

“ARMATURY Group a.s. has been part of the Vexve Armatury Group since 2019, together with companies Vexve Oy and ZMK Technologies GmbH. The entire group strives to become a leading provider of mission-critical valve solutions for five core markets: power generation, natural gas and LNG, steel and iron production, district energy and the petrochemical sector, focussing on lower carbon solutions,” says Petr Groh, CEO of ARMATURY Group. “We also want to increase our geographical reach and enter new markets.”

By Lucien Joppen



The roots of the ARMATURY Group lie in the North-Eastern region of the Czech Republic, around the city of Ostrava. The area became the nation's center of valve development and production after the Second World War. In the early nineties, following the Czech Republic's independence, several businesses were formed. One of them was ARMATURY Group, registered by its owners in 2000. The tradition of this company is based on more than 50 years of history and experience in design and production of valves. Since its foundation, the company has been developing very dynamically and has been investing in development and modern manufacturing technologies.

Company highlights:

- 2000 Founded
- 2003 First export
- 2007 New production facility
- 2009 First production of high-pressure valves
- 2013 Extension production facilities
- 2016 Opening of German office
- 2018 Opening office in Dubai
- 2019 Acquired by DevCo Partners, forming Vexve Armatury Group
- 2020 Acquisition ZMK Technologies

Vexve Armatury Group: facts & figures

- CEO: Jussi Vanhanen
- Established: 2019
- Head office: Sastamala, Finland
- Members: ARMATURY Group a.s., Vexve Oy, ZMK Technologies GmbH
- Turn over: over 120 million EUR
- Employees: 790 people
- Production: factories in Finland, Czech Republic, Germany, and Russia

ARMATURY Group aim to become a leading provider in mission-critical valves

The last time Valve World visited ARMATURY Group, in February 2019, it became apparent that the company wanted to move forward. In the years before our visit, the company had already invested heavily in its production facilities, tripling its production capacity, and expanding its machining (CNC etc.) park.

During its short lifetime (see box text Company timeline), ARMATURY Group has evolved from a domestic producer to an international player, extending its reach mainly throughout the European continent. “The reason for this move was simple. Central Europe is very small, and we could only grow by exporting our products. Given our high export

share (roughly 80 per cent, ed.), we have succeeded in our initial mission to become a truly international company in the global valve market. We are now active in more than 70 countries,” says Petr Groh.

Combined forces

ARMATURY Group received a synergy boost in 2019, when DevCo Partners Oy acquired ARMATURY Group to create a leading European provider of valve solutions by combining the company with Vexve Oy. Vexve Armatury Group was created, offering an extensive portfolio of valves for a wide range of industrial applications. The group has a combined turnover of over €100 m. Last year, the two companies got another ‘sister’, when Vexve Armatury Group acquired ZMK Technologies, a promising young company.

ARMATURY Group specializes in tailor-made solutions for the gas, power and metallurgical sectors, Vexve supplies valves solutions for heating and cooling systems and ZMK Technologies is a designer and supplier of highly specialized valves for the petrochemical industry with a focus on ethylene production. As mentioned in this introduction, Vexve Armatury Group aims to be the leading provider of mission critical valves solution in the transition to a low-CO2 future. To reach these goals, the group has to win four ‘battles’, namely succeeding in each market segment, creating winning teams, establishing world leading operations and capturing synergies between the group’s members, mainly in product development.

When asked about these opportunities, Libor Kremel, Commercial Director of ARMATURY Group, states that sharing knowledge and insights will increase the competitiveness of the Vexve Armatury Group and its daughter companies. “We already mentioned synergies in product development. Well, there are also best practices we can share in terms of new product development, production methodology, sourcing, sales representation, marketing, and service,” says Libor Kremel.

