



News Release

## **Festo Introduces at SLAS 2022 an Open-Source Gantry Robot for Automated Liquid Handling**

**This solution allows OEMs to develop instruments targeted specifically to their application in minimum time.**

Media Contact:  
Marketingmgr.us@festo.com

**ISLANDIA, NY, February 7, 2022** — [Festo](#) introduces at SLAS 2022 the Modular Gantry Robot platform for laboratory-based automated liquid handling. Open sourced, customizable, and utilizing world-class components, this new solution enables equipment designers to quickly realize their unique solutions with fewer mechanical and electrical engineering resources, speeding time to market. (February 5-9, Boston Convention and Exhibition Center, Festo Booth #718)

Festo also introduces a complete family of building blocks for developing pressure/time based automated dispensing and pipetting applications. This platform is compatible with a broad range of media, offers exceptional repeatability at high speed, and can be easily calibrated for targeted applications. A core component of the family, the [PGVA](#) pressure/vacuum generator, supplies microfiltered air and vacuum for lab fluidic applications, including dispensing and pipetting. A single automated pipetting system equipped with a PGVA can transfer a range of liquid volumes from milliliters on up with  $\pm 2\%$  precision.

Festo Corporation

1377 Motor Parkway  
Suite 310  
Islandia, NY 11749  
Tel: 631.435.0800  
Fax: 631.231.9215  
[www.festo.us](http://www.festo.us)

Dispense/pipette heads are available in variants from 1 up to 96 channels for high throughput applications.

These new solutions were developed at the Festo Life Science Technology Engineering Center (TEC), Billerica, Mass. Established in 2018 as part of the Festo research and development arm, the TEC pioneers the development of new high speed, high accuracy fluid handling and dispensing solutions and collaborates with OEMs to bring their laboratory equipment to market faster and with less risk based on Festo world-class automation components and global technical support.

COVID has accelerated both product development and individualized work at the TEC. To speed development, personnel used a strategy of modular building blocks that can be applied quickly and mixed and matched as needed. COVID accelerated development led to the new Modular Gantry, open-loop pipettes, and PGVA air box.

### **Modular Gantry**

Modular gantries feature an open-source motion and fluidic application programming interface (API) with Python, Java, and .NET/C# drivers. Utilizing a library of common drivers reduces the learning curve and enables integrators to easily develop an optimized control strategy for their machine – strategies that support the end-use customer's success and satisfaction with the machine. The flexibility and



News Release

Media Contact:  
Marketingmgr.us@festo.com

Festo Corporation

1377 Motor Parkway  
Suite 310  
Islandia, NY 11749  
Tel: 631.435.0800  
Fax: 631.231.9215  
www.festo.us

ability to customize eliminates the need for OEMs to purchase a generic machine and then adapt their test or assay solution onto it.

Modular three-axes gantry robots can be delivered as ready-to-assemble kits, including cabinet and all necessary supporting components, or as preassembled systems. The Modular Gantry Robot platform follows a Lego-like building block strategy of hundreds of interoperable components designed to be assembled with simple hand tools. Festo Life Science engineers guide customers in the selection of the optimum modules for the target application, including the level of three-axis robot required to handle speed and load. Other modules can include dispense head, pipettes, capper/decapper, and bar code reader. Simple modular Gantries can ship in 8 to 12 weeks, and production scaled up rapidly where needed to suit urgent applications such as Covid testing.

### **Open-loop pipettes**

Utilizing compressed air and vacuum, Festo open-loop pipettes transfer liquid volumes in microliter ranges with up to  $\pm 2\%$  precision. The system can provide fast clog detection and liquid level sensing. Sterile pipettes are available with 20, 300, and 1,000 ul tips, with filters and without. They are compatible with Festo dispense heads, gantries, and PGVA, creating the benefits of modular automation. By the end of 2022, Festo will be offering the “smart” closed loop pipette. Programmed easily using a built-in web interface, the smart pipette will be used in



News Release

Media Contact:  
Marketingmgr.us@festo.com

Festo Corporation

1377 Motor Parkway  
Suite 310  
Islandia, NY 11749  
Tel: 631.435.0800  
Fax: 631.231.9215  
www.festo.us

applications benefiting from high accuracy and multiple sensor feedback that enables volume verification.

