

# Chart's Orca™ System remains top of the food chain

By Molly Burgess

© Chart Industries

In 1996, Chart Industries put its first Orca™ MicroBulk Delivery System into service with the aim of making distribution of cryogenic gases to smaller accounts much more feasible. And it worked. Twenty-seven years later, Chart is still witnessing high demand for the innovation and is having to open new manufacturing sites to keep up.

Today, the Orca truck is one of Chart's core products. Since 2020, in fact, the US cryogenic equipment manufacturer has seen record orders and shipped a record number of Orca units. At the time of writing, Chart is building over 100 units per year at its manufacturing facilities globally.

"Demand for Orca units has really grown over the past few years," Meagan Widmer, Orca Product Manager at Chart Industries, tells *gasworld*. Chart has responded to this demand with additional manufacturing sites. In the US, there are three Chart manufacturing sites that support Orca production, with the final Orca units all being completed in New Prague, Minnesota.

But this wasn't enough. Chart needed to do more to keep up with the Orca systems increased demand, which spans the US, Europe, China, Australia, New Zealand, Canada, Mexico, Guatemala, and Columbia. The company has increased production at all locations in order to control lead times – and to ship Orca units at the quality standards that

Chart customers expect. It is a demanding roll-out.

**The Killer Whale of micro bulk delivery**  
So how did the Orca system become the desirable product that it is today? Let's look at its history.

When Chart was looking to launch a microbulk delivery system, discussion revolved around a simple question. "Why can't Chart make a small liquid delivery system for atmospheric gases, just like it did ten years earlier with bulk CO<sub>2</sub> for McDonald's® restaurants?"

Ultimately the company proved that this could be achieved – and in a strong way. In fact, Chart even went as far as naming the product after the killer whale, with the mentality of "eat lunch or be lunch."

In simple terms, Orca systems are cryogenic tanks mounted to either a truck or a trailer that fills cryogenic storage tanks. But how does this work in practice?

The Orca system has a power generation source (either a stand-alone generator or a power take-off and driveline powering a frame-mounted generator) that supplies the power needed to spin the pump, power the Flowcom® Flow Meter System, and run its various components on the back-end. There is a dispense hose that connects the Orca system to the receiving tank and, once connected with the safety standards met, the fill can begin.

Once the fill has been terminated, the operator disconnects and stows the dispense hose, powers down the system, and hops back into the truck to head to their next delivery.

"There are thousands of tanks all over the globe that vary in size," Widmer confirms. "The Orca™ MicroBulk Delivery System provides a way to fill those tanks. Orca models range in size from 2,000 gallons to 7,200 gallons."

## The brains of an Orca

In 2015, Chart took the technology to the next level when the Flowcom 3000 was introduced. This is a sophisticated flow-metering system, which Widmer says sets the system apart from any others on the market. The Flowcom 3000 brings added safety improvements and streamlines the fill process.

Playing an important role before, during and after a delivery, the Flowcom 3000 ensures that the pump is cooled down and ready to pump liquid. It does this by ensuring that there is appropriate sub-cool, saturation pressure and that all critical components are working as expected to ensure a safe and efficient delivery.

"The Flowcom 3000 handles a lot of the cryogenic aspects of the fill," Widmer explains. "The driver no longer needs to manipulate valves to initiate and control pump cool-down, sub-cool and valve operation."

However, the Flowcom 3000 doesn't just benefit the fill. With the addition of the system, drivers don't need to undergo additional training. It makes the filling process a lot more straightforward and user-friendly.

## High demand for nitrogen

While the Orca system serves several industries, one strong demand is the refilling of nitrogen microbulk tanks and small tanks utilized in Trifecta® gas supply systems for laser cutting.

"Over time, this particular application has experienced significant growth, necessitating the use of larger microbulk tanks," says Chad Vosejka, Director of Industrial Gas Products at Chart Industries. "However, it remains crucial for these tanks to fit within limited spaces, making it essential to employ smaller microbulk delivery units capable of accessing hard-to-reach areas."

To cater to the evolving demand, Chart has developed additional equipment to facilitate the refilling process without disrupting the end user's laser cutting operations.

"The Orca Delivery Assist, for example, enables users to stay online during refills, eliminating the need to shut down their operations. Consequently, it also streamlines the refill process for the driver, who doesn't need to locate the shop supervisor and interrupt operations for tank refills," Widmer adds.

"The continuous evolution of the Orca system, along with the associated equipment enhancements, has played a crucial role in meeting the growing demands of the laser cutting industry and ensuring efficient nitrogen supply for laser cutting operations."

## The future is strong

Chart is working to evolve the Orca system to ensure it stays at the top of the food chain for decades to

come. Widmer confirms that the Orca engineering team is currently working through prototype builds of a very high-pressure (VHP) pump.

