



**GEMÜ**



**Valves, measurement and control systems  
for industrial applications**

# Contents

<b>01</b>	<b>General information</b>	<b>5</b>
<b>02</b>	<b>Valve designs</b>	<b>17</b>
	<b>Diaphragm valves</b>	<b>24</b>
	Manually operated diaphragm valves made of metal	32
	Manually operated diaphragm valves made of plastic	44
	Pneumatically operated diaphragm valves made of metal	50
	Pneumatically operated diaphragm valves made of plastic	60
	Motorized diaphragm valves made of metal	68
	Motorized diaphragm valves made of plastic	74
	M-block diaphragm valves	80
	<b>Globe valves</b>	<b>86</b>
	Manually operated globe valves	92
	Pneumatically operated angle seat globe valves	98
	Pneumatically operated globe valves	104
	Motorized globe valves	112
	Multi-port and M-block globe valves	122
	<b>Diaphragm globe valves</b>	<b>136</b>
	Manually and pneumatically operated diaphragm globe valves	138
	<b>Butterfly valves</b>	<b>144</b>
	Butterfly valves with bare shaft made of metal	150
	Butterfly valves with bare shaft made of plastic	158
	Manually operated butterfly valves made of metal	162
	Manually operated butterfly valves made of plastic	172
	Pneumatically operated butterfly valves made of metal	176
	Pneumatically operated butterfly valves made of plastic	184
	Motorized butterfly valves made of metal	188
	Motorized butterfly valves made of plastic	196
	<b>Ball valves</b>	<b>202</b>
	Ball valves with bare shaft	206
	Manually operated ball valves made of metal	212
	Manually operated ball valves made of plastic	220
	Pneumatically operated ball valves	224
	Motorized ball valves	232
	<b>Process solenoid valves</b>	<b>242</b>
	Servo-assisted process solenoid valves	244
	Directly controlled process solenoid valves	250
	<b>Check valves and strainers</b>	<b>258</b>
	Check valves and strainers	260
<b>03</b>	<b>Control systems</b>	<b>269</b>
	<b>Control systems</b>	<b>274</b>
	<b>Positioners and process controllers</b>	<b>278</b>
	<b>Pressure control valves</b>	<b>286</b>

<b>04</b>	<b>Measurement and control technology</b> .....	<b>295</b>
	<b>Electrical position indicators and combi switchboxes</b> .....	<b>296</b>
	Electrical position indicators .....	298
	Combi switchboxes .....	312
	<b>Pilot valves</b> .....	<b>318</b>
	<b>Flowmeter</b> .....	<b>330</b>
	Variable area flowmeter .....	332
	Electrical flowmeters .....	338
	<b>Pressure and temperature measurement devices</b> .....	<b>344</b>
<b>05</b>	<b>Connection technology</b> .....	<b>349</b>
<b>06</b>	<b>Accessories</b> .....	<b>353</b>
	<b>Valve mounting accessories</b> .....	<b>354</b>
	<b>Connection accessories</b> .....	<b>355</b>
	<b>Commissioning and maintenance accessories</b> .....	<b>357</b>
	<b>Clamping devices</b> .....	<b>358</b>
	<b>Position indicators and travel sensors</b> .....	<b>359</b>
	<b>Stroke limiters</b> .....	<b>360</b>
	<b>Manual override</b> .....	<b>361</b>
	<b>Sensor accessories</b> .....	<b>362</b>
	<b>Accessories for fieldbus systems</b> .....	<b>363</b>
<b>07</b>	<b>Valve knowledge</b> .....	<b>365</b>
<b>08</b>	<b>Product directory</b> .....	<b>380</b>





## General information



## GEMÜ Group

Through continuous innovative design and a focus on quality and proximity to our customers, GEMÜ is one of today's leading worldwide manufacturers of valves, measurement and control systems. We have achieved this status by investing extensively in application-focused research and development. After more than 55 years of healthy growth, Gert Müller, son of founder Fritz Müller, now directs our independent family-owned enterprise alongside his cousin Stephan Müller.

**50+**  
**Countries**  
Subsidiaries and long-term partners

  
**Employees**  
1900+

Reorganized – for even greater proximity to our customers.  
With our wide product range, we offer solutions for the most varied customer groups.  
To operate in a way that is more customer-oriented, strategic business units have been created:



### Pharma, Food & Biotech

The Pharma, Food & Biotech business unit is the biggest business unit of the GEMÜ Group. With its large base of user knowledge and its efficient products, it is used for all the processes of the pharmaceutical, biotechnology and cosmetics industries as well as the food and beverage industries.



### Industry

Due to the variety of industrial applications, the Industry business unit has specialized in five main industrial sectors. Regardless of whether it concerns industrial water treatment, chemical industry and environmental systems, mechanical engineering and processing industries or surface finishing, the Industry business unit can provide the right range for these and other areas of application.



### Semiconductor

The Semiconductor business segment focuses on pure and ultra pure process media in many different areas of application. The focus here is on valves for systems in the production of semiconductors and microchips, the production of photovoltaic systems and batteries, and the manufacture of ultra high purity chemicals.





## Global manufacture

We develop and manufacture virtually all products at six different locations. At sites in Germany, Switzerland, the USA, China, Brazil and France, we draw on our many years of experience in the manufacture of valves, measurement and control systems to offer you products and solutions worldwide which conform to GEMÜ standards of quality.

So that we can also continue to impress you with high quality and expert advice in the future, we are continually investing in modernizing our production centres.



## Machining and coating technology

Whenever valves with high-quality corrosion protection are required, the right coating method can have a decisive influence on product quality.

For this reason, at GEMÜ we place considerable importance on our high level of vertical integration.

In our state-of-the-art machining centre at GEMÜ Valves China, casting blanks are mechanically processed in-house. The most notable feature here is that our valve bodies and butterfly discs are milled in one clamping position. This allows us to achieve precise shape and positional tolerances for our butterfly valves.

A further highlight is the fully automated coating system. This applies the coating using whirl sintering in the shortest possible time and without any interruptions.

State-of-the-art robot technology is used to develop a high-quality coating for butterfly valve components with an even layer thickness of at least 250 µm. With it, we can offer our customers reliably robust equipment for their systems that is classified to DIN EN ISO 12944 in the top corrosion protection class, C5-M.

## Diaphragm production

GEMÜ leaves nothing to chance in the development and manufacture of diaphragms. As well as many years of experience in the area of diaphragm valves, GEMÜ can draw on the Group's ever increasing expertise in the field of diaphragm production. In addition to the development of compounds, this also includes production and permanent control of the diaphragms during the manufacturing process. Random sampling of the finished products completes the comprehensive test cycle.

### GEMÜ ensures its usual diaphragm quality thanks to the following measures:

- Raw materials are sourced exclusively from selected suppliers
- Comprehensive testing of the raw materials in our in-house laboratory or in external, accredited institutions
- Storage of raw materials under controlled conditions
- Automated testing and documentation processes during production
- State-of-the-art production facilities
- The diaphragms are tested on our own test rigs





## Technical consultation and service range

The correct installation and predictive maintenance of valves, measurement and control components are important prerequisites for efficient operation and optimum operating cycles for a plant. This is why we also support you in this regard and offer various additional services.

### All-round service

Our well-trained advisors and service engineers support designers, equipment manufacturers and operators, in addition to service providers, in planning, configuring, commissioning and maintaining pipework components. They have in-depth knowledge of the market and can find the optimum technical and cost-effective product version for the relevant application from our comprehensive range. Repair and maintenance work can be carried out at the service centres or directly on site. If you wish, our qualified fitters can also assume responsibility for component inventory, data management and retrofitting for CONEXO.

Furthermore, we offer a variety of technical training courses. With a multi-stage training system and individual training models, we pass all the required knowledge and tools for installing and maintaining GEMÜ products on to employees from Installation and Service. This also includes an innovative, specially designed VR training course (virtual reality training). This lets you practise and internalize the movements required when carrying out maintenance work with CONEXO, for example.

### Prepared for Industry 4.0

With CONEXO, we offer an RFID system architecture that enables clear identification of wearing parts, paperless maintenance and process documentation.

To meet the growing requirements of digitalization, we founded the start-up *inevvo solutions* in 2018. Its core expertise is the sale and further development of the CONEXO RFID system. This allows positive electronic identification of our valve components using the integrated RFID chip.

In addition, the CONEXO software supports the user with paperless maintenance. An app for mobile devices guides maintenance technicians through the fully customizable maintenance workflows step by step. Clear identification of components, coupled with innovative elements such as photo documentation or assessment schemes, ensures transparent and reliable maintenance. The recorded data can then be processed electronically. Further information can be obtained from [www.inevvo-solutions.com](http://www.inevvo-solutions.com)







## Overview of industrial sectors

GEMÜ products are used around the globe in industrial water treatment and waste water treatment, the chemical industry, power generation and environmental systems, the industrial plant and machinery sectors, surface finishing and many other areas.

Our decades of application experience feed directly into the new and further development of our valves. This is why, in the demanding industrial environment, GEMÜ valves have proven very successful to date.

### Industrial water treatment

In industry, barely a single production process can manage without water. Whether it is for cooling, cleaning or as a starting material for aqueous solutions – depending on the application, unwanted substances must be removed from the raw water or desired substances added.

This task is performed by water treatment plants, thus ensuring a functioning circuit. The GEMÜ product range can provide numerous solutions for these plants.

### Power generation and environmental systems

The signs all point towards sustainable modernization of power and heat.

Whether renewable or conventional – innovative, efficient and durable valves are essential in power generation. This is why, at GEMÜ, we always offer solution-focused concepts.

### Chemical processes

Specific valve and component solutions are required when dealing with critical working media, high temperatures and high pressures.

GEMÜ offers numerous valves made of plastic and high-performance thermoplastics, such as PFA or PVDF. This flexibility regarding valve selection ensures the highest possible degree of process and plant reliability even for critical media.

### Surface finishing

Numerous products today come with high-quality functional or decorative surfaces.

When it comes to valve selection, the high flexibility in terms of material selection is one of GEMÜ's selling points. You can also choose to receive our valves and individual components, such as diaphragms, free from substances that prevent paint adhesion.

### Mechanical engineering

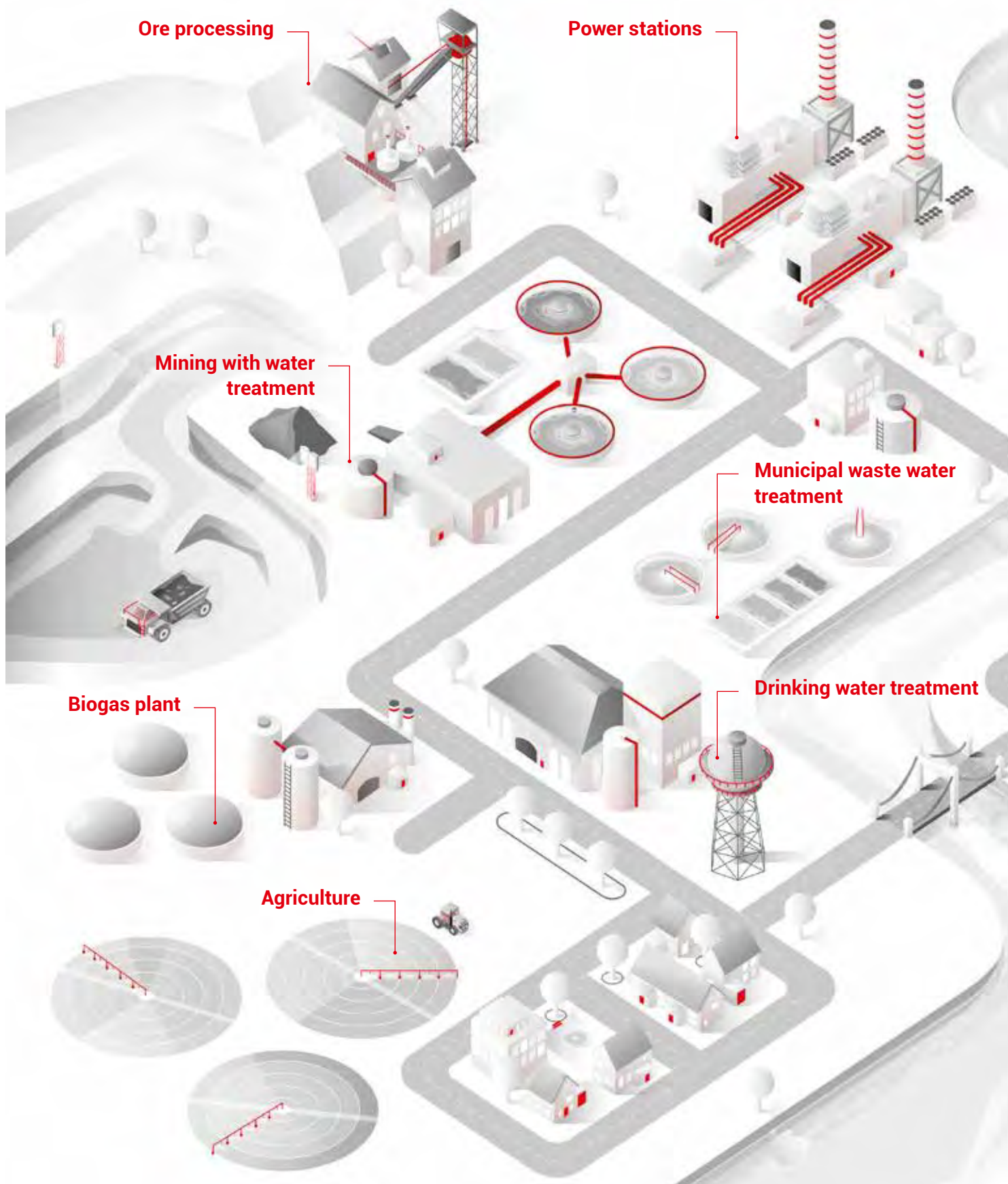
Technological progress is leading to changing procedures and processes both in the mechanical engineering industry and in the processing industry. The GEMÜ product range includes robust valves and customized solutions for valves, measurement and control systems.

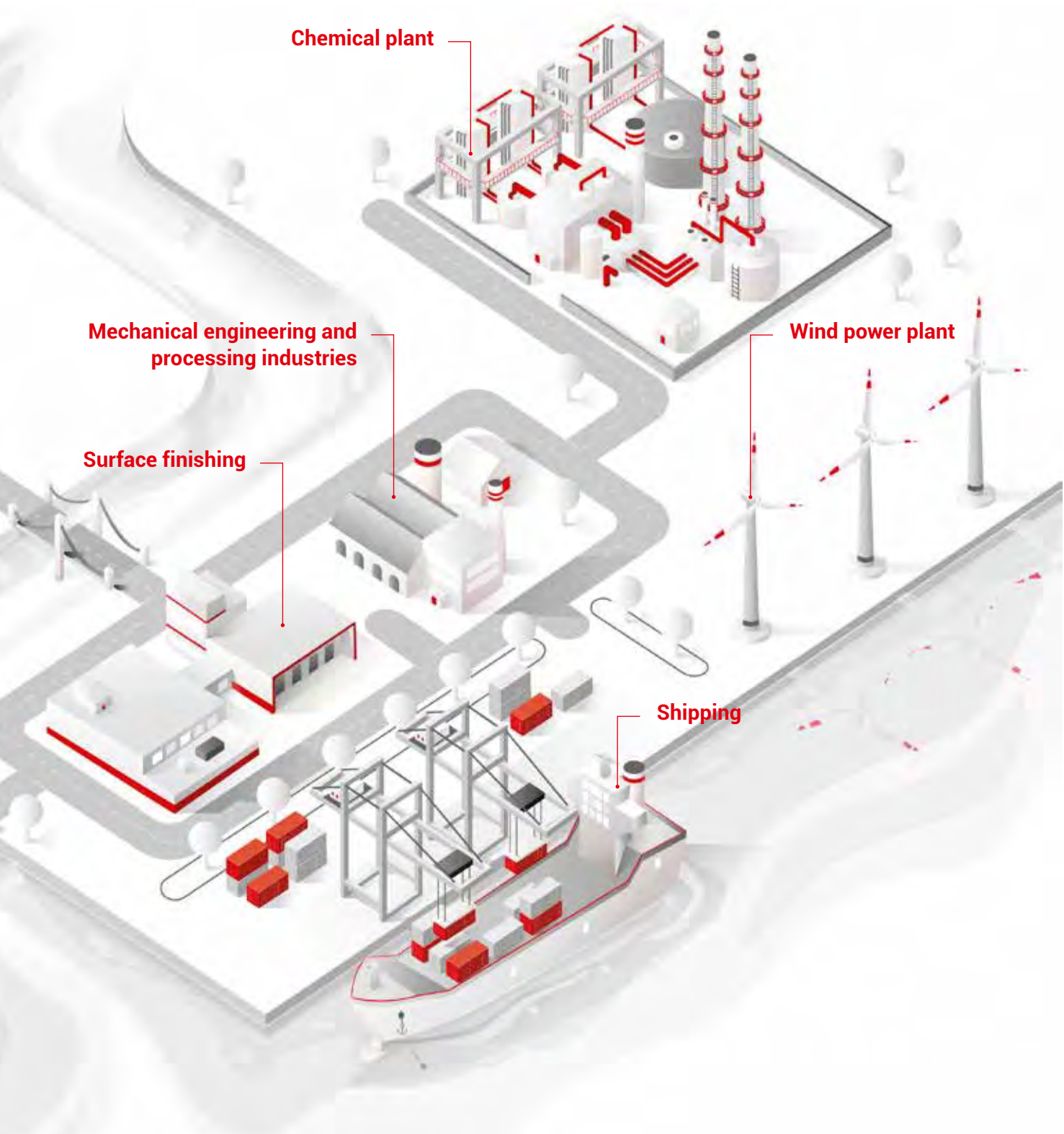
Also – and in particular – when new requirements arise in plant and mechanical engineering, we are the right partner when it comes to the distribution, mixing, supply and isolation of media.





# Areas of application for valves, measurement and control systems





**Chemical plant**

**Mechanical engineering and processing industries**

**Wind power plant**

**Surface finishing**

**Shipping**



# Valve designs





## Valve types

Whether it is for water, gas or air – valves are used for shutting off or regulating a medium in piping. But which functional principle is the right one? The designations of various valve types are frequently more numerous than the types themselves. That is why we are giving you an overview here of the most common designs in the industrial plant and machinery sectors.



## Valves with linear movement



### Diaphragm valves

Diaphragm valves are the all-rounders in the world of valves. One of their major advantages is that only two components come into contact with the working medium – the diaphragm and the valve body.

The flexible diaphragm becomes deformed via a compressor and, during the closing movement, is pressed onto the sealing weir of the valve body with a positive and non-positive fit.



### Globe valves

Globe valves are suitable for clean, liquid media as well as gases and steam. Due to their linear movement and favourable mechanical conditions, they often perform automated tasks with fast cycle duties and high switching frequencies.

Globe valves involve a gasket, the valve plug, pressing against a seal seat, which then blocks the volumetric flow.



### Diaphragm globe valves

Valves that combine the advantages of the hermetic sealing of an actuator and the medium of a diaphragm valve with the advantages of a globe valve are designated as diaphragm globe valves.

The flexible PD (plug diaphragm) is compressed onto the valve seat for sealing. The actuator of a diaphragm globe valve is hermetically separated from the medium.

## Rotating valves



### Butterfly valves

If pipes are large, then butterfly valves are required. Most frequently, they are used for controlling mechanically pure liquids. In the right material combination, however, slightly abrasive liquids or gases pose no problem either.

Butterfly valves comprise a ring-shaped body into which a liner and a butterfly disc are inserted. The disc swings 90° into the liner.



### Ball valves

Ball valves are versatile and can also be used in extreme circumstances. This type of valve is particularly well-suited to safely shutting off liquid and gaseous media at a very high operating pressure.

The ball valve comprises a ball with a continuous hole, which sits in a body between sealing rings. The valve can be opened and closed by rotating it through 90°.

# Selection guide

The following table aims to give you an overview of which valve function is most appropriate for which processes and media. In addition to these categories, we also offer valves for special applications.

## Valve groups according to valve function

Criterion	Diaphragm valves		Globe valves	Butterfly valves	
	Metal	Plastic	Metal	Metal	Plastic
<b>MEDIUM</b>					
Gaseous	○	○	●	–	–
Vaporous	○	–	●	●	–
Liquid	●	●	●	●	●
Viscous	●	●	○	●	●
Particulate, abrasive	●	○	–	○	○
Granular	○	○	–	○	○
Corrosive (depends on material)	●	●	–	–	●
<b>PROCESS</b>					
Multi-port design available	●	●	●	–	–
Piggable	–	–	–	–	–
Controllable	○	○	●	For larger diameters	
Media temperature	up to 100 °C	up to 150 °C	up to 185 °C	up to 210 °C	up to 90 °C
Operating pressure	up to 10 bar	up to 10 bar	up to 40 bar	up to 16 bar	up to 10 bar
Frequent cycle duties	○	○	●	–	–

- Very suitable
- Conditionally suitable
- Not suitable

## Further process accessories



Check valves



Strainers

Ball valves		Diaphragm globe valves	Process solenoid valves	
Metal	Plastic	Plastic	Metal	Plastic
●	●	○	-	-
●	●	○	-	-
●	●	●	●	●
○	○	●	○	○
-	-	-	-	-
-	-	-	-	-
-	●	●	-	○
●	●	●	●	-
●	●	-	-	-
○	-	●	-	-
up to 220 °C	up to 100 °C	up to 150 °C	up to 60 °C	up to 60 °C
up to 137 bar	up to 16 bar	up to 6 bar	up to 20 bar	up to 6 bar
-	-	●	●	●



Control systems



Pressure control valves

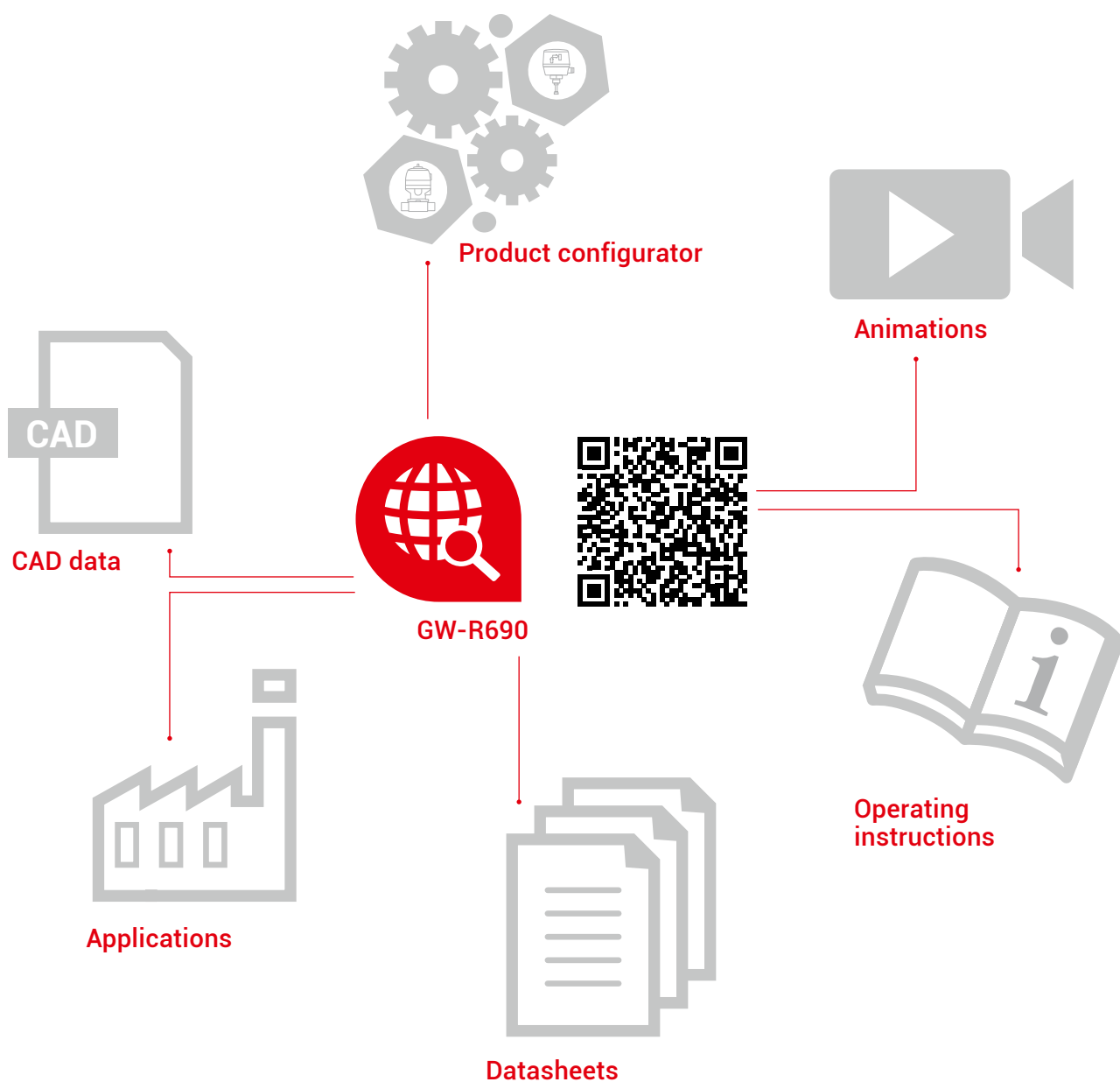


## Configure easily online

With this product range, we want to offer you a quick overview of all standard products in our range. We have, therefore, listed the most important technical specifications for individual products in this catalogue. But there's still more to discover! On our website, you can find a great deal of further useful information, such as datasheets, operating instructions and animations, allowing you to configure a valve completely in line with your requirements.

## Go directly to the online product page using the web code

The web code consists of the abbreviation "GW-" and the respective product type. For example, the GEMÜ R690 diaphragm valve has the web code GW-R690. Enter the web code in the search window on the GEMÜ website [www.gemu-group.com](http://www.gemu-group.com) and you will be taken straight to the associated product page. Alternatively, you can scan the QR code.







## Diaphragm valves

## Description

Diaphragm valves are the all-rounders in the world of valves. One of their major advantages is that only two components come into contact with the working medium – the diaphragm and the valve body. Diaphragm valves are amongst the valve types with minimal deadleg and are, therefore, insensitive to particulate media and can be cleaned safely. They are the first choice for applications in which deposits of the medium are to be avoided at all costs.

The large material selection means that GEMÜ diaphragm valves are ideally suited for corrosive, abrasive or high viscosity media, which are often found in chemical processes and in the industrial water treatment and processing industries.

## Features

- For ultra pure to heavily contaminated abrasive media
- Optional flow direction
- Hermetic separation between medium and actuator
- Very good cleanability

## Typical working media

- Inert and corrosive media
- Clean and contaminated abrasive media
- Liquids and gases
- Slurries, powder and dust

## Applications

- Treatment of waste water, sewage, sea water, drinking water, process water
- Woodpulp and paper manufacturing/processing
- Paint and coating manufacturing/processing
- Gemstone and metal extraction and processing, mining
- Fertilizer production
- Brine and salt extraction
- Power plants
- Sewage clarification plants
- Dyeing
- Granulate manufacture
- Sugar production
- Ceramics industry





# Functional principle of diaphragm valves



Open



Closed

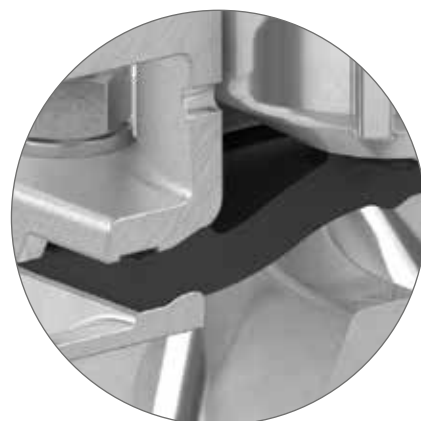
The diaphragm valve works thanks to the interaction of perfectly tuned components. These are the valve body, the shut-off diaphragm, the diaphragm fixing, the compressor as well as the actuator.

The flexible diaphragm becomes deformed via a compressor and, during the closing movement, is pressed onto the sealing weir of the valve body with a positive and non-positive fit. You can choose the flow direction here.

## GEMÜ seal system

GEMÜ valve bodies are distinguished by a sealing bead running close to the seat diameter. The defined sealing edge between the valve body and the diaphragm makes it ideal for sterile applications. This measure reduces the ring-shaped gap between diaphragm and valve body in the external sealing area. This special feature makes GEMÜ diaphragm valves suitable for sterile applications. When developing our diaphragms, we also consider this crucial functional and design characteristic, which was developed by GEMÜ more than three decades ago and has been continually refined since then. This is the only way to ensure that our customers can rely on the valve as a complete unit.

GEMÜ diaphragms have been developed, tested, and approved for applications with GEMÜ valve bodies. Therefore GEMÜ does not recommend the use of other manufacturers' diaphragms with GEMÜ valve bodies. We shall not accept any liability resulting from the use of diaphragms of other manufacturers inside GEMÜ diaphragm valves.



GEMÜ seal system

# Modular system for diaphragm valves

With the GEMÜ modular system, we offer you the opportunity to put together a suitable valve in line with your requirements. Discover all configuration options at [www.gemu-group.com](http://www.gemu-group.com)

## Measurement and control technology

Electrical position indicators and combi switchboxes | Positioners and process controllers | Accessories



## Actuators

Manual | Pneumatic | Motorized  
Metal | Plastic



## Diaphragms

EPDM | FKM | NBR | NR | IIR | PTFE/EPDM



## Bodies

2/2-way body | Multi-port body  
Metal | Metal with plastic lining | Plastic



Configure your valve online  
at [www.gemu-group.com](http://www.gemu-group.com)

# Weir-type and full bore bodies

Depending on area of application, designs with or without a sealing weir can be advisable. The differences will be compared in the following section.

## Weir-type bodies

### Features

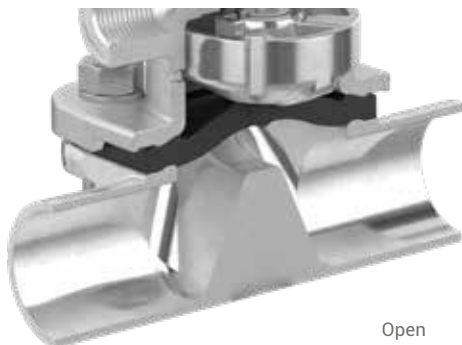
- Depending on the version, up to 10 bar operating pressure and 150 °C operating temperature
- Good flow characteristics
- All mechanical components are located outside the media wetted area. The working medium comes into contact only with the internal surface of the valve body and the diaphragm surface
- The valve is also suitable for higher cycle duties

### Areas of use

- Suitable for clean and heavily contaminated, liquid and gaseous and inert and corrosive media
- Slurries, powder and dust
- Can be used for abrasive media
- Controlling liquid media

### Typical areas of application

- Waste water, sewage, sea water, cooling water, service water and drinking water treatment
- Woodpulp and paper manufacturing/processing
- Dyestuff and paint manufacturing/processing
- Gemstone and metal extraction and processing, mining
- Fertilizer production
- Extraction/processing of plaster, cement, sulphur and lime
- Brine and salt extraction
- Power plants
- Sewage clarification plants
- Dyeing
- Granulate manufacture
- Sugar production



Open



Closed

## Full bore bodies

### Features

- Depending on diameter and materials of construction, up to 7 bar operating pressure and 100 °C operating temperature
- Very good flow characteristics
- All mechanical components are located outside the media wetted area. The working medium comes into contact only with the internal surface of the valve body and the diaphragm surface

### Areas of use

- Suitable for heavily and extremely contaminated liquid, inert and corrosive media
- Heavily contaminated waste water and slurries
- Granular materials
- Suitable for abrasive media

### Typical areas of application

- Woodpulp and paper manufacturing/processing
- Gemstone and metal extraction and processing, mining
- Fertilizer production/phosphate processing
- Extraction/processing of plaster, cement, sulphur and lime
- Sewage clarification plants
- Granulate manufacture



# Lined diaphragm valves

Lined valve bodies can be used if a valve is exposed to particularly heavy chemical or mechanical loads. The combination of robust body housing and durable plastics is preferable for corrosive media and safety-relevant systems, such as in the chemical industry.

