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Foundry-Retail Relationship WORKS OUT

A Michigan foundry stepped in to solve an urgent reshoring need for store-branded fitness products, creating a new, compact supply chain that quickly met customer demand while supporting a Midwest retailer's Made in America mission. **KIM PHELAN, CONTRIBUTING EDITOR**

As the inconspicuous Clark Kents of manufactured products, castings generally go about saving the day cloaked in secrecy, unseen or unrecognized by most consumers—but in an unusual case of partnering directly with a major retail chain, one foundry is not only blazing a new trail outside the normal OEM or distributor channels but has broken the mold of casting concealment from the public. It did so during the nationwide 2020 shutdown mandates, which sparked and then fueled demand for the project.

AFS Corporate Member Great Lakes Castings in Ludington, Michigan, is producing a store-branded line of hand weights for Michigan-based Meijer, a supermarket and home-goods retailer with 240 “supercenters” in six Midwestern states, thereby putting cast iron exercise weights straight into the hands of gym- and workout-enthusiasts, who were almost universally instructed to stay home starting last spring. Nearly overnight, home exercise

equipment became scarce while, at the same time, low-cost overseas suppliers like China (that have “owned” the dumbbell casting market since the ‘90s) were suddenly unable to deliver product. Several iron foundries, including GLC, helped fill the demand by working with gyms and retailers, like

Meijer, whose buyers were scrambling for a new casting vendor.

“It was just about one year ago that things exploded,” said Meijer Team Sports and Fitness Buyer Scott Schuette. “We went from normal everyday sales volume in most categories to selling six or seven times the number of hand



GLC helped forge a tight new Michigan supply-chain for Meijer's 10-, 15- and 20-lb. hand weights. The castings travel 90 minutes south from the Ludington-based foundry for a stop at its Holland machining facility, and then take a final half-hour journey to Grand Haven Powder Coating before they're delivered to Meijer.



Castings are cleaned before the hand weights are sent to Great Lakes Casting's Holland, Michigan milling facility for grinding. If the volume continues to grow, the company plans to implement automatic grinding for the job.

weights we had sold the prior week. Early on, we were watching it and kind of marveling over the business, but it didn't take long to realize that we were going to have to take some unusual steps to stay ahead of this and keep our stocks in place for our customers.

"Our vendor partners' stock evaporated quickly," he added, "And we were buying as much as we could, but the lead time to produce product out of China was a challenge. There was a void that we needed to fill quickly."

The first foundry Schuette contacted in Northern Michigan wasn't a good fit for the job, but thanks to good inter-foundry networking, the COO of that company referred Meijer to Great Lakes Castings (GLC), which responded enthusiastically and was quickly selected to produce the retailer's "Active" brand of 10-, 15- and 20-lb. hand weights.

Finding GLC was fortuitous for the obvious solution to Meijer's product crisis, but an added stroke of luck was the new partnership coinciding with the chain's rebranding of its Active brand, which could now be rolled out as Made in the USA, a high priority at Meijer.

The Michigan foundry, which was simultaneously marking its 75th anniversary, provided value-added services of product design, grinding at its Holland facility, and outsourced painting at Grand Haven Powder Coating. GLC's

sand is also sourced in Muskegon, Michigan, and its steel scrap comes from regional scrap suppliers, giving Meijer the deep satisfaction of supporting the local economy in its home state. The fact that GLC recycles its gating and risers and reclaims bond from sand for green sand reuse made the foundry even more attractive as a Meijer vendor.

No Time to Lose

It was now late summer 2020 and the goal was to have abundant product in time for holiday shopping as well as consumers fulfilling their New Year's

resolutions. Step 1 was designing the weights, which, according to Schuette, couldn't have gone more smoothly. GLC's engineers collaborated with Meijer to design castings that proved to be both manufacturable and cost-competitive while meeting quality and functionality requirements. Hitting the correct weight for dumbbells was clearly a nonnegotiable, but so was creating a very safe casting that would be grasped in bare human hands. GLC stepped up to the challenge.

