

GEMÜ news

CHALLENGING AND SUCCESSFUL BUSINESS YEAR

Product news

Innovations

Application reports

Apprenticeship and working

Commitment and initiatives

Magazine for the
customers, partners
and friends of the
GEMÜ Group

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Dear Readers,

A very challenging year is drawing to a close. A year characterised by global tensions, the war of aggression against Ukraine, the resulting geopolitical impacts, rising inflation and manufacturing costs and other disruptions in the supply chain. In addition, many people and companies have been affected by the energy crisis. The global economy faces major turbulences and we are also feeling the effects. Nevertheless, we are very happy to report that we have managed to have a good year. This was a substantial feat for every one of us, and we consider ourselves fortunate that our customers have remained loyal to us even in times of difficult delivery conditions. We would like to extend our warmest thanks for this trust. We will continue to do everything within our power to remain a reliable partner for our customers. Their commitment and the exceptional collaboration between our employees and our customers form the foundation of our success. As a family-owned enterprise, we support one another and rely on one another even in difficult times. This helps us to come together as a motivated team. Our customers also benefit from this, just as we benefit from strong customers who operate in stable sectors. Thanks to our business unit structure, which focuses on a range of markets, we are able to understand the needs of our customers in each market, and we have acquired a high level of specialist knowledge over the course of years. This enables us to advise our customers and offer genuine added value.

In spite of certain challenges, the GEMÜ Group has still managed to reach a few milestones in 2022. We are investing in the future, and we are glad to have been able to celebrate the topping-out ceremony for our Headquarters in the Hohenlohe business park. We have also founded a new subsidiary with GEMÜ Iberica to take care of our customers in the Spanish and Portuguese markets directly.

The tasks we have faced this year have not been easy, but at GEMÜ we love a challenge. As such, we have a positive outlook for the coming year and expect further growth. Of course, nobody can be certain how geopolitical tensions will develop. We are monitoring the general situation

with increased vigilance. This careful and critical approach served us well over the last three years in responding to the coronavirus pandemic. With the introduction of early measures and collaboration towards a common goal, we have been able to tackle all of the challenges we faced very effectively. The coming year promises to be exciting. The world is currently lurching from one crisis

into the next, but if we continue to stick together and work together, we can remain strong together. On behalf of the entire Company Management team and the family, we would like to say a big thank you to all members of staff across the world for their tireless dedication and exceptional collaboration. We wish you all a good start to the new year and look forward to a successful 2023 with you.


Gert Müller
Managing Partner
of the GEMÜ Group


Stephan Müller
Managing Director
of the GEMÜ Group

GREAT PLACE TO WORK GEMÜ BRAZIL AWARDED CERTIFICATION

The international research and consulting institute **Great Place to Work®** has awarded the Brazilian subsidiary of the GEMÜ Group, **GEMÜ Brazil**, the “Great place to work” (GPTW) certificate. The satisfaction of the approx. 120 employees was determined on the basis of an anonymous survey.

The reason for participating in GPTW was to determine employee satisfaction with regard to the changes introduced in the last three years. The improvements include investments in training courses, changes to the internal structure with redesign of the premises, modernisation of machines and increasing staff by approx. 20%, expanding operations by adding an additional work shift and other achievements such as emergency medical treatments and environmental certificates.

An impressive 93% of employees gave a positive assessment of the work culture at GEMÜ Brazil. The Brazilian subsidiary of the valve manufacturer GEMÜ, which has its headquarters in Ingelfingen, Germany, was awarded the seal in its very first year of participation. Generally speaking, 80% of certified companies take two or more years to be awarded the certification.

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GEMÜ EXPANDS ITS COMPANY MANAGEMENT TEAM

MATTHIAS FICK MANAGING DIRECTOR OF GLOBAL OPERATIONS

GEMÜ Gebrüder Müller Apparatebau GmbH & Co. KG based in Ingelfingen, Baden-Württemberg, is reorganizing its company management team. Graduate industrial engineer Matthias Fick was appointed as Managing Director of Global Operations within GEMÜ Germany's company management team on 1st July 2022. This appointment will further strengthen the company management team, comprising Gert Müller, Managing Partner, and Stephan Müller, Managing Director.

As a result of strong growth in recent years, the Global Operations and Supply Chain Management (SCM) department at GEMÜ has steadily grown in importance and has been instrumental to the company's successful development. With a view to further growth, the company management has decided to incorporate the management of this department directly into the company management team.

As part of this reorganization, GEMÜ is also partly restructuring its management structure at the Divisional Manager and Senior Head of Department levels. In addition, the company management team is increasingly shifting its focus to strategic decisions for the entire GEMÜ Group and the management of international subsidiaries.

In Matthias Fick, the company management team is gaining a highly experienced production, logistics and supply chain management expert and long-time GEMÜ employee. Mr Fick started his career at GEMÜ back in 1994 as a logistics controller. Two years later, he was named Head of the Order Processing Centre, before being appointed as Head of Logistics/SCM in 2007. Ever since, Matthias Fick has played a decisive role in shaping global production, logistics and supply chain processes in various management projects. Most recently, as the Divisional Manager of Global Operations & SCM, Matthias Fick has been responsible for GEMÜ's global production, logistics and supply chain management.

"We're delighted to be joined by Mr Fick, a highly experienced and successful manager from within the company, in this position of responsibility. We're confident that, working together with him and his team, we'll be able to make strategic progress in this important department for GEMÜ," says Gert Müller, Managing Partner at the GEMÜ Group.

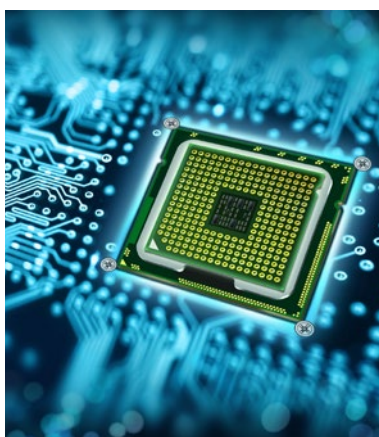
"I'm looking forward to the new role. I particularly relish the opportunity to work with my enthusiastic team to further advance the operational excellence strategy and to roll it out to all factories. I'm greatly appreciative of the trust placed in me and look forward to working together in a creative approach," says Matthias Fick, new Managing Director at GEMÜ Germany.

WE ARE WORKING TO CREATE THE FUTURE POSITIVE PROJECTIONS FOR THE SEMICONDUCTOR GROWTH MARKET

Up to 2030, the demand for semiconductor products will grow by six to eight percent year on year across all sectors (source: McKinsey & Company, semiconductor market analysis 2022). While the consumer electronics industry has been directly affected by rising inflation and therefore reduced readiness to buy among consumers, other markets are proving to be more resilient. The increasing demand for electric cars worldwide, the growth in artificial intelligence and industrial automation technology including the IoT and the resulting sustained investment in cloud infrastructure for data centres have ensured long-lasting stability.



The global semiconductor industry is poised for another decade of growth. Market insiders expect that demand for semiconductors will experience growth in the two-digit range over the next three years thanks to increasing digitalisation, particularly in the automotive electronics sector. The amount spent on semiconductors per vehicle is expected to rise from 712 US dollars in 2022 to 931 US dollars in 2025. Deloitte forecasts yearly growth of 10% over the coming years.



Good prospects in geopolitically difficult times

This dynamic growth requires flexible planning by GEMÜ for all resources while taking strategic objectives into consideration. Coping with increased demand is a challenge that affects employees across all departments. The rising demand on the market has a direct impact on production planning and the supply chain as well.

"I am pleased to be able to say right now that we can look forward to a stable order situation next year as well and that our entire team in the Semiconductor business unit will be working at full capacity up to the third quarter of 2023. This validates our strategy and all the steps that the team has taken so far in the long term. That is truly great. I am proud to have achieved so much together with such a strong team," reports Burkhard Müller, Head of Semiconductor business unit.

"The issues of digitalisation, autonomous driving, etc. will continue to drive the market over the next two years. There is certainly also a certain level of saturation on the semiconductor market to contend with, which means that a more conservative approach is taken for planning and implementing new investments. Our core strategies in the Semiconductor business unit, such as focussing on the process tool OEM market and the material sector, should compensate for this potential flattening," says Moritz Waldmann, Head of Department Semiconductor business unit, Sales.

Despite overall confidence: The situation in the procurement markets is strained. The tapering developments in the energy markets and the limited amount of raw materials have affected everyone. For GEMÜ, this means rising raw material prices and correspondingly long delivery times. The technology company is nevertheless doing everything it can to offer planning certainty for its customers. The only way to achieve this is with collaborative partnership. Closely coordinated advance planning with customers is an important factor for turning long delivery times into predictable implemented projects, and honouring the trust they place in our company.

"In general, it is a good feeling that we have achieved the ambitious growth plans we set ourselves more quickly than we expected. However, the scale at which demand has continuously grown was surprising to us, and we find ourselves faced with challenges that have never before been seen at GEMÜ. Thanks to our twin initiatives of intensive cooperation with our customers and establishing quotas for individual markets, we have been able to resolve these challenges in the best possible way thus far," reports Moritz Waldmann, Head of Department Semiconductor business unit, Sales.



We ensure intelligent power supply

Climate protection and the issue of sustainability have been a core component of the GEMÜ corporate culture for many years. The company has set itself the objective of becoming climate-neutral using measures such as investment in photovoltaic systems for energy production and expansion of its fleet of electric cars.

For the GEMÜ Semiconductor business unit, the factor of renewable energy sources and storing the energy they produce plays a further very different role. Semiconductors play a crucial role in generating and above all storing energy from hydroelectric power, solar and wind energy and biomass. Accumulators and batteries are the most important carriers of energy for sustainable supply.

But what happens to the stored energy? How does excess power reach the places where it is needed? This is where Smart Grid provides an intelligent solution.

Smart Grid is an intelligent power grid that transports both power and data. This data enables information exchange, which in turn is used to dynamically control electricity production, consumption and storage. Implementing this as a functioning system that is capable of communication, controlling and distribution requires the use of semiconductors.

The vehicle to grid method, which uses the battery within an electric car as a power buffer, is only possible with semiconductor technology. The power stored within the vehicle battery can be fed back into the power grid via bidirectional charging. This enables a car to play an active role in an intelligent power system while it is not being used.

With its components for microchip manufacture and system solutions for battery charging, GEMÜ enables the relevant industries to drive forward the transformation of the energy supply industry. Making energy “green” requires groundbreaking technologies that would not be possible without modern semiconductors – now and in the future.

Europe is becoming more independent. So are we.

The ongoing shortage of microchips in the industrial sector is having a positive effect in a different area: The proposed “Chips Act” of the European Commission aims to increase capacity for manufacturing semiconductors within the EU over the coming years. To this end, public funds totalling 43 billion euros will be provided within Europe to avoid future shocks to the



economy such as those resulting from the current supply bottlenecks concerning microchips from Asia. This initiative aims to ensure that at least 20% of the microchips manufactured worldwide are produced in the EU by 2030, in order to achieve greater technological sovereignty.

