

Valves for the changing chemical industry



The importance of digitalisation in the chemical industry is growing continuously – valves are playing their part in this and supporting the sustainability and efficiency revolution.

Photo: Pixabay

To overcome the challenges that it is currently facing, the chemical industry needs increasingly efficient, sustainable and safe components. At the same time, these developments also open up enormous opportunities for the valve, actuator and automation sector – opportunities that the sector is glad to embrace, because once again, it is completely in its element.

The chemical industry is clearly feeling the effects of energy and raw material prices, supply chain risks, sustainability, increasing regulation, and digitalisation. Many factors have to be addressed at the same time, and when it comes to this, dependable partners are indispensable.


**Messe
Düsseldorf**

Messe Düsseldorf GmbH
Postfach 10 10 06
40001 Düsseldorf
Messeplatz
40474 Düsseldorf
Deutschland

Telefon +49 211 4560 01
Telefax +49 211 4560 668
www.messe-duesseldorf.de
info@messe-duesseldorf.de


Geschäftsführung:
Wolfram N. Diener (Vorsitzender)
Marius Berlemann
Bernhard J. Stempfle
Vorsitzender des Aufsichtsrats:
Dr. Stephan Keller

Amtsgericht Düsseldorf HRB 63
USt-IdNr. DE 119 360 948
St.Nr. 105/5830/0663

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Investments in fresh solutions

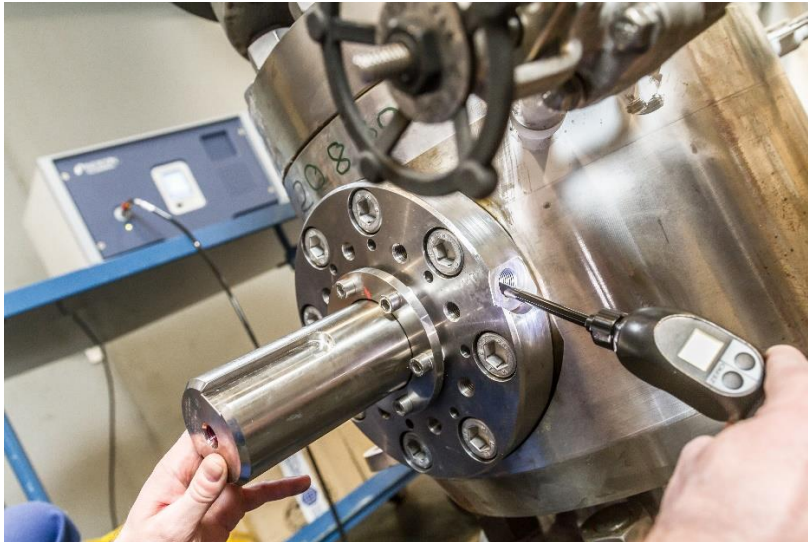
For example, chemical companies are finding dependable partners in the valves industry. This is because the sector has mastered the field, and is constantly investing in the development of new products and solutions for the chemical industry. And also in new employees whenever appropriate. For example, Hartmann Valves: the chemical industry is a high priority for this company, which is also reflected in its investments. “In recent years, we have expanded our team in the area of valves for the chemical and petrochemical industries,” explains Hartmann Valves. Sales activities have been further increased.

The Research and Development department at Hartmann Valves is also increasingly focussing on solutions such as a ball valve with an integrated heating jacket. Basically, the aim is “to achieve increased safety for our customers with our metallic gas-tight ball valve, especially in more demanding applications or those with special functions”. In the future, we want to continue to develop new, innovative solutions together with customers in the chemical industry, and to invest in these products.

Enhancing sustainability through digitalisation

The digitalisation of valves in the chemical sector is steadily gaining in importance – it is a key player in the shift towards sustainability and efficiency. In addition to aspects such as digital type plates, digitalisation is playing an increasingly important role, especially in the automation of valves. “Automated valve readout data, for example, is in demand here,” according to Hartmann Valves.





*Hydrogen leakage tests ensure that the limit values are complied with and fugitive emissions are minimised.
Photo: Hartmann Valves GmbH*

Component development is characterised by a trend towards smart valves in order to further increase efficiency. The aim is to more precisely control and regulate how chemicals are processed and transported through plants. Quality valves reduce the risk of leaks through which hazardous or environmentally harmful substances could enter the environment. There is an increasing demand for smart valves equipped with sensors, actuators, self-diagnosis and communication capabilities, Samson reports. These smart valves enable remote control, predictive maintenance and real-time monitoring, which boosts operational efficiency significantly.

Maximum safety through automation

Valve automation has long proven itself in hazardous areas of the chemical industry. "Especially in difficult-to-access or large, complex installations, this saves working time," explains Armaturen Vertrieb Alms (AVA). When used in hazardous areas, remote control also offers more safety for plant operators. "As our valves are mostly used in



safety-relevant applications in chemistry or petrochemistry, we primarily install actuators that immediately return to a predefined safety position in the event of a power failure,” explains AVA. It is crucial to have a safety system in place that safely interrupts the process in the event of a drop in control pressure or loss of electrical power supply. For example, the process of filling a boiler or reactor can be stopped automatically – “closed” safety position – or a pressure relief can be triggered – “open” safety position.



In the valves industry, the chemical sector finds dependable partners to face current and future challenges.

Photo: Pixabay

Short delivery times are becoming increasingly important in a changing market. The valves industry is responding: In 2023, for example AVA invested in expanding warehouse capacity at its German headquarters in Ratingen to 11,000 square meters – more than doubling the previous capacity. Users benefit from short delivery times, which can be achieved through holding large inventories of standard components.



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Components for highly explosive media

In recent years, Bray Europe has also invested in the chemical and petrochemical markets in Europe. These investments include the development of the new Cx Line range. This line of products has been specifically tailored to the chemical and petrochemical market. All Cx Line products feature a digital nameplate that allows easy access to the most important data. The focus is on the aspects of safety, reliability and sustainability.

Richter Chemie-Technik is also responding to the growing demands of the markets. This year, the company has continued to develop its KSE series. The plastic-lined safety angle valve KSE 3.0 aims to optimise flow and design in combination with simplified storage and installation. "This valve technology improves the system performance in the long term through efficiency and cost-effectiveness," explains Richter. The KSE 3.0 safety valve has a thermally processed, homogeneous PFA lining with a defined thickness. The safety valve is suitable for highly explosive gases, vapours and liquids.

Hydrogen for the chemical industry

As well as efficient components and processes, the chemical industry also relies on the use of green hydrogen and the chemical recycling of plastics to further increase sustainability. In order to maintain its competitiveness, the chemical sector urgently needs hydrogen as a raw material, because it is the starting point for important chemical value chains. And also an energy source.

However, in order to transport enough hydrogen to satisfy the rapidly growing demand, suitable infrastructure is needed. This means that investments in pipeline construction are required. The bottom line is that



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efficient and safe valves are needed not only for chemical plants, but also for pipelines. The associated investments open up great opportunities for the chemical industry in terms of achieving sustainability goals and enhancing competitiveness – and the valves industry has the right technologies to implement them. Which ensures that everyone has the right chemistry.

Trends and highlights from the valves industry can be experienced at VALVE WORLD EXPO from 3 to 5 December 2024 in Düsseldorf. Current industry and product information can be found on the internet portal at www.valveworldexpo.com.

Press contact VALVE WORLD EXPO 2024:

Petra Hartmann Bresgen MA
Ulrike Osahon
Tel.: +49 (0)211/4560-541/-992
E-Mail: HartmannP@messe-duesseldorf.de



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