Widmer continues, "The VHP product will eliminate the need to blow down high-pressure applications while filling. Once all testing is complete,

and Chart releases the VHP model for market consumption, we fully expect that this will become the go-to pump when ordering Orca MicroBulk Delivery Systems." [gw](#)

© Chart Industries



## DO YOU HAVE AN ORCA UNIT ON THE ROAD?

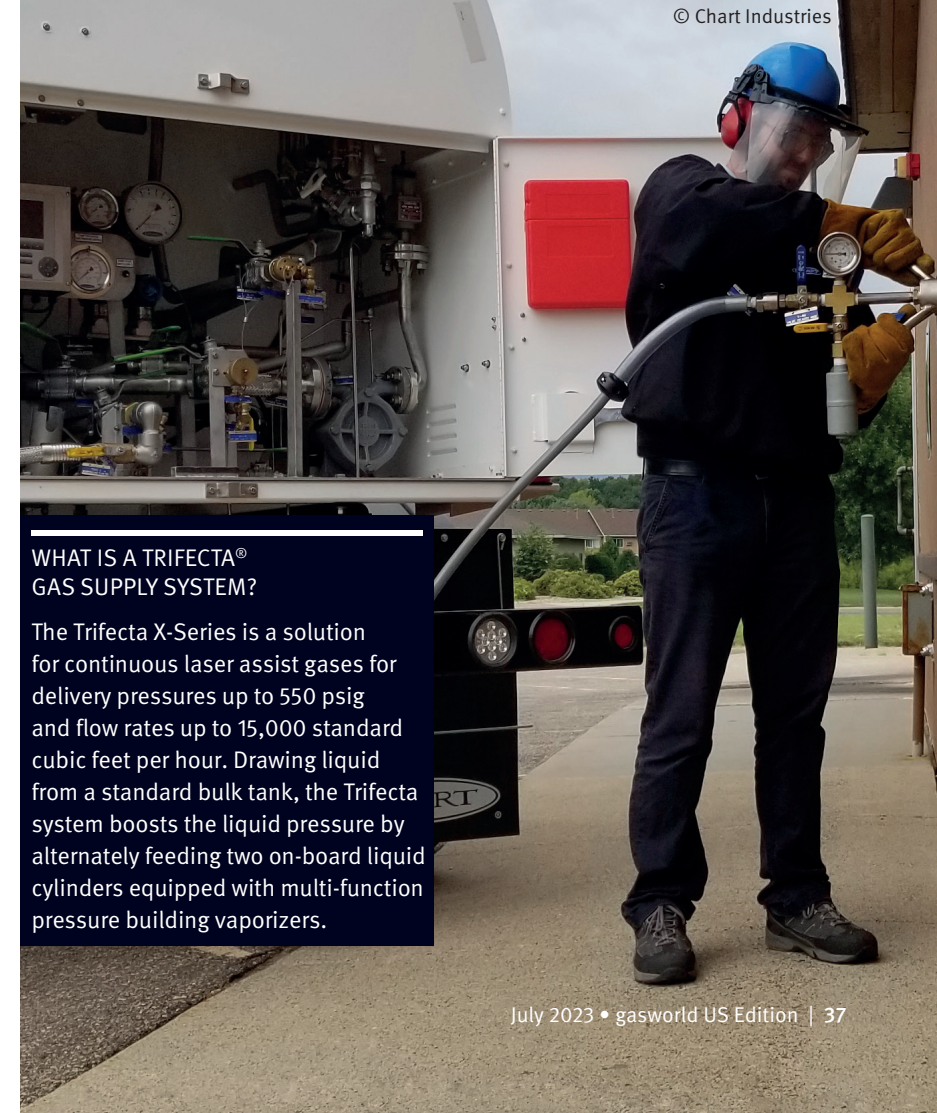
Chart's oldest Orca unit has been remounted and is still in service today. But Chart wants to know how many of its 800-plus Orca units are still on the road today.

Chart is asking customers of Orca units to send a picture of the Orca

truck dating prior to 2002 – and Chart will announce an award for the oldest Orca system still in operation.

Post your picture on social media and tag Chart Industries Inc. or send the picture to [marketing@chartindustries.com](mailto:marketing@chartindustries.com)

© Chart Industries



## WHAT IS A TRIFECTA® GAS SUPPLY SYSTEM?

The Trifecta X-Series is a solution for continuous laser assist gases for delivery pressures up to 550 psig and flow rates up to 15,000 standard cubic feet per hour. Drawing liquid from a standard bulk tank, the Trifecta system boosts the liquid pressure by alternately feeding two on-board liquid cylinders equipped with multi-function pressure building vaporizers.