At GEMÜ, we manufacture the injection moulding tools for the plastic linings ourselves.

Our special manufacturing processes and the sophisticated geometric suitability of the material transitions make lined GEMÜ valve bodies a long-term, high-quality application solution. For additional reliability of application, we carry out an individual inspection of each lining.

The lined GEMÜ valve bodies are produced exclusively using high-quality materials and only at selected and certified foundries.

## Lining/injection moulding

GEMÜ injects the plastic valve body linings subject to strict quality controls, e.g. spark testing.

When selecting the materials for the lining, you can choose between polypropylene (PP) and fluoroplastics (PFA), as well as soft and hard rubber.

Using an extruder, fluid thermoplastics and elastomers are injected between the metal bodies and into the metal mould core inside the bodies. The lining thickness can, therefore, be defined precisely – and at a consistently high quality.

## This is how high-quality, lined diaphragm valves are developed at GEMÜ

- Injection moulding is carried out via a central sprue from below through the valve weir, preventing the plastic layer from detaching from the metal body under vacuum operating conditions
- The metal/plastic material transition is designed at the pipe connections so that the plastic lining is fixed axially inside the pipe and no stress damage can occur as a result of thermal expansion
- A temperature-resistant coating on the metal bodies prepared for injection provides a high level of corrosion protection for the metal surface even underneath the plastic layer

## Coating

In demanding ambient conditions, valves also need special external protection. This is why GEMÜ offers different coating solutions:

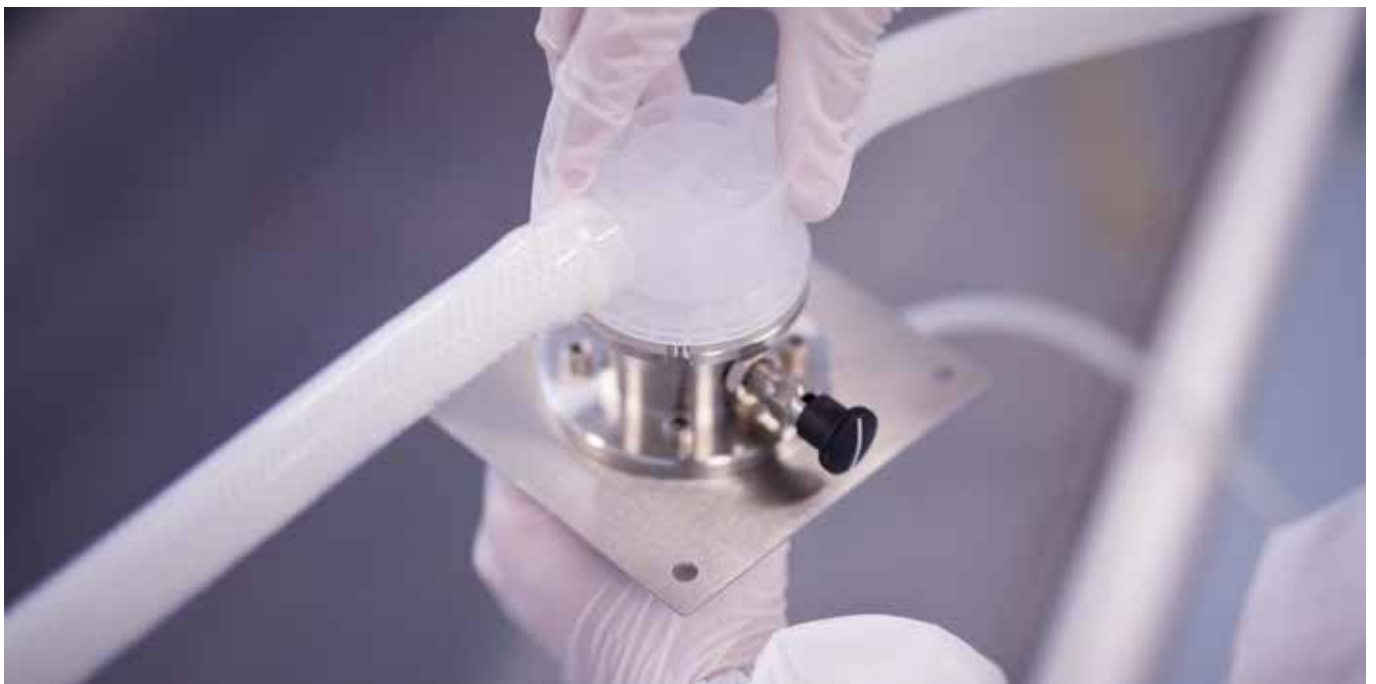
- Metal, paint or synthetic powder coating
- Coating applied by galvanization, painting or immersion/enamelling
- Thin coating, less material coating
- Materials such as zinc, chrome, epoxy, phenol resins, nylon or fluoroplastics are used as coating materials.



## Single-use valves

GEMÜ also offers diaphragm valves for single use. These are designated as single-use valves and are used if it is crucial to avoid cross-contamination or if a simplified plant design is required. Secondary processes once required for cleaning and sterilization (CIP/SIP) are no longer at all necessary in single-use systems and processes. The necessary purity is guaranteed by using gamma rays to sterilize all the process components used.

Unlike with a conventional diaphragm valve, the two media wetted components (valve body and diaphragm) are sealed together. This produces the central component, the single-use valve body, which is removed from the actuator and disposed of after a single use. The actuator remains in the system for multiple use. The single-use diaphragm valve body and the actuator are joined using a clamp. These are locked together and unlocked through a defined opening and closing procedure.







## Manually operated diaphragm valves made of metal

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# Overview

GEMÜ type	601 / 612 / 673	602	673P9	611/671
				
<b>Special feature</b>			Valve actuator with sealing	
<b>Nominal sizes</b>	DN 4 to 65	DN 4 to 15	DN 4 to 65	DN 10 to 100
<b>Media temperature</b>	-10 to 100 °C	-10 to 100 °C	-10 to 100 °C	-10 to 80 °C
<b>Ambient temperature</b>	0 to 60 °C	0 to 60 °C	0 to 60 °C	0 to 60 °C
<b>Operating pressure</b>	0 to 10 bar	0 to 10 bar	0 to 10 bar	0 to 10 bar
<b>Connection types</b>				
Clamp	•	•	•	•
Flange	•	•	•	•
Spigot	•	•	•	•
Threaded connection	•	•	•	•
<b>Body materials</b>				
1.4408	•	•	•	•
1.4408, lined	-	-	-	•
1.4435	•	•	•	•
1.4435 (316L)	•	•	•	•
1.4435 (BN2)	•	•	•	•
1.4539	•	•	•	•
CW614N	-	-	-	•
CW617N	-	-	-	•
EN-GJL-250	-	-	-	•
EN-GJL-250, lined	-	-	-	-
EN-GJS-400-18-LT, lined	•	-	•	•
EN-GJS-500-7, lined	-	-	-	-
<b>Conformities</b>				
3A	•	•	-	-
CRN	•	•	•	-
EAC	•	•	•	•
FDA	•	•	•	•
Oxygen	•	•	•	•
Reg. (EU) No. 10/2011	•	•	•	•
Regulation (EC) No. 1935/2004	•	•	•	•
Regulation (EC) No. 2023/2006	•	•	•	•
TA Luft (German Clean Air Act)	•	•	•	-
USP	•	•	•	•

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

GEMÜ type	675	653 BioStar	654 BioStar	655
				
<b>Special feature</b>				Full bore valve body
<b>Nominal sizes</b>	DN 15 to 150	DN 10 to 100	DN 4 to 100	DN 25 to 300
<b>Media temperature</b>	-10 to 100 °C	-10 to 100 °C	-10 to 100 °C	0 to 100 °C
<b>Ambient temperature</b>	0 to 60 °C	0 to 60 °C	0 to 60 °C	0 to 60 °C
<b>Operating pressure</b>	0 to 10 bar	0 to 10 bar	0 to 10 bar	0 to 7 bar
<b>Connection types</b>				
Clamp	-	•	•	-
Flange	•	•	•	•
Spigot	-	•	•	-
Threaded connection	•	•	•	-
<b>Body materials</b>				
1.4408	-	•	•	-
1.4408, lined	-	•	•	-
1.4435	-	•	•	-
1.4435 (316L)	-	•	•	-
1.4435 (BN2)	-	•	•	-
1.4539	-	•	•	-
CW614N	-	-	-	-
CW617N	-	-	-	-
EN-GJL-250	•	-	-	•
EN-GJL-250, lined	-	-	-	•
EN-GJS-400-18-LT, lined	•	-	-	-
EN-GJS-500-7, lined	•	-	-	-
<b>Conformities</b>				
3A	-	•	•	-
CRN	-	•	•	-
EAC	•	•	•	•
FDA	•	•	•	-
Oxygen	-	•	•	-
Reg. (EU) No. 10/2011	•	•	•	-
Regulation (EC) No. 1935/2004	•	•	•	-
Regulation (EC) No. 2023/2006	-	•	•	-
TA Luft (German Clean Air Act)	•	•	•	-
USP	-	•	•	-

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 601 / 612 / 673

## Manually operated diaphragm valve

The GEMÜ 601/612/673 2/2-way diaphragm valves have temperature-resistant plastic handwheels and are manually operated. A closing stroke limiter or a seal adjuster to increase service life of the diaphragm and an optical position indicator are integrated as standard.

### Features

- Long service life of the diaphragm due to patented seal adjuster (US-Pat. 5 377 956)
- Compact design (ideal when space is at a premium)
- Continuous minimum flow regulation thanks to closing stroke limiter
- Various lining materials are available for a wide range of media



### Technical specifications

<b>Media temperature:</b>	-10 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 4 to 65
<b>Body configurations:</b>	2/2-way body   i-body   Multi-port body   T body   Tank valve body   Welding configuration
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   JIS   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435 (BN2), forged material   1.4435, investment casting material   1.4539 (904L), forged material   EN-GJS-400-18-LT, SG iron material
<b>Body lining:</b>	PFA   PP
<b>Diaphragm materials:</b>	EPDM   FKM   PTFE/EPDM
<b>Conformities:</b>	3A   CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   TA Luft (German Clean Air Act)   USP

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GW-601



GW-612



GW-673



# GEMÜ 602

## Manually operated diaphragm valve

The GEMÜ 602 2/2-way diaphragm valve has a stainless steel handwheel and is manually operated. Bonnet and internals are made entirely from stainless steel. A closing stroke limiter to increase service life of the diaphragm and an optical position indicator are integrated as standard.

### Features

- Long service life of the diaphragm due to patented seal adjuster (US-Pat. 5 377 956)
- Compact design (ideal when space is at a premium)
- Continuous minimum flow regulation thanks to closing stroke limiter



### Technical specifications

<b>Media temperature:</b>	-10 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 4 to 15
<b>Body configurations:</b>	2/2-way body   i-body   Multi-port body   T body   Tank valve body   Welding configuration
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   JIS   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435 (BN2), forged material   1.4435, investment casting material   1.4539 (904L), forged material
<b>Diaphragm materials:</b>	EPDM   FKM   PTFE/EPDM
<b>Conformities:</b>	3A   CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   TA Luft (German Clean Air Act)   USP

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GW-602





# GEMÜ 673P9

## Manually operated diaphragm valve

The GEMÜ 673P9 2/2-way diaphragm valve has a temperature resistant plastic handwheel and is manually operated. The actuator is specially sealed, making it ideal for demanding cleaning procedures. A closing stroke limiter to increase service life of the diaphragm and an optical position indicator are integrated as standard (diaphragm size 10 to diaphragm size 50).

### Features

- Compact design (ideal when space is at a premium)
- Autoclave capability
- CIP, COP and SIP capable
- Continuous minimum flow regulation thanks to closing stroke limiter
- Specially sealed actuator version



### Technical specifications

<b>Media temperature:</b>	-10 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 4 to 65
<b>Body configurations:</b>	2/2-way body   i-body   Multi-port body   T body   Tank valve body   Welding configuration
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   JIS   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435 (BN2), forged material   1.4435, investment casting material   1.4539 (904L), forged material   EN-GJS-400-18-LT, SG iron material
<b>Body lining:</b>	PFA   PP
<b>Diaphragm materials:</b>	EPDM   FKM   PTFE/EPDM
<b>Conformities:</b>	CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   TA Luft (German Clean Air Act)   USP

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GW-673P9



# GEMÜ 611/671

## Manually operated diaphragm valve

The GEMÜ 611/671 2/2-way diaphragm valves have a low-maintenance plastic actuator and are manually operated. An integral optical position indicator is standard.

### Features

- Optional PVDF handwheel available in white (GEMÜ 611)
- Extensive range of accessories available, e.g. electrical position indicator for "open" handwheel position or lockable handwheel clamp (GEMÜ 671)



### Technical specifications

<b>Media temperature:</b>	-10 to 80 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 10 to 100
<b>Body configurations:</b>	2/2-way body   i-body   Welding configuration
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   JIS   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435 (BN2), forged material   1.4435, investment casting material   1.4539 (904L), forged material   CW614N, brass   CW617N, brass   EN-GJL-250, cast iron material   EN-GJS-400-18-LT, SG iron material
<b>Body lining:</b>	PFA   PP
<b>Diaphragm materials:</b>	EPDM   FKM   PTFE/EPDM
<b>Conformities:</b>	EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   USP

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GW-611/671



# GEMÜ 675

## Manually operated diaphragm valve

The GEMÜ 675 2/2-way diaphragm valve has a metal handwheel and is manually operated. An integral optical position indicator is standard.

### Features

- Suitable for particulate and abrasive media
- Various lining materials are available for a wide range of media
- Standard integral optical position indicator



### Technical specifications

<b>Media temperature:</b>	-10 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 15 to 150
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange   Threaded connection
<b>Connection standards:</b>	ANSI   BS   DIN   EN
<b>Body materials:</b>	EN-GJL-250, cast iron material   EN-GJS-400-18-LT, SG iron material   EN-GJS-500-7, ductile iron material
<b>Body lining:</b>	Hard rubber   PFA   PP
<b>Diaphragm materials:</b>	CR   EPDM   FKM   NBR   PTFE/EPDM
<b>Conformities:</b>	EAC   FDA   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   TA Luft (German Clean Air Act)

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GW-675



# GEMÜ 653 BioStar

## Manually operated diaphragm valve

The GEMÜ 653 2/2-way diaphragm valve has a stainless steel bonnet and is manually operated. The valve features a handwheel made of temperature and chemical resistant plastic. An integral optical position indicator is standard.

### Features

- CIP/SIP capable
- Autoclave capability
- Extensive range of accessories available
- Opening stroke and closing stroke limiter
- Handwheel locking available upon request (electric or mechanical)
- Configurable with proximity switches for position feedback



### Technical specifications

<b>Media temperature:</b>	-10 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 10 to 100
<b>Body configurations:</b>	2/2-way body   i-body   Multi-port body   T body   Tank valve body   Welding configuration
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   JIS   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435 (BN2), forged material   1.4435, investment casting material   1.4539 (904L), forged material
<b>Body lining:</b>	PFA
<b>Diaphragm materials:</b>	EPDM   FKM   PTFE/EPDM
<b>Conformities:</b>	3A   CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   TA Luft (German Clean Air Act)   USP

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GW-653



# GEMÜ 654 BioStar

## Manually operated diaphragm valve

The GEMÜ 654 2/2-way diaphragm valve has a stainless steel bonnet and is manually operated. The valve has a handwheel made from stainless steel. An integral optical position indicator is standard.

### Features

- Handwheel design allows minimal heat sink
- CIP/SIP capable
- Autoclave capability
- Extensive range of accessories available
- Opening stroke and closing stroke limiter
- Handwheel locking available upon request (electric or mechanical)
- Configurable with proximity switches for position feedback



### Technical specifications

<b>Media temperature:</b>	-10 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 4 to 100
<b>Body configurations:</b>	2/2-way body   i-body   Multi-port body   T body   Tank valve body   Welding configuration
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   JIS   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435 (BN2), forged material   1.4435, investment casting material   1.4539 (904L), forged material
<b>Body lining:</b>	PFA
<b>Diaphragm materials:</b>	EPDM   FKM   PTFE/EPDM
<b>Conformities:</b>	3A   CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   TA Luft (German Clean Air Act)   USP

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GW-654





# GEMÜ 655

## Manually operated full bore diaphragm valve

The GEMÜ 655 2/2-way diaphragm valve has a metal handwheel and is manually operated. The valve body has a full bore design.

### Features

- High mechanical stability
- High flow rate due to straight through flow
- Can be retrofitted with a pneumatic actuator



EAC

### Technical specifications

<b>Media temperature:</b>	0 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 7 bar
<b>Nominal sizes:</b>	DN 25 to 300
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   EN   ISO
<b>Body materials:</b>	EN-GJL-250, cast iron material   EN-GJS-400-18-LT, SG iron material   EN-GJS-500-7, ductile iron material
<b>Body lining:</b>	Butyl   Hard rubber   Soft rubber
<b>Diaphragm materials:</b>	CR   EPDM   IIR   NBR   NR
<b>Conformities:</b>	EAC

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GW-655



## Manually operated diaphragm valves made of plastic

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# Overview

GEMÜ type	607	617	R677	C67 CleanStar
				
<b>Special feature</b>	Angle valve body		High-Flow valve body	High-Flow valve body
<b>Nominal sizes</b>	DN 10 to 10	DN 12 to 20	DN 15 to 100	DN 4 to 25
<b>Media temperature</b>	-10 to 80 °C	-10 to 80 °C	-10 to 80 °C	-10 to 150 °C
<b>Ambient temperature</b>	-10 to 50 °C	-10 to 50 °C	-10 to 50 °C	0 to 60 °C
<b>Operating pressure</b>	0 to 10 bar	0 to 6 bar	0 to 10 bar	0 to 6 bar
<b>Connection types</b>				
Flange	-	-	●	-
Flare	-	●	-	●
Flare SpaceSaver	-	-	-	●
PrimeLock®	-	-	-	●
PrimeLock® SpaceSaver	-	-	-	●
Solvent cement socket	-	●	-	-
Spigot	●	●	●	●
Super 300 Type Pillar® SpaceSaver	-	-	-	●
Threaded connection	-	●	-	-
Union end	-	●	●	●
<b>Body materials</b>				
ABS	-	-	●	-
Inliner PP-H/outliner PP	-	-	●	-
Inliner PVDF/outliner PP	-	-	●	-
PFA	-	-	-	●
PP	-	●	●	-
PP-H	●	●	-	●
PVC-U	●	●	●	-
PVDF	●	●	●	-
<b>Conformities</b>				
EAC	-	●	●	●
FDA	●	●	●	●
NSF	-	●	●	-
TA Luft (German Clean Air Act)	-	-	-	●

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 607

## Manually operated diaphragm valve

The GEMÜ 607 2/2-way diaphragm valve has a low maintenance plastic bonnet and is manually operated. An integral optical position indicator is standard.

### Features

- Compact design
- Integral optical position indicator
- Angle valve bodies save on additional pipe bends in the piping



### Technical specifications

<b>Media temperature:</b>	-10 to 80 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 10 to 10
<b>Body configurations:</b>	Angle valve body
<b>Connection types:</b>	Spigot
<b>Connection standards:</b>	DIN
<b>Body materials:</b>	PP-H, grey   PVC-U, grey   PVDF
<b>Diaphragm materials:</b>	EPDM   FKM   PTFE/EPDM
<b>Conformities:</b>	FDA

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GW-607



# GEMÜ 617

## Manually operated diaphragm valve

The GEMÜ 617 2/2-way diaphragm valve has a low maintenance plastic bonnet and is manually operated. An integral optical position indicator is standard.

### Features

- High flow rates
- Integral optical position indicator
- Choice of various body materials and connection types



### Technical specifications

<b>Media temperature:</b>	-10 to 80 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 12 to 20
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flare   Solvent cement socket   Spigot   Threaded connection   Union end
<b>Connection standards:</b>	BS   DIN   ISO
<b>Body materials:</b>	PP, reinforced   PP-H, natural   PVC-U, grey   PVDF
<b>Diaphragm materials:</b>	EPDM   FKM   NBR   PTFE/EPDM
<b>Conformities:</b>	EAC   FDA   NSF

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# GEMÜ R677

## Manually operated diaphragm valve

The GEMÜ R677 2/2-way diaphragm valve has a low maintenance plastic bonnet and is manually operated. An integral optical position indicator is standard. The high-flow valve body provides compact dimensions at high flow rates.

### Features

- Same mounting height planes over multiple nominal sizes
- Integral optical position indicator
- Compact system design thanks to flow-optimized high-flow valve bodies



EAC

FDA

NSF

### Technical specifications

<b>Media temperature:</b>	-10 to 80 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 15 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange   Spigot   Union end
<b>Connection standards:</b>	ANSI   ASTM   BS   DIN   EN   ISO   JIS
<b>Body materials:</b>	ABS   Inliner PP-H, grey / outliner PP, reinforced   Inliner PVDF/outliner PP, reinforced   PP, reinforced   PVC-U, grey   PVDF
<b>Diaphragm materials:</b>	EPDM   FKM   NBR   PTFE/EPDM
<b>Conformities:</b>	EAC   FDA   NSF

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GW-R677



# GEMÜ C67 CleanStar

## Manually operated diaphragm valve

The GEMÜ C67 HPW CleanStar ultra-pure 2/2-way diaphragm valve is manually operated. All media wetted parts are made of PFA or PTFE.

### Features

- High purity due to cleanroom manufacturing
- High Flow version
- High flow rates
- Minimal deadleg
- Optional flow direction
- Also available as T valve
- The valve is available with ECTFE union nut as an option.  
Thus you achieve: brief equipment rinsing times, clearly improved Kv values (High Flow), high "MTBF" and reduced costs



### Technical specifications

<b>Media temperature:</b>	-10 to 150 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 4 to 25
<b>Body configurations:</b>	2/2-way body   T body
<b>Connection types:</b>	Flare   Flare SpaceSaver   PrimeLock®   PrimeLock® SpaceSaver   Spigot   Super 300 Type Pillar® SpaceSaver   Union end
<b>Connection standards:</b>	DIN
<b>Body materials:</b>	PFA   PP-H, grey   PP-H, natural   PVDF
<b>Diaphragm materials:</b>	PTFE/EPDM
<b>Conformities:</b>	EAC   FDA   TA Luft (German Clean Air Act)

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GW-C67






## Pneumatically operated diaphragm valves made of metal

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# Overview

GEMÜ type	650 BioStar	660	605 / 625 / 687
			
<b>Special feature</b>		Precise stroke limiter	
<b>Nominal sizes</b>	DN 4 to 100	DN 4 to 25	DN 4 to 100
<b>Media temperature</b>	-10 to 100 °C	-10 to 100 °C	-10 to 100 °C
<b>Ambient temperature</b>	0 to 60 °C	0 to 60 °C	0 to 60 °C
<b>Operating pressure</b>	0 to 10 bar	0 to 5 bar	0 to 8 bar
<b>Connection types</b>			
Clamp	•	•	•
Flange	•	•	•
Spigot	•	•	•
Threaded connection	•	•	•
<b>Body materials</b>			
1.4408	•	•	•
1.4408, lined	•	-	•
1.4435	•	•	•
1.4435 (316L)	•	•	•
1.4435 (BN2)	•	•	•
1.4539	•	•	•
CW617N	-	-	-
EN-GJL-250	-	-	-
EN-GJL-250, lined	-	-	-
EN-GJS-400-18-LT, lined	-	-	•
EN-GJS-500-7, lined	-	-	-
<b>Conformities</b>			
3A	•	•	-
BSE/TSE	•	•	•
CRN	•	•	•
EAC	•	•	•
FDA	•	•	•
Oxygen	•	•	•
Reg. (EU) No. 10/2011	•	•	•
Regulation (EC) No. 1935/2004	•	•	•
Regulation (EC) No. 2023/2006	•	•	•
SIL	•	-	•
TA Luft (German Clean Air Act)	•	•	•
USP	•	•	•

Technical data depends on the respective configuration - see datasheet or Product Selection Tool



GEMÜ type	615 / 695	620	656
			
<b>Special feature</b>			Full bore design
<b>Nominal sizes</b>	DN 10 to 50	DN 15 to 150	DN 25 to 300
<b>Media temperature</b>	-10 to 80 °C	0 to 100 °C	0 to 100 °C
<b>Ambient temperature</b>	0 to 60 °C	0 to 60 °C	0 to 60 °C
<b>Operating pressure</b>	0 to 10 bar	0 to 10 bar	0 to 7 bar
<b>Connection types</b>			
Clamp	•	-	-
Flange	•	•	•
Spigot	•	-	-
Threaded connection	•	•	-
<b>Body materials</b>			
1.4408	•	-	-
1.4408, lined	•	-	-
1.4435	•	-	-
1.4435 (316L)	•	-	-
1.4435 (BN2)	•	-	-
1.4539	•	-	-
CW617N	•	-	-
EN-GJL-250	•	•	•
EN-GJL-250, lined	-	-	•
EN-GJS-400-18-LT, lined	•	•	-
EN-GJS-500-7, lined	-	•	-
<b>Conformities</b>			
3A	-	-	-
BSE/TSE	•	-	-
CRN	-	-	-
EAC	•	•	•
FDA	•	•	-
Oxygen	•	-	-
Reg. (EU) No. 10/2011	•	-	-
Regulation (EC) No. 1935/2004	•	-	-
Regulation (EC) No. 2023/2006	•	-	-
SIL	-	-	-
TA Luft (German Clean Air Act)	-	•	-
USP	•	-	-

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 650 BioStar

## Pneumatically operated diaphragm valve

The GEMÜ 650 BioStar 2/2-way diaphragm valve has a stainless steel piston actuator and is pneumatically operated. The valve is designed for use in a sterile environment. All actuator parts are made from stainless steel (except seals). The compression springs of diaphragm sizes 80 and 100 are made of epoxy coated spring steel. Normally Closed (NC), Normally Open (NO) and Double Acting (DA) control functions are available. An integral optical position indicator is standard.

### Features

- Compact design (ideal when space is at a premium)
- CIP/SIP capable
- Autoclave capability, depending on version
- Controlled exhaust air duct available as an option
- Wide range of adaptation options for add-on components and accessories



### Technical specifications

<b>Media temperature:</b>	-10 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 4 to 100
<b>Body configurations:</b>	2/2-way body   i-body   Multi-port body   T body   Tank valve body   Welding configuration
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   JIS   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435 (BN2), forged material   1.4435, investment casting material   1.4539 (904L), forged material
<b>Body lining:</b>	PFA
<b>Diaphragm materials:</b>	EPDM   PTFE/EPDM
<b>Conformities:</b>	3A   BSE/TSE   CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   SIL   TA Luft (German Clean Air Act)   USP

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GW-650



# GEMÜ 660

## Pneumatically operated diaphragm valve

The GEMÜ 660 2/2-way diaphragm valve has a stainless steel piston actuator and is pneumatically operated. The valve was designed for dosing and filling a wide range of products. All actuator parts are made from stainless steel (except seals). Normally Closed (NC), Normally Open (NO) and Double Acting (DA) control functions are available. An opening stroke and closing stroke limiter and an optical position indicator are integrated as standard.

### Features

- Easily adjustable, integrated opening stroke and closing stroke limiter
- Precise stroke scale (10 scale points per turn) on the actuator top
- High level of reproducibility of the flow rates thanks to distance sleeves integrated in the shut-off diaphragms
- Fast cycle duties due to minimized filling volume



### Technical specifications

<b>Media temperature:</b>	-10 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 5 bar
<b>Nominal sizes:</b>	DN 4 to 25
<b>Body configurations:</b>	2/2-way body   i-body   Multi-port body   T body   Tank valve body   Welding configuration
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   JIS   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435 (BN2), forged material   1.4435, investment casting material   1.4539 (904L), forged material
<b>Diaphragm materials:</b>	EPDM   PTFE/EPDM
<b>Conformities:</b>	3A   BSE/TSE   CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   TA Luft (German Clean Air Act)   USP

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GW-660



# GEMÜ 605 / 625 / 687

## Pneumatically operated diaphragm valve

The GEMÜ 605/625/687 2/2-way diaphragm valves have a low maintenance plastic actuator and are pneumatically operated. The valves have a metal distance piece. An integral optical position indicator is standard. Normally Closed (NC), Normally Open (NO) and Double Acting (DA) control functions are available.

### Features

- Hermetic separation between medium and actuator
- CIP/SIP capable
- Wide range of adaptation options for add-on components and accessories



### Technical specifications

<b>Media temperature:</b>	-10 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 8 bar
<b>Nominal sizes:</b>	DN 4 to 100
<b>Body configurations:</b>	2/2-way body   i-body   Multi-port body   T body   Tank valve body   Welding configuration
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   JIS   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435 (BN2), forged material   1.4435, investment casting material   1.4539 (904L), forged material   CW617N, brass   EN-GJS-400-18-LT, SG iron material
<b>Body lining:</b>	Hard rubber   PFA   PP
<b>Diaphragm materials:</b>	EPDM   FKM   PTFE/EPDM
<b>Conformities:</b>	BSE/TSE   CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   SIL   TA Luft (German Clean Air Act)   USP

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GW-605



GW-625



GW-687



# GEMÜ 615 / 695

## Pneumatically operated diaphragm valve

The GEMÜ 615/695 2/2-way diaphragm valves have a low maintenance plastic actuator and are pneumatically operated. An integral optical position indicator is standard. Normally Closed (NC), Normally Open (NO) and Double Acting (DA) control functions are available.

### Features

- Wide range of adaptation options for add-on components and accessories
- CIP capable



### Technical specifications

<b>Media temperature:</b>	-10 to 80 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 10 to 50
<b>Body configurations:</b>	2/2-way body   i-body   Welding configuration
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   JIS   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435 (BN2), forged material   1.4435, investment casting material   1.4539 (904L), forged material   EN-GJL-250, cast iron material   EN-GJS-400-18-LT, SG iron material
<b>Body lining:</b>	Hard rubber   PFA   PP
<b>Diaphragm materials:</b>	EPDM   FKM   NBR   PTFE/EPDM
<b>Conformities:</b>	BSE/TSE   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   USP

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GW-615



GW-695



# GEMÜ 620

## Pneumatically operated diaphragm valve

The GEMÜ 620 2/2-way diaphragm valve has a low maintenance membrane actuator made of metal or plastic and is pneumatically operated. The valve has a metal distance piece. Normally Closed (NC), Normally Open (NO) and Double Acting (DA) control functions are available.

### Features

- Suitable for particulate and abrasive media
- Various lining materials are available, such as PFA, PP or hard rubber
- Standard optical position indicator
- Wide range of adaptation options for add-on components and accessories



### Technical specifications

<b>Media temperature:</b>	0 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 15 to 150
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange   Threaded connection
<b>Connection standards:</b>	ANSI   BS   EN   ISO
<b>Body materials:</b>	EN-GJL-250, cast iron material   EN-GJS-400-18-LT, SG iron material   EN-GJS-500-7, ductile iron material
<b>Body lining:</b>	Hard rubber   PFA   PP
<b>Diaphragm materials:</b>	CR   EPDM   FKM   NBR   PTFE/EPDM
<b>Conformities:</b>	EAC   FDA   TA Luft (German Clean Air Act)

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GW-620





# GEMÜ 656

## Pneumatically operated full bore diaphragm valve

The GEMÜ 656 2/2-way diaphragm valve has a low maintenance metal membrane actuator and is pneumatically operated. Normally Closed (NC), Normally Open (NO) and Double Acting (DA) control functions are available. The valve body has a full bore design.

