Ensuring cryogenic supply capabilities. Any application - Any time.

Our Bulk Storage Systems Advantage

Chart’s Bulk Storage Systems are engineered and manufactured to the highest quality standards providing you with the safest and most reliable system available. Driven by innovation since 1963, our Bulk Storage Systems lead the industry in performance. Experience from understanding our customer’s specifications and the end-use applications made Chart the industry standard in bulk storage. When you want the best in cryogenic bulk storage, our wide range of products are certain to satisfy your requirements while providing the lowest cost of ownership in the industry.

Engineering Design

Our Bulk Storage advantage is based on a system that incorporates patented and proven innovative technologies. Every component is designed, built and tested to create the safest and most reliable Bulk Storage System available today.

Quality Manufacturing

Our experience and code compliant ISO 9001 certification ensures that our Bulk Storage Systems are manufactured to high quality standards and on schedule.

Installation Ready

Only Chart allows you to custom build a Bulk Storage System to match your customer’s application and budget. With nine sizes and five pressures, there’s a bulk tank to match your business strategy.

Chart’s Bulk Storage Systems are custom engineered to meet your application’s specifications. Chart’s complete system solution package ensures quality liquid or gas to keep your processes operating at peak efficiency. Built for long-term integrity and industry-leading efficiency, these systems give you the highest performance at the lowest operating cost.

1 Liquefied gases are stored at ultra-cold temperatures in a vacuum insulated tank. Controls on the tank keep the pressure of the liquid at optimum levels to assure proper liquid delivery to the application.

2 Vacuum insulated pipe connects the tank’s liquid withdrawal to the application equipment. The pipe is the foundation for the system’s heat-loss efficiency and long-term integrity. It must be engineered to work with the associated controls and accessories.

3 Chart manufactures equipment that controls and provides gas to other applications within the facility. Our engineers can help provide proper sizing for vaporizers, control manifolds, etc. to serve both a liquid and gas application from a single bulk tank liquid source.

4 The application equipment is designed to utilize liquid or gas at specific properties. The system design must take careful consideration of these requirements so the equipment meets the user’s performance specifications.

When you choose Chart, you get single-source accountability from the engineered solution through post-installation service.
Ensuring cryogenic supply capabilities. Any application - Any time.

**Bulk Storage Systems Meet the Needs of Any Application**

**Welding – GMAW/MIG, GTAW/TIG and Laser Beam Welding**

Metal fabrication uses many different welding processes for the wide range of materials, thickness and product applications. Many of these unique and specialized welding processes use inert shielding gas or the combination of gases to obtain the maximum weld quality and optimized productivity. For single gas requirements, Bulk Storage provides you with a continuous supply of quality gas. And for mixed gas applications, a mixer solution provides on-site gas blending directly from bulk storage for the most accurate mixture available and at the lowest cost.

**Cutting – Laser, Oxy Fuel and Plasma**

All thermal cutting techniques utilize gases to assist in the cutting process. High-pressure nitrogen and oxygen are used as an assist gas to rapidly remove the molten metal from the cut zone or burn it away during the laser cutting process. To maintain maximum laser uptime and achieve the best cut quality, it is critical that the gas supply be uninterrupted and the required pressures and flows for the material and thickness being cut are maintained. Oxy Fuel and Plasma cutting processes have similar requirements. Only Chart offers an engineered “High-Pressure, High-Flow Package” to customize your Bulk Storage System for these demanding applications.

**Space Fuels**

Chart’s Bulk Storage and vacuum insulated pipe systems are used on launch pads delivering extremely high flow rates of liquid hydrogen and oxygen to fuel today’s demanding space programs. Aerospace applications are extremely precise, requiring higher pressures and intense analysis of engineering stress and heat leak. Additionally, Chart is able to meet the tightest clean requirements common to these applications.

**Bulk Biological Storage and Research**

A sufficient supply of high-quality liquid nitrogen is needed to keep valuable biological samples stored indefinitely. Today’s top medical research facilities depend on a reliable liquid nitrogen supply to find cures for tomorrow’s diseases. Any interruption in supply can result in the loss of many years of research. Chart’s experience in the biological container market makes us the first choice in Bulk Storage Systems for these applications.

**Medical Oxygen Therapy • O.R.**

Medical applications have some of the most stringent gas requirements and the Bulk Storage Systems meet these requirements with NF grade capability. Liquid oxygen for respiratory therapy is easily and safely dispensed from bulk storage into smaller systems to lower distribution costs. Similarly, the bulk storage and a reserve tank is an excellent solution as the main oxygen gas supply for hospitals. NF grade nitrogen can also be supplied for gas applications to operate pneumatic surgical tools and supply liquid for medical uses such as cryotherapy.

**Heat Treating • Cryotempering • Thermal Spray Coating**

Heat treating and cryotempering processes are dependent on the quality of the nitrogen gas and liquid supply to maintain production at peak performance. With our Bulk Storage System directly piped to the equipment, these applications are assured of a consistent supply of nitrogen with minimal operator intervention. In the thermal spray coating process, oxygen or argon gas is used at high pressure and high flows. With optional packages, your gas supply will exceed these requirements and provide long-term trouble-free service.

**Food and Beverage Packaging**

In beverage packaging, CO₂ is used in carbonated drinks and liquid nitrogen is used to create a positive pressure in non-carbonated drinks to improve container rigidity for lower-cost handling. Additionally, this process eliminates oxygen to improve the products shelf life (MAP: Modified Atmospheric Packaging). For meat packaging, nitrogen gas yields the same benefits and when combined with carbon dioxide and carbon monoxide for processing meat, a longer shelf life of the desired red color is maintained. Our Bulk Storage Systems give you optimum control of your liquid and gas supply for maximum production uptime.

**Food Freezing**

Total system cost and efficiency is crucial in food freezing applications. Chart’s superior insulation technology delivers liquid nitrogen with more cooling capacity, using less nitrogen per pound of frozen product. With our experience and capabilities in providing complete Bulk Storage and vacuum insulated pipe system solutions, we help maintain the lowest total cost of ownership by supplying the most efficient system.

**Purging and Blanketing**

Inert purging and blanketing with nitrogen or argon gas is a common processing step in many manufacturing applications. These range from pharmaceutical to chemical to the wine industry, and they require a secure supply of gas for optimum processing results. With a dedicated Bulk Storage System and the optional telemetry system, you are assured of a continuous, oxygen-free gas supply.

