Focus on food and beverage

Designed to be clean, and cost-effective

IF YOU ARE DESIGNING A PRODUCT FOR FOOD MACHINERY MANUFACTURERS, IT MAKES SENSE TO INVOLVE THEM RIGHT FROM THE START. THAT'S WHAT FESTO DID WITH ITS NEW GENERATION OF PNEUMATIC ACTUATORS. THE RESULT IS A RANGE WHICH PROVIDES A COST-EFFECTIVE ALTERNATIVE TO SPECIALIST HIGH-END COMPONENTS FOR THE FOOD AND BEVERAGE INDUSTRIES.

"Our discussions with customers," explained Stuart Gittins, REU Team Sales Manager at Festo Ltd., "revealed that one of their biggest concerns is the lack of options when it comes to choosing machine components. The choice has traditionally been expensive custom components or non-compliant off-the-shelf products, with nothing in-between. Our challenge was to help machine builders put together food-safe automation equipment, without being forced to choose between cost and compliance."

Festo's new range of products based on **'Clean Design'** principles provides a 'third way': products with all the advantages of standard components – such as competitive pricing and ready availability of both product and replacement parts – but manufactured to the same high standards of design and engineering as more expensive custom items. Using a combination of standard parts, specialist materials and the latest fabrication technologies, Festo has created a range of products – initially comprising corrosion-resistant round and guided cylinders, and a proximity switch – which are high quality, hygiene regulation compliant, low maintenance and with a long service life.

'Clean Design' means not only a low contamination risk, but also suitability for use in aggressive environments, where frequent washdowns are the order of the day (or to be more accurate: several times a day).

The most obvious characteristic of a Festo Clean Design product is its body profile which – to eliminate waste and bacteria traps, and increase the efficiency of high-pressure hose washdowns – is noticeably free from protrusions. The products are manufactured from corrosion-resistant stainless steel, and also feature an extra-thick anodising surface (as thick as 12 microns, compared with the more usual 3) which provides several extra degrees of corrosion protection. Additional mounting items are also manufactured to the same standard, ensuring there are no weak points where corrosion can take hold, or nooks and crannies where bacteria can breed.

Festo's engineers have also listened to customers' comments, and considered the hygiene demands of the food and beverage industry environment, in designing the patented PPS self-adjusting pneumatic cushioning technology, present in the new CRDSNU round cylinder.

This ensures that the cylinder automatically adjusts to the prevailing load and speed conditions, to provide optimum end-position cushioning. Not only does automation eliminate the need for maintenance, but it also eliminates the manually-adjustable cushioning screw, and so helps to maintain the cylinder's clean washdown lines. Added benefits of this patented technology are faster installation – saving time and money – easier handling and greater ease of use, and reduced noise when the machine is in operation.

The new range uses U.S. Food and Drug Administration approved seals and U.S. Department of Agriculture approved H1 food-grade lubricants, making it suitable for use in any environments where there is direct contact with food products – whether that's the food zone, splash zone or standard zone. For particularly aggressive applications, where there are frequent detergent-based washdowns, self-lubricating seals made from Ultra-High Molecular Weight PolyEthylene are available as an option. UHMWPE is a non-toxic substance which is used to create seals combining high abrasion resistance with an exceptionally low co-efficient of friction. If frequent washdowns succeed in stripping the grease from the piston rod, the cylinder can continue to run 'dry' with no negative effect on the length of its service life.

The exceptional cost and performance benefits of Clean Design are the result not only of customer feedback and collaboration, but also of extensive research into surface friction, lubrication and wear, and of in-depth materials analysis and computer-optimised design. The consequent Clean Design principles can currently be found applied across a range of three Festo pneumatic actuators and a proximity switch and a compatible range of tube and fittings.

The CRDSNU stainless steel round cylinder is available in eight ISO 6432 compliant sizes, with stroke lengths from 1-500mm. The DGRF guided cylinder is designed for applications involving high torque movements, as it features lateral piston rod support guides. There is a choice of six different bore sizes, from 20-63mm, and stroke lengths from 10-400mm. The third cylinder in the range is the DSBF – a reliable standard cylinder with dimensions complying with ISO 15552. It is available in five piston diameters (32, 40, 50, 63, 80 and 100mm) and stroke lengths from 10-2000mm.

The SMT-C1 cylinder switch is manufactured from housing and cable materials approved for the food and beverage industry, and is a washdown suitable design – meaning on the one hand it will not contaminate food and beverage products, and on the other it will not be corroded by aggressive cleaning agents. It also provides a safe and highly stable fixing onto the cylinder, so even high-pressure hoses won't dislodge it. However, as an additional precaution, it is available with a cable length of up to 5m, making it possible to remove it entirely from wet and splash zones, to avoid any possibility of accident-sensitive electrical connections coming into contact with liquids. The SMT-C1 is suitable for all Festo Clean Design drives with mounting rails.

Readily available from ERIKS, the Festo Clean Design range of actuators and switches is designed for both cleanliness and cost-effectiveness, ***by*** machine builders, ***for*** machine builders.

Stuart Gittins
REU Team Sales Manager, Festo Ltd

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