

Pumps: keeping it clean

IN TODAY'S PROCESS INDUSTRIES, THE DEMAND FOR EFFICIENT, RELIABLE AND CUSTOMISED PUMP SOLUTIONS IS HIGH. HERE WE LOOK AT SOME OF THE FACTORS THAT ARE OF PARTICULAR SIGNIFICANCE WHEN CHOOSING A PUMP FOR ONE OF THE MOST DEMANDING AREAS – HYGIENIC APPLICATIONS.

**FOCUS
ON
PROCESS**

Pump applications in the process industry are many and various, ranging from cleaning and dosing to heating, fire protection and hygienic processing. And many of these applications demand specifically designed products – especially hygienic processing. It is this area which is the subject of this article, as there are several aspects of pump design to which a purchaser should pay particular attention.

Take materials and surface finish, for example. These are of the utmost importance – both for their physical properties and to eliminate possible breeding grounds for bacteria or germs. When sourcing a pump, make sure you specify that only FDA-approved materials are used in the manufacture. In fact, you'll find that AISI (1.4404/1.4435) stainless steel, which is either cold-rolled

and/or forged is now an accepted standard. This ensures a homogeneous pore-free surface as opposed to the surfaces provided by cast material and should be specified by manufacturers in their sanitary pumps.

“Grundfos’ Sanitary Range embraces the need for optimum performance and hygienic design.”

Seals are another issue. Depending on the actual application and pumped media, you may need either single or double mechanical shaft seals to secure trouble-free operation. Double shaft seals are available as ‘tandem’ or ‘back-to-back’ versions. When using a product

with single mechanical shaft seals, look for inboard seals which are mounted in an optimum position in the product flow to ensure proper lubrication and cooling, as well as CIP and SIP-capability. With hygienic pumps, standard materials are usually carbon/stainless steel and EPDM – though other materials are available too. You might also want to consider other connection options, such as SMS, RIT, DIN, ISO, and Tri-Clover. Special sterile threaded fittings and flanges are also available.

Of course, one of the most important things in hygienic processing is the ability to cleanse the pumps thoroughly. That's why you should look for products in which every assembly and every last bolt has been designed to be 100% hygienic. Furthermore, many users will want to be sure that the product

they purchase are maintenance-friendly, offering easy access to hydraulic components. This helps ensure short downtime periods and helps to optimise maintenance procedures during production.

And what of standards and legislation? After all, when it comes to hygienic applications, a pumping solution is subject to a variety of national and international rules and regulations, guidelines and laws. When sourcing hygienic pumps, make sure that the manufacturer you choose can guarantee that its products are fully compliant with all relevant standards and legislation.

Although other solutions are available, one manufacturer which offers an excellent choice of hygienic pumps is Grundfos. Called the Sanitary Range, Grundfos solutions are primarily aimed at production environments within the food, beverage and pharmaceutical industries. Although relatively new to the Grundfos portfolio, they are products with a distinguished history, as they were developed by Hilge, a brand founded in 1862 and which is today well-known for its hygienic design and high-grade stainless steel sanitary pumps.

From the smallest part to complete pump systems, the Grundfos range of sanitary pumps is designed to meet the needs of today's process industry. Furthermore, these solutions can be fully customised on request, to meet any specific requirements you may have. It is this ability to innovate and meet the demands of its customers that makes Grundfos unique.



Meeting the standard

There's a wide variety of standards and legislation relevant to hygienic pumps. These include the EU Machine Guidelines, GMP Rules and Regulations, FDA Regulations, 3A Sanitary Standard, EU Foodstuff Hygienic Guidelines, DIN EN 12462 Biotechnology and the recommendations of the EHEDG (European Hygienic Engineering Design Group) and QHD (Qualified Hygienic Design).

