

## EM Pumps Improve Employee Retention, Safety & Productivity by 180%

Littlestown Foundry has never shied away from an opportunity to reinvent itself.

When it was chartered back in 1916, the foundry specialized in the production of iron hardware goods like hammers, doorstops, vices, and fireplace tools. A year later, the U.S. entered the First World War and Littlestown pivoted production to help with the war effort.

Commercial operations resumed at the close of the war but were swiftly interrupted – this time by the Second World War. Once again, Littlestown adapted to meet the need.

Over the decades that followed, the foundry continued to evolve. Iron castings were eventually phased out and replaced by aluminum ones. Production expanded to serve the medical, food and electrical industries. New products were added to include everything from firefighting nozzles to train bells.

Two decades ago, Littlestown reinvented itself yet again to embrace the efficiency of automation by investing in an automatic molding machine and stack melter. The new equipment worked in tandem with employees and allowed the foundry to produce more goods and fulfill customer requests for new product lines.

One problem remained: the automatic molding machine produced parts almost *too* efficiently. Without an automated pump in place, workers that were still hand ladling metal had difficulty keeping up.

### Hand-Ladling Hurdles: Staffing Woes & Production Bottlenecks

Hand ladling 1400° F molten aluminum into wet sand casts isn't a job for the faint of heart. The work keeps employees on their feet for hours, often in the blistering heat, repeatedly hoisting



heavy, molten metal-filled ladles from furnace to cast.

The challenges posed by the process are something Sean Neiderer, Littlestown Foundry's foundry supervisor and employee of 38 years, knows well – especially when it comes to [recruitment](#).

“There's a word ‘foundry,’ and when people hear it, they think ‘hot and dirty,’” Neiderer said. “The work is very labor intensive and physical. Trying to find people to get in a foundry gets harder and harder every year.”

While the automation solutions Littlestown Foundry implemented likely helped to dispel some of the stigma, workers were still needed to hand-ladle the molten metal – the industry's dirtiest, hardest job and, arguably, the most dangerous.

Even though Littlestown Foundry workers have always worn protective equipment, hand pouring still led occasional mishaps.

The staffing challenges posed by hand ladling ultimately led to production bottlenecks. Employees who hand ladled metal into the hyper-efficient automatic molder, burned out quickly. Those who finished casts with grinding

couldn't keep up with the high volume of parts produced by the automated machine.

The new equipment could make *hundreds* of parts in a matter of hours. But employees – split between ladling and processing – took two to three days to finish the same number of parts. The resulting bottleneck meant the automatic equipment made the foundry only slightly more productive when it came to getting products out the door.

Those involved in the decision to automate processes knew something was missing. To complete the foundry's modern transformation, a solution that would eliminate the need for hand-ladling was needed.

## The Missing Piece

The final piece of the puzzle fell into place when Littlestown Foundry's then president met CMI Novacast's president, Lee Gouwens at a show and learned about CMI's [electromagnetic \(EM\) pumps](#).

The pumps, which are fully enclosed and installed inside furnaces, use electromagnetism to move molten metal – and eliminate the need for hand pouring, altogether. Within a year of the show, Littlestown Foundry ordered and received its first EM pump.

## EM Pumps Supercharge Process & Production

Once installed, the foundry's inaugural EM pump alleviated staffing challenges and removed bottlenecks almost instantly. It also dramatically increased throughput and even improved the consistency of parts.

According to Luke Baugher, Littlestown Foundry's operations manager, EM pumps have provided them with three main benefits: "they save a lot of manpower, reduce safety concerns, and produce consistent results."

### *Reduced Bottlenecks & Fewer Staffing Challenges*

Because EM pumps eliminate the need for hand-ladling, the foundry was able to reallocate labor – which made productivity skyrocket.

Now, instead of hand ladling molten metal, employees are put to use in other areas of the foundry, including production. With more workers freed up to saw and grind, parts no longer languish in the finishing stage for days.

Even though production volume increased, workers are not as susceptible to overwork as they once were. With the pumps doing the hard work of filling molds, employees no longer have to spend long shifts repeatedly lifting and pouring ladles full of molten aluminum.

This improvement not only reduced burnout and turnover – it also made the foundry more attractive to new candidates.

"It's easier to recruit and retain when people come in and don't see guys standing over a vat of molten metal," said Baugher.