“Demand in the semiconductor market is immense. In conjunction with the current raw material shortages in the area of fluoropolymers such as PFA, PTFE and PVDF, this represents a real challenge for us and our competitors. Thanks to their properties such as purity and chemical resistance, these materials are at the heart of our semiconductor products. We are all aware that rising demand results in higher prices – and the same is true for us in this case. My team and I are attempting to master exactly this balancing act between long delivery times and price increases on the one hand, and ensuring high quality and customer satisfaction on the other. This is both a challenge and motivation for us,” reports Frederik Trudel, Head of Department Semiconductor business unit, Business Development Management.

In the wake of increasingly critical assessments of globalisation and long supply chains, GEMÜ has already taken the early decision to make reliability a high priority. The complete renovation of production capacities in Switzerland represented a crucial step in ensuring that future demand for GEMÜ products in the semiconductor industry can be met with maximum quality, regardless of geopolitical changes.

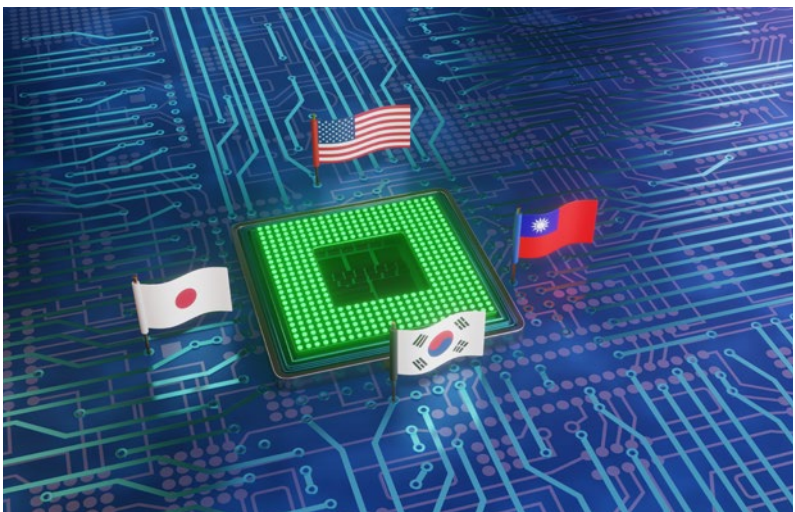
International growth across all regions

Growth in the semiconductor industry was in the two-digit range across all regions worldwide in 2022. In the Asia-Pacific region – the largest region – growth of 13.9% is expected by the end of the year. Economic experts forecast growth of 22.6% in America, 20.8% in Europe and 12.6% in Japan for 2025. Digitalisation across all areas of life and all companies is a driving factor for demand. Some of the largest semiconductor manufacturers are based in the USA. That is where research and development primarily takes place. Conversely, production is mainly

passed on to contract manufacturers in Asia. In 1990, 37% of the global semiconductor manufacturing capacity was in the USA, whereas today it accounts for just 12%. Astonishingly, Europe accounts for barely 10% of the total capacity. Furthermore, China is massively upscaling its production capacity. With the aid of direct subsidies and other forms of funding, 70 new factories, meaning pure production facilities, are currently being constructed. Even now, China boasts 12% of the global production capacity. Its planned objective is 28%. In the other direction, a 2.2 billion US dollar investment program seeks to return production to the United States. Over the next ten years, 100 billion US dollars will be invested in infrastructure development, which includes microelectronics production. That is a long-term perspective, and it is not possible to rush everything.

To provide some background: The manufacturing of microchips involves 400 to 1400 steps, depending on the complexity of the microchip. This takes 12 to 26 weeks. For this reason, reinforcing the semiconductor industry in the USA is important to enable high-quality chips to be produced more quickly right now and, looking into the future, to take the lead in this innovative sector.

The growth of the digital world of today continues to be an exciting story, and we are part of it.



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ACHEMA 2022

A GREAT PERFORMANCE FOR GEMÜ IN FRANKFURT


With new product presentations and many digital interaction opportunities, GEMÜ's appearance at the leading ACHEMA trade fair in Frankfurt am Main in Germany cemented its reputation as an innovative technology company.

GEMÜ took part in numerous trade fairs in 2022, and the highlight of the exhibition year was the ACHEMA. Around 2200 exhibitors from 50 countries demonstrated their expertise and their product ranges at the ACHEMA trade fair. GEMÜ set up its eye-catching stand in its regular place in Hall 8, Stand F4. Prospective clients were greeted with a modern, lively trade fair design and a highly motivated team on-site in Frankfurt. The personal discussions, the product innovations on display and the open stand design made for an experience that will resonate with visitors to the trade fair for a long time to come.

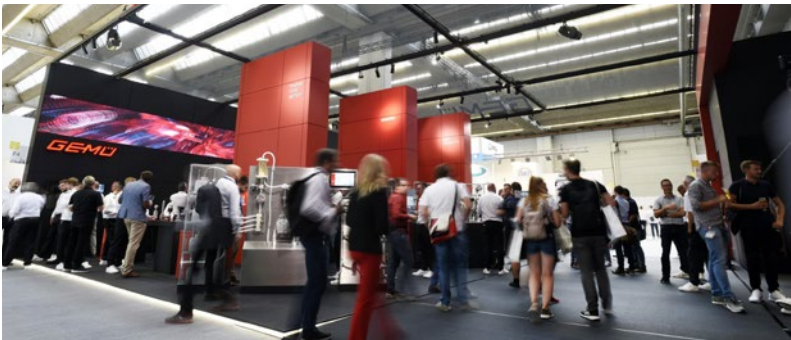
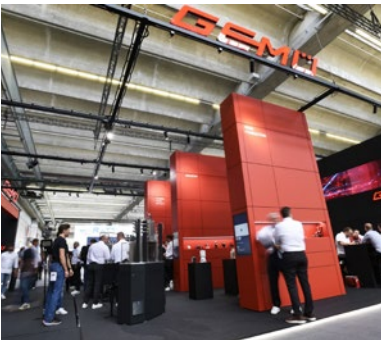
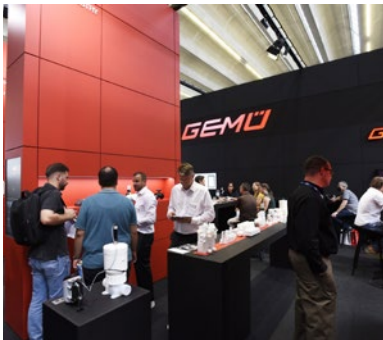
In accordance with the current trend towards digitalization, GEMÜ integrated many different digital interaction options into its trade fair stand: Animations on large LED walls, products that could be controlled live via transparent OLED screens and a virtual reality escape room combined to create a unique atmosphere. GEMÜ offered visitors a hybrid live experience this year at the ACHEMA trade fair. For guests who could not visit Frankfurt in person, the opportunity was available for the first time to follow the events at the trade fair stand via the livestream in the GEMÜ Digital Showroom.

The Digital Showroom, found at www.gemu-group.com/digitalshowroom, enables any prospective customers to find out about the products and trend topics such as New Food in the foodstuff industry, a look at the current semiconductor market and single-use applications, even at a later date.



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NEW POSITIONER


EVERYTHING YOU NEED TO KNOW IN A VIDEO INTERVIEW


The new GEMÜ 1441 cPos-X electro-pneumatic positioner was a highlight of the products showcased at the ACHEMA trade fair in 2022. It is suitable for a multitude of control applications with the most varied tasks.

At the ACHEMA trade fair, Platform Manager Thorsten Ungerer answered questions from Lukas Lehmann, editor at the Konradin publishing group, about the new positioner. The newly developed GEMÜ 1441 cPos-X is suitable both for single-acting and double-acting pneumatic process valves with linear and quarter-turn actuators, and features an impressive smart app control concept, simple commissioning and comprehensive,

customisable configuration options. You can find the complete interview on the GEMÜ YouTube channel or by simply scanning this QR code.



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TRADE FAIRS 2023

(INTER)NATIONAL

Pharmapack – medical	01.02. – 02.02.	Paris (FR)
Semicon Korea	01.02. – 03.02.	Seoul (KR)
ISPE CaSA Tech Show USA	07.03.	Raleigh (US)
CFIA Rennes France	14.03. – 16.03.	Rennes (FR)
Semicon China	22.03. – 24.03.	Shanghai (CN)
Pharma Kongress	28.03. – 29.03.	Wiesbaden (DE)
Expo Lounges	18.04. – 20.04.	Karlsruhe (DE)
Cophex Korea	18.04. – 21.04.	Kintex, Ilsan (KR)
Canadian Hydrogen Convention	25.04. – 27.04.	Edmonton (CAN)
Interpex USA	25.04. – 27.04.	New York (US)
MSR Spezialmesse	26.04.	Leverkusen (DE)
Interpack Components	04.05. – 10.05.	Düsseldorf (DE)
Chem UK	10.05. – 11.05.	Birmingham (UK)
Farmaforum Spain	17.05. – 18.05.	Madrid (ES)
Manufacturing & Supply Chain		
Conference Ireland	23.05. – 24.05.	Dublin (IR)
MedtecLive – medical	23.05. – 24.05.	Nürnberg (DE)
Maintenance / Inevvo	24.05. – 25.05.	Dortmund (DE)
Expoquimia Spain	30.05. – 02.06.	Barcelona (ES)

Subject to change due to the coronavirus pandemic!



THE MODERN WORKING WORLD

RESEARCH WORKSTATION IN THE SPECIAL ENGINEERING DEPARTMENT

Within the Global Operations and Supply Chain Management main department, the Special Engineering department with the design, control technology and mechanical design departments is tasked with developing special solutions and providing support for the production factories in the GEMÜ Group.