### Features

- High mechanical stability
- High flow rate due to straight through flow
- Valve can be cleaned without disassembly of actuator



EAC

### Technical specifications

<b>Media temperature:</b>	0 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 7 bar
<b>Nominal sizes:</b>	DN 25 to 300
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   EN   ISO
<b>Body materials:</b>	EN-GJL-250, cast iron material   EN-GJS-400-18-LT, SG iron material   EN-GJS-500-7, ductile iron material
<b>Body lining:</b>	Hard rubber   Soft rubber
<b>Diaphragm materials:</b>	CR   EPDM   IIR   NBR   NR
<b>Conformities:</b>	EAC

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GW-656



## Pneumatically operated diaphragm valves made of plastic

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# Overview

GEMÜ type	610	630	R690	600HP	C60 CleanStar
					
<b>Special feature</b>			High-Flow valve body		High-Flow valve body
<b>Nominal sizes</b>	DN 12 to 20	DN 12 to 20	DN 15 to 100	DN 40 to 50	DN 4 to 25
<b>Media temperature</b>	-10 to 80 °C	-10 to 80 °C	-10 to 80 °C	0 to 90 °C	-10 to 150 °C
<b>Ambient temperature</b>	-10 to 50 °C	-10 to 50 °C	-10 to 50 °C	0 to 60 °C	0 to 60 °C
<b>Operating pressure</b>	0 to 6 bar	0 to 6 bar	0 to 10 bar	0 to 6 bar	0 to 6 bar
<b>Connection types</b>					
Flange	-	-	●	-	-
Flare	●	●	-	-	●
Flare SpaceSaver	-	-	-	-	●
PrimeLock®	-	-	-	-	●
PrimeLock® SpaceSaver	-	-	-	-	●
Solvent cement socket	●	●	-	-	-
Spigot	●	●	●	●	●
Super 300 Type Pillar® SpaceSaver	-	-	-	-	●
Threaded connection	●	●	-	-	-
Union end	●	●	●	-	●
<b>Body materials</b>					
ABS	-	-	●	-	-
Inliner PFA / Outliner PVDF	-	-	-	●	-
Inliner PP-H/outliner PP	-	-	●	-	-
Inliner PVDF/outliner PP	-	-	●	-	-
PFA	-	-	-	-	●
PP	●	●	●	-	-
PP-H	●	●	-	-	●
PVC-U	●	●	●	-	-
PVDF	●	●	●	-	●
<b>Conformities</b>					
EAC	●	●	●	●	●
FDA	●	●	●	●	●
NSF	●	●	●	-	-
TA Luft (German Clean Air Act)	-	-	-	-	●

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 610

## Pneumatically operated diaphragm valve

The GEMÜ 610 2/2-way diaphragm valve has a low maintenance plastic piston actuator and is pneumatically operated. An integral optical position indicator is standard. Normally Closed (NC), Normally Open (NO) and Double Acting (DA) control functions are available.

### Features

- Same mounting height planes over multiple nominal sizes
- High flow rates
- Integral optical position indicator and closing stroke limiter as standard
- Option with electrical position indicator



### Technical specifications

<b>Media temperature:</b>	-10 to 80 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 12 to 20
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flare   Solvent cement socket   Spigot   Threaded connection   Union end
<b>Connection standards:</b>	BS   DIN   ISO
<b>Body materials:</b>	PP, reinforced   PP-H, natural   PVC-U, grey   PVDF
<b>Diaphragm materials:</b>	EPDM   FKM   NBR   PTFE/EPDM
<b>Conformities:</b>	EAC   FDA   NSF

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GW-610



# GEMÜ 630

## Pneumatically operated diaphragm valve

The GEMÜ 630 2/2-way diaphragm valve has a low-maintenance plastic piston actuator and is pneumatically operated. An integral optical position indicator is standard. The valve is also equipped with a stroke limiter. Normally Closed (NC), Normally Open (NO) and Double Acting (DA) control functions are available.

### Features

- Variable spring set for applications with low control pressure
- Mounting plates for height compensation of differing body dimensions and nominal sizes available
- Extensive range of accessories



### Technical specifications

<b>Media temperature:</b>	-10 to 80 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 12 to 20
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flare   Solvent cement socket   Spigot   Threaded connection   Union end
<b>Connection standards:</b>	ANSI   BS   DIN   EN   ISO
<b>Body materials:</b>	PP, reinforced   PP-H, natural   PVC-U, grey   PVDF
<b>Diaphragm materials:</b>	EPDM   FKM   NBR   PTFE/EPDM
<b>Conformities:</b>	EAC   FDA   NSF

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GW-630



# GEMÜ R690

## Pneumatically operated diaphragm valve

The GEMÜ R690 2/2-way diaphragm valve has a low maintenance membrane actuator and is pneumatically operated. Normally Closed (NC), Normally Open (NO) and Double Acting (DA) control functions are available. The valve body provides compact dimensions at high flow rates.

### Features

- Same mounting height planes over multiple nominal sizes
- Compact system design thanks to flow-optimized high-flow valve bodies
- Reduced control air consumption
- Modified spring sets available for applications with reduced control pressure



### Technical specifications

<b>Media temperature:</b>	-10 to 80 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 15 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange   Spigot   Union end
<b>Connection standards:</b>	ANSI   ASTM   BS   DIN   EN   ISO   JIS
<b>Body materials:</b>	ABS   Inliner PP-H, grey / outliner PP, reinforced   Inliner PVDF/outliner PP, reinforced   PP, reinforced   PVC-U, grey   PVDF
<b>Diaphragm materials:</b>	EPDM   FKM   NBR   PTFE/EPDM
<b>Conformities:</b>	EAC   FDA   NSF

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GW-R690





# GEMÜ 600HP

## Pneumatically operated diaphragm valve

The GEMÜ 600 HP 2/2-way diaphragm valve has a low maintenance plastic piston actuator and is pneumatically operated. A stroke limiter, a manual override and an optical position indicator are integrated as standard.

### Features

- High flow rates
- Minimal deadleg
- Optional flow direction and installation position
- Due to its design particularly suitable for polishing agents and slurries
- Extensive range of accessories



### Technical specifications

<b>Media temperature:</b>	0 to 90 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 40 to 50
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Spigot
<b>Connection standards:</b>	DIN
<b>Body materials:</b>	Inliner PFA / Outliner PVDF
<b>Diaphragm materials:</b>	PTFE/EPDM
<b>Conformities:</b>	EAC   FDA

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GW-600HP



# GEMÜ C60 CleanStar

## Pneumatically operated diaphragm valve

The GEMÜ C60 CleanStar® ultra pure 2/2-way diaphragm valve has a plastic piston actuator and is pneumatically operated. A stroke limiter and an optical position indicator are integrated as standard. All media wetted parts are made of PFA or PTFE.

### Features

- High purity due to cleanroom manufacturing
- High Flow version
- High flow rates
- Minimal deadleg
- Optional flow direction
- Also available as T valve
- The valve is available with ECTFE union nut as an option.  
Thus you achieve: brief equipment rinsing times, clearly improved Kv values (High Flow), high "MTBF" and reduced costs



### Technical specifications

<b>Media temperature:</b>	-10 to 150 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 4 to 25
<b>Body configurations:</b>	2/2-way body   T body
<b>Connection types:</b>	Flare   Flare SpaceSaver   PrimeLock®   PrimeLock® SpaceSaver   Spigot   Super 300 Type Pillar® SpaceSaver   Union end
<b>Connection standards:</b>	DIN
<b>Body materials:</b>	PFA   PP-H, grey   PP-H, natural   PVDF
<b>Diaphragm materials:</b>	PTFE/EPDM
<b>Conformities:</b>	EAC   FDA   TA Luft (German Clean Air Act)

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GW-C60








## Motorized diaphragm valves made of metal

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# Overview

GEMÜ type	639 eSyStep	649 eSyDrive	698
			
<b>Special feature</b>	Universal actuator, optionally with integrated positioner	Premium actuator with integrated positioner and process controller	
<b>Nominal sizes</b>	DN 4 to 25	DN 10 to 65	DN 15 to 50
<b>Media temperature</b>	-10 to 100 °C	-10 to 100 °C	-10 to 100 °C
<b>Ambient temperature</b>	0 to 60 °C	-10 to 60 °C	-10 to 55 °C
<b>Operating pressure</b>	0 to 10 bar	0 to 10 bar	0 to 10 bar
<b>Supply voltage</b>	24 V DC	24 V DC	120 V AC, 50/60 Hz 230 V AC, 50/60 Hz 24 V AC, 50/60 Hz
<b>Actuating speed</b>	max. 3 mm/s	max. 6 mm/s	max. 1 mm/s
<b>Connection types</b>			
Clamp	•	•	•
Flange	•	•	•
Spigot	•	•	•
Threaded connection	•	•	•
<b>Body materials</b>			
1.4408	•	•	•
1.4408, lined	•	•	•
1.4435	•	•	•
1.4435 (316L)	•	•	•
1.4435 (BN2)	•	•	•
1.4539	•	•	•
EN-GJL-250	-	•	•
EN-GJS-400-18-LT, lined	-	•	•
<b>Conformities</b>			
BSE/TSE	•	•	-
CRN	-	-	•
EAC	-	-	•
FDA	•	•	•
Oxygen	•	•	-
Reg. (EU) No. 10/2011	•	•	-
Regulation (EC) No. 1935/2004	•	•	-
Regulation (EC) No. 2023/2006	•	•	-
TA Luft (German Clean Air Act)	•	•	•
USP	•	•	-

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 639 eSyStep

## Motorized diaphragm valve

The GEMÜ 639 diaphragm valve is actuated by a compact motorized spindle actuator with step motor. Depending on the version, the valve is available for OPEN/CLOSE or simple control applications. The actuator has an integrated IO-Link interface for parameterization and diagnosis purposes. The self-locking actuator holds its position in a stable manner when idle and in the event of power supply failure.

### Features

- CIP/SIP capable (only with stainless steel distance piece)
- Open/close function or with integrated positioner
- Actuating speed max. 3 mm/s
- Parameterizable via IO-Link
- On-site or remote end position programming via programming input
- Various functions integrated (e.g. feedback, stroke limiter, etc.)



### Technical specifications

<b>Media temperature:</b>	-10 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 4 to 25
<b>Body configurations:</b>	2/2-way body   i-body   Multi-port body   T body   Tank valve body   Welding configuration
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   JIS   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435 (BN2), forged material   1.4435, investment casting material   1.4539 (904L), forged material
<b>Body lining:</b>	PFA
<b>Diaphragm materials:</b>	CR   EPDM   FKM   NBR   PTFE/EPDM
<b>Supply voltage:</b>	24 V DC
<b>Actuating speed:</b>	max. 3 mm/s
<b>Protection class:</b>	IP 65
<b>Conformities:</b>	BSE/TSE   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   TA Luft (German Clean Air Act)   USP

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GW-639





# GEMÜ 649 eSyDrive

## Motorized diaphragm valve

The GEMÜ 649 diaphragm valve is actuated by a motorized hollow shaft actuator. It is based on technology that does not use brushes or sensors and therefore guarantees high performance and a long service life. In addition to OPEN/CLOSE applications, the valve is ideal for variable and complex control applications. The actuator has an integrated web server for parameterization and diagnosis purposes.

### Features

- Installation for optimized draining is possible
- Open/close function, positioner and process controller
- Various functions of add-on components and accessories are already integrated (e.g. position indicators, stroke limiters, etc.)



### Technical specifications

<b>Media temperature:</b>	-10 to 100 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 10 to 65
<b>Body configurations:</b>	2/2-way body   i-body   Multi-port body   T body   Tank valve body   Welding configuration
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   JIS   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435 (BN2), forged material   1.4435, investment casting material   1.4539 (904L), forged material   EN-GJL-250, cast iron material   EN-GJS-400-18-LT, SG iron material
<b>Body lining:</b>	Hard rubber   PFA   PP
<b>Diaphragm materials:</b>	CR   EPDM   FKM   NBR   PTFE/EPDM
<b>Supply voltage:</b>	24 V DC
<b>Actuating speed:</b>	max. 6 mm/s
<b>Protection class:</b>	IP 65
<b>Conformities:</b>	BSE/TSE   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   TA Luft (German Clean Air Act)   USP

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GW-649



# GEMÜ 698

## Motorized diaphragm valve

The GEMÜ 698 2/2-way diaphragm valve has a low maintenance motorized actuator with a reversible synchronous motor. A manual override and an optical position indicator are integrated as standard. The valve has a metal distance piece.

### Features

- Open/close function or positioner and process controller
- Variable force and speed
- Diagnostic functions
- Operable via web interface eSy-Web
- Various functions of add-on components and accessories are already integrated (e.g. position indicators, stroke limiters, etc.)



### Technical specifications

<b>Media temperature:</b>	-10 to 100 °C
<b>Ambient temperature:</b>	-10 to 55 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Body configurations:</b>	2/2-way body   i-body   Multi-port body   T body   Tank valve body   Welding configuration
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   JIS   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435 (BN2), forged material   1.4435, investment casting material   1.4539 (904L), forged material   EN-GJL-250, cast iron material
<b>Body lining:</b>	Hard rubber   PFA   PP
<b>Diaphragm materials:</b>	EPDM   FKM   NBR   PTFE/EPDM
<b>Supply voltage:</b>	120 V AC, 50/60 Hz   230 V AC, 50/60 Hz   24 V AC, 50/60 Hz
<b>Actuating speed:</b>	max. 1 mm/s
<b>Protection class:</b>	IP 65
<b>Conformities:</b>	CRN   EAC   FDA   TA Luft (German Clean Air Act)

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GW-698









## Motorized diaphragm valves made of plastic

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# Overview

GEMÜ type	R629 eSyLite	R639 eSyStep	R649 eSyDrive	R693
				
<b>Special feature</b>	Basic actuator	Universal actuator, option with integrated positioner	Premium actuator with integrated positioner and process controller	High-Flow valve body
<b>Nominal sizes</b>	DN 12 to 50	DN 12 to 32	DN 12 to 65	DN 15 to 50
<b>Media temperature</b>	-10 to 80 °C	-10 to 80 °C	-10 to 80 °C	-10 to 80 °C
<b>Ambient temperature</b>	-10 to 50 °C	0 to 50 °C	-10 to 50 °C	-10 to 50 °C
<b>Operating pressure</b>	0 to 6 bar	0 to 6 bar	0 to 10 bar	0 to 10 bar
<b>Supply voltage</b>	24 V DC	24 V DC	24 V DC	120 V AC, 50/60 Hz 230 V AC, 50/60 Hz 24 V AC, 50/60 Hz
<b>Actuating speed</b>	Max. 2 mm/s	max. 3 mm/s	max. 6 mm/s	max. 1 mm/s
<b>Connection types</b>				
Flange	•	-	•	•
Flare	•	•	-	-
Solvent cement socket	•	•	•	-
Spigot	•	•	•	•
Threaded connection	•	•	•	-
Union end	•	•	•	•
<b>Body materials</b>				
ABS	•	-	•	•
Inliner PP-H/outliner PP	•	-	•	•
Inliner PVDF/outliner PP	•	-	•	•
PP	-	•	-	-
PP-H	-	•	-	-
PVC-U	•	•	•	•
PVDF	-	•	•	-
<b>Conformities</b>				
EHEDG	•	-	-	-
FDA	•	•	•	-
NSF	-	-	•	•
Reg. (EU) No. 10/2011	-	-	•	-
Regulation (EC) No. 1935/2004	•	-	•	-
USP	-	•	-	-

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ R629 eSyLite

## Motorized diaphragm valve

The GEMÜ R629 eSyLite 2/2-way diaphragm valve is motorized. It is available as an OPEN/CLOSE version. An integral optical position indicator is standard.

### Features

- Optional flow direction and installation position
- Low space requirement due to compact design
- Motorized alternative for applications without compressed air supply
- Standard integral optical position indicator
- Insensitive to particulate media
- Integrated emergency power supply module (optional)
- Simple diaphragm replacement
- Hermetic separation between medium and actuator
- Installation for optimized draining is possible
- Open/close function
- Electric linear actuator



### Technical specifications

<b>Media temperature:</b>	-10 to 80 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 12 to 50
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange   Flare   Solvent cement socket   Spigot   Threaded connection   Union end
<b>Connection standards:</b>	ANSI   ASTM   BS   DIN   EN   ISO   JIS
<b>Body materials:</b>	ABS   Inliner PP-H, grey / outliner PP, reinforced   Inliner PP-H, natural / Outliner PP, reinforced   Inliner PVDF/outliner PP, reinforced   PP, reinforced   PP-H, natural   PVC-U, grey   PVDF
<b>Diaphragm materials:</b>	EPDM   FKM   NBR   PTFE/EPDM
<b>Supply voltage:</b>	24 V DC
<b>Actuating speed:</b>	Max. 2 mm/s
<b>Protection class:</b>	IP 65

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GW-R629





# GEMÜ R639 eSyStep

## Motorized diaphragm valve

The GEMÜ R639 is a motorized 2/2-way diaphragm valve. The eSyStep electric actuator is available as ON/OFF or with integrated positioner. An integral optical and electrical position indicator is standard. The self-locking actuator holds its position in a stable manner when idle and in the event of power supply failure.

### Features

- Hermetic separation between medium and actuator
- Installation for optimized draining is possible
- Open/close function or with integrated positioner
- Integral optical position indicator
- Parameterizable via IO-Link
- Extensive diagnostic facilities
- Actuating speed max. 3 mm/s



### Technical specifications

<b>Media temperature:</b>	-10 to 80 °C
<b>Ambient temperature:</b>	0 to 50 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 12 to 32
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flare   Solvent cement socket   Spigot   Threaded connection   Union end
<b>Connection standards:</b>	BS   DIN   ISO
<b>Body materials:</b>	PP, reinforced   PP-H, natural   PVC-U, grey   PVDF
<b>Diaphragm materials:</b>	EPDM   NBR   PTFE TFM™ / FKM   PTFE/EPDM
<b>Supply voltage:</b>	24 V DC
<b>Actuating speed:</b>	max. 3 mm/s
<b>Protection class:</b>	IP 65
<b>Conformities:</b>	FDA   USP

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GW-R639



# GEMÜ R649 eSyDrive

## Motorized diaphragm valve

The GEMÜ 649 diaphragm valve is actuated by a motorized hollow shaft actuator. It is based on technology that does not use brushes or sensors and therefore guarantees high performance and a long service life. In addition to OPEN/CLOSE applications, the valve is ideal for variable and complex control applications. The actuator has an integrated web server for parameterization and diagnosis purposes.



### Technical specifications

<b>Media temperature:</b>	-10 to 80 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 12 to 65
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange   Solvent cement socket   Spigot   Threaded connection   Union end
<b>Connection standards:</b>	ANSI   BS   DIN   EN   ISO   JIS
<b>Body materials:</b>	ABS   Inliner PP-H, grey / outliner PP, reinforced   Inliner PVDF/outliner PP, reinforced   PP, reinforced   PVC-U   PVDF
<b>Diaphragm materials:</b>	EPDM   FKM   NBR   PTFE/EPDM
<b>Supply voltage:</b>	24 V DC
<b>Actuating speed:</b>	max. 6 mm/s
<b>Protection class:</b>	IP 65
<b>Conformities:</b>	FDA   NSF   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004

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GW-R649



# GEMÜ R693

## Motorized diaphragm valve

The GEMÜ R693 2/2-way diaphragm valve has a low maintenance motorized actuator, a toothed belt drive with a reversible synchronous motor. The valve is motorized. A manual override and an optical position indicator are standard.

### Features

- Compact system design thanks to flow-optimized high-flow valve bodies
- Reliable opening and closing action and consistent control system
- Direct processing of 0/4 – 20 mA signals via an additional module available as an option
- Electrical position feedback by means of a potentiometer available as an option



### Technical specifications

<b>Media temperature:</b>	-10 to 80 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange   Spigot   Union end
<b>Connection standards:</b>	ANSI   ASTM   BS   DIN   EN   ISO   JIS
<b>Body materials:</b>	ABS   Inliner PP-H, grey / outliner PP, reinforced   Inliner PVDF/outliner PP, reinforced   PVC-U, grey
<b>Diaphragm materials:</b>	EPDM   FKM   NBR   PTFE/EPDM
<b>Supply voltage:</b>	120 V AC, 50/60 Hz   230 V AC, 50/60 Hz   24 V AC, 50/60 Hz
<b>Actuating speed:</b>	max. 1 mm/s
<b>Protection class:</b>	IP 65

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GW-R693



## M-block diaphragm valves

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# GEMÜ P600M

## M-block plastic diaphragm valve

The plastic M-block diaphragm valve, GEMÜ P600M, comprises one or more diaphragm valve seats. These can be equipped with manual, pneumatic and motorized actuators. The downstream media is isolated using a diaphragm at the valve seat.

### Features

- Combining several valves and pipe sections in one compact unit
- Reduced installation space
- Combining several functions in one blockControl, batch, distribute, flush, etc.
- Reduced number of welded and solvent cemented joints in the plant
- Customised block construction



### Technical specifications

<b>Media temperature:</b>	-10 to 80 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 6 to 50
<b>Body configurations:</b>	Multi-port body
<b>Connection types:</b>	Clamp   Spigot   Threaded connection   Union end
<b>Connection standards:</b>	ASME   DIN   ISO
<b>Body materials:</b>	PP-H, grey   PP-H, natural   PVC-U, grey   PVDF
<b>Diaphragm materials:</b>	EPDM   FKM   NBR   PTFE/EPDM

# GEMÜ P600M

## M-block stainless steel diaphragm valve

The M-block diaphragm valve in stainless steel, GEMÜ P600M, comprises one or more diaphragm valve seats. It is possible to choose between manual, pneumatic and motorized actuator variants. The downstream media is isolated using a diaphragm at the valve seat.

### Features

- Compact design saves space
- Individual, customized and flexible design
- Reduced deadleg
- Fewer connection points and weld seams
- Huge variety of functions combined in the smallest of spaces
- Hermetic separation between medium and actuator
- Wide range of adaptation options from measurement and control systems, in addition to accessories



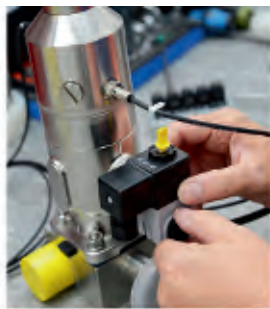
### Technical specifications

<b>Media temperature:</b>	-10 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 4 to 150
<b>Body configurations:</b>	Multi-port body
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   JIS   SMS
<b>Body materials:</b>	1.4435 (316L), block material   1.4435 (BN2), block material   1.4539 (904L), block material
<b>Diaphragm materials:</b>	EPDM   PTFE/EPDM
<b>Conformities:</b>	3A   BSE/TSE   CRN   EAC   FDA   Regulation (EC) No. 1935/2004   USP

# Add-on components for diaphragm valves

GEMÜ type	610	615	620	630	656	687	695	698	605
<b>Measurement and control technology</b>									
<b>Electrical position indicators</b>									
GEMÜ 1205 ▶ page 305			•	•	•	•	•		
GEMÜ 1201 / 1211 / 1214 ▶ page 304			•	•	•	•	•		
GEMÜ 1215 ▶ page 302	•	•	•	•		•	•		•
GEMÜ 1230 / 1231 / 1232 ▶ page 303	•	•	•	•	•	•	•	•	•
GEMÜ 1234 ▶ page 306	•	•	•	•		•			•
GEMÜ 1235 / 1236 ▶ page 307	•	•	•	•	•	•	•		•
GEMÜ 1242 ▶ page 308	•	•	•	•		•	•		•
<b>Combi switchboxes</b>									
GEMÜ 4241 ▶ page 315	•	•				•			
GEMÜ 4242 ▶ page 316	•	•	•	•	•	•	•		•
<b>Pilot valve</b>									
GEMÜ 0324 ▶ page 323	•	•	•	•	•	•	•		•
<b>Control systems</b>									
<b>Positioner</b>									
GEMÜ 1434 µPos ▶ page 282	•	•	•	•	•	•	•		•
GEMÜ 1435 ePos ▶ page 284	•	•	•	•	•	•	•		•
<b>Positioner and process controller</b>									
GEMÜ 1436 cPos ▶ page 285	•	•	•	•	•	•	•		•
<b>Accessories</b>									
Connection accessories ▶ page 355	•	•	•	•	•	•	•		•
Clamping devices ▶ page 358									
Manual overrides ▶ page 361			•		•	•	•		
Stroke limiters ▶ page 360	•	•	•	•		•	•		•
Sensor accessories ▶ page 362	•	•	•	•	•	•	•		•
Position indicators ▶ page 359	•	•	•	•	•	•	•		•
Valve mounting accessories ▶ page 354	•		•	•					

GEMÜ valves are fully assembled in our in-house Assembly department – with compatible accessories on request.

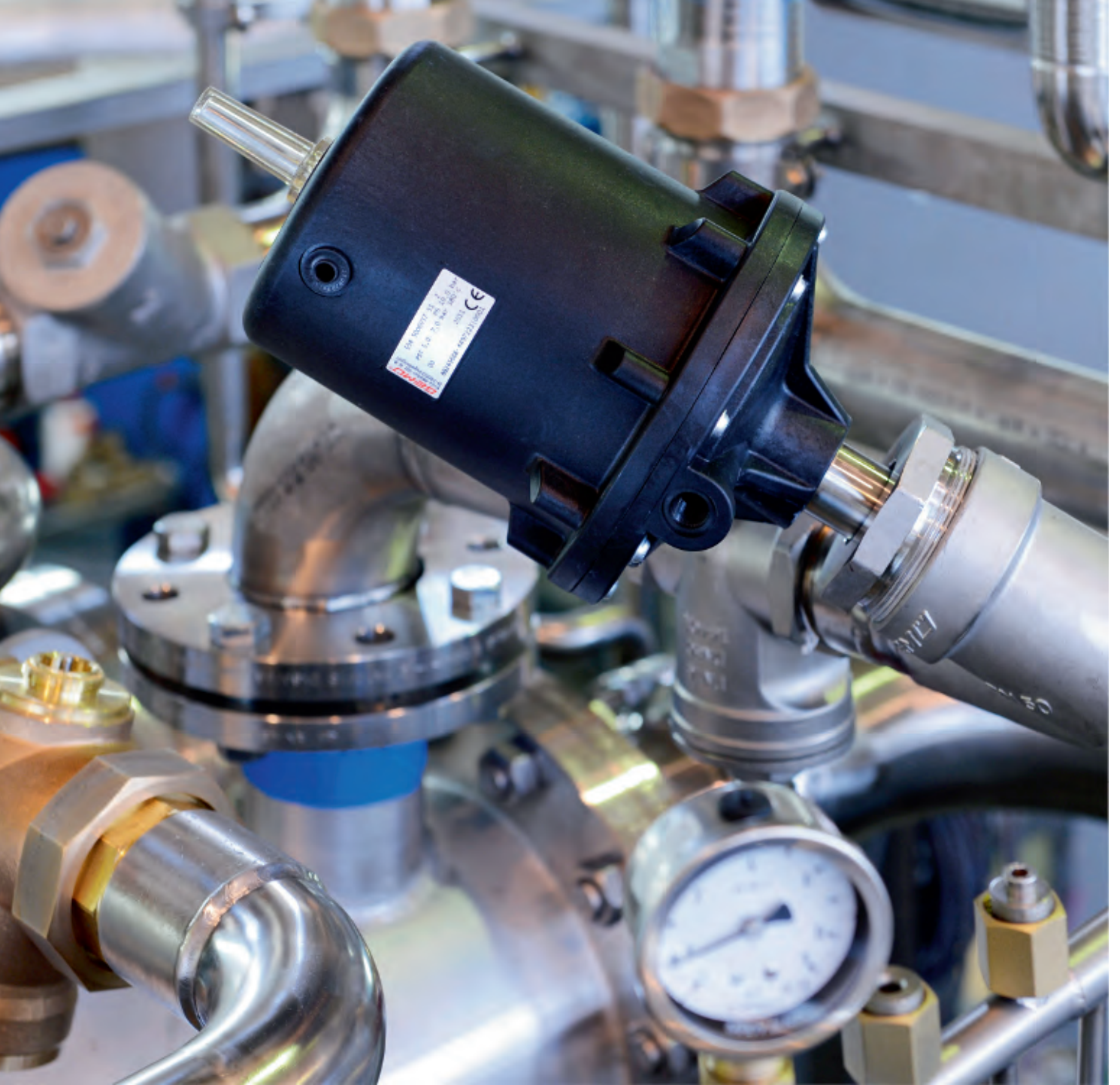


Our pre-assembled solutions are supplied to you preset and tested. Not only can you obtain all components from a single source, you also save on the time and effort required for logistics and installation of the plant on site, as well as for documentation.





GEMÜ type	617	625	650	653	660	671	C60	R690
<b>Measurement and control technology</b>								
<b>Electrical position indicators</b>								
GEMÜ 1205 ▶ page 305			•		•			•
GEMÜ 1201 / 1211 / 1214 ▶ page 304			•		•			•
GEMÜ 1215 ▶ page 302		•	•			•	•	•
GEMÜ 1230 / 1231 / 1232 ▶ page 303		•	•		•		•	•
GEMÜ 1234 ▶ page 306		•	•		•			
GEMÜ 1235 / 1236 ▶ page 307		•	•		•		•	•
GEMÜ 1242 ▶ page 308		•	•				•	•
<b>Combi switchboxes</b>								
GEMÜ 4241 ▶ page 315		•	•					
GEMÜ 4242 ▶ page 316		•	•		•		•	•
<b>Pilot valve</b>								
GEMÜ 0324 ▶ page 323		•	•		•		•	•
<b>Control systems</b>								
<b>Positioner</b>								
GEMÜ 1434 µPos ▶ page 282		•	•		•		•	•
GEMÜ 1435 ePos ▶ page 284		•	•					•
<b>Positioner and process controller</b>								
GEMÜ 1436 cPos ▶ page 285		•	•		•			•
<b>Accessories</b>								
Connection accessories ▶ page 355		•	•		•		•	•
Clamping devices ▶ page 358			•					
Manual overrides ▶ page 361			•					•
Stroke limiters ▶ page 360		•	•					•
Sensor accessories ▶ page 362		•	•	•	•			•
Position indicators ▶ page 359		•	•					•
Valve mounting accessories ▶ page 354	•							•



## Globe valves

## Description

Globe valves are suitable for clean, liquid media as well as gases and steam. Due to the linear movement and favourable mechanical conditions, they often take on automated tasks. Particularly in small nominal sizes, they are very well-suited to fast cycle duties and high switching frequencies. In conjunction with the relevant positioners and regulating cones, they are the best possible control valves.

*Further information can be found in the control systems section.*

## Features

- Fast cycle duties
- High switching frequencies
- Very good control characteristics

## Typical working media

- Liquids: Water, glycol, cooling lubricant, sodium hydroxide
- Steam: Black steam, saturated steam
- Gases: Air, nitrogen, oxygen

## Applications

- Generation and distribution of industrial and sterile steam, industrial gas, compressed air, biogas
- Batch and filling processes
- Heat exchangers and heating systems
- Heating and cooling processes in machines, systems and buildings
- Steam control for humidity regulation in production plants and buildings
- Dyeing and cleaning
- Filter systems and filter cleaning
- EPS machinery
- Parts cleaning
- Distribution of cooling lubricants in machining centres
- Water treatment: Evaporator, reverse osmosis
- PSA (pressure swing adsorption) systems: Nitrogen generators, oxygen generators



# Functional principle of globe valves



Open



Closed

## Seat seal

For soft-seated angle seat and straight seat globe valves, the seat seal is pressed against a valve seat using the force applied in the positioning element. The seat seal is stabilized here with a valve plug. The volumetric flow is shut off on the circular edge that emerges from the compression of the seat seal on the valve seat.

The tightness of the valve depends on factors including the chemical compatibility of the working medium. A PTFE gasket is used as a standard seal for the valve seats of GEMÜ globe valves. Furthermore, elastomer and metal seals are also available.

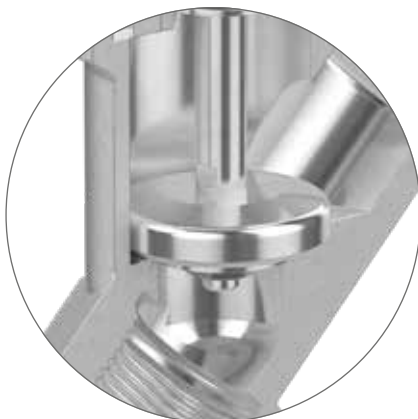
## Gland packing

The gland packing seals the valve spindle in the direction of the actuator. It prevents both emission of the working medium into the actuator and penetration of foreign matter into the working medium from outside. At high temperatures, GEMÜ uses special seal materials or stainless steel bellows. Special applications that require NBR seals or other special versions are available on request.

