

The “Milky Way”

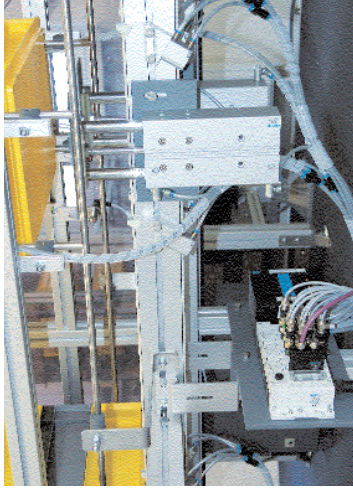
Milk fresh on the breakfast table - delivered by FlexLink, Krones and Elopak. In companies producing dairy products, they prepare the packaging, carry out labelling and filling and load the filled packs onto standard wheeled containers, whilst ensuring the highest quality hygiene in every phase. Hygienic valve terminals and cylinders from Festo guarantee reliable automation on a modern “Milky Way”.

■ Because of its high protein content, milk is one of the most perishable of all foodstuffs. If not handled correctly, milk may become unfit for consumption and even poisonous within a few hours. It is therefore vital to design milk-processing installations to the highest international hygiene standards in order to prevent chemical contamination or outbreaks of bacteria or fungus.

In addition to these technical requirements, installation planners are also increasingly subject to economic pressures. Throughout the world, the large food companies which dominate the market are forcing down prices. As a result, milk-processing companies must automate their processes still further in order to cut costs.

Always the right answers

FlexLink, Krones and Elopak have worked with Festo to find the right answers to the challenges of automation, not only in dairy-product plants but also in plants filling



The CPX modular electrical terminal: ideal for applications in the food and process industries – for example here in a crate transporter made by FlexLink.

other liquid foodstuffs, from soft drinks and mineral water through to beer and wine and edible oils. The installations and machine components which these companies offer provide the highest possible level of protection against contamination in food and splash zones.

Thoroughgoing interlinkage

FlexLink of Sweden uses conveyor systems to link individual stations in filling processes, for example to transport packaging cartons to filling workstations or to bring plastic and glass bottles to labelling machines. These conveyor systems, with sealed water-repellent stainless-steel surfaces, can be cleaned quickly and operate without the need for lubrication.

The shaped stainless-steel guide profile in conjunction with a connection system allows modules to be combined as desired without additional welding or laborious spanner work.

The return run of the conveyor chain is enclosed in a separate plastic conduit which provides protection against product fragments or leakages of liquid from the conveyor chain above it. It is also possible to select antibacterial plastic components to inhibit the growth of bacteria. “In these conveyor and distributor systems, Festo ADVU compact cylinders operate as rotating and clamping stopper cylinders,” says the General Manager of FlexLink Deutschland, Peter Nauwerck.





FlexLink AB

Headquarters Göteborg, Sweden
Locations In 25 countries worldwide
Turnover Approx. 125 Mio. Eur (2004)
Number of staff 550
Contact www.flexlink.com
Products Turnkey automation systems and modules for materials flow in assembly, filling, machining and packaging operations in the automobile, packaging, food, cosmetics, pharmaceutical, electrical and electronics industries

The compact cylinders are just as powerful as standard cylinders but need only half as much installation space. All the pneumatic components fit together perfectly and are from a single source: CPV valve terminals triggered via AS Interface and services units from Festo's D series complete the pneumatic equipment needed to automate the conveyor system.

More than just milk

The system supplier Krones supplies suitable solutions for the actual filling processes in dairy product factories. The products concerned range from skimmed milk, yoghurt drinks and cream to mixed milk drinks containing fruit and grain. Krones machines fill plastic containers (PET, HDPE) of different shapes and sizes or glass bottles with milk products.

The Krones company covers all the central operations in the filling processes, from the stretch-blowing and cleaning (rinsing) of PET

bottles through to the actual filling with milk products and the sealing and labelling of the bottles. These aseptic filling installations are the state of the art in the industry. The filling and sealing stations are of hygienic design with easy-to-clean inclined surfaces and options such as gutters to collect product residues and automatic spray-cleaning and disinfection of external surfaces.

