

8. October 2018

A systematic approach to greater efficiency:

Application-specific fluidic solutions

The development of practical solutions for the measurement, control and regulation of gases and fluids takes more than just combining individual valves or controllers. This is why at this year's COMPAMED, fluidics expert Bürkert (see company box) will be focusing on systematic approaches, showing how tailored solutions can be created at reasonable cost with know-how and creativity. A highlight at the fair booth will be an "application machine" (Image 1), which unites two specific, entirely different application examples from the fields of stem cell research and aseptic filling, solved with the same technology: In both cases, microvalves play a key role along the corresponding controller. Such application solutions along with other "tailored" solutions are developed in Bürkert's Systemhaus institutions in Ingelfingen, Dortmund and Dresden as well as in Charlotte (USA) and Suzhou (China). Together they form an international engineering network that understands the needs of their respective markets and satisfy them with expertise.

Stem cell research and aseptic filling

The two applications "stem cell research" and "aseptic filling" both require precise dosing of minuscule quantities (Image 2). Stem cells must flow at a precisely defined flow rate so that they can be extracted from the flow duct, identified, counted and placed in test tubes. This process enables lymphoid cells, stem cells and blood cells to be separated from one another for the first time without accidentally influencing the nature of the cells. The fluidic system solution developed by Bürkert made a key contribution in this regard.

It was also possible to apply the experience from the non-destructive filling of stem cells to the filling of aseptic packaging (Image 3). In this case, many small containers are filled with 500 microlitres of sterile fluid prior to sealing in order to protect the delicate product

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Press release

contained within. The compact solution developed by Bürkert reduces the complexity of the process while also improving efficiency, because the dosing unit is now only connected to the controller via a single bus line; the supply of medium now also only requires one line.

Image 1: The “application machine” shows two specific, entirely different application examples from the fields of stem cell research and aseptic filling, solved with the same technology. (Source: Bürkert)

Image 2: Breakthrough in stem cell research – stem cells flow at a precisely defined flow rate so that they can be extracted from the flow duct, identified, counted and placed in test tubes without being damaged. (Source: Bürkert)

Image 3: Aseptic filling process – the entire dosing unit is now only connected to the controller via a single bus line; the supply of medium now also only requires one line. (Source: Bürkert)

Further information is available from the links below:

<https://www.burkert.com/en/Products-Applications/Customised-Solutions/Applications/Scientific-research-handling-and-dosing-in-the-micro-range>

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About Bürkert

Bürkert Fluid Control Systems is one of the world's leading manufacturers of measuring, control and regulating systems for liquids and gases. Bürkert products are used in a wide range of industries and applications – ranging from breweries and labs to medical, bio-engineering and aerospace technology. With a portfolio of more than 30,000 products, Bürkert is the only supplier to offer all fluid control system components, from solenoid valves to process and analytical valves, from pneumatic actuators to sensors.

With its headquarters in Ingelfingen in southern Germany, the company has a wide-ranging sales network in 36 countries and more than 2,500 employees worldwide. Bürkert continuously develops customized solutions and innovative products at its five Systemhaus locations in Germany, China, and the USA, and in four research centers.

Further information is available from the links below:

www.burkert.com

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