

ROLLON ACTUATORS FOR FOOD PACKAGING SYSTEMS

Pactiv, one of the world's largest producers of food packaging, recently found a good way to improve the productivity of its multi-line inspection system for detecting and rejecting misformed egg cartons.

Instead of relying on troublesome pneumatic diverters, they attached diverting rods to actuators, forming sufficient lanes for the traveling and separating of finished products.

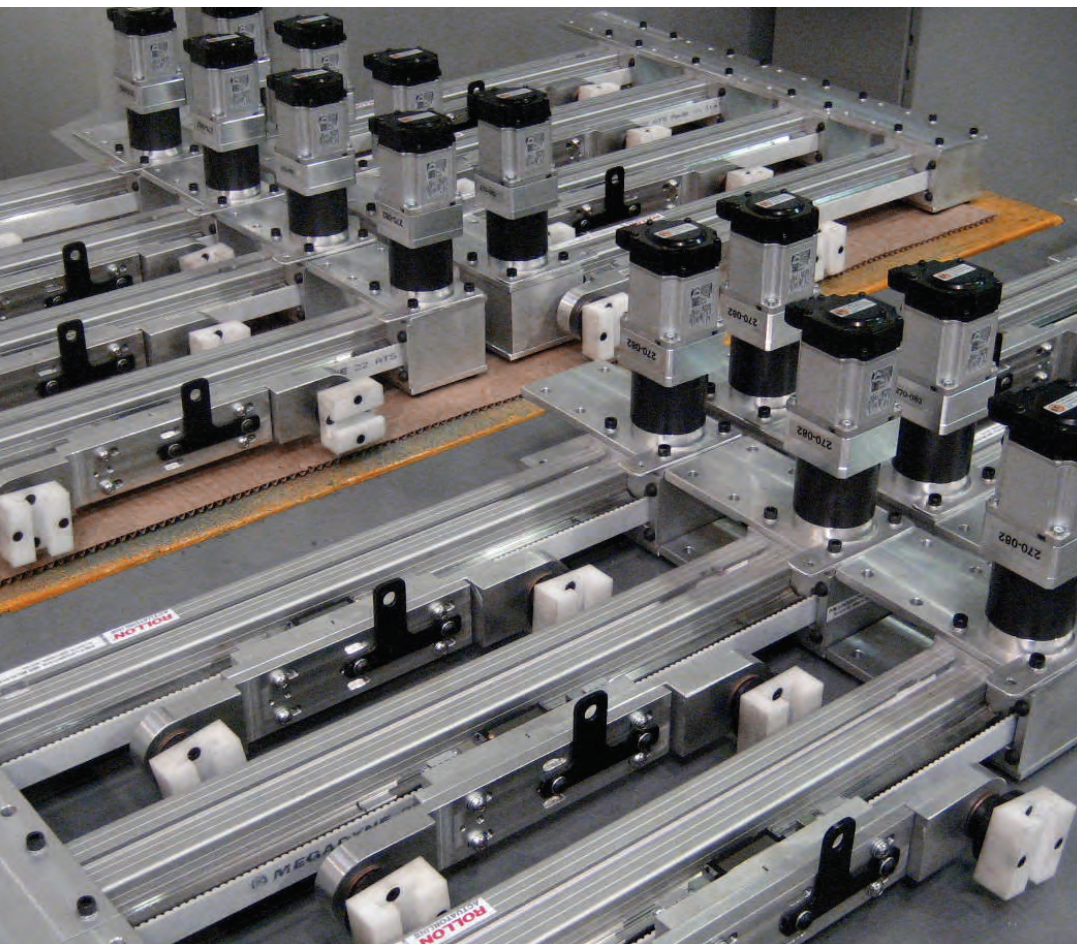
For this task, Pactiv went with a 27-axis servo system that resists jamming and downtime. Designed and built by systems integrator Chicago Electric, this new servo system is based on E-Smart 50 belt-driven actuators from Rollon Corp.

A SCALABLE SERVO SYSTEM.

Chicago Electric engineers combined 27 E-Smart actuators into a single servo system. Because of their shape and material, egg cartons are particularly susceptible to jamming.

"The original pneumatic system was unreliable and sometimes jammed in Pactiv's production line," said Brendan Forbes, Chicago Electric application engineer who helped design the 27-axis servo system. "The ensuing downtime backed up products and caused major headaches as engineers repaired the machines."

However, when Pactiv upgraded to a servo system, the threat of jamming decreased. Since servo



Pactiv redesigned and replaced its original pneumatic system with a servo-driven system using Rollon's E-Smart 50 actuators. The updated system lets engineers control the timing and speed of the diversion.