Individual solutions

For the pneumatic automation of its installations, Krones relies on Festo's well proven products. The stainless-steel control cabinet houses CPV valve terminals with AS Interface triggering. "This means that our installations remain extremely flexible with regard to future expansions," reports Dr. Albrecht Hoene, Head of Component Development at Krones. He continues: "AS Interface, as an easy-to-use bus system, in conjunction with the compact Festo CPV valve terminals

is an ideal means of implementing Krones' modular concept."

The valve terminals are equipped with a special multiple connector plate made of POM, which is used to route all the tubing lines out of the control cabinet to the drives via ready-installed stainless-steel fittings. This meets the stringent hygiene requirements of the food industry.

Ready to install

With the labelling machines, too, Festo has been able to provide the perfect answer to the needs of this system supplier. Festo supplies Krones with service units and pneumatic modules in ready-to-install form – fully tested and guaranteed and complete with documentation. This reduces the workload of Krones' own planning, purchasing and production personnel and means that Krones has only one order to deal with, one delivery date and one supplier contact. All that Krones needs to

KRONES

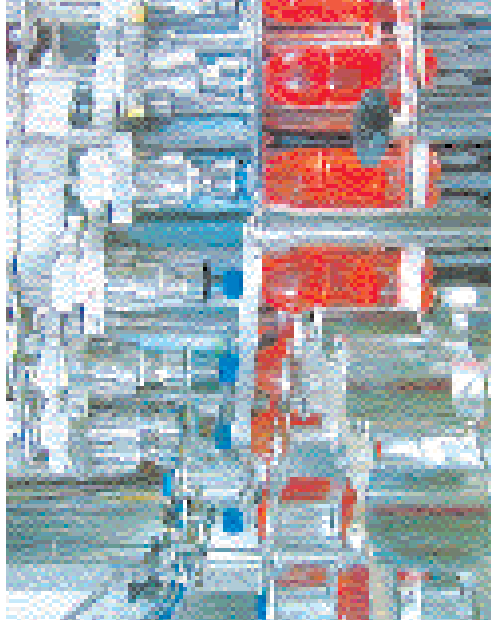
Krones AG

Headquarters Neutraubling near Regensburg
Locations 5 production locations in Germany, over 40 sales/service centres worldwide
Turnover Approx. 1.4 Mrd. Eur (2003) of which 80 % was earned abroad
Number of staff Approx. 8,800
Contact www.krones.com
Products Machines and complete installations for filling and packaging operations in the beverage, food, chemical, pharmaceutical and cosmetics industries

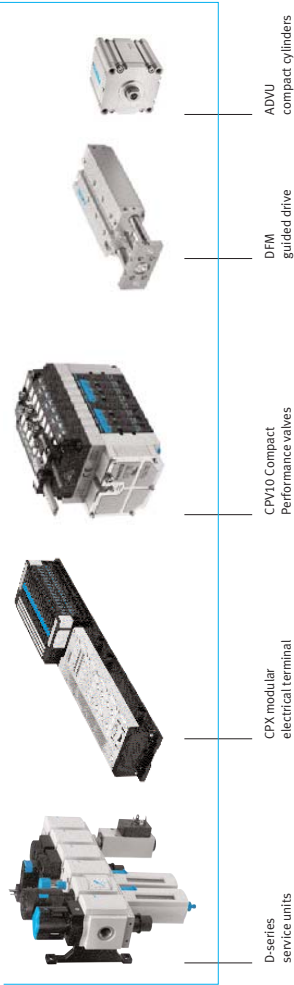


Flexible individual customer solution: CPV valve terminals with AS interface triggering on a pneumatic multiple connector plate.

