

MEDICAL EQUIPMENT • SHORT LEAD TIME • SAMPLE PARTS • DIE CASTING

RAPID RESPONSE TO HELP SAVE LIVES



THE OPPORTUNITY:

Twin City Die Casting installed its first piece of ALMCO equipment nearly 45 years ago and have been consistently impressed with every subsequent machine for its reliability and overall performance.

In March 2020, in the first days of the global COVID-19 pandemic, oxygen therapy was critically important to help those stricken by the corona virus. The U.S. government invoked the Defense Production Act, a Korean War-era law that authorizes the government more power over industrial production during emergencies. Large manufacturers were directed to quickly produce huge quantities of respirators.

General Motors (GM) selected Ventec Life Systems, a Twin City Die Castings customer, as their partner. In turn, Ventec Life Systems selected Twin City Die Castings to finish 13 unique parts, comprised of 5 magnesium and 8 aluminum ventilator castings for each ventilator manufactured. The Federal Emergency Management Agency (FEMA) placed an order with GM for 40,000 respirators for immediate production.



ABOUT THE CLIENT

Industry:
Die Casting

Location:
Minneapolis, Minnesota

Founded in 1919, Employee-Owned Twin City Die Castings is a full-service provider of precision aluminum and magnesium die-castings. The company creates custom die casting solutions for the Automotive, Medical, HVAC, Power Sports, Agriculture, and Aerospace and Defense industries, and seeks to work on trail-breaking projects. Twin City Die Castings has 200 employees in three locations in Minnesota and South Dakota and aims to be the partner of choice for industry leaders.

THE SOLUTION:

"I wanted a very clean, smooth surface on the castings, without any ceramic media residue in the ventilator air stream," said Twin City Die Castings President Greg Hansen. "We needed to use steel media and ALMCO's finishing machines are built to handle the weight." Hansen needed equipment fast and contacted ALMCO Regional Sales Manager Jeff Hoium at 6:30 p.m. on a Friday. Early the next morning, Hansen and Hoium met at ALMCO's lab, 90 minutes from Hansen's facility.

Hoium, a seasoned finishing expert, knew how to operate all the lab machines, and had preselected and loaded a steel media into an **ALMCO OR-9VLR Vibratory Round Bowl Finishing Machine**. Hansen initially focused on two particular parts with corners, and while the finish looked really good, there was some distortion. After a couple days of trial and error, the right rotation and amplitude of the machine were determined to eliminate part bending.

Hansen took the samples back to his facility, worked on pricing, and by Monday he knew he wanted to buy the lab machine – the only one available. His toolmakers created a 6-cavity 3-slide tool and produced complete parts in just 6 days – 13 weeks faster than under normal conditions. The OR-9VLR was installed, up and running in 10 days.

THE RESULTS:

Twin City Die Castings ultimately cast and finished the castings for 33,000 critically needed ventilators for FEMA, plus parts for another 20,000 ventilators for the states of New York and California, potentially saving countless lives. Twin City Die Casting was able to start shipping product in April and had the order complete by the end of August 2020. According to Hansen, **"Our ALMCO machine doesn't break down.** These machines are made to break themselves by shaking all day long, especially with metal media, which is very heavy. We don't have mechanical failures with ALMCO machines. **This equipment is built to run for decades – and it does."** In fact, the initial ALMCO machine purchased by Twin City Die Castings in 1977 was sold to a finisher they work with and is still running. The casting for this important project earned the North American Die Casting Association annual competition for Best Aluminum Casting under 1 pound.

"ALMCO gives us a good local advantage. I can go to their lab, see the cycle time and work through the process to determine how we'll quote a part," adds Hansen. **"I'd absolutely recommend ALMCO machines,** and I have. We've had really good experience with their equipment."

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- Greg Hansen

