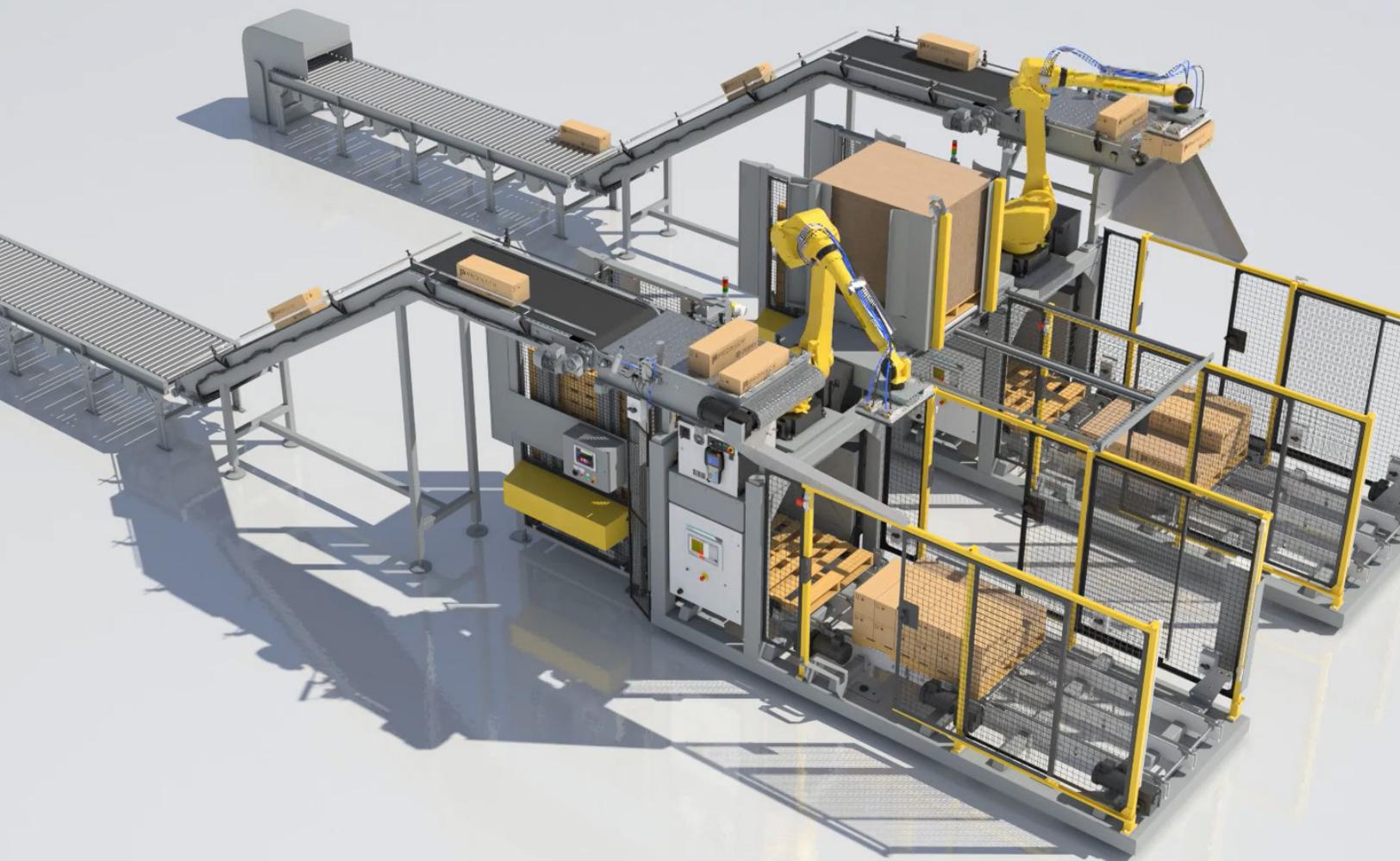




ProMach Collaboration Leads to New, Optimized End-of-Line Packaging System for Snak King



Overview

Ask any major food manufacturer these days to list their top production challenges, and efficiencies and labor will likely rank near the top. Snak King is no exception.

"We had previously automated our bagging process and packing product into cases, but what we really needed to address next is how to get them palletized in the most efficient manner possible," said Mark Schieldge, COO of Snak King's Freeport facility.

The cases Schieldge was looking to palletize are packed daily with tasty snacks that people around the world have been enjoying for decades. Since 1978, Snak King has built a portfolio of both private label and branded snacks, including pork rinds, potato chips, caramel corn, tortilla chips and other tempting treats.

"For us, our next step was automating the palletizing operations," Schieldge said. "We really started exploring different packaging options and companies available to us, and we came across ProMach."

Schildge was introduced to ProMach and one of its robotic and end-of-line brands, Brenton, at an engineering conference about six years ago. Alexandria, Minnesota-based Brenton focuses on end-of-line packaging systems, specializing in case packing and palletizing using both robotics and other automation.

