

AUTOMATED PACKAGING IS THE ICING ON THE (CHEESE)CAKE

Automated packaging at Culinary Art's Specialties increases rates to 45 frozen cheesecakes per minute.

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Packaged
cheesecakes speed
along gently on CAS's
production line with a
product integrity rate
near 100%.

Culinary Art's Specialties (CAS) Inc., a manufacturer of frozen cheesecakes, tripled the size of its operations by building a 53,000-square-foot manufacturing facility in Cheektowaga, N.Y., outside of Buffalo. In doing so, it upgraded a manual packaging line to an automated system that could handle 45 frozen cheesecakes per minute. The facility has the capacity to produce and ship 150,000 pounds of the dessert each week—30,000 cheesecakes daily.

"When we planned the move to our new building, we redesigned the entire production process," says Art Keller, vice president of operations. "We started from scratch and designed a facility to manufacture the world's best cheesecakes with a very high level of throughput efficiency without sacrificing product quality."

It was critical to move the delicate frozen desserts undamaged through the packaging cycle with placement precision while toppings and plastic domes are applied and the cakes are shrink wrapped, individually boxed, labeled and case-packed. To achieve this, CAS uses a unique conveying solution from Shuttleworth Inc. It virtually eliminates cheesecake damage, a problem the company was experiencing with its prior manual packaging.

Equipped with smart conveyor technology from Shuttleworth, the automated packaging line processes 2,700 frozen cheesecakes per hour with a product integrity rate of 99.9%. It handles cakes 6 inches in diameter and smaller.

"Our prior packaging lines were largely manual," explains Keller. "One of the challenges we needed to solve with the design of the automated system

was, how do we now move our cheesecakes through the packaging line before they are shrink wrapped without having them touch anything, as this would mar the



product. We looked at a number of conveyor systems, but they permitted too much contact with the cheesecakes. It was a huge issue for us."

From freezer to wrapper

After blast freezing, the cake is inverted to release it from the pan and placed atop a paperboard ring. A topping is added and a plastic dome is applied. The product registration into the shrink wrapper required that the cakes be separated, spaced and centered on the conveyor.

Shrink Packaging Systems handled the procurement and integration of the Shanklin HS1 shrink wrapper from Sealed Air Corp. Shuttleworth engineered the conveyor to prepare the cheesecakes for induction into the automatic horizontal continuous-motion side sealer, rated at a maximum 100 cycles per minute. The spacing had to be highly precise, a tolerance of no more than 0.5 inch.

Shuttleworth engineered two different solutions. First, it designed a sequential series of different height rollers that center the cakes on the conveyor. Second, the conveyors offer Slip-Torque technology that minimizes damage by creating extremely low back-pressure accumulation.

The conveyor is food-grade, all-stainless steel construction designed for heavy duty washdown.

After shrink wrapping, the cheesecakes are cartoned using a semi-automatic carton erector from Econocorp. The conveyor then rotates the cartons and indexes them past a printer that applies a date code.





"Shuttleworth designed this part of the conveyor with tightly spaced rollers so we get a perfectly smooth motion as the boxes go by the printhead," continues Keller. "The resulting code is very legible. With our prior system, we were having difficulty with blurring of the printed codes because of vibration as the cartons were passing."

The conveyor integrates an adjustable post that tilts the box slightly to allow the printer to imprint at the desired box position (which varies depending on the product). The conveyor then routes the cartons to a Wepackit case packer, where again, the low back-pressure of Slip-Torque accumulation is used to stage the cartons ahead of the case packer.

Along the way the cake's weight is verified by a Mettler-Toledo checkweigher.

The new conveying capability has enabled Culinary Art's to automate and streamline its entire packaging line. The company has been able to transfer and improve upon the product integrity of the manual processes with its automated system.

"The packaging line automation has significantly reduced our product defects to less than one-tenth of 1%, while increasing our throughput," Keller explains. "This significantly surpasses what we could do on a manual level. With the success of this line we are now building out a second automated packaging line."

That will be welcome—Keller says that the main line operates at least six days weekly, 18 hours a day. The upgraded

second line, which will be a virtual duplicate of the first line, will be more flexible, to handle a range of cake sizes up to 10 inches in diameter. It's expected to be in place by the end of 2011. **F&BP**

Rick Lingle, executive editor, with Jim McMahon, president, Zebra Communications

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