Press Information

Durable and efficient: Kyocera's containment shells impress with high-performance ceramics

Containment shells are already firmly established in the pump industry. Due to the ceramic material FZM, Kyocera's products avoid wear, eddy current losses and excessive energy input.

Kyoto/London, March 25th, 2021. Magnetic couplings are increasingly being selected for sealing systems as leakage-free solutions in pump construction. The containment shell is a crucial element in this regard, and the fine ceramics manufacturer Kyocera specialises in producing it. It is the material in particular that makes the products stand out: FZM heavy-duty ceramics do not contain any metallic components. This helps to avoid eddy currents that cause power losses, and the drive power can be reduced by up to 15 percent. In comparison, eddy currents in metallic containment shells can generate up to 50 kW of heat. Additional heat inducted in metallic containment shells is dangerous when pumping liquid gases or liquids close to their boiling point. The corrosion-resistant property is another advantage of the ceramic containment shell together with its excellent mechanical strength. Therefore, an almost universal use is possible – even in the chemical industry. Among its other beneficial properties are its exceptional fracture toughness, wear resistance and low thermal conductivity. The temperature range of the FZM ceramics of between -200°C and +450°C allows them to be used in cryogenic applications, e.g. vaccine production, as well as in hot applications such as pumping hot oils.

Energy-saving containment shells

Kyocera's containment shells offer another important advantage: energy-efficiency. This is particularly noticeable when using large pumps, where the energy savings accumulate. Improving the energy efficiency of pumps and pumping systems is hugely important, because pumps account for about 20 percent of the energy consumption of motor-driven systems. According to a projection made by the German Energy Agencies (dena), this would amount to 10 billion kWh saved per year - just by optimising pumping systems.

Custom solutions for every customer

Every industry, business and even every pump is different. This is why Kyocera works with its customers to develop components that are specifically tailored to their requirements. One of these customers is Klaus Union, a manufacturer of industrial pumps and valves. Klaus Union

equips its pumps with ceramic containment shells to increase operational reliability in applications close to steam pressure and at the same time reduce energy consumption. Even old pumps can be retrofitted with Kyocera's containment shells with little effort in order to take advantage of this technological progress. When a twelve-year-old pump was retrofitted, the impeller diameter was reduced while taking into account the operating parameters, with the result that the pump could be operated closer to the BEP (best-efficiency point).

For more information on Kyocera: www.kyocera.co.uk

About Kyocera
Headquartered in Kyoto, Japan, KYOCERA Corporation is one of the world's leading manufacturers of fine ceramic components for the technology industry. The strategically important divisions in the KYOCERA Group, which is comprised of 298 subsidiaries (as of March 31, 2020), are information and communications technologies, products which increase quality of life, and environmentally friendly products. The technology group is also one of the most experienced producers of smart energy systems worldwide, with more than 40 years of know-how in the industry.

The company is ranked #549 on Forbes magazine's 2020 "Global 2000" listing of the world's largest publicly traded companies. With a global workforce of over 75,500 employees, Kyocera posted sales revenue of approximately €13,33 billion in fiscal year 2019/2020. The products marketed by the company in Europe include printers, digital copying systems, semiconductor-, fine ceramic-, automotive- and electronic components as well as printing devices and ceramic kitchen products. The KYOCERA Group has two independent companies in the United Kingdom: KYOCERA Fineceramics Ltd. and KYOCERA Document Solutions Ltd.

The company also takes an active interest in cultural affairs. The Kyoto Prize, a prominent international award, is presented each year by the Inamori Foundation — established by Kyocera founder Dr. Kazuo Inamori — to individuals worldwide who have contributed significantly to the scientific, cultural, and spiritual betterment of humankind (converted at approximately €828,000 per prize category).

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