

Elopak equips first fully aseptic filling machine for gable top packaging with robust AVENTICS™ pneumatics from Emerson

RESULTS

- High reliability of components despite hydrogen peroxide
- Low-maintenance requirements
- Optimized, energy-efficient process



APPLICATION

The E-PS120A is the first fully aseptic filling machine for gable top packaging. This efficient, powerful solution presented by the packaging specialist ensures high reliability owing in part to robust, food-compliant pneumatics from Emerson.

CUSTOMER

Elopak EQS GmbH, Germany

Elopak develops, produces, and sells complete systems for packaging noncarbonated liquid products, such as milk and dairies, juices, wine, water, and soups. Since 2011, Elopak EQS GmbH has been headquartered in Mönchengladbach, Germany. EQS stands for equipment supply and includes everything from machine construction to development and production of pourer sealing systems.

CHALLENGE

Machines for filling milk or juice have to work around the clock. With an output of up to 12,000 cartons an hour, disruptions and downtime are not at all welcome. For this reason, availability plays a major role in selecting machine components.

A sterile environment and aseptic packaging are vital to maintain product quality for the long term at room temperature without cooling the products or using conservatives. This means the ultra-sensitive drinks, dairy products, and liquid foods have to be filled hygienically and securely while the machine components are subjected to high strains by cold, humidity, and splashes.

“Even though the pneumatic components installed here at first appear insignificant, they are crucial to machine availability and aseptic. In addition to reliable components, we also need close contact and collaboration with suppliers based on partnership to detect optimization potentials in good time and drive improvements forward together.”

Wolfgang Buchkremer
Senior Manager Research & Engineering
Elopak EQS GmbH

SOLUTION

Emerson realizes such detailed solutions thanks to its many years of experience in designing hygienic components. This is reflected in numerous properties of the 'best-in-class' components customized specifically for utmost food safety. In plain terms, this means no recesses or sharp edges, easy cleaning and disinfection as well as the use of food-compliant materials and lubricants, and resistance to chemicals.

Besides many other components of this complex task, Emerson supported Elopak to find the best solution for throttles: Hydrogen peroxide (H₂O₂) is used to sterilize the packaging, but has an effect on all reactive components, including sealing materials and grease, which are standard for throttles. Here, choosing the wrong material poses a risk to the entire sterilization process in the long run. Together with Emerson's experts, Elopak found a suitable solution using a throttle that has been cleaned on the inside, with a special sealing ring on the sterilization system's vaporizer. These design details allow achieving higher stability.

Emerson also developed a special valve system for Elopak: H₂O₂-impregnated air also resulted in an application-specific development here. To extend the valves' service life, valve specialists at Emerson combined a standard valve system with an aluminum corner strip including an all-round seal. Now, the valve pilots engage directly in the closed cable conduit within the machine, while the outlets exit the machine. This effectively prevents problematic contact between valves and hydrogen peroxide, contributing to optimized reliability.



The varying pressure when moving the packaging is precisely and dynamically controlled by Emerson's AVENTICS ED02 electropneumatic pressure regulators.