## **PGVA pressure/vacuum generator**

In the PGVA unit, pressure and vacuum are generated by a quiet 50 dB pump and stored internally in individual reservoirs. Air is filtered to -0.001µm purity. Flow is servo controlled by a fast, silent, energy efficient piezoelectric regulator. For easy operation, PGVA can be controlled from any RS232, USB, or Ethernet port. Open-source Python, C#, and Java drivers are posted and supported on Github:

[GitHub - Festo-se/PGVA-1: Pressure and Vacuum Generator](#)

This all-in-one 24V system has a footprint of 8"x3"x8". The PGVA received in 2021 an IDEA! gold award and LEAP engineering design silver award.

For more information on Festo LifeTech solutions – dispensing liquids, controlling gases, handling and gripping vials – email [life.sciences.nam@festo.com](mailto:life.sciences.nam@festo.com) and visit [Festo Laboratory Automation](#).

Visit [www.festo.us](http://www.festo.us) for the full range of products.

**Download images here:**

<https://app.box.com/s/miblil3k9h91jq61gkags5qkcithx7wt>

## **Photo Captions**

### **Modular Gantry Robot platform**

*Modular three-axes gantry robots can be delivered as ready-to-assemble kits, including cabinet and all necessary supporting components, or as preassembled systems.*

### **Mechatronics, controls, and air box**

*The rear of the modular gantry robot cabinet shows mechatronics (top), air box (lower left), and control panel (lower right) in a neat, ready-to-program assembly.*

# FESTO

News Release

Media Contact:  
[Marketingmgr.us@festo.com](mailto:Marketingmgr.us@festo.com)

Festo Corporation

1377 Motor Parkway  
Suite 310  
Islandia, NY 11749  
Tel: 631.435.0800  
Fax: 631.231.9215  
[www.festo.us](http://www.festo.us)

## **Festo Closeup of the control panel**

*The assembled control panel is one of the factors enabling designers to quickly realize their unique solutions – speeding time to market.*

## **ISO view cabinet and gantry robot**

*This ISO view of the Modular Robotic Gantry platform shows the three-axis robot mounted in its cabinet. Designers can expect exceptional repeatability at high speed, and easy calibration.*

## **Scalable platform**

*The Modular Robotic Gantry can easily be scaled to meet the designer's goals.*

## **Open-loop pipettes**

*Utilizing onboard pure compressed air and vacuum, Festo open-loop pipettes rapidly aspirate and dispense a range of volumes from sub ul to 10 ml and up with  $\pm$  2% precision.*

## **Festo PGVA cut-away**

*The compact PGVA features a compressor, proportional control, air filter, silencer, pressure/vacuum reservoirs, pressure sensor, 24V power supply, and digital outlet for valve actuation.*

## **PGVA**

*The PGVA with an 8x8x3-inch housing is installed on or inside an instrument to supply compressed air and vacuum for liquid handling. It won a Silver award in the LEAP program and a Gold IDEA! award.*

## **About Festo**

Festo is a leading manufacturer of pneumatic and electromechanical systems, components, and controls for process and industrial automation. Celebrating 50 years in the US, Festo Corporation has continuously elevated the state of manufacturing with innovations and optimized motion control solutions that deliver higher performing, more profitable automated manufacturing and processing equipment.

Through advanced technical and industrial education, Festo Didactic Learning Systems and its partners prepare workers for today's and tomorrow's manufacturing technologies.

**Connect with Festo:** [Facebook](#), [LinkedIn](#), [Twitter](#) and [YouTube](#)



News Release

Media Contact:  
Marketingmgr.us@festo.com

Festo Corporation

1377 Motor Parkway  
Suite 310  
Islandia, NY 11749  
Tel: 631.435.0800  
Fax: 631.231.9215  
www.festo.us