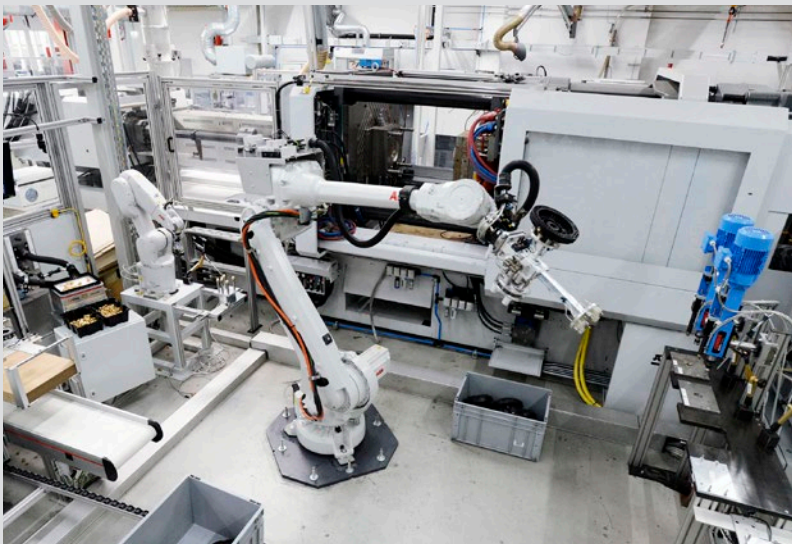
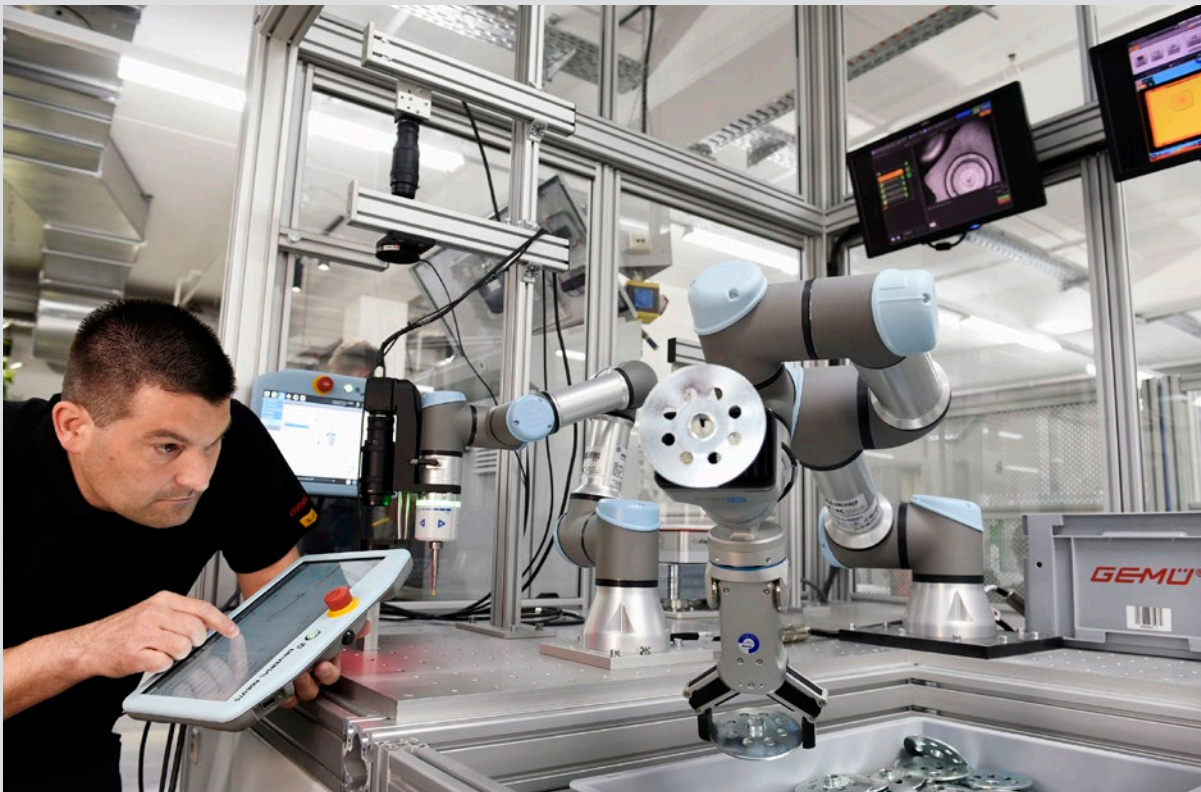
One of the various tasks of the Special Engineering department is the qualification of future processes and minimising implementation times and downtimes, in parallel with the manufacturing workflow. This includes combining visual systems for 2D/3D solutions with robotics systems for parts handling. To this end, the research workstation was created in the Special Engineering department in 2021/2022.

In simple terms, the tasks of the research workstation can be described as linking together robotics and visual systems. The main tasks involved in this are testing, recognition and sorting.

These tasks are varied and can be combined together, and are already used in practice with a range of machines. One example of this is inserts. A solution has been developed at the research workstation that enables robots to recognise the correct components and match them to the right insertion points via contour testing, handling of the components and sorting functions.


With the aid of robots, it is possible to further automate repetitive processes, ensure reproducibility and free up qualified employees for machine setup and scheduled or unscheduled maintenance procedures.

In addition, the “readiness level” is increased via pre-qualification of manufacturing processes and early detection of potential improvements in parallel with manufacturing processes. Handling processes for simple tasks are improved and the availability of processes is increased. This pre-qualification substantially reduces implementation times and later interruptions in ongoing processes via the linking together of processing stages and machinery.



Further successfully implemented projects that involve variants of this technology include:

- ⇒ RFID production
- ⇒ Initialisation
- ⇒ Bin picking thrust washers
- ⇒ Handling bushes
- ⇒ Diaphragm handling at the GEMÜ subsidiary Intercarat in France

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GEMÜ SYSTEMS IS GROWING

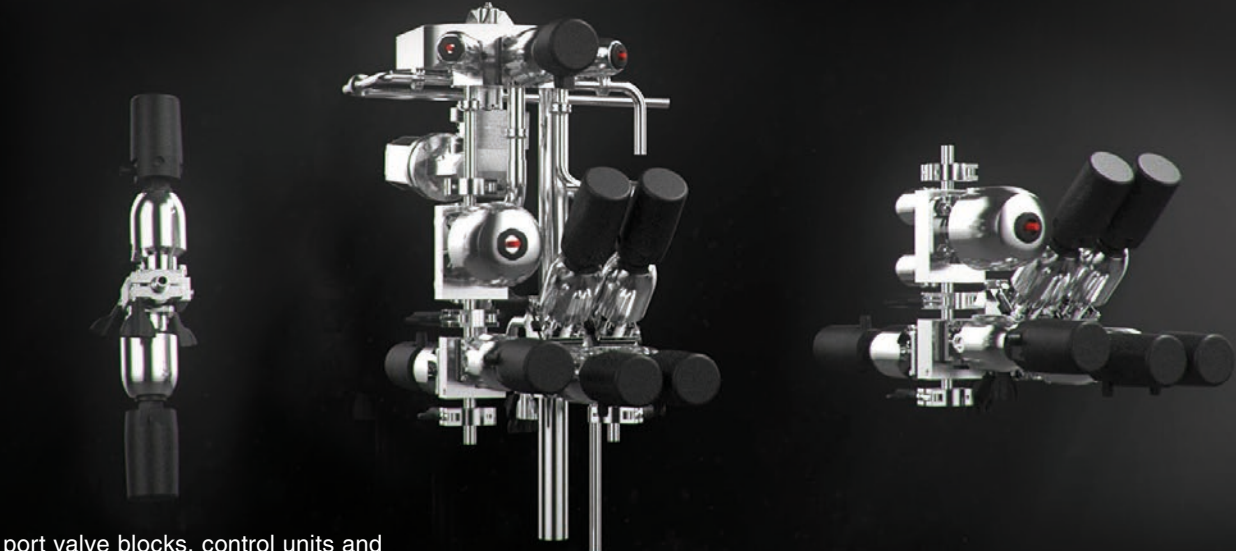
SUCCESSFUL START

In accordance with the GEMÜ motto “Venturing down new paths”, we have expanded our range of services in 2020 and successfully launched GEMÜ Systems. This newly founded department has since been responsible for expanded product applications according to customer requirements.

The approach is simple: GEMÜ wishes to support its customers in simplifying its processes. This means not only providing various standard products, but also combining different components to create complete system assemblies. This is the area in which the GEMÜ Systems department specialises.

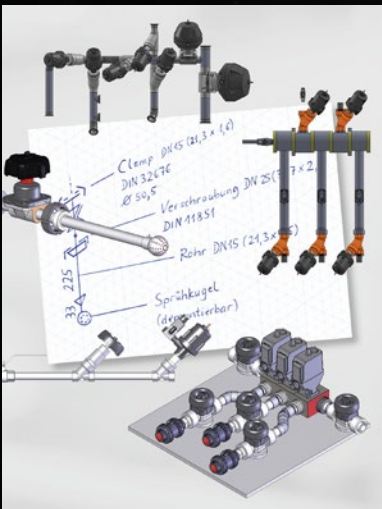
This reduces expenditure and effort on the part of the customer in the areas of purchasing, incoming goods, quality assurance and storage and logistics. “This provides our customers with more time to focus on their own core competencies,” states Bernd Haidt, Senior Head of the GEMÜ Systems department. “We discuss with our customers what happens to the left and right of the valve, and offer that to their specifications or modify the application according to customer wishes. This has been received so well by the market that we have so far developed around 500 extremely diverse variations for our customers.”

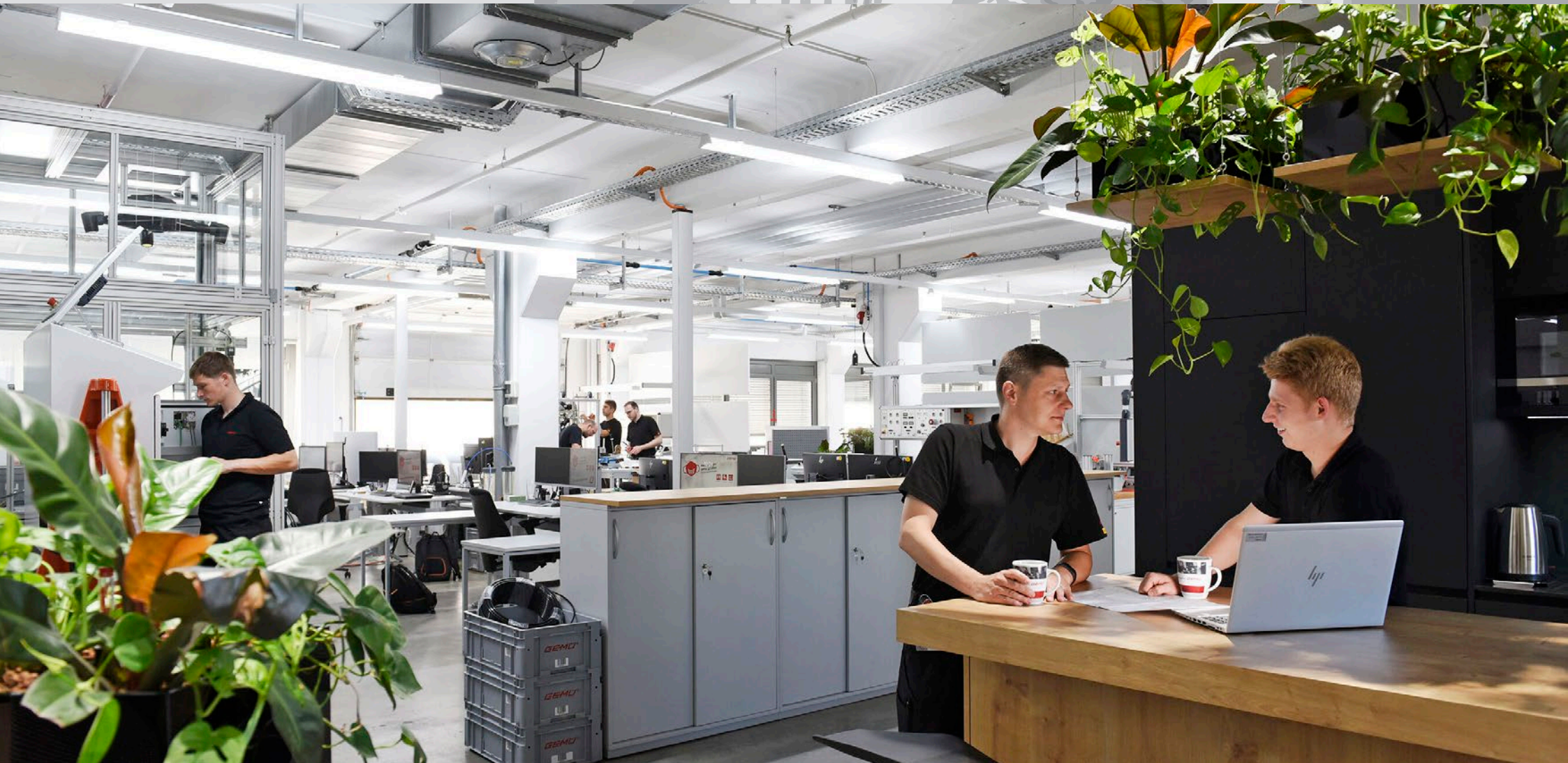
The offered solutions began with shaft extensions for tank bottom valves installed in difficult-to-access locations, pivot mechanisms for butterfly valves and ball valves and mixing and filling assemblies, progressed to welded assemblies and on to complex body retainers for single-use multi-