Designed and built by Chicago Electric, Pactiv's new 27-axis servo system organizes traffic flow at the end of production and resists jamming and downtime.

TECHNICAL FEATURES INCLUDE:

- A 50 x 50mm 6060 aluminum profile
- A maximum stroke of 6.000 mm
- A repeat accuracy of 0.1 mm
- Sizes from 30 to 100 mm
- Speeds up to 4 m/s
- Accelerations of up to 50 m/s²
- A carriage weight of 0.56 kg
- High bending moments
- High load capacity of 14,560 N for theoretical, 1,747 N for permissible
- Low friction of 0.01

systems are faster and more precise than pneumatic systems, less downtime and additional maintenance are needed. Servo systems are also more reliable due to their heightened accuracy and repeatability.

The original system was redesigned and replaced with a servo-driven system by using the E-Smart 50 actuator, which gives more feedback and allows engineers to see if something has jammed. The system also lets engineers control the timing and speed of the diversion.

In addition, this upgrade takes away the need for a worker to constantly stand and monitor the machine. Operators can now be reassigned to more productive roles since the threat of jamming no longer exists.

COMPACT ACTUATOR. The E-Smart 50 used for this servo system is part of Rollon's ActuatorLine Smart Series. The actuator features a compact frame for reduced size and weight, yet it's engineered to maximize load bearing capacity.

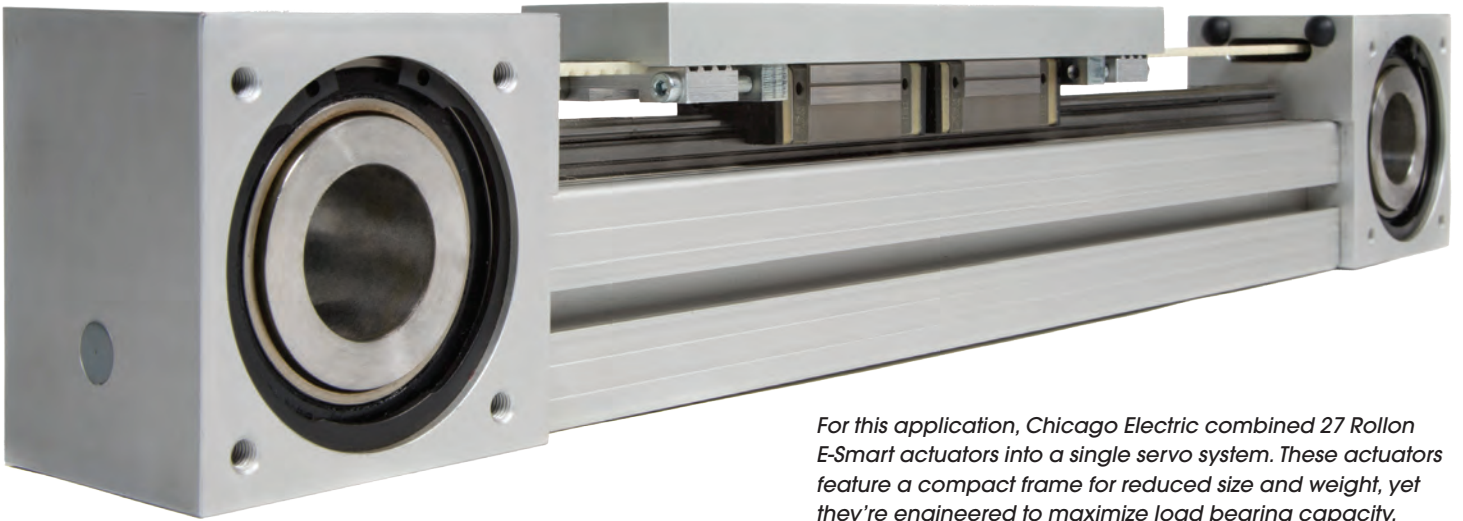
To strike the balance between size and load carrying capacity, the E-Smart 50 has rigid aluminum profiles and robust ball bearing guides mounted into a seat in the aluminum body. A carriage is assembled onto the preloaded ball bearing block so it can withstand even

distribution from radial and lateral loads. The carriages of some actuators have a retention cage that eliminates steel-to-steel contact between adjacent rotating elements.

The E-Smart 50 also includes a polyurethane transmission belt with steel inserts, AT pitch and parabolic profiles, as well as a 25 AT 5 belt and Z 40 pulley. The belt is ideal because of its

high load transmission capabilities, compact size and low noise. And, when combined with a pulley, the belt achieves smooth alternating motion.

“The sturdiness, the look—everything about the E-Smart 50 just impressed us,” Forbes said. “We used this project to see how well the product stood up and how well it operated against other actuator systems we have used. It has held up extremely well.”



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