"I feel good about our foundry when people come in," added Neiderer. "I've always gotten compliments on how good our foundry looks."

### *Enhanced Safety*

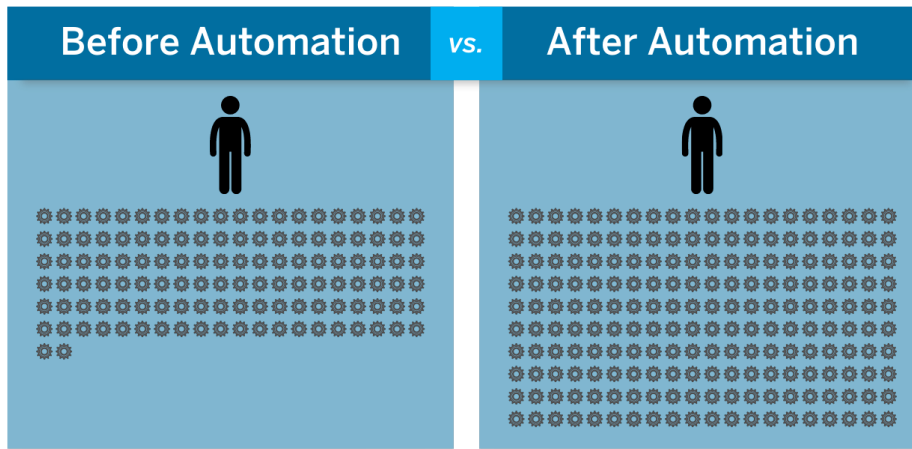
Neiderer and Baugher say EM pumps have made the foundry much safer overall. Small spills and minor burns have been greatly reduced – and the threat of more serious injuries has been significantly reduced.

***"They [EM pumps] save a lot of manpower, reduce safety concerns, and produce consistent results." - Luke Baugher, Operations Manager***

### *Increased Throughput*

Before Littlestown Foundry automated operations, 17 employees worked in molding. Those employees produced an average of 2070 molds per day – or approximately 122 molds per employee, per day.

Now, with the pumps, stack melter, and automatic molding machine in place, only five employees work in molding. Those employees generally produce around 1100 molds per day (that number can rise to 1600, though, depending on the complexity of the part). That means each employee can now produce an average of 220 molds per day – a 180% increase in productivity.



*Prior to automating operations, one employee produced an average of 122 molds per day. Now that the foundry is automated, one employee produces an average of 220 molds per day – a 180% increase in productivity.*

### Greater Consistency

In addition to making casting faster, the pumps also made the process leaner and more efficient, overall. When humans pour molten metal into molds, slight variations – that often generate some amount of waste – are inevitable. EM pumps eliminate those variations.

“I might pour different from someone else,” said Baugher. “The pumps add consistency to our products. It will pour the same amount each time, so you never have to worry about it. You get perfect pours all day if everything is working right.”

Those “perfect pours” eliminate over-pouring and misruns, which waste both metal and the energy needed to remelt imperfect parts. This has allowed the foundry to “squeeze out as much yield as they can,” according to Neiderer.

### A Professional Partnership with a Personal Touch

Now, nearly two decades after the first order was placed, CMI Novacast EM pumps are an integral part of Littlestown Foundry’s operations.

No matter what the future holds, or where it takes the foundry next, Neiderer knows they have the reliability of the pumps to depend on – and the steadfastness of the team at CMI Novacast to guide them.

“Lee understands the business and has always gone above and beyond. There’s a lot of trust between the two of us,” said Neiderer. “Whenever we need something, he gets it done.”

### About CMI Novacast

Founded in 1981, CMI NOVACAST manufactures electromagnetic (EM) pumps with no moving parts that automate the movement of liquid metal in foundry casting and non-casting applications. Foundry casting applications include pumping aluminum, magnesium, zinc, and other alloys to improve the safety, productivity and retention of workers while also increasing metal quality and consistently reducing scrap rates to below 5% – this helps foundries eliminate hand ladling, maximize yield, and reduce production costs with options for gravity pouring and low-pressure side/bottom-filling. Non-casting applications include pumping liquid sodium that keep secondary cooling systems in nuclear power plants available on a 24/7 basis without needing maintenance – ever.