

# GEMÜ news

LOOKING TO THE  
FUTURE WITH  
OPTIMISM

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,

The coronavirus pandemic and the restrictions associated with it have presented GEMÜ, as well as many other companies throughout the world, with unprecedented challenges that are set to stay with us for some time.

Even if a vaccine is introduced, it will still be several months until sufficient quantities have been produced and a sufficient number of people have been vaccinated to achieve what has become known as herd immunity. But a vaccine still represents a glimmer of hope on the horizon. For months, many people have felt they have no real future prospects. With a vaccine within reach, the world is slowly and cautiously breathing a sigh of relief and the economy is once again looking optimistically towards the future. In the past year, companies and private individuals have either refrained from or at least postponed investments. With the introduction of a vaccine, we can finally start thinking ahead and investing again in the coming year. Next year, there will be a backlog demand in the economy, which will form the basis for economic revival. Even if this is something that is already becoming apparent, it will still take some time for the economy to return to where it was in 2019.

From GEMÜ's perspective, this year has gone very differently for the various business areas. Industry in particular has been shaken up, and we certainly felt the effects of this. It was the hospitality sector that really suffered, however. Our employees in the Schlosshotel can vouch for that. No sooner had the first lockdown ended and they enthusiastically returned to work, than along came the second lockdown in November, crushing their enthusiasm.

We have optimized our procedures and processes within the company and introduced several measures at exactly the right time. But this doesn't mean it's been an easy year for GEMÜ. The pandemic has had many different impacts that have affected us in all sorts of ways. We have overcome most of these challenges together with the entire workforce – and we are very grateful for that!

The coronavirus pandemic has also underlined the fact that our relationship with our customers is based on partnership and trust. For this reason, we would like to thank our customers for remaining loyal to us during these difficult times. We are delighted to have been there for you and look forward to continuing our trusting collaboration. Of course we must also express our huge gratitude to all GEMÜ members of staff all over the world, who have shown exemplary teamwork and adhered to the measures we had to take in order to protect everyone. We are proud of how we have pulled together and worked as a team. We are optimistic that we will get through this situation together.

Wishing you the best of health.



**Gert Müller**  
Managing Partner



**Stephan Müller**  
Managing Director



## GEMÜ IS RECOGNIZED AS ONE OF GERMANY'S BEST EMPLOYERS

The GEMÜ Group is one of Germany's best employers and is "extremely attractive", as acknowledged by German newspaper "Die Welt".

As part of a survey across Germany, Cologne-based analysis institute ServiceValue GmbH has determined which companies are considered to be particularly good employers by the public and published these findings in a ranking. A total of 4009 companies were rated by 820,000 people. "Die Welt" stated that the survey, carried out in partnership with ServiceValue, found that GEMÜ is an "extremely attractive" employer and recognizes the company as one of Germany's best employers.

GEMÜ has always had short decision-making channels and a personal atmosphere, with the values of respect, appreciation and reliability actively put into practice in everyday professional life. The GEMÜ Group currently employs around 1900 employees worldwide, approximately 1100 of whom are based at the three sites in Germany.

"We're well aware that every single employee plays their role in the company's success. The fact that we've been recognized as one of Germany's best employers shows us how important it is to put our values into practice every day. It's our goal to actively shape the constant changes in society and technology with the help of our employees," says Gert Müller, owner and Managing Partner at GEMÜ.

In total, "Die Welt" deemed 881 companies from the services, retail and industry sectors to be "extremely attractive". You can find the full results and information about the methodology at [www.arbeitgeber-image.de](http://www.arbeitgeber-image.de) (German website).

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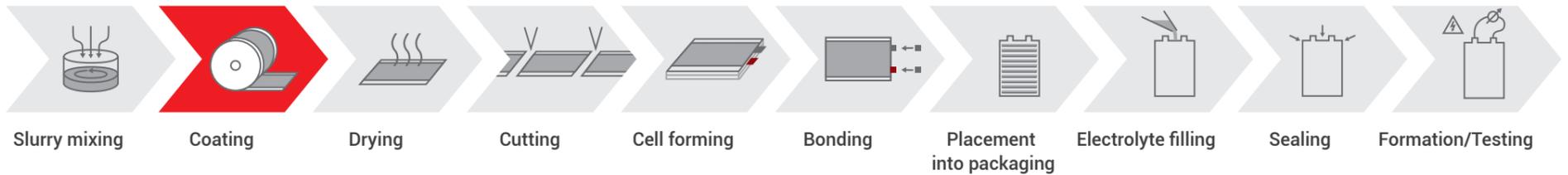
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# SOLUTIONS FOR LITHIUM-ION ELECTRODE COATING

## RELIABLE COATING OF ELECTRODE FOILS

### Li-ion cell manufacturing process



As a manufacturer of valves, measurement and control systems, GEMÜ is also increasingly establishing itself in high-tech markets. Particularly in the manufacture of Li-ion battery cells, GEMÜ is working with customers to develop solutions for the relevant production steps – ranging from slurry mixing all the way to electrolyte filling.

### Areas of expertise at GEMÜ in the field of lithium-ion cell manufacturing

#### Electrode coating process

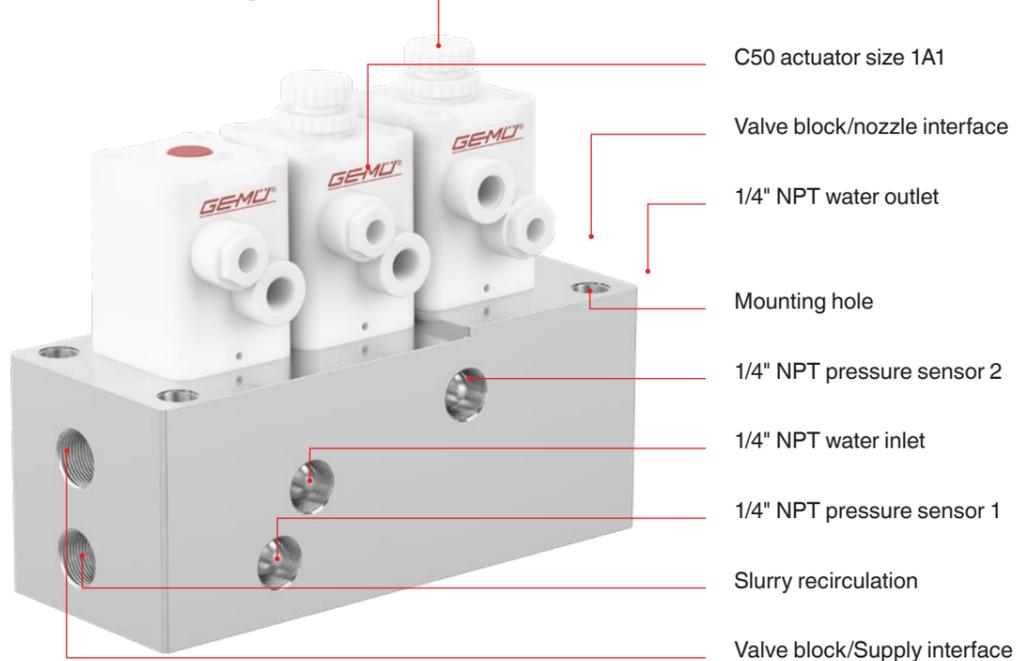
The electrode coating process is a complex and important part of Li-ion cell manufacture. Here, coating methods are used to attach the electrode foils to the substrate material with a mix of active materials, solvents, binders and additives, the so-called slurry. One (or multiple) strongly adhesive viscous layer(s) is/are applied to the surface of the anode and cathode foils here. The viscosity employed depends on the specific cell design and the manufacturer. The process places the following stringent requirements on the valves, measurement and control systems used.

#### Process requirements:

- ⇒ Precisely cut edges on the electrode foils
- ⇒ Consistent slurry viscosity
- ⇒ No temperature fluctuations
- ⇒ Simple cleaning of the coating system
- ⇒ Process automation through integrated pressure measurement system

When using the GEMÜ PC50 iComLine valve block solution for electrode coating, the suck-back function and fast valve switching times together facilitate precisely cut edges, as well as constant slurry distribution over the electrode foils – both for the anode and the cathode. In addition to this, the integrated slurry circuit guarantees a continuous media flow and thereby prevents phase formation in the slurry mix. Another important process requirement during electrode coating is maintaining a consistent slurry viscosity. To achieve this, temperature-controlled multi-port valve blocks

### GEMÜ PC50 iComLine valve block solutions for electrode coating



prevent potential temperature fluctuations. Here, the integrated pressure measurement system facilitates both process monitoring and process automation throughout the entire process.

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With this valve solution, which was developed in collaboration with the customer, GEMÜ is once again underlining its expertise in developing perfectly tailored solutions, also in high-tech markets.

# GEMÜ 3040 ULTRASONIC FLOWMETER

## CONTACTLESS AND PRECISE DETERMINATION OF THE VOLUMETRIC FLOW

**GEMÜ is bringing the new GEMÜ 3040 ultrasonic flowmeter onto the market which can be used to determine conductive and non-conductive volumetric flows of liquids in a contactless process.**

The GEMÜ 3040 ultrasonic flowmeter is distinguished by its suitability for a wide range of nominal sizes (DN 10 to 50), its lack of moving parts in the media-wetted area and its increased accuracy and reproducibility of measurement results. The device can be used to measure both conductive and non-conductive media within a pressure range of 0 to 16 bar with an accuracy of 2% of the current measured value. The flowmeter can be used in a temperature range of between -10 °C and 80 °C.

Its high-quality plastic body means that the flowmeter can be used for corrosive media, such as acids and alkalis. Its use in cooling circuits, chemical processes and water supply projects make up just a small part of the GEMÜ 3040's diverse areas of application.

The illuminated display, which is installed as standard, means that programming can be carried out directly on-site. In addition, all of the

important operating parameters can be read directly on the flowmeter and it comes with integrated empty pipe monitoring and a quantity measuring device as standard. In order to optimize integration into different applications, all of the standard electrical and mechanical connections are also provided.

As sensor systems are also often used in control circuits as part of process automation and monitoring, the GEMÜ 3040 measurement device can be combined with a GEMÜ valve and GEMÜ positioner or process controller to form a complete pressure control system.

With the launch of this ultrasonic flowmeter, GEMÜ is further expanding its product range of measurement systems. In addition, the GEMÜ C38 SonicLine ultrasonic flowmeter remains available for ultra pure applications.



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# CARBON-NEUTRAL COMPANY RESPONSIBILITY FOR THE ENVIRONMENT



**Climate change is real. The polar ice caps are melting, the global sea level is rising, the weather is ever more unpredictable and the number of extreme events is increasing. Our planet is clearly facing serious ecological challenges. Fortunately, however, awareness of the need to prevent greenhouse gas emissions has been on the rise for years. As such, more and more consumers are now choosing environmentally friendly products and even companies are making ever greater efforts to help protect the climate.**

GEMÜ has already been committed to environmental protection for many years. Its strategy in this regard includes construction of photovoltaic systems on company buildings, providing efficient thermal insulation, utilizing waste heat and using electric vehicles to take employees around sites. The objective here is to become a CO<sub>2</sub>-neutral company and thereby also act as a role model for other companies and society at large. But how can this be achieved and what can a company like GEMÜ do to further reduce its carbon footprint?

The road to becoming a CO<sub>2</sub>-neutral company starts with analyzing current CO<sub>2</sub> emissions. GEMÜ's carbon footprint is currently being recorded with the help of a partner institute. When determining a carbon footprint, all relevant greenhouse gas emissions generated by the company are recorded, calculated and disclosed. This takes into account both direct emissions, such as those produced by the company's systems or resulting from purchased energy (for example electricity, district heating), and indirect emissions, such as those resulting from business trips, employee commuting and material usage.

On the basis of this CO<sub>2</sub> analysis, appropriate measures to save energy and increase efficiency are then derived in the next step as a way of reducing CO<sub>2</sub> emissions.