**Electronic Manufacturing and Testing**

Electronic grade manufacturing requires an Ultra High Purity gas stream void of contamination. Our electronic grade tanks are built with all stainless steel construction from the annular lines to the exterior plumbing to maintain gas purity. For electronic component testing, Chart works with today’s leading equipment manufacturers to design and manufacture Bulk Storage and vacuum insulated pipe systems that supply the flows demanded by today’s thermal stress environmental test chambers. As the leading manufacturer of UHP cooled chambers, Chart gets your entire system designed and built right the first time.
### Composite Super Insulation™

**See the Difference**

Since most liquid and gas applications require only 100-psi delivery pressure, why are ordinary tanks built with a 250-psi maximum allowable working pressure (MAWP)? The answer is simple—traditional Perlite insulation allows more heat into the liquid, driving the pressure up faster and reducing the hold-time. To compensate, Perlite tanks need a 150-psi “pressure buffer” to increase the hold-time and prevent unwanted, costly venting. So why pay for an outdated tradition?

---

### The Difference is Clear with Chart’s Composite SI™ System

- **25% Lower Cost**
- **13% Smaller Footprint**
- **21% Lower Tare Weight**
- **60% Less Daily Evaporation**
- **14 Gal/Day Lower Losses**
- **5 Day Longer Hold Time**

---

### Chart’s Composite SI System VS. Competitor Perlite System

**Pressure Rise Comparison from 125 psi to Relief Valve**

<table>
<thead>
<tr>
<th>Chart’s SI-175</th>
<th>Perlite-250</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price Difference (%)</td>
<td>+ 25</td>
</tr>
<tr>
<td>Diameter (in)</td>
<td>122</td>
</tr>
<tr>
<td>Tare Weight (lbs)</td>
<td>42,000</td>
</tr>
<tr>
<td>NER (%)</td>
<td>0.18</td>
</tr>
<tr>
<td>Hold Time (days)</td>
<td>13</td>
</tr>
<tr>
<td>Losses at MAWP (SCFD)</td>
<td>1,865</td>
</tr>
</tbody>
</table>

**Note:** All values based on a Vertical 9000 Gallon Bulk Tank half full in oxygen service at 125 psig under normal ambient conditions. Published values posted on the Internet. SCFD = Standard Cubic Feet per Day

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### Chart’s SI-175 Tanks Leave Perlite-250 Tanks in the Dust

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At Chart, we have a great solution to those challenges: Composite Super Insulation (SI™). Applying this state-of-the-art insulation technology to a lower cost 175-psig MAWP bulk tank, we build-in performance and value. Even at this lower pressure, the Composite SI clearly outperforms the Perlite insulation. This innovative insulation system is standard on all Chart Bulk Storage Systems.
Modular Piping Design

Chart’s innovative modular piping system provides an Industry Standard Piping Configuration.

Modular Piping Advantages:
- Reduces your life-cycle costs by reducing the number of external piping joints, minimizing the risk of external piping leaks and the cost to repair.
- Simple by design yet robust and able to support a broad range of customer applications.
- Combination pressure building/economizer regulator for easy in-field adjustments.
- Long-life extended stem packing pressure builder and economizer isolating valves are standard on the VS-01 series.

Interchangeable gauge systems with digital telemetry capable gauge and flexible stainless-steel interconnection lines.

Combination pressure building/economizer regulator for easy in-field adjustments.

Chart's innovative modular piping system provides an Industry Standard Piping Configuration. Modular Piping Advantages:
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- Combination pressure building/economizer regulator for easy in-field adjustments.
- Long-life extended stem packing pressure builder and economizer isolating valves are standard on the VS-01 series.

Interchangeable gauge systems with digital telemetry capable gauge and flexible stainless-steel interconnection lines.

Combination pressure building/economizer regulator for easy in-field adjustments.

Chart's VS-Series Storage Systems, available in liquid nitrogen, oxygen or argon service are offered in a wide range of sizes for applications requiring Maximum Allowable Working Pressures of 175 and 250 psig (12 and 17 bar) as standard.

Our proprietary composite insulation system gives you the competitive edge with high thermal performance, extended hold times, low life-cycle costs and lower weight to reduce operational and installation costs. Chart leads the industry with an innovative, modular piping system designed for performance, durability and low maintenance.

Product Advantages
- Sizes, pressures and configurations to meet most applications
- Backed by an industry-leading 5-year warranty
- Leg design provides better access to anchor bolts for quicker installation
- Plumbing built to ASME B31.3 code and leak tested at 1.1 times the MAWP
- Long-life Hentzen urethane paint system
- New, innovative vertical fin pressure building system improves performance, while reducing frost and ice build up to further reduce your maintenance costs

<table>
<thead>
<tr>
<th>Model</th>
<th>Gross Capacity Gal</th>
<th>Net Capacity Gal</th>
<th>MAWP* psi</th>
<th>Diameter in mm</th>
<th>Height in mm</th>
<th>Weight** lbs</th>
<th>NER % /day</th>
<th>Flow Capacity*** SCFH nm 3/hr</th>
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<tbody>
<tr>
<td>VS-525SC</td>
<td>570</td>
<td>2,166</td>
<td>175</td>
<td>66</td>
<td>1,676</td>
<td>3,300</td>
<td>9,000</td>
<td>237</td>
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<tr>
<td>VS-900SC</td>
<td>940</td>
<td>3,586</td>
<td>175</td>
<td>68</td>
<td>1,676</td>
<td>6,600</td>
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<td>237</td>
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<tr>
<td>VS-1500SC</td>
<td>1,640</td>
<td>6,216</td>
<td>250</td>
<td>86</td>
<td>2,184</td>
<td>12,000</td>
<td>9,000</td>
<td>237</td>
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<tr>
<td>VS-3000SC</td>
<td>3,140</td>
<td>11,924</td>
<td>250</td>
<td>103</td>
<td>2,184</td>
<td>18,000</td>
<td>16,000</td>
<td>473</td>
</tr>
<tr>
<td>VS-6000SC</td>
<td>6,010</td>
<td>22,750</td>
<td>250</td>
<td>121</td>
<td>2,184</td>
<td>31,500</td>
<td>18,000</td>
<td>473</td>
</tr>
<tr>
<td>VS-9000SC</td>
<td>9,360</td>
<td>35,431</td>
<td>250</td>
<td>152</td>
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<td>473</td>
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<tr>
<td>VS-11000SC</td>
<td>11,410</td>
<td>43,192</td>
<td>250</td>
<td>173</td>
<td>2,184</td>
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<td>18,000</td>
<td>473</td>
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<tr>
<td>VS-13000SC</td>
<td>15,520</td>
<td>58,750</td>
<td>250</td>
<td>195</td>
<td>2,184</td>
<td>78,000</td>
<td>18,000</td>
<td>473</td>
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<tr>
<td>VS-15000SC</td>
<td>18,620</td>
<td>70,375</td>
<td>250</td>
<td>217</td>
<td>2,184</td>
<td>99,000</td>
<td>18,000</td>
<td>473</td>
</tr>
</tbody>
</table>

MAWP - Maximum Allowable Working Pressure. 400, 500 psi tanks are available upon request. **Weights are for ASME design. ***Flow capacity rating down to a 20% contents level with a maximum fall off in tank operating pressure of 15 psig (1 bar).

