

A JUMBO TARGET

Pet All accumulator-head system takes aim at rotomolding

By Robert Grace

ROTATIONAL molding traditionally has been the go-to technology for molding very large plastic parts. But a 34-year-old Canadian maker of blow molding machinery wants to change all that. At NPE2018, Pet All Manufacturing introduced its Jumbo series of accumulator-head blow molding machines, including what it calls the world's largest such machine — capable of producing plastic products with a volume of up to 25,000 liters.

Most people would associate a large, accumulator-head blow molding machine as having a shot size greater than 110 pounds. Until now, a few machines larger than that have been built, and those have mostly been one-off, specialty machines. Rotational molding has been the main process for anything larger, as rotomolding machines are easier to scale up in size than blow molding machines.

But Pet All believes its Jumbo series offers some true competition to rotational molding. This series of scaled-up machines offers shot sizes of up to about 1,540 pounds, with 2,000mm-diameter head tooling. Platens can be configured for wide and/or long parts and offer large daylight openings for molding and removing large blow molded parts. Pet All says it leverages Asian manufacturing partners to build its Jumbo machines with quick lead times and competitive pricing. "We offer up to six-layer heads as well," U.S. technical manager Andrew Hobson said. "We work with our customers to build machines to suit their specific needs."

With the new series, Hobson said, Pet All intends to give molders "an option for quicker cycle times and multilayer capabilities of blow molding." With a footprint of about 29.5 feet by 14.8 feet, the smallest machine in the series can handle a maximum part volume of 1,000 liters; the biggest machine covers about 72.2 feet by 52.5 feet.

The availability of the Jumbo series offers a number of advantages over rotomolding machines.



Pet All's biggest Jumbo-series machine is capable of producing parts with a volume of up to 25,000 liters.

For example, rotomolding cycles can take 45 minutes to 1 hour for large parts; components of the process, such as mold filling and part take-out, require significant operator labor. By contrast, Hobson estimated that the Jumbo's largest machine could make 3.5 parts an hour — or about one every 17 minutes or so.

Tooling costs are another consideration. Historically, rotational mold tools are less expensive than blow molds. But if you need to build multiple rotational molds to manufacture a particularly in-demand part, this cost advantage disappears quickly. "Rotational molding historically has been really good for low quantities, whereas blow molding has made sense for higher volumes, but there is not a good rule of thumb to go by," Hobson noted.

Also, compared with rotomolding, blow molding presents more choices in materials, including some that could lower costs or reduce part weight. Blow molders can use regrind in the inner layers of parts, with virgin and colorant on the visible outside and/or inside layers. Some manufacturers also build large, continuous extrusion machines that can mold multilayer parts such as fuel tanks with a barrier layer for emissions standards.

Another factor to consider, Hobson said, is reprocessing the scrap. In blow molding, it is relatively simple to grind up the scrap parts and flash and add the material back into the resin stream. In rotational molding, most molders send the parts out to have the material processed so they can use it again.

Molding with the Jumbo series, though, poses its own challenges. Housing these large machines, equipment for secondary operations and the big parts is a tall order — the biggest of the Jumbo machines stands in at over 40 feet high. At NPE2018, Michael Merrick, the chairman and founder of Pet All, recounted how a customer in the Southeast recently bought one of the machines, only to discover its 37-foot factory ceiling was not high enough to accommodate it.

So, what can one mold with the company's new Jumbo machines?

"Clean water is a huge issue around the world," Hobson said, "so, obviously, tanks are in great demand." Also, the need for chemical storage for farming and industrial applications is ever increasing. Affordable housing is another major issue. And one U.S. customer bought three Jumbo machines with 14-foot platens to blow mold kayaks.

"In a Jumbo blow molding machine, I can envision panels being blow molded for homes and also temporary housing for use after natural disasters," Hobson said.

Clearly, he noted, many factors, including part design and production volumes, need to be considered when deciding between blow molding and rotational molding — but size no longer has to be one of them. ■

Robert Grace, contributor
 bob@rcgrace.com

Contact:
 Pet All Manufacturing Inc.
 Markham, Ontario, 905-305-1797,
 www.petallmfg.com