## What does this mean for GEMÜ?

GEMÜ checks where the use of renewable energies makes sense and evaluates its collaboration with companies that are working hard to reduce their own CO<sub>2</sub> output. Green technologies that focus on use of renewable energies also create new jobs.

One specific effect of climate change can already be seen today in the form of the increase in temperature. Indeed, the halls at GEMÜ require more powerful air conditioning to prevent the machines from overheating as a result of the higher outside temperatures. However, GEMÜ is currently in the process of switching over this air conditioning to adiabatic cooling. This is an environmentally friendly process in which cooling is performed through evaporation. Many more measures are set to be implemented in the coming months that will help GEMÜ make a significant contribution to climate protection. Everyone at the company is called upon to get involved here. The key is to work together on reducing CO<sub>2</sub> emissions. This all starts with day-to-day situations and concepts, such as correct ventilation.

"With our environmental protection measures and our objective of becoming a CO<sub>2</sub>-neutral company, we are working hard every day to improve our carbon footprint. As a company, we are doing our bit to ensure that we leave behind an intact, diverse and liveable environment for future generations," reports Gert Müller, Managing Partner at GEMÜ. "We are keen to become a pioneer in the field of climate protection and motivate every single employee to support us in this endeavour," he adds.

To reduce the speed of climate change, it is important for everyone to pull together, as well as for more and more companies to intensify their climate protection efforts. If we can work together and keep CO<sub>2</sub> emissions down, this could help mitigate the consequences of climate change.



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# MORE THAN A FULL-TIME JOB THE COVID-19 TASK FORCE

**Nobody was truly prepared for the magnitude of the coronavirus pandemic. This includes GEMÜ. However, introducing precautionary measures for the company and its members of staff right at the start of the pandemic has not only proven to be the right decision, but also an extremely important one.**

GEMÜ was quick to establish a COVID-19 task force on 26th February 2020. Since this time, the dedicated team has been monitoring the current position, deciding on measures, drawing up emergency plans and both coordinating and communicating all related activities on a daily basis. The task force also acts as a point of contact to answer questions from members of staff. The Intranet, e-mails and briefings by superiors are also being used for active communication of all measures and the current information regarding coronavirus developments. Communication from the task force is also being supplemented, for example by use of alternating screen savers and T-shirts, as well as gifts for the workforce in the form of jam jars, posters and roll-up banners. These help maintain awareness of the seriousness of the situation among all employees and also encourage them to observe the necessary protective measures when not at work. Company regulations for clarifying suspected COVID-19 cases were met and instructions were given as to how affected employees should act.

## Information and communication

The COVID-19 task force comprises three management assistants Tanja Mangold, Dorothea Mayer and Stefanie Theierl, for whom the clocks have since been ticking rather differently – including at the weekend. There is also no end in sight here. Working in daily rotation, they take it in turns to respond to the many questions arriving at the dedicated e-mail address, which was set up specifically for this purpose. "Questions like 'what would happen if ...'" are the most difficult to answer, as Tanja Mangold from the COVID-19 task force reports. "However, we obviously answer all questions that come in."

The key for the task force is to keep up to date with the latest developments in and around the pandemic at all times, although the three assistants must also continue to perform their regular day-to-day duties. "We are keen to keep the members of staff up to date and obviously provide them with well-founded information. In terms of communication, it is also always important to find the right tone," reports Tanja Mangold. In addition to this, the background work and preparing all the information takes up a lot of time – although this is clearly an effort that pays off.

## Exemplary COVID-19 management

The COVID-19 task force has also been assigned responsibility for organizing and coordinating certification as a "Certified SARS-CoV-2 Occupational Health and Safety Standard" as per the stipulation of the German Federal Ministry of Labour and Social Affairs (BMAS).

GEMÜ was one of the first companies in the Hohenlohe district to be honoured for its exemplary management of the COVID-19 crisis. The German Federal Ministry of Labour and Social Affairs (BMAS) has published a nationwide SARS-CoV-2 Occupational Health and Safety Standard for protection from the coronavirus pandemic. The requirements for occupational health and safety listed here are binding for all employers as well as employees.

"Other companies in the Kocher Valley initially considered our coronavirus activities to be rather excessive. However, time has shown that we were absolutely right to establish a task force early on and develop an emergency response plan right at the start of the pandemic," describes Managing Partner Gert Müller, reflecting on the first measures and adding: "The work of the COVID-19 task force is of inestimable value in this pandemic. A great deal is being asked of all GEMÜ members of staff during this time and we are happy they have played a key part in establishing the protective measures from the outset."

From today's perspective, the COVID-19 task force will certainly be planning and coordinating all measures for protection from COVID-19 until well into 2021 and thereby making a valuable contribution to protecting all GEMÜ members of staff.

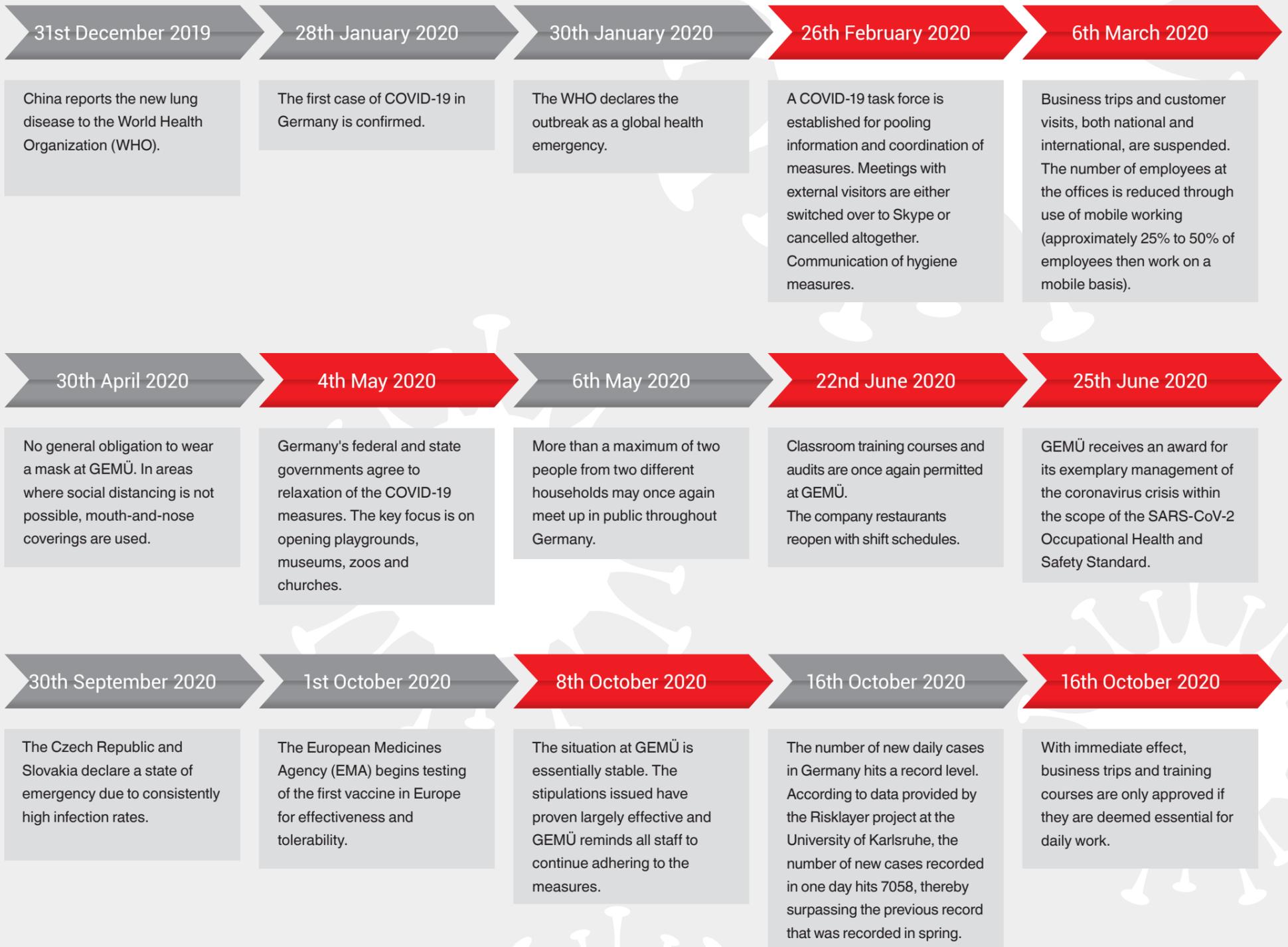
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# COVID-19 AT GEMÜ IN HOHENLOHE

## COVID-19 IN GERMANY AND THE WORLD

■ GEMÜ measures  
■ Global measures





11th March 2020 → 15th March 2020 → **18th March 2020** → 29th March 2020 → 27th April 2020

The WHO declares the worldwide spread of COVID-19 as a pandemic. Germany cancels all major events.

Germany closes schools, kindergartens and businesses. France imposes a curfew.

First positive COVID-19 case in the company. Closure of the staff canteen.

Spain closes all "non-essential businesses".

Face masks become obligatory throughout the whole of Germany, especially when shopping and using public transport.

**30th July 2020** → 8th August 2020 → 11th August 2020 → 16th September 2020 → 29th September 2020

Rules for those returning from travel in high-risk areas are defined.

Those returning from travel in high-risk areas are obligated to take a COVID-19 test.

Russia is the first country worldwide to approve a COVID-19 vaccine for broad use.

In Germany, more than 2000 new cases are registered in a single day for the first time since mid-April.

More than a million people worldwide have died as a result of COVID-19.

18th October 2020 → 24th October 2020 → 28th October 2020 → 31st October 2020 → **2nd November 2020**

The number of confirmed infections worldwide increases to more than 40 million.

The number of deaths due to COVID-19 in Germany surpasses the 10,000 mark.

Germany's federal and state governments approve a "partial lockdown". As of 2nd November 2020, social contact is to be limited to just two households, while the catering and tourism sectors as well as cultural institutions must remain closed. Schools, industry and the economy, on the other hand, are to be kept up and running.

In the US, more than 100,000 new cases per day are recorded for the first time. Meanwhile, European countries such as Italy and France also confirm record levels of new infections.

GEMÜ reintroduces extended shift assignments in the departments.



# OPTIMISTIC OUTLOOK FURTHER DEVELOPMENT OF THE SPEAKING WALLS

The redesigned façade of the western building face at the GEMÜ headquarters shows the company's development and prospects.

When the last of the work was completed and the scaffolding removed in late September 2020, the façade shone in a brand-new design. The western side of the building now seamlessly integrates with the existing speaking walls around the main entrance to the company headquarters in Ingelfingen-Criesbach and continues the company's history.

The walls to the left of the entrance area start with the large "big bang" image and then continue to show individual scenes from the company's development, progressing from left to right. Next to them, the symbolic circles represent the meeting of different specialist areas, opinions, ideas and principles, resulting in a very dynamic momentum.

This momentum is the starting point for the new speaking walls. This is where the future starts. As a globally successful company, GEMÜ is subject to a gentle but continuous change away from traditional engineering and towards a new reality characterized by digital possibilities.

### Two faces symbolizing future-oriented thinking

This transformation and the will to maintain an optimistic outlook even in such a challenging time is what artist Max Grüner drew on in the redesign of the façade. GEMÜ's future-oriented thinking is symbolized by two faces, mutually connected by a white and a red line. The left face stands for everything modern, while the right face represents the digitalization and diversity that characterizes GEMÜ. The two lines symbolize the dynamic development, with the white line representing the average and the red line representing the dynamics at GEMÜ. Both lines move towards the future, emphasizing the above-average dynamic development of GEMÜ.

"The possibilities available to GEMÜ are represented by the "new reality" (NR) as an intersection of "visionary creativity" (V) and "state-of-the-art technical options" (T)," explains Gert Müller, Managing Partner at GEMÜ, and adds: "These components make up the formula  $V \cap T = NR$ ." This formula stands between the two faces as a connecting element.