(new) = Nominal Evaporation Rate
**VS-DSS Series**

Available in the 525, 900, 1500, 3000 and 6000 gallon (2000, 3400, 5700, 11,400 and 23,000 liter) models, these new VS-DSS Models feature the industry standard thermal performance. The modular plumbing system has been selectively optimized to meet the flow requirements of a complete range of liquid or gas applications. With a comprehensive set of plumbing features, each circuit has been carefully designed to match the demands placed on these vessel sizes. Dual safety-relief devices are now standard, and tank mounted vaporizers are optional on the 525, 900 and 1500 gallon sizes.

Chart’s VS-DSS (Distributor Storage System) Series of vertical bulk storage stations are engineered for superior performance, durability and value. Equipped with our proprietary composite Super Insulation (a light-weight system offering better thermal performance than Perlite), VS-DSS Models provide reduced product losses and a slower rate of pressure rise during periods of non-use. Backing up this performance is a competitive 2-year warranty.

**Product Advantages**

- Sizes, pressures and configurations to meet most applications
- Backed by our standard 2-year warranty
- Leg design provides better access to anchor bolts for quicker installation
- Lower tare weight reduces freight and pad costs
- Long-life Hentzen urethane paint system with optional zinc-rich primer
- Plumbing built to ASME B31.3 code and leak tested at 1.1 times the MAWP

**Dual regulator economizer and pressure builder supplied as standard.**

**New, innovative vertical fin pressure building system improves performance, while reducing frost and ice build up to further reduce your maintenance costs**

**Full-trycock and economizer valves come standard with non-extended packing.**

---

<table>
<thead>
<tr>
<th>Model</th>
<th>Gross Capacity Gal</th>
<th>Net Capacity Gal</th>
<th>MAWP bar</th>
<th>Diameter in</th>
<th>Height in</th>
<th>Weight lbs</th>
<th>NER %/day</th>
<th>Flow Capacity SCFM/hr</th>
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</thead>
<tbody>
<tr>
<td>VS-525-DSS</td>
<td>570</td>
<td>510</td>
<td>105</td>
<td>66</td>
<td>1,676</td>
<td>3,200</td>
<td>.55</td>
<td>9,900</td>
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<td>VS-900-DSS</td>
<td>940</td>
<td>850</td>
<td>136</td>
<td>66</td>
<td>2,184</td>
<td>5,806</td>
<td>.45</td>
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<td>VS-1500-DSS</td>
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<td>196</td>
<td>86</td>
<td>2,184</td>
<td>9,728</td>
<td>.35</td>
<td>18,000</td>
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<td>VS-3000-DSS</td>
<td>3,150</td>
<td>3,030</td>
<td>228</td>
<td>86</td>
<td>2,184</td>
<td>9,728</td>
<td>.25</td>
<td>18,000</td>
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<tr>
<td>VS-6000-DSS</td>
<td>6,010</td>
<td>5,770</td>
<td>250</td>
<td>86</td>
<td>2,184</td>
<td>9,728</td>
<td>.15</td>
<td>18,000</td>
</tr>
</tbody>
</table>

*MAWP = Maximum Allowable Working Pressure. **Weights are for ASME design. ***Flow capacity rating down to a 20% contents level with a maximum fall off in tank operating pressure of 15 psig (1 bar). **NER = Nominal Evaporation Rate. **SCFM/hr = Standard Cubic Feet per Hour.*
The HS-Series Bulk Stations are engineered and built with the same quality you have come to expect from Chart. They have standard features along with pre-engineered options sure to satisfy all of your requirements. Chart’s HS Series Bulk Stations are designed to ASME code and available in 175 and 250 psig (12 and 17 bar) as standard (other pressures available upon request).

Our composite insulation system gives you the competitive edge with high thermal performance and extended hold times, resulting in low life-cycle costs. In addition, the light weight design reduces your installation costs.

Product Advantages

- Piping modules designed for ease-of-access to all operational control valves with stainless steel interconnecting piping minimizes the number of connections, reducing maintenance and cost of ownership
- Component selection to improve operational performance - combination pressure building/economizer regulator for easy pressure adjustment and extended bonnet bronze control valves for ease of operation
- High performance safety system with dual relief valves and rupture disks supplied as a standard
- New, innovative vertical fin pressure building system improves performance, while reducing frost and ice build-up to further reduce your maintenance costs
- Backed by an industry-leading 5-year warranty

<table>
<thead>
<tr>
<th>Model</th>
<th>Gross Capacity</th>
<th>Net Capacity</th>
<th>MAWP*</th>
<th>Width</th>
<th>Height</th>
<th>Length</th>
<th>Weight**</th>
<th>NER %/day in O2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HS-1500SC</td>
<td>1,640</td>
<td>6,206</td>
<td>250</td>
<td>12.1</td>
<td>66</td>
<td>1,738</td>
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<td>2,032</td>
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<td>HS-3000SC</td>
<td>3,150</td>
<td>11,470</td>
<td>250</td>
<td>12.1</td>
<td>86</td>
<td>2,184</td>
<td>95</td>
<td>2,413</td>
</tr>
<tr>
<td>HS-6000SC</td>
<td>6,010</td>
<td>21,442</td>
<td>250</td>
<td>12.1</td>
<td>86</td>
<td>2,184</td>
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<td>2,413</td>
</tr>
<tr>
<td>HS-9000SC</td>
<td>9,360</td>
<td>34,021</td>
<td>250</td>
<td>17.2</td>
<td>114</td>
<td>2,896</td>
<td>126</td>
<td>3,202</td>
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<tr>
<td>HS-11000SC</td>
<td>11,410</td>
<td>41,489</td>
<td>250</td>
<td>17.2</td>
<td>114</td>
<td>2,896</td>
<td>126</td>
<td>3,202</td>
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<tr>
<td>HS-13000SC</td>
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<td>49,437</td>
<td>250</td>
<td>17.2</td>
<td>114</td>
<td>2,896</td>
<td>126</td>
<td>3,202</td>
</tr>
<tr>
<td>HS-15000SC</td>
<td>15,520</td>
<td>57,008</td>
<td>250</td>
<td>17.2</td>
<td>114</td>
<td>2,896</td>
<td>126</td>
<td>3,202</td>
</tr>
</tbody>
</table>

MAWP* - Maximum Allowable Working Pressure. **Weights are for ASME design. (NER) = Nominal Evaporation Rate
Ensuring cryogenic supply capabilities. Any application - Any time.