port valve blocks, control units and control cabinets, and have since come to comprise the entire product range and all customer groups. The GEMÜ Systems team is curious and enjoys finding solutions for individual customer requirements as well as working together with customers to take the next step into the future. Do you also have special requirements? Please contact our GEMÜ team.

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INNOVATIVE WORKSPACES IN INDUSTRIAL ENVIRONMENTS

RENOVATION OF THE SYSTEM CONSTRUCTION AND PLASTIC TECHNOLOGY CENTER MAIN DEPARTMENTS

Around 50 GEMÜ employees in the System Construction and Plastic Technology Center main departments as well as apprentices undergoing electronics training have been working since the start of the year on modern workspaces with a new ambience

The new headquarters of the GEMÜ Group is currently under development in the Hohenlohe business park. Valuable preliminary work on the concept for the future office spaces and workspaces for approx. 300 employees has already been completed. The new concept has already been implemented for the employees of the System Construction main department and the Plastic Technology Center at the Ingelfingen-Criesbach production and administration location, meaning that flexible, innovative workspaces have already been developed here.

“Our goal was to create a room concept in the production environment that meets the requirements for creative, concentrated and innovative work. Working together with the managers of the departments and the product team, a concept was developed, sample offices were visited and sample workspaces were constructed on-site. Our weekly meetings with the core project team were equally as important as regular coordination with the managers and employees of the affected departments,” explains Annette Walz, Management Assistant Global Operations and Project Manager for the renovation project.

Eye-catching sound absorbers

Much like any large office space, sound insulation is an important issue for this project. A great deal of emphasis was placed on this aspect in order to ensure that all employees are able to concentrate on their work. Acoustic walls were installed with an appearance that evokes piping, while the conventional meeting room was replaced by a Meeting Creative Workshop (MCW for short). This provides two different meeting tables, a cutting-edge memo-board as a flexible, writeable work surface and a “dancing wall”, a movable wall fitted with a screen and monitor. If necessary, a large sound-absorbing curtain can be drawn around the MCW. All of the furniture in the Workshop is fitted with castors so that the space can be used flexibly depending on the current requirements. Small spaces within the room, known as alcoves, can be used as temporary workspaces or for meetings with fewer participants. The design wallpaper at various locations is not just intended to be visually appealing, but also performs a sound absorbing

function. The innovative concept also incorporates a fully equipped, modern kitchenette with various seating options. Air purifying indoor plants complete the industrial design of the office space.

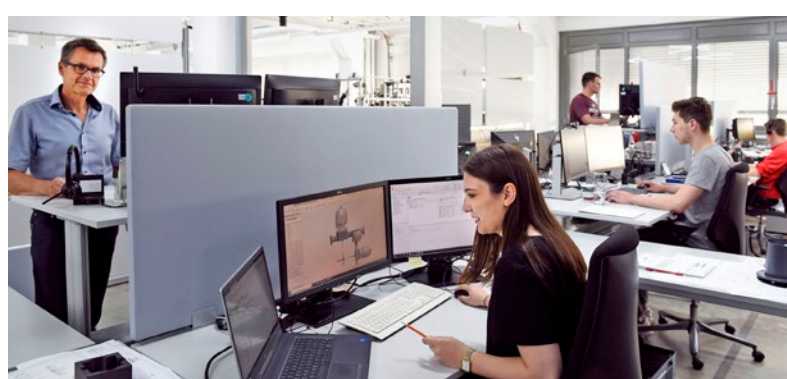
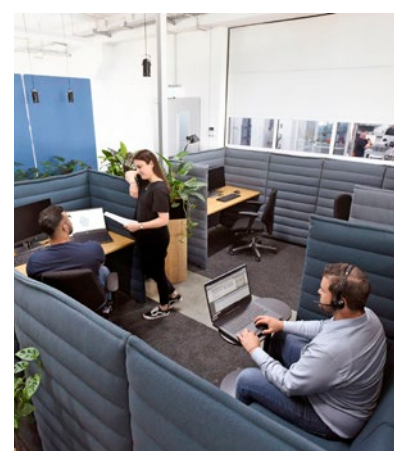
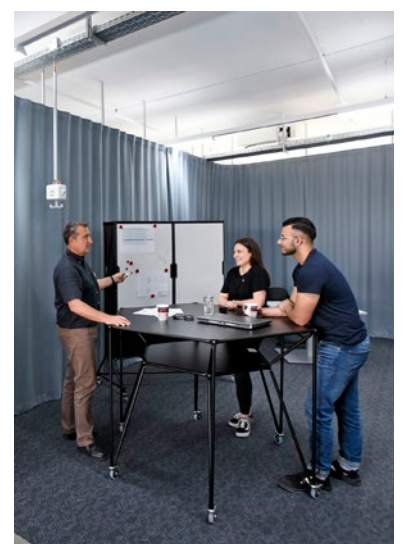
Other new features include lockers which employees can use as private storage spaces. They can be opened simply using a time card.

Shuttle system

An existing shuttle has been repurposed as small parts storage for employees working in specialised machines control systems production and the apprentices undergoing electronics training. The required work materials can be dispensed at the push of a button. This eliminates the need for large storage cabinets.

One special feature was a necessary part of the conceptual design for the rooms: There are two roller doors that need to remain accessible. Machines are transported to the production department through these doors. “Then we roll up the carpet, push the curtain to the side and move the alcoves. This office space is designed to make it simple to do so,” Annette Walz states.

Right from the start of the project, all participants were well aware that renovation of the facilities while they remained in operation would only be possible with the full support of the affected employees. “I would like to say a big thank you to all employees and to the project team for their cooperation, willingness to help and flexibility over the course of the renovations,” says Managing Director of Global Operations Matthias Fick. The new premises were inaugurated with a small opening ceremony in the form of a communal breakfast in April 2022. “Since then, additional writing tables for new employees have already been added. Thanks to the well-thought-out space planning, this was not a problem,” Annette Walz adds.



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NEW GEMÜ APP OFFERS A WIDE RANGE OF DIGITAL SERVICES AVAILABLE ON ANDROID AND IOS OPERATING SYSTEMS

With the new GEMÜ app for smartphones and tablets, products can be clearly identified, operated intuitively and product information can be called up conveniently. Furthermore, the entire GEMÜ product range is now also accessible from your trouser pocket. The GEMÜ app offers numerous functions that make life easier in the world of GEMÜ valves, measurement and control systems.



Simple product initialization and configuration

New electrical GEMÜ products can now be initialized, configured, parametrized and localized via a Bluetooth connection. The GEMÜ app shows process values as well as status information in detail and provides

support in setting parameters and error analysis. In the development of the app, particular attention was given to user friendliness in order to enable intuitive operation GEMÜ products. The new GEMÜ 1441 cPos-X positioner is the first product to be operated using the GEMÜ app.

Clear product identification and access to product documentation

GEMÜ products with a digital product label (QR code) or RFID tag can be clearly identified with the app. This means that users have the right product information and documents to hand directly in the plant. In addition, job-specific information, such as any product certificates acquired, can be called up. GEMÜ provides both the currently available documentation as well as the documentation at the time the product is delivered. This means that any changes or additions are immediately apparent.

Mobile access to product information


The new GEMÜ app also enables easy access to general GEMÜ product information, documents and videos – even when on the move. Users can quickly access datasheets, operating instructions, product flyers and further information to help them with product selection. The offline availability of the documents, which can also be used in plants without internet access, is particularly helpful.

Furthermore, the GEMÜ app offers users a way to make contact quickly and easily.

Work is currently underway on further functions that will help plant operators and plant designers in the digitalization of the processing industry.

The GEMÜ app is available in German, English and French, and can be used both on Android and on iOS operating systems. The GEMÜ app can be downloaded from the Google PlayStore and from the App Store. You can find further information on the GEMÜ app at www.gemu-group.com/app.



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SUSTAINABILITY AND HUMAN RIGHTS AWARD FOR GEMÜ BRAZIL

EcoVadis, a global provider of sustainability ratings, has awarded the Brazilian subsidiary of GEMÜ a silver medal for its improvements in the areas of the environment, working conditions and human rights, ethics and sustainable procurement.



Together for Sustainability (TFS) is a joint initiative of Brazilian chemical companies. This initiative aims to improve sustainability in its members own operations as well as those of their suppliers, and uses an evaluation programme to encourage efforts towards sustainability in the global supply chain. The idea is to create standards and synergies for optimising resource use and thereby establish uniform evaluations and tests. EcoVadis has in turn evaluated these sustainability efforts, and has honoured GEMÜ Brazil as one of the most highly rated companies in the chemical industry.

“Previously, every company in the chemical sector carried out its own assessments and tests. Now we have standards and an incentive for improvement,” explains Fabio Kuriyama, Quality Manager of the Brazilian subsidiary. At GEMÜ Brazil, various departments in the company are working on improvements in the areas of the environment, working conditions and human rights, ethics and sustainable procurement. “We are making progress in reducing water consumption and waste disposal. Furthermore, we are constantly working to improve our working conditions and are making efforts to increase our use of renewable energies,” states Fabio Kuriyama.

