

Drive & Control profile

Pedigree Ovens expands business with Veronica cartoner



Ultra Packaging's Veronica vertical cartoner provides an efficient, compact cartoning solution that was custom-engineered to handle both conventional and gable-top cartons, using Rexroth's IndraMotion XLC platform for complete automation control and fast changeovers.

Pedigree Ovens (www.thepoundbakery.com, Harvard, IL) is a contract manufacturer in the niche market of high-end dog treats. Baking and packaging products for 60 brands, Pedigree produces an array of treats packaged in cartons of varying sizes and configurations. To do so, it's critical that its packaging systems be flexible enough to handle high throughput, short turnaround times and fast changeovers between jobs.

The company recently decided to invest in cartoning technology to improve productivity and increase capacity. It chose the compact Veronica Vertical Cartoner from Ultra Packaging, Inc. (www.ultrapackaging.com, Bensenville, IL), which operates with a complete Bosch Rexroth control and drives solution.

Challenge:

Help Pedigree Ovens meet growing demand for producing and packaging pet "treats" with a flexible, high-throughput cartoning machine able to package both conventional and gable-top cartons

Rexroth Solution:

- IndraDrive Mi cabinet-free drive-motor solution
- IndraMotion XLC L25 motion-logic automation controller supports up to 16 axis of motion
- IndraWorks Engineering complete software suite supports HMIs, PLCs, Drives and I/O in one IEC 61131-3 environment
- IndraControl VCP 35 HMI, 10.4" touchscreen display

Results:

- Replaced manual cartoning with automated system
- Single machine supports both conventional and gable-top closures
- Changeovers for different products or different carton sizes fast and easy to accomplish
- Pedigree can take on larger packaging orders and has increased production capacity

Operating at maximum capacity

The market for specialty pet treats is competitive, with retail shelf space at a premium. Manufacturers need to find ways to stand out from the competition, and eye-catching packaging is an important and successful technique.

While some of Pedigree's clients use conventional folded top cartons, others request a gable-top closure for improved shelf appeal. In addition, Pedigree supports multiple package dimensions, ranging from 4 to 10.5 inches high, 3 to 9 inches wide and .75 to 3.5 inches deep.

With approximately 60 clients—each with multiple treat types or flavors and up to five packaging variations—Pedigree's success depends on its ability to meet all client requests. Until recently, the company used a manual cartoning process to fulfil customers' needs. Once treats were bagged, a conveyor brought the filled bags to manual stations where they were inserted into erected boxes. The boxes were then manually sealed with glue guns.

"When we were smaller, we were able to do everything manually," said Kurt Stricker, owner of Pedigree Ovens. "But when we started getting larger requests, only to turn them down because we didn't have the cartoning, we knew it was time to expand our limited capacity."

Automating the cartoning process

Eager to boost throughput and enable expansion without adding significantly to costs, Pedigree researched several machines and selected Ultra Packaging's Veronica cartoner. The Veronica is a user-friendly seven-axis cartoner that erects cartons from flat



Pedigree Ovens recently installed the Veronica cartoner from Ultra Packaging, automating the cartoning process for pet treats and helping the company increase throughput and grow its capacity to handle contract packaging projects.

paperboard blanks and efficiently transports, closes and glues the cartons.

It is engineered to be a cost-effective solution for growing companies that need fast changeovers and flexibility; key to the Veronica's versatility is its advanced control and drives platform from Bosch Rexroth.

"Rexroth components help make the Veronica as powerful and as versatile as it is," said Bob Stockus, owner of Ultra Packaging. "With Rexroth's components, the Veronica is user-friendly and can be adapted for each user's needs, while staying within a budget."

The Veronica uses the [IndraMotion XLC](#) motion logic controller, Bosch Rexroth's premiere platform for motion, robotic, logic and hydraulic control applications, that is programmed according to the

PLCopen standard IEC 61131-3. For the Veronica, it provides synchronized motion control on each axis as well as logic programming and features a wide range of open interfaces, including Sercos III, PROFINET and EtherNet/IP.

