual regulator system standard, eliminating any safety concerns
- Oxygen cleaned vessel and piping per CGA S4.1
- Pressure Building and Vaporizer options available, inquire with Chart for more details
- Interchangeable gauge systems with a choice of analog or digital telemetry capable systems are available with flexible stainless-steel interconnecting lines
- Refrigeration systems including internal coil available as options

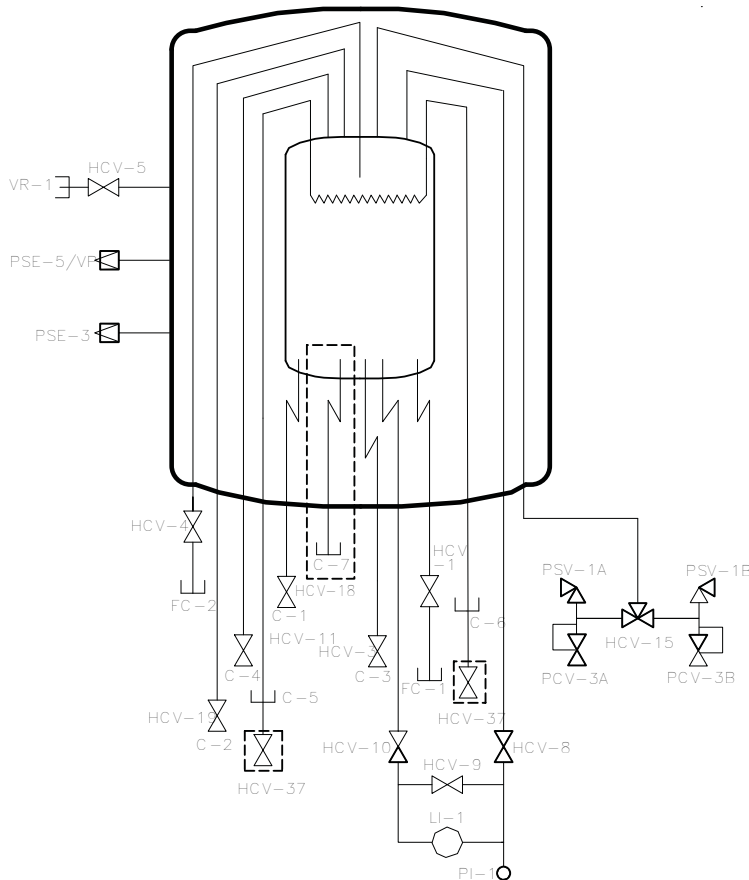


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## VERTICAL BULK STATIONS

VERTICAL													
Model	Gross Capacity		Net Capacity		MAWP*	Height	Diameter		Weight**		NER %/day in N <sub>2</sub> O		
	Ton	(Tonne)	Ton	(Tonne)			PSIG	(bar)	in	(mm)		lbs	(kg)
<b>6 Ton</b>	6.5	(5.9)	6.2	(5.6)	350	(24.1)	186	(4,724)	68	(1,728)	9,000	(4,080)	.15
<b>14 Ton</b>	12.9	(11.7)	12.3	(11.2)	350	(24.1)	228	(5,791)	86	(2,184)	17,500	(7,940)	.08
<b>30 Ton</b>	30.4	(27.6)	28.9	(26.2)	350	(24.1)	287	(7,290)	114	(2,900)	39,800	(18,050)	.05
<b>50 Ton</b>	47.0	(42.7)	44.8	(40.6)	350	(24.1)	406	(10,312)	114	(2,900)	57,200	(25,945)	.04

\* MAWP – Maximum Allowable Working Pressure \*\* Tare Weight



### Nomenclature

C-1	CONNECTION, AUX LIQUID
C-2	CONNECTION, AUX VAPOR
C-3	CONNECTION, PB LIQUID
C-4	CONNECTION, PB VAPOR
FC-1	CONNECTION, FILL
FC-2	CONNECTION, VAPOR RETURN/ FULL TRYCOCK
HCV-1	VALVE, BOTTOM FILL
HCV-3	VALVE, PB LIQUID
HCV-4	VALVE, VAPOR RETURN/FULL TRYCOCK
HCV-5	VALVE, VACUUM GAUGE TUBE
HCV-8	VALVE, LI-1 VAPOR PHASE
HCV-9	VALVE, LI-1 EQUALIZATION
HCV-10	VALVE, LI-1 LIQUID PHASE
HCV-11	VALVE, PB VAPOR
HCV-15	VALVE, SAFETY RELIEF SELECTOR
HCV-18	VALVE, AUX LIQUID
HCV-19	VALVE, AUX VAPOR
LI-1	LEVEL INDICATOR, INNER VESSEL
PI-1	PRESS INDICATOR, INNER VESSEL
PCV-3A	PRESS CONTROL VALVE, ECON VENT
PCV-3B	PRESS CONTROL VALVE, ECON VENT
PSE-3	PRESS SAFETY ELEMENT, OTR VESSEL
PSE-5/VP	PRESS SAFETY ELEMENT, OTR VESSEL, VAC. PORT
PSV-1A	PRESS SAFETY VALVE, INR VESSEL
PSV-1B	PRESS SAFETY VALVE, INR VESSEL
VR-1	VACUUM READOUT, OTR VESSEL

### REFRIGERATION OPTION (STANDARD ON 6 TON)

C-5	CONNECTION, AUXILIARY REFRIGERATION
C-6	CONNECTION, AUXILIARY REFRIGERATION
DASHED LINE REPRESENTS ADDITIONAL LINE STANDARD ON 30/50 TON	
C-7	CONNECTION, SECONDARY AUX LIQUID
OPTIONAL COMPONENTS	
HCV-37	VALVE AUXILLARY REFRIGERATION