## Advantages of GEMÜ:

- Suitable for use in a vacuum of up to 20 mbar (absolute pressure) as standard
- Designed for fast cycle duties and high numbers of switching cycles
- Gland packing replaceable
- Special versions with bellows up to 300 °C

The stainless steel bellows take on the function of the gland packing. It is preferred for use in high-vacuum applications and/or high media temperatures. At high temperatures, it should, ideally, be combined with a metallic seal at the seat.



Globe valve seal system



Bellows valve open



Bellows valve closed

# Modular system for globe valves

With the GEMÜ modular system, we offer you the opportunity to put together a suitable valve in line with your requirements. Discover all configuration options at [www.gemu-group.com](http://www.gemu-group.com)

## Measurement and control technology

Electrical position indicators and combi switchboxes | Positioners and process controllers | Accessories



## Actuators

Manual | Pneumatic | Motorized  
Metal | Plastic



## Valve plug

Rigid | Movable



## Bodies

Angle seat body | Straight seat body | Multi-port body | Angle valve body



Configure your valve online  
at [www.gemu-group.com](http://www.gemu-group.com)



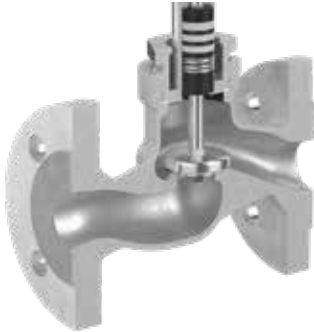
## Globe valve bodies

The variety of areas of application for globe valves also demands a variety of requirements from the valve. To satisfy these requirements, GEMÜ offers different body configurations that can be combined with GEMÜ gland packings and actuators in accordance with the modular system.

With our wide selection of connections and materials, we can cater to industrial process requirements on a case-by-case basis.



### Globe valve



- DN 15 to 150
- Ideally suited to control applications

### Angle seat globe valve



- DN 6 to 80
- Reduced vertical installation space
- Reduced pressure loss and higher flow rates

### 3/2-way globe valve



- DN 15 to 100
- Ideal for mixing, separating, aerating and de-aerating

### Angle globe valve



- Saves an additional pipe bend
- Compact design

#### Please note the flow direction

The preferred flow direction is *under the seat*. With the flow direction *over the seat*, there is a risk of water hammers. They can damage the valve and other system components. The flow direction for GEMÜ valves is permanently marked on the body.







## Manually operated globe valves

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# Overview

GEMÜ type	505	507	537	566
				
<b>Nominal sizes</b>	DN 8 to 80	DN 6 to 80	DN 15 to 50	DN 8 to 15
<b>Media temperature</b>	-10 to 185 °C	-10 to 180 °C	-10 to 180 °C	0 to 90 °C
<b>Ambient temperature</b>	-10 to 60 °C	-10 to 60 °C	-10 to 60 °C	-15 to 60 °C
<b>Operating pressure</b>	0 to 10 bar	0 to 25 bar	0 to 40 bar	0 to 6 bar
<b>Connection types</b>				
Clamp	●	●	-	●
Flange	-	●	●	-
Spigot	●	●	-	-
Threaded connection	-	●	-	●
<b>Body configurations</b>				
2/2-way body	●	●	●	●
Angle valve body	-	●	-	-
<b>Body materials</b>				
1.4408	-	●	●	-
1.4435	●	●	-	●
1.4435 (316L)	●	●	-	-
EN-GJS-400-18-LT	-	-	●	-
<b>Conformities</b>				
ATEX	●	●	●	●
CRN	●	●	●	-
EAC	●	●	●	●
FDA	●	●	●	●
Oxygen	-	●	●	-
Reg. (EU) No. 10/2011	●	●	●	-
Regulation (EC) No. 1935/2004	●	●	●	-
Regulation (EC) No. 2023/2006	●	●	●	-
USP	●	●	●	-

# GEMÜ 505

## Manually operated angle seat globe valve

The GEMÜ 505 2/2-way angle seat globe valve has a temperature resistant plastic handwheel and is manually operated. The valve is suitable for pure steam and gaseous media. The seat seal is made of PTFE. The valve spindle is sealed with a stainless steel bellows. Valve plug and valve spindle are welded together to prevent dirt ingress.

### Features

- Free from non-ferrous metals
- Welded valve plug/valve spindle design to remove possible contamination areas
- Low maintenance, fixed seat plug (without threads)
- Stainless steel bellows as spindle seal for high operating temperatures
- Batch traceability for all media-wetted components



### Technical specifications

<b>Media temperature:</b>	-10 to 185 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 8 to 80
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Clamp   Spigot
<b>Connection standards:</b>	ASME   DIN   EN   ISO
<b>Body materials:</b>	1.4435 (316L), block material   1.4435, investment casting material
<b>Seat seal materials:</b>	PTFE
<b>Conformities:</b>	ATEX   CRN   EAC   FDA   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   USP

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GW-505



# GEMÜ 507

## Manually operated angle seat globe valve

The GEMÜ 507 2/2-way angle seat globe valve has an ergonomically designed plastic handwheel and is manually operated. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage.

### Features

- Available as shut off or control valve
- High flow rates due to angle seat design
- Suitable for vacuum up to 20 mbar (a)
- Handwheel locknut for fixing the spindle, in order to set a consistent flow rate



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 25 bar
<b>Nominal sizes:</b>	DN 6 to 80
<b>Body configurations:</b>	2/2-way body   Angle valve body
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   NPT   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), block material   1.4435 (316L), forged material   1.4435, investment casting material
<b>Seat seal materials:</b>	PTFE   PTFE, reinforced
<b>Conformities:</b>	ATEX   CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   USP

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GW-507



# GEMÜ 537

## Manually operated globe valve

The GEMÜ 537 2/2-way globe valve has an ergonomically designed plastic handwheel and is manually operated. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage. A handwheel extension available as an option enables installation of the valve in insulated pipelines.

### Features

- High flow rates and compact design
- Continuous series with SG iron and stainless steel bodies
- Can be retrofitted with a pneumatic actuator
- Seat seal made of PTFE or PTFE/fibreglass
- Suitable for vacuum up to 20 mbar (a)



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 40 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   ASME   EN   ISO   JIS
<b>Body materials:</b>	1.4408, investment casting material   EN-GJS-400-18-LT, SG iron material
<b>Seat seal materials:</b>	PTFE, reinforced
<b>Conformities:</b>	ATEX   CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   USP

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# GEMÜ 566

## Manually operated control valve

The GEMÜ 566 2/2-way straight seat control valve has a body with an integrated control mechanism. Manual, pneumatic and motorized actuator types are available. The GEMÜ 566 valve was specially developed for controlling small quantities and allows flow rates from 63 l/h to 2500 l/h.

### Features

- Control of liquid and gaseous media from 63 l/h to 2500 l/h
- Linear or equal-percentage control characteristic options
- Hermetic separation between medium and actuator
- Actuator and actuator type can be changed without draining or removing the valve body from the piping
- Various types of actuators available



### Technical specifications

<b>Media temperature:</b>	0 to 90 °C
<b>Ambient temperature:</b>	-15 to 60 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 8 to 15
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Clamp   Threaded connection
<b>Connection standards:</b>	ASME   DIN   EN   ISO
<b>Body materials:</b>	1.4435, investment casting material
<b>Seat seal materials:</b>	1.4435
<b>Conformities:</b>	ATEX   EAC   FDA

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GW-566



## Pneumatically operated angle seat globe valves

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# Overview

GEMÜ type	514	550	554	555
				
<b>Special feature</b>	Robust actuator made from aluminium	Precise actuator design depends on operating pressure	Light piston actuator made of plastic	Free from non-ferrous metals
<b>Nominal sizes</b>	DN 8 to 80	DN 6 to 80	DN 6 to 80	DN 8 to 80
<b>Media temperature</b>	-10 to 180 °C	-10 to 180 °C	-10 to 180 °C	-10 to 185 °C
<b>Ambient temperature</b>	-10 to 60 °C	-10 to 60 °C	-10 to 60 °C	-10 to 60 °C
<b>Operating pressure</b>	0 to 25 bar	0 to 25 bar	0 to 25 bar	0 to 10 bar
<b>Connection types</b>				
Clamp	•	•	•	•
Flange	•	•	•	-
Spigot	•	•	•	•
Threaded connection	•	•	•	-
<b>Body configurations</b>				
2/2-way body	•	•	•	•
Angle valve body	•	•	•	-
Multi-port body	-	•	-	•
<b>Body materials</b>				
1.4408	•	•	•	-
1.4435	•	•	•	•
1.4435 (316L)	-	•	•	•
CC499K	•	-	•	-
<b>Conformities</b>				
ATEX	-	•	•	•
CRN	•	•	•	•
EAC	•	•	•	•
FDA	•	•	•	•
Oxygen	•	•	•	•
Reg. (EU) No. 10/2011	•	•	•	•
Regulation (EC) No. 1935/2004	•	•	•	•
Regulation (EC) No. 2023/2006	-	•	-	•
SIL	•	•	•	•
USP	-	•	•	•

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 514

## Pneumatically operated angle seat globe valve

The GEMÜ 514 2/2-way angle seat globe valve has a low maintenance aluminium piston actuator and is pneumatically operated. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage.

### Features

- Robust actuator housing made of aluminium
- High flow rates due to angle seat design
- Stainless steel bellows as spindle seal for high operating temperatures
- Special connections and materials on request
- Suitable for vacuum up to 20 mbar (a)



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 25 bar
<b>Nominal sizes:</b>	DN 8 to 80
<b>Body configurations:</b>	2/2-way body   Angle valve body
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   NPT   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435, investment casting material   CC499K, cast bronze material
<b>Seat seal materials:</b>	1.4404   PTFE   PTFE, reinforced
<b>Conformities:</b>	CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   SIL

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GW-514





# GEMÜ 550

## Pneumatically operated angle seat globe valve

The GEMÜ 550 2/2-way angle seat globe valve has a low maintenance stainless steel piston actuator and is pneumatically operated. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage.

### Features

- Suitable for isolating and control functions with gaseous and liquid media
- Suitable for vacuum up to 20 mbar (a)
- Wide range of adaptation options for add-on components and accessories
- Free from non-ferrous metals
- Optional for food contact according to Regulation (EC) No. 1935/2004
- Particularly compact design, actuator size 0



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 25 bar
<b>Nominal sizes:</b>	DN 6 to 80
<b>Body configurations:</b>	2/2-way body   Angle valve body   Multi-port body
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   NPT   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), block material   1.4435 (316L), forged material   1.4435, investment casting material
<b>Seat seal materials:</b>	PTFE   PTFE, reinforced
<b>Conformities:</b>	ATEX   CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   SIL   USP

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GW-550



# GEMÜ 554

## Pneumatically operated angle seat globe valve

The GEMÜ 554 2/2-way angle seat globe valve has a plastic piston actuator and is pneumatically operated. The valve spindle is sealed by a self-adjusting gland packing or a compact seal cartridge, dependent on the size and version. A wiper ring or the wiper contour of the seal cartridge additionally protects the valve spindle against contamination and damage. This provides low maintenance and reliable spindle sealing even after a long service life.

### Features

- Available as shut off or control valve
- Low actuator weight due to plastic body
- Faster actuator replacement and free actuator positioning due to fixing via union nut
- Standard actuator can be replaced with 550 or 514 on request
- Suitable for vacuum up to 20 mbar (a)
- Particularly compact design, actuator size 0



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 25 bar
<b>Nominal sizes:</b>	DN 6 to 80
<b>Body configurations:</b>	2/2-way body   Angle valve body
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   NPT   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435, investment casting material   CC499K, cast bronze material
<b>Seat seal materials:</b>	NBR   PFA   PTFE   PTFE, reinforced
<b>Conformities:</b>	ATEX   CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   SIL   USP

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GW-554



# GEMÜ 555

## Pneumatically operated angle seat globe valve

The GEMÜ 555 2/2-way angle seat globe valve has a stainless steel piston actuator and is pneumatically operated. The valve is particularly designed for isolating pure steam. The valve has a PTFE seat for tight shut off. The valve spindle is sealed by a stainless steel bellows. Valve plug and valve spindle are welded to prevent contamination areas.

### Features

- Free from non-ferrous metals
- Welded valve plug/valve spindle design to remove possible contamination areas
- Low maintenance, fixed seat plug (without threads)
- Stainless steel bellows as spindle seal for high operating temperatures
- Batch traceability for all media-wetted components



### Technical specifications

<b>Media temperature:</b>	-10 to 185 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 8 to 80
<b>Body configurations:</b>	2/2-way body   Multi-port body
<b>Connection types:</b>	Clamp   Spigot
<b>Connection standards:</b>	ASME   DIN   EN   ISO
<b>Body materials:</b>	1.4435 (316L), block material   1.4435, investment casting material
<b>Seat seal materials:</b>	PTFE
<b>Conformities:</b>	ATEX   CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   Regulation (EC) No. 2023/2006   SIL   USP

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GW-555



## Pneumatically operated globe valves

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# Overview

GEMÜ type	530	532	534	536	566
					
<b>Special feature</b>		Robust actuator made from aluminium	Light piston actuator made of plastic	Large nominal sizes	
<b>Nominal sizes</b>	DN 15 to 100	DN 15 to 100	DN 15 to 100	DN 50 to 150	DN 8 to 15
<b>Media temperature</b>	-10 to 180 °C	-10 to 180 °C	-10 to 180 °C	-10 to 180 °C	0 to 90 °C
<b>Ambient temperature</b>	-10 to 60 °C	-10 to 60 °C	-10 to 60 °C	-10 to 60 °C	-15 to 60 °C
<b>Operating pressure</b>	0 to 40 bar	0 to 40 bar	0 to 40 bar	0 to 40 bar	0 to 6 bar
<b>Connection types</b>					
Clamp	-	-	-	-	•
Flange	•	•	•	•	-
Threaded connection	-	-	-	-	•
<b>Body materials</b>					
1.4408	•	•	•	•	-
1.4435	-	-	-	-	•
EN-GJS-400-18-LT	•	•	•	•	-
<b>Conformities</b>					
ATEX	•	-	•	•	•
CRN	•	•	•	•	-
EAC	•	•	•	•	•
FDA	•	•	•	-	•
Oxygen	•	•	•	•	-
Reg. (EU) No. 10/2011	•	•	•	-	-
Regulation (EC) No. 1935/2004	•	•	•	-	-
SIL	•	•	•	-	-

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 530

## Pneumatically operated globe valve

The GEMÜ 530 2/2-way globe valve has a rugged low maintenance stainless steel piston actuator and is pneumatically operated. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage.

### Features

- Available as shut-off or control valve
- Stainless steel actuator resistant to corrosive ambient conditions
- Optionally with rapid venting valve for preventing the penetration of ambient media
- Faster actuator replacement and easily rotatable due to fixing via union nut
- Suitable for vacuum up to 20 mbar (a)



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 40 bar
<b>Nominal sizes:</b>	DN 15 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   ASME   EN   ISO   JIS
<b>Body materials:</b>	1.4408, cast stainless steel material   EN-GJS-400-18-LT, SG iron material
<b>Seat seal materials:</b>	PTFE   PTFE, reinforced
<b>Conformities:</b>	ATEX   CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   SIL

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GW-530



# GEMÜ 532

## Pneumatically operated globe valve

The GEMÜ 532 2/2-way globe valve has a robust low maintenance aluminium piston actuator and is pneumatically operated. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage.

### Features

- Available as shut-off or control valve
- Robust actuator housing made of aluminium
- Low frictional forces due to the plastic sleeve in the actuator enable improved control results
- Faster actuator replacement and easily rotatable due to fixing via union nut
- Available with stainless steel bellows as the spindle seal
- Suitable for vacuum up to 20 mbar (a)



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 40 bar
<b>Nominal sizes:</b>	DN 15 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   ASME   EN   ISO   JIS
<b>Body materials:</b>	1.4408, investment casting material   EN-GJS-400-18-LT, SG iron material
<b>Seat seal materials:</b>	1.4404   PTFE   PTFE, reinforced
<b>Conformities:</b>	CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   SIL

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GW-532



# GEMÜ 534

## Pneumatically operated globe valve

The GEMÜ 534 2/2-way globe valve has a plastic piston actuator and is pneumatically operated. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage.

### Features

- Available as shut-off or control valve
- Low actuator weight due to plastic body
- Faster actuator replacement and easily rotatable due to fixing via union nut
- Standard actuator can be replaced with 530 or 532 on request
- Suitable for vacuum up to 20 mbar (a)



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 40 bar
<b>Nominal sizes:</b>	DN 15 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   ASME   EN   ISO   JIS
<b>Body materials:</b>	1.4408, cast stainless steel material   EN-GJS-400-18-LT, SG iron material
<b>Seat seal materials:</b>	PTFE   PTFE, reinforced
<b>Conformities:</b>	ATEX   CRN   EAC   FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004   SIL

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GW-534





# GEMÜ 536

## Pneumatically operated globe valve

The GEMÜ 536 2/2-way globe valve has a rugged low maintenance membrane actuator and is pneumatically operated. The valve is particularly suitable for use as a control valve. The valve plug is fixed to the spindle in such a way as to allow flexing during closure in order to ensure tight shut off. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage.

### Features

- Available as shut-off or control valve
- Precise controllability with guided regulating cage and actuator membrane
- Flow rate values of up to 380 m<sup>3</sup>/h
- Suitable for vacuum up to 20 mbar (a)
- Versions for higher temperatures are available on request



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 40 bar
<b>Nominal sizes:</b>	DN 50 to 150
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   EN   ISO
<b>Body materials:</b>	1.4408, investment casting material   EN-GJS-400-18-LT, SG iron material
<b>Seat seal materials:</b>	PTFE   PTFE, reinforced
<b>Conformities:</b>	ATEX   CRN   EAC   Oxygen

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GW-536



# GEMÜ 566

## Pneumatically operated control valve

The GEMÜ 566 2/2-way straight seat control valve has a body with an integrated control mechanism. Manual, pneumatic and motorized actuator types are available. The GEMÜ 566 valve was specially developed for controlling small quantities and allows flow rates from 63 l/h to 2500 l/h.

### Features

- Control of liquid and gaseous media from 63 l/h to 2500 l/h
- Linear or equal-percentage control characteristic options
- Hermetic separation between medium and actuator
- Actuator and actuator type can be changed without draining or removing the valve body from the piping
- Various types of actuators available



### Technical specifications

<b>Media temperature:</b>	0 to 90 °C
<b>Ambient temperature:</b>	-15 to 60 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 8 to 15
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Clamp   Threaded connection
<b>Connection standards:</b>	ASME   DIN   EN   ISO
<b>Body materials:</b>	1.4435, investment casting material
<b>Seat seal materials:</b>	1.4435
<b>Conformities:</b>	ATEX   EAC   FDA

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GW-566








## Motorized globe valves




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# Overview

GEMÜ type	533 eSyStep	543 eSyStep	549 eSyDrive
			
<b>Special feature</b>	Universal actuator, option with integrated positioner	Universal actuator, option with integrated positioner	Premium actuator with integrated positioner and process controller
<b>Nominal sizes</b>	DN 15 to 50	DN 6 to 50	DN 10 to 80
<b>Media temperature</b>	-10 to 180 °C	-10 to 180 °C	-10 to 180 °C
<b>Ambient temperature</b>	0 to 60 °C	0 to 60 °C	-10 to 60 °C
<b>Operating pressure</b>	0 to 40 bar	0 to 25 bar	0 to 25 bar
<b>Supply voltages</b>			
120 V AC, 50/60 Hz	-	-	-
230 V AC, 50/60 Hz	-	-	-
24 V AC, 50/60 Hz	-	-	-
24 V DC	•	•	•
<b>Actuating speed</b>			
max. 3 mm/s	•	•	-
max. 6 mm/s	-	-	•
<b>Connection types</b>			
Clamp	-	•	•
Flange	•	•	•
Spigot	-	•	•
Threaded connection	-	•	•
<b>Body configurations</b>			
2/2-way body	•	•	•
Angle valve body	-	•	•
<b>Body materials</b>			
1.4408	•	•	•
1.4435	-	•	•
1.4435 (316L)	-	•	•
CC499K	-	•	-
EN-GJS-400-18-LT	•	-	-
PVC-U	-	-	-
PVDF	-	-	-
<b>Conformities</b>			
EAC	-	-	-
FDA	•	•	•
Oxygen	-	-	•
Reg. (EU) No. 10/2011	-	-	•
Regulation (EC) No. 1935/2004	•	•	•

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

GEMÜ type	539 eSyDrive	563	566
			
<b>Special feature</b>	Premium actuator with integrated positioner and process controller	Valve bodies made of plastic	
<b>Nominal sizes</b>	DN 15 to 100	DN 3 to 15	DN 8 to 15
<b>Media temperature</b>	-10 to 180 °C	0 to 90 °C	0 to 90 °C
<b>Ambient temperature</b>	-10 to 60 °C	0 to 40 °C	0 to 60 °C
<b>Operating pressure</b>	0 to 40 bar	0 to 6 bar	0 to 6 bar
<b>Supply voltages</b>			
120 V AC, 50/60 Hz	-	•	-
230 V AC, 50/60 Hz	-	•	-
24 V AC, 50/60 Hz	-	•	-
24 V DC	•	-	•
<b>Actuating speed</b>			
max. 3 mm/s	-	•	•
max. 6 mm/s	•	-	-
<b>Connection types</b>			
Clamp	-	•	•
Flange	•	-	-
Spigot	-	-	-
Threaded connection	-	•	•
<b>Body configurations</b>			
2/2-way body	•	•	•
Angle valve body	-	-	-
<b>Body materials</b>			
1.4408	•	-	-
1.4435	-	•	•
1.4435 (316L)	-	-	-
CC499K	-	-	-
EN-GJS-400-18-LT	•	-	-
PVC-U	-	•	-
PVDF	-	•	-
<b>Conformities</b>			
EAC	-	•	•
FDA	•	-	•
Oxygen	-	-	-
Reg. (EU) No. 10/2011	•	-	-
Regulation (EC) No. 1935/2004	•	-	-

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 533 eSyStep

## Motorized globe valve

The GEMÜ 533 is a motorized 2/2-way globe valve. The eSyStep electric actuator is available as ON/OFF or with integrated positioner. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage. An integral optical and electrical position indicator is standard. The self-locking actuator holds its position in a stable manner when idle and in the event of power supply failure.

### Features

- Suitable for vacuum up to 20 mbar (a)
- Actuating speed max. 3 mm/s
- Open/close function or with integrated positioner
- Parameterizable via IO-Link
- Linear or modified equal-percentage control characteristics
- On-site or remote end position programming via programming input
- Various functions integrated (e.g. feedback, stroke limiter, etc.)



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 40 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   EN   JIS
<b>Body materials:</b>	1.4408, investment casting material   EN-GJS-400-18-LT, SG iron material
<b>Seat seal materials:</b>	1.4404   PTFE   PTFE, reinforced
<b>Supply voltage:</b>	24 V DC
<b>Actuating speed:</b>	max. 3 mm/s
<b>Protection class:</b>	IP 65
<b>Conformities:</b>	FDA   Regulation (EC) No. 1935/2004

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GW-533





# GEMÜ 543 eSyStep

## Motorized angle seat globe valve

The GEMÜ 543 eSyStep is a motorized 2/2-way angle seat globe valve. The eSyStep electric actuator is available as ON/OFF or with integrated positioner. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage. An integral optical and electrical position indicator is standard. The self-locking actuator holds its position in a stable manner when idle and in the event of power supply failure.

### Features

- CIP/SIP capable (only with stainless steel distance piece)
- Linear or modified equal-percentage control characteristics
- Open/close function or with integrated positioner
- Actuating speed max. 3 mm/s
- Parameterizable via IO-Link
- On-site or remote end position programming via programming input
- Various functions integrated (e.g. feedback, stroke limiter, etc.)



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 25 bar
<b>Nominal sizes:</b>	DN 6 to 50
<b>Body configurations:</b>	2/2-way body   Angle valve body
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   NPT   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435, investment casting material   CC499K, cast bronze material
<b>Seat seal materials:</b>	PTFE   PTFE, reinforced
<b>Supply voltage:</b>	24 V DC
<b>Actuating speed:</b>	max. 3 mm/s
<b>Protection class:</b>	IP 65
<b>Conformities:</b>	FDA   Regulation (EC) No. 1935/2004

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GW-543



# GEMÜ 539 eSyDrive

## Motorized globe valve

The GEMÜ 539 is a motorized 2/2-way globe valve with a hollow shaft electric actuator. The eSyDrive hollow shaft actuator can be operated as ON/OFF or with integrated positioner or process controller. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage. An integral optical and electrical position indicator is standard.

### Features

- Linear or modified equal-percentage control characteristics
- High flow rates
- Force and speed are variably adjustable
- Extensive diagnostic facilities
- Operable via web interface eSy-Web
- Integral optical position indicator and LED high visibility display
- Suitable for vacuum up to 20 mbar (a)



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 40 bar
<b>Nominal sizes:</b>	DN 15 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   ASME   EN   ISO   JIS
<b>Body materials:</b>	1.4408, investment casting material   EN-GJS-400-18-LT, SG iron material
<b>Seat seal materials:</b>	1.4404   PTFE   PTFE, reinforced
<b>Supply voltage:</b>	24 V DC
<b>Actuating speed:</b>	max. 6 mm/s
<b>Protection class:</b>	IP 65, IP 61
<b>Conformities:</b>	FDA   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004

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GW-539



# GEMÜ 549 eSyDrive

## Motorized angle seat globe valve

The GEMÜ 549 eSyDrive is a motorized 2/2-way angle seat globe valve with a hollow shaft electric actuator. The eSyDrive hollow shaft actuator can be operated as ON/OFF or with integrated positioner or process controller. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage. An integral optical and electrical position indicator is standard.

### Features

- CIP/SIP capable
- Linear or modified equal-percentage control characteristics
- Open/close function, positioner and process controller
- Force and speed are variably adjustable
- Actuating speed max. 6 mm/s
- Extensive diagnostic functions
- Operable via web interface eSy-Web or Modbus TCP
- On-site or remote end position programming via programming input
- Various functions integrated (e.g. feedback, stroke limiter, etc.)



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 25 bar
<b>Nominal sizes:</b>	DN 10 to 80
<b>Body configurations:</b>	2/2-way body   Angle valve body
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   NPT   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (316L), forged material   1.4435, investment casting material
<b>Seat seal materials:</b>	1.4404   PTFE   PTFE, reinforced
<b>Supply voltage:</b>	24 V DC
<b>Actuating speed:</b>	max. 6 mm/s
<b>Protection class:</b>	IP 65, IP 61
<b>Conformities:</b>	FDA   Oxygen   Reg. (EU) No. 10/2011   Regulation (EC) No. 1935/2004

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GW-549



# GEMÜ 563

## Motorized control valve

The GEMÜ 563 2/2-way globe control valve has a motorized actuator and a low maintenance reversible synchronous motor. Operation takes place via a non-self-locking reduction gear and cam. An integral optical position indicator is standard.

### Features

- Direct processing of 0/4 – 20 mA signals via the integrated controller
- Opening and closing behaviour is independent of the operating pressure
- Hermetic separation between medium and actuator
- Isolating diaphragm made of FPM or EPDM
- Regulating cone made of PEEK



### Technical specifications

<b>Media temperature:</b>	0 to 90 °C
<b>Ambient temperature:</b>	0 to 40 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 3 to 15
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Clamp   Threaded connection
<b>Connection standards:</b>	DIN   EN   ISO
<b>Body materials:</b>	1.4435, investment casting material   PVC-U, grey   PVDF
<b>Seat seal materials:</b>	PEEK
<b>Supply voltage:</b>	120 V AC, 50/60 Hz   230 V AC, 50/60 Hz   24 V AC, 50/60 Hz
<b>Actuating speed:</b>	max. 3 mm/s
<b>Protection class:</b>	IP 65
<b>Conformities:</b>	EAC

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GW-563



# GEMÜ 566

## Motorized control valve

The GEMÜ 566 2/2-way straight seat control valve has a body with an integrated control mechanism. Manual, pneumatic and motorized actuator types are available. The GEMÜ 566 valve was specially developed for controlling small quantities and allows flow rates from 63 l/h to 2500 l/h.

### Features

- Control of liquid and gaseous media from 63 l/h to 2500 l/h
- Linear or equal-percentage control characteristic options
- Hermetic separation between medium and actuator
- Actuator and actuator type can be changed without draining or removing the valve body from the piping
- Various types of actuators available



### Technical specifications

<b>Media temperature:</b>	0 to 90 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 8 to 15
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Clamp   Threaded connection
<b>Connection standards:</b>	ASME   DIN   EN   ISO
<b>Body materials:</b>	1.4435, investment casting material
<b>Seat seal materials:</b>	1.4435
<b>Supply voltage:</b>	24 V DC
<b>Actuating speed:</b>	max. 3 mm/s
<b>Protection class:</b>	IP 65
<b>Conformities:</b>	EAC   FDA

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GW-566






## Multi-port and M-block globe valves

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# Overview

GEMÜ type	312	314	352
			
<b>Special feature</b>			Light piston actuator made of plastic
<b>Nominal sizes</b>	DN 15 to 100	DN 15 to 50	DN 15 to 100
<b>Media temperature</b>	-10 to 180 °C	-10 to 180 °C	-10 to 180 °C
<b>Ambient temperature</b>	-10 to 60 °C	-10 to 60 °C	-10 to 60 °C
<b>Operating pressure</b>	0 to 16 bar	0 to 16 bar	0 to 16 bar
<b>Connection types</b>			
Clamp	-	-	-
Flange	●	-	●
Spigot	-	-	-
Threaded connection	-	●	-
<b>Body materials</b>			
1.4408	●	-	●
1.4435 (316L)	-	-	-
CC499K	-	●	-
<b>Conformities</b>			
ATEX	-	-	●
EAC	●	●	-
FDA	-	-	-
Oxygen	●	-	●
Regulation (EC) No. 1935/2004	-	-	-

Technical data depends on the respective configuration - see datasheet or Product Selection Tool



GEMÜ type	354	553	P500M
			
<b>Special feature</b>		Flexible modular system	Individually configurable
<b>Nominal sizes</b>	DN 15 to 50	DN 15 to 20	DN 15 to 50
<b>Media temperature</b>	-10 to 180 °C	-10 to 180 °C	-10 to 180 °C
<b>Ambient temperature</b>	-10 to 60 °C	-10 to 60 °C	0 to 60 °C
<b>Operating pressure</b>	0 to 16 bar	0 to 25 bar	0 to 25 bar
<b>Connection types</b>			
Clamp	-	-	•
Flange	-	-	-
Spigot	-	-	•
Threaded connection	•	•	•
<b>Body materials</b>			
1.4408	-	•	-
1.4435 (316L)	-	-	•
CC499K	•	-	-
<b>Conformities</b>			
ATEX	•	•	•
EAC	•	-	-
FDA	-	-	•
Oxygen	•	-	-
Regulation (EC) No. 1935/2004	-	-	•

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 312

## Pneumatically operated multi-port globe valve

The GEMÜ 312 3/2-way globe valve has a rugged low maintenance aluminium piston actuator and is pneumatically operated. The double sided valve plug is connected to the actuator via a spindle. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage.

### Features

- Suitable for mixing and distributing media
- Robust actuator housing made of aluminium
- Available as shut off or control valve
- Materials of wetted parts can be selected to suit the requirements of the relevant applications



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 15 to 100
<b>Body configurations:</b>	Multi-port body
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   DIN   EN   ISO
<b>Body materials:</b>	1.4408, investment casting material
<b>Seat seal materials:</b>	PTFE   PTFE, reinforced
<b>Conformities:</b>	EAC   Oxygen

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GW-312



# GEMÜ 314

## Pneumatically operated multi-port globe valve

The GEMÜ 314 3/2-way globe valve has a rugged low maintenance aluminium piston actuator and is pneumatically operated. The double sided valve plug is connected to the actuator via a spindle. The valve spindle is sealed by a self-adjusting gland packing providing low maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage.

### Features

- Suitable for mixing and distributing media
- Robust actuator housing made of aluminium
- Available as shut off or control valve
- Materials of wetted parts can be selected to suit the requirements of the relevant applications



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Body configurations:</b>	Multi-port body
<b>Connection types:</b>	Threaded connection
<b>Connection standards:</b>	ANSI   DIN   EN   ISO
<b>Body materials:</b>	CC499K, cast bronze material
<b>Seat seal materials:</b>	PTFE   PTFE, reinforced
<b>Conformities:</b>	EAC

Go online!