Our VS-CO2 and HS-CO2 Series of Bulk Carbon Dioxide Storage Tanks continue our pioneering of user-friendly engineered products. This product series offers strength and durability in an all-welded outer container, while maintaining lower life-cycle costs. Utilizing our proprietary composite insulation system along with superior 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.

### Product Advantages

- 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 with drain valves standard on all models
- Optimum piping design results in flexible equipment connection
- High performance safety system with dual relief valves and rupture disks supplied as standard
- 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

### Vacuum Jacketed vs. Foam CO2 tanks

<table>
<thead>
<tr>
<th>Pressure Rise to Relief</th>
<th>6 Day Hold Time</th>
<th>32 Day Hold Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foam</td>
<td>310</td>
<td>320</td>
</tr>
<tr>
<td>Chart Composite Super Insulation</td>
<td>320</td>
<td>340</td>
</tr>
</tbody>
</table>

### Product Advantages

- Lowest life-cycle costs for bulk CO2 storage
- Superior functional performance
- Increased reliability and ease of repair
- High-strength, dent resistant outer jacket eliminates deterioration of insulation, costly repairs, down-time
- Reduce potential of CO2 solidification due to refrigeration failure (power failure)
- Eliminate product loss due to venting
- Hold time is 8 times longer than foam
- Refrigeration system not required for maintaining heat leak
- No monthly maintenance or electrical charge
- Two-year payback vs. foam tank
- Backed by an industry-leading 5-year warranty

### Vertical Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Gross Capacity Ton</th>
<th>Net Capacity Tonne</th>
<th>MAWP* psig bar</th>
<th>Height in (mm)</th>
<th>Diameter in (mm)</th>
<th>Weight** lbs Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Ton</td>
<td>6.8</td>
<td>6.2</td>
<td>5.8</td>
<td>188 (4,775)</td>
<td>68</td>
<td>9,400 4,270</td>
</tr>
<tr>
<td>14 Ton</td>
<td>13.2</td>
<td>12.0</td>
<td>11.4</td>
<td>228 (5,791)</td>
<td>86</td>
<td>17,400 7,900</td>
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<tr>
<td>30 Ton</td>
<td>31.1</td>
<td>28.2</td>
<td>28.9</td>
<td>267 (7,290)</td>
<td>114</td>
<td>39,600 17,970</td>
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<tr>
<td>50 Ton</td>
<td>48.1</td>
<td>43.6</td>
<td>41.5</td>
<td>406 (10,312)</td>
<td>114</td>
<td>56,900 25,810</td>
</tr>
</tbody>
</table>

### Horizontal Specifications

<table>
<thead>
<tr>
<th>Model</th>
<th>Gross Capacity Ton</th>
<th>Net Capacity Tonne</th>
<th>MAWP* psig bar</th>
<th>Width in (mm)</th>
<th>Height in (mm)</th>
<th>Length in (mm)</th>
<th>Weight** lbs Kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Ton</td>
<td>6.8</td>
<td>6.2</td>
<td>5.8</td>
<td>68 (1,728)</td>
<td>188 (4,775)</td>
<td>80</td>
<td>9,300 4,130</td>
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<tr>
<td>14 Ton</td>
<td>13.2</td>
<td>12.0</td>
<td>11.4</td>
<td>86 (2,184)</td>
<td>233 (5,913)</td>
<td>127</td>
<td>17,400 7,900</td>
</tr>
<tr>
<td>30 Ton</td>
<td>31.1</td>
<td>28.2</td>
<td>28.9</td>
<td>114 (2,900)</td>
<td>280 (7,112)</td>
<td>39,700</td>
<td>16,000</td>
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<tr>
<td>50 Ton</td>
<td>48.1</td>
<td>43.6</td>
<td>41.5</td>
<td>114 (2,900)</td>
<td>396 (10,058)</td>
<td>56,900</td>
<td>25,800</td>
</tr>
</tbody>
</table>

*MAWP - Maximum Allowable Working Pressure **Weights are for ASME design. (NER) = Nominal Evaporation Rate
Ensuring cryogenic supply capabilities. Any application - Any time.

**Features and Benefits**

- All welded stainless steel piping modules
- Heavy duty bronze valves with extended bonnets
- Valve bonnet uniformity to reduce spare parts inventory
- Highest grade components for low to zero maintenance
- Separate pressure building and economizer regulators are standard on all 400 and 500 psi (27.6 and 34.5 bar) units
- High performance safety system with dual relief valves and rupture disks supplied as a standard.

High flow pressure-building regulator and coil are standard.

Chart’s VS High Pressure Bulk Stations are engineered for superior performance in high pressure applications. To support these demands, the VS High Pressure Bulk Station comes standard with a larger pressure-building regulator and coil. For more demanding applications with higher withdrawal rates, a remote pressure-building system is available.

Cut Operating Costs

- Reduces deliveries by up to 36%
- Reduces delivery time by up to 33%
- Increases actual storage capacity by 27% or reduces needed tank size
- Reduces service calls and maintenance
- Telemetry ready
- Easy to configure and install

**Improve Customer Satisfaction**

- Reduces customer downtime by up to 86%... or to zero with optional fill assist unit
- Cuts blow-down and venting losses and increases holding time
- Builds operating pressure in minutes
- Provides precision pressure control and eliminates regulator pressure creep
- Reduces space required to provide the same gas flow rates
- Easy to adjust pressure settings and contents alarms - truly user-friendly
- Supplies warmer outlet gas

**Specifications**

- **MAWP** - Maximum Allowable Working Pressure
- **Weights are for ASME design.**
- **Flow capacity rating down to a 20% contents level with a maximum fall off in tank operating pressure of 15psi (1 bar).**

**MULTI-FUNCTION VAPORIZER (see page 5)**

- **Rated Flow Capacity (scfh / Nm³/hr)**
- **Design Pressure (psi / bar)**
- **Overall Height (in. / mm)**
- **Length / Width (in. / mm)**
- **Rattler Valve for Snow and Ice Removal**