The new speaking wall stands for an optimistic outlook. And not just with respect to GEMÜ. For the practical implementation of the project, Max Grüner hired two employees who suddenly found themselves unable to



work in their original professions due to Covid-19. One of them was Daniel Brück, who worked as a successful lighting engineer for big productions and events prior to the pandemic.

The new speaking wall is a real eye-catcher – and not just during the day. It is worth visiting the new façade at dusk or at night as the connecting lines are illuminated. The company's orientation towards the future is particularly striking from the bike path, but also from the road, and can be seen clearly for quite a distance in the Kochertal Valley.



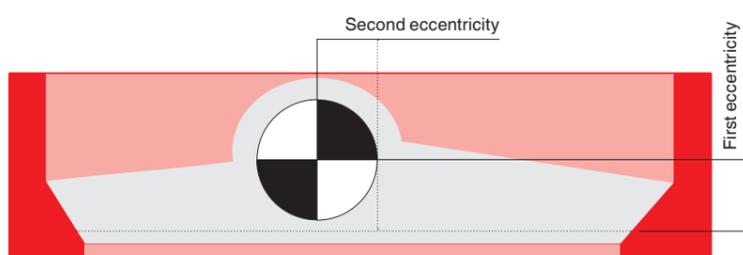
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# GEMÜ TUGELA DOUBLE-ECCENTRIC BUTTERFLY VALVE MEETS STRICTER TEMPERATURE AND PRESSURE REQUIREMENTS

The new GEMÜ R470 series in wafer version is now ready for delivery in nominal sizes of DN 50 to DN 400.

The high-performance butterfly valves have now been successfully sold for several years at GEMÜ China so there is already a range of interesting applications available. The GEMÜ butterfly valve range will now be completed and rounded out across the globe.

The GEMÜ Tugela is distinguished in particular by its double-eccentric design, one reason why it is also referred to as a high-performance butterfly valve and why it is suitable for a pressure of up to 40 bar or temperatures of up to 230 °C. The disc directly separates from the sealing seat when opening, which reduces wear and therefore increases the service life. Thanks to the locking screw on the actuator flange, the gland packing can be retightened directly at the shaft, which sits in a carbon braid bearing, so that the butterfly valve can be serviced when installed. This, in turn, significantly reduces the maintenance requirements.



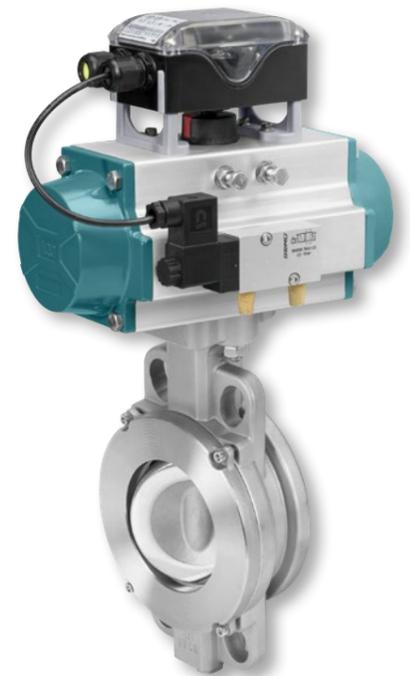
### Double-eccentric design for easy opening and increased service life

There are three different types of basic structures/geometries when it comes to designing butterfly valves:

- ⇒ In a concentric design such as the GEMÜ Victoria series, the pivot point is in the centre of the seat valve, meaning the main seal is interrupted by the shaft.
- ⇒ In a simple eccentric design, the main seal is offset to the shaft axis so that the entire 360° sealing circumference is uninterrupted.
- ⇒ In the double-eccentric design, the shaft axis is also offset to the pipeline axis as a second eccentric aspect (see figure) so that the centre of the shaft is slightly offset to the centre of the pipeline. Fun fact: A normal door is a double-eccentric butterfly valve.

### Other features of the GEMÜ R470 Tugela butterfly valve:

- ⇒ Shaft blow-out protection as an additional safety measure in case the shaft breaks
- ⇒ Improved sealing with an optimized disc design in a ball configuration
- ⇒ Antistatic spring for use in ATEX areas
- ⇒ Particularly low-brittle TFM seat ring ensures reliable use in a wide temperature range



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# GLOBAL MANUFACTURING CAPABILITIES FURTHER EXPANDED – MADE BY GEMÜ

**GEMÜ uses the experience of long-term partners in production planning for its butterfly valves.**

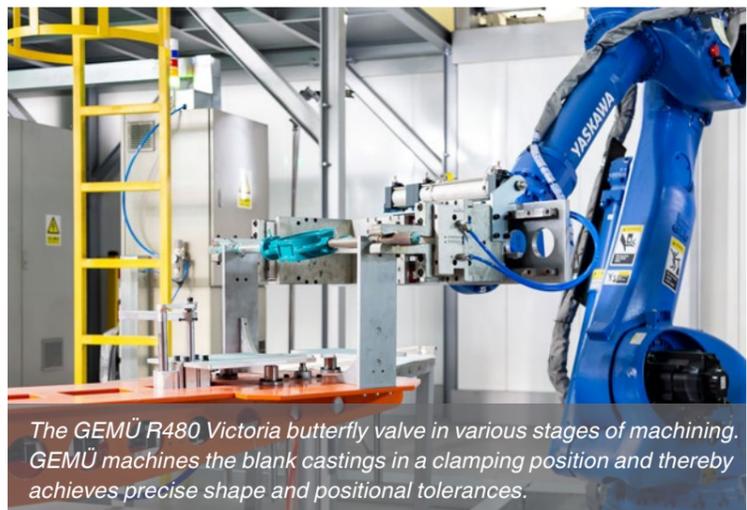


GEMÜ has further expanded its global manufacturing concept and is relying on the experience of long-term partners when it comes to production planning. To cater to GEMÜ's high quality standards in terms of global production planning and its own products, great emphasis is placed on considering all parameters during planning for production of GEMÜ butterfly valves at the company's factory in China. A partner company that has its own experience and offers an additional perspective can really help in this regard. This consideration motivated GEMÜ to bring on board specialist technical supplier Boie GmbH from Heilbronn, as well as the machining experts from Walter in Tübingen, both of whom have been important partners to GEMÜ for many years. Alongside many years of experience, the aspect of collaboration across two continents also played an important part here.

After GEMÜ had reached the strategic decision to produce the R480 Victoria butterfly valve in-house, the focus was on designing and then introducing a completely new machining process that could satisfy these extremely strict quality requirements.

By taking this step, GEMÜ is also working towards its aspiration of establishing as much technical expertise as possible in the company for this type of soft seated butterfly valve. In reaching the decision, scalability and quality management were just as important as the plan to secure the product a USP in the market through design and production improvements. Achieving precise shape and positional tolerances in the manufacture of the butterfly valves represented a key objective here.

GEMÜ has been offering soft seated butterfly valves for many years. The relatively straightforward mechanical design and geometry of the GEMÜ butterfly valves have also proven very reliable over many years of use. Their short installation length, fast operating time and attractive price make the GEMÜ R480 butterfly valves extremely popular worldwide. The butterfly valves are primarily used in systems for drinking water production and waste water management, in chemical plant construction, in plastic foaming operations, in CHP systems and in the power industry.



*The GEMÜ R480 Victoria butterfly valve in various stages of machining. GEMÜ machines the blank castings in a clamping position and thereby achieves precise shape and positional tolerances.*

## A reliable partner for years

GEMÜ procures not only machining tools and technical products from Boie. As a system provider, Boie also supports its customers with complex procurement and service challenges.

With the new production planning, for example, it was then possible to reduce both the machining time and the number of tool changes required through use of special tools. To achieve an optimal machining process, and secure compliance with the strictest quality requirements of the GEMÜ R480 Victoria, it was therefore important to check what effect this would have on the other elements and production steps. Supplementing the company's own expertise, a team of engineers and application experts from Walter supported GEMÜ in this process.



*The blank castings are mechanically machined using a state-of-the-art machining centre.*

## A perfected product thanks to an optimized production process

The machining process, which was developed by the companies together, facilitates extremely tight shape and positional tolerances of the entire component body. The butterfly valve has been technically optimized in such a way that it was possible to reduce torque by 20% thanks to the reduced effect of the respective force. This makes the GEMÜ R480 Victoria particularly low-wear, while also securing a long service life. The new, leaner and thereby flow optimized disc design delivers improved Kv values. The pressure loss with the valve open is 10% lower than with the predecessor and comparable butterfly valves from other suppliers. As such, the butterfly valves can be operated with significantly lower energy input – which in turn saves operating costs.

The project was successfully implemented together with the partners Boie and Walter and all targets were met. Many thanks for the successful collaboration.

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# WHEN POLITICS MEETS BUSINESS

**Opportunity to exchange views with a State Minister and a Member of State Parliament.**

**Baden-Württemberg's Minister of Economic Affairs, Dr. Nicole Hoffmeister-Kraut (of the centre-right CDU party), and Member of State Parliament Arnulf Freiherr von Eyb (CDU) visited GEMÜ at the Hohenlohe business park.**

On 11th August 2020, the Minister of Economic Affairs visited the GEMÜ surface technology centre (OTZ) and GEMÜ's Production and Logistics Centre (PLZ) at the Hohenlohe business park in Kupferzell and spoke to GEMÜ managers as well as a representative of the trade association.

Having greeted the guests, Stephan Müller, GEMÜ's Managing Director, gave a presentation about the company. In addition to a quick retrospective of the family-owned enterprise's 56-year history and an overview of its business areas and products, the brief presentation could not ignore the fact that, this year, GEMÜ has been recognized as the global market leader for solutions for sterile applications – for the fourth time in a row.

Stephan Müller then gave the visitors a tour of the GEMÜ surface technology centre, which was opened in 2018 and where the company has brought together its expertise in the field of surface technology. He particularly highlighted the state-of-the-art field of electropolishing, including electroplating.

Minister of Economic Affairs Dr. Nicole Hoffmeister-Kraut and Member of State Parliament Arnulf Freiherr von Eyb were then joined by master joiner Sebastian Leuze (as a representative of the trade association) as well as GEMÜ managers for the subsequent discussions. The lively discussion covered subjects such as the coronavirus pandemic, as well as the risks and effects of the current trade disputes on medium-sized companies. In their discussions with the politicians, the company representatives also shared their experiences and views about Industry 4.0 and the opportunities presented by digitalisation.

"With their innovativeness and high-quality, high-tech products, medium-sized family-owned enterprises like GEMÜ are successfully responding to the complex transformation processes in the economy and society. They are deeply rooted in the region and form the economic backbone of Baden-Württemberg as a leading European region for industry and innovation," said Minister of Economic Affairs Dr. Nicole Hoffmeister-Kraut on the visit to the GEMÜ Group at the logistics centre in the Hohenlohe business park.

"Hohenlohe wouldn't be Hohenlohe without successful globally operating companies like GEMÜ. These companies are key to prosperity and skilled jobs in the region. I'm therefore particularly pleased that our Minister of Economic Affairs is using the parliamentary summer recess to visit Hohenlohe in order to speak to employers on-site," added Member of State Parliament Arnulf Freiherr von Eyb.

"We're pleased about the visit and the interest taken in our company by the Minister of Economic Affairs and Member of State Parliament. The visit shows us how important it is for both sides to continue to seek dialogue in order to find constructive solutions together and to specify common goals," Stephan Müller, GEMÜ's Managing Director, said about the on-site event held by GEMÜ.