GW-314



# GEMÜ 352

## Pneumatically operated multi-port globe valve

The GEMÜ 352 3/2-way globe valve has a rugged low-maintenance plastic piston actuator and is pneumatically operated. The connection for the control medium can be rotated through 360°. The double sided valve plug is connected to the actuator via a valve spindle. The valve spindle is sealed by a self-adjusting gland packing providing low-maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage.

### Features

- Suitable for mixing and distributing media
- Lightweight plastic piston actuator, free from non-ferrous metals
- Available as shut off or control valve
- Materials of wetted parts can be selected to suit the requirements of the relevant applications



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 15 to 100
<b>Body configurations:</b>	Multi-port body
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   EN   ISO
<b>Body materials:</b>	1.4408, investment casting material
<b>Seat seal materials:</b>	PTFE   PTFE, reinforced
<b>Conformities:</b>	ATEX   Oxygen

Go online!



GW-352



# GEMÜ 354

## Pneumatically operated multi-port globe valve

The GEMÜ 354 3/2-way globe valve has a rugged low-maintenance plastic piston actuator and is pneumatically operated. The connection for the control medium can be rotated through 360°. The double sided valve plug is connected to the actuator via a valve spindle. The valve spindle is sealed by a self-adjusting gland packing providing low-maintenance and reliable valve spindle sealing even after a long service life. A wiper ring fitted in front of the gland packing protects the seal against contamination and damage.

### Features

- Simple adaptation for use as a control valve
- Seat seal made of PTFE or PTFE/fibreglass
- Materials of wetted parts can be selected to suit relevant applications



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Body configurations:</b>	Multi-port body
<b>Connection types:</b>	Threaded connection
<b>Connection standards:</b>	DIN   ISO
<b>Body materials:</b>	CC499K, cast bronze material
<b>Seat seal materials:</b>	PTFE   PTFE, reinforced
<b>Conformities:</b>	ATEX   EAC   Oxygen

Go online!



GW-354



# GEMÜ 553

## Modular distribution valve

The modular GEMÜ 553 distribution valve comprises various globe valve modules. These can be equipped with manual or pneumatic actuators. The downstream media is isolated using a PTFE seal. The valve spindle is sealed by a self-adjusting gland packing. This provides a low-maintenance and reliable valve spindle seal even after an extended period of operation. The wiper ring that is installed upstream of the gland packing also protects this against contamination and damage. The individual modules can be easily connected using screws.

### Features

- Space-saving modular design
- Reduced servicing times of the plant compared with single valves as the complete module can be replaced
- Up to 10 single modules can be flexibly combined together
- Can be ordered ready configured
- Faster actuator replacement and easily rotatable due to fixing via union nut



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 25 bar
<b>Nominal sizes:</b>	DN 15 to 20
<b>Body configurations:</b>	Multi-port body
<b>Connection types:</b>	Threaded connection
<b>Connection standards:</b>	DIN   ISO   NPT
<b>Body materials:</b>	1.4408, investment casting material
<b>Seat seal materials:</b>	PTFE
<b>Conformities:</b>	ATEX

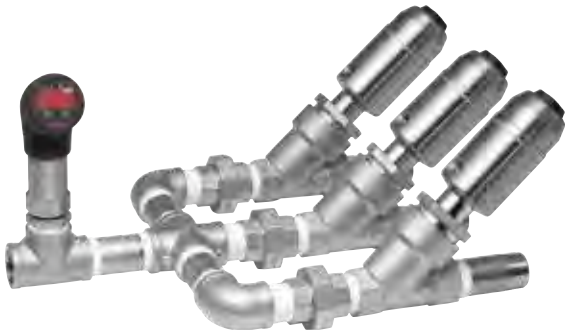
Go online!



GW-553



## Conventional design



- Several 2/2-way valves with additional piping and gaskets
- Considerable effort to expand later
- Valves are ordered individually and connected on-site

## GEMÜ 553 modular system



- Individual modules can be fitted directly
- Modules and sensor system can be fitted easily
- Complete system available for ordering under a single item number

### Advantages at a glance

#### Compact design

Saves space and material by being directly linked to the modules

#### Simple installation

Saves time and costs during installation and maintenance

#### Flexible modular system

Highly flexible design and customized configuration

# GEMÜ P500M

## Stainless steel multi-port globe valve block

The GEMÜ P500M stainless steel valve block comprises two or more globe valves. These can be equipped with manual, pneumatic and motorized actuators. The downstream media is isolated using a valve plug/seat.

### Features

- Compact design saves space
- Individual, customized and flexible design
- Fewer connection points and weld seams
- Huge variety of functions combined in the smallest of spaces
- Highly suitable for control applications
- Actuators, gland packing and automation components can be used from the tried-and-tested GEMÜ modular system



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 25 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Body configurations:</b>	Multi-port body
<b>Connection types:</b>	Clamp   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   BS   DIN   EN   ISO   NPT   SMS
<b>Body materials:</b>	1.4435 (316L), block material
<b>Seat seal materials:</b>	NBR   PFA   PTFE   PTFE, reinforced
<b>Conformities:</b>	ATEX   FDA   Regulation (EC) No. 1935/2004

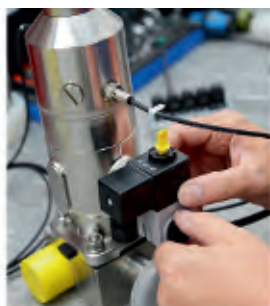




## Add-on components for globe valves

GEMÜ type	312	314	352	354	514	530	532
<b>Measurement and control technology</b>							
<b>Electrical position indicators</b>							
GEMÜ 1201 / 1211 / 1214 ▶ page 304	•	•	•		•	•	•
GEMÜ 1205 ▶ page 305	•	•			•	•	
GEMÜ 1215 ▶ page 302	•	•			•	•	•
GEMÜ 1230 / 1231 / 1232 ▶ page 303	•	•	•	•	•	•	•
GEMÜ 1234 ▶ page 306						•	•
GEMÜ 1235 / 1236 ▶ page 307	•	•	•	•	•	•	•
GEMÜ 1242 ▶ page 308					•	•	•
<b>Combi switchboxes</b>							
GEMÜ 4240 ▶ page 314						•	
GEMÜ 4241 ▶ page 315							
GEMÜ 4242 ▶ page 316	•	•			•	•	•
<b>Pilot valve</b>							
GEMÜ 0324 ▶ page 323	•	•	•	•	•	•	•
<b>Control systems</b>							
<b>Positioner</b>							
GEMÜ 1434 µPos ▶ page 282	•	•	•	•	•	•	•
GEMÜ 1435 ePos ▶ page 284	•	•	•		•	•	•
<b>Positioner and process controller</b>							
GEMÜ 1436 cPos ▶ page 285	•	•	•	•	•	•	•
<b>Accessories</b>							
Connection accessories ▶ page 355	•	•	•	•	•	•	•
Clamping devices ▶ page 358							
Manual overrides ▶ page 361	•	•			•	•	•
Stroke limiters ▶ page 360	•	•	•	•	•	•	•
Sensor accessories ▶ page 362	•	•	•	•	•	•	•
Position indicators ▶ page 359	•	•	•	•	•	•	•

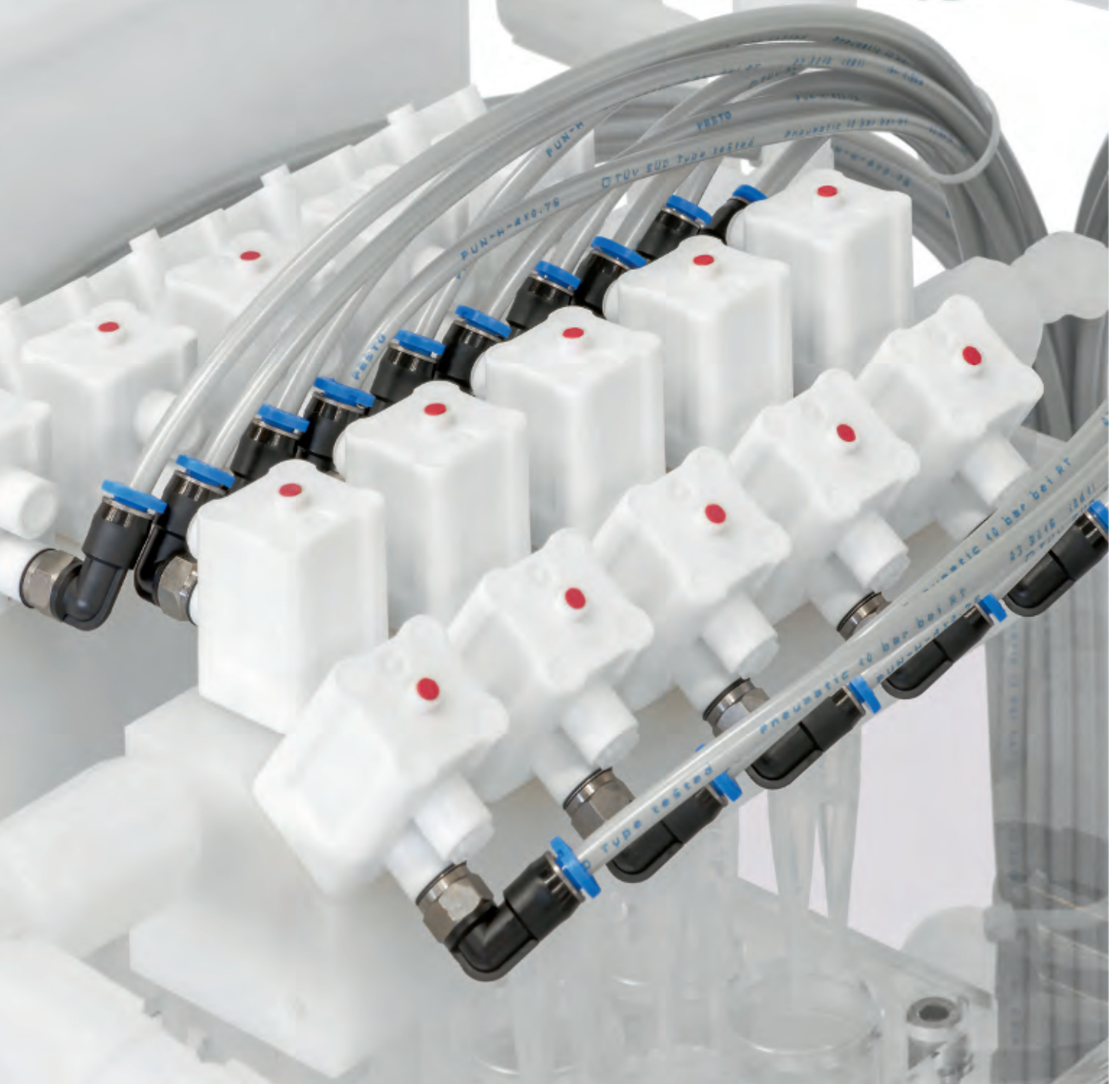
GEMÜ valves are fully assembled in our in-house Assembly department – with compatible accessories on request.



Our pre-assembled solutions are supplied to you preset and tested. Not only can you obtain all components from a single source, you also save on the time and effort required for logistics and installation of the plant on site, as well as for documentation.



GEMÜ type	534	536	550	553	554	555	566
<b>Measurement and control technology</b>							
<b>Electrical position indicators</b>							
GEMÜ 1201 / 1211 / 1214 ▶ page 304	•	•	•		•		
GEMÜ 1205 ▶ page 305	•	•	•		•		
GEMÜ 1215 ▶ page 302	•		•	•	•	•	
GEMÜ 1230 / 1231 / 1232 ▶ page 303	•		•		•	•	
GEMÜ 1234 ▶ page 306	•		•	•	•		
GEMÜ 1235 / 1236 ▶ page 307	•	•	•		•	•	
GEMÜ 1242 ▶ page 308	•	•	•		•		
<b>Combi switchboxes</b>							
GEMÜ 4240 ▶ page 314	•		•		•		
GEMÜ 4241 ▶ page 315			•		•		
GEMÜ 4242 ▶ page 316	•	•	•		•	•	
<b>Pilot valve</b>							
GEMÜ 0324 ▶ page 323	•	•	•		•	•	
<b>Control systems</b>							
<b>Positioner</b>							
GEMÜ 1434 µPos ▶ page 282	•		•		•	•	•
GEMÜ 1435 ePos ▶ page 284	•	•	•		•	•	•
<b>Positioner and process controller</b>							
GEMÜ 1436 cPos ▶ page 285	•	•	•		•	•	•
<b>Accessories</b>							
Connection accessories ▶ page 355	•	•	•		•	•	
Clamping devices ▶ page 358			•				
Manual overrides ▶ page 361	•	•	•		•		
Stroke limiters ▶ page 360	•	•	•		•	•	
Sensor accessories ▶ page 362	•	•	•		•	•	
Position indicators ▶ page 359	•	•	•	•	•		



## Diaphragm globe valves

## Description

Valves that combine the advantages of the hermetic sealing of an actuator and the medium of a diaphragm valve with the advantages of a globe valve are designated as diaphragm globe valves.

GEMÜ diaphragm globe valves are suitable both for open/close applications and for control and dosing applications. The PTFE diaphragms used reliably isolate the medium from the actuator. The valves are easy to clean and, in comparison with valves with bellows, have significantly reduced deadlegs. A pretensioning element included in the actuator guarantees external leak tightness, even with temperature fluctuations and settling of the plastic parts. The valves are available with a straight through body, angle valve body or as M-block systems.

## Features

- CIP/SIP capable and autoclavable
- Available with linear or equal-percentage control characteristic
- Hermetic separation of the actuator from the medium using a sealing diaphragm
- High number of switching cycles
- Various valve body connections available
- Customized block designs possible
- Compact design
- No "lift effect" thanks to the use of the GEMÜ PD design

## Typical working media

- Inert and corrosive media
- Liquids and gases

## Applications





- Dosing at minimum quantities
- Suitable for media containing oil or grease
- Isolation of sensitive process media
- All types of media for filling machines (vacuum, liquid, gaseous)
- Filling processes in hygienic and aseptic plants in the pharmaceutical, biotechnology, food and beverage industries



## Manually and pneumatically operated diaphragm globe valves

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# Overview

GEMÜ type	C51 iComLine	C57 iComLine	C50 iComLine	PC50 iComLine
				
<b>Nominal sizes</b>	DN 4 to 25	DN 4 to 25	DN 4 to 25	DN 4 to 40
<b>Media temperature</b>	-10 to 150 °C	-10 to 150 °C	-10 to 150 °C	-10 to 200 °C
<b>Ambient temperature</b>	0 to 60 °C	0 to 60 °C	0 to 60 °C	0 to 60 °C
<b>Operating pressure</b>	0 to 6 bar	0 to 6 bar	0 to 6 bar	0 to 6 bar
<b>Connection types</b>				
Clamp	-	-	-	•
Flare	•	•	•	•
PrimeLock®	•	•	•	•
Super 300 Type Pillar®	•	•	•	•
Threaded connection	-	-	-	•
Threaded socket	-	-	-	•
Union end	-	-	-	•
Yodogawa Nano Link	-	-	-	•
<b>Body materials</b>				
	-	-	-	•
PFA	•	•	•	-
PP	-	-	-	•
PTFE	•	•	•	•
PVC	-	-	-	•
PVDF	-	-	-	•
<b>Conformities</b>				
EAC	•	•	•	-
FDA	•	•	•	-



# GEMÜ C51 iComLine

## Manually operated diaphragm globe valve

The GEMÜ C51 iComLine ultra-pure 2/2-way plastic diaphragm globe valve is manually operated using a hand lever (quarter turn). All media-wetted parts are made of PTFE. The external actuator parts are made of PVDF. In addition to 2/2-way valve bodies, customized multi-port valve block solutions can be produced.

### Features

- Low space requirement due to compact design
- Ideally suited for corrosive media
- High purity due to cleanroom manufacturing
- Manifolds are a space-saving design solution
- Choice of design with PTFE-coated screws and compression springs



### Technical specifications

<b>Media temperature:</b>	-10 to 150 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 4 to 25
<b>Body configurations:</b>	2/2-way body   Multi-port body
<b>Connection types:</b>	Flare   PrimeLock®   Super 300 Type Pillar®
<b>Body materials:</b>	PFA   PTFE
<b>Diaphragm materials:</b>	PTFE
<b>Conformities:</b>	EAC   FDA

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GW-C51





# GEMÜ C57 iComLine

## Manually operated diaphragm globe valve

The GEMÜ C57 iComLine ultra-pure 2/2-way plastic diaphragm globe valve is manually operated using a handwheel. All media-wetted parts are made of PTFE. The external actuator parts are made of PVDF. An integral optical position indicator is standard. In addition to 2/2-way valve bodies, customized multi-port valve block solutions can be produced.

### Features

- Low space requirement due to compact design
- Ideally suited for corrosive media
- High purity due to cleanroom manufacturing
- Manifolds are a space-saving design solution
- Choice of design with PTFE-coated screws and compression springs



### Technical specifications

<b>Media temperature:</b>	-10 to 150 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	1/4" (DN 4) to 1 1/4" (DN 25)
<b>Body configurations:</b>	2/2-way body   Multi-port body
<b>Connection types:</b>	Flare   PrimeLock®   Super 300 Type Pillar®
<b>Body materials:</b>	PFA   PTFE
<b>Diaphragm materials:</b>	PTFE
<b>Conformities:</b>	EAC   FDA

Go online!



GW-C57



# GEMÜ C50 iComLine

## Pneumatically operated diaphragm globe valve

The GEMÜ C50 iComLine ultra-pure 2/2-way plastic diaphragm globe valve has a pneumatic actuator. All media wetted parts are made of PTFE. The external actuator parts are made of PVDF. An integral optical position indicator is standard. In addition to 2/2-way valve bodies, customized multi-port valve block solutions can be produced.

### Features

- Low space requirement due to compact design
- Ideally suited for corrosive media
- High purity due to cleanroom manufacturing
- Manifolds are a space-saving design solution
- Choice of design with PTFE-coated screws and compression springs



### Technical specifications

<b>Media temperature:</b>	-10 to 150 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	1/4 " (DN 4) to 1 1/4 " (DN 25)
<b>Body configurations:</b>	2/2-way body   Multi-port body
<b>Connection types:</b>	Flare   PrimeLock®   Super 300 Type Pillar®
<b>Body materials:</b>	PFA   PTFE
<b>Diaphragm materials:</b>	PTFE
<b>Conformities:</b>	EAC   FDA

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GW-C50



# GEMÜ PC50 iComLine

## M-block diaphragm globe valve for ultra pure applications

The purity of the process media used in many high-tech areas is increasingly decisive for the quality and quantity of the products. In order to offer our customers from this sector a flexible and cost-effective solution that also saves space, we focus on our plastic M-block systems. Due to their individual design, they can combine a wide variety of functions in the smallest of spaces. The GEMÜ PC50 iComLine actuators are based on the GEMÜ C50, C51 and C57 iComLine valve types. These are suitable for many areas of application with selection of the appropriate plastic material.

### Features

- Fully-integrated system solutions (valve functions, fittings, sensor system, check valves, tank/housing walls)
- Compact design, low space requirement, logistical advantage, reduction of installation time, few connection points, low-maintenance and cost-effective
- Materials are media-specific, matched to requirements and cost-effective
- Cleanroom manufacturing (HP version), complies with SEMI F 57



### Technical specifications

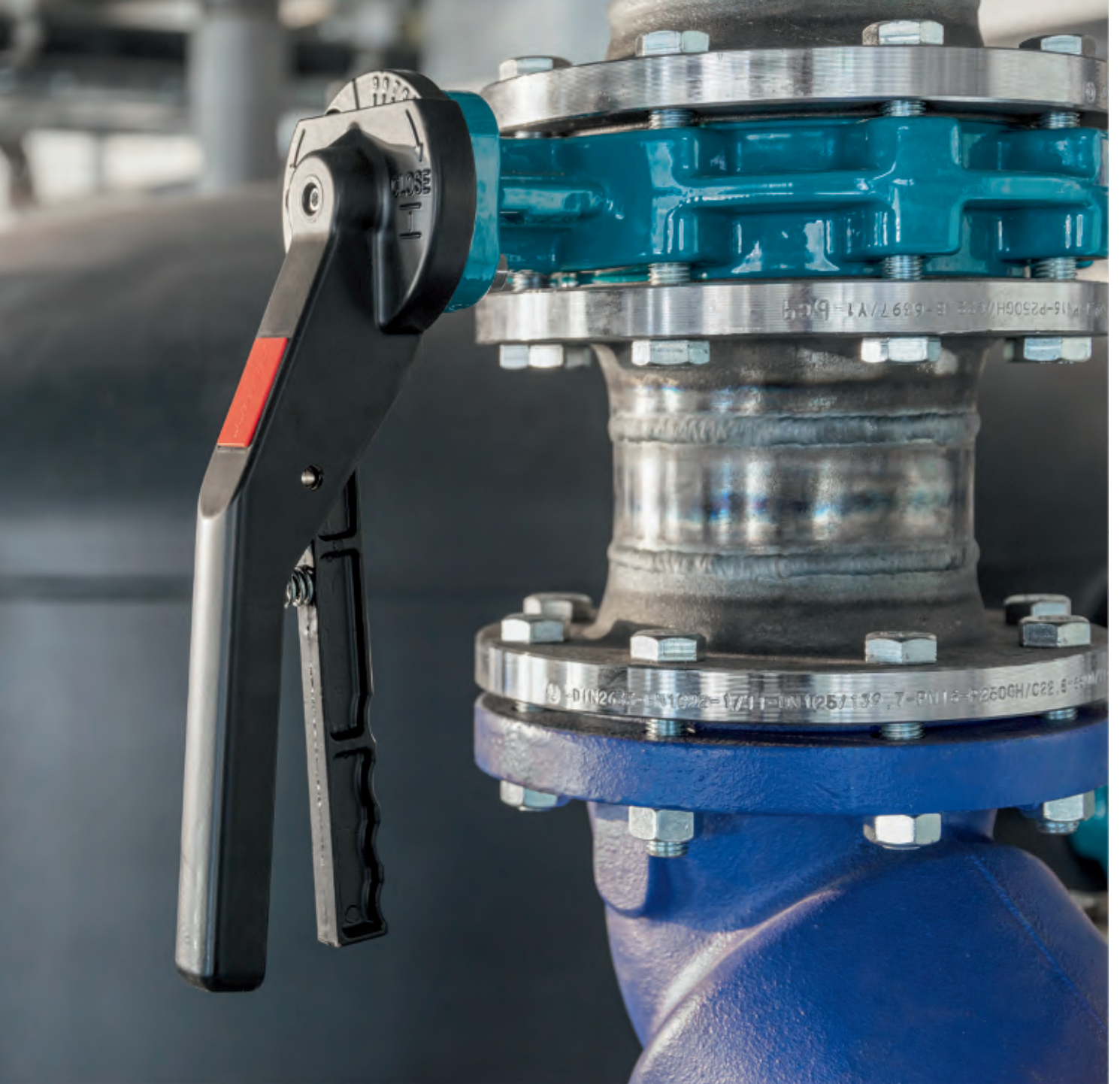
<b>Media temperature:</b>	-10 to 200 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 4 to 40
<b>Body configurations:</b>	Multi-port body
<b>Connection types:</b>	Clamp   Flare   PrimeLock®   Super 300 Type Pillar®   Threaded connection   Threaded socket   Union end   Yodogawa Nano Link
<b>Body materials:</b>	PP   PTFE TFM™   PVC   PVDF   Stainless steel
<b>Seal materials:</b>	PTFE
<b>Conformities:</b>	<b>META-Daten fehlen</b>

Go online!



GW-PC50





## Butterfly valves

## Description

If pipes are large, then butterfly valves are required. Most frequently, they are used for controlling mechanically pure liquids. In the right material combination, however, slightly abrasive liquids or gases pose no problem either. Due to the variety of materials, the GEMÜ butterfly valves are universally compatible, for example in various industrial applications, in drinking water and waste water treatment and in the coastal and offshore sector.

For all nominal sizes, butterfly valves are effective as short shut-off valves with high flow rates. They are a cost-effective alternative to other valve types, where there are no stringent requirements regarding switching cycles, hygiene or control accuracy.

## Features

- Large range of nominal sizes
- Short length
- Low weight
- Fast operating time
- Simple installation and low maintenance requirements

## Typical working media

- Liquids: Water, oils, acids, alkalis, surfactants, solvents, heating media/coolants
- Gases: Steam, air, nitrogen, natural gas, noble gases, vapour
- Solids: Bulk materials

## Applications

- Treatment of process water, drinking water, waste water
- Biogas plant
- Chemical industry
- Fertilizer chemicals and agrochemicals
- Irrigation systems
- Refineries and the petrochemical industry
- Surface finishing/paint shop and coating
- Heating and cooling systems
- Distribution of gas and water
- Swimming pool processes
- Ship and offshore area
- Textile industry
- Paper/woodpulp industry
- Steel works
- Mining





# Functional principle of butterfly valves



Open



Closed

Butterfly valves comprise a ring-shaped body into which a liner is inserted. When fully opened, the butterfly disc carried in a shaft is parallel to the flow direction. The disc is rotated by 90° into the liner, which closes the butterfly valve. The liner isolates the inner body from the medium and ensures that the butterfly valve is leak-tight inside and outside. When partially open, butterfly valves can also be used as control valves.

GEMÜ's butterfly discs are spherical and polished, and achieve particularly low torques due to the optimized sealing concept between disc, shaft and liner.

For control applications, GEMÜ offers adjusted position indicators as well as positioners and process controllers for quarter turn valves.

Flange connections are the standard connections for butterfly valves. A distinction is made between different body configurations:

## Wafer body configuration

- Wafer-type flange design
- Low weight
- Optional installation position

## Lug body configuration

- Flange-mounted design (can be used as end-of-line valve)
- Optimized centring
- Simple installation
- Optional installation position

## U section body configuration

- Flange-mounted design (can be used as end-of-line valve)
- Optimized centring
- Simple installation
- Short installation length



Wafer

Lug

U section

# Modular system for butterfly valves

With the GEMÜ modular system, we offer you the opportunity to put together a suitable valve in line with your requirements. Discover all configuration options at [www.gemu-group.com](http://www.gemu-group.com)

## Measurement and control technology

Electrical position indicators and combi switchboxes | Positioners and process controllers | Accessories



## Actuators

Manual | Pneumatic | Motorized  
Metal | Plastic



## Liners and discs

Elastomer | Elastomer/thermoplastic  
Metal | Plastic



## Bodies

Metal | Plastic



Configure your valve online  
at [www.gemu-group.com](http://www.gemu-group.com)

## Overview of series

Different series are advantageous depending on the area of application, as each application has quite specific requirements for isolation technology. Due to the GEMÜ modular system, the materials for butterfly discs and liners can also be adjusted to the process parameters for each series.

All series are available both with manual, pneumatic or motorized actuators and with a bare shaft.





### **GEMÜ Victoria series**

GEMÜ 480, 481, 487 and 488 Victoria  
GEMÜ D480, D481, D487 and D488 Victoria



- Soft-seated butterfly valve
- All-rounder with a large variety of materials

### **GEMÜ Edessa series**

GEMÜ 490, 491, 497 and 498 Edessa



- PTFE seal butterfly valve
- Suitable for corrosive chemical applications due to selection of highly resistant materials

### **GEMÜ D450 series**

GEMÜ K410, 410, 417 and 423



- Soft-seated butterfly valve made from corrosion-resistant plastic
- Disc outlet dimension designed on plastic piping

### **GEMÜ K415 series**

GEMÜ K415, 411, 415 and 428



- Butterfly valve in stainless steel or brass
- Available in small nominal sizes

### **GEMÜ K410 series**

GEMÜ D450, D451, D457 and D458







- Butterfly valve made from corrosion-resistant plastic
- Simple installation with union nut

Butterfly valves with bare shaft  
made of metal





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# Overview

GEMÜ type	480 Victoria	D480 Victoria	490 Edessa	K415
				
<b>Media temperature</b>	-10 to 150 °C	-60 to 210 °C	-20 to 200 °C	-20 to 160 °C
<b>Operating pressure</b>	0 to 16 bar	0 to 16 bar	0 to 10 bar	0 to 10 bar
<b>Nominal sizes</b>	DN 25 to 600	DN 25 to 1600	DN 25 to 1050	DN 15 to 50
<b>Connection types (body configuration)</b>				
Clamp	-	-	-	●
Flange (lug)	●	●	●	-
Flange (U section)	●	●	-	-
Flange (wafer)	●	●	●	-
Spigot	-	-	-	●
Threaded connection	-	-	-	●
<b>Body materials</b>				
1.4408 (CF8M)	-	●	-	●
1.4435 (316L)	-	-	●	-
CW614N	-	-	-	●
CW617N	-	-	-	●
EN-AC-46100	-	●	-	-
EN-AC-47100	-	●	-	-
EN-GJS-400-15, coated	●	●	-	-
EN-GJS-400-18-LT, coated	-	●	●	-
S275JR, coated	-	●	-	-
S355J2 + N	-	-	●	-
VE Duroplast, reinforced	-	-	●	-
<b>Liner materials</b>				
CR	-	●	-	-
CSM (Hypalon®)	-	●	-	-
ECO	-	●	-	-
EPDM	●	●	-	●
FKM	●	-	-	●
NBR	●	●	-	-
PTFE / silicone	-	-	●	-
PTFE TFM™ / FKM	-	-	●	-
PTFE TFM™/EPDM	-	-	●	-
PTFE TFM™/silicone	-	-	●	-
PTFE/EPDM	-	-	●	-
PTFE/FKM	-	-	●	-
SBR, abrasion resistant	●	●	-	-
Silicone	-	●	-	●

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

GEMÜ type	480 Victoria	D480 Victoria	490 Edessa	K415
				
<b>Disc materials</b>				
1.4404 (316L)	-	-	●	-
1.4404 (316L), coated	-	-	●	-
1.4408	●	●	-	●
1.4408, coated	●	●	-	-
1.4408, polished	●	-	-	-
1.4469	-	●	●	-
1.4539	-	●	-	-
2.0975	-	●	-	-
2.4602 (alloy 22)	-	●	●	-
3.7035	-	-	●	-
CW614N	-	-	-	●
CW617N	-	-	-	●
EN-GJS-400-15, coated	●	●	-	-
<b>Conformities</b>				
ACS	●	●	-	-
ATEX	●	●	●	●
Belgaqua	●	-	-	-
DNV GL	●	●	-	-
DVGW Drinking water	●	●	-	-
DVGW Gas	●	●	-	-
EAC	●	●	●	●
FDA	●	●	●	●
SIL	-	-	●	-
TA Luft (German Clean Air Act)	-	-	●	-
USP	-	-	●	-
WRAS	●	●	-	-

# GEMÜ 480 Victoria

## Butterfly valve with bare shaft

The GEMÜ 480 soft seated Victoria butterfly valve has a bare shaft with a top flange, in accordance with EN ISO 5211. The butterfly valve is available in nominal sizes DN 25 to 600 and in standard installation lengths: ISO 5752/20 | EN 558-1/20 | API 609 category A (DIN 3202 K1) available in wafer, lug and U section body versions.

### Features

- Low torques thanks to special disc contour
- Improved sealing
- Extensive applications using a variety of materials
- Robust body coating in accordance with ISO 12944-6 C5-M
- Min. 250 µm layer thickness body coating
- Bubble tight sealing, in accordance with EN 12266-1/P12, leak rate A



### Technical specifications

<b>Media temperature:</b>	-10 to 150 °C
<b>Ambient temperature:</b>	-10 to 70 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 25 to 600
<b>Body configurations:</b>	Lug   U section   Wafer
<b>Connection standards:</b>	AS   ASME   BS   DIN   EN   ISO   JIS
<b>Body materials:</b>	EN-GJS-400-15, SG iron material
<b>Body coating:</b>	Epoxy
<b>Liner materials:</b>	EPDM   FKM   NBR   SBR, abrasion resistant
<b>Disc materials:</b>	1.4408, investment casting material   1.4408, polished investment casting material   EN-GJS-400-15, SG iron material
<b>Disc coating:</b>	EPDM   Epoxy   Halar®   Rilsan®
<b>Conformities:</b>	ACS   ATEX   Belgaqua   DNV GL   DVGW Drinking water   DVGW Gas   EAC   FDA   WRAS

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GW-480



# GEMÜ D480 Victoria

## Butterfly valve with bare shaft

The GEMÜ D480 Victoria soft-seated butterfly valve has a bare shaft. The butterfly valve is available in nominal sizes DN 25 to 1600 and standard installation lengths: ISO 5752/20 | EN 558-1/20 | API 609 category A (DIN 3202 K1) and available in wafer, lug and U section body versions.