---

**VS High Pressure Bulk Stations**

<table>
<thead>
<tr>
<th>Model</th>
<th>Gross Capacity Gal</th>
<th>Net Capacity Gal</th>
<th>MAWP** psig</th>
<th>Diameter in mm</th>
<th>Height in mm</th>
<th>Weight** lbs</th>
<th>Flow Capacity*** SCFH</th>
<th>NER %/day in O₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS-900SC</td>
<td>940</td>
<td>850</td>
<td>3,218</td>
<td>400</td>
<td>27.6</td>
<td>66</td>
<td>1,676</td>
<td>136</td>
</tr>
<tr>
<td>VS-1500SC</td>
<td>1,640</td>
<td>1,580</td>
<td>5,981</td>
<td>400</td>
<td>27.6</td>
<td>66</td>
<td>1,676</td>
<td>196</td>
</tr>
<tr>
<td>VS-3000SC</td>
<td>3,150</td>
<td>3,030</td>
<td>11,470</td>
<td>400</td>
<td>27.6</td>
<td>66</td>
<td>2,184</td>
<td>228</td>
</tr>
<tr>
<td>VS-6000SC</td>
<td>6,010</td>
<td>5,770</td>
<td>21,842</td>
<td>400</td>
<td>27.6</td>
<td>66</td>
<td>2,184</td>
<td>383</td>
</tr>
<tr>
<td>VS-9000SC</td>
<td>9,360</td>
<td>8,990</td>
<td>34,031</td>
<td>400</td>
<td>27.6</td>
<td>114</td>
<td>2,096</td>
<td>348</td>
</tr>
<tr>
<td>VS-11000SC</td>
<td>11,410</td>
<td>10,960</td>
<td>41,488</td>
<td>400</td>
<td>27.6</td>
<td>114</td>
<td>2,096</td>
<td>407</td>
</tr>
<tr>
<td>VS-13000SC</td>
<td>13,470</td>
<td>12,060</td>
<td>49,437</td>
<td>400</td>
<td>27.6</td>
<td>114</td>
<td>2,096</td>
<td>466</td>
</tr>
<tr>
<td>VS-15000SC</td>
<td>15,520</td>
<td>14,060</td>
<td>57,068</td>
<td>400</td>
<td>27.6</td>
<td>114</td>
<td>2,096</td>
<td>525</td>
</tr>
</tbody>
</table>

---

**HP™ High Pressure–High Performance**

An integrated state-of-the-art system, including an HP™ tank, a multi-function vaporizer and advanced control technology for delivering high-pressure high-performance gas flow. With our performance, you get pressure building recovery in 10 minutes or less at 93% full. Pressure is easily adjustable to within 50 psi/3.4 bar of tank MAWP. Flow rates up to 12,500 scfh / 328 Nm³/hr can be achieved. The rattler valve (attached to the vaporizer) ensures sustained vaporizer performance and the HP™ is available in sizes from 900 gallons / 3,406 liters and larger.

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**Larger High-Pressure Tanks**

- Contact Chart

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**Multi-Factor VapORIZER (See page 5)**

- **3.5 K Model**
- **7.5 K Model**
- **12.5 K Model**

---

**HP™ TANK (See VS High Pressure Bulk Station Literature)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Net Capacity* (gal / liters)</th>
<th>MAWP** (psi / bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS-900SC</td>
<td>850 / 3,218</td>
<td>400 / 27.6 or 500 / 34.5</td>
</tr>
<tr>
<td>VS-1500SC</td>
<td>1,580 / 5,881</td>
<td>400 / 27.6 or 500 / 34.5</td>
</tr>
<tr>
<td>VS-3000SC</td>
<td>3,030 / 11,470</td>
<td>400 / 27.6 or 500 / 34.5</td>
</tr>
<tr>
<td>VS-4000SC</td>
<td>5,770 / 21,842</td>
<td>400 / 27.6 or 500 / 34.5</td>
</tr>
</tbody>
</table>

---

**Notes:**

- **NSA:** Nominal Service Flow Capacity
- **NTR:** Nominal Tank Capacity
- **MAWP:** Maximum Allowable Working Pressure
- **Weights are for ASME design.**
- **Flow capacity rating down to a 20% contents level with a maximum fall off in tank operating pressure of 15psi (1 bar).**

---

**Footnotes:**

- Specifications are subject to change without prior notification. *HP 2 tanks can be filled to 95% of gross capability. For traditional high-pressure bulk tanks the recommended fill level is only 75% of gross capability. **Components used in the HP 2 Retrofit Kit for converting existing high-pressure tanks to HP 2 technology. ***Flow rate based on nitrogen under standardized conditions with minimum 1” liquid feed and gas return lines.
### Chart's Engineered Bulk Tanks

Engineered Tank Systems

---

**VS-Siphon 100**

HIGH PRESSURE PUMP SYSTEM – FILLING LIQUID CYLINDERS

Chart has engineered the VS-Siphon 100 system to provide an economical, reliable and high performance pumping system for high pressure and liquid cylinder filling. Current cryogenic tank and pumping systems have worked for years, but increased efficiencies are now available with the VS-Siphon 100 system.

The VS-Siphon 100 system combines two revolutionary technologies in cryogenic bulk tanks. Its improved and patented “thermal-siphoning” system reduces and efficiently reprocesses the heat of pumping. Additionally, this system’s composite insulation is 30% to 70% more efficient than Perlite in reducing the effects of heat from the atmosphere.

### Features and Benefits

- Simple and reliable automatic pump start-up in three minutes with 100% product utilization
- Thermal-siphon design manages heat from pump cool down, keeping storage tank pressure down
- Pump priming at tank pressure of 10 psi (0.69 bar) or less without the necessity for pressure building
- Reduce liquid cylinder & ORCA filling losses
- Longer life of high-wear pump parts
- Capability to operate two pumps at once (liquid and HP pump)
- Adapters available to match all standard pumps

### Product Advantages

- Premium materials, joint designs and fabrication methods minimize particle entrapment
- Vertical and horizontal tanks available from 1500 to 90,000 gallon (5678 to 340,200 liter) capacities
- Designed in accordance with ASME code, 175 to 250 psig (12.1 to 17.2 barg) or custom pressure
- Standard and custom grades available to comply with any specifications
- Internal cleaning and surface treatment options available
- Applications: Ozone, LNG, Hydrogen, Electronic Grade (pictured above), Air Separation Unit (ASU), and Engineered-To-Order