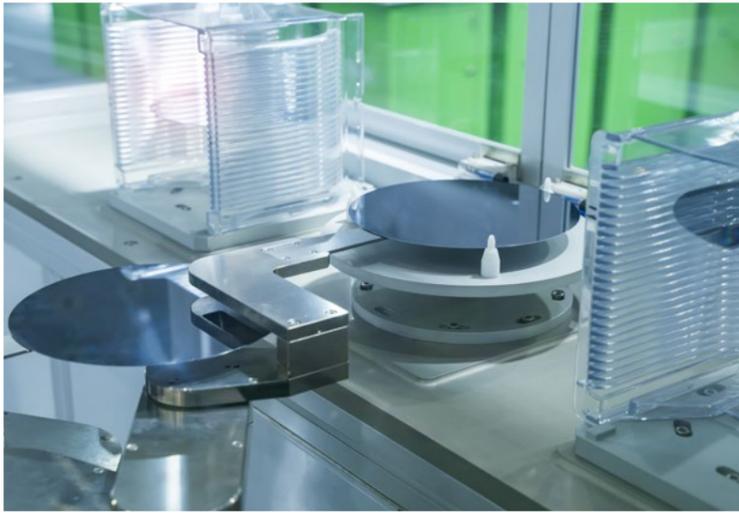
*From left to right: Stephan Müller, Dr. Nicole Hoffmeister-Kraut, Arnulf Freiherr von Eyb*

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# GEMÜ C53 ICOMLINE A CLASSIC APPLICATION

With the GEMÜ C53 iComLine, the company has developed and launched an electrically operated control valve specifically for applications in the semiconductor industry. This excels in particular through its innovative PD design and high-resolution linear actuator with stepper motor. It is used both as a 2/2-way valve and integrated into GEMÜ PC50 valve block solutions

Alongside the application areas of chemical supply, media distribution and ultra-pure water supply, the GEMÜ C53 iComLine control valve is primarily used in the process area. Based on the example of an FOUP cleaner, which is used in all modern semiconductor factories, the following describes an application example for the new control valve.



## What is an FOUP?

The abbreviation FOUP stands for Front Opening Unified Pod. These are often also called wafer carriers or wafer shippers. They comprise a plastic housing, in which the wafers can be securely transported between the various process steps during manufacture of semiconductors in the cleanroom (lithography, CMP, etching, analytics, etc.). The dimensions of the FOUPs used differ, based on the wafer size (200/250/300). The housings are generally produced from polycarbonate (PC), while the frames are made from stainless steel.

## What is an FOUP cleaner?

In automated single wafer processes, a robot arm is used to remove the wafers from the coupled FOUPs in order to process them. The FOUPs are then transported via conveyors to the next process tool. Frequent transportation and passage through the process steps can lead to formation of (dust) particles, which can then be deposited on the wafers. To prevent this, the FOUPs require regular cleaning. Special FOUP cleaners are used for this.

When cleaning FOUPs, it is important to keep the throughput quota as high as possible in order to avoid downtimes during wafer manufacture. The particle and AMC cleaning performance is the key factor here. The process thereby imposes stringent requirements on the valves, measurement and control systems used.

## Process requirements:

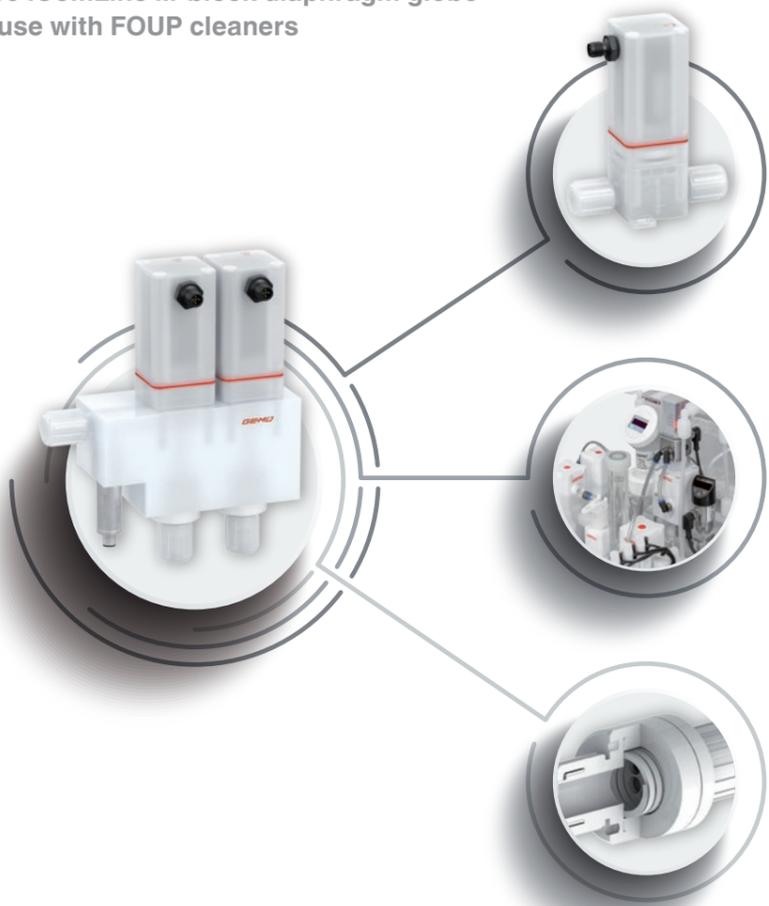
- ⇒ All media wetted parts must be produced from ultra pure fluoroplastics
- ⇒ Handling of media in various aggregate conditions (gases and DI water)
- ⇒ Reliable mixing of the cleaning media used (different temperatures, aggregate conditions, etc.) through continuous checking of the operating parameters
- ⇒ Compact design of the valves, measurement and control systems used

Precise control of the cleaning media plays a key part in this regard. The GEMÜ PC50 valve block shown below assumes the temperature control function here. It performs the task of regulating two different input temperatures in such a way that a constant output temperature is secured. Any potential backflow is prevented using integrated check valves, and the temperature is monitored using an integrated temperature sensor. The GEMÜ C53 iComLine motorized control valve thereby satisfies the challenging process requirements in the semiconductor industry. As such, it is for example recommended for use when cleaning FOUPs as described here.

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## GEMÜ PC50 iComLine M-block diaphragm globe valves for use with FOUP cleaners



### GEMÜ C53 iComLine motorized actuator

- ⇒ Control valve for ultra pure applications
- ⇒ High-resolution linear actuator with stepper motor
- ⇒ All media wetted parts are made of PFA or PTFE

### Sensor integration:

- ⇒ Pressure measurement system
- ⇒ Temperature sensors
- ⇒ Flow measurement
- ⇒ Heating elements

### Integrated check valves:

- ⇒ Metal-free
- ⇒ Cleanroom manufactured
- ⇒ Compact design

## IMPRINT

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# CUSTOMIZED SINGLE-USE COMPONENTS

## RISK OF CROSS CONTAMINATION SIGNIFICANTLY REDUCED

Alongside its standard portfolio of single-use products, GEMÜ also offers individually tailored solutions.

In its dedicated cleanroom plant in Switzerland, GEMÜ produces, assembles and packages single-use components. These are subject to strict quality assurance measures, which help ensure that they comply with all requirements of the cGMP process. The GEMÜ cleanroom satisfies the requirements as per ISO 8 for the manufacture of all single-use components and can be increased locally to ISO 6. The factory is registered with the FDA and also offers BSE/TSE-free manufacturing.

By employing single-use components, the risk of cross contamination is significantly reduced, cleaning costs are massively reduced and plant downtimes are reduced to a minimum. The benefits quickly become apparent and verifiable in terms of the costs involved, particularly when processing smaller batches and more frequent media changes.

GEMÜ produces a wide range of single-use solutions, such as mixers, distribution plates, fittings, sensor holders or multi-port valve blocks. GEMÜ also offers fully assembled components, manifolds or flow paths. Manufacturing in accordance with cGMP, transport validation as per ISTA and the fact that both the components and the complete flow paths are sterilized mean these can be used directly.

Plant design requirements are likely to become even stricter in future. With GEMÜ single-use components, operators already have a future-proof solution at their disposal that impresses thanks to its safety, quality and efficiency.



Cleanroom plant in Emmen

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# GEMÜ BALL VALVES FOR INDUSTRIAL APPLICATIONS

## NEW BALL VALVE RANGE

The valve specialist GEMÜ is expanding and changing its product range of industrial ball valves. General applications are covered by focussing on selected designs.

All ball valves are designed for use in industrial applications, predominantly for use in chemical engineering, water treatment, mechanical engineering, the processing industry and in power generation and environmental systems. GEMÜ ball valves are primarily used for the control and regulation of liquids. With a view to these industry-focussed applications, GEMÜ has revised its range of shut-off valves in the form of ball valves made of metal.

The new ball valve range is a further development of the well-known design trusted by users, and fulfils all current normative standards. In addition, the sealing concepts and installation-relevant features have been optimized as part of the update. With the launch of B series ball valves, these significant optimizations have been



Ball valve GEMÜ B20



Ball valve GEMÜ B22



Ball valve GEMÜ B24



Ball valve GEMÜ B26

implemented in the new GEMÜ ball valve generation, which is also reflected in the new choice of name.

### GEMÜ B20

The GEMÜ B20 ball valve is impressive due to its low weight and compact design. It is a two-piece 2/2-way ball valve made of metal, which is manually operated. The plastic sleeved hand lever is lockable. The seat seal is made of PTFE and the ball valve is compatible with DIN and NPT threaded connections.

### GEMÜ BB02, B22, B42, B52

The GEMÜ BB02, B22, B42 and B52 ball valve series is based on 3-piece body 2/2-way metal ball valves, available in nominal sizes DN 8 to 100. The ball valves are suitable for

vacuum applications and require little maintenance. The 3-piece body construction makes assembly of the series simple. The standardized top flange in accordance with DIN EN ISO 5211 means that actuator mounting and replacement is simple. Butt weld spigot, flange and threaded socket connection types are available.

### The following structures are possible:

GEMÜ BB02 is delivered with bare shaft, GEMÜ B22 has a hand lever for manual operation, GEMÜ B42 is pneumatically operated and GEMÜ B52 is motorized.

### GEMÜ BB06, B26, B46, B56

The GEMÜ BB06, B26, B46 and B56 ball valve series comprises one-piece

ball valves made of metal. Ball valves in nominal sizes DN 15 to 100 are available. The ball valves have a compact design and high flow rates because the ball enables a full bore. Similar to the GEMÜ BB02, B22, B42, B52 series, there is compliance according to PED, and ATEX versions with an antistatic unit is available. For the compact flange series, installation of various actuators is made simpler, since a standardized top flange according to DIN EN ISO 5211 is present.

### The following constructions are possible for this series:

GEMÜ BB06 is available with bare shaft, GEMÜ B26 is manually operated and GEMÜ B46 is pneumatically operated and B56 is

motorized. GEMÜ offers a suitable solution for many industrial sectors thanks to the various ball valve series. The new B series ball valves are now available from GEMÜ or in the GEMÜ online shop.

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# SUCCESSFUL AUDIT OF TÜV SÜD GEMÜ CIP/SIP STERILE TEST RIG AND CODE 19 DIAPHRAGMS CERTIFIED

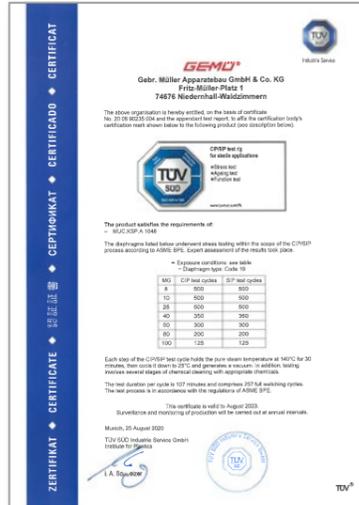
The CIP/SIP sterile test rig, as well as the load test of the CIP/SIP endurance test for diaphragms have been successfully tested and certified by TÜV SÜD.