### Features

- Available in large nominal sizes
- Special materials for disc, seal and valve body
- Vulcanizable liner
- Abrasion-resistant version possible



### Technical specifications

<b>Media temperature:</b>	-60 to 210 °C
<b>Ambient temperature:</b>	-20 to 70 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 25 to 1600
<b>Body configurations:</b>	Lug   U section   Wafer
<b>Connection standards:</b>	AS   ASME   AWWA   BS   DIN   EN   ISO   JIS
<b>Body materials:</b>	1.4408, cast stainless steel material   EN-AC-46100, aluminium casting material   EN-AC-47100, aluminium casting material   EN-GJS-400-15, SG iron material   EN-GJS-400-18-LT, SG iron material   S275JR, cast steel material
<b>Body coating:</b>	Epoxy
<b>Liner materials:</b>	CR   CSM (Hypalon®)   ECO   EPDM   NBR   SBR, abrasion resistant   Silicone
<b>Disc materials:</b>	1.4408, investment casting material   1.4469, Duplex cast steel material   1.4539, forged material   2.0975, bronze casting material   2.4602 (alloy 22), block material   EN-GJS-400-15, SG iron material
<b>Disc coating:</b>	EPDM   Epoxy   Halar®   NBR   Rilsan®   SBR
<b>Conformities:</b>	ACS   ATEX   DNV GL   DVGW Drinking water   DVGW Gas   EAC   FDA   WRAS

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GW-D480



# GEMÜ 490 Edessa

## Butterfly valve with bare shaft

The GEMÜ 490 Edessa PTFE seal butterfly valve has a bare shaft. The disc and shaft are one piece; the body and liner are available in different designs. The butterfly valve is available in nominal sizes DN 25 to 1050 (1½"–36"), in the standard installation lengths: ISO 5752/20 | EN 558-1/20 | API 609 category A (DIN 3202 K1) available in wafer and lug body versions.

### Features

- Suitable for chemically corrosive media
- High-quality selection of materials can be combined in different ways
- High level of plant reliability thanks to one-piece shaft and spring-washer-supported seal system
- Long service life thanks to shaft bearings and special disc and liner geometry



### Technical specifications

<b>Media temperature:</b>	-20 to 200 °C
<b>Ambient temperature:</b>	-20 to 95 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 25 to 1050
<b>Body configurations:</b>	Lug   Wafer
<b>Connection standards:</b>	AS   ASME   DIN   EN   ISO   JIS
<b>Body materials:</b>	1.4404, block material   EN-GJS-400-18-LT, SG iron material   S355J2 + N, cast steel material   VE Duroplast, reinforced
<b>Body coating:</b>	Epoxy
<b>Liner materials:</b>	PTFE / silicone   PTFE TFM™ / FKM   PTFE TFM™/EPDM   PTFE TFM™/silicone   PTFE/EPDM   PTFE/FKM
<b>Disc materials:</b>	1.4404 (316L), forged material   1.4469, Duplex cast steel material   2.4602 (alloy 22), block material   3.7035, titan
<b>Disc coating:</b>	PFA
<b>Conformities:</b>	ATEX   EAC   FDA   SIL   TA Luft (German Clean Air Act)   USP

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GW-490





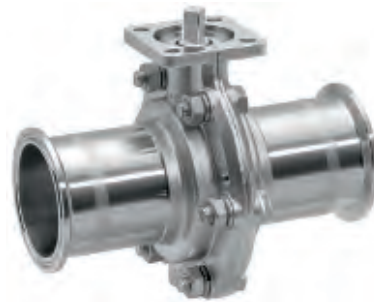
# GEMÜ K415

## Butterfly valve with bare shaft

The GEMÜ K415 soft seated butterfly valve made from stainless steel or brass has a bare shaft with standardized actuator flange in accordance with ISO 5211. With its rounded and polished disc edges, the butterfly valve is optimized for frequent cycle duties. The surface of the butterfly valve can still be further finished. The butterfly valve is optionally available with FDA or in an ATEX version. Thanks to its modular construction, it is also available with a manual, pneumatic or motorized actuator.

### Features

- High-quality butterfly valve made from stainless steel or brass
- Available in small nominal sizes
- Compact and robust body
- Suitable for vacuum applications and low temperatures



### Technical specifications

<b>Media temperature:</b>	-20 to 160 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Connection types:</b>	Clamp   Spigot   Threaded connection
<b>Connection standards:</b>	ASME   DIN   EN   ISO   SMS
<b>Housing materials:</b>	1.4408 (CF8M), investment casting material   CW614N, brass   CW617N, brass
<b>Liner materials:</b>	EPDM   FKM   Silicone
<b>Disc materials:</b>	1.4408, investment casting material   CW614N, brass   CW617N, brass
<b>Conformities:</b>	ATEX   EAC   FDA

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GW-K415



Butterfly valves with bare shaft  
made of plastic

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# Overview

GEMÜ type	D450	K410
		
<b>Media temperature</b>	5 to 90 °C	0 to 60 °C
<b>Operating pressure</b>	0 to 10 bar	0 to 6 bar
<b>Nominal sizes</b>	DN 50 to 300	DN 15 to 50
<b>Connection types</b>		
Flange	•	-
Union end	-	•
<b>Body materials</b>		
PP	•	-
PVC-U	-	•
<b>Liner materials</b>		
EPDM	•	•
FKM	•	•
Silicone	-	•
<b>Disc materials</b>		
PP-H	•	-
PVC-C	•	-
PVC-U	•	-
PVDF	-	•
<b>Conformities</b>		
EAC	•	•

# GEMÜ D450

## Butterfly valve with bare shaft

The GEMÜ D450 soft seated butterfly valve has a bare shaft. The butterfly valve is available in nominal sizes DN 50 - 300 and has a Wafer body version.

### Features

- Low weight
- Corrosion resistant plastic body
- Disc outlet dimension designed on plastic piping



EAC

### Technical specifications

<b>Media temperature:</b>	5 to 90 °C
<b>Ambient temperature:</b>	20 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 50 to 300
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   EN   JIS
<b>Housing materials:</b>	PP, reinforced
<b>Liner materials:</b>	EPDM   FKM
<b>Disc materials:</b>	PP-H   PVC-C   PVC-U
<b>Conformities:</b>	EAC

Go online!



GW-D450



# GEMÜ K410

## Butterfly valve with bare shaft

The GEMÜ K410 butterfly valve has a bare shaft. The valve body is available in a plastic design.

### Features

- Low weight
- Corrosion resistant plastic body
- Simple installation with union nut



### Technical specifications

<b>Media temperature:</b>	0 to 60 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Connection types:</b>	Union end
<b>Connection standards:</b>	BS   DIN
<b>Housing materials:</b>	PVC-U, grey
<b>Liner materials:</b>	EPDM   FKM   Silicone
<b>Disc materials:</b>	PVDF
<b>Conformities:</b>	EAC

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GW-K410







## Manually operated butterfly valves made of metal

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# Overview

GEMÜ type	487 Victoria	D487 Victoria	497 Edessa	411
				
<b>Media temperature</b>	-10 to 150 °C	-60 to 210 °C	-20 to 200 °C	-20 to 120 °C
<b>Operating pressure</b>	0 to 16 bar	0 to 16 bar	0 to 10 bar	0 to 10 bar
<b>Nominal sizes</b>	DN 25 to 600	DN 25 to 1600	DN 25 to 1050	DN 15 to 50
<b>Connection types (body configuration)</b>				
Clamp	-	-	-	•
Flange (lug)	•	•	•	-
Flange (U section)	•	•	-	-
Flange (wafer)	•	•	•	-
Spigot	-	-	-	•
Threaded connection	-	-	-	•
<b>Body materials</b>				
1.4408	-	-	-	•
1.4408 (CF8M)	-	•	-	-
1.4435 (316L)	-	-	•	-
CW614N	-	-	-	•
CW617N	-	-	-	•
EN-AC-46100	-	•	-	-
EN-AC-47100	-	•	-	-
EN-GJS-400-15, coated	•	•	-	-
EN-GJS-400-18-LT, coated	-	•	•	-
S275JR, coated	-	•	-	-
S355J2 + N	-	-	•	-
VE Duroplast, reinforced	-	-	•	-
<b>Liner materials</b>				
CR	-	•	-	-
CSM (Hypalon®)	-	•	-	-
ECO	-	•	-	-
EPDM	•	•	-	•
FKM	•	-	-	•
NBR	•	•	-	-
PTFE / silicone	-	-	•	-
PTFE TFM™ / FKM	-	-	•	-
PTFE TFM™/EPDM	-	-	•	-
PTFE TFM™/silicone	-	-	•	-
PTFE/EPDM	-	-	•	-
PTFE/FKM	-	-	•	-
SBR, abrasion resistant	•	•	-	-
Silicone	-	•	-	•

Technical data depends on the respective configuration - see datasheet or Product Selection Tool



GEMÜ type	487 Victoria	D487 Victoria	497 Edessa	411
				
<b>Disc materials</b>				
1.4404 (316L)	-	-	●	-
1.4404 (316L), coated	-	-	●	-
1.4408	●	●	-	●
1.4408, coated	●	●	-	-
1.4408, polished	●	-	-	-
1.4469	-	●	●	-
1.4539	-	●	-	-
2.0975	-	●	-	-
2.4602 (alloy 22)	-	●	●	-
3.7035	-	-	●	-
CW614N	-	-	-	●
CW617N	-	-	-	●
EN-GJS-400-15, coated	●	●	-	-
<b>Conformities</b>				
ACS	●	●	-	-
ATEX	●	●	●	-
Belgaqua	●	-	-	-
DNV GL	●	●	-	-
DVGW Drinking water	●	●	-	-
DVGW Gas	●	●	-	-
EAC	●	●	●	●
FDA	●	●	●	●
SIL	-	-	●	-
TA Luft (German Clean Air Act)	-	-	●	-
USP	-	-	●	-
WRAS	●	●	-	-

# GEMÜ 487 Victoria

## Manually operated butterfly valve

The GEMÜ 487 Victoria soft seated butterfly valve is manually operated. It has a metal hand lever or gearbox depending on customer requirements. The butterfly valve is available in nominal sizes DN 25 to 600 and standard installation lengths: ISO 5752/20 | EN 558-1/20 | API 609 category A (DIN 3202 K1) available in wafer, lug and U section body versions.

### Features

- Low torques thanks to special disc contour
- Improved sealing
- Extensive applications using a variety of materials
- Robust body coating in accordance with ISO 12944-6 C5-M
- Lockable hand lever
- Optional end position control
- Min. 250 µm layer thickness body coating
- Bubble tight sealing, in accordance with EN 12266-1/P12, leak rate A



### Technical specifications

<b>Media temperature:</b>	-10 to 150 °C
<b>Ambient temperature:</b>	-10 to 70 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 25 to 600
<b>Body configurations:</b>	Lug   U section   Wafer
<b>Connection standards:</b>	AS   ASME   BS   DIN   EN   ISO   JIS
<b>Body materials:</b>	EN-GJS-400-15, SG iron material
<b>Body coating:</b>	Epoxy
<b>Liner materials:</b>	EPDM   FKM   NBR   SBR, abrasion resistant
<b>Disc materials:</b>	1.4408, investment casting material   1.4408, polished investment casting material   EN-GJS-400-15, SG iron material
<b>Disc coating:</b>	EPDM   Epoxy   Halar®   Rilsan®
<b>Conformities:</b>	ACS   ATEX   Belgaqua   DNV GL   DVGW Drinking water   DVGW Gas   EAC   FDA   WRAS

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GW-487



# GEMÜ D487 Victoria

## Manually operated butterfly valve

The GEMÜ D487 Victoria soft seated butterfly valve is manually operated. It has a metal hand lever or gearbox depending on customer requirements. The butterfly valve is available in nominal sizes DN 25 to 1600 and standard installation lengths: ISO 5752/20 | EN 558-1/20 | API 609 category A (DIN 3202 K1) and available in wafer, lug and U section body versions.

### Features

- Available in large nominal sizes
- Special materials for disc, seal and valve body
- Vulcanizable liner
- Abrasion-resistant version possible



### Technical specifications

<b>Media temperature:</b>	-60 to 210 °C
<b>Ambient temperature:</b>	-20 to 70 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 25 to 1600
<b>Body configurations:</b>	Lug   U section   Wafer
<b>Connection standards:</b>	AS   ASME   AWWA   BS   DIN   EN   ISO   JIS
<b>Body materials:</b>	1.4408, cast stainless steel material   EN-AC-46100, aluminium casting material   EN-AC-47100, aluminium casting material   EN-GJS-400-15, SG iron material   EN-GJS-400-18-LT, SG iron material   S275JR, cast steel material
<b>Body coating:</b>	Epoxy
<b>Liner materials:</b>	CR   CSM (Hypalon®)   ECO   EPDM   NBR   SBR, abrasion resistant   Silicone
<b>Disc materials:</b>	1.4408, investment casting material   1.4469, Duplex cast steel material   1.4539, forged material   2.0975, bronze casting material   2.4602 (alloy 22), block material   EN-GJS-400-15, SG iron material
<b>Disc coating:</b>	EPDM   Epoxy   Halar®   NBR   Rilsan®   SBR
<b>Conformities:</b>	ACS   ATEX   DNV GL   DVGW Drinking water   DVGW Gas   EAC   FDA   WRAS

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GW-D487



## Order example

# GEMÜ 497 Edessa

## Manually operated butterfly valve

The GEMÜ 497 Edessa PTFE seal butterfly valve is manually operated. It has a metal hand lever or gearbox depending on customer requirements. The disc and shaft are one piece; the body and liner are available in different designs. The butterfly valve is available in nominal sizes DN 25 to 1050 (1½"–36"), in the standard installation lengths: ISO 5752/20 | EN 558-1/20 | API 609 category A (DIN 3202 K1) and wafer and lug body versions available.

### Features

- Suitable for chemically corrosive media
- High-quality selection of materials can be combined in different ways
- High level of plant reliability thanks to one-piece shaft and spring-washer-supported seal system
- Long service life thanks to shaft bearings and special disc and liner geometry
- Lockable hand lever
- Optional stainless steel hand lever



### Technical specifications

<b>Media temperature:</b>	-20 to 200 °C
<b>Ambient temperature:</b>	-20 to 95 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 25 to 1050
<b>Body configurations:</b>	Lug   Wafer
<b>Connection standards:</b>	AS   ASME   DIN   EN   ISO   JIS
<b>Body materials:</b>	1.4404, block material   EN-GJS-400-18-LT, SG iron material   S355J2 + N, cast steel material   VE Duroplast, reinforced
<b>Body coating:</b>	Epoxy
<b>Liner materials:</b>	PTFE / silicone   PTFE TFM™ / FKM   PTFE TFM™/EPDM   PTFE TFM™/silicone   PTFE/EPDM   PTFE/FKM
<b>Disc materials:</b>	1.4404 (316L), forged material   1.4469, Duplex cast steel material   2.4602 (alloy 22), block material   3.7035, titan
<b>Disc coating:</b>	PFA
<b>Conformities:</b>	ATEX   EAC   FDA   SIL   TA Luft (German Clean Air Act)   USP

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GW-497



# GEMÜ 411

## Manually operated butterfly valve

The GEMÜ 411 soft seated butterfly valve made from stainless steel or brass has an ergonomically designed, corrosion-resistant plastic hand lever. It is protected against accidental operation by the integrated locking device. With its rounded and polished disc edges, the butterfly valve is optimized for frequent cycle duties. The surface of the butterfly valve can be further finished.

### Features

- Suitable for vacuum applications and low temperatures
- High-quality butterfly valve made from stainless steel or brass
- Available in small nominal sizes
- Compact and robust body
- Ergonomically designed hand lever with integrated locking device



### Technical specifications

<b>Media temperature:</b>	-20 to 120 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Connection types:</b>	Clamp   Spigot   Threaded connection
<b>Connection standards:</b>	ASME   DIN   EN   ISO   SMS
<b>Housing materials:</b>	1.4408, investment casting material   CW614N, brass   CW617N, brass
<b>Liner materials:</b>	EPDM   FKM   Silicone
<b>Disc materials:</b>	1.4408, investment casting material   CW614N, brass   CW617N, brass
<b>Conformities:</b>	EAC   FDA

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GW-411







## Manually operated butterfly valves made of plastic

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# Overview

GEMÜ type	D457	417
		
<b>Media temperature</b>	5 to 90 °C	0 to 60 °C
<b>Operating pressure</b>	0 to 10 bar	0 to 6 bar
<b>Nominal sizes</b>	DN 50 to 300	DN 15 to 50
<b>Connection types</b>		
Flange	•	-
Union end	-	•
<b>Body materials</b>		
PP	•	-
PVC-U	-	•
<b>Liner materials</b>		
EPDM	•	•
FKM	•	•
<b>Disc materials</b>		
PP-H	•	-
PVC-C	•	-
PVC-U	•	-
PVDF	-	•
<b>Conformities</b>		
EAC	•	•

# GEMÜ D457

## Manually operated butterfly valve

The GEMÜ D457 soft seated butterfly valve is manually operated. It has a metal hand lever or gearbox according to customer requirements. The butterfly valve is available in nominal sizes DN 50 - 300 and has a Wafer body version.

### Features

- Low weight
- Corrosion resistant plastic body
- Disc outlet dimension designed on plastic piping
- Lockable hand lever made of plastic with latch positions



EAC

### Technical specifications

<b>Media temperature:</b>	5 to 90 °C
<b>Ambient temperature:</b>	20 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 50 to 300
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   EN   JIS
<b>Housing materials:</b>	PP, reinforced
<b>Liner materials:</b>	EPDM   FKM
<b>Disc materials:</b>	PP-H   PVC-C   PVC-U
<b>Conformities:</b>	EAC

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GW-D457



# GEMÜ 417

## Manually operated butterfly valve

The GEMÜ 417 butterfly valve has an ergonomically designed corrosion resistant plastic hand lever. It can be protected against accidental operation by the integrated locking device.

### Features

- Low weight
- Corrosion resistant plastic body
- Simple installation with union nut
- Ergonomic handle with anti-twist system and locking device



EAC

### Technical specifications

<b>Media temperature:</b>	0 to 60 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Connection types:</b>	Union end
<b>Connection standards:</b>	BS   DIN
<b>Housing materials:</b>	PVC-U, grey
<b>Liner materials:</b>	EPDM   FKM
<b>Disc materials:</b>	PVDF
<b>Conformities:</b>	EAC

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GW-417







## Pneumatically operated butterfly valves made of metal





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# Overview

GEMÜ type	481 Victoria	D481 Victoria	491 Edessa	415
				
<b>Media temperature</b>	-10 to 150 °C	-60 to 210 °C	-20 to 200 °C	-20 to 120 °C
<b>Operating pressure</b>	0 to 16 bar	0 to 16 bar	0 to 10 bar	0 to 10 bar
<b>Nominal sizes</b>	DN 25 to 600	DN 25 to 1600	DN 25 to 1050	DN 15 to 50
<b>Connection types (body configuration)</b>				
Clamp	-	-	-	•
Flange (lug)	•	•	•	-
Flange (U section)	•	•	-	-
Flange (wafer)	•	•	•	-
Spigot	-	-	-	•
Threaded connection	-	-	-	•
<b>Body materials</b>				
1.4408	-	-	-	•
1.4408 (CF8M)	-	•	-	-
1.4435 (316L)	-	-	•	-
CW614N	-	-	-	•
CW617N	-	-	-	•
EN-AC-46100	-	•	-	-
EN-AC-47100	-	•	-	-
EN-GJS-400-15, coated	•	•	-	-
EN-GJS-400-18-LT, coated	-	•	•	-
S275JR, coated	-	•	-	-
S355J2 + N	-	-	•	-
VE Duroplast, reinforced	-	-	•	-
<b>Liner materials</b>				
CR	-	•	-	-
CSM (Hypalon®)	-	•	-	-
ECO	-	•	-	-
EPDM	•	•	-	•
FKM	•	-	-	•
NBR	•	•	-	-
PTFE / silicone	-	-	•	-
PTFE TFM™ / FKM	-	-	•	-
PTFE TFM™/EPDM	-	-	•	-
PTFE TFM™/silicone	-	-	•	-
PTFE/EPDM	-	-	•	-
PTFE/FKM	-	-	•	-
SBR, abrasion resistant	•	•	-	-
Silicone	-	•	-	•

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

GEMÜ type	481 Victoria	D481 Victoria	491 Edessa	415
				
<b>Disc materials</b>				
1.4404 (316L)	-	-	●	-
1.4404 (316L), coated	-	-	●	-
1.4408	●	●	-	●
1.4408, coated	●	●	-	-
1.4408, polished	●	-	-	-
1.4469	-	●	●	-
1.4539	-	●	-	-
2.0975	-	●	-	-
2.4602 (alloy 22)	-	●	●	-
3.7035	-	-	●	-
CW614N	-	-	-	●
CW617N	-	-	-	●
EN-GJS-400-15, coated	●	●	-	-
<b>Conformities</b>				
ACS	●	●	-	-
ATEX	●	●	●	-
Belgaqua	●	-	-	-
DNV GL	●	●	-	-
DVGW Drinking water	●	●	-	-
DVGW Gas	●	●	-	-
EAC	●	●	●	●
FDA	●	●	●	●
SIL	-	-	●	-
TA Luft (German Clean Air Act)	-	-	●	-
USP	-	-	●	-
WRAS	●	●	-	-

# GEMÜ 481 Victoria

## Pneumatically operated butterfly valve

The GEMÜ 481 Victoria soft seated butterfly valve has a metal actuator and is pneumatically operated. Normally Closed, Normally Open and Double Acting control functions are available. The butterfly valve is available in nominal sizes DN 25 to 600 and standard installation lengths: ISO 5752/20 | EN 558-1/20 | API 609 category A (DIN 3202 K1) available in wafer, lug and U section body versions.

### Features

- Low torques thanks to special disc contour
- Improved sealing
- Extensive applications using a variety of materials
- Robust body coating in accordance with ISO 12944-6 C5-M
- Fast operating times
- Optional accessories are installed, set and tested so they are ready for operation
- Min. 250 µm layer thickness body coating
- Bubble tight sealing, in accordance with EN 12266-1/P12, leak rate A



### Technical specifications

<b>Media temperature:</b>	-10 to 150 °C
<b>Ambient temperature:</b>	-10 to 70 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 25 to 600
<b>Body configurations:</b>	Lug   U section   Wafer
<b>Connection standards:</b>	AS   ASME   BS   DIN   EN   ISO   JIS
<b>Body materials:</b>	EN-GJS-400-15, SG iron material
<b>Body coating:</b>	Epoxy
<b>Liner materials:</b>	EPDM   FKM   NBR   SBR, abrasion resistant
<b>Disc materials:</b>	1.4408, investment casting material   1.4408, polished investment casting material   EN-GJS-400-15, SG iron material
<b>Disc coating:</b>	EPDM   Epoxy   Halar®   Rilsan®
<b>Conformities:</b>	ACS   ATEX   Belgaqua   DNV GL   DVGW Drinking water   DVGW Gas   EAC   FDA   WRAS

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GW-481





# GEMÜ D481 Victoria

## Pneumatically operated butterfly valve

The GEMÜ D481 Victoria soft-seated butterfly valve has a metal actuator and is pneumatically operated. The Normally Closed, Normally Open and Double Acting control functions are available. The butterfly valve is available in nominal sizes DN 25 to 1600 and standard installation lengths: ISO 5752/20 | EN 558-1/20 | API 609 category A (DIN 3202 K1) and available in wafer, lug and U section body versions.

### Features

- Available in large nominal sizes
- Special materials for disc, seal and valve body
- Vulcanizable liner
- Abrasion-resistant version possible



### Technical specifications

<b>Media temperature:</b>	-60 to 210 °C
<b>Ambient temperature:</b>	-20 to 70 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 25 to 1600
<b>Body configurations:</b>	Lug   U section   Wafer
<b>Connection standards:</b>	AS   ASME   AWWA   BS   DIN   EN   ISO   JIS
<b>Body materials:</b>	1.4408, cast stainless steel material   EN-AC-46100, aluminium casting material   EN-AC-47100, aluminium casting material   EN-GJS-400-15, SG iron material   EN-GJS-400-18-LT, SG iron material   S275JR, cast steel material
<b>Body coating:</b>	Epoxy
<b>Liner materials:</b>	CR   CSM (Hypalon®)   ECO   EPDM   NBR   SBR, abrasion resistant   Silicone
<b>Disc materials:</b>	1.4408, investment casting material   1.4469, Duplex cast steel material   1.4539, forged material   2.0975, bronze casting material   2.4602 (alloy 22), block material   EN-GJS-400-15, SG iron material
<b>Disc coating:</b>	EPDM   Epoxy   Halar®   NBR   Rilsan®   SBR
<b>Conformities:</b>	ACS   ATEX   DNV GL   DVGW Drinking water   DVGW Gas   EAC   FDA   WRAS

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GW-D481



# GEMÜ 491 Edessa

## Pneumatically operated butterfly valve

The GEMÜ 491 Edessa PTFE seal butterfly valve has a metal actuator and is pneumatically operated. Normally Closed, Normally Open and Double Acting control functions are available. The disc and shaft are one piece; the body and liner are available in different designs. The butterfly valve is available in nominal sizes DN 25 to 1050 (1½"–36"), in the standard installation lengths: ISO 5752/20 | EN 558-1/20 | API 609 category A (DIN 3202 K1) and wafer and lug body versions available.

### Features

- Suitable for chemically corrosive media
- High-quality selection of materials can be combined in different ways
- High level of plant reliability thanks to one-piece shaft and spring-washer-supported seal system
- Long service life thanks to shaft bearings and special disc and liner geometry
- Optional accessories are installed, set and tested so they are ready for operation



### Technical specifications

<b>Media temperature:</b>	-20 to 200 °C
<b>Ambient temperature:</b>	-20 to 95 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 25 to 1050
<b>Body configurations:</b>	Lug   Wafer
<b>Connection standards:</b>	AS   ASME   DIN   EN   ISO   JIS
<b>Body materials:</b>	1.4404, block material   EN-GJS-400-18-LT, SG iron material   S355J2 + N, cast steel material   VE Duroplast, reinforced
<b>Body coating:</b>	Epoxy
<b>Liner materials:</b>	PTFE / silicone   PTFE TFM™ / FKM   PTFE TFM™/EPDM   PTFE TFM™/silicone   PTFE/EPDM   PTFE/FKM
<b>Disc materials:</b>	1.4404 (316L), forged material   1.4469, Duplex cast steel material   2.4602 (alloy 22), block material   3.7035, titan
<b>Disc coating:</b>	PFA
<b>Conformities:</b>	ATEX   EAC   FDA   SIL   TA Luft (German Clean Air Act)   USP

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GW-491



# GEMÜ 415

## Pneumatically operated butterfly valve

The GEMÜ 415 soft seated butterfly valve made from stainless steel or brass is pneumatically operated by a space-saving piston actuator. Normally Closed, Normally Open and Double Acting control functions are available. A low-cost rack and pinion actuator can also be fitted. With its rounded and polished disc edges, the butterfly valve is optimized for frequent cycle duties. The surface of the butterfly valve can be further finished.

### Features

- Suitable for vacuum applications and low temperatures
- High-quality butterfly valve made from stainless steel or brass
- Available in small nominal sizes
- Compact and robust body
- Corrosion-resistant and space-saving piston actuator made from plastic or metal



### Technical specifications

<b>Media temperature:</b>	-20 to 120 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Connection types:</b>	Clamp   Spigot   Threaded connection
<b>Connection standards:</b>	ASME   DIN   EN   ISO   SMS
<b>Housing materials:</b>	1.4408, investment casting material   CW614N, brass   CW617N, brass
<b>Liner materials:</b>	EPDM   FKM   Silicone
<b>Disc materials:</b>	1.4408, investment casting material   CW614N, brass   CW617N, brass
<b>Conformities:</b>	EAC   FDA

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GW-415



## Pneumatically operated butterfly valves made of plastic

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# Overview

GEMÜ type	D451	410
		
<b>Media temperature</b>	5 to 90 °C	0 to 60 °C
<b>Operating pressure</b>	0 to 10 bar	0 to 6 bar
<b>Nominal sizes</b>	DN 50 to 300	DN 15 to 50
<b>Connection types</b>		
Flange	•	-
Union end	-	•
<b>Body materials</b>		
PP	•	-
PVC-U	-	•
<b>Liner materials</b>		
EPDM	•	•
FKM	•	•
<b>Disc materials</b>		
PP-H	•	-
PVC-C	•	-
PVC-U	•	-
PVDF	-	•
<b>Conformities</b>		
EAC	•	•

# GEMÜ D451

## Pneumatically operated butterfly valve

The GEMÜ D451 soft-seated butterfly valve has a metal actuator and is pneumatically operated. The Normally Closed, Normally Open and Double Acting control functions are available. The butterfly valve is available in nominal sizes DN 50–300 and has a wafer body version.

### Features

- Low weight
- Corrosion resistant plastic body
- Short operating times



EAC

### Technical specifications

<b>Media temperature:</b>	5 to 90 °C
<b>Ambient temperature:</b>	20 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 50 to 300
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   EN   JIS
<b>Housing materials:</b>	PP, reinforced
<b>Liner materials:</b>	EPDM   FKM
<b>Disc materials:</b>	PP-H   PVC-C   PVC-U
<b>Conformities:</b>	EAC

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GW-D451



# GEMÜ 410

## Pneumatically operated butterfly valve

The GEMÜ 410 butterfly valve has a low maintenance corrosion-resistant plastic piston actuator and is pneumatically operated. Normally Closed and Normally Open control functions are available. The valve body is available in a plastic design.

### Features

- Low weight
- Corrosion resistant plastic body
- Simple installation with union nut
- Space-saving piston actuator made of plastic



### Technical specifications

<b>Media temperature:</b>	0 to 60 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Connection types:</b>	Union end
<b>Connection standards:</b>	BS   DIN
<b>Housing materials:</b>	PVC-U, grey
<b>Liner materials:</b>	EPDM   FKM
<b>Disc materials:</b>	PVDF
<b>Conformities:</b>	EAC

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GW-410







Motorized butterfly valves  
made of metal

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# Overview

GEMÜ type	488 Victoria	D488 Victoria	498 Edessa	428
				
<b>Media temperature</b>	-10 to 150 °C	-60 to 210 °C	-20 to 200 °C	-20 to 120 °C
<b>Operating pressure</b>	0 to 16 bar	0 to 16 bar	0 to 10 bar	0 to 10 bar
<b>Nominal sizes</b>	DN 25 to 600	DN 25 to 1600	DN 25 to 1050	DN 15 to 50
<b>Connection types (body configuration)</b>				
Clamp	-	-	-	•
Flange (lug)	•	•	•	-
Flange (U section)	•	•	-	-
Flange (wafer)	•	•	•	-
Spigot	-	-	-	•
Threaded connection	-	-	-	•
<b>Body materials</b>				
1.4408	-	-	-	•
1.4408 (CF8M)	-	•	-	-
1.4435 (316L)	-	-	•	-
CW614N	-	-	-	•
CW617N	-	-	-	•
EN-AC-46100	-	•	-	-
EN-AC-47100	-	•	-	-
EN-GJS-400-15, coated	•	•	-	-
EN-GJS-400-18-LT, coated	-	•	•	-
S275JR, coated	-	•	-	-
S355J2 + N	-	-	•	-
VE Duroplast, reinforced	-	-	•	-
<b>Liner materials</b>				
CR	-	•	-	-
CSM (Hypalon®)	-	•	-	-
ECO	-	•	-	-
EPDM	•	•	-	•
FKM	•	-	-	•
NBR	•	•	-	-
PTFE / silicone	-	-	•	-
PTFE TFM™ / FKM	-	-	•	-
PTFE TFM™/EPDM	-	-	•	-
PTFE TFM™/silicone	-	-	•	-
PTFE/EPDM	-	-	•	-
PTFE/FKM	-	-	•	-
SBR, abrasion resistant	•	•	-	-
Silicone	-	•	-	•

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

GEMÜ type	488 Victoria	D488 Victoria	498 Edessa	428
				
<b>Disc materials</b>				
1.4404 (316L)	-	-	●	-
1.4404 (316L), coated	-	-	●	-
1.4408	●	●	-	●
1.4408, coated	●	●	-	-
1.4408, polished	●	-	-	-
1.4469	-	●	●	-
1.4539	-	●	-	-
2.0975	-	●	-	-
2.4602 (alloy 22)	-	●	●	-
3.7035	-	-	●	-
CW614N	-	-	-	●
CW617N	-	-	-	●
EN-GJS-400-15, coated	●	●	-	-
<b>Conformities</b>				
ACS	●	●	-	-
ATEX	●	●	●	-
Belgaqua	●	-	-	-
CSA	●	●	●	●
DNV GL	●	●	-	-
DVGW Drinking water	●	●	-	-
DVGW Gas	●	●	-	-
EAC	●	●	●	●
FDA	●	●	●	●
SIL	-	-	●	-
TA Luft (German Clean Air Act)	-	-	●	-
USP	-	-	●	-
WRAS	●	●	-	-

# GEMÜ 488 Victoria

## Motorized butterfly valve

The GEMÜ 488 Victoria soft-seated butterfly valve is motorized. Various metal or plastic on/off or control actuators are available. The butterfly valve is available in nominal sizes DN 25 to 600 and standard installation lengths: ISO 5752/20 | EN 558-1/20 | API 609 category A (DIN 3202 K1) available in wafer, lug and U section body versions.