---

**Table:**

<table>
<thead>
<tr>
<th>Model</th>
<th>Gross Capacity</th>
<th>Net Capacity</th>
<th>MAWP*</th>
<th>Diameter</th>
<th>Height</th>
<th>Weight**</th>
<th>NER % /day in O₂</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS 3000SC</td>
<td>3,150</td>
<td>2,184</td>
<td>175</td>
<td>12.1</td>
<td>271</td>
<td>12,800</td>
<td>5,810 .25</td>
</tr>
<tr>
<td>VS 6000SC</td>
<td>6,010</td>
<td>2,184</td>
<td>175</td>
<td>12.1</td>
<td>425</td>
<td>21,300</td>
<td>9,660 .15</td>
</tr>
<tr>
<td>VS 9000SC</td>
<td>9,354</td>
<td>2,896</td>
<td>175</td>
<td>12.1</td>
<td>598</td>
<td>32,100</td>
<td>14,560 .10</td>
</tr>
<tr>
<td>VS 11000SC</td>
<td>11,410</td>
<td>2,896</td>
<td>175</td>
<td>12.1</td>
<td>457</td>
<td>37,900</td>
<td>17,191 .10</td>
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<tr>
<td>VS 13000SC</td>
<td>13,470</td>
<td>2,896</td>
<td>175</td>
<td>12.1</td>
<td>516</td>
<td>44,300</td>
<td>20,094 .10</td>
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<tr>
<td>VS 15000SC</td>
<td>15,520</td>
<td>2,896</td>
<td>175</td>
<td>12.1</td>
<td>575</td>
<td>50,600</td>
<td>22,952 .10</td>
</tr>
</tbody>
</table>

**MAWP** - Maximum Allowable Working Pressure. **Weights are for ASME design. (NER) = Nominal Evaporation Rate

---

**Notes:**

- **MAWP** - Maximum Allowable Working Pressure. **Weights are for ASME design. (NER) = Nominal Evaporation Rate
Ensuring cryogenic supply capabilities. Any application - Any time.

**CHILLZILLA® LN₂**
BULK LN₂ SUPPLY MANAGEMENT SYSTEM

**Features and Benefits**

- Dynamic Pressure Builder System™ for precise saturated LN₂ supply regardless of liquid level
- Insulation Baffle with dedicated upper fill port for uninterrupted LN₂ supply during transport refill
- High performance two-stage ambient pressure builder vaporizer for maximum efficiency (20 gpm (4 tph) standard)
- PLC controlled with actual LN₂ storage temperature, pressure and level monitoring for precise tank pressure control (PB and Vent) with automatic desaturation capability
- High flow automatic pressure building valve improves response time and performance after a fill along with a tighter operating pressure dead-band
- Extended legs and vacuum insulated pod for increased head pressure aids in dampening LN₂ saturation pressure fluctuations

**The ChillZilla® Bulk LN₂ Supply Management System is engineered to provide consistent liquid nitrogen for optimum equipment performance. Ideally suited for Individually Quick Frozen (IQF), LN₂ immersion freezers and cryobiological storage freezers, the ChillZilla LN₂ system features a Dynamic Pressure Builder™ for precise saturated liquid supply to the freezer regardless of the LN₂ liquid level. The ChillZilla incorporates an insulation baffle to inhibit the mixing of fresh liquid from a trailer load delivery with the liquid supply to the freezer for better liquid supply stability during the refill.**

With the aid of a patented high performance two-stage ambient pressure building coil, the heat management of this circuit is optimized for fast pressure recovery and reduced heat transfer to the contents. Coupling these unique features with the temperature monitoring of the liquid supply, a Programmable Logic Controller (PLC), VJ feed valve with an extended VJ pod and extended legs, the ChillZilla LN₂ system automatically provides the optimum liquid nitrogen supply to any liquid application.

---

**Table:**

<table>
<thead>
<tr>
<th>Model</th>
<th>Gross Capacity</th>
<th>Nominal Capacity</th>
<th>MinIP**</th>
<th>Diameter</th>
<th>Height</th>
<th>Weight**</th>
<th>NER lb/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>VS 9000CZ</td>
<td>9,354</td>
<td>35,410</td>
<td>8,990</td>
<td>34,031</td>
<td>175</td>
<td>12.1</td>
<td>2,896</td>
</tr>
<tr>
<td>VS 1100CZ</td>
<td>11,416</td>
<td>43,192</td>
<td>10,960</td>
<td>41,438</td>
<td>175</td>
<td>12.1</td>
<td>2,896</td>
</tr>
<tr>
<td>VS 1300CZ</td>
<td>13,470</td>
<td>50,989</td>
<td>13,060</td>
<td>49,437</td>
<td>175</td>
<td>12.1</td>
<td>2,896</td>
</tr>
<tr>
<td>VS 1500CZ</td>
<td>15,520</td>
<td>58,750</td>
<td>15,060</td>
<td>57,008</td>
<td>175</td>
<td>12.1</td>
<td>2,896</td>
</tr>
</tbody>
</table>

**Notes:**

- MinIP = Minimum Inlet Operating Pressure
- NER = Nominal Evaporation Rate
- All weights are for ASME design (NB-SE)
Features and Benefits

- Compact, horizontal low profile: 69”H x 72”W x 187”L
- Integrated large forklift channels provide for easy mobility and secure mounting for an economical installation
- Forklift channels are 48” center to center (18-3/4” min x 57-1/2” max) and provide a stable and secure mounting base without the need for a concrete pad
- On-board high-efficiency gas use vaporizer provides up to 2000 SCFH
- Integrated flat fin pressure-builder with PCV-1 (combo regulator) with single pressure adjusting screw for easy changes to the pressure builder and economizer settings
- Durable, ergonomic plumbing with isolation valves for long service life, easy operation and field maintenance
- Low NER is ideal for low usage accounts with longer delivery cycles for low distribution costs
- Liquid withdrawal package option available: 1” vacuum-insulated female bayonet, vent connected back pressure regulator and low-range PCV-1 spring for low liquid loss and accurate tank pressure control

The new Bulklite™ 1400 is a compact horizontal bulk storage tank designed for economical turnkey installations. The tank can be installed on common precast concrete foundations, asphalt or directly on to class 5 gravel. The integrated forklift channels provide for easy mobility without a crane, further reducing the installation costs. The low profile and low cost installation is ideal for accounts that specify a height restriction and/or pad restriction due to property constraints. The Bulklite is also a good solution for temporary installations. The plumbing is conveniently located on one end of the vessel for easy access in tight locations and it can be filled from a standard transport or an Orca delivery system.