At the start of 2020, a comprehensive examination by an expert from TÜV SÜD got under way in the form of technical testing at the GEMÜ Dome in Niedernhall-Waldzimmern. The GEMÜ CIP/SIP sterile test rig (CIP: Cleaning in place, SIP: Sterilization in place) and the working method in its surrounding area were scrutinized in detail. In particular, proper functioning and process repeatability were tested in order to demonstrate the cleaning and sterilization of wetted sections in the valve and determine both the useful life and effectiveness of the quality assurance. Following an extensive inspection by the auditor, all technical documentation, including datasheets, functional illustrations and work regulations, were submitted and reviewed.

The test rig can be operated with various media and at various temperatures. Inputs for eight test media are available for the tests:

- ⇒ Compressed air
- ⇒ Hot water
- ⇒ Cold water
- ⇒ Vacuum
- ⇒ Steam
- ⇒ Acid
- ⇒ Lye
- ⇒ Cleaning agents

Measures are in place here to ensure that all test media are prepared properly before the test and then correctly neutralized, monitored, collected and disposed of after exiting the test rig. Alongside the highly positive assessment of the technical function of the CIP/SIP sterile test rig, sustainable and clean operation was also particularly highlighted.



### How a test cycle works

The test rig comprises multiple test routes, which are divided into separate load circuits and can then be checked individually (see Fig. 2). In a test cycle, a diaphragm valve is placed under load with a defined medium in a closed testing circuit for a predetermined time at a specific speed. Once one test cycle has been completed, the testing circuit is emptied and the next medium is then applied. When all test cycles are complete, everything is then flushed and neutralized.

### The GEMÜ CIP/SIP sterile test rig satisfies the following certified requirements:

- ⇒ Test of the load and ageing of diaphragms and gaskets in accordance with ASME BPE (American Society of Mechanical Engineers – Bioprocess Equipment), for example for cleaning and sterilization of all wetted sections
- ⇒ General operating principle and technically flawless function of the test rig
- ⇒ Monitoring the required process conditions of the tests for accuracy and repeatability
- ⇒ Procedure
- ⇒ Intended use
- ⇒ Safety equipment, i.e. test rig designed in accordance with the safety standard

### The following requirements of GEMÜ are also satisfied:

- ⇒ Equipment that permits proper testing in line with the state of the art
- ⇒ Quality assurance
- ⇒ Suitably qualified supervisory and testing staff

### Qualification of code 19 diaphragms in accordance with ASME BPE

The qualification of the code 19 diaphragms performed, which is based on ASME BPE, was also tested and certified by TÜV SÜD. ASME BPE is an international standard for the design and construction of devices and systems used in the production of biopharmaceuticals. The components of this standard include the procedure for CIP/SIP cleaning of systems.

The following table shows the number of tested and certified CIP/SIP cycles:

MG	Test cycles CIP	Test cycles SIP
8	500	500
10	500	500
25	500	500
40	350	350
50	300	300
80	200	200
100	125	125

*CIP/SIP cycles of code 19 diaphragms per diaphragm size (MG)*

Each CIP/SIP cycle step maintains the temperature of the ultra pure steam at 140 °C for 30 minutes, with subsequent cooling down to 25 °C and application of a vacuum. In addition to this, multiple chemical cleaning steps are performed with corresponding chemicals. Each test cycle lasts 107 minutes and encompasses 257 switching cycles.

Michael Klemt, Head of CCS at GEMÜ, who was also in attendance during the audit, summarizes this as follows: "We are delighted by the successful certification of our CIP/SIP test rig, as we can now test our diaphragms individually and under real world conditions with various cleaning media for our customers. After all, those cleaning applications that use corrosive media in combination with sterilization and the associated temperature load, for example steam, subject the diaphragm to the greatest loads as a result of the additional dynamics.

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GEMÜ CIP/SIP sterile test rig at the GEMÜ Dome

## ACCURACY TEST FAST AND PRECISE FILLING

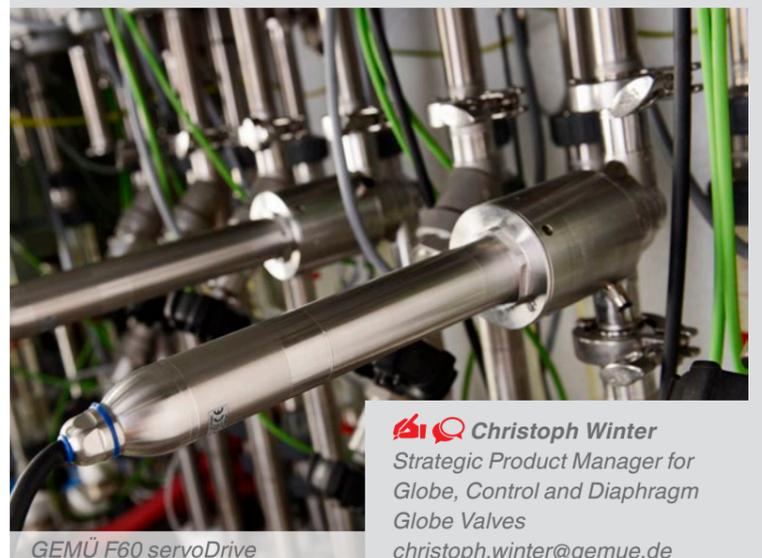
As a component of the filling valve platform, the GEMÜ F60 servoDrive is predestined for fast and precise filling of small volumes (approximately 1 ml to 100 ml), such as pharmaceuticals.

Rotary lobe pumps are currently often used in hygienic and aseptic filling processes. Using the GEMÜ F60 servoDrive not only allows these filling processes to be made significantly faster and more flexible, but also extends service lives.

The GEMÜ servoDrive actuator design excels through its high traverse speed, excellent positioning accuracy and fast controllability. The low-loss, brushless and rugged servo motors made from stainless steel satisfy the requirements of electrical protection class IP69K and can achieve 50 to 100 million cycle duties, depending on the application.

An accuracy test was performed with the GEMÜ F60 servoDrive for filling with the smallest quantities. The aim here was to achieve the accuracy required when filling pharmaceuticals of ± 0.5% at a filling weight of 1 g. The test was performed with water and a continuous pressure of 0.3 bar. The results showed that the requisite accuracy could be delivered over multiple measurement series. Further tests with various small volumes also confirmed the filling accuracy. A filling cycle time of significantly less than one second could be achieved with all fill volumes.

The GEMÜ F60 servoDrive allows faster filling cycles than the rotary lobe pumps that are currently often used. In addition, various filling volumes can be implemented without having to modify the filling plunger. Alongside filling of pharmaceutical products, the GEMÜ F60 servoDrive is also suitable for all filling applications that require accuracy, speed and hygiene, such as foodstuffs or battery and chemical filling.



GEMÜ F60 servoDrive

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# ALCOHOL-FREE SEMI-SPARKLING WINE

## INGELFINGER FASS WINERY EXPANDS ITS RANGE

The Ingelfinger Fass winery is breaking new ground with its new alcohol-free "Secco" semi-sparkling wine. In keeping with this concept, the refreshing alcohol-free drink has been christened "Neuland", which roughly translates as "Uncharted Territory".

The Ingelfinger Fass winery, a company of the GEMÜ Group, has had a new product in its range since November. The refreshing "Neuland" drink is the first alcohol-free Secco in the portfolio at the Ingelfinger Fass winery. It is pressed from the juice of domestic grapes and regional fruit.

Alcohol-free beverages are benefiting from the growing appetite for natural and conscious nutrition. Above all, young and lifestyle-oriented shoppers prefer these trendy beverages, as they are more healthy. "We are catering to this trend and see adding a new dimension to enjoyment as an important step. The Neuland Secco is the ideal drink for any occasion, including important business meetings, family parties or get-togethers with friends. Neuland lends any event or celebration a sense of exclusivity," comments Gert Müller, Managing Partner in the GEMÜ Group.

With its local origins, Neuland is also aimed at the target group that prefers to buy domestic products. Indeed, the beverage is produced in cooperation with Manufaktur Jörg Geiger GmbH in Schlatt at the foot of the Swabian Alb. Both Jörg Geiger and the Ingelfinger Fass winery are committed to the preservation of regional cultural landscapes and processing with the highest level of craftsmanship. Grapes grown by the Ingelfinger Fass winery, as well as hand-picked apples and pears from the Manufaktur Jörg Geiger GmbH winery are used for the Secco. These are then mixed with spices and carbon dioxide is added to produce a high-quality and refreshing beverage. It is ideal as a refreshing summer drink, as an accompaniment to Asian cuisine or starters with leafy salads and cream cheese, as well as for desserts containing berries or baked goods. The alcohol-free "Neuland" Secco is available now from Schloßhotel Ingelfingen.

### Grapes in the Neuland Secco

#### Müller-Thurgau

The Müller-Thurgau white wine variety is also known by the name Rivaner. It was cultivated in the Swiss canton of Thurgau by Hermann Müller. It produces soft, fruity wines with mild acidity and a delicate nutmeg aroma. It is very popular in Germany.

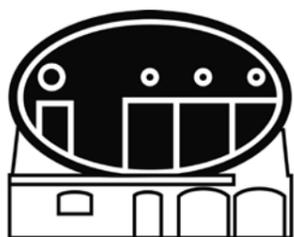
#### Portugieser

Contrary to its name, this grape variety likely originates from present-day Slovenia. It has been grown in Germany since the 19th century. The Portugieser grape is primarily used to produce red wine, but also rosé. The Portugieser excels with its mild acidity and soft, fruity nature. It is particularly popular as a summer wine thanks to its freshness.

#### Orchards

Orchards represent a traditional form of fruit growing. Tall fruit trees of various ages and varieties grow naturally in sustainably farmed meadows. Many of the orchards employ a multi-use approach, for example including grazing land. The orchards are also home to many animal and plant species, making them particularly important in the conservation of biodiversity. However, this type of growing delivers a poor ratio of income to expenses when compared with modern fruit plantations. As such, the number of traditional orchards is in constant decline.

The Swabian orchard paradise: Covering around 26,000 hectares, the orchards between the Swabian Alb and the Neckar river represent one of the largest orchard landscapes in Europe. Around 1.5 million fruit trees producing various fruit, such as apples, pears, cherries and plums, can be found here.



## WEINMANUFAKTUR INGELFINGER FASS

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### THE INGELFINGER FASS WINERY

The Ingelfinger Fass winery belongs to Schloßhotel Ingelfingen and is part of the GEMÜ Group. The emblem and eponym of the winery is the wine barrel in Ingelfingen-Criesbach, which sits at the heart of the winery's vineyards. After the barrel in Bad Dürkheim, this barrel is considered to be one of the largest in Europe. It is used as a wine museum and can be rented for both private and business celebrations. In total, the winery maintains two and a half hectares of vineyards on the shell limestone slopes of the Kocher Valley right in the middle of the Hohenlohe wine region.

### THE JÖRG GEIGER WINERY

The Jörg Geiger winery in Schlatt at the foot of the Swabian Alb presses the Secco for GEMÜ. It has specialized in the processing of fruit for many years and is known for innovative, high-quality products in the alcohol-free beverage market. It produces a wide range of alcohol-free Seccos.

Jörg Geiger obtains his fruit regionally within a 60 kilometre radius. Thanks to the enterprise's exclusive use of old meadow fruits, it is contributing to the preservation of the Swabian orchard paradise. Jörg Geiger also employs traditional production methods to achieve high quality and a unique flavour.

## SALES LAUNCH FOR CODE 29 DIAPHRAGMS USE OF A NEW ELASTOMER MATERIAL

The new code 29 industrial diaphragm is the successor to the code 14 diaphragms, which were discontinued on 1st December 2020.

The diaphragm has been available since June 2020 in the diaphragm sizes MG 10 to MG 200. Thanks to the GEMÜ modular system, it can be used for all diaphragm valves in the industrial sector in the nominal sizes DN 12 to DN 200.