The foundry used 3D printing to expedite patterns for the weights—removing about two weeks out of the lead time—then used the green sand molding process with its Disamatic 2013 vertical molding machine, which can run in excess of 200 molds per hour, according to long-time foundry expert and GLC Director of Sales and Marketing Ray Burnes.

"Cosmetics is critical on this part, and the Disa produces a really good casting from a surface appearance standpoint," said Burnes. "This product flows through our foundry very well," he added. "We can use yellow or red light iron because [Meijer] isn't after any structural or mechanical properties; they just want mass. So it gives us a great deal of flexibility moving from one iron type to another."

Burnes outlined details of the casting process as follows:



Rob Killips, Great Lakes' recently retired president and CEO, was instrumental in helping get the Meijer business for the foundry.

- 1) Iron is melted in a 10 ton/hour cupola melting center (continuous melting process) and poured into the molds at around 2,400F.
- 2) As the molds cool down the line, they target shaking the castings out of the mold at a temperature below 1,200F.
- 3) At shakeout, they remove sand from the molding process away from the casting. Down the line, the gating is separated from the castings; both the gating and sand are recycled and used again in GLC casting processes.
- 4) From there, they tumble blast the castings and introduce small steel shot to clean the castings.
- 5) After cleaning, gating witness marks are flash ground, then the castings are sent out for painting, the final step of the production process.

"GLC casts the Meijer Active brand logo on each weight, and it also has 'Made in the USA' cast on it in two places," Burnes said. "Our paint source adheres the SKU label with barcode to the handle of the weight, which Meijer scans at their checkouts. That removable label also has our logo on it, and it's the only place you can see that it's made at Great Lakes Castings."

Building Market Muscle

Five hundred initial cast iron hand weights were piloted at 14 Meijer stores in the Grand Rapids area, and the entire stock sold out in 10 days. As gyms around the country continued their struggle to remain open, the Meijer-GLC project was fast-tracked. Eventually, the foundry and its painting vendor each expanded to three shifts to keep up with an aggressive production schedule as Meijer steadily increased distribution to more stores throughout Michigan, Ohio, Indiana, Illinois, Kentucky and Wisconsin.

Creating a new type of relationship neither had experienced before, both Meijer and GLC have had a few dance steps to learn. Working with a retailer was unfamiliar for the foundry, so Meijer helped educate the GLC team in the nuances of bringing a consumer-friendly, finished product to market. Likewise,



"Made in USA" cast into each Active brand dumbbell is resonating with consumers—Meijer reports it's selling every weight it puts on the shelf.

Meijer isn't accustomed to working directly with a foundry, so the high upfront tooling costs, for example, was part of its schooling in metalcasting processes and protocols. But nine months into the partnership, Schuette said GLC's good communication practices were essential to the success of the ongoing project.

"This is an unusual project for both of us, so there was a lot of communication involved," he said. "From Day 1, it was kind of, 'Alright, we've never done this. How can we make it happen?' We just proceeded from there, and the whole [GLC] organization from top to bottom has been super accommodating." He said he also views the mutually rewarding relationship with GLC as one with long-term potential.

Schuette has also found working with the foundry to be an eye-opening experience.

"Most of what I buy for consumers comes from a catalog—it's designed, it's priced, and here it is," said Schuette.

"In this case, we went from nothing but a concept to finish products hitting the Meijer shelves, and that was exciting. And in my role, even though I have a degree in engineering, I certainly learned some things. I've never been involved with a foundry. When COVID rules permitted it, the Great Lakes Castings team was gracious enough to have us out and see the process. And it was very interesting—you just get a real sense of how it's truly American made ... It was cool."

Last year, Meijer sold 1.5 million pieces of fitness equipment, and while the privately-held company doesn't typically share sales numbers, Schuette ventured to estimate the retailer expects to sell over 1.5 million lbs. of the hand weights in 2021.

"At this point, we're limited by nothing more than our production capabilities, and Great Lakes Castings is working to expand that," Schuette said. "Really, we're selling every piece we get." **MC**



Great Lakes Castings went to three shifts once the Meijer dumbbell order increased to supply more stores throughout six Midwestern states.