BulkLite™ 1400
COMPACT HORIZONTAL BULK STORAGE

Features and Benefits

- Increased ground clearance further enhancing heat transfer by natural convection.
- High capacity fins measure 8 inches (203 mm) from tip to tip and provide high performance and longevity.
- Low pressure drop, full-bore passages in the elements provides more flow cross section.
- Heat transfer elements up to 40 ft (12 m) are available to meet a range of process demands.
- Standard assembly configurations and ratings are shown on the reverse side.
- MAWP – 580 psig (40 barg) for all aluminum construction.

AMBIENT AIR VAPORIZERS

Cryoquip Wide-Spaced Ambient Vaporizers

Improved unitized construction yields the highest structural strength to cost ratio available and precludes the use of welds that cannot be heat treated, thereby maintaining the greatest structural integrity.

Employs the unique Cryoquip “spar” link design – an efficient attachment method that enhances load carrying capability, while maintaining the highest level of structural integrity available in the industry during all modes of transportation.

Can be deployed or redeployed with ease since these units are capable of resting on a flat bed trailer.

Designed in accordance with ASME Section VIII, Division 1 latest edition. Design capabilities to rate equipment to all the latest wind/seismic codes including ASCE and IBC, available on special request.

Standard Vaporizer Specifications

<table>
<thead>
<tr>
<th>Chart Part Number</th>
<th>Cryoquip Model Number</th>
<th>Flow Rate 8 hours, SCFH, Nitrogen</th>
<th>Inlet/Outlet Connection Size (inches)</th>
<th>Dimensions WxDxH (inches)</th>
<th>Weight (Lbs)</th>
<th>MAWP</th>
</tr>
</thead>
<tbody>
<tr>
<td>25597529</td>
<td>VN-406F-FL10</td>
<td>2,000</td>
<td>3/4 RPT</td>
<td>24 x 10 x 13.5</td>
<td>150</td>
<td>580</td>
</tr>
<tr>
<td>25597207</td>
<td>VN-406F-FL15</td>
<td>3,000</td>
<td>3/4 RPT</td>
<td>30 x 12 x 19.5</td>
<td>150</td>
<td>580</td>
</tr>
<tr>
<td>25597208</td>
<td>VN-406F-FL20</td>
<td>4,000</td>
<td>3/4 RPT</td>
<td>36 x 14 x 24</td>
<td>150</td>
<td>580</td>
</tr>
<tr>
<td>25594567</td>
<td>VN-1209F-FL10</td>
<td>10,000</td>
<td>1-1/2 RPT</td>
<td>24 x 9 x 22.5</td>
<td>645</td>
<td>580</td>
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<tr>
<td>25595711</td>
<td>VN-1216F-FL10</td>
<td>15,000</td>
<td>1-1/2 RPT</td>
<td>28 x 10 x 27</td>
<td>645</td>
<td>580</td>
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<tr>
<td>25593716</td>
<td>VN-1234F-FL10</td>
<td>15,000</td>
<td>2 Ruptile</td>
<td>45 x 6 x 17.7</td>
<td>1,200</td>
<td>580</td>
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<tr>
<td>25594368</td>
<td>VN-1240F-FL20</td>
<td>20,000</td>
<td>2 Ruptile</td>
<td>67 x 8 x 21.3</td>
<td>2,000</td>
<td>580</td>
</tr>
</tbody>
</table>

*MAWP – Maximum Allowable Working Pressure, Section VIII Div. 1 ASME code. **Eight hours continuous flow @ 80% duty cycle in room temp. w/ LN2. ***Weights are for ASME design. (NER) = Nominal Evaporation Rate

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Ensuring cryogenic supply capabilities. Any application - Any time.

Bulk Storage Systems
The VHR Series high-performance storage system creates a competitive advantage with industry-leading hold times and a stainless steel, low maintenance outer shell.

The VHR liquid bulk systems are economical customer stations designed to receive and hold liquid oxygen at a low temperature and pressure. This low-cost storage system is ideal for applications requiring liquid or reserve suppliers, such as hospitals, nursing homes and health care facilities, or as back-up to membrane/PSA systems.

Product Advantages

- Dual relief and rupture disc vent system with a 3-way diverter valve
- Extended Stem Valve on all liquid lines
- Liquid level gauge with low level alarm
- Stainless steel inter-connecting piping
- All stainless steel outer vessel eliminates the need for paint and surface maintenance
- Internal product vaporizer saves pad space and reduces maintenance costs
- Super-insulation system provides industry leading NER performance and extended product hold time
- Optional Certified lab test reports for medical oxygen service available

The VHR Series high-performance storage system creates a competitive advantage with industry-leading hold times and a stainless steel, low maintenance outer shell. The VHR liquid bulk systems are economical customer stations designed to receive and hold liquid oxygen at a low temperature and pressure. This low-cost storage system is ideal for applications requiring liquid or reserve suppliers, such as hospitals, nursing homes and health care facilities, or as back-up to membrane/PSA systems.

Product Advantages

- Industrial gas service pressure control manifold for oxygen, nitrogen and argon service
- Field adjustable mounting stand
- Oxygen compatible brass regulators
- High flow, quarter turn isolation ball valves
- Minimum design temperature: -40°F/-40°C
- Mounting slots (2): 9/16” x 1.5”/14.3 x 38.1 mm
- High pressure options available for up to 500 psi
- Low temperature shutdown options for low pressure manifolds set at -20°F/-29°C, provides temperature protection for downstream components
- Dual pressure regulator options available

<table>
<thead>
<tr>
<th>Model</th>
<th>VHR-120</th>
<th>VHR-260</th>
<th>VHR-400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity - Liquid (gal / liters)</td>
<td>112 / 424</td>
<td>255 / 964</td>
<td>387 / 1,479</td>
</tr>
<tr>
<td>Nit</td>
<td>118 / 447</td>
<td>269 / 1,015</td>
<td>407 / 1,553</td>
</tr>
<tr>
<td>Capacity - Gas @ 1 atm of 70°F (SCF / NM³)</td>
<td>10,500 / 280</td>
<td>23,800 / 860</td>
<td>36,100 / 1,300</td>
</tr>
<tr>
<td>Nitrogen</td>
<td>12,000 / 340</td>
<td>24,900 / 780</td>
<td>44,600 / 1,180</td>
</tr>
<tr>
<td>Argon</td>
<td>12,600 / 340</td>
<td>28,700 / 780</td>
<td>43,600 / 1,150</td>
</tr>
</tbody>
</table>

Dimensions (in / cm)

- Diameter: 30 / 76, 42 / 107, 48 / 122
- Height: 80 / 203, 94 / 239, 100 / 254

Weight (lbs / kg)