The code 29 diaphragm consists of new elastomer material that has been specially developed for industrial applications by GEMÜ. The position of the fabric layer, as well as the improved sandwich construction and the benefits resulting from this, such as a longer service life, represent the optimized

diaphragm characteristics. The favourable compression set of the material means that maintenance intervals can be significantly extended when using code 29 diaphragms.

To ensure that customers receive optimum diaphragm quality, the code 29 diaphragm was intensively tested in a comprehensive test programme. The diaphragm delivers excellent results within the scope of specially defined endurance and resilience tests, and also in direct comparison with products from competitors.

**The following tests were performed:**

- ⇒ Vacuum endurance test
- ⇒ Pressure test on both sides
- ⇒ Hot water endurance test
- ⇒ Fatigue test

- ⇒ Abrasion test
- ⇒ Chemical-physical storage test
- ⇒ Pin pull-out force test
- ⇒ Pin overtorque test

Based on an excerpt from the "abrasion test" test programme, the following presents one of multiple test programmes by way of an example.

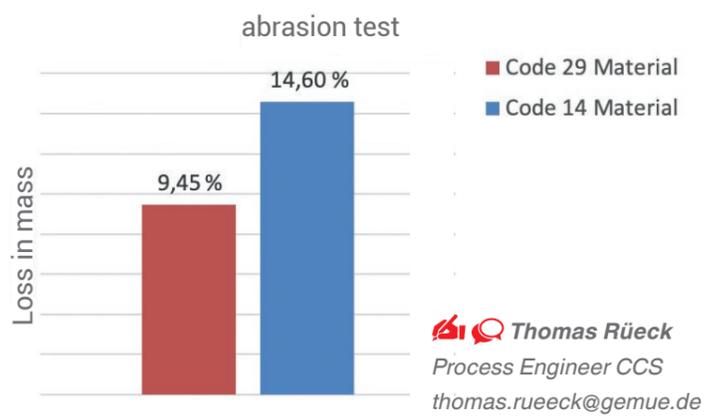
The abrasion test on elastomers is performed in accordance with the standards DIN 53516 and ISO/DIS 4649. As part of the abrasion test, a sample of the respective diaphragm material is first weighed and then mounted in the testing instrument. A defined abrasion clearance is set and a load weight is applied. The sample is moved along a defined test route via an abrasive sheet. The loss in mass of the sample following the abrasion test is determined.

As shown in the figure, the code 14 diaphragm material lost 14.6% of its original mass, while the code 29 diaphragm material lost only 9.45% of its mass in an identical test procedure. The code 29 diaphragm material therefore displays an improvement of around 50% over the code 14 material in terms of abrasion properties.

You can find more details on this in the Validation Guides. If you are looking for a quick overview, the Validation Guide Handout can be found on the product page in SharePoint. The versions containing detailed information are also available on request from product managers in the BU IND and CCS departments.



**Results of the abrasion test for the code 29 and code 14 elastomer materials**



## CHECK VALVES FOR HIGH AND LOW TEMPERATURES GEMÜ R90 AND GEMÜ R91

GEMÜ is expanding their product range with the GEMÜ R90 disco check valve and the GEMÜ R91 dual plate check valve. The check valves withstand media temperatures in a range of -200 to 400 °C and are therefore suitable for use in extremely high and extremely low temperatures.

Both check valves are designed for use in industrial applications, particularly in chemical engineering, water treatment, mechanical engineering or in energy and environmental technology. They can be used for liquids, gases and vapours.

**GEMÜ R90**

In addition to the main function of the GEMÜ R90 as a non-return check, the valve can also be used as a gravity circulation check in cooling and heating circuits. For pump systems, it can be used as a short circuit check or to protect containers and piping as a vacuum breaker. Special disc guidance prevents the valve plug from tilting. The GEMÜ R90 is available in the nominal sizes DN 15 to 300 as an intermediate flange solution in accordance with the ANSI, ASME and EN standards. ATEX, FDA or KTW compliant versions are also available for the GEMÜ R90.

**GEMÜ R91**

The GEMÜ R91 dual plate check valve comes with two semicircular plates and is distinguished by its low flow resistance. The dual plate check valve

can be used as a non-return check in piping systems or also as a short circuit check for pump systems. The GEMÜ R91 check valve also has the advantage that the dual-plate design with springs guarantees a controlled open pressure of the plates. The GEMÜ R91 also has WRAS approval for use up to + 60 °C and is available in the nominal sizes DN 50 to 600 as an intermediate flange solution in accordance with the ANSI, ASME and EN standards.

Both check valves have standardized lengths in accordance with DIN EN 558-1, Series 49 or DIN EN 558-1, Series 16. Different materials are available for selection, depending on the customer requirement. With soft-seated sealing, the new check valves in accordance with EN 12266-1/P12 achieve leakage rate A.

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## TRADE FAIRS 2021 (INTER)NATIONAL

Semicon Korea	03.02. – 05.02.	Seoul (KR)
WIN Türkei	10.03. – 13.03.	Istanbul (TR)
M+R Antwerpen	24.03. – 25.03.	Antwerpen (BE)
SEPTEM Toulouse	30.03. – 01.04.	Toulouse (FR)
Cophex Korea	13.04. – 16.04.	Seoul (KR)
MiningWorld Russia	20.04. – 22.04.	Moscow (RU)
Battery Experts Forum	27.04. – 29.04.	Frankfurt (DE)
VA Mässan Sweden	27.04. – 29.04.	Jönköping (SE)
T4M	04.05. – 06.05.	Stuttgart (DE)
Abwasser und Umwelt	05.05. – 06.05.	Rennerod (DE)
National Manufacturing & Supply Chain Conference	12.05. – 13.05.	Dublin (IE)
CHEMUK UK	12.05. – 13.05.	Birmingham (GB)
The Battery Show	18.05. – 20.05.	Stuttgart (DE)
Pharmapack	19.05. – 20.05.	Paris (DE)
Ugol and Mining Russia	01.06. – 04.06.	Novokuzneck (RU)
CFIA Rennes	08.06. – 10.06.	Rennes (FR)
MSR Spezialmesse Hamburg	09.06.	Hamburg (DE)
Kunststoffe im Anlagenbau	29.06. – 30.06.	Munich (DE)
MSR-Spezialmesse Halle	14.07.	Halle Saale (DE)

*Subject to changes due to the Corona Pandemic!*





# ELECTRIFICATION IN PLANT ENGINEERING

## GEMÜ IS TAKING AN ACTIVE ROLE AND TRAINING CUSTOMERS AND STAFF

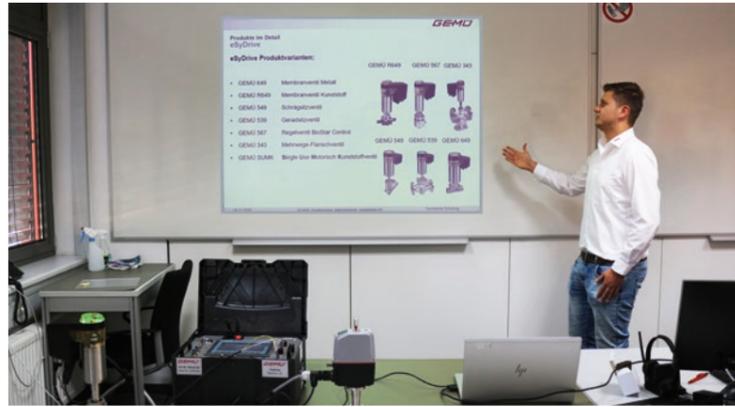
Electrification and energy efficiency are two of the big issues of the last years. Naturally, this development is also very important for GEMÜ. On the one hand, we need to develop and produce new products. On the other hand, customers and employees need to receive the corresponding training as part of the market launch in a training concept for motorized actuators.

GEMÜ is taking a leading role in the electrification of plants with the new linear actuators of the eSy series and is offering its customers the right motorized actuator for all valve types. The training team has created a new training concept for motorized actuators so that GEMÜ customers and employees can get to know the products and designs, update their knowledge and gain experience in relevant applications. This concept was populated with up-to-date contents in collaboration with the Competence Centre Automation (CCA) product management. Product training PE1000 has been developed specially for motorized linear actuators and includes all important information about the eSy series as well as all other electric linear actuators.

### It deals with the following topics:

- ⇒ Basic principles of electronics
- ⇒ Market launch of motorized actuators
- ⇒ Overview of GEMÜ product range
- ⇒ Products in detail
- ⇒ Practical applications and parametrization of actuators

The training content was compiled, structured and the training objectives defined together with the CCA product management. This basic concept was then supplemented and perfected with information from other departments and specialist areas by the training team. The theoretical part



of the training is complemented with selected, representative product samples so that participants have both the visual and the haptic experience of trying and parametrizing the valves on-site. The training model was also updated and supplemented with the new GEMÜ R629 eSyLite and GEMÜ R639 eSyStep motorized valves. Finally, a learning check was conceptualized and the training certificate for the participants created so that evidence and documentation of successful training can be provided.

The first training course took place in mid October 2020. All participants gained a wide range of knowledge about motorized linear actuators, which they could then apply and consolidate in practical examples and exercises. The first training course received thoroughly positive feedback from

participants, who all completed the learning check successfully.

The new training brochures with the detailed contents of the training series on motorized actuators, which includes PE2000 on motorized quarter turn actuator and PE3000 on process solenoid valves among others, is available on the GEMÜ website under Download and support/Training courses for customers and on the intranet for employees. GEMÜ is looking forward to making the latest generation of motorized actuators more accessible and we hope to welcome you in one of our training courses soon.

Electrical actuator design product training	Motorized linear actuators	PE1000GB
	Motorized quarter turn actuators	PE3000GB
	Process solenoid valves	PE2000GB

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# INTERNATIONAL SPECIALIST TRADE FAIRS 4.0

## VIRTUAL TRADE FAIR STANDS ARE ON THE RISE

For hundreds of years now, trade fairs have been organized to present products and services to a wide audience. Acquiring new customers and maintaining contacts are also important aims of any trade fair. These days, virtual trade fairs are increasingly taking centre stage. They offer many advantages, but also pose significant challenges for companies.

Trade fairs are a popular marketing tool. The company's image is transferred perfectly through an individually designed trade fair stand. Additional live demonstrations of new products and face-to-face discussions with customers round out a successful trade fair appearance. This makes for a visitor experience that appeals to all the senses.

The challenge with virtual trade fairs is transferring this experience to an online event. Visitors working from the office or on the go are easily distracted by external influences. That means it is all the more important to stage virtual experiences in an exciting way to fully immerse the audience in the virtual world of GEMÜ. Short, interesting video clips, 3D animations and virtual or augmented reality applications are particularly suitable for this medium.

In 2020, virtual trade fair appearances underwent a particularly rapid development. Due to in-person events being cancelled, many trade fair organizers decided to hold virtual versions of their trade fairs – often at very short notice. But what exactly such a virtual trade fair should look like could differ a lot from organizer to organizer.

There was everything from a simple website right up to a 2D model of a trade fair stand.

GEMÜ also participated in a number of virtual trade fairs. By inserting the logo and selecting the company colours, the virtual trade fair stand could be adapted to almost perfectly comply with the corporate design. Communication

with visitors was limited to live chats or often even solely to e-mails. Customers were able to learn about new products from specially produced video clips, presentations and brochures. In individual cases, it was possible to track which content visitors accessed and to individually address them as a result. This required visitors to consent to this tracking beforehand (GDPR). Virtual trade fair stands are completely independent from time and location. Visitors can stop by at any time, no matter where they are. Whether a trade fair appearance is analogue or digital, each has its advantages and disadvantages. The future surely belongs to both versions. And they are complemented by another new type of trade fair, so-called hybrid trade fairs. These trade fairs combine in-person appearances with virtual events.

GEMÜ has furthermore created an innovative platform, the "digital showroom". This marketing tool will become part of GEMÜ's increasingly digital future. It will be an exciting time for us.



