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**NORTHEAST**



EACH OF THE PLASTIC FORMING CO.'S MACHINES MAKES BETWEEN 450 AND 550 PARTS PER SHIFT.

## CASE BY CASE

THE PLASTIC FORMING CO.'S PROPRIETARY MOLDERS HELP IT BEST SERVE CLIENTS. BY RUSS GAGER

**Secure transportation of delicate instruments** is always a challenge, and one of the best ways to do that is with a dedicated double-wall, blow-molded carrying case with either a foam insert or an integral molded interior. Manufacturing that durable, double-wall case – sometimes in a single shot of blow-molded high-density polyethylene – is the niche of The Plastic Forming Co. Inc.

"Our machinery – all built in-house – was designed specifically to make cases," says Gary Amatrudo, vice president of customer and product development. "Typical blow molding machines don't make cases as effectively as a purpose-built machine."

The reverse also is true. "Our proprietary machinery has really been designed for manufacturing cases – especially in comparatively lower volumes – with quick mold and color changes," President John Womer adds. "If you want to make bottles or auto parts in high production, there are better ways than using our proprietary machinery."

Nevertheless, the company also blow molds other molded products, such as buoys for oil containment booms and various tanks and trays. The company fabricates foam and thermoformed inserts and trays for its cases when an integral blow-molded interior is not the best choice.

Among the products packaged in the company's double-wall cases are professional hand and power tools, portable test instruments and meters, microscopes, surveying transits and other optical devices, heart monitors, medical instruments and educational kits.

"Our machinery is designed essentially to make rectangular flat parts," Amatrudo says. "Most of the blow-molding world is bottles. Our machines were designed with the tooling in mind, and the tooling is tailored to fit the machines to allow very fast changeovers and very little downtime. The core of our business is now, and always has been, what the industry considers short runs. We routinely set up and make 300 to 500 complete units, and those volumes are not something that typical commercial machinery is well-adapted to." Adds Womer, "We are a lower-volume, high-service producer."

The Plastic Forming Co. uses a continuous extrusion method. "In addition to quick changeovers, continuous extrusion gives us a lot of flexibility in terms of part weight distribution using comparatively simple hand tooling, but the trade-off is that it tends to be a slower process than using an accumulator head like those used on bottle-blowing machines," Womer says.

### MACHINE DESIGN

Three in-house designers work on the company's production machines and molds. "We start with commercial extruders and commercial granulators, and pretty much everything else is designed and built by us," Amatrudo says. "That said, the bulk of our design and machine shop efforts are focused on mold-building."

The company's blow-molding ma-

chines last approximately 20 years, and the last one that was designed and built was in 2000. "In 2005, we adapted an older design to incorporate more modern controls," Amatrudo says. "In some of our rebuilt machinery, we have incorporated more sophisticated programmable controls, with more optical and less physical sensing. Also, the positioning accuracy is much higher, which allows us better control so that we can make more consistent parts."

The continuous extrusion method speeds changes between jobs. "In our industry, we are pretty much the short-run specialist, so we've designed and built everything around being able to do short, very customer-specific runs," Amatrudo maintains.

#### CYCLE TIME

The typical cycle time required to make a blow-molded case is approximately 70 seconds, the time it takes to extrude a tube of molten plastic called a parison that is then transferred into the mold. "And while we're blowing one part in the mold, we are creating the parison for the next part," Amatrudo explains. "Over the years, we've adjusted our cycle times to better utilize the production staff. It's a balance of machine time and man-hours, and we've slowed the part cycle down to better utilize the staff."

"While one part is in the mold and the parison is being formed for the next part, the machine operator is deflashing and performing various secondary operations on the part that just came out of the mold," Womer adds.

Each machine makes between 450 and 500 parts per shift. "So a 500-piece run of a case molded with both halves at once would be a one-shift run," Amatrudo calculates. The company operates 12 molding machines in total.

The Plastic Forming Co. keeps a

large inventory of 60-plus case sizes for immediate shipment within 48 hours. In addition, the company has proprietary tooling to make more than 180 different exterior sizes and configurations in all.

"Part of our strategy has been to focus on offering a proprietary line of case exteriors to sell as both off-the-shelf items and as customized products," Womer says, "That has allowed us to sell our cases to smaller manufacturers who want cases specifically designed for their products without the cost and complexity of having to create a custom mold from scratch."

#### TWO LOCATIONS

Most of the company's case manufacturing is performed at its 30,000-square-foot plant in Massillon, Ohio. The 30,000-square-foot headquarters in Woodbridge, Conn., houses large part manufacturing, the design and engineering departments, the machine and mold shop, sales, customer service and all other back-office operations.

Besides the company's manufacturing flexibility, quick changeovers and ability to do short runs, another competitive advantage is its design capabilities. "All of our products are completely designed and made in the USA, so shipping lead times are shorter," Business Development Specialist Jacquie Gilmore stresses.

Womer attributes the company's success to the employees' commitment, their 25 percent stock ownership and being very customer-focused. "Something that we pride ourselves on is the duration of our customer relationships," he says. "On any given day, we are shipping to customers that we have been supplying for 30-plus years. As their products change, we supply them with new packaging." **mt**



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