Rexroth's [IndraDrive Mi](#) cabinet-free drive/motor system drives each axis. With drive electronics integrated into the motor housing, servo units can be housed on the machine itself; this helps make the Veronica a very compact and modular machine that can be easily fit into tight factory workspaces.

The integrated motors and drives offer additional benefits like reduced space and cooling requirements in the control cabinet. This system also reduces the machine's component cost; a single cable for power and communication runs from the power supply, and each IndraDrive



Multiple Rexroth IndraDrive Mi cabinet-free drive/motor units drive all the major axes on the machine, including this portion of the machine which closes the carton top, shown here closing a conventional carton.

Mi is daisy-chained to the next for significantly reduced cabling.

“Rexroth’s control and drives platform gave us the flexibility we needed,” Stricker said. “It was critical for our dual fold capabilities.”

Veronica facilitates expansion

The Pedigree application is the first that uses the Veronica for gable-fold closures, but the cartoner proved extremely well-suited for the job. Once the pet treats are bagged, they are transported to the cartoner via a conveyor controlled with the same IndraMotion XLC used for the Veronica. The conveyor lifts the products about six feet to reach the Veronica.

The Veronica’s first step is to erect each carton and seal the bottom. The product is inserted at a manual production station, and the Veronica

then seals the filled box. For conventional closures, this is the same process as sealing the bottom: The Veronica kicks a flap into place, applies glue and kicks the second flap into place.

Gable-top closures require an additional step. After the carton is

erected, the bottom sealed and the product inserted, the Veronica must create gussets on the sides. The machine has a mechanism that moves up and down on either side of the box to push the sides in. Then the machine applies the glue and folds the flap over the top to create a gable-top closure resembling a milk carton.

The changeovers between conventional and gable folds can be done quickly, thanks to a special sub-assembly Ultra Packaging added to the Veronica for Pedigree. All the components necessary for each type of fold are grouped together on one plate so the machine operator can change them all at once.

“Rexroth’s control and drives platform provided essential programming capabilities,” Stockus said. “Because the Rexroth IndraDrive Mi drive platform is extremely accurate regarding the timing of the drives’ position, we were able to accomplish this and keep the changeover times to a minimum.”

For Pedigree, this was an important benefit of the Veronica. While most



The IndraMotion XLC motion logic control system is the centerpiece of a complete Rexroth machine control and drives solution, engineered for maximum efficiency and compact space savings.

manufacturers would have two separate systems in place to handle two different folds, Pedigree can do everything with just one machine. With greater capacity for changeovers, the company now does up to three a day and 10 to 12 per week, enabling faster turnaround times and greater flexibility.

Overall, the automated cartoning process is five to seven times faster, creating significant improvements in throughput. Five to six people working together with the Veronica can package 40 to 60 bags per minute. And for easier jobs that simply require repackaging into shelf-ready boxes, the team can reach 60 to 70 bags per minute.

“We were able to reduce labor and increase speed immediately, and the return on investment was really quick,” Stricker said. “A job that used to take us three days can now be done in an afternoon. It’s no comparison from before.”

The Final Result

The Veronica met all of Pedigree’s objectives and exceeded target production rates. The Rexroth XLC controller and IndraDrive Mi drive system provided the modular technology and intelligent automation platform that enabled Ultra Packaging to efficiently modify the Veronica to integrate conventional and gable-top cartons on a single machine.

“New opportunities are key as we grow the company,” Stricker said. “We can definitely look at bigger jobs and larger customers, knowing that we can fill the orders.” He added that Pedigree has recently added a new customer worth several million dollars a year in additional contract packaging revenue—new business that’s a direct result of adding the Veronica to Pedigree’s production operations.

“We pride ourselves in our flexibility, in manufacturing and in packaging,” Stricker said. “That’s where the Veronica’s really helped us. It’d be hard to imagine getting all this work done without the Veronica.”

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