### Features

- Low torques thanks to special disc contour
- Improved sealing
- Extensive applications using a variety of materials
- Robust body coating in accordance with ISO 12944-6 C5-M
- Manual override
- Wide choice of motorized actuator types
- Min. 250 µm layer thickness body coating
- Bubble tight sealing, in accordance with EN 12266-1/P12, leak rate A



### Technical specifications

<b>Media temperature:</b>	-10 to 150 °C
<b>Ambient temperature:</b>	-10 to 70 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 25 to 600
<b>Body configurations:</b>	Lug   U section   Wafer
<b>Connection standards:</b>	AS   ASME   BS   DIN   EN   ISO   JIS
<b>Body materials:</b>	EN-GJS-400-15, SG iron material
<b>Body coating:</b>	Epoxy
<b>Liner materials:</b>	EPDM   FKM   NBR   SBR, abrasion resistant
<b>Disc materials:</b>	1.4408, investment casting material   1.4408, polished investment casting material   EN-GJS-400-15, SG iron material
<b>Disc coating:</b>	EPDM   Epoxy   Halar®   Rilsan®
<b>Supply voltage:</b>	100 - 120 V AC, 50/60 Hz   12 - 24 V AC/DC   220 - 240 V AC, 50/60 Hz   380 - 480 V AC, 50/60 Hz
<b>Operating time 90°:</b>	4 to 100 s
<b>Protection class:</b>	IP 65, 66, 67, 68
<b>Conformities:</b>	ACS   ATEX   Belgaqua   CSA   DNV GL   DVGW Drinking water   DVGW Gas   EAC   FDA   WRAS

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GW-488



# GEMÜ D488 Victoria

## Motorized butterfly valve

The GEMÜ D488 Victoria soft-seated butterfly valve is motorized. Various metal or plastic on/off or control actuators are available. The butterfly valve is available in nominal sizes DN 25 to 1600 and standard installation lengths: ISO 5752/20 | EN 558-1/20 | API 609 category A (DIN 3202 K1) and available in wafer, lug and U section body versions.

### Features

- Available in large nominal sizes
- Special materials for disc, seal and valve body
- Vulcanizable liner
- Abrasion-resistant version possible



### Technical specifications

<b>Media temperature:</b>	-60 to 210 °C
<b>Ambient temperature:</b>	-20 to 70 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 25 to 1600
<b>Body configurations:</b>	Lug   U section   Wafer
<b>Connection standards:</b>	AS   ASME   AWWA   BS   DIN   EN   ISO   JIS
<b>Body materials:</b>	1.4408, cast stainless steel material   EN-AC-46100, aluminium casting material   EN-AC-47100, aluminium casting material   EN-GJS-400-15, SG iron material   EN-GJS-400-18-LT, SG iron material   S275JR, cast steel material
<b>Body coating:</b>	Epoxy
<b>Liner materials:</b>	CR   CSM (Hypalon®)   ECO   EPDM   NBR   SBR, abrasion resistant   Silicone
<b>Disc materials:</b>	1.4408, investment casting material   1.4469, Duplex cast steel material   1.4539, forged material   2.0975, bronze casting material   2.4602 (alloy 22), block material   EN-GJS-400-15, SG iron material
<b>Disc coating:</b>	EPDM   Epoxy   Halar®   NBR   Rilsan®   SBR
<b>Supply voltage:</b>	100 - 120 V AC, 50/60 Hz   12 - 24 V AC/DC   220 - 240 V AC, 50/60 Hz   380 - 480 V AC, 50/60 Hz
<b>Operating time 90°:</b>	4 to 100 s
<b>Protection class:</b>	IP 65, 66, 67, 68
<b>Conformities:</b>	ACS   ATEX   CSA   DNV GL   DVGW Drinking water   DVGW Gas   EAC   FDA   WRAS

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GW-D488



# GEMÜ 498 Edessa

## Motorized butterfly valve

The GEMÜ 498 Edessa PTFE seal butterfly valve is motorized. Various metal or plastic on/off or control actuators are available. The disc and shaft are one piece; the body and liner are available in different designs. The butterfly valve is available in nominal sizes DN 25 to 1050 (1½"–36"), in the standard installation lengths: ISO 5752/20 | EN 558-1/20 | API 609 category A (DIN 3202 K1) and wafer and lug body versions available.

### Features

- Suitable for chemically corrosive media
- High-quality selection of materials can be combined in different ways
- High level of plant reliability thanks to one-piece shaft and spring-washer-supported seal system
- Long service life thanks to shaft bearings and special disc and liner geometry
- Wide choice of motorized actuator types



### Technical specifications

<b>Media temperature:</b>	-20 to 200 °C
<b>Ambient temperature:</b>	-20 to 95 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 25 to 1050
<b>Body configurations:</b>	Lug   Wafer
<b>Connection standards:</b>	AS   ASME   DIN   EN   ISO   JIS
<b>Body materials:</b>	1.4404, block material   EN-GJS-400-18-LT, SG iron material   S355J2 + N, cast steel material   VE Duroplast, reinforced
<b>Body coating:</b>	Epoxy
<b>Liner materials:</b>	PTFE / silicone   PTFE TFM™ / FKM   PTFE TFM™/EPDM   PTFE TFM™/silicone   PTFE/EPDM   PTFE/FKM
<b>Disc materials:</b>	1.4404 (316L), forged material   1.4469, Duplex cast steel material   2.4602 (alloy 22), block material   3.7035, titan
<b>Disc coating:</b>	PFA
<b>Supply voltage:</b>	100 - 120 V AC, 50/60 Hz   12 - 24 V AC/DC   220 - 240 V AC, 50/60 Hz   380 - 480 V AC, 50/60 Hz
<b>Operating time 90°:</b>	4 to 100 s
<b>Protection class:</b>	IP 65, 66, 67, 68
<b>Conformities:</b>	ATEX   CSA   EAC   FDA   SIL   TA Luft (German Clean Air Act)   USP

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GW-498



# GEMÜ 428

## Motorized butterfly valve

The GEMÜ 428 soft seated butterfly valve made from stainless steel or brass is motorized. A manual override and an optical position indicator are integrated as standard. With its rounded and polished disc edges, the butterfly valve is optimized for frequent cycle duties. The surface of the butterfly valve can be further finished.

### Features

- Suitable for vacuum applications and low temperatures
- High-quality butterfly valve made from stainless steel or brass
- Available in small nominal sizes
- Compact and robust body



### Technical specifications

<b>Media temperature:</b>	-20 to 120 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Connection types:</b>	Clamp   Spigot   Threaded connection
<b>Connection standards:</b>	ASME   DIN   EN   ISO   SMS
<b>Housing materials:</b>	1.4408, investment casting material   CW614N, brass   CW617N, brass
<b>Liner materials:</b>	EPDM   FKM   Silicone
<b>Disc materials:</b>	1.4408, investment casting material   CW614N, brass   CW617N, brass
<b>Supply voltage:</b>	100 - 120 V AC, 50/60 Hz   12 - 24 V AC/DC   220 - 240 V AC, 50/60 Hz   380 - 480 V AC, 50/60 Hz
<b>Operating time 90°:</b>	4 to 100 s
<b>Protection class:</b>	IP 65, 66, 67, 68
<b>Conformities:</b>	CSA   EAC   FDA

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GW-428





## Motorized butterfly valves made of plastic

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# Overview

GEMÜ type	D458	423
		
<b>Media temperature</b>	5 to 90 °C	0 to 60 °C
<b>Operating pressure</b>	0 to 10 bar	0 to 6 bar
<b>Nominal sizes</b>	DN 50 to 300	DN 15 to 50
<b>Connection types</b>		
Flange	•	-
Union end	-	•
<b>Body materials</b>		
PP	•	-
PVC-U	-	•
<b>Liner materials</b>		
EPDM	•	•
FKM	•	•
<b>Disc materials</b>		
PP-H	•	-
PVC-C	•	-
PVC-U	•	-
PVDF	-	•
<b>Conformities</b>		
CSA	•	•
EAC	•	•

# GEMÜ D458

## Motorized butterfly valve

The GEMÜ D458 butterfly valve is motorized. Various metal or plastic on/off or control actuators are available. A manual override and an optical position indicator are integrated as standard. The butterfly valve is available in nominal sizes DN 50 - 300 and has a Wafer body version.

### Features

- Low weight
- Corrosion-resistant materials
- Disc outlet dimension designed on plastic piping



### Technical specifications

<b>Media temperature:</b>	5 to 90 °C
<b>Ambient temperature:</b>	20 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 50 to 300
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   EN   JIS
<b>Housing materials:</b>	PP, reinforced
<b>Liner materials:</b>	EPDM   FKM
<b>Disc materials:</b>	PP-H   PVC-C   PVC-U
<b>Supply voltage:</b>	100 - 120 V AC, 50/60 Hz   12 - 24 V AC/DC   220 - 240 V AC, 50/60 Hz   380 - 480 V AC, 50/60 Hz
<b>Operating time 90°:</b>	4 to 100 s
<b>Protection class:</b>	IP 65, 66, 67, 68
<b>Conformities:</b>	CSA   EAC

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GW-D458



# GEMÜ 423

## Motorized butterfly valve

The GEMÜ 423 butterfly valve has a low maintenance motorized quarter turn actuator. A manual override and an optical position indicator are integrated as standard.

### Features

- Low weight
- Adjustable end positions by means of microswitches
- Corrosion resistant plastic body
- Simple installation with union nut
- Compact design



### Technical specifications

<b>Media temperature:</b>	0 to 60 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Connection types:</b>	Union end
<b>Connection standards:</b>	BS   DIN
<b>Housing materials:</b>	PVC-U, grey
<b>Liner materials:</b>	EPDM   FKM
<b>Disc materials:</b>	PVDF
<b>Supply voltage:</b>	100 - 120 V AC, 50/60 Hz   12 - 24 V AC/DC   220 - 240 V AC, 50/60 Hz   24 - 240 V AC/DC   380 - 480 V AC, 50/60 Hz
<b>Operating time 90°:</b>	4 to 100 s
<b>Protection class:</b>	IP 65, 66, 67, 68
<b>Conformities:</b>	CSA   EAC

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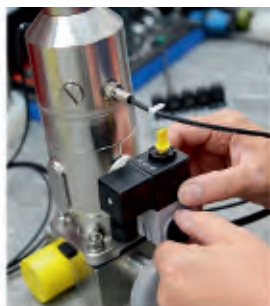
GW-423



## Add-on components for butterfly valves

GEMÜ type	410	411	415	417	423	428	481
<b>Measurement and control technology</b>							
<b>Electrical position indicator</b>							
GEMÜ 1201 / 1211 / 1214 ▶ page 304	•		•				
GEMÜ 1205 ▶ page 305	•		•				
GEMÜ 1215 ▶ page 302	•		•				
GEMÜ 1225 ▶ page 309	•	•	•	•	•	•	
GEMÜ 1230 / 1231 / 1232 ▶ page 303	•		•				
GEMÜ 1235 / 1236 ▶ page 307	•		•				•
GEMÜ 1242 ▶ page 308	•		•				•
GEMÜ LSC ▶ page 310							•
GEMÜ LSF ▶ page 311							•
<b>Combi switchbox</b>							
GEMÜ 4242 ▶ page 316	•		•				•
<b>Pilot valve</b>							
GEMÜ 0324 ▶ page 323	•		•				
<b>Control systems</b>							
<b>Positioner</b>							
GEMÜ 1434 µPos ▶ page 282	•		•				
GEMÜ 1435 ePos ▶ page 284	•		•				•
<b>Positioner and process controller</b>							
GEMÜ 1436 cPos ▶ page 285	•		•				•
<b>Accessories</b>							
Connection accessories ▶ page 355	•		•				
Stroke limiters ▶ page 360	•		•				
Sensor accessories ▶ page 362	•		•				
Position indicators ▶ page 359	•		•				

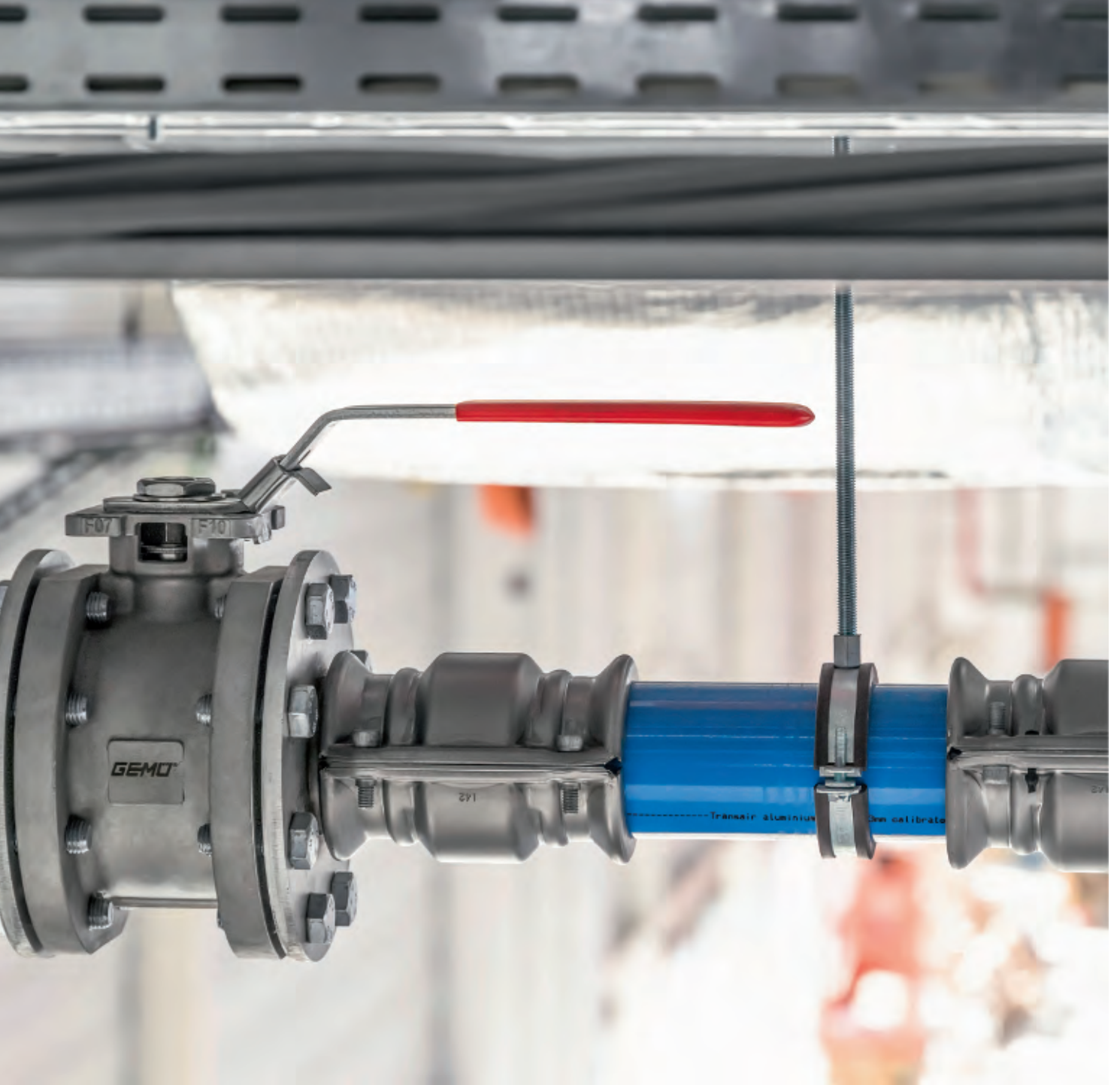
GEMÜ valves are fully assembled in our in-house Assembly department – with compatible accessories on request.



Our pre-assembled solutions are supplied to you preset and tested. Not only can you obtain all components from a single source, you also save on the time and effort required for logistics and installation of the plant on site, as well as for documentation.



GEMÜ type	487	491	497	D451	D481	D487
<b>Measurement and control technology</b>						
<b>Electrical position indicator</b>						
GEMÜ 1201 / 1211 / 1214 ▶ page 304						
GEMÜ 1205 ▶ page 305						
GEMÜ 1215 ▶ page 302						
GEMÜ 1225 ▶ page 309						
GEMÜ 1230 / 1231 / 1232 ▶ page 303						
GEMÜ 1235 / 1236 ▶ page 307		•		•	•	
GEMÜ 1242 ▶ page 308		•		•	•	
GEMÜ LSC ▶ page 310	•	•	•	•	•	•
GEMÜ LSF ▶ page 311	•	•	•	•	•	•
<b>Combi switchbox</b>						
GEMÜ 4242 ▶ page 316		•		•	•	
<b>Pilot valve</b>						
GEMÜ 0324 ▶ page 323						
<b>Control systems</b>						
<b>Positioner</b>						
GEMÜ 1434 µPos ▶ page 282						
GEMÜ 1435 ePos ▶ page 284		•		•	•	
<b>Positioner and process controller</b>						
GEMÜ 1436 cPos ▶ page 285		•		•	•	
<b>Accessories</b>						
Connection accessories ▶ page 355						
Stroke limiters ▶ page 360						
Sensor accessories ▶ page 362						
Position indicators ▶ page 359						



## Ball valves

## Description

Ball valves are versatile and can also be used in extreme circumstances. With the ball that has been drilled through as a shut-off body, this valve type is particularly well-suited to safely shutting off liquid and gaseous media at a very high operating pressure. As media travels between the ball and the body when opening and closing, ball valves are suitable for mechanically pure, inert or corrosive liquids, gases or steam. Caution must be exercised with crystallizing media, as these can have a negative effect on functionality.

## Features

- High flow rates
- Fast cycle duties
- High operating pressures
- High temperatures

## Typical working media

- Liquids: Water, glycol, cooling lubricant
- Gases: Air, compressed air

## Applications

- Generation and distribution of compressed air, water, industrial gas
- Batch and filling processes
- Heat exchangers and heating systems
- Heating and cooling processes in machines, systems and buildings
- Dyeing and cleaning
- Filter systems and filter cleaning





# Functional principle of ball valves



Open



Closed

The ball valve comprises a ball with a continuous hole, which generally sits in a body between PTFE sealing rings. The ball is connected via an externally positioned shaft. The valve can be opened and closed by rotating it through 90°.

The deadleg needs to be taken into account for ball valves. Caution must be exercised with crystallizing media. If a medium is enclosed in the ball, this can have a negative impact on functionality and service life.

## Ball holes

GEMÜ ball valves are available as both a 2/2-way straight through body and a 3/2-way valve with T or L ball. With these special designs, various customers can also use ball valves to bypass the media flow.

## Full and reduced flow bore

There is a difference between ball valves with full flow bore and reduced flow bore. With a full flow bore, the hole in the ball has the same inside diameter as the connected piping. A major advantage of the version with full flow bore is that the full cross section of the pipe is free when open. This results in minimal pressure loss and a high Kvs value. This makes the ball valves ideal for high viscosity media, and they are the only named valves that are also piggable.

In the design with reduced flow bore, the inside diameter in the area of the ball is reduced. An altered pressure structure is, therefore, generated in the valve and outlet distance. The turbulence that this creates results in a jet effect that is, among other things, suitable for applications with dual-substance or multi-substance mixtures.



# Modular system for ball valves

With the GEMÜ modular system, we offer you the opportunity to put together a suitable valve in line with your requirements. Discover all configuration options at [www.gemu-group.com](http://www.gemu-group.com)

## Measurement and control technology

Electrical position indicators and combi switchboxes | Positioners and process controllers | Accessories



## Actuators

Manual | Pneumatic | Motorized  
Metal | Plastic



## Bodies

2/2-way body | Multi-port body  
Metal | Plastic







Configure your valve online  
at [www.gemu-group.com](http://www.gemu-group.com)

## Ball valves with bare shaft

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# Overview

GEMÜ type	790	K715	K740	K762
				
<b>Special feature</b>	High pressures	Various connection options	Option with cavity filled seat and high-grade surface finish	Compact length
<b>Media temperature</b>	-20 to 180 °C	-20 to 180 °C	-20 to 180 °C	-20 to 180 °C
<b>Ambient temperature</b>	-20 to 60 °C	-20 to 60 °C	0 to 60 °C	-20 to 60 °C
<b>Operating pressure</b>	0 to 137 bar	0 to 63 bar	0 to 63 bar	0 to 40 bar
<b>Nominal sizes</b>	DN 8 to 100	DN 8 to 100	DN 8 to 100	DN 15 to 100
<b>Connection types</b>				
Clamp	-	-	•	-
Flange	•	•	-	•
Spigot	•	•	•	-
Threaded connection	•	•	-	-
<b>Connection standards</b>				
ANSI	-	•	-	•
ASME	•	•	•	-
DIN	•	•	•	-
EN	•	•	•	•
ISO	•	•	•	-
NPT	•	•	-	-
SMS	•	•	•	-
<b>Body configurations</b>				
2/2-way body	•	•	•	•
Multi-port body	-	•	-	-
<b>Body materials</b>				
1.4404 (CF3M)	-	-	•	-
1.4408	•	•	-	•
<b>Conformities</b>				
ATEX	•	•	•	-
EAC	-	•	-	-
FDA	•	•	•	•
FireSafe	•	-	-	-
TA Luft (German Clean Air Act)	•	•	•	•

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 790

## High-pressure ball valve with bare shaft

The GEMÜ 790 3-piece 2/2-way metal ball valve has a bare shaft. The seat seal is made of PTFE. Due to a graphite reinforced body seal, the GEMÜ 790 ball valve is optionally also available as a FireSafe version.

### Features

- Low maintenance and reliable spindle sealing
- TA-Luft compliant
- Broad range of operating temperatures and pressures
- Additionally encapsulated body seal
- Suitable for vacuum applications
- Fire-safe design according to API 607 optionally available



### Technical specifications

<b>Media temperature:</b>	-20 to 180 °C
<b>Ambient temperature:</b>	-20 to 60 °C
<b>Operating pressure :</b>	0 to 137 bar
<b>Nominal sizes:</b>	DN 8 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ASME   DIN   EN   ISO   NPT   SMS
<b>Body materials:</b>	1.4408, investment casting material
<b>Seal materials:</b>	PTFE
<b>Conformities:</b>	ATEX   FDA   FireSafe   TA Luft (German Clean Air Act)

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GW-790



# GEMÜ K715

## Ball valve with bare shaft

The GEMÜ K715 stainless steel three-piece 2/2-way ball valve has a bare shaft. The actuator is easy to assemble, as the top flange is in line with ISO 5211.

### Features

- Suitable for vacuum applications
- Low maintenance and reliable spindle sealing
- TA-Luft compliant
- Antistatic device



### Technical specifications

<b>Media temperature:</b>	-20 to 180 °C
<b>Ambient temperature:</b>	-20 to 60 °C
<b>Operating pressure :</b>	0 to 63 bar
<b>Nominal sizes:</b>	DN 8 to 100
<b>Body configurations:</b>	2/2-way body   Multi-port body
<b>Connection types:</b>	Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   DIN   EN   ISO   NPT   SMS
<b>Body materials:</b>	1.4408, investment casting material
<b>Seal materials:</b>	PTFE
<b>Conformities:</b>	ATEX   EAC   FDA   TA Luft (German Clean Air Act)

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GW-K715



# GEMÜ K740

## Sanitary ball valve with bare shaft

The GEMÜ K740 metal 3-piece 2/2-way ball valve has a bare shaft. It is ideal for sanitary/hygienic applications. The seat seal is available either in PTFE or TFM™.

### Features

- Suitable for vacuum applications
- Optionally available with cavity-filled seat
- CIP/SIP capable
- Low maintenance and reliable spindle sealing
- Reduced torque
- High-grade surface finish
- Standard interface (connection flange acc. to ISO 5211)



### Technical specifications

<b>Media temperature:</b>	-20 to 180 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 63 bar
<b>Nominal sizes:</b>	DN 8 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Clamp   Spigot
<b>Connection standards:</b>	ASME   DIN   EN   ISO   SMS
<b>Body materials:</b>	1.4404 (CF3M), investment casting material
<b>Seal materials:</b>	PTFE
<b>Conformities:</b>	ATEX   FDA   TA Luft (German Clean Air Act)

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GW-K740



# GEMÜ K762

## Compact flanged ball valve

The GEMÜ K762 metal one-piece 2/2-way ball valve has a bare shaft. The seat seal is made of PTFE.

### Features

- High flow rates
- Full-flow bore
- Compact design
- Approvals: FDA, TA-Luft (German Clean Air Act)



### Technical specifications

<b>Media temperature:</b>	-20 to 180 °C
<b>Ambient temperature:</b>	-20 to 60 °C
<b>Operating pressure :</b>	0 to 40 bar
<b>Nominal sizes:</b>	DN 15 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   EN
<b>Body materials:</b>	1.4408, investment casting material
<b>Seal materials:</b>	PTFE
<b>Conformities:</b>	FDA   TA Luft (German Clean Air Act)

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GW-K762








## Manually operated ball valves made of metal

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# Overview

GEMÜ type	797	707	711	740	762
					
<b>Special feature</b>	High pressures		Various connection options	Option with cavity filled seat and high-grade surface finish	Compact length
<b>Media temperature</b>	-20 to 180 °C	-20 to 180 °C	-20 to 180 °C	-20 to 220 °C	-20 to 180 °C
<b>Ambient temperature</b>	-20 to 60 °C	0 to 60 °C	-20 to 60 °C	0 to 60 °C	-20 to 60 °C
<b>Operating pressure</b>	0 to 137 bar	0 to 69 bar	0 to 63 bar	0 to 63 bar	0 to 40 bar
<b>Nominal sizes</b>	DN 8 to 100	DN 8 to 50	DN 8 to 100	DN 8 to 100	DN 15 to 100
<b>Connection types</b>					
Clamp	-	-	-	●	-
Flange	●	-	●	-	●
Spigot	●	-	●	●	-
Threaded connection	●	●	●	-	-
<b>Connection standards</b>					
ANSI	-	-	●	-	●
ASME	●	-	●	●	-
DIN	●	●	●	●	-
EN	●	-	●	●	●
ISO	●	-	●	●	-
NPT	●	●	●	-	-
SMS	●	-	●	●	-
<b>Body configurations</b>					
2/2-way body	●	●	●	●	●
Multi-port body	-	-	●	-	-
<b>Body materials</b>					
1.4404 (CF3M)	-	-	-	●	-
1.4408	●	●	●	-	●
<b>Conformities</b>					
ATEX	●	●	●	●	●
EAC	-	●	●	●	●
FDA	●	●	●	●	●
FireSafe	●	-	-	-	-
TA Luft (German Clean Air Act)	●	-	●	●	●

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 797

## Manually operated high-pressure ball valve

The GEMÜ 797 3-piece 2/2-way metal ball valve is manually operated. It has a plastic sleeved hand lever. The seat seal is made of PTFE. Due to a graphite reinforced body seal, the GEMÜ 797 ball valve is optionally also available as a FireSafe version.

### Features

- Low maintenance and reliable spindle sealing
- Broad range of operating temperatures and pressures
- Choice of various body materials and connection types
- Lockable hand lever
- Suitable for vacuum applications
- Fire-safe design according to API 607 optionally available



### Technical specifications

<b>Media temperature:</b>	-20 to 180 °C
<b>Ambient temperature:</b>	-20 to 60 °C
<b>Operating pressure :</b>	0 to 137 bar
<b>Nominal sizes:</b>	DN 8 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ASME   DIN   EN   ISO   NPT   SMS
<b>Body materials:</b>	1.4408, investment casting material
<b>Seal materials:</b>	PTFE
<b>Conformities:</b>	ATEX   FDA   FireSafe   TA Luft (German Clean Air Act)

Go online!



GW-797



# GEMÜ 707

## Manually operated ball valve

The GEMÜ 707 2-piece 2/2-way metal ball valve is manually operated. It has a plastic sleeved lockable hand lever. The seat seal is made of PTFE.

### Features

- High flow rates
- Low weight
- Compact design
- Lockable hand lever



### Technical specifications

<b>Media temperature:</b>	-20 to 180 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 69 bar
<b>Nominal sizes:</b>	DN 8 to 50
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Threaded connection
<b>Connection standards:</b>	DIN   NPT
<b>Body materials:</b>	1.4408, investment casting material
<b>Seal materials:</b>	PTFE
<b>Conformities:</b>	ATEX   EAC   FDA

Go online!



GW-707



# GEMÜ 711

## Manually operated ball valve

The GEMÜ 711 3-piece 2/2-way metal ball valve is manually operated. It has a plastic sleeved hand lever with a locking device. The seat seal is made of PTFE.

### Features

- Suitable for vacuum applications
- Low maintenance and reliable spindle sealing
- TA-Luft compliant
- Antistatic device



### Technical specifications

<b>Media temperature:</b>	-20 to 180 °C
<b>Ambient temperature:</b>	-20 to 60 °C
<b>Operating pressure :</b>	0 to 63 bar
<b>Nominal sizes:</b>	DN 8 to 100
<b>Body configurations:</b>	2/2-way body   Multi-port body
<b>Connection types:</b>	Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   DIN   EN   ISO   NPT   SMS
<b>Body materials:</b>	1.4408, investment casting material
<b>Seal materials:</b>	PTFE
<b>Conformities:</b>	ATEX   EAC   FDA   TA Luft (German Clean Air Act)

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GW-711



# GEMÜ 740

## Manually operated sanitary ball valve

The GEMÜ 740 3-piece 2/2-way metal ball valve is manually operated. It has a plastic sleeved hand lever with a locking device. The seat seal is available either in PTFE or TFM™.

### Features

- Suitable for vacuum applications
- Optionally available with cavity-filled seat
- CIP/SIP capable
- Low maintenance and reliable spindle sealing
- Reduced torque
- High-grade surface finish



### Technical specifications

<b>Media temperature:</b>	-20 to 220 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 63 bar
<b>Nominal sizes:</b>	DN 8 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Clamp   Spigot
<b>Connection standards:</b>	ASME   DIN   EN   ISO   SMS
<b>Body materials:</b>	1.4404 (CF3M), investment casting material
<b>Seal materials:</b>	PTFE
<b>Conformities:</b>	ATEX   EAC   FDA   TA Luft (German Clean Air Act)

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GW-740



# GEMÜ 762

## Manually operated compact flanged ball valve

The GEMÜ B26 2/2-way metal ball valve is manually operated. It has a plastic sleeved hand lever. The seat seal is made of PTFE.

