

Innovating the Gel Pack Manufacturing Process:

ARTIC EXPRESS PACK & KPS GLOBAL

WHAT IS IT?

Arctic Express Pack is a fully automated gel pack production system that is installed at end user's facilities. The patented technology allows the production of gel packs on-demand, maintain desired/specified gel pack temperatures, significantly reduce required storage and freezer space, reduces transportation and labor cost all while reducing their carbon footprint up to 97%. The unit had three key design considerations:



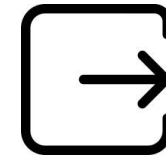
FOOTPRINT

The KPS Global design team determined that the basic freezer unit didn't need to have a large footprint to produce the needed gel packs. In fact, the unit could be as small as 12 feet tall by 6 feet wide and 6 feet deep.



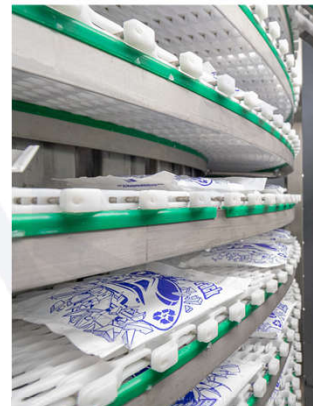
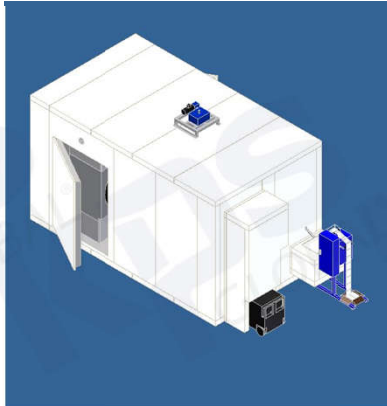
TIME TO FREEZE

Traditional pallet-based manufacturing methods take 2 ½ weeks to freeze compared to as few as 45 minutes with the Arctic Express Pack System. With this solution, the gel-pack temperature can be defined by the user and allows for on demand production.



OUTPUT

The conveyor needed to be able to be adjusted up or down in height so capacity could scale from producing, for example, 500 gel packs in one run to 5,000 or more



HOW IT WORKS:

The Arctic Express Pack manufacturing process has been engineered to be completely automated yet can easily accommodate human intervention at the front and back end of the production process.



A box of chain-linked bags filled with a freezing compound is placed at the head of the freezer

The bags are fed into a water injection system that opens, fills, reseals and separates them to be introduced to the freezer.

The bags are fed onto a conveyor through a specially designed chamber that restricts warm air intrusion and cold air to escape

Needing as little as 45 minutes to reach the desired frozen gel pack condition, the KPSG freezer unit can achieve temperatures as low as -36°F

The bags exit the freezer through another airtight slot and are delivered into portable cooler totes or directly into the packaging.

BENEFITS:

There are several benefits to the system but the ability to get gel packs to a user-specified temperature in a smaller footprint and only use what you need is a game changer. The additional benefit is the reduction in carbon footprint.



\$100,000 Annual Savings

In a cost-analysis comparison between the Artic Express system and a traditional gel pack manufacturer, the results found that a facility that uses 24,000 gel packs a week will save more than \$100,000 annually in ancillary costs by converting to the Arctic Express Pack system.



Up to 97% Carbon-footprint reduction

As measured in kilograms of CO2 equivalent for transportation, freezer, forklift and cardboard waste activities, of 96% during the production of 24,000 16-ounce gel packs, and 97% for a 24,000-unit pallet of 48-ounce gel packs.



99% Reduction in Square Footage

The footprint needed for the Arctic system is what makes this unit unique. Rather than needing the 100,000 cubic feet of warehouse space to house the pallets of gel packs, the KPS Global freezer has a footprint of just 72 sq ft