

# Revolutionizing Conveyor Belt Technology in Food Processing

## Regal Rexnord upgrades operational efficiency with MP Equipment

Regal Rexnord

*Mike Mitchell at Middleby Food Processing helped develop a patented Beaver Tail End design, which allows for smoother product transition, enhancing operational efficiency. All photos courtesy of Regal Rexnord.*

With over 20 years' experience in the food processing industry, Mike Mitchell has filled many roles in his career. Now, as the key accounts manager for Middleby Food Processing brand, MP Equipment, Mitchell has been pivotal in advancing food technology. He understands the demands of frequent, late-night repairs on first generation equipment.

"I've been that production guy at three o'clock in the morning underneath the breader or the fryer, dealing with the problems no one wants to deal with," said Mitchell, who began his food processing career in a poultry factory.

Not only does he have insight due to his past experience, he's now in an interesting position to innovate the next generation of technology that saves end users oil costs while making repairs simpler and safer for workers. Mitchell and the engineering experts at MP Equipment have recently developed an exciting new batter, breader, and fryer line that integrates technology from Regal Rexnord and fellow Middleby brand, Filtration Automation.

Most notably, the team developed a patented Beaver Tail End design which added the belt path to the next conveyor, replacing outdated sliding mechanisms. This feature allows for smoother product transition, enhancing operational efficiency. Additionally, the introduction of a unique sediment belt in the U.S. market plays a crucial role in maintaining oil quality by removing floating debris like chrome, which reduces oil degradation and maintenance frequency, thereby increasing uptime.

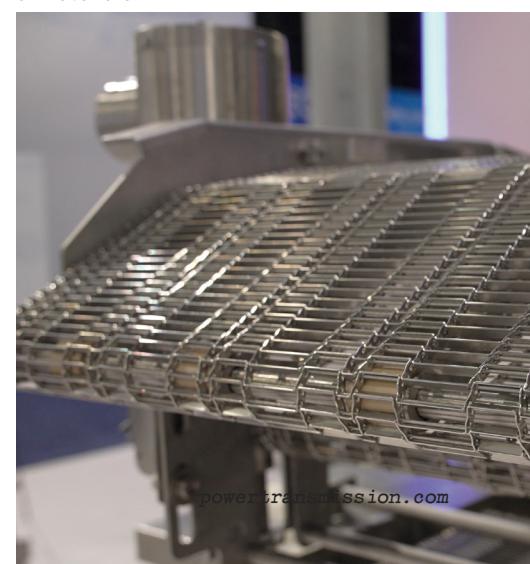
The fryer's integration with advanced Filtration Automation further aids in oil management by ensuring active movement and cleaning of oil, especially in typically stagnant areas, through targeted jet flows. This not only saves on oil costs but also extends the oil's life and quality.

"We developed the Beaver Tail, and were looking for a vendor to help us make that concept become a reality," Mitchell said. "We had tried many different belts, and we were looking for what lasts the longest, what is the easiest for the customer to repair, what is the fastest to repair."

With its robust design, the Regal Rexnord PacTitanPro belt significantly extends component lifespan while reducing the frequency of replacements. Engineered to splice together easily with a pin, it minimizes the need for direct handling, enhancing worker safety.

Traditional belts, prone to frequent breakdowns and labor-intensive maintenance, posed significant

*In specific processing scenarios such as battering and frying, Regal Rexnord PacTitanPro belt optimizes the use of resources like batter and oil, which reduces waste and decreases the cost of materials.*



challenges. The need for regular splicing not only increased downtime but also introduced safety risks, with exposed wires leading to potential cuts and lacerations.

"When we found this PacTitanPro belt, we found that it has a simple pin that slides through, you can hold it with pliers while you slide the pin through, you don't even have to touch the belt with your hands," Mitchell said. "So, it's able to perform under these hot, oily conditions a lot better than any of the other belts we tried."

The PacTitanPro design also ensures that any broken pieces are contained, preventing contamination of food products. This innovation not only improved safety and reduced maintenance time but also contributed to lowering the total cost of ownership for end users by decreasing downtime and increasing production efficiency.

The sustainability and cost efficiency of the PacTitanPro are also noteworthy. Its stainless-steel construction and innovative design extend its service life up to six times longer than traditional metal belts, dramatically reducing the frequency of replacements and minimizing environmental impact.

In specific processing scenarios such as battering and frying, the belt optimizes the use of resources like batter and oil, which not only reduces waste but also decreases the cost of materials. The flat wire design of the belt creates a ploughing effect in frying applications, ensuring efficient



*Natalie Gray assisted with sourcing additional components like motors, speed reducers and bearings into MP Equipment's applications.*

oil usage and maintaining the quality of the food processed.

"By integrating oil cost reducing technology from Filtration Automation with our MP fryers, we've revolutionized oil management. We've made sure it's continuously cleaned and circulated, eliminating stagnant spots and extending oil life," Mitchell said. "So not only does this reduce oil costs, but it also guarantees that the food quality remains consistently high, preventing nutrient loss and maintaining flavor integrity."

MP Equipment tested the new BeaverTail innovation at an Arkansas poultry processing facility. There, the new integrated system was subjected to rigorous conditions for six months and showed no failures, even under high tension and harsh environments. It lasted 12 times longer than the previous belt solution used at the facility, dramatically reducing maintenance time and costs associated with belt replacement.

Following the successful integration of the PacTitanPro, Mitchell worked with Regal Rexnord's Natalie Gray to source additional stainless steel, IP69-certified components for MP Equipment applications, including a Leeson electric motor, Boston Gear speeder reducer and SealMaster bearings.

Regal Rexnord drives efficiency and throughput for conveyor applications across countless industries, from food processing and beverage

bottling to mining and material handling. Collaborative, solutions-based engineering is what sets Regal Rexnord apart, Gray said.

"We know the components, but we also know how they work together in the entire system. We really are system experts," she said. "We work with our partners to come up with comprehensive, well-engineered solutions to whatever pain point they're trying to solve."

In the end, the collaboration between MP Equipment and Regal Rexnord not only solved a pressing engineering challenge but also set a new standard in the industry.

"We've had the best time working with Regal Rexnord all the way through this, our salespeople to the engineers that have worked with us not on just this product line," Mitchell said. "They are in our hip pocket all the way through this, we really can count on them as a partner."

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