As Snak King began exploring new solutions for its palletizing operations a few years later, they reached out to Brenton. After discussing the project's goals and objectives, Brenton could offer a solution that Snak King would be very happy with. However, Brenton ultimately determined that Quest, which is also a ProMach brand, had a more perfect machine for Snak King's application.

SOLUTION

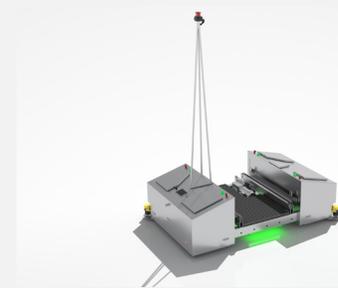
The company goes to great lengths to ensure quality standards are met for each and every product. Snak King's computerized quality management system, coupled with its experienced on-site teams, precisely monitors every raw ingredient and finished product to deliver the results its customers look for every day. And this level of commitment extends into its packaging operations as well.

"It wasn't just a Brenton solution, it wasn't just a Quest solution, it was a ProMach solution, mainly out of what was the best fit for Snak King themselves," said Brian Guzek, Regional Sales Manager, Brenton.

ProMach is a family of 42 best-in-class packaging solution brands serving manufacturers of all sizes and geographies in the food, beverage, pharmaceutical, personal care, and household and industrial goods industries. ProMach brands operate across the entire packaging spectrum: filling, bottling and capping, decorative labeling, flexibles and trays, pharma, handling and sterilizing, labeling and coding, and robotics and end of line. ProMach also provides systems and integration including turnkey solutions, design/build, engineering services, and productivity



City of Industry, California-based Snak King was looking to optimize its efficiency in throughput, while also seeking to alleviate labor shortages at its manufacturing facility in Freeport, Illinois. And one area that offered tremendous automation opportunities was in its end-of-line packaging.



3 INTELLIGENT AUTONOMOUS VEHICLES (IAV) PROVIDES A SMART, FLEXIBLE SOLUTION TO MOVE PRODUCT IN SNAK KING'S FACILITY.



16 SKID-BASED BOX BOT SERIES PALLETIZERS WITH 6-AXIS ROBOTS ALLOW FOR ROBOTIC PLACEMENT OF PALLETS AND SLIP-SHEETS WITHOUT THE NEED FOR ADDITIONAL FUNCTIONALITY ON THE ROBOT'S EOAT.

software to optimize packaging line design and deliver maximum uptime.

"What we're looking to do is bring the ProMach product brands closer together to better meet our customers' needs," said Troy Snader, Senior Vice President of Business Development for ProMach's Secondary Packaging Group. "Our goal is to commercially connect across our flexible packaging, product handling, robotics, and end of line packaging brands. This better positions ProMach to be that one-stop, full-service provider that many companies are looking for moving forward."

The collaboration between Brenton, Quest and Snak King led to a solution involving 16 Box Bot robotic palletizers, and three autonomous vehicles to streamline its end-of-line packaging.

After products are made, bagged and placed into cases, those cases travel up an elevator where overhead conveyance from Zarpac, a ProMach brand, take them to one of 16 Quest Box Bots. The Box Bot is a space-saving palletizer that is available as a modular or skid-based solution. The Box Bot features a long-reach Fanuc M-710IC Series robot that provides higher stack patterns, which better maximize tractor-trailer loading for more efficient shipping. The Box Bot is extremely flexible, allowing an operator to design and produce exact pallet patterns quickly and easily from bags to boxes and other product types, and does so with a small footprint starting at just 8'x10'.

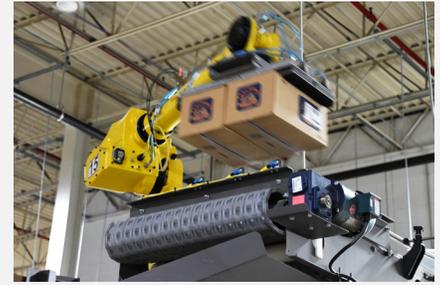
"The Box Bot was really developed for applications that have tight space requirements and benefit from having a single, modular setup, that can be placed into a cell and quickly started up. This was a perfect fit for Snak King," said Tucker Behrns, Vice President and General Manager, Quest.

After pallets stacked eight cases high are made, they travel down a centralized trunk line to an automatic stretch wrapper, and then move into a holding pen where they wait for a Quest Intelligent Autonomous Vehicle (IAV) from Quest to take them to the warehouse for shipping. Quest IAVs provide a smart, flexible solution to moving product through a facility.

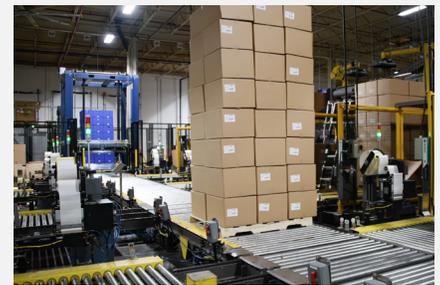
"The IAVs operate by a lidar based system. The lidar is bouncing essentially light off of the walls or fixed objects to triangulate a position. That position is in a pre-programmed map, and the vehicles then travel that pre-programmed path and we give them the signals to pickup and drop-off when needed," said Erik Grinnell, Vice President of Automation, Quest.