With support from the certified environmental consultancy Ekos Brasil, GEMÜ Brazil has taken inventory to determine its CO2 footprint for 2020, with the objective of reducing and offsetting greenhouse gas emissions due to liquefied petroleum gas. For offsetting, the Brazilian subsidiary selected the social-ecological project “Ituiutaba Ceramic Fuel Switching Project”. Ituiutaba is a manufacturer of red ceramics in the state of Minas Gerais in Brazil. Since 2008, the company has used locally produced wood fuel for its kilns. It uses 20,000 m3 of locally grown wood fuel per year to manufacture 15,000 tons of ceramic articles such as bricks and tiles. To reduce the impact on the environment, Ituiutaba started a carbon project that replaces non-renewable fuels with renewable biomass such as sawdust and wood chips.



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THE LONGEST IMMERSED TUNNEL IN THE WORLD

GEMÜ VALVES FOR COOLING THE TUNNEL ELEMENTS

The Fehmarn Belt fixed link is a transport link currently under construction under the full length of the Fehmarn Belt. With a length of 18 km, the Fehmarn Belt is the longest underwater tunnel in the world and is one of the largest construction projects in Denmark and Germany with a budget of around 7.4 billion euros. And GEMÜ is part of it!

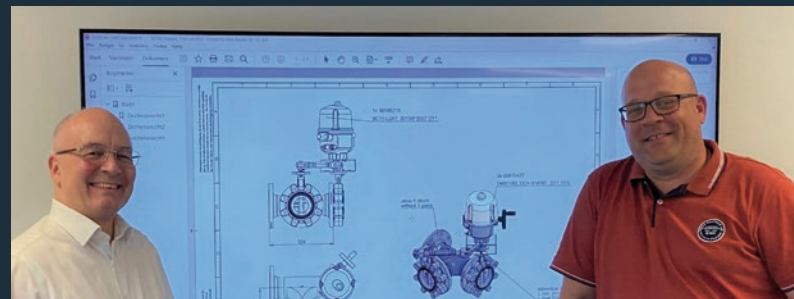
GEMÜ Denmark first started preparing for participation in the Fehmarn Belt tunnel in 2019 and drew market attention to itself and the application possibilities of GEMÜ products for tunnel construction.

GEMÜ valves are now used in a giant tunnel element factory for cooling concrete tunnel elements. These comprise 79 individual elements and 10 smaller special elements with a basement level. Each standard individual element is 217 metres long, 42 metres wide and 10 metres high.

The GEMÜ D487 Victoria and GEMÜ D488 Victoria butterfly valves with flange-mounted design (lug) with vulcanized shut-off seals

are used here: 127 valves with manual operator, 23 valves with motorized quarter turn actuators and nine special designs, custom-developed by the GEMÜ System Construction main department.

GEMÜ products have also been used in other applications in this project, such as in ventilation systems, fire protection systems and drainage systems as well as in the areas of heating, ventilation and air conditioning. GEMÜ Denmark has already established contact with the planners of the tunnel project.



Stefan Holmgren, Operations Manager GEMÜ Denmark (left) during the consultation with project coordinator Torben Hartoft on the supply of butterfly valves and fittings for the HVAC pipe systems of the three concrete plants.



Photos © Femern A/S

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TRAINEES ABROAD AS GUESTS OF GEMÜ SWITZERLAND

Placements abroad have been an established part of the experience for apprentices and students at GEMÜ for many years. Over the course of two to five weeks, the trainees visit various GEMÜ subsidiaries to further their linguistic, professional and intercultural development. Following a hiatus due to the coronavirus pandemic, the programme started up again this year, giving several apprentices and students the opportunity to spend time abroad. Let's join the six apprentices and one student in their travels.

As part of our training or studies at GEMÜ, we had the opportunity to spend three weeks familiarising ourselves with the GEMÜ subsidiary in Emmen, Switzerland. The seven of us – six GEMÜ apprentices and one student on a dual course of study – were divided into two groups, each of which visited Switzerland over different dates. On the first day of work we were greeted very warmly by our Swiss colleagues and our visit began with a tour through the GEMÜ factory. We were then introduced to each of the departments in turn. In the CNC department, we were guided through the entire area and learned about the difficulties and special features of machining plastic. In the Quality Assurance department, we were able to perform a measuring study in order to detect measurement errors in a variance analysis that occur just because a different person carried out the measurements on the same valve body, even though both measurements use the same measuring equipment. In the Logistics department, we were able to spend a full day helping out with commissioning and packing.

Following detailed hygiene instructions, we were even able to visit the clean room for a short time. It is extremely impressive to see the care and safety precautions taken when manufacturing the products in order to meet the requirements for the medical, single-use and high-purity sectors. The seriousness of complying with the hygiene rules was underlined for us with a "wipe test" performed on a smartphone display. Within a few days, the growth on the culture medium in the Petri dish showed us how many bacteria there are on a mobile phone.



From left: Mechatronics engineers Rico Brand and Luke Lang, tool mechanic Kevin Belz and Lena Gebhardt, student of cooperative degree in industrial engineering and management

In the Key Account Management department of the GEMÜ Medical subsidiary, we received a very thorough introduction to the use, function and construction of medical products. It is very impressive to see the range of products offered by GEMÜ, and the wide range of areas of application in which these products are used.

Over the next few days, we worked in various departments depending on the specific areas of our apprenticeships. The Mechatronics and Electronics Engineers had the opportunity to expand their knowledge of PLC programming and try out various functions on operating terminals for conveyor belt models. Meanwhile, the Technical Product Designer supported the Technical Valves team. The student on a dual course of study received an in-depth look at project work in the Project and Product Management department for the Medical sector.

The weather was good for the most part, which meant we were able to tour the beautiful Old Town and river promenade of Lucerne and even experience

the city at night during the warm summer evenings. Over the two weekends of our stay, we visited the Swiss Museum of Transport – a real insider top for anybody interested in technology. When the weather was nice, we took the opportunity to visit the Lauterbrunnen area about an hour away to the south, surrounded by the Eiger, Mönch and Jungfrau mountains. Our excursion also included the beautiful Trümmelbach falls and the village of Grindelwald at the foot of the north face of the Eiger.

On the last day of our stay, we said our goodbyes to our Swiss colleagues and thanked them for their hospitality, their detailed presentations and tours, and their unfailing ability to answer all of our questions. We are particularly grateful to the people who made it possible for this extremely well-organised programme to take place.

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From left: Max Kraft, technical product designer and the electronics engineers Marvin Weber and Alexis Kiter

On another day, I and my fellow apprentices had the opportunity to help our colleagues in the grey room with assembling and packing valves. In the Technical department, we gained an insight into the development of single-use bodies. With state-of-the-art system solutions, which were first presented at theACHEMA trade fair, single-use blocks can be used in a quick-change system. It was very interesting to get to know the colleagues behind this project and discuss their work with them. During our time in this department, we were able to help the team develop a solution for data processing in the switch sensors on locking cylinders. In the Tool Manufacturing department, we were given the opportunity to watch employees at work as they performed regular inspection of the plastic injection moulds. They used sand blasting and polishing of the surface to remove contaminants from the moulds with utmost precision.



Lauterbrunnen



Chapel Bridge, Lucerne

INTELLIGENT SOLUTIONS FOR STATE-OF-THE-ART TECHNOLOGIES CATL TRUSTS IN GEMÜ SOLUTIONS



Batteries or accumulators have become an intrinsic part of our day-to-day lives. Electric cars, smartphones and laptops all have one thing in common: A lithium-ion battery.

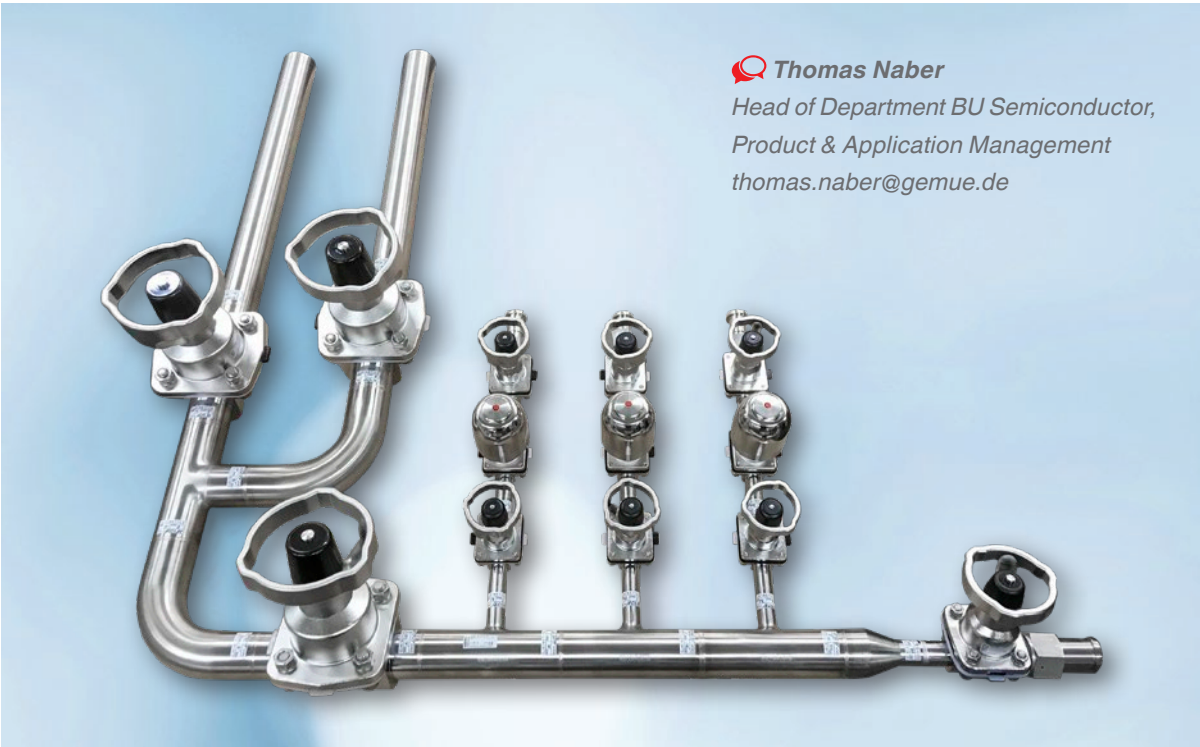
Up to now, the bulk of battery cells have been imported into Germany, and the largest manufacturers have been based in Asia. But Germany is catching up – and in style.

CATL, a global leader for innovative technologies in the field of new energy sources, has been one of the largest manufacturers of battery cells in China for years now. The market research company SNE Research determined in 2021 that CATL was the largest manufacturer of batteries for electric cars in the world for the fifth year in a row. With its German subsidiary CATT (Contemporary Amperex Technology Thuringia GmbH), the company has established its first European location for manufacturing EV batteries in Thuringia.

