

Frozen Ready-to-eat Cookie Dough

Rolling in Cookie Dough Demand, Rhino Foods Boosts IQF Throughput with New Spiral Freezer from Messer



By installing a new, advanced-design Messer spiral freezer, Rhino Foods boosted production of ice cream and ready-to-eat inclusions. The company improved both freezing and labor efficiency in a smaller space.

Rhino Foods Inc. (Burlington, Vt.) invented ready-to-eat cookie dough for commercial use in ice cream 30 years ago and has been the industry leader ever since. The company provides quality individually quick frozen (IQF) cookie dough inclusions for ice cream brands across the country. To help Rhino Foods meet rising demand for its products, Messer recently installed its next generation spiral freezer, boosting potential production capacity by 45% in a single freezer, saving valuable floor space and line labor while maintaining their rigorous high product quality.

Background

Embarking on a business expansion in 2018, Rhino Foods turned to Messer to meet its rising product demand. At that time Messer installed its latest tunnel freezing innovation, the Wave Freezer, to increase throughput while

maintaining adherence to a strict temperature profile to achieve superior product quality. However, in 2021, Rhino Foods reached out to Messer once again as it had outgrown its freezing capacity and needed a freezing solution with a reduced linear footprint.

Challenge

“Increasing our production meant adding new higher-capacity packaging equipment that took up more linear space on the production line. We needed a freezing solution that could do more work in less space,” Rhino Foods Director of Operations Gene Steinfeld explains.

Rhino Foods’ previous process was to individually quick freeze the cookie dough, move it to a secondary freezing environment to achieve equilibrated temperature specifications, and then package the product.

“This was a labor-intensive process and used a lot of floorspace - we knew we had to streamline our process and Messer’s team would help us find the right solution.”

Solution: Quality quick freeze at high throughput in less space

Working collaboratively, Messer’s team performed onsite product testing and recommended Messer’s new Spiral 2.0 freezer. The freezer’s high belt speed allowed for spacing between product pieces entering the freezing zone and gave enough residence time to achieve an equilibrated product temperature upon exit from the freezer. The increased heat transfer rate of the new spiral allows for higher capacity, more challenging product recipes to be quick frozen and consequently, a wider range of SKUs to be processed.

The advanced design can remove heat 15% faster than traditional spirals, improving throughput and efficiency in a smaller footprint. Spiral 2.0 is designed with durability and longevity in mind to handle and sustain high production demands while maintaining design integrity. Its surfaces are easily accessible and sloped toward floor drains, reducing cleaning and verification time.

In addition, Spiral 2.0 is fabricated in smaller sections to simplify assembly and reduce rigging time by 50%. At Rhino Foods, it was moved into the production facility through existing loading dock doors and assembled inside the plant without wall demolition.

Results

"Spiral 2.0 met our objectives. We increased production capacity by 25% and have room to grow up to 45%, perhaps even higher depending on the product," Steinfeld reports.

Rhino Foods improved not only its freezing capacity, it also improved quality with less product handling. The Messer

Spiral was specifically designed to achieve an equilibrated product temperature upon exit of the freezer. This not only met Rhino's customer's high-quality expectations, it reduced unnecessary handling or the need to stage product to achieve final temperature specifications. The product pieces can now move directly to packaging and delivery to commercial brands reducing storage time and allowing critical labor to be redeployed to other operations within the plant.

"We were able to gain 17 linear feet of valuable production floor space with the new spiral which was crucial to freeing up footprint for the new packaging equipment and removed the product handling step altogether to allocate labor elsewhere," Steinfeld notes. "Our working partnership with Messer has been a win-win. As we've grown, they have the technology and experienced team to help us meet our production goals."



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