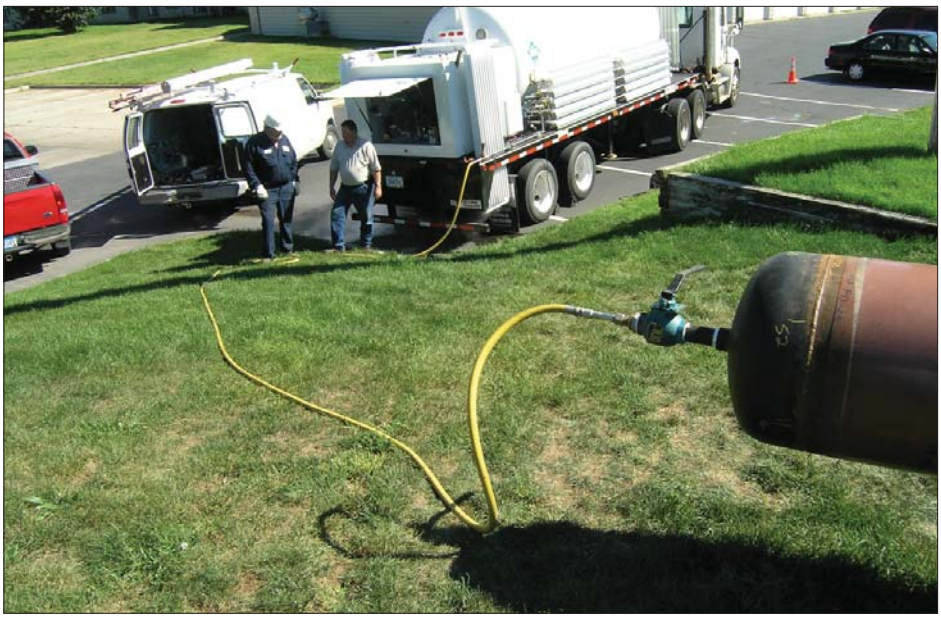
Creating a Competitive Advantage in Mobile Liquid Gas Supply

Chart's Liquid Tube Trailer HP²-2500

By Tim Neeser



Pressure testing new underground pipelines is just one of many applications for the Liquid Tube Trailer HP²-2500

Gas supply for temporary and remote applications has traditionally been supported with high pressure gas tube trailers. These applications range from pressure testing underground piping to stationary bulk tank back up to purging water piping systems. Now, a new product is being introduced by Chart Industries (*www.chart-ind.com*) as an alternative mode of gas supply targeted at these applications—the Liquid Tube Trailer HP²-2500. Just as the name implies, its operation is high pressure, high performance using 2,500 gallons of cryogenic liquefied gas—all on a 28-foot-long trailer.

The baseline benefits of this new product over traditional high pressure gas tube trailers start with the economics of liquid storage using the liquid's thermodynamic heat engine. The liquid tube trailer uses nature to add energy through ambient vaporization only up to the pressure and gas vaporization necessary to satisfy the application. This conserves energy as it replaces a high pressure compressed gas source, where costly energy is wasted from the compression cycle when the gas is depressurized during supply to the application. This energy conservation is the basis for overall lower costs of the gas supply to the application from the Liquid Tube Trailer.

Itemizing the cost savings that come from capital equipment, distribution, operations, and residual gas helps quantify the benefits of the Liquid Tube Trailer over its competition. Not only is the purchase price less than a high pressure tube trailer, but only one asset is required to support the application as liquid can be delivered to the Liquid Tube Trailer at the job site. Losses incurred during refill at the job site will be significantly less than residual gas losses in a high pressure gas tube trailer because of operational differences between the two systems. Refilling the Liquid Tube Trailer at the ASU (air separation unit) or off a cryogenic vessel with a pump at 150 gpm, drives additional distribution (labor) and operational cost savings (electricity and cryogenic high pressure pump seals) when compared to using a high pressure pump at five gpm for refilling a high pressure gas tube trailer. Further operational savings with the Liquid Tube Trailer come from no periodic DOT testing, as compared to a high pressure tube trailer.

Chart's new Liquid Tube Trailer HP²-2500 is engineered for high pressure and high performance.

Versatility is built into the HP²-2500 Liquid Tube Trailer. It can be used as a back-up to deliver liquid and it can even supply liquid nitrogen to applications like concrete cooling, and soil and pipe freezing. The Liquid Tube Trailer has one small limitation—the maximum delivery pressure it can supply is 535 psig. Applications requiring pressures greater than this must use a traditional high pressure gas tube trailer to "top off" the application.

While other mobile pump systems with vaporizers are in use today as a viable gas solution for these niche applications, they require on-board or on-site power for the pump. The Liquid Tube Trailer does not require external power to operate.

Rounding out the Liquid Tube Trailer's specifications is its high flow rate of 15,000 scfh, a rate made possible by its unique multiple vaporizer system design. This patented system, which was rigorously lab and field tested, can achieve this high flow rate and high pressure under a continuous duty cycle to almost emptying the horizontal tank—a remarkable engineering feat.

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