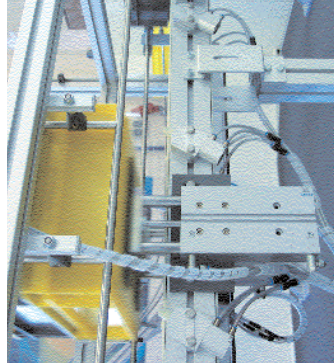
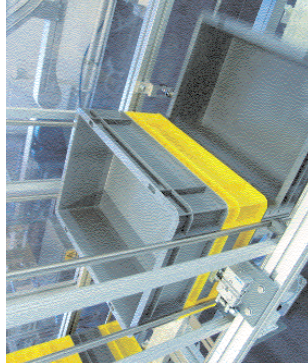
Krones cam-controlled bottle-closing machine with servo technology.



Festo components in the FlexLink installation



The FlexLink crate transporter: Flexible conveyor system for final users in numerous industries, including food and packaging.





Elopak AS

Headquarters
Locations
Turnover
Number of staff
Contact
Products

Stabekk, Norway
In 40 countries worldwide
565 Mio. Eur (2004)
Approx. 2,500
(including joint ventures)
www.elopak.com
Packaging and carton-making machinery

www.festo.com/en/food

do is bolt the mounting plates with service units into place and connect up the tubing lines to the drives – a fine example of Festo's plug and work® principle.

The end of the "Milky Way"

Once the packs have been filled, conveyor systems supplied by the Materials Handling Division of Elopak, whose factories are located in Finland and Norway, complete the last phase of the packing process. Within a wheeled container packaging system, the individual packs are first grouped together and then loaded onto the individual levels of the wheeled containers. The wheeled containers are then transported in a grouping unit by transfer vehicles to the storage tracks of the cold store. They remain here for just

a short time before continuing their journey to the refrigerated cabinets of supermarkets and grocery stores.

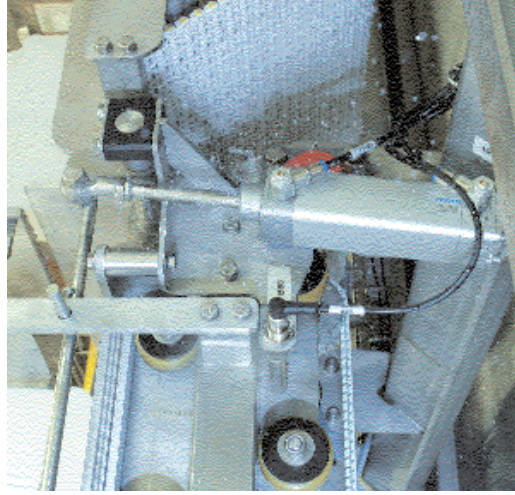
Clean Design

Elopak also installs wheeled-container washing machines and lifters, which return empty wheeled containers to the filling process. As the entire installation is located in a splash zone, subject to extremely high hygiene requirements, the system constructors rely on Festo's "Clean Design" product line of valve terminals and cylinders. These have completely smooth corrosion-resistant surfaces and are easy to clean. Their connectors have no exposed threads. All components have large radii and are free of sharp corners and edges and recesses.

This eliminates many possible hazards which could otherwise result, associated with bacteria, the effects of chemicals or corrosion particles.

Festo's "Clean Design" valve terminals are the perfect answer to wet environments, offering the high degrees of protection IP65 and IP67. They thus do not need the protection of a stainless-steel control cabinet and can be mounted directly on machines, even in applications with critical hygiene requirements. The practical result is that space is saved in the control cabinet. "This makes these valve terminals the ideal choice for filling processes," explains Lauri Nurminen, Sales Manager at Elopak Materials Handling. ■

In the splash zone: Easy-to-clean "Clean Design" cylinders from Festo with smooth corrosion-resistant surfaces.



No need for the protection of a stainless-steel control cabinet: Festo's CDV "Clean Design" valve terminal.



Festo components in the Elopak installation

CDN "Clean Design" standard cylinders



CDV "Clean Design" valve terminals



Wheeled-container filling system by Elopak: The filled packs are first grouped together and then loaded onto the individual levels of a wheeled container.

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Clean Design valve terminals

