

SOLUTIONS IN ACTION

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When it comes to handling fresh-made delicacies like apple pie, the challenge for manufacturers is to maximize efficiency without damaging the goods. **Shuttleworth**, an Indiana-based builder of automated material handling and conveyor systems for the food processing, healthcare and paper industries, has applied its more than 40 years of industry expertise to develop a material handling solution that could meet those challenges, the **Easy Clean™ Bakery Conveyor**.

Hot off the manufacturing line, pies, cakes, tortillas and other delicacies need to be quickly refrigerated to preserve quality. The Bakery Conveyor gently diverts products into multiple lanes and ushers them into the freezer with careful precision – even the slightest contact could damage a pie's flaky crust.

Running a massive, 20-to-40-degrees-below-zero freezer is expensive for food manufacturers, so Shuttleworth designed a multi-lane machine. This design allows customers to optimize freezer space. Once frozen, the products are reunited into a single lane to the packaging station.

As its name implies, the Easy Clean Bakery Conveyor design simplifies the washdown process due to its stainless steel framework and horizontal, flat surfaces. The machine offers another enticing benefit for food manufacturers: low back pressure. To protect the fragile delicacies, the loose fit roller surface prevents products from being damaged due to excess line pressure.

Smooth handling does not sacrifice speed, as the Bakery Conveyor shuttles approximately 200 products per minute. In addition, an operator can easily change from one product to the next in less than five minutes.

Managing this precise pastry application, Shuttleworth leverages the Rockwell Automation Integrated Architecture® for both discrete and motion capabilities. At the heart of the solution, an Allen-Bradley® ControlLogix® programmable automation controller manages the movement between all of the mechanical components, helping eliminate the risk of collision between pies.



Shuttleworth's Easy Clean™ Bakery Conveyor



*Allen-Bradley® ControlLogix®
Programmable Automation Controller*



*Allen-Bradley® Kinetix® 6000
Servo Drive*

Solutions in action at Pack Expo 2008

To enable precise motion control and improved synchronization, the Bakery Conveyor leverages Allen-Bradley Kinetix® 6000 servo drives. These servo motors help smooth the process of dividing products from one lane to many and then merging them back to a single lane. Precise, servo-driven positioning capabilities also allow customers to effectively space products in the freezer.



“Our customers want to maximize the number of products they freeze each minute while minimizing the number of products damaged on the conveyor,” said Todd Eckert, marketing manager, Shuttleworth, Inc. “Integrated motion capabilities help us meet and exceed these performance demands.”

Integrated information capabilities of the system allow users to better monitor the manufacturing process. By leveraging the Allen-Bradley PanelView™ Plus human-machine interface, users have a window to all aspects of the machine. Operators can access real-time diagnostics, such as line efficiencies, making it possible for them to fine tune different zones of the system to accommodate a back up or shortage in specific areas. At the touch of a finger, operators can also efficiently change from one product to the next.

Despite the fact that Shuttleworth has delivered more than 18,000 product handling systems such as this one, the company’s systems are far from a canned solution. “We make an effort to understand each customer’s needs individually and provide a system tailored to their business situation,” said Eckert.

The secret to Shuttleworth’s ability to provide cost-effective customization has been the company’s partnership with Rockwell Automation. “Our ability to leverage the Rockwell Automation experience and quality across all areas of manufacturing has added tremendous value for us and our customers,” said Eckert.

Perhaps the reason the partnership has worked so well is because of the similarities between the two company philosophies.

“Being a family owned, family-named company comes with an added pressure to uphold a reputation for quality,” said Eckert. “To us, Rockwell Automation represents that same high-standard of quality. Installing Rockwell Automation components backed by their global service and support team allows us to rest assured that our name and reputation have that extra level of service and protection built in.”

For more information, contact:

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