The Semiconductor business unit is developing and supplying state-of-the-art process solutions for this giga-factory. For the first time, GEMÜ has developed, produced and delivered a stainless steel manifold, a pre-assembled distributor for process media with additional integration of fittings, measurement and control systems, for the supply level of a battery production facility.

This has enabled GEMÜ to expand its position in this growth market. The lessons learned from this project can now be used to gain additional customers and enjoy further successes in this strategically important field.

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ADDITIVE MANUFACTURING A NEW PROCESS WITH A BIG FUTURE

GEMÜ has been turning its attention to additive manufacturing: A processing technique fit for the future that produces complex products efficiently.




The additive processing technique is a new method of manufacturing, which can be used to make three-dimensional products (3D printing). This computer-controlled process adds materials layer by layer. This allows geometrically complex structures to take shape, which would not be possible using subtractive manufacturing techniques. In contrast to additive manufacturing techniques, these methods remove materials by means of sanding, milling and drilling. It is these processes that have primarily been used at GEMÜ until now.

GEMÜ applies the additive process, e.g. in the manufacture of a metal multi-port globe valve block. The GEMÜ M-Block is used to treat gas in PSA (pressure swing adsorption) systems.

The advantages described here will see the additive manufacturing technique continue to gain more traction in both the plastic and metal sectors in future, because workpieces that are fundamentally more complex can be produced more sustainably and usually more efficiently too.

Using the additive technique, it is possible to create a very compact construction, because the need for unnecessary pipes and fittings is removed. Furthermore, measuring and control technologies can be neatly integrated with space-saving design. Another advantage of this technique is that it allows for smaller batches to be produced. This is particularly important for customer-specific valve solutions. With no need for laborious tool adaptations, design changes can now be implemented flexibly and at short notice.

GEMÜ has joined forces with BASF to work on this new manufacturing technology. With BASF as a manufacturing partner, GEMÜ can offer fast production of complex and certified custom valve solutions using additive manufacturing.

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THE GEMÜ 652 PULSATION DAMPER

THE HYGIENIC SOLUTION TO PRESSURE SURGES IN PLANTS

In many production plants, unwanted pressure surges arise which are generated by switching on pumps, by temperature changes in enclosed liquids or by quickly switching valves, for example. Opening valves can also result in pressure surges if the media supply is at a high level and the fluid column to lower plant components suddenly starts moving.

These pressure surges may damage plant components, such as filters, sensors, pumps and piping. The pressure surges can also cause shut-off valves to inadvertently open for a brief period, which can in turn result in possible contamination of the medium. In the worst case, they can result in downtime due to required repair work or a loss of product.

The GEMÜ 652 pulsation damper was developed as a solution to these pressure surges, based on the tried and tested diaphragm valve technology and therefore suitable for use in sterile applications. This means that it is completely drainable and CIP/SIP capable, taking the specified draining angle into account.

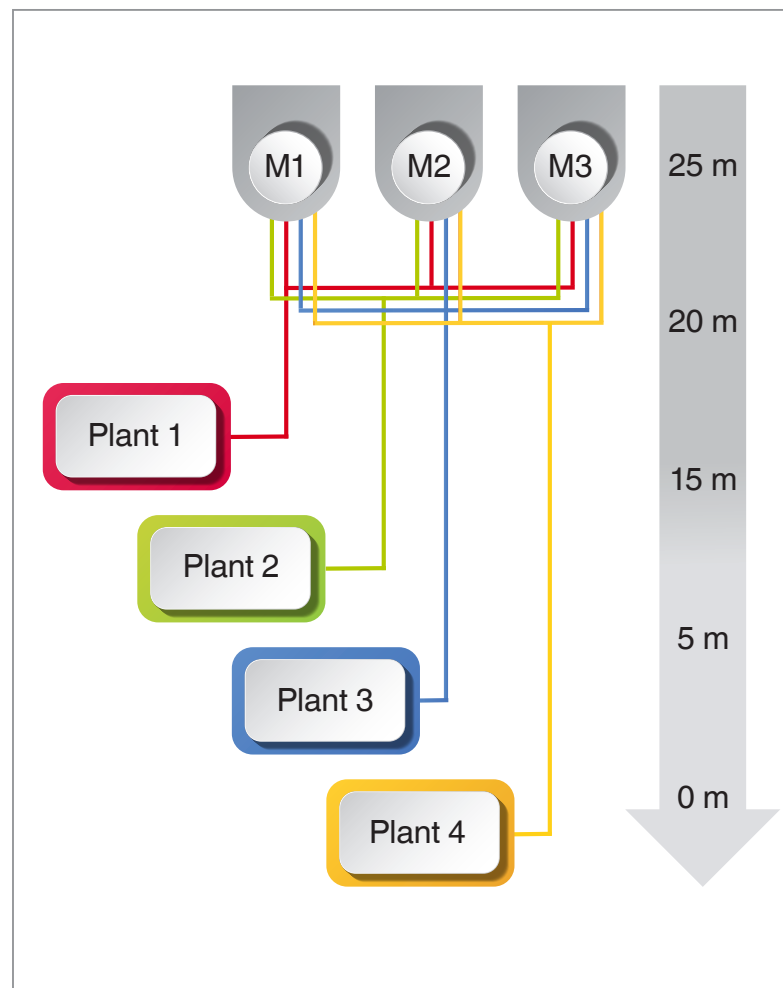
The pulsation damper is designed to open up as much volume as possible in a given operating range and thereby absorb and compensate for the pressure surge. Its body does not include a sealing weir, meaning that it is not suitable for shutting off media. The actual expansion volume is opened up by the moving diaphragms.

By using different actuator sizes and spring sets, it is possible to adjust the operating range and the volume that can be compensated for. Increased expansion volume can be achieved by installing multiple pulsation dampers in series, enabling larger volumes to be compensated for.

The control air connector is only used for assembly. Actuation via control air is not required for operation, as its function is accomplished solely using spring force.

The GEMÜ 652 pulsation damper is available in the nominal sizes DN15 to DN80 (diaphragm size 25 to 80). To ensure high flexibility of applications, the valve bodies and diaphragms are available in various materials and designs.

Due to the diaphragm valve technology used, the product complies as standard with the current standards in the foodstuffs and pharmaceutical industry, such as BSE/TSE, FDA, USP Class VI and Regulation (EC) no. 1935/2004.



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NEW ELECTRICALLY OPERATED SOLENOID VALVE GEMÜ J70

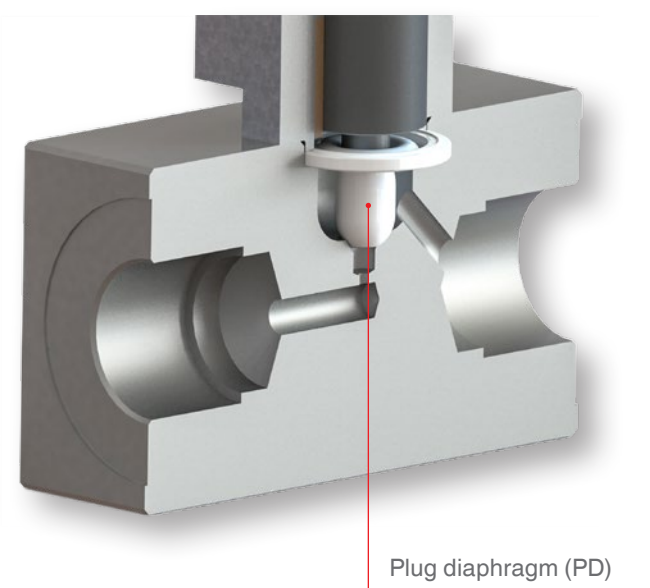
GEMÜ is introducing the new GEMÜ J70 electrically operated 2/2-way solenoid valve, optimising its existing solenoid valve product group.

The GEMÜ J70 electrically operated solenoid valve is suitable for applications with low flow rates in analysis, vacuum and dosing technology and enables precise dosing. The resistant plug diaphragm made of PTFE (TFM™) has a unique sealing concept. PD technology provides for a high degree of accuracy for customer-specific applications.

With the PD (plug diaphragm) technology, the media wetted area is separated from the actuator by a plug diaphragm made from modified PTFE. PTFE is composed of linear carbon chains which are surrounded by fluorine atoms. They spatially shield the carbon atoms and protect the molecule from chemical attack – even at higher temperatures.

The compact GEMÜ J70 solenoid valve features a space-saving design and impressive features such as low wear and simple wear part replacement alongside good cleanability. The coil can be replaced without removing the valve body from the piping.

With CONEXO and an RFID chip, the GEMÜ J70 solenoid valve can be clearly identified, enabling efficient documentation of maintenance. In addition, the solenoid valve is variable and extendable and suitable for valve manifolds and multi-port valve blocks.



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REPLACING MORE THAN JUST DIAPHRAGMS OPERATION REPORT FROM THE SERVICE/AFTER SALES SERVICE DEPARTMENT

When faced with a maintenance request for a faulty detergent dosing installation, the Facility Manager of the Studierendenwerk Heidelberg contacted the GEMÜ Service department.

Malfunctions and failures in the detergent dosing installation in the cellar of the Studierendenwerk (Student Services) Heidelberg repeatedly caused flooding, resulting in toxic vapour emissions due to highly concentrated washing agents. This frequently meant that the stationary washing machines were unusable, regularly forcing students to return to their accommodations with washing baskets still full of dirty clothes. In addition, even when the machines were working, their washing performance ended up being unsatisfactory. This was due to the dosing of the detergent, and resulted in dissatisfaction among the students.

In the basement of the hall of residence there are containers filled with highly concentrated detergents, fabric softeners and bleach. These concentrates are transported out of the container through suction tubes by diaphragm pumps and dosed into the supply lines for the individual washing machines via GEMÜ solenoid valves. The detergent is then mixed together with water from the supply and flushed into the machine. The valves and pumps are controlled via a Siemens Logo PLC. A total of 20 washing machines are in use at the hall of residence.

At this point, the customer wanted to carry out maintenance on the entire dosing installation. This includes the suction tubes, diaphragm pumps, connecting tubes, connection nipples, hose clips, and GEMÜ 202 and GEMÜ 205 solenoid valves. The system was installed in 2014 and operated since then without maintenance of any kind.

To solve the problem faced by the customer, the GEMÜ Service/After Sales Service based in the company headquarters in Ingelfingen-Criesbach bonded together new PVC valve bodies and new hose barbs to avoid causing any delays due to drying time when installing on-site. The valve bodies were then pre-assembled on mounting plates.



When the service team arrived on site in Heidelberg, their first task was to disassemble the entire detergent dosing installation. All tubes, bodies and diaphragm pumps were dismantled from the carrier panel. The new bodies were screwed onto the carrier panel with the prepared mounting plates. This enables the individual bodies to be replaced, which was not previously possible because the bodies were screwed onto the panel from behind. The next step for the GEMÜ service technicians was to replace all tubes and install new hose clips made from stainless steel. In addition, the wearing parts in the

Ecolab diaphragm valves were replaced according to manufacturer specifications. In the course of the subsequent commissioning process, a wire break was noticed in the wiring for the suction tubes, which the GEMÜ service team was immediately able to correct.

