



Cavanna's first XTS application is a 90-degree transfer system for packaging so-called slugs of cookies.

XTS in flow pack machines

Intelligent transport system as cost-effective, compact and highly flexible feeder component in cookie packaging

Italy's Cavanna Packaging Group is a leading specialist in the flow-pack segment for both food and non-food products. Starting with its cookie packaging segment, Cavanna recently made the strategic decision to equip its flow-pack machines with the intelligent XTS transport system and EtherCAT communication technology from Beckhoff.

Cavanna was founded in 1960 in Italy's Piedmont region as one of the first makers of electro-mechanical flow-pack machines. Over time, the family-owned company focused on fully electronic machines and complete packaging lines: primary flow-packs for individual products and product groups, secondary flow-packs or box packaging, and tertiary packaging in display cartons. Today, roughly 6,000 Cavanna machines are installed with more than 900 customers worldwide.

The main areas of application are the entire food sector and the non-food sector, especially the cosmetics and pharmaceutical industries. The broad spectrum of food applications ranges from uniform and mixed cookie packages, chocolate, breakfast products and sweet and salty snacks to bread replacement products, as well as cheese, coffee pads, and frozen products. Whatever the product, Cavanna focuses on protecting the product and maintaining the product quality through appropriate packaging. The consumer must also be able to open the package easily. All these requirements must be considered in the design of the flow-pack machines in combination with high packaging quality, machine availability and the lowest possible total cost of ownership.

Technology partnership for optimized machine design

To meet all these requirements optimally and in an innovative manner, Cavanna looked for a globally active technology partner. The main objective, according to Cavanna, was to improve the machines' flexibility for product changeovers while reducing their footprint, time requirements, and cost. The company also had to meet the rising requirements regarding gentle and efficient product



The slugs get tilted by 90 degrees before being handled by the XTS movers.

handling, for which PC-based control from Beckhoff delivered the ideal control and drive solution. Cavanna also appreciated that Beckhoff is characterized by the same philosophy as the Italian company with its passion for quality, technological excellence and reliability.

The technological innovation and continuous development of PC-based control were especially important for Cavanna because they enable them to advance

in accordance with changing customer requirements. The pre-eminent example of this is the intelligent XTS transport system, which – in combination with the powerful EtherCAT communication – provides exceptional product transport flexibility in a very small space.

XTS supports new product handling capabilities

From Cavanna's perspective, XTS harbors a huge potential for innovation due to its high software functionalities with mostly automatic configuration capabilities and its modular, application-specific variations and geometries, all of which make it easy to implement a wide range of applications for individual product transportation in combination with a continuous material flow. With its high energy efficiency and significantly reduced footprint, XTS delivers the best possible solution in terms of cost, compactness and innovation for Cavanna's packaging machines. A system this compact and reliable with individually controllable movers opens the door to a new world of packaging applications that allow manufacturers to adapt their machines even more effectively to their customers' needs.

According to Cavanna, high speed and precise synchronization are the goals of all XTS-based advancements. The company plans to extend the system into additional application areas with the help of the Beckhoff experts, who have already been instrumental in Cavanna's continuous improvements to their current machines.

Cookie feeding in slug packaging

As its first XTS application, Cavanna developed a new packaging system that can package 4,200 cookies after they have been compiled into so-called slugs. Once again, the high system flexibility was a huge benefit because the cookies can be in a round, rectangular or square shape. In addition, the machine can package the cookies in various flow-pack formats at speeds of up to 130 packages per minute with up to 32 cookies per package.

XTS functions as a feeder unit in this system. Two XTS movers receive the cookie slugs from a chain track after they have been rotated by 90 degrees. The movers then transport the slugs to the tubular bag for the final flow-pack packaging. According to Cavanna, the XTS system's main advantage is that all the settings needed to switch to a new product format are stored in the control software and can be executed automatically. In this way, the XTS can adapt to the product "on the fly", which is a vast improvement over conventional solutions based on servomotors that require extensive mechanical conversions.

Another example of the ways Cavanna uses the XTS is a system for transferring product stacks from one chain track to another with varying distances between the separators on each chain. Cavanna also uses the XTS as a distribution system to split an incoming product stream into two streams at low cost and with exceptional flexibility.

More information:

www.cavanna.com

www.beckhoff.com/xts