

Production of infusion and blood bags

Compact class

The trend in automation technology is towards smaller, multifunctional components. Compact one-way flow control valves type VFOF-LE-BAH are one of the latest developments in the field of pneumatics. In machines and systems for the production of infusion and blood bags at Kiefel GmbH, they shorten assembly time and reduce the installation space required by over 50 per cent.



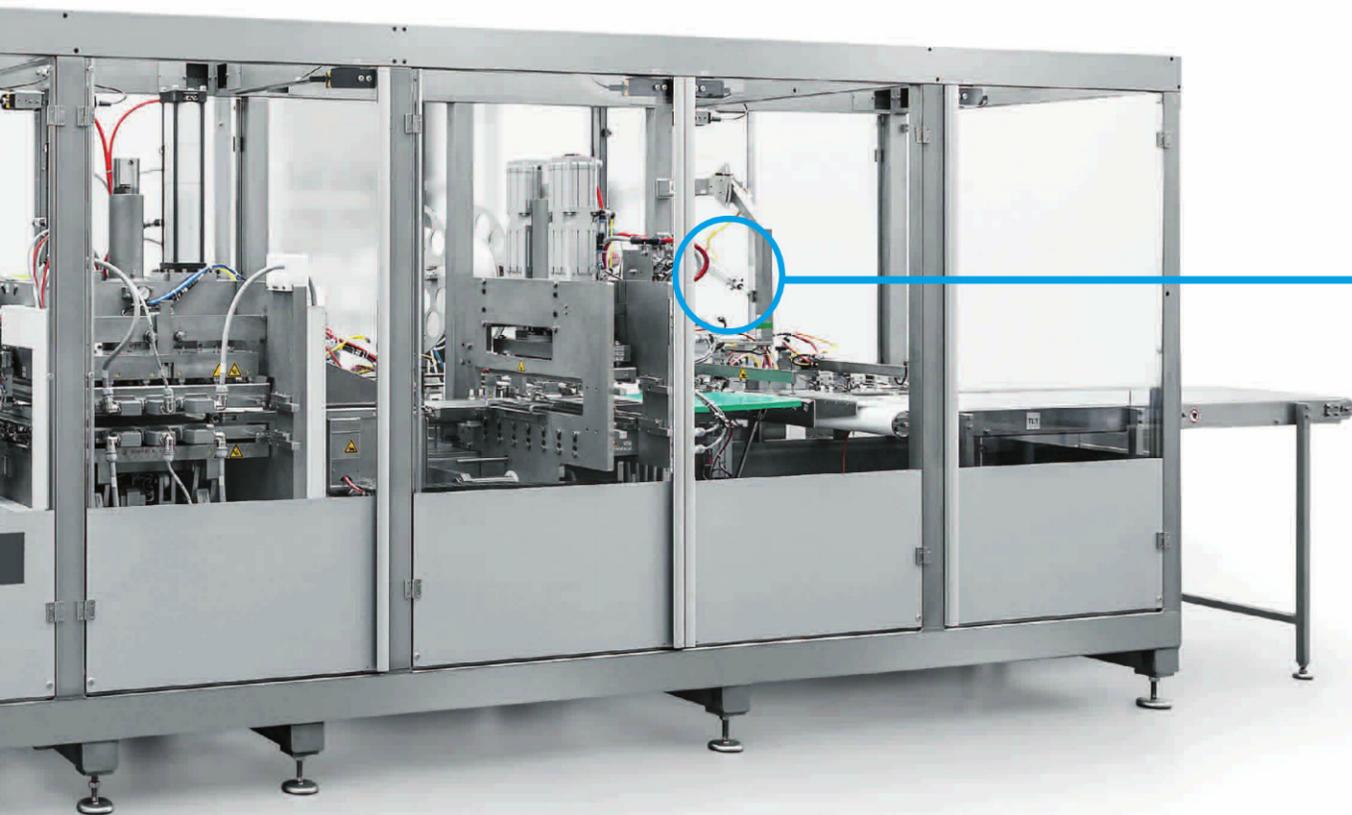
When manufacturing bags for medical fluids, extreme precision and high production speeds are of the utmost importance. The systems produced by Kiefel GmbH meet both requirements. The company specialises in developing and building systems for thermoforming and joining polymer films and is a global technology leader. Its machines for manufacturing infusion bags based on the contact welding method produce up to 6,500 bags per hour, while systems for making blood bags based on the high-frequency welding method produce up to 2,500 units. Innovative pneumatic components from Festo can be found in all Kiefel machines. The extremely compact one-way flow control valves VFOF-LE-BAH with their three-in-one function not only save on assembly time, but also reduce installation space requirements and make maintenance easier.

