

# Reducing Wide Mouth PET Packaging Costs

**By dividing the PET bottle manufacturing process into two steps instead of one, manufacturers experience significant savings in shipping and inventory costs.**



For decades, producers of PET blow-molded containers have been shipping bulky bottles and jars that contained nothing more than air, in many cases over long distances. Until these containers are filled with product, they take up valuable space on cargo pallets and in transport vehicles — not to mention warehouse shelves. This is particularly true with wide-mouth, bulk containers that are used to package a wide range of products ranging from snacks to candies and novelty items.

Today, however, a far more efficient two-step manufacturing process is eliminating the need to transport and store empty PET containers prior to filling. In the two-step process, the first step begins with the production of “un-inflated” plastic bottles, called pre-forms, which can be nested like Dixie Cups in space-saving stacks for transport and storage. During the second step, the pre-forms are inflated to full size using stretch blow molding equipment that can be purchased or leased for on-site production, or outsourced to a local vendor.

By breaking the process into two steps, with the second step performed locally, manufacturers are enjoying unprecedented savings in transportation and inventory costs, along with increased production flexibility to create PET containers essentially on-demand.

“Some of our customers have a little trouble visualizing this process,” says Jack “The Jar Man” Podnar, President of Rez-Tech Corp., a Kent, Ohio-based manufacturer of wide-mouth PET and vinyl plastic containers. “But once they see the bulk-packed pre-forms, they immediately understand the tremendous savings

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on shipping and storing.”

The potential savings become much clearer when you learn that instead of shipping 5,000 to 10,000 full-size containers in a shipment, a manufacturer could ship 100,000 pre-forms — 10 to 20 times as much — at a similar cost. Of course, that improved efficiency means a very substantial savings of energy, always a plus benefit.

### Far reaching benefits

Podnar, a leading manufacturer of wide mouth PET and vinyl containers, has become a pioneer in two-step molding of packaging products in the US.

“I thought this was a winning concept, but until recently, nobody in the U.S. made pre-forms for wide-mouth containers,” he says. “The most competitive supplier I could find was located in Asia. But no matter what the other economics of going overseas, when you are buying pre-forms from a supplier at such a vast distance, you lose your savings on shipping.

According to Podnar the lead time for transit from distances such as Asia are also considerably longer than those required for domestic shipments, possibly six weeks or longer. He says that lead times translate to big dollars. While outsourcing PET pre-forms overseas, he estimates that he continually had \$400,000-\$500,000 floating on the water, in transit.

The other major benefit of a two-step PET molding process is the extensive flexibility that it provides for managing inventory.

“When you are using the pre-forms, you can more easily order bottles on demand as you need them,” says Podnar. “So, instead of waiting three to five weeks for new shipments, and having a lot of inventory in transit, the lower cost of shipping makes it affordable to inventory a larger supply. Also, since the PET pre-forms are stored in a much more compact manner, you don’t require the physical warehouse space that you would with full-size blow molded containers.”

Given the potential costs savings due to reduced shipping costs and improved inventory management, Podnar made the decision to custom design his own, less expensive stretch blow molding equipment so Rez-Tech could begin manufacturing and delivering pre-forms within the United States, and also offer optional, low-cost step-two services.

“After researching the available technology needed to create quality pre-forms both domestically and overseas, I decided to design my own equipment,” he explains. “The step-two equipment is not quite as fast as more expensive high-volume equipment, but that is virtually irrelevant if you simply allow a little more lead time.”

Podnar adds that certain shapes such as handles are not possible using a pre-form, and that there is a small trade-off in the visual quality of the final product.

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However, for most wide-mouth applications, the final result is very comparable to most conventional extrusion molding techniques.

### New options available

For the second step of the PET container manufacturing process, customers have the option of purchasing conventional stretch blow molding equipment. Another option is the proprietary lower-speed option from Rez-Tech, which has the advantage of costing approximately half the price. If a company does not want to purchase equipment, they can farm it out to a local supplier to do the work.

Rez-Tech also provides a turnkey lease option for its equipment that includes all maintenance. The advantages of a lease arrangement include economical possession of equipment on site, plus expert service and the assurance that the equipment is compatible with the supplier's pre-forms.

In the wide-mouth container industry, Podnar recognizes that many manufacturers like to field test alternative package designs before committing to producing them in volume. In such cases Rez-Tech can deliver fully inflated PET wide-mouth containers using the two-step process until such point when the customer decides to commit to the package design and/or invest in on-site stretch blow molding equipment.

"That allows the customer to do some market testing to ensure that they have selected the best PET container design," says Podnar. "It also allows them time to grow more comfortably into the investment, if capital allocation is an issue."

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