

Festo Introduces the HPSX Universal Adaptive Gripper

For Faster, Gentler and More Hygienic Picking

Festo has introduced the HPSX Universal Adaptive Gripper, a pneumatic soft gripper engineered to improve speed, hygiene and flexibility in demanding food, pharmaceutical and cosmetics applications. Combining robust design, food-safe materials and adaptive silicone fingers, the HPSX directly addresses long-standing automation challenges where rapid, precise and gentle product handling is essential.

“In developing the HPSX, we refined the gripper’s shape, dimensions and internal geometry to maximise gripping force while minimising air volume,” says Peter Potters, Product Manager at Festo. “This enables faster cycle times and multiple picks per second. At the same time, we selected a silicone material that is soft enough to prevent product damage but firm enough to securely grip objects and withstand high acceleration.”

The new gripper’s design reduces air consumption while maintaining high gripping force, enabling quicker actuation and faster picking cycles. The HPSX has been designed and tested to withstand acceleration forces of up to 15G while handling loads of up to 0.5 kg, ensuring reliable performance even in high-speed applications. This combination of low air volume, strong grip and acceleration resistance delivers both speed and consistency on fast-moving production lines.

Gripper fingers are manufactured from a soft, silicone-based material specifically chosen for its controlled flexibility. This allows the HPSX to conform to delicate, irregularly shaped or hygienically sensitive products without damaging them. The adaptive design eliminates the need for rigid, application-specific tooling, making the HPSX ideal for handling fragile food items, pharmaceutical products and cosmetics.

To meet stringent hygiene requirements, the HPSX features a corrosion-resistant, sanitary design that is easy to clean and maintain. The gripper has an IP69k high-pressure washdown rating and is built to withstand aggressive cleaning processes common in food and pharmaceutical environments. It complies with EC 1935/2004 requirements and uses FDA-compliant, food-grade and metal-detectable materials, ensuring safe operation in regulated production environments.

The HPSX can handle a wide range of product shapes and sizes without requiring a tool change, significantly reducing mechanical changeover time. This flexibility is particularly valuable in applications such as cosmetics kitting, where a single gripper may need to pick and place multiple product types within the same production run. By eliminating the need for frequent gripper swaps, manufacturers benefit from reduced downtime and increased overall equipment effectiveness.

Available in three sizes (40 mm, 70 mm and 100 mm) and in two-, three- and four-finger configurations, the HPSX offers nine variants to suit diverse applications. A universal ISO50 fitting enables straightforward attachment to existing robotic end-of-arm tooling.

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In addition, the HPSX integrates seamlessly with Festo's broader automation portfolio, including controllers, valves and pneumatic systems. Using single source reduces installation and programming complexity by eliminating interface and compatibility issues between components from different suppliers. For OEMs and end users, this translates into faster commissioning, simplified troubleshooting and a single point of contact for service and support – further increasing uptime.

Press Images



New HPSX soft gripper

Features a hygienic, food-safe design and handles a wide variety of objects of different shapes and sizes without requiring a tool change.

Festo GB & IE

About Festo

Festo is a leading international supplier of automation technology with a turnover in 2024 of around €3.45 billion. Festo employs over 20,000 people worldwide and is a proven innovator and problem solver in pneumatic and electrical automation, where it is the performance leader. Festo offers around 36,000 pneumatic and electric products in hundreds of thousands of variants for factory and process automation technology, many of which can be tailored to specific customer needs. Sustainability, reducing its CO₂ footprint, digital learning, innovation, performance and speed are the key drivers for the company's future. Festo GB operates as a carbon neutral organisation and uses the PAS 2060 standard externally audited by NQA to validate this claim to customers, employees and other stakeholders.

Festo Industrial Automation's innovative strength is demonstrated through the launch of around 100 new products every year. The company invests over 8.5% of its turnover in R&D, resulting in over 2,600 patents held worldwide. For more information about the company's products and UK / Irish services, please visit: www.festo.com/gb and www.festo.com/ie

Festo and Industry 4.0 - Festo has engaged with the Industry 4.0 initiative from its inception: as a user, manufacturer and trainer. As a member of the steering group, the company has taken an active role in defining the core standards such as the RAMI model and the Administration Shell. Festo Didactic has installed Industry 4.0 Cyber-Physical Factory training hardware systems in many leading universities and training centres. It also provides Industry 4.0 training courses for change managers and practical workshops for employees. Industry 4.0 technologies such as OPC-UA communications are embedded in the latest generation products. For more information, go to www.festo.com/digitalisation

Festo Didactic training delivers training for industry – by industry. Combining Festo's industrial heritage with its future-focused manufacturing and engineering expertise to deliver courses for greater productivity and competitiveness. Offering a wide range of open courses, structured development programmes and tailor-made, customer-specific projects on technology and Industry 4.0 and the industry-leading online training suite, Festo LX. Festo also provides state-of-the-art training equipment solutions for industrial companies and educational institutions around the world. Festo Didactic has around 56,000 education customers worldwide. More information on Festo training and consulting services can be found at: www.festo.com/didactic

Festo Bionic Learning Network encapsulates the innovative nature of Festo, raising awareness and attracting talent to the company. Exploring the links between nature and technology opens

new areas of innovation and demonstrates complex ideas in a stimulating and enjoyable way. Festo works with an alliance of internal R&D, external educational establishments and specialist companies to advance bionic solutions for automation applications of the future. The objective is to benefit from bionics as a source of inspiration and to realise these in industrial automation. For more information about Festo's Bionic Learning Network, please visit: www.festo.com/bionics