

APPLICATION SOLUTION: Escapement & Stacking



Product Family: Electric
Product Used: B3W Rodless Belt-Drive Actuator, B3S Rodless Screw-Drive Actuator
Product Type: Standard

Application Description:

Escapement & stacking features for conveyor with a machine-vision inspection system.

Challenge:

A tortilla producer contracted a conveyor manufacturer to design a fully automated system for tortilla production that would eliminate human contact with the product. Along with optimizing production and meeting sanitation requirements, non-conforming product had to be efficiently removed in-process. The tortillas needed to be fed through a machine-vision inspection system at two tortillas per second. Any non-conforming product identified, would then trigger an escapement feature. The machine's rotating stacking feature creates uniform stacks of tortillas, critical for final packaging. The manufacturer had already standardized on Allen Bradley as their supplier for PLCs, controls and servo motors. Any other control components had to integrate seamlessly.

Tolomatic Solution:

A B3W belt-drive and B3S screw-drive rodless actuator were selected for this application. The actuators, although not in direct contact with the food product, have a robust enclosed design to provide contaminant protection. The B3W belt-drive actuator was used to move the escapement gate and was mounted under the conveyor system. As non-conforming product is identified the actuator lowers the escapement gate to evacuate rejects and rapidly closes it to resume flow. The B3S screw drive actuator was selected to accurately control and quickly index the tortilla stacks. Both actuators were equipped with Allen Bradley motor mounts using Tolomatic's Your Motor Here® program for turnkey motor mounting. A JVL servo drive and motor was easily integration with the existing Allen Bradley PLCs. The JVL drive synchronized the vertical indexing with tortilla stack rotation.

Customer Benefit:

- Increased throughput, reduced labor costs, higher profits.
- Improved processing hygiene for increased product quality and safety.
- Seamless compatibility with existing control components for easy integration.