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## PCE Automation uses Festo technology

Putting STANLEY® knife production at the cutting edge

Festo automation technology is being used to help STANLEY® Tools in the UK to meet continued demand for its renowned safety knives, while continuing to maintain the highest standards of safety and quality.

Festo automation sits at the heart of a new rotary assembly cell designed and supplied by PCE Automation Ltd. The new production cell also contains Festo mini slides, axes, cylinders, valves and grippers – all of which contribute to the high precision alignment required for STANLEY knife assembly.

Josh Roberts, Festo Business Development Consultant, says: “The STANLEY knife rotary assembly cell presents a great example of how automation can be applied to replace manual repetitive tasks and deliver benefits, such as improved productivity and quality.

“PCE involved Festo at the earliest possible stage, which meant we could work in partnership and combine our respective specialist knowledge as system builders and automation specialists to deliver the optimum solution for Stanley Black & Decker.”

### Cutting edge solution

The customer required an assembly cell that could be used to produce safety knives with two different sizes of blade capable of swapping production efficiently between their 9mm and 18mm width options. To meet demand, a cycle time of 20 parts per minute was necessary. In addition, Stanley Black & Decker needed a compact solution to fit in the existing footprint at their UK production facility.

PCE Automation Ltd won the contract to design and build the new automated assembly cell under competitive tender, against international competition. In partnership with Festo, they were able to demonstrate the levels of responsiveness and aftersales support that their customer was looking for.

Their solution is an eight-station rotary assembly cell featuring Festo automation. The blade handles are held in position on the central rotary assembly and the components, including blades, are placed with high precision to build up the final product. The fully assembled STANLEY knives are subject to camera inspection for quality control as they leave the cell on a conveyor.

The customer did not want the assembly cell to require constant overseeing by an operator. So, hoppers are used to feed components down to vibrating bowl feeders. The hopper feeds will keep the cell running for approximately one hour without the need for operator intervention. The bespoke vibrating bowl feeders were manufactured by PCE’s sister company Premier Bowl Feeders.

Introducing the knife blades into the assembly cell raised a particular challenge for PCE. The 9mm and 18mm length blades are presented to the assembly cell in stacks of 400, but each blade is only 0.4mm or 0.5mm thick, which makes them tricky to pick and place accurately. There was a real risk of the blades jamming and halting production if not correctly positioned, so it was critical to be able to pick off one blade

at a time and place it in the correct orientation. PCE used magnets to hold the blades effectively. Festo grippers are used to pick and place all the other components.

The nerve centre of the new rotary assembly cell is the Festo CPX-AP-I (see box-out), which acts as a single control network and facilitates the use of a single cable for all communications and power. It also allows flexible positioning of valve terminals and other components around the assembly cell – all of which simplifies installation and lowers overall cost. Festo DGST precision mini slides and grippers are used for accuracy and repeatability in presenting the plastic components for assembly. These are complemented by DFM guided actuators and air preparation units from Festo's core Blue Star range of best priced and availability, pneumatics.

Ellen Blackie, Senior Project Manager, PCE Automation, comments: "As an existing Festo Integrator, we had every confidence that their product portfolio would offer the quality and precision that the STANLEY knife assembly application demanded. Breadth of product choice, coupled with Festo's on time delivery record and parts availability, were critical in helping us win the Stanley Black & Decker contract. As a systems builder, we appreciate the proactive support that Festo offers in exploring alternative solutions. We also found their online software tools particularly helpful, especially the ability to track parts and lead-in times online."

Press Images



PCE Stanley knives - assembly

A combination of Festo DGST mini-slides, axes, cylinders and grippers are used to pick and place the STANLEY knife components with high precision and repeatability.



PCE Stanley Knives - CPX-API automation platform

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](http://www.festo.com/gb) and [www.festo.com/ie](http://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](http://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](http://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](http://www.festo.com/bionics)