Last but not least, the final performance test was carried out. All tubes were filled with their respective media and multiple test washes were performed.

Since then, there have been no further failures and the washing performance has been of consistently high quality.

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NEW GEMÜ BB07 3/2-WAY BALL VALVE VERSATILE APPLICATIONS

GEMÜ is expanding its product range of industrial ball valves. Due to its multi-functional properties, the newly developed GEMÜ BB07 3/2-way ball valve family is suitable for the most varied areas of application. These include chemical processes, industrial water treatment, surface finishing, power generation and environmental systems, mechanical engineering and processing industries.

The GEMÜ BB07 3/2-way ball valve is the ideal valve when it comes to mixing and distribution tasks of media flows, like in the trouble-free change-over of sensitive media in the area of energy or auxiliary materials in the food-processing industry.

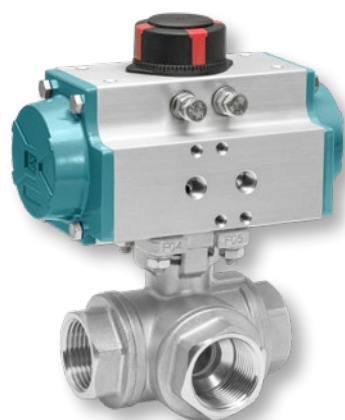
A further advantage is that the new ball valve types are available with the threaded socket connection type, which ensures trouble-free installation of the shut-off valve.

The GEMÜ BB07 multi-port ball valves represent a cost effective solution, as multiple valve seats are generally required for mixing and distribution tasks. These seats are combined to make just one subassembly through the use of multi-port ball valves.

The GEMÜ BB07 is versatile in use due to its three outlets. Thanks to the top flange acc. to ISO 5211, simple actuator mounting is possible. The seat seal is made of PTFE. The newly developed GEMÜ BB07 ball valve family is automation-capable, low maintenance and can be used for a vacuum. The new ball valve is selectable as a T or L ball, and is therefore flexible and versatile.



GEMÜ BB07
with bare shaft




GEMÜ B47
with pneumatic actuator



GEMÜ B27
with manual actuator

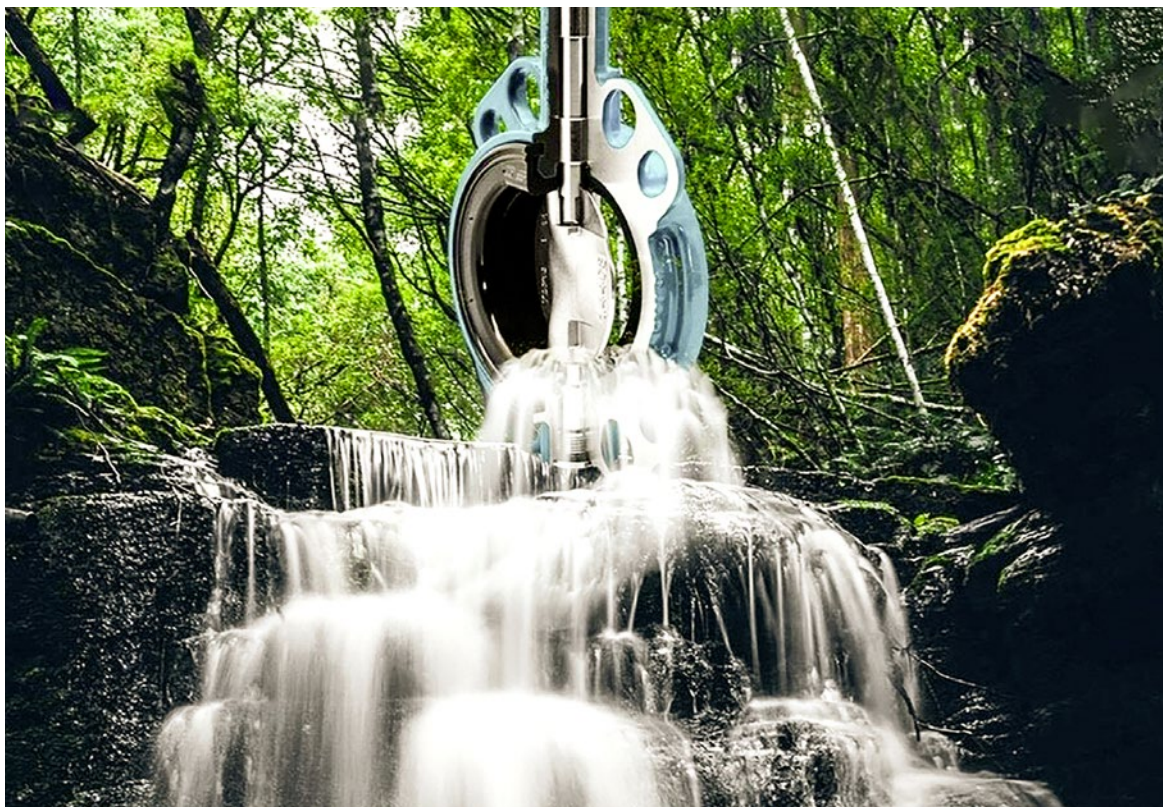


GEMÜ B57
with motorized actuator

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NEW APPROVALS FOR BUTTERFLY VALVES GEMÜ R480 VICTORIA NSF AND DVGW-CERTIFIED





The GEMÜ R480, R481, R487 and R488 Victoria butterfly valves now have an NSF/ANSI/CAN 61 certification and a DVGW (German Technical and Scientific Association for Gas and Water) certification. Both certifications entail compliance with the recognised rules of an official body. These approvals certify that the GEMÜ products are suitable for use in drinking water applications.

Customers who require the GEMÜ R480, R481, R487 and R488 Victoria butterfly valves for drinking water applications can select between the American NSF approval with the special function "N" and the European DVGW (German Technical and Scientific Association for Gas and Water) approval with the special function "D". The NSF/ANSI/CAN 61 certification is also valid for all products that can be supplied with liner code W in combination with stainless steel disc code A, B and D.

The DVGW certification is also valid for all products that can be supplied with liner code W in combination with stainless steel disc code A, B and D and special function "D". The composition of the seal in the GEMÜ 480 and GEMÜ R480 has been tested in accordance with the old Elastomer Guideline and the new KTW-BWGL standard. Following the publishing of

the third change to the KTW-BWGL in March 2022, a transitional period is in place lasting until March 2025. After this date, the old Elastomer Guideline will be withdrawn. With the GEMÜ R480 Victoria series, GEMÜ is able to provide its customers with security when planning future projects that will last beyond this transitional period, and supply butterfly valves that ensure long-term suitability.

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OXYGEN APPROVAL FOR GEMÜ VICTORIA

A special version of the GEMÜ R480 Victoria butterfly valve series from Ingelfingen-based valve specialist GEMÜ is approved with immediate effect for the medium of oxygen.

In the design for the medium of oxygen, all media wetted seal materials and auxiliary materials (lubricants and screw locking agents) from the Victoria butterfly valve series have been tested and approved by the Federal Institute for Materials Research and Testing (BAM). Unsuitable oils and greases can lead to the development of fires, which is why all media wetted components must be cleaned accordingly.

The examination for BAM approval was based on the DIN EN 1797 and ISO 21010 standard. Approval is limited to the use of gaseous oxygen at a maximum operating temperature of 60 °C and a pressure of 15 bar. The



butterfly valves of the GEMÜ R480 Victoria series approved for oxygen applications are recognizable by the special function O. The approval refers to EPDM seal material code E and stainless steel disc material code A.

DVGW CERTIFICATION FOR GEMÜ 550

The GEMÜ 550 angle seat globe valve is now available with gas certification from the DVGW (German Technical and Scientific Association for Gas and Water).

GEMÜ 550 with special function G was certified by the DVGW (German Technical and Scientific Association for Gas and Water) to DIN EN 161:2013-04 and DIN EN 16678:2016-02 standards.

DIN EN 161:2013-04 is the European standard for automatic shut-off valves for gas burners and gas appliances (German version EN 161:2011+A3:2013).

DIN EN 16678:2016-02 is the European standard for safety and control devices for gas burners and gas burning appliances and automatic shut-off valves for operating pressures of over 500 kPa up to and including 6300 kPa (German version EN 16678:2015).

Therefore, the angle seat globe valve can be used as a shut-off valve for combustible gases in the gas families 2 and 3 in gas burners and gas appliances. Typical gases in this family include natural gases, petroleum gases and biogases, consisting mainly of methane, liquid gases containing propane and butane, and hydrogen.

It is important to note that the designs of the GEMÜ 550 G angle seat globe valves with the flow direction "over the seat" (class A according to EN161) are suitable for use with combustible gases. This does not result in the sealing force being reduced by the inlet pressure. The maximum operating pressure is 10 bar.

Two class A shut-off valves connected in series are required to achieve safety class C. Gas controlled systems are a typical area of application for this.



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WELCOME TO THE GEMÜ FAMILY TRAINING BEGINS AT THE VALVE SPECIALIST

The new training year at GEMÜ started on 1st September 2022 with 16 new apprentices, eight students at the Cooperative State University and two students in the cooperative study model.

"The start into their professional lives is an important milestone in life. For this reason, GEMÜ has a few tricks up its sleeve to ensure that the new apprentices and students feel comfortable right from day one. The company establishes this positive environment with an intensive introductory week to allow the new arrivals to get to know each other as well as their trainers, the apprentices and students in the later years or semesters of their training and the GEMÜ product range. The highlight of the introductory week was a trip to the lake at Schleierhof, where the trainees enjoyed a fun group raft-building experience.

Sixteen of the 26 new apprentices and students opted for industrial and technical or commercial training. At the same time, ten students are beginning their professional careers in various specialisations, seven of whom are studying at the Mosbach / Bad Mergentheim campus of the Baden-Wuerttemberg Cooperative State University and two of whom are

students in the cooperative study model at the Heilbronn University of Applied Sciences / Künzelsau Campus. The GEMÜ subsidiary Inevvo Solutions is offering a position in applied computer science for one DHBW student again this year. Inevvo Solutions specialises in software development for complete RFID system solutions. A new part of the study options offered at GEMÜ is the "Online media" dual study programme in cooperation with the Mosbach branch of the Baden-Wuerttemberg Cooperative State University.