"The IAVs were an ideal solution for Snak King because it improved safety on the production floor," Grinnell said. "Previously they had multiple operators driving forklifts, and it was really creating a chaotic environment just trying to get the pallets between the stretch wrappers and the warehouse. We replaced 10 to 12 forklift operators with just three IAVs."

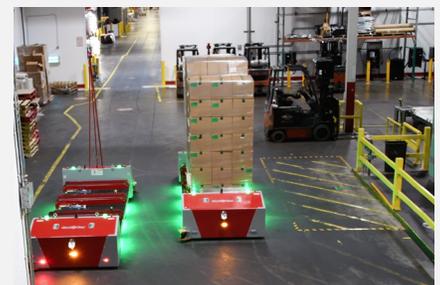
"The ProMach solution is helping Snak King to be successful where it's been able to streamline our process," said Bill Cook, Warehouse Manager,



A VENTURI VACUUM GRIPPER END-OF-ARM-TOOL WITH FOAM PAD HANDLES CORRUGATE CASES, SLIP SHEET AND PALLETS.



STACKED PALLETS DISCHARGE FROM EACH BOX BOT CELL BUILD STATION ONTO A CENTRALIZED TRUNK LINE THAT CONVEYS TO AN AUTOMATIC STRETCH WRAPPER.



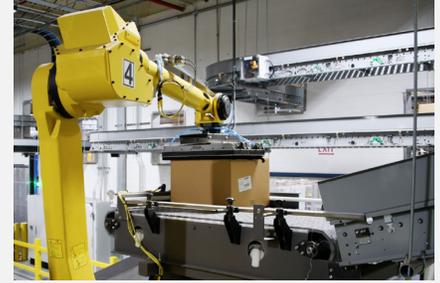
THE IAVS SAFELY MANEUVER ALONGSIDE OTHER WORKERS, CONTROLLED BY INDUSTRY LEADING SAFETY FIELDS THAT INSTRUCT THE VEHICLES TO START, SPEED UP, SLOW DOWN OR STOP WITH NO NEED FOR ANY MAGNETIC TAPE OR OTHER PHYSICAL GUIDES.

Snak King. "The whole process is much quicker, it's less headcount, and we're able to be more productive with the people that we have."

A key component to bringing a fully integrated ProMach solution together is demonstrating that they're more than just an assortment of operating companies. Merging two or more ProMach product brands together on a packaging line allows customers to have one centralized point of contact for larger projects. This level of project management greatly streamlines the planning process, installation, and start-up curve for packaging lines.

"ProMach is more than just a product and a price, it's a solution-based company that is trying to find out what is the best product to solve their application," Guzek said.

"ProMach has done a really nice job of delivering the overall automation solution that we were looking for. The interface between the robot and palletizers and the IAVs have been seamless," Schieldge said. "Snak King has been very focused on optimizing their performance and efficiencies. With ProMach's solutions on their robotic palletizers and IAVs, it's really provided exactly what we needed."



ACTIVATED ROLLER BELT (ARB) CONVEYORS ENSURE CASES ARE REGISTERED TO THE CORRECT LOCATION PRIOR TO PICKING WITHOUT THE USE OF CLAMPS OR OTHER DEVICES.

Brenton is a global leader in designing and manufacturing integrated end of line packaging systems and machines, specializing in case packing and palletizing using both robotics and other automation. With over 30 years of experience in providing solutions for the consumer packaged goods, food, beverage, pharmaceutical and medical device industries, Brenton centers on creating collaborative, long-standing partnerships across a diverse customer base while remaining in front of the latest technologies and changing market conditions. Brenton is a product brand of ProMach, a global leader in packaging line solutions. As part of the ProMach Robotics & End of Line business line, Brenton helps packaging customers protect their reputation and grow the trust of their consumers. ProMach is performance, and the proof is in every package. Learn more about Brenton at www.BrentonEngineering.com and more about ProMach at www.ProMachBuilt.com.

Quest is a leading manufacturer of industrial automation equipment focusing on robotics and vision-guidance. With expertise in the food, beverage, and dairy markets, Quest optimizes floor space for customers experiencing growing demand and helps improve their overall production line flexibility and efficiency. Quest offers application-specific software on their robotic products, including pick and place, case packing, and palletizing systems to simplify system setup and streamline configurability. Quest is a product brand of ProMach, a global leader in packaging line solutions. As part of the ProMach Robotics & End of Line business line, Quest helps our packaging customers protect their reputation and grow the trust of their consumers. ProMach is performance, and the proof is in every package. Learn more about Quest at www.QuestIndustrial.com and more about ProMach at www.ProMachBuilt.com.

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