

Festo Demonstrates Contactless Handling and Weighing of Samples in Clean Environments at SLAS 2025

Festo also introduces the enhanced VEMD mass flow controllers and a new line of compact rotary grippers.

For the first time at SLAS, Festo Research demonstrates SupraMotion superconducting technology for automated contactless handling of samples in clean environments. The company is also showcasing its enhanced VEMD mass flow controller, a line of compact rotary grippers, and EXCL, a multi-axis gantry kit. The Society for Laboratory Automation and Screening (SLAS) Festo Booth 2133, San Diego Convention Center, January 27-29.

Festo celebrates its 100th anniversary in 2025. It showcases at SLAS the types of innovations that have propelled the company to the top tier of global automation suppliers. Festo annually invests seven percent of its gross revenue in research and development.

SupraMotion for lowering the risk of handling contamination

Festo has developed [SupraMotion](#) superconducting technology as a future concept for automated contactless handling of objects from non-sterile to the clean areas of med labs and pharma facilities. SupraMotion also automates contactless weighing and test tube handling within clean environments.

Superconductors are materials with unique magnetic features that lend themselves to contactless handling for dust and abrasion-free operation. The superconductor used in SupraMotion applications anchors the magnetic field of a permanent magnet, creating a strong but invisible bond keeping the magnet and superconductor at a fixed distance from each other – even through walls, liquids, and vacuum.

Levitation gaps of 10 mm and more are possible allowing the SupraMotion superconductor to be on the non-sterile side of a barrier and the carrier plate on the clean side where the plate moves samples and objects through automated processes such as capping/decapping, pipetting, and weighing.

Recently, Festo demonstrated the automated contactless transport of covered microplates from non-sterile holding cells to a clean filling cell. Rather than using horizontal transport, the microplates were moved vertically up a wall and into the clean cell via a SupraMotion carrier. Vertical handling resulted in an ultracompact solution. The filling operation was 100% automated utilizing Festo filling technology and associated solutions, including grippers.

Earlier this year, Festo demonstrated fully automated contactless filling and weighing of freeze-dry containers in cleanrooms. The SupraMotion modules and products from the Festo automation portfolio for contactless handling maintained the highest standards of cleanliness.

Festo is seeking pilot projects as the next development stage for this new solution that lowers the risk of contamination in clean environments. Those interested in pursuing pilot projects

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The VEMD mass flow controller with high dynamic range and affordable price

Festo has expanded the capabilities of its popular [VEMD](#) mass flow controller to maintain the unit's cost competitiveness while improving connectivity, control dynamics and flow range. The VEMD controller is applied in the medical laboratory, pharmaceutical, biotechnology, chemical, and food industries to automate the flow control of oxygen, nitrogen, argon, CO₂, and air. It is also used in 3D printing applications, where inert gas protects printed material during deposition.

For the most often used gases, the VEMD is configured via software, eliminating the need to purchase and use individual flow meters. Automated configuration reduces set up time and is a major feature of these enhanced controllers.

Due to the integrated control circuit with thermal sensor, the VEMD works precisely and dynamically with minimal hysteresis. It reacts quickly to setpoint changes. The VEMD mass flow controller is fast, noiseless, compact, lightweight, and offers long service life with low energy consumption.

VEMD units are ideal for use in bioreactors and fermenters. The devices are also suitable for applications where containers must be initially filled with inert gas or when a protective atmosphere of nitrogen or carbon dioxide is required.

EHMD rotary grippers ideal for life science applications

Festo expands [EHMD](#), a compact line of grippers with infinite rotation capabilities. The EHMD is ideal for life science automation applications where small objects need to be gripped and turned in a confined space. An optional module with Z-compensation automatically adjusts to cap thread pitch without moving the Z-axis, eliminating changeover times.

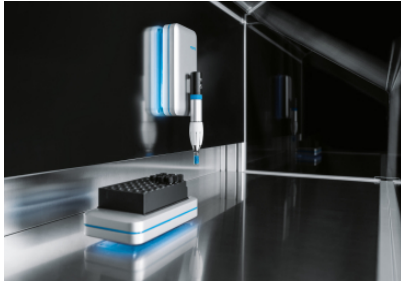
The EHMD is employed in such applications as in vitro diagnostics, cell or genomic research, and quality inspection in the biotech and pharmaceutical industries. This gripper line can also be used in the preparation and analysis of samples; loading centrifuges; gripping, rotating, and placing microwell plates; and opening and closing various sized vials. EHMD grippers are offered in 40- and now 50-mm sizes.

Combined with a 3D gantry and a camera, the EHMD can be incorporated into systems that carry out quality inspections, read bar codes, and print labels.

Festo is also showcasing at SLAS its EXCL, a multi-axis gantry kit that lowers acquisition, engineering, and assembly costs for automated sample handling and liquid dispensing in laboratory devices. Attendees will see Festo flexible dispensing and pipetting solutions using the PGVA compact precision pressure/vacuum generator.

For more information on Festo Life Science solutions – dispensing liquids, controlling gases, and handling and gripping vials – email life.sciences.nam@festo.com and visit the [Festo Laboratory Automation](#) webpage. Visit <http://www.festo.us/> for the company's full range of products.

Persfoto's



SupraMotion

A SupraMotion carrier offers contactless transport of test tubes.



Precision motion control

Precision motion control of the carrier accurately places the test tube carrier under the Festo gripper.



SupraMotion

SupraMotion levitates this container above the horizontal surface of a clean cell, while a Festo filler dispenses solution into the container.



VEMD

The enhanced VEMD mass flow controller automates the flow control of O₂, N₂, CO₂, and air.



EHMD

The EHMD is ideal for life science applications where small objects need to be gripped and turned in a confined space.