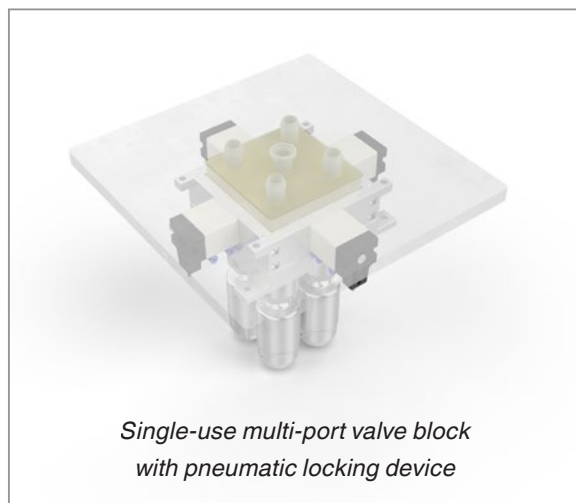
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GEMÜ SINGLE-USE MULTIPORTS TECHNOLOGY FOR TODAY AND FOR THE FUTURE



*Single-use multi-port valve block
with manual locking device*



*Single-use multi-port valve block
with pneumatic locking device*

The use of single-use technologies has become an integral part of modern medical and pharmaceutical technology. The idea of designing production equipment for single use has become increasingly prominent in recent years. Importantly, the vaccine development processes performed under high time pressure during the COVID-19 pandemic proved to be a driving force for the expansion of single-use technology.

There are several benefits to using single-use technology: Eliminating the need for conventional cleaning cycles and the associated costs for power, cleaning media, waste disposal and peripherals while increasing protection against cross contamination between different manufacturing drives. It also minimises downtimes in factories, which significantly improves the flexibility and effectiveness of single-use solutions in the medical and pharmaceutical technology sectors in comparison with conventional solutions. In addition, the use of single-use technology reduces negative environmental effects by eliminating energy-intensive cleaning cycles. One drawback alongside these benefits is the cost and effort involved in changing design concepts for stainless steel plants into single-use plants. The fact that responsibility for part of the integral quality measures by the customer is transferred to the manufacturer of the single-use equipment also presents challenges for all parties involved. This can be accomplished via an appropriate URS (User Requirement Specification) and corresponding qualification and validation processes. Establishing trust between the parties involved plays a very important role here. As a pioneer in this field, GEMÜ recognised the trend early on and developed the GEMÜ SUMONDO series as far back as 2014, enabling the company to successfully position itself on the market.

The single-use standard range includes a selection of pinch valves as well as the first – and so far only – single-use diaphragm valves on the market. Due to the high demand for multi-port valve blocks in the field of stainless steel diaphragm valves and the benefits of these block solutions, GEMÜ has worked closely with a wide range of customers to develop the GEMÜ SUMONDO multi-port valve block. The multi-port valve combines multiple single valves in a single block, minimising the dead space within the valve seat layout as well as the overall space requirement. The specific characteristic of single-use technology, which requires that the valve body can be quickly, simply and safely replaced, can be ensured via additional designs. In contrast to stainless steel multi-port valve blocks, where the actuators are supported by the valve body, the GEMÜ SUMONDO single-use multi-port valve consists of both a multi-use actuator unit in which the skid is fixed and the media wetted valve body with the diaphragm welded on. This design enables the single-use blocks to be fixed precisely and with sufficient force onto the actuator units within the assembly and to be safely replaced as quickly as possible when required.

At the ACHEMA trade fair in August 2022, GEMÜ presented two different solutions for single-use multi-port valve blocks: The first solution featured a valve block sunk into the skid surface, where the valve block is locked into place pneumatically via locking cylinders. The second solution demonstrated a valve block placed onto the skid surface, where the valve block was manually connected to the actuator unit via a detachable hand lever. This second type offers greater flexibility for the spigot layout. The connection between the actuator and the diaphragms welded onto the valve block is created reliably within a few seconds using the familiar clamping principle of the GEMÜ SU40 SUMONDO. The blocks themselves are manufactured by machining and can therefore be tailored to each specific application.

A typical example of and further details regarding a single-use multi-port valve is available in the GEMÜ Digital Showroom at www.gemu-group.com/digitalshowroom.

GEMÜ is currently working on a certain level of standardisation to provide the greatest possible

freedom in combining the various actuator units. The qualification and validation of the block design is another area of focus.

With the GEMÜ multi-port valve block solutions, GEMÜ is offering a versatile, safe, qualified and customisable single-use product, which provides the greatest possible flexibility and safety for its customers.

HYDROGEN AS THE POWER SOURCE OF THE FUTURE

GEMÜ offers promising options for school leavers wishing to start their professional lives. Apprenticeships and dual courses of studies at GEMÜ are popular ways of joining the family-owned enterprise. GEMÜ is a multi-award-winning training specialist and offers students varied work placements as well as the opportunity to write their thesis on any of a wide range of subject areas.

The use of hydrogen as a key part of the transformation of energy supply is currently developing into a major trend, providing GEMÜ with a variety of applications for the use of industrial valves. As part of her bachelor's thesis, Fabienne Bogert, a student on a dual course of study, investigated this exciting future topic and further detailed the current potential for GEMÜ in this sector.

As part of the process of transforming energy production and German decarbonisation targets, hydrogen has an important role to play as a versatile energy source. A combined analysis of specific material properties, legal regulations and customer requirements has resulted in technical requirements that are important for GEMÜ to take into account. Part of this bachelor's thesis focused on identifying the requirements for this sector in order to assess the current potential for the Business Unit Industry product range. In order to ensure that GEMÜ is ideally equipped for operating in this future sector, the conclusion of the thesis presented a strategy recommendation for the next steps to take.

Based on the results of these evaluations, the overall potential of the existing product range is rated highly. Each of the investigated product groups demonstrated beneficial properties for various applications within the hydrogen sector based on their functional and design strengths. This enabled specific product types to be identified which are already available at a market-ready level. Expand marketing and sales activities in future will be a relevant measure for ensuring that market success can be achieved quickly.



Fabienne Bogert

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2023 training dates

ONLINE TRAINING

SPECIALIST LEVEL

⇒ Valve designs in detail

PV1000GB	Valves for the biotechnology, pharmaceutical, foodstuffs and cosmetics industries <i>8th May 2023, 8:00 am – 5:00 pm</i>
PV1100GB	Single-use valves for the biotechnology and pharmaceutical industries <i>9th May 2023, 8:00 am – 12:30 pm</i>
PV2000GB	Valves for high purity, semiconductors and critical media industries <i>22nd May 2023, 8:00 am – 2:30 pm</i>
PV3000GB	Diaphragm valves in the chemical and processing industries and water <i>10th May 2023, 8:00 am – 5:00 pm</i>
PV3004GB	Globe valves in the chemical and processing industries and water <i>11th May 2023, 8:00 am – 5:00 pm</i>
PV3001GB	Ball valves in the chemical and processing industries and water <i>12th June 2023, 8:00 am – 5:00 pm</i>
PV3002GB	Butterfly valves in the chemical and processing industries and water <i>13th June 2023, 8:00 am – 5:00 pm</i>
PV4000GB	Automation components and accessories for linear valves <i>15th May 2023, 8:00 am – 2:30 pm</i>
PV4001GB	Pneumatic quarter turn actuators and automation components for quarter turn valves <i>14th June 2023, 8:00 am – 2:30 pm</i>

⇒ Product training in measurement and control systems

PM0101GB	Measurement devices and measurement principles for pressure, temperature, level and volumetric flow <i>19th May 2023, 8:00 am – 5:00 pm</i>
PM0201GB	Positioners: Function and application <i>20th May 2023, 8:00 am – 5:00 pm</i>
PM0301GB	Process controllers: Function and application <i>21st May 2023, 8:00 am – 5:00 pm</i>

⇒ Product training in electrical actuators (linear and quarter turn actuators)

PE1000GB	Motorized linear actuators <i>16th May 2023, 8:00 am – 2:30 pm</i>
PE2000GB	Process solenoid valves <i>17th May 2023, 8:00 am – 11:00 am</i>
PE3000GB	Motorized quarter turn actuators <i>15th June 2023, 8:00 am – 12:30 pm</i>

EXPERT LEVEL

⇒ Qualified service expert/service trainer in accordance with GMP/FDA

ET1001GB	Training as authorized service expert for GEMÜ diaphragm valves <i>27th June 2023, 8:00 am – 5:00 pm</i> <i>Suitable for external service and maintenance personnel with the skills of an experienced mechanic (face-to-face-training)</i>
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ALLROUNDER LEVEL

⇒ Basic technical principles of valve designs

GV0101GBON	Functional principles of valves and their selection criteria (basic module) <i>17th April 2023, 7:00 am – 11:30 am</i>
GV0102GBON	Plastics in valve and pipeline construction <i>18th April 2023, 7:00 am – 11:30 am</i>
GV0103GBON	Metals in valve and pipeline construction <i>19th April 2023, 7:00 am – 11:30 am</i>
GV0104GBON	Pipe connectors and assembly information <i>20th April 2023, 7:00 am – 11:30 am</i>
GV0105GBON	Explosion protection, ATEX / IECEx <i>27th April 2023, 7:00 am – 11:30 am</i>
GV0106GBON	Surface finishing in plant engineering <i>On request, 7:00 am – 11:30 am</i>

⇒ Basic technical principles of application technology

GA1000GBON	Procedures and processes in the biotechnology, pharmaceutical, foodstuffs and cosmetics industries <i>24th April 2023, 7:00 am – 11:30 am</i>
GA2000GBON	Procedures and processes in the high purity and semiconductor sector as well as for critical media <i>25th April 2023, 7:00 am – 11:30 am</i>
GA3000GBON	Procedures and processes in the chemical, processing and water industries <i>26th April 2023, 7:00 am – 11:30 am</i>

⇒ Basic technical principles of measurement and control systems

GM0101GBON	Introduction to electric systems, electronic systems and pneumatics (basic module) <i>2nd April 2023, 7:00 am – 11:30 am</i>
GM0102GBON	Measurement variables and measurement principles in process engineering <i>3rd May 2023, 7:00 am – 11:30 am</i>
GM0103GBON	Control circuits: Their construction and function <i>4th May 2023, 7:00 am – 11:30 am</i>

The training courses will be held in English.

Subject to changes due to the Corona Pandemic!

 **Jessica Donner**

Assistant of the Service Department |
Organisation of Technical Training
training@gemue.de

SERVICE TRAINING

SPECIALIST LEVEL

⇒ Qualified service fitter in accordance with GMP/FDA

SM1001GB*	Servicing and changing replacement and wearing parts in diaphragm valves for hygienic and sterile applications, attachment and readjustment of valve accessories.
SM2002GB*	Expert manufacture of ultra pure PFA tube connections for the GEMÜ FlareStar/TubeStar tubing and fitting system
SM3001GB*	Servicing and changing replacement and wearing parts in globe valves, attachment and readjustment of valve accessories
SM3002GB*	Servicing and changing replacement and wearing parts in elastomer butterfly valves, attachment and readjustment of valve accessories.
SM3003GB*	Servicing and changing replacement and wearing parts in diaphragm valves for industrial applications, attachment and readjustment of valve accessories
SM4001GB*	Installation and commissioning of valve accessories such as stroke limiters, electr. position indicators and positioners

* On-site briefing, approx. three hours, appointments by arrangement, minimum five participants. On request.