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## NEW DIMENSIONS IN ASEPTIC VALVE TECHNOLOGY GEMÜ 650 BIOSTAR IN DN 150

With the GEMÜ 650 BioStar stainless steel diaphragm valve, the company is extending its product range to include the 150 seat size and nominal size.



With the two-piece PTFE/EPDM 5Q diaphragm, the new valve is suitable for operating pressures of up to 10 bar. This is made possible by the actuation force in excess of 45,000 N – more than twice the actuation force of its "baby brother" for the 100 seat size.

The newly designed internal contours of the block material bodies also guarantee high flow rates. For the 150 nominal size with pipe connections in accordance with ASME BPE, a flow rate value of 570 m<sup>3</sup>/h was measured in cooperation with the Graz University of Technology. To simplify diaphragm changes, an assembly assistant is available for the actuator, which tips the scales at almost 100 kg. This can be used to hook in the actuator and move it into position. The actuator for control function 1 (normally closed) is already available. The actuators for control function 2 (normally open) and control function 3 (for control on both sides) are currently still under development.

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## GEMÜ AUTOMATION LISTED COMPONENTS RECEIVE UL CERTIFICATION MARK

**Certification mark enables access to US and Canadian markets. As part of advancing globalization, complying with local approvals and certifications is becoming increasingly important in the development of new markets. For that reason, GEMÜ has had further automation components certified with the UL approval.**

This certification is practically a prerequisite for all machinery and plant components used in or exported to the United States and Canadian markets as it is virtually impossible to use electronic products without UL certification in these countries.

The GEMÜ 1235 and GEMÜ 1236 electrical position indicators and the GEMÜ 1436 eco cPos positioner therefore hold the "UL listed" approval with immediate effect, valid for the USA and Canada.

### Intelligent electrical position indicators

The GEMÜ 1235 and GEMÜ 1236 electrical position indicators are characterized by their compact and simple design, which still offers state-of-the-art functions. They feature the conventional discrete indication of the process valve position (closed or open) as well as IO-Link communication. The products are available in plastic and stainless steel.

The GEMÜ 1436 eco cPos positioner is very versatile in use. The electronic system has been reduced to the core functions. Together with the quick commissioning function (speed-AP), this makes for a positioner that is incredibly easy to use and suitable for control tasks with basic requirements.

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## GEMÜ PRODUCT NEWS

### PRODUCT LAUNCHES AND EXTENSIONS



GEMÜ 343 multi-port globe valve with cast bronze and stainless steel body

#### New GEMÜ 343 eSyDrive multi-port globe valve

As the successor to the discontinued valves GEMÜ 342 and GEMÜ 344, the motorized GEMÜ 343 valve with the GEMÜ eSyDrive actuator is now available. It combines the series, which previously had different valve bodies, in one product type. The GEMÜ 343 is operated by the GEMÜ eSyDrive premium hollow shaft actuator and is available as an open/closed type, as well as a control valve type. The valve can be configured with a cast bronze body with a female thread connection or a stainless steel body with a flange connection. These 3/2-way globe valves are, for example, used for temperature control in cooling or heating circuits.



GEMÜ 9428 with 55 Nm torque

#### New actuator version for GEMÜ 9428

Thanks to a new actuator version, it will also be possible to use the GEMÜ 9428 motorized quarter turn actuator for butterfly valves and ball valves in nominal sizes up to DN 150 in future. The version is operated with a torque of 55 Nm and 24 V DC and has an operating time of 15 seconds. For example, it can be used for gear lubrication in wind power plants.



GEMÜ BC (Code 150 to 170)

#### New actuator versions and communication interfaces for GEMÜ BC

New actuator versions with an upstream gearbox are available for the GEMÜ BC motorized quarter turn actuator. These are available as open/closed and control versions and can also be ordered with a display and on-site control. The actuators are operated at a supply voltage of 400 V 50 Hz and can be configured for butterfly valves and ball valves in nominal sizes DN 450 to DN 1200. Versions with torques of 4300 Nm to 10,400 Nm are available for this.

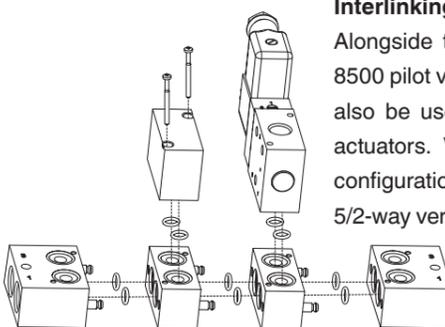
In addition, a version with a torque of 800 Nm (actuator version code 80) for nominal sizes of DN 300 to DN 450 is now available for ordering.

There will also be a version with 24 V DC supply voltage for the code 30 and 50 actuator versions. This means that all versions, from 50 Nm (code 05) to 800 Nm (code 80) of torque, will be available with a supply voltage of 24 V DC, 230 V 50/60 Hz or 400 V 50 Hz.

All versions of the GEMÜ BC will now also be available with the Profibus and Modbus communication interfaces.



GEMÜ BC (Code 05 to 80)



Interlinking system of the GEMÜ 8500 pilot valve

#### Interlinking system for the GEMÜ 8500 pilot valve

Alongside the standard version, an interlinking system for the GEMÜ 8500 pilot valve is also now available. This means that the pilot valve can also be used locally for activating single or double acting pneumatic actuators. Various base plates and blanking plates are available for configuration as a valve manifold for both the 3/2-way version and the 5/2-way version.



GEMÜ CV check valve

#### Optimization of the GEMÜ CV check valve

Valves, measurement and control systems are having to meet ever stricter requirements, particularly in the semiconductor market. To cater to this trend, GEMÜ has optimized the GEMÜ CV check valve by making technical modifications:

- ⇒ Optimized Kv values across all sizes
- ⇒ Consistent temperature resistance across all sizes:
  - Media temperature from 0 °C to +130 °C
  - Ambient temperature from 0 °C to +100 °C

Alongside the technical optimizations, increased availability, greater flexibility and improved delivery times can now also be guaranteed.



## PRODUCT MODIFICATIONS



GEMÜ R629 eSyLite

### Further nominal sizes now available for the GEMÜ R629 eSyLite diaphragm valve

Bodies in the nominal size DN 32 are now also available for the motorized GEMÜ R629 eSyLite diaphragm valve. This means that the entire range of nominal sizes between DN 12 and DN 50 can now be covered. The body in the nominal size DN 32 is available in the materials PVC-U, ABS, inliner PP-H/outliner PP or inliner PVDF/outliner PP and with the flange, spigot or union end connection type. You can find more information on this online or via the web code GW-R629.

### Longer service life and new label design for GEMÜ SUB SUMONDO



GEMÜ SUB SUMONDO single-use diaphragm valve body

A series of tests has shown that a longer service life can be indicated for the GEMÜ SUB SUMONDO valve bodies of the GEMÜ SUHK and SUPM SUMONDO single-use diaphragm valves. Instead of the three-year service life previously disclosed (1.5 years before sterilization/1.5 years after sterilization), the single-use valve bodies can now be used for up to 4.5 years (1.5 years before sterilization/3 years after sterilization).

As part of the adjustment to service life, the GEMÜ SUB SUMONDO valve bodies are also getting a new label design.



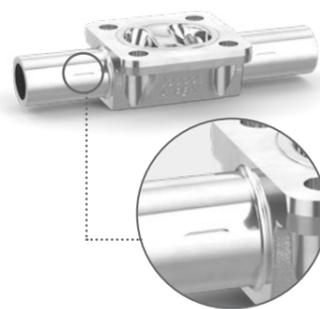
GEMÜ Q30 and Q40 single-use pinch valves

### New nominal sizes for single-use pinch valves

New nominal sizes are now available for the GEMÜ Q30 and Q40 single-use pinch valves. These valves feature a secured retainer, into which the tube is inserted. The tube is then compressed from above by a compressor to control and regulate the medium being conveyed. Thanks to the specially developed contour of the compressor, the strain on the tube is minimized. This increases the service life of the tubes.

The single-use pinch valves are now available in the following tube sizes:

- ⇒ ID 1/2" / AD 3/4"
- ⇒ ID 1/2" / AD 7/8"
- ⇒ ID 3/8" / AD 5/8"



Angle of rotation engraving on diaphragm valve bodies

### Angle of rotation engraving on 2/2-way diaphragm valve bodies produced from forged and block material

GEMÜ already engraves the angle of rotation on 2/2-way diaphragm valve bodies produced from forged and block material that feature connections in accordance with ASME BPE and JIS. Four engravings, designated as hash marks, are applied per body. Alongside the valve bodies that already bear hash marks and feature connections in accordance with ASME BPE and JIS, all further 2/2-way valve bodies made of forged and block materials are now set to receive an angle of rotation engraving in a step-by-step approach.

## APPROVALS



GEMÜ 650 BioStar in diaphragm size 100

### New operating pressures for the GEMÜ 650 BioStar in seat sizes 80 and 100

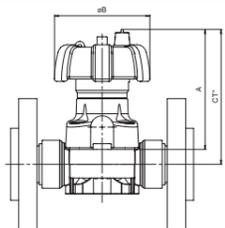
The GEMÜ 650 BioStar aseptic diaphragm valve can now be operated at an operating pressure of up to 10 bar in the seat sizes 80 and 100 for all three control functions – regardless of the diaphragm material.



GEMÜ code 19 and code 54 diaphragms

### New TA Luft (German Clean Air Act) certificate for GEMÜ code 19 and code 54 diaphragms

A new TA Luft (German Clean Air Act) certificate is now available for GEMÜ code 19 and code 54 diaphragms. The TA Luft (German Clean Air Act) is the central regulatory code for reducing emissions and immissions of air pollutants from facilities requiring permits.



GEMÜ R677 diaphragm valve with new actuator version

### New actuator version for the GEMÜ R677 diaphragm valve and the GEMÜ A677 replacement actuator

The manually operated plastic GEMÜ R677 diaphragm valve with flanged connection now features a new actuator version in the nominal sizes DN 15 to DN 25 (diaphragm size 20). The taller actuator height on this new design makes the valve easier to operate.



GEMÜ VSX

GEMÜ VRX

### GEMÜ VRX, VSX and VTX motorized quarter turn actuators now with ATEX approval

The GEMÜ VRX, VSX and VTX motorized quarter turn actuators are now available with ATEX approval. They can be mounted on all GEMÜ butterfly valves and GEMÜ ball valves, as well as other valve makes with EN ISO 5211 top flange.

GEMÜ VTX



GEMÜ 2026 plug

### New GEMÜ 2026 plug for process solenoid valves, pilot valves and measuring turbines

The new GEMÜ 2026 plug is used as a connector for connecting electrical cables to valves. It can be used for all electrically operated products from GEMÜ with a connector in design A or design B IND. These include process solenoid valves, pilot valves and measuring turbines. The GEMÜ 2026 is available in various versions, with and without a light, as well as with and without interference suppression, and both for DC voltage (24 VDC) and AC voltage (250 VAC, 50–60 Hz).



### New flyer for NSF approval

A new flyer for NSF-certified plastic diaphragm valves for drinking water applications is available on the GEMÜ homepage. This provides information on the NSF/ANSI/CAN 61 approval and clarifies the precise benefits associated with this kind of certification. The flyer also includes a list of all relevant GEMÜ types that are NSF-tested and thereby certified. Adherence to this approval standard confirms compliance with the US requirements regarding contact with drinking water.

The flyer can be found on the homepage of GEMÜ USA below the sliders.

# STARTING INTO THE WORLD OF VALVES

## START OF TRAINING 2020

**At the start of September, it was time for 24 new apprentices and students to take the first step into an exciting future at GEMÜ.**

GEMÜ offers 20 different training schemes to young adults taking the first steps into their professional lives. Throughout the entire duration of their training or dual course of studies, GEMÜ provides support and ensures that their introduction to the everyday world of work is successful.

Sixteen of the 24 new trainees chose an industrial and technical or a commercial apprenticeship. At the same time, seven students of DHBW (Baden-Wuerttemberg Cooperative State University) started their professional careers at GEMÜ with different specializations. For the first time ever, in vivo solutions also took in one DHBW student this year.