Goggle valve

Specifically related to new product development, the Vexve Armatury Group members have already achieved many results. Only recently, in August 2021, the company announced the development of the new goggle



valve C62.3 type 139Z DN 2000 (see image above) for the demanding environment of petrochemicals. For this project, designers, and technicians of ARMATURY Group and ZMK Technologies worked together. Their common goal was to extend the range of valves for the petrochemical sector with a new, highly specialized type of valve. “The working medium is gas with impurities with a working temperature of 780 °C, which can increase in short term up to 900 °C, working pressure is 0,2 bar. Due to the high temperature and aggressiveness of the working medium, we had to use special materials and fireproof lining for the prototype of DN 2000,” says Pavel Heider, Designer of ARMATURY Group. “We are pleased to present a new product, of which the development is coming

to an end. We believe that the new type of goggle valve will bring added value to its future customers in the form of maintenance-free operation with a long service life.”

Shared values and interests

Another telling example is the collaboration between ARMATURY Group and Vexve, regarding to a new ball valve line for district energy system. This synergy project developed a completely new product range of ball valves for hot water in sizes DN 150 – 900. The first manufactured pieces headed to Romania and Ukraine. As mentioned before, ball valve range of Vexve is more geared toward applications in lower pressure classes, whereas ARMATURY Group is specialized in more demanding, critical applications. “We are sharing our

knowledge and insights with Vexve in the area of sealing systems, ‘valve behavior’ and coating to develop a product with superior performance characteristics,” says Libor Kremel. On the question whether these collaborative efforts are not hampered by (company) cultural differences, Petr Groh answers as followed: “We are all European companies. Therefore, we share common values.”

Mission-critical

Going back to ARMATURY Group, the company develops and produces an extensive range of industrial valves, with the focus on ball and butterfly valves, but also encompassing check, gate and globe valves, goggle and hot blast gate valves and valves for nuclear service (containment 2,3,4). With the company’s aim in mind, the group specializes in mission-critical valves, many of which are designed tailor-made. “Usually, we develop and manufacture these valve solutions based upon requirements from our customers,” says Libor Kremel. “In general, the industry sectors that we serve, have set more stringent requirements due to various factors such as tougher regulation on (fugitive) emissions. These tougher requirements vary, depending on the sector and specific applications. Such applications can be found - for example - in the power generation industry, which is heavily regulated and has demanding requirements regarding corrosion, high-temperature and pressure applications.”

From coal to gas

Speaking about zero leakage and (fugitive) emissions, Petr Groh mentioned in the beginning of the interview, low-carbon energy solutions as an important market development that will impact product development and subsequent sales. “In several countries, we expect an energy transition by which coal-firing gradually makes way for natural gas and other renewable sources, which have a more favourable CO2-footprint, and which are far less polluting,” Petr Groh says. “For example, countries traditionally highly-dependent on coal are telling examples of this development. Parallel to this transition, countries increasingly will adopt renewable energy. Specifically for coal-firing, there is a trend to convert these power plants to facilitate co-firing with gas and biomass.” For the time being, however, natural gas will thrive in Europe, with pipeline development both from Russia through northern-Europe and from the south from Azerbaijan. Natural gas will also find its way to the continent in liquefied form.

Hydrogen

When mentioning natural gas, one can’t avoid asking about hydrogen. As previously reported (see Valve World issue 2, March 2019), the European Commission has identified green hydrogen as a promising way to harness renewable energy (through electrolysis powered by wind and solar). For the time being, green hydrogen can’t compete on price with grey hydrogen but



As Petr Groh and Libor Kremel have stated, the company aims to extend its reach across the globe. The company already can provide a track record. “We supply valves to one of our important customers, Siemens, to various places in the world for 20 years. Recently, we shipped check valves for steam turbines C09 and L10 of various sizes to Brazil and Indonesia. All these valves in the range NPS 24” to 36” are designed for steam with a temperature of 200 °C,” says Libor Kremel.

ultimately - in 20 to 30 years’ time - green hydrogen could be produced on a large scale for industrial, residential and mobility. “In the short term, we see opportunities for H2-service in transportation,” Libor Kremel says. “Hydrogen production has been around, so far mainly for industrial purposes but there are developments by which hydrogen can be phased in through existing natural gas infrastructure,” Another pathway is the use of hydrogen to replace coal in steel and iron production, one of ARMATURY Group’s core markets. The iron and steel industry is hard-to-abate and accounts for 9 per cent of man-generated CO2-emissions worldwide. Replacing coal with hydrogen generated by renewable energy would largely decarbonise this industry.