- Tare: 700 / 320, 1,700 / 770, 2,100 / 950
- Nitrogen: 1,400 / 640, 3,900 / 1,590, 4,800 / 2,180
- Oxygen: 1,710 / 780, 4,200 / 1,910, 5,800 / 2,630
- Argon: 1,950 / 890, 4,700 / 2,130, 6,600 / 2,990

Maximum Pressure (psig / bar)

- Nitrogen: 250 / 17, 250 / 17, 250 / 17
- Oxygen: 250 / 17, 250 / 17, 250 / 17

Gas Delivery Rate (SCFH₂O / NM₃ O₂)

- Normal*: 340 / 10, 620 / 18, 750 / 22
- Peak**: 490 / 14, 890 / 25, 1,140 / 32

Evaporation Rate (% per day of O₂)

- Normal: 1.1%, 0.62%, 0.62%
- Peak: 1.1%, 0.62%, 0.62%
Ensuring cryogenic supply capabilities. Any application - Any time.

**APPSP-160**

**ADJUSTABLE PRESSURE PHASE SEPARATOR**

**Product Advantages**
- Tighter pressure control for the lower pressure liquid application
- Adjustable outlet pressure ranges
- Working capacity of 160 liters
- Bayonet outlet connection is standard

**Vacuum Jacketed (VJ) Valves**

Cryogenic pipe systems often require valves to properly control the liquid flow to the application. Strategically located valves control flow to a branch of the system or into a use-point drop. A vacuum insulated valve has the benefit of extremely low heat leak for minimum gas boil-off, and it eliminates ice build-up and dripping water.

**VACUUM JACKETED VALVES**

**Product Advantages**
- Available in many sizes and styles such as T or Y pattern.
- Actuators can be installed on valves for control from a remote location or signal. Standard pneumatic actuators are often used to control flow rate or open and close valves based on the state of a switch, control system, or oxygen system E-stop switch.
- Un-insulated economical brass valves are also available for applications that have in-frequent use.

**TRIFECTA X-SERIES**

**LASER ASSIST GAS SUPPLY SYSTEM**

The Trifecta X-Series is the preferred solution for reliable and continuous laser assist gases for delivery pressures up to 550 psi and flow rates up to 15,000 scfh. Drawing liquid from a standard bulk tank, the Trifecta system boosts the liquid pressure by alternately feeding two liquid cylinders equipped with innovative multi-function pressure building vaporizers. The Trifecta solution has no down-time and minimal losses when compared with other laser assist gas solutions. This convenient solution eliminates high-pressure pumps, compressors, cylinder cradles and surge tanks.

**Features and Benefits**
- Fully automated PLC controlled
- No downtime - system maintains pressure and flow when bulk tank is filled
- Cylinders switch by pressure instead of level to further reduce product loss and protect against pressure decay
- Robust design features streamlined all stainless steel piping with only five control valves
- Frame assembly features a protective top cover in a compact footprint with an elevated base for improved ventilation

For All Your Parts Needs... www.chartparts.com

For All Your Parts Needs... www.chartparts.com
Ensuring cryogenic supply capabilities. Any application - Any time.

**Tank-Tel & Tank-Tel\(^{2}\) Gauges**

Go digital with Chart’s Tank-Tel\(^{1}\) system, the industry leading hands-free tank monitoring solution. Forget the time and hassles of calibration charts associated with traditional analog tank monitoring. The Tank-Tel system brings you a low cost, reliable and user-friendly differential pressure (DP) gauge for industrial bulk tank applications.

The Tank-Tel\(^{2}\) has four, 2-way wireless communication options for complete geographical coverage. The advanced data logging supplies 24 data points per day. It also provides historical data to determine trends, forecasting, costs, charts and predicts customer delivery schedule.

**Product Advantages**
- Operates on 12 VDC (12 VDC required for telemetry) or batteries
- Standard on new Chart bulk tanks
- Improved level accuracy-program automatically adjusts for changes in liquid density
- Programmable to match most tanks up to 20,000 gallons
- Upgrade existing tank by adding to or replacing existing gauges
- Available in a low DP model for horizontal tanks

**OnSite Telemetry\(^{1}\)**

The OnSite Telemetry\(^{1}\) System is the only integrated telemetry solution for distribution. It provides distributors the access to levels, tank pressure, and line pressure at customer locations via the Internet. Centralized reports, information management tools and integrated fleet routing/scheduling software allows distributors to operate more efficiently.

**Product Advantages**
- Accurate, up-to-date measurements of liquid levels and pressure
- Self-administered system for maximum service and flexibility
- Account customization for best cost/benefit
- Up to four data ports per call
- Tank and line pressure readings for troubleshooting capabilities
- Email, pager or cell phone alarm capability
- Analog telephone line based
- Easy integration with other gas markets

**DataOnline** provides information management services throughout the DataOnline web portal. With 24/7 availability, fault tolerance and redundancy over a secure Internet connection, DataOnline customers are assured that their data is managed via a safe and reliable platform.

**Product Advantages**
- Secure Internet based data service
- Automated data collection and reporting
- Fault tolerant and redundant system
- Advanced analysis and trending algorithms
- Email, fax or pager alarm notifications
- Data feeds into corporate SAP\(^{\circledast}\) system
- Integration with other data services

Optional Tank-Tel\(^{1}\) for wireless communication with DataOnline

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**Telemetry Options**

**Telemetry Systems**
Ensuring cryogenic supply capabilities. Any application - Any time.

Chart Online Marketing Services

As Chart Inc. continues to provide distributors and customers with the best products and services in the industry, we would like to introduce you to an innovative marketing support tool designed to assist you in growing your business faster! Chart Online Marketing Services is like having your very own 24/7 marketing department providing you the marketing materials needed to drive customers to you. But this is much more than just a site to download product photos, you now have the ability to truly customize brochures, spec sheets and posters with your local contact information and company logo.

3 Easy Steps To Getting Onto Our Website To Order Marketing Materials!

1. Go to http://literature.chart-ind.com
2. Enter your User ID and Password, click Log In
3. Choose a category that you are interested in.

If you don’t currently have an account set up, click on Sign Up, fill out your account details, and click Create. Chart will then have to approve access for you, and then a password will be sent to you to log in.

For All Your Marketing Needs... literature.chart-ind.com

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Note: Density of water at 60°F = 62.40 lbs/ft³

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<td>1 Lb Liquid</td>
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Bulk Storage Systems

Double at Various Saturation Pressures

Correlation Data