Festo right down the line

The new one-way flow control valves not only control the piston speed of cylinders, but also allow an intermediate stop in a predefined position. Parts can be held and processed in this position and lowering in the event of the compressed air being disconnected briefly can be prevented. To reduce potential risks as per the Machinery Directive 2006/42/EC, a manual exhaust function is used which switches the drive to the energy-free state if the compressed air supply has been disconnected. Along with VFOF-LE-BAH, a number of other Festo components ensure efficient pneumatic processes in Kiefel systems. These include service units for compressed air preparation, valve terminals and individual valves and cylinders. The latter are used, for example, to move the grippers for feeding the film and to operate punching, embossing, printing and welding equipment. →



Saves installation space: one-way flow control valve VFOF-LE-BAH.



Fast and precise: the system for manufacturing infusion bags produces up to 6,500 units per hour.



“With the VFOF we have reduced assembly time and installation space. Instead of three parts, we now need to install only one.”

Peter Kronawitter, Pneumatics Design Engineer, Kiefel GmbH

From film to bag

Although the individual systems from Kiefel are all used to produce different products, the fundamental automation principle behind the medical technology machines is the same. The process is best illustrated by a new system for manufacturing infusion bags. In the first step, the film is unrolled. Dancer rollers perform a buffer function to cushion the synchronised motion sequences. They isolate the power from the machine, which is needed to set the parent roller in motion. This is followed by contactless electrostatic cleaning of the film and application of the product-specific information in the printing station. The system laterally feeds a film with the print medium. The inlet and outlet tubes for fluids such as blood or infusion solutions are then welded on. In the next processing step the entire bag is welded and the cooling systems then reduce the temperature of the welded sections. Finally, the bags are separated by punching or cutting, placed on a conveyor and transported onwards.

Three functions, one valve

Until a year ago, two pneumatic control elements – the one-way flow control valve GRLA and the shut-off valve HGL – were still required on many cylinders. The GRLA was used to adjust the flow rate, while the HGL blocked the flow in one direction. The blocked connection could be opened again by a control signal. Both valves are still installed in systems where called for by the design specifications. In other areas, however, the compact, multifunctional valves VFOF-LE-BAH are used. The new components integrate three functions: variable piston speed, short intermediate

stop and individual manual exhaust. The efficient control element therefore saves time and money and reduces the installation space by over 50 per cent. It is easy to operate and assemble and can be used everywhere. The pneumatic control elements offer versatile functionality, are energy-efficient and non-polluting, and reduce compressed air losses.

Two-thirds less assembly time

For Peter Kronawitter, Pneumatics Design Engineer at Kiefel, use of the valves VFOF-LE-BAH has paid off right down the line. “Previously, our installation technicians had to install up to three different parts. Now they install just one pneumatic component. Assembly now only takes a third of the time that it used to”, explains Kronawitter. He also sees benefits for his company in the extensive portfolio of Festo pneumatic products and in the fast, worldwide spare parts delivery service. “This has permanently reduced our warehousing requirements”, he says. With the one-way flow control valve VFOF-LE-BAH, Festo has opened up new possibilities in terms of time and space savings for Kiefel. ■

www.festo.com/vfof



Easy to adjust: simple adjustment of the cylinder speed.

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Area of business:
Developing and building
systems for thermoforming
and joining polymer films