First contract for hydrogen

In April 2021, ARMATURY Group received its first order from a gas transmission system operator in central Europe. The project consists of high-pressure gate valves in the size of DN 300 PN 100, which ensure to provide an energy mixture of natural gas with 10 to 20 per cent hydrogen. “We had to solve a few technical issues. First, there is a requirement for helium testing of the valves. Since helium is a rare gas, it is limited in quantity on our planet and these tests are costly. «Recently we were preparing production of middle and large high pressure ball valves,” says Libor Kremel. Other challenges include preventing a possible hydrogen reaction with other chemical elements in the valve structure, whether

they are gate valves or ball valves, or preventing hydrogen from escaping into the environment. ARMATURY Group says it will use the practical experience gained from the new valve design and tests for future projects where the energy mix will be 50-50.

Customer focus

To conclude the interview, both Libor Kremel and Petr Groh stress that ARMATURY Group, apart from developing and manufacturing valve solutions, also strives to assist its customers during the valves’ product life. Both gentlemen mention that yearly customer reviews show that the company’s clients mostly appreciate the ‘high valve quality, reliability, professionalism, and the friendliness of the whole company.’ “Our commitment to our clients doesn’t stop at the sales for us,” Libor Kremel says. “We are active in the after-sales domain in various ways: maintenance and repair, measuring and regulation, warranty and post-warranty service, installation and assembly. Recently, we assisted one of our clients. Following an incident at the pipeline where our valve would be installed, the client wanted to close the valve. However, the gas-over-oil actuator wasn’t installed yet. We found a solution in-house: by using a gearbox instead of the gas-over-oil actuator, the client could close the valve and keep the production line secure. This job wasn’t contracted, nor did we agree upon a price. This shows that we are very service-oriented and flexible to move with our clients, to help them solve every problem. We may have grown over the years, but we are and will remain a flexible, customer-centred company.”

Complete deliveries

In 2021, ARMATURY Group completed three megaprojects. One of these projects involved the production of four huge butterfly valves (see image) with lever and counterweight L32 DN 1800 and two dismantling joints M20. “These units weigh over 20 tons each and the total length of the set is 3.9 meters,” says Libor Kremel. The butterfly valves serve at a hydropower plant in Norway. The supply pipeline from the lake is 1,250 meters long and goes through a mountain tunnel. “This water flows through our valves to this power plant. It is therefore a very important part of the line. We consider this order as a great, worldwide reference to safety butterfly valves that are controlled by hydraulic cylinders, protecting turbines in hydropower plants.” Libor Kremel also stresses the ability of the group to deliver large orders to its customers. The company delivered a record of 114 pieces of ball valves DN 300-1000 for the Baltic-Pipe project in Poland in March. “This was the biggest delivery for this colossal project in 2021, for which we manufactured more than 430 pieces of valves DN 200 - 1000 for GAZ-SYSTEM, of which DN 1000 were 42 pieces! For your imagination, nearly 160 trucks were needed to transport more than 3,000 tons of valves in total.” When asked about any other recent success stories, Libor Kremel mentions the last shipment of 400 valves to ADNOC in the beginning of 2021. “In total, we have already shipped almost 2,273 pieces of valves to this country of unlimited possibilities. Most of these are made of stainless steel alloys and Inconel, some are cryogenic ball valves with extensions.”



Tailor-made solutions

ARMATURY Group prides itself on its ability to provide tailor-made solutions to its customers. For example, the company manufactured two goggle valves C62.2 113 DN 2000 for a blast furnace at a customer in the Czech Republic. “We usually supply our goggle valves to our customers assembled in one piece,” says Libor Kremel. “This time it was different. The working place of those valves is located at a height of about 30 meters above ground. The installation is also complicated due to space constraints. Therefore, we had to deliver the goggle valves disassembled and then lift piece-by-piece and assemble the goggle valve again above ground. This was quite an undertaking which we completed to the customer’s satisfaction.”