"The start into their professional lives is an important milestone for these young adults. That is why we are delighted that we were able to hold our orientation week this year. We developed a concept complying with all pandemic measures specially for this purpose, which ensures that we can offer a good level of safety for our new apprentices and students. Thanks to the orientation week, they were able to get to know the company, the products and their colleagues from the very start. This makes their first weeks of their new apprenticeship or course of studies at GEMÜ much easier," reports Katrin Engert, Head of Vocational Training.

### Getting to know each other

Divided into small groups, one of the aims of the varied orientation week was to get to know both each other and the trainers. They had the opportunity to make new contacts and benefit from the expertise of their fellow apprentices and trainers right from the start. At presentations of the company and its various sites, the new members of the GEMÜ family were able to get to know



a large part of the business right away. In the days that followed, the apprentices and students went on to attend various training courses in small groups, on topics such as "Occupational safety", "Successfully starting your career" and "The world of GEMÜ products", providing them with an initial overview of all important areas. With this opportunity, there is absolutely nothing standing in the way of our apprentices and students as they make a successful start in their professional lives.

GEMÜ wishes its new apprentices and students all the best and good luck in this new stage of their lives.

 **Katrin Engert**  
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### OUR TRAINING PROFESSIONS AND STUDY PROGRAMMES:

#### Training

- ⇒ Electronics technician
- ⇒ Expert information technician
- ⇒ Warehouse logistics operator
- ⇒ Industrial electrician
- ⇒ Industrial management assistant
- ⇒ Machine and plant operator
- ⇒ Mechatronics technician
- ⇒ Technical product designer
- ⇒ Process mechanic
- ⇒ Tool mechanic
- ⇒ Cutting machine operator

#### Studies

- ⇒ Bachelor of Arts (DHBW)
  - Business Administration – Industrial Management
- ⇒ Bachelor of Engineering (DHBW)
  - Mechanical Engineering
  - Mechatronics
  - Business Administration and Engineering
- ⇒ Bachelor of Science (DHBW)
  - Business Information Systems
- ⇒ Cooperative study model (RWH)
  - Electrical Engineering
  - Industrial Engineering and Management

# GEMÜ SPONSORS PEDAL BOAT

## SUMMER FEELING IN KÜNZELSAU

Following the motto of "Summer in the city", GEMÜ sponsored a pedal boat organized by the town of Künzelsau this summer.

The ongoing coronavirus pandemic meant that the summer months this year were a little different to what we are used to. Many holidaymakers chose to spend the summer at home. That is why the town of Künzelsau decided to bring the holidays to its inhabitants under the motto of "Summer in the city". In addition to setting up deckchairs on two newly created stretches of sand, the town purchased two pedal boats for the Kocherfreibad lido. One of these was sponsored by GEMÜ. Visitors to the Kocherfreibad lido in Künzelsau were able to explore the Kocher river from a brand-new vantage point in the new GEMÜ pedal boat, which was christened "Ü-Boot" (a pun on the German word U-Boot, meaning submarine). The pedal boats can be rented from Heffner outdoor events directly at the Kocherfreibad lido during opening hours.



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# NEW PATHS IN THE WORLD OF EDUCATION CORONAVIRUS – WHAT NOW?

Education fairs, apprentice speed dating, work experience, open days for dual courses of studies, partnerships with schools and many other formats normally play a significant role in the career choice of young people and therefore also in filling apprenticeship and university places at GEMÜ.

But what happens when a virus suddenly turns the entire world (of education) upside down? When choosing a profession is no longer at the centre of attention at schools and no one really has an answer to the question "What happens now?". The coronavirus pandemic has resulted in a situation that no one could have anticipated.

GEMÜ decided early on to continue offering the same number of education opportunities as in previous years. Today's apprentices are tomorrow's specialist technicians after all. But how could the company communicate this to potential applicants, pupils and parents, while also encouraging them to apply despite this difficult situation? The GEMÜ training managers quickly decided to rely on new formats and forge new paths. A variety of options was created in a very short time frame thanks to the amazing commitment of everyone involved:

## Virtual careers guidance

The Training department has been employing virtual reality as a tool in careers guidance for some time now with 360° videos previously presented with VR glasses at trade fairs. Young people interested in apprenticeships can now watch the videos on the company website, either using their own VR glasses or directly on the screen of any end device. With this method, GEMÜ is offering potential applicants exclusive insights into individual training professions and the rooms in which this training occurs. While they cannot truly replace the experience gained during an internship, the 360° videos are a good alternative for the initial orientation.

## Online employment fairs and events

The first online events were also slowly established, for example the online job fair organized by VR-Bank Schwäbisch Hall or the "night of education" in the Hohenlohe district. All participating companies introduced themselves and presented their training programmes, contact persons and videos on an online platform.

This purely informational platform gave rise to the first formats with video presentations. During the open days for dual courses of studies, GEMÜ held its presentation in a virtual seminar room, for example. GEMÜ students introduced themselves and their study programmes in elaborately designed live interviews with video and sound and answered any questions asked by interested young people.



## Matching concept

Another interesting concept matches interested young people and companies based on the model of a dating app. GEMÜ tested this concept for apprenticeship and university places as well as for internships and thesis projects at universities during three events this autumn. The concept allows companies to view the virtual visitor profiles before an online event. The prospective apprentices and students can visit the company profiles and learn about the companies. If both parties are interested, this is a match and they can schedule a video interview to get to know each other in more detail. This concept is particularly popular with the younger generation and offers an easy first point of contact.

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 **Ilka Rölke**  
Personnel Officer  
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In this way, the GEMÜ Training department demonstrates its open attitude and indicates that it is open to forging new paths -- whether in person or digitally.

GEMÜ is also offering a large number of apprenticeship and university places in 2021. Applications are still open to anyone interested! Ilka Rölke and Katrin Engert will be happy to answer any questions you might have.

# INNOVATIVE BELLOWS SYSTEM NEW GEMÜ M75 PROCESS SOLENOID VALVE

The new GEMÜ M75 process solenoid valve uses an innovative double bellows principle to compensate for pressure forces.

This principle means that the new valve with the highly compact coil in the available nominal sizes can be used for processes with an operating pressure of up to 6 bar.

Solenoid valves are characterized by short operating times and are therefore ideal for dosing steps in mixing technology. Whether in the

chemical industry, water treatment, washing and cleaning installations or in electroplating – solenoid valves are a low-maintenance alternative to pneumatic or motorized valves, which is also cost-effective in the smaller nominal sizes.

## Save resources thanks to an energy-saving reduction

The new directly controlled, fully pressure-relieved GEMÜ M75 2/2-way process solenoid valve has a plastic encapsulated coil, available in a range of different supply voltages.

The valve also helps to save resources thanks to an energy-saving reduction in holding current. Dynamic and static pressure forces are compensated for by the double bellows. Thanks to a wide range of high-quality body materials (PP, PVC and PVDF) and hermetic separation between the medium and the actuator using O-rings in various designs, the new process solenoid valve guarantees a reliable process sequence – including for corrosive media. The valve can also be used for gaseous and liquid media and is

suitable for vacuum applications. The compact solenoid valve is suitable for nominal sizes DN 8 to DN 15 for open/close applications. With an adapter it can be extended to DN 20.



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Strategic Product Manager  
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Pressure-compensated process solenoid valve GEMÜ M75

## Training dates 2021

### ALLROUNDER-LEVEL

#### ⇒ Basic technical principles of valve designs

- GV0100GBON GEMÜ Products and markets  
Half-day training course, on request
- GV0101GBON Functional principles of valves and their selection criteria (basic module)  
12th April 2021, 6:00 – 10:30  
14:30 – 19:00
- GV0102GBON Plastics in valve and pipeline construction  
13th April 2021, 6:00 – 10:30  
14:30 – 19:00
- GV0103GBON Metals in valve and pipeline construction  
14th April 2021, 6:00 – 10:30  
14:30 – 19:00
- GV0104GBON Pipe connectors and assembly information  
19th April 2021, 6:00 – 10:30  
14:30 – 19:00
- GV0105GBON Explosion protection, ATEX / IECEx  
20th April 2021, 6:00 – 10:30  
14:30 – 19:00

#### ⇒ Basic technical principles of application technology

- GA1000GBON Procedures and processes in the biotechnology, pharmaceutical, foodstuffs and cosmetics industries  
21st April 2021, 6:00 – 10:30  
14:30 – 19:00
- GA2000GBON Procedures and processes in the high purity, semiconductors and critical media industries  
26th April 2021, 6:00 – 10:30  
14:30 – 19:00
- GA3000GBON Procedures and processes in the chemical, processing and water industries  
27th April 2021, 6:00 – 10:30  
14:30 – 19:00

#### ⇒ Basic technical principles of measurement and control systems

- GM0101GBON Introduction to electric systems, electronic systems and pneumatics (basic module)  
28th April 2021, 6:00 – 10:30  
14:30 – 19:00
- GM0102GBON Measurement variables and measurement principles in process engineering  
3rd May 2021, 6:00 – 10:30  
14:30 – 19:00
- GM0103GBON Control circuits: Their construction and function  
4th May 2021, 6:00 – 10:30  
14:30 – 19:00

### SPECIALIST LEVEL

#### ⇒ Product training in valve designs

- PV1000GBON Valves for the biotechnology, pharmaceutical, foodstuffs and cosmetics industries  
5th May 2021, 6:00 – 10:30  
14:30 – 19:00
- PV1100GBON Single-use valves for the biotechnology and pharmaceutical industries  
10th May 2021, 6:00 – 10:30  
14:30 – 19:00
- PV2000GBON Valves for high purity, semiconductors and critical media industries  
6th May 2020, 6:00 – 10:30  
14:30 – 19:00

- PV3000GBON Globe valves and diaphragm valves in the chemical and processing industries and water  
11th and 12th May 2021,  
6:00 – 10:30  
14:30 – 19:00
- PV3001GBON Butterfly valves and ball valves in the chemical and processing industries and water  
17th and 18th May 2021,  
6:00 – 10:30  
14:30 – 19:00
- PV4000GBON Automation components and accessories for linear valves  
19th May 2021, 6:00 – 10:30  
14:30 – 19:00
- PV4001GBON Pneumatic quarter turn actuators and automation components for quarter turn valves  
19th May 2021, 6:00 – 10:30  
14:30 – 19:00
- PV5000GBON Individual, upgrades and refresher course  
Training course on request as required

#### ⇒ Product training in measurement and control systems

- PM0101GB Measurement devices and measurement principles for pressure, temperature, level and volumetric flow  
5th July 2021, 6:00 – 10:30  
14:30 – 19:00
- PM0201GB Positioners: Function and application  
6th July 2021, 6:00 – 10:30  
14:30 – 19:00
- PM0301GB Process controllers: Function and application  
7th July 2021, 6:00 – 10:30  
14:30 – 19:00

## 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.
- SM2001GB\* Servicing and changing replacement and wearing parts in HP Cleanstar diaphragm valves, 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.

- SM5001GB\* Servicing for various GEMÜ products, upon consultation.  
\* On-site briefing, approx. three hours, appointments by arrangement, minimum five participants

### EXPERT LEVEL

#### ⇒ Qualified Service expert in accordance with GMP/FDA

- ET1001GB Training as authorized service expert for GEMÜ diaphragm valves. Suitable for external service and maintenance personnel with the skills of an experienced mechanic  
8th July 2021, 06:00 am – 10:30 am  
14:30 pm – 19:00 pm

#### ⇒ Authorized service trainer in accordance with GMP/FDA

- ST1001GB Training as an authorized service trainer for GEMÜ diaphragm valves  
8th July 2021, 06:00 am – 10:30 am  
14:30 pm – 19:00 pm  
Please note, only for the employees of GEMÜ

The training courses will be held in English.

Subject to changes due to the Corona Pandemic!

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