### Features

- High flow rates
- Full-flow bore
- Compact design
- Non-twisting lever
- Lockable hand lever



### Technical specifications

<b>Media temperature:</b>	-20 to 180 °C
<b>Ambient temperature:</b>	-20 to 60 °C
<b>Operating pressure :</b>	0 to 40 bar
<b>Nominal sizes:</b>	DN 15 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   EN
<b>Body materials:</b>	1.4408, investment casting material
<b>Seal materials:</b>	PTFE
<b>Conformities:</b>	ATEX   EAC   FDA   TA Luft (German Clean Air Act)

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GW-762







## Manually operated ball valves made of plastic

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# Overview

GEMÜ type	717	S717
		
<b>Special feature</b>		For Group 2 fluids in accordance with PED 2014/68/EU
<b>Media temperature</b>	-20 to 100 °C	0 to 60 °C
<b>Ambient temperature</b>	-10 to 50 °C	0 to 60 °C
<b>Operating pressure</b>	0 to 16 bar	0 to 16 bar
<b>Nominal sizes</b>	DN 10 to 100	DN 10 to 100
<b>Connection types</b>		
Flange	•	•
Solvent cement socket	•	•
Spigot	•	•
Threaded connection	•	•
Union end	•	•
<b>Connection standards</b>		
ANSI	•	-
ASTM	-	•
BS	•	•
DIN	•	•
EN	•	-
ISO	•	-
JIS	•	-
NPT	•	•
<b>Body configurations</b>		
2/2-way body	•	•
Multi-port body	•	-
<b>Body materials</b>		
ABS	•	-
PP-H	•	•
PVC-C	•	-
PVC-U	•	•
PVDF	•	-
<b>Conformities</b>		
EAC	•	-

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 717

## Manually operated ball valve

The GEMÜ 717 2/2 or 3/2-way plastic ball valve has an ergonomically designed hand lever and is manually operated. The seat seal is made from PTFE and the O-ring seals can be made from either EPDM or FKM.

### Features

- High flow rates
- Low weight
- Choice of various body materials and connection types
- Union nut with integrated spin-lock
- 2/2 and 3/2-way versions available
- Optionally available with control ball



### Technical specifications

<b>Media temperature:</b>	-20 to 100 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 10 to 100
<b>Body configurations:</b>	2/2-way body   Multi-port body
<b>Connection types:</b>	Flange   Solvent cement socket   Spigot   Threaded connection   Union end
<b>Connection standards:</b>	ANSI   BS   DIN   EN   ISO   JIS   NPT
<b>Body materials:</b>	ABS   PP-H, grey   PVC-C, chlorinated   PVC-U, grey   PVDF
<b>Seal materials:</b>	EPDM   FFKM   FKM
<b>Conformities:</b>	EAC

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# GEMÜ S717

## Manually operated ball valve

GEMÜ S717 is a 2/2-way plastic ball valve available in sizes DN 10 to 100. It is equipped with a plastic manual actuator. The seat seal is made from PTFE and the O-ring seals can be made from either EPDM or FKM.

The product is designed for use in piping. It controls a flowing medium by manual operation.

### Features

- Simple installation
- Durable
- Grip can be used as a regulating key



### Technical specifications

<b>Media temperature:</b>	0 to 60 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 10 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange   Solvent cement socket   Spigot   Threaded connection   Union end
<b>Connection standards:</b>	ASTM   BS   DIN   NPT
<b>Body materials:</b>	PP-H, grey   PVC-U, grey
<b>Seal materials:</b>	EPDM   FKM

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GW-S717



## Pneumatically operated ball valves

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# Overview

GEMÜ type	791	751	741	761	710
					
<b>Special feature</b>	High pressures	Various connection options	Option with cavity filled seat and high-grade surface finish	Compact length	Plastic ball valve
<b>Media temperature</b>	-20 to 180 °C	-20 to 180 °C	-20 to 220 °C	-20 to 180 °C	-20 to 100 °C
<b>Ambient temperature</b>	-20 to 60 °C	-20 to 60 °C	0 to 60 °C	-20 to 60 °C	-10 to 50 °C
<b>Operating pressure</b>	0 to 137 bar	0 to 63 bar	0 to 63 bar	0 to 40 bar	0 to 16 bar
<b>Nominal sizes</b>	DN 8 to 100	DN 8 to 100	DN 8 to 100	DN 15 to 100	DN 10 to 100
<b>Connection types</b>					
Clamp	-	-	●	-	-
Flange	●	●	-	●	●
Solvent cement socket	-	-	-	-	●
Spigot	●	●	●	-	●
Threaded connection	●	●	-	-	●
Union end	-	-	-	-	●
<b>Connection standards</b>					
ANSI	-	●	-	●	-
ASME	●	●	●	-	-
ASTM	-	-	-	-	●
BS	-	-	-	-	●
DIN	●	●	●	-	●
EN	●	●	●	●	●
ISO	●	●	●	-	●
JIS	-	-	-	-	●
NPT	●	●	-	-	-
SMS	●	●	●	-	-
<b>Body configurations</b>					
2/2-way body	●	●	●	●	●
Multi-port body	-	●	-	-	●
<b>Body materials</b>					
1.4404 (CF3M)	-	-	●	-	-
1.4408	●	●	-	●	-
ABS	-	-	-	-	●
PVC-C	-	-	-	-	●
PVC-U	-	-	-	-	●
PVDF	-	-	-	-	●
<b>Conformities</b>					
ATEX	●	●	●	●	-
EAC	-	●	●	●	●
FDA	●	●	●	●	-
FireSafe	●	-	-	-	-
Regulation (EC) No. 1935/2004	-	-	●	-	-
TA Luft (German Clean Air Act)	●	●	●	●	-

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 791

## Pneumatically operated high-pressure ball valve

The GEMÜ 791 3-piece 2/2-way metal ball valve has a metal actuator and is pneumatically operated. The seat seal is made of PTFE. Due to a graphite reinforced body seal, the GEMÜ 791 ball valve is optionally also available as a FireSafe version.

### Features

- Low maintenance and reliable spindle sealing
- TA-Luft compliant
- Broad range of operating temperatures and pressures
- Additionally encapsulated body seal
- Suitable for vacuum applications
- Fire-safe design according to API 607 optionally available



### Technical specifications

<b>Media temperature:</b>	-20 to 180 °C
<b>Ambient temperature:</b>	-20 to 60 °C
<b>Operating pressure :</b>	0 to 137 bar
<b>Nominal sizes:</b>	DN 8 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ASME   DIN   EN   ISO   NPT   SMS
<b>Body materials:</b>	1.4408, investment casting material
<b>Seal materials:</b>	PTFE
<b>Conformities:</b>	ATEX   FDA   FireSafe   TA Luft (German Clean Air Act)

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GW-791



# GEMÜ 751

## Pneumatically operated ball valve

The GEMÜ 751 3-piece 2/2-way metal ball valve is pneumatically operated. The seat seal is made of PTFE.

### Features

- Suitable for vacuum applications
- Low maintenance and reliable spindle sealing
- TA-Luft compliant
- Seal material made of PTFE and FPM
- Antistatic device



### Technical specifications

<b>Media temperature:</b>	-20 to 180 °C
<b>Ambient temperature:</b>	-20 to 60 °C
<b>Operating pressure :</b>	0 to 63 bar
<b>Nominal sizes:</b>	DN 8 to 100
<b>Body configurations:</b>	2/2-way body   Multi-port body
<b>Connection types:</b>	Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   DIN   EN   ISO   NPT   SMS
<b>Body materials:</b>	1.4408, investment casting material
<b>Seal materials:</b>	PTFE
<b>Conformities:</b>	ATEX   EAC   FDA   TA Luft (German Clean Air Act)

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GW-751



# GEMÜ 741

## Pneumatically operated sanitary ball valve

The GEMÜ 741 3-piece 2/2-way metal ball valve has a metal actuator and is pneumatically operated. The seat seal is available either in PTFE (cavity filled) or in PTFE TFM™.

### Features

- Suitable for vacuum applications
- Optionally available with cavity-filled seat
- CIP/SIP capable
- Low maintenance and reliable spindle sealing
- Reduced torque
- High-grade surface finish



### Technical specifications

<b>Media temperature:</b>	-20 to 220 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 63 bar
<b>Nominal sizes:</b>	DN 8 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Clamp   Spigot
<b>Connection standards:</b>	ASME   DIN   EN   ISO   SMS
<b>Body materials:</b>	1.4404 (CF3M), investment casting material
<b>Seal materials:</b>	PTFE
<b>Conformities:</b>	ATEX   EAC   FDA   Regulation (EC) No. 1935/2004   TA Luft (German Clean Air Act)

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GW-741





# GEMÜ 761

## Pneumatically operated compact flanged ball valve

The GEMÜ 728 2/2-way metal ball valve is pneumatically operated. The seat seal is made of PTFE.

### Features

- High flow rates
- Full-flow bore
- Adjustable travel stops
- Antistatic device



### Technical specifications

<b>Media temperature:</b>	-20 to 180 °C
<b>Ambient temperature:</b>	-20 to 60 °C
<b>Operating pressure :</b>	0 to 40 bar
<b>Nominal sizes:</b>	DN 15 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   EN
<b>Body materials:</b>	1.4408, investment casting material
<b>Seal materials:</b>	PTFE
<b>Conformities:</b>	ATEX   EAC   FDA   TA Luft (German Clean Air Act)

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GW-761



# GEMÜ 710

## Pneumatically operated ball valve

The 2/2 and/or 3/2-way GEMÜ 710 plastic ball valve has a pneumatic actuator, which can either be made from aluminium or plastic. The seat seal is made from PTFE and the O-ring seals can be made from either EPDM or FKM.

### Features

- High flow rates
- Choice of various body materials and connection types
- 2/2 and 3/2-way versions available
- Optionally available with control ball



### Technical specifications

<b>Media temperature:</b>	-20 to 100 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 10 to 100
<b>Body configurations:</b>	2/2-way body   Multi-port body
<b>Connection types:</b>	Flange   Solvent cement socket   Spigot   Threaded connection   Union end
<b>Connection standards:</b>	ASTM   BS   DIN   EN   ISO   JIS
<b>Body materials:</b>	ABS   PP-H, grey   PVC-C, chlorinated   PVC-U, grey   PVDF
<b>Seal materials:</b>	EPDM   FFKM   FKM
<b>Conformities:</b>	EAC

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GW-710










## Motorized ball valves

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# Overview

GEMÜ type	798	728	748	768	723
					
<b>Special feature</b>	High pressures	Various connection options	Option with cavity filled seat and high-grade surface finish	Compact length	Plastic ball valve
<b>Media temperature</b>	-20 to 180 °C	-20 to 180 °C	-20 to 220 °C	-20 to 180 °C	-20 to 100 °C
<b>Ambient temperature</b>	-20 to 60 °C	-20 to 60 °C	0 to 60 °C	-20 to 60 °C	-10 to 50 °C
<b>Operating pressure</b>	0 to 137 bar	0 to 63 bar	0 to 63 bar	0 to 40 bar	0 to 16 bar
<b>Nominal sizes</b>	DN 8 to 100	DN 8 to 100	DN 8 to 100	DN 15 to 100	DN 10 to 100
<b>Supply voltage</b>	12 - 250 V AC/DC	12 - 250 V AC/DC	12 - 250 V AC/DC	12 - 250 V AC/DC	12 - 250 V AC/DC
<b>Operating time 90°</b>	11 to 20 s	11 to 20 s	11 to 20 s	11 to 20 s	11 to 20 s
<b>Connection types</b>					
Clamp	-	-	●	-	-
Flange	●	●	-	●	●
Solvent cement socket	-	-	-	-	●
Spigot	●	●	●	-	●
Threaded connection	●	●	-	-	●
Union end	-	-	-	-	●
<b>Connection standards</b>					
ANSI	-	●	-	●	●
ASME	●	●	●	-	-
BS	-	-	-	-	●
DIN	●	●	●	-	●
EN	●	●	●	●	●
ISO	●	●	●	-	●
JIS	-	-	-	-	●
NPT	●	●	-	-	-
SMS	●	●	●	-	-
<b>Body configurations</b>					
2/2-way body	●	●	●	●	●
Multi-port body	-	●	-	-	●
<b>Body materials</b>					
1.4404 (CF3M)	-	-	●	-	-
1.4408	●	●	-	●	-
ABS	-	-	-	-	●
PP-H	-	-	-	-	●
PVC-C	-	-	-	-	●
PVC-U	-	-	-	-	●
PVDF	-	-	-	-	●
<b>Conformities</b>					
ATEX	●	-	-	-	-
EAC	-	●	●	●	-
FDA	●	●	●	●	-
FireSafe	●	-	-	-	-
TA Luft (German Clean Air Act)	●	●	-	●	-

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 798

## Motorized high-pressure ball valve

The GEMÜ 798 3-piece 2/2-way metal ball valve is motorized. It has a plastic actuator housing. A manual override and an optical position indicator are integrated as standard. The seat seal is made of PTFE. Due to a graphite reinforced body seal, the GEMÜ 798 ball valve is optionally also available as a FireSafe version.

### Features

- Low maintenance and reliable spindle sealing
- TA-Luft compliant
- Broad range of operating temperatures and pressures
- Choice of various body materials and connection types
- Suitable for vacuum applications
- Available with Open/Close control or control module



### Technical specifications

<b>Media temperature:</b>	-20 to 180 °C
<b>Ambient temperature:</b>	-20 to 60 °C
<b>Operating pressure :</b>	0 to 137 bar
<b>Nominal sizes:</b>	DN 8 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ASME   DIN   EN   ISO   NPT   SMS
<b>Body materials:</b>	1.4408, investment casting material
<b>Seal materials:</b>	PTFE
<b>Supply voltage:</b>	12 - 250 V AC/DC
<b>Operating time 90°:</b>	11 to 20 s
<b>Protection class:</b>	IP 65
<b>Conformities:</b>	ATEX   FDA   FireSafe   TA Luft (German Clean Air Act)

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GW-798



# GEMÜ 728

## Motorized ball valve

The GEMÜ 728 3-piece 2/2-way metal ball valve is motorized. It has a plastic actuator housing. A manual override and an optical position indicator are integrated as standard. The seat seal is made of PTFE.

### Features

- Suitable for vacuum applications
- Low maintenance and reliable spindle sealing
- TA-Luft compliant
- Seal material made of PTFE and FPM
- Antistatic device



### Technical specifications

<b>Media temperature:</b>	-20 to 180 °C
<b>Ambient temperature:</b>	-20 to 60 °C
<b>Operating pressure :</b>	0 to 63 bar
<b>Nominal sizes:</b>	DN 8 to 100
<b>Body configurations:</b>	2/2-way body   Multi-port body
<b>Connection types:</b>	Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   DIN   EN   ISO   NPT   SMS
<b>Body materials:</b>	1.4408, investment casting material
<b>Seal materials:</b>	PTFE
<b>Supply voltage:</b>	12 - 250 V AC/DC
<b>Operating time 90°:</b>	11 to 20 s
<b>Protection class:</b>	IP 65
<b>Conformities:</b>	EAC   FDA   TA Luft (German Clean Air Act)

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GW-728



# GEMÜ 748

## Motorized sanitary ball valve

The GEMÜ 748 3-piece 2/2-way metal ball valve is motorized. It has a plastic actuator housing. The seat seal is available either in PTFE or TFM™.

### Features

- Suitable for vacuum applications
- Optionally available with cavity-filled seat
- CIP/SIP capable
- Low maintenance and reliable spindle sealing
- Reduced torque
- High-grade surface finish



### Technical specifications

<b>Media temperature:</b>	-20 to 220 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 63 bar
<b>Nominal sizes:</b>	DN 8 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Clamp   Spigot
<b>Connection standards:</b>	ASME   DIN   EN   ISO   SMS
<b>Body materials:</b>	1.4404 (CF3M), investment casting material
<b>Seal materials:</b>	PTFE
<b>Supply voltage:</b>	12 - 250 V AC/DC
<b>Operating time 90°:</b>	11 to 20 s
<b>Protection class:</b>	IP 65
<b>Conformities:</b>	EAC   FDA

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GW-748





# GEMÜ 768

## Motorized compact flanged ball valve

The GEMÜ 768 2/2-way metal ball valve is motorized. It has a plastic actuator housing. A manual override and an optical position indicator are integrated as standard. The seat seal is made of PTFE.

### Features

- High flow rates
- Full-flow bore
- Suitable for vacuum applications
- Available with Open/Close control or control module
- Antistatic device



### Technical specifications

<b>Media temperature:</b>	-20 to 180 °C
<b>Ambient temperature:</b>	-20 to 60 °C
<b>Operating pressure :</b>	0 to 40 bar
<b>Nominal sizes:</b>	DN 15 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   EN
<b>Body materials:</b>	1.4408, investment casting material
<b>Seal materials:</b>	PTFE
<b>Supply voltage:</b>	12 - 250 V AC/DC
<b>Operating time 90°:</b>	11 to 20 s
<b>Protection class:</b>	IP 65
<b>Conformities:</b>	EAC   FDA   TA Luft (German Clean Air Act)

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GW-768



# GEMÜ 723

## Motorized ball valve

The 2/2 and/or 3/2-way GEMÜ 723 ball valve is motorized. It has a plastic actuator housing. A manual override and an optical position indicator are integrated as standard. The seat seal is made from PTFE and the O-ring seals can be made from either EPDM or FKM.

### Features

- High flow rates
- Low weight
- Choice of various body materials and connection types
- Available as shut off or control valve
- 2/2 and 3/2-way versions available



### Technical specifications

<b>Media temperature:</b>	-20 to 100 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 10 to 100
<b>Body configurations:</b>	2/2-way body   Multi-port body
<b>Connection types:</b>	Flange   Solvent cement socket   Spigot   Threaded connection   Union end
<b>Connection standards:</b>	ANSI   BS   DIN   EN   ISO   JIS
<b>Body materials:</b>	ABS   PP-H, grey   PVC-C, chlorinated   PVC-U, grey   PVDF
<b>Seal materials:</b>	EPDM   FFKM   FKM
<b>Supply voltage:</b>	12 - 250 V AC/DC
<b>Operating time 90°:</b>	11 to 20 s
<b>Protection class:</b>	IP 65

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GW-723

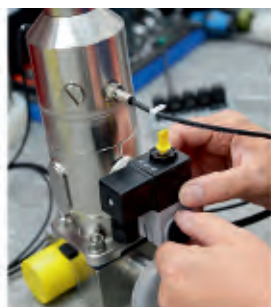




# Add-on components for ball valves

GEMÜ type	710	711	740	741	751	761	762	791	797
<b>Measurement and control technology</b>									
<b>Electrical position indicator</b>									
GEMÜ 1201 / 1211 / 1214 ▶ page 304	•								
GEMÜ 1205 ▶ page 305	•								
GEMÜ 1215 ▶ page 302	•								
GEMÜ 1230 / 1231 / 1232 ▶ page 303	•								
GEMÜ 1235 / 1236 ▶ page 307	•			•	•	•		•	
GEMÜ 1242 ▶ page 308	•			•	•	•		•	
GEMÜ LSC ▶ page 310	•	•	•	•	•	•	•	•	•
GEMÜ LSF ▶ page 311	•	•	•	•	•	•	•	•	•
<b>Combi switchbox</b>									
GEMÜ 4242 ▶ page 316	•			•	•	•		•	
<b>Pilot valve</b>									
GEMÜ 0324 ▶ page 323	•								
<b>Control systems</b>									
<b>Positioner</b>									
GEMÜ 1434 µPos ▶ page 282	•								
GEMÜ 1435 ePos ▶ page 284	•			•	•	•		•	
<b>Positioner and process controller</b>									
GEMÜ 1436 cPos ▶ page 285	•			•	•	•		•	
<b>Accessories</b>									
Connection accessories ▶ page 355	•								
Stroke limiters ▶ page 360	•			•	•	•		•	
Sensor accessories ▶ page 362	•								
Position indicators ▶ page 359	•			•	•	•		•	

GEMÜ valves are fully assembled in our in-house Assembly department – with compatible accessories on request.



Our pre-assembled solutions are supplied to you preset and tested. Not only can you obtain all components from a single source, you also save on the time and effort required for logistics and installation of the plant on site, as well as for documentation.







## Process solenoid valves

## Description

All valves that are actuated with an electromagnetic actuator are designated as process solenoid valves. Generally, these are short stroke globe valves.

GEMÜ offers process solenoid valves for inert and corrosive and gaseous and liquid media.

The actuator is joined directly to the seal with the **directly controlled** process solenoid valve. A single compression spring holds the valve closed. To open, the seal is lifted by the force of the solenoid and the medium is allowed to flow freely. No minimum operating pressure or pressure differential is required – the valves work from 0 bar.

Using **servo assisted** process solenoid valves, the solenoid opens a pilot hole through which the valve is actuated either directly or supported by the operating pressure differential. They are, therefore, a cross between pilot valves and directly controlled solenoid valves, and can also be used for higher pressure ranges.

## Features

- High cycle duties possible
- Very sensitive to contamination
- Corrosion-resistant
- Ideal dosing valve for small to very small quantities
- Preferred flow direction over the seat

## Typical working media

- Inert and corrosive media
- Liquids and gases

## Applications





- Water treatment plants, washing and cleaning installations
- Plants for the food and foodstuff industries, the chemical industry and electroplating
- Equipment for the photographic industry, laboratory, analytical and medical apparatus

## Servo-assisted process solenoid valves

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# Overview

GEMÜ type	8253	8257	8258	225
				
<b>Media temperature</b>	-10 to 110 °C	-10 to 150 °C	-10 to 110 °C	-20 to 60 °C
<b>Ambient temperature</b>	-10 to 50 °C	-10 to 50 °C	-10 to 50 °C	10 to 40 °C
<b>Operating pressure</b>	0 to 16 bar	0 to 10 bar	0,1 to 16 bar	0 to 6 bar
<b>Nominal sizes</b>	DN 8 to 50	DN 10 to 10	DN 8 to 50	DN 15 to 50
<b>Supply voltages</b>				
110 V AC, 50/60 Hz	•	-	•	-
120 V AC, 50/60 Hz	-	-	-	•
230 V AC, 50 Hz	-	•	-	-
230 V AC, 50/60 Hz	•	-	•	•
230 V AC, 60 Hz	-	•	-	-
24 V AC, 50 Hz	-	•	-	-
24 V AC, 50/60 Hz	•	-	•	•
24 V AC, 60 Hz	-	•	-	-
24 V DC	•	•	•	•
<b>Connection types</b>				
Spigot	-	-	-	•
Threaded connection	•	•	•	-
Union end	-	-	-	•
<b>Body materials</b>				
1.4408	•	•	•	-
CW617N	•	•	•	-
PVC-U	-	-	-	•
<b>Conformities</b>				
EAC	•	•	•	•
UL	-	-	-	•

# GEMÜ 8253

## Electrically operated solenoid valve

The GEMÜ 8253 2/2-way solenoid valve with a positive lift diaphragm has a brass or stainless steel valve body. All media wetted parts are made of NBR, FPM, EPDM, brass, PVDF or stainless steel. The valve is suitable for inert medium such as air, water and oil.

### Features

- Valve operates without minimum pressure differential
- High flow rates
- Soft closing action
- Suitable for vacuum applications
- Simple coil replacement without tools (Click-on®)
- NPT thread available
- Explosion protected solenoids acc. to ATEX available as an option
- UL and CSA approval available



EAC

### Technical specifications

<b>Media temperature:</b>	-10 to 110 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 8 to 50
<b>Connection type:</b>	Threaded connection
<b>Connection standards:</b>	DIN   ISO   NPT
<b>Body materials:</b>	1.4408, investment casting material   CW617N, brass
<b>Supply voltages:</b>	110 V AC, 50/60 Hz   230 V AC, 50/60 Hz   24 V AC, 50/60 Hz   24 V DC
<b>Conformities:</b>	EAC

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GW-8253



# GEMÜ 8257

## Electrically operated solenoid valve

The GEMÜ 8257 2/2-way solenoid valve with a positive lift diaphragm is electromagnetically operated and has a brass or stainless steel valve body. All parts that come into contact with the medium are made from NBR, HNBR, FPM, EPDM, brass or stainless steel. The valve is suitable for inert media such as air, water and oils.

### Features

- Valve operates without minimum pressure differential
- Soft closing action
- Compact design
- Suitable for vacuum applications
- Explosion protected solenoids acc. to ATEX available as an option
- Optimum media compatibility due to choice of materials
- NPT thread available
- Option: for liquids and steam up to 150 °C



EAC

### Technical specifications

<b>Media temperature:</b>	-10 to 150 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 10 to 10
<b>Connection type:</b>	Threaded connection
<b>Connection standards:</b>	DIN   ISO   NPT
<b>Body materials:</b>	1.4408, investment casting material   CW617N, brass
<b>Supply voltages:</b>	230 V AC, 50 Hz   230 V AC, 60 Hz   24 V AC, 50 Hz   24 V AC, 60 Hz   24 V DC
<b>Conformities:</b>	EAC

Go online!



GW-8257



# GEMÜ 8258

## Electrically operated solenoid valve

The GEMÜ 8258 2/2-way servo assisted solenoid valve has a brass or stainless steel valve body. All parts that come into contact with the medium are made from stainless steel, NBR, EPDM or FPM. The valve is suitable for inert media such as air, water and oils.

### Features

- Low power consumption
- High flow rates
- Soft closing action
- Low minimum pressure differential
- Simple, compact construction
- Simple coil replacement without tools (Click-on®)
- Optional manual override
- Explosion protected solenoids acc. to ATEX available as an option
- Type examination up to DN 25 to DIN EN 60730-2-8
- Optional mounting bracket available (not pre-assembled)
- NPT thread available



EAC

### Technical specifications

<b>Media temperature:</b>	-10 to 110 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0,1 to 16 bar
<b>Nominal sizes:</b>	DN 8 to 50
<b>Connection type:</b>	Threaded connection
<b>Connection standards:</b>	DIN   ISO   NPT
<b>Body materials:</b>	1.4408, investment casting material   CW617N, brass
<b>Supply voltages:</b>	110 V AC, 50/60 Hz   230 V AC, 50/60 Hz   24 V AC, 50/60 Hz   24 V DC
<b>Conformities:</b>	EAC

Go online!



GW-8258



# GEMÜ 225

## Electrically operated solenoid valve

The GEMÜ 225 servo assisted 2/2-way plastic solenoid valve has a high performance coil. The armature is sealed by a bellows made of PTFE backed by an additional safety diaphragm. The plug has a rectifier for use with an AC supply. A manual override and an optical position indicator are integrated as standard.

### Features

- Hermetic separation between medium and actuator
- In case of power failure operation possible by manual override
- Standard integral optical position indicator



EAC

### Technical specifications

<b>Media temperature:</b>	-20 to 60 °C
<b>Ambient temperature:</b>	10 to 40 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Connection types:</b>	Spigot   Union end
<b>Connection standards:</b>	DIN
<b>Body materials:</b>	PVC-U
<b>Supply voltages:</b>	120 V AC, 50/60 Hz   230 V AC, 50/60 Hz   24 V AC, 50/60 Hz   24 V DC
<b>Conformities:</b>	EAC   UL

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GW-225



## Directly controlled process solenoid valves

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# Overview

GEMÜ type	52	102	202	205	8259
					
<b>Media temperature</b>	-20 to 100 °C	-20 to 100 °C	-20 to 100 °C	-20 to 60 °C	-10 to 110 °C
<b>Ambient temperature</b>	10 to 40 °C	10 to 40 °C	10 to 40 °C	10 to 40 °C	-10 to 50 °C
<b>Operating pressure</b>	0 to 6 bar	0 to 4 bar	0 to 2 bar	0 to 6 bar	0 to 20 bar
<b>Nominal sizes</b>	DN 2 to 6	DN 6 to 10	DN 10 to 15	DN 10 to 50	DN 2 to 5
<b>Supply voltages</b>					
110 V AC, 50 Hz	-	-	-	-	•
12 V DC	•	•	•	-	-
120 V AC, 50/60 Hz	•	•	•	•	-
230 V AC, 50 Hz	-	-	-	-	•
230 V AC, 50/60 Hz	•	•	•	•	-
24 V AC, 50/60 Hz	•	•	•	•	-
24 V DC	•	•	•	•	•
<b>Connection types</b>					
Solvent cement socket	-	•	•	•	-
Spigot	-	-	-	•	-
Threaded connection	•	•	•	•	•
Union end	-	-	-	•	-
<b>Body materials</b>					
1.4408	-	-	-	-	•
CW617N	-	-	-	-	•
PVC-U	•	•	•	•	-
PVDF	•	•	•	•	-
<b>Conformities</b>					
ATEX	-	-	-	-	•
EAC	•	•	•	•	•
UL	•	•	•	•	-

# GEMÜ 52

## Electrically operated solenoid valve

The GEMÜ 52 directly controlled 2/2-way solenoid valve has a completely plastic encapsulated coil. The armature is sealed by a bellows made of PTFE backed by an additional safety diaphragm. The valve body is available in various materials and with a straight through or angle valve body design.

### Features

- Good cleanability
- Hermetic separation between medium and actuator
- The solenoid can be replaced without removing the valve body from the piping



EAC

### Technical specifications

<b>Media temperature:</b>	-20 to 100 °C
<b>Ambient temperature:</b>	10 to 40 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 2 to 6
<b>Connection type:</b>	Threaded connection
<b>Connection standards:</b>	DIN   ISO
<b>Body materials:</b>	PVC-U, grey   PVDF
<b>Supply voltages:</b>	12 V DC   120 V AC, 50/60 Hz   230 V AC, 50/60 Hz   24 V AC, 50/60 Hz   24 V DC
<b>Conformities:</b>	EAC   UL

Go online!



GW-52





# GEMÜ 102

## Electrically operated solenoid valve

The GEMÜ 102 directly controlled 2/2-way solenoid valve has a completely plastic encapsulated coil. The armature is sealed by a bellows made of PTFE backed by an additional safety diaphragm. The valve body is available in various materials and with a straight through or angle valve body design.

### Features

- Good cleanability
- Hermetic separation between medium and actuator
- The solenoid can be replaced without removing the valve body from the piping



EAC

### Technical specifications

<b>Media temperature:</b>	-20 to 100 °C
<b>Ambient temperature:</b>	10 to 40 °C
<b>Operating pressure :</b>	0 to 4 bar
<b>Nominal sizes:</b>	DN 6 to 10
<b>Connection types:</b>	Solvent cement socket   Threaded connection
<b>Connection standards:</b>	DIN   ISO
<b>Body materials:</b>	PVC-U, grey   PVDF
<b>Supply voltages:</b>	12 V DC   120 V AC, 50/60 Hz   230 V AC, 50/60 Hz   24 V AC, 50/60 Hz   24 V DC
<b>Conformities:</b>	EAC   UL

Go online!



GW-102



# GEMÜ 202

## Electrically operated solenoid valve

The GEMÜ 202 directly controlled 2/2-way solenoid valve has a completely plastic encapsulated coil. The armature is sealed by a bellows made of PTFE backed by an additional safety diaphragm. The valve body is available in various materials and with a straight through or angle valve body design.

### Features

- Good cleanability
- The solenoid can be replaced without removing the valve body from the piping
- Hermetic separation between medium and actuator



EAC

### Technical specifications

<b>Media temperature:</b>	-20 to 100 °C
<b>Ambient temperature:</b>	10 to 40 °C
<b>Operating pressure :</b>	0 to 2 bar
<b>Nominal sizes:</b>	DN 10 to 15
<b>Connection types:</b>	Solvent cement socket   Threaded connection
<b>Connection standards:</b>	DIN   ISO
<b>Body materials:</b>	PVC-U, grey   PVDF
<b>Supply voltages:</b>	12 V DC   120 V AC, 50/60 Hz   230 V AC, 50/60 Hz   24 V AC, 50/60 Hz   24 V DC
<b>Conformities:</b>	EAC   UL

Go online!



GW-202



# GEMÜ 205

## Electrically operated solenoid valve

The GEMÜ 205 directly controlled 2/2-way plastic solenoid valve has a high performance coil. It is hermetically separated from the medium by means of a flexible PTFE bush. The armature is sealed by a bellows made of PTFE backed by an additional safety diaphragm. The plug has a rectifier for use with an AC supply. A manual override and an optical position indicator are integrated as standard.

### Features

- Hermetic separation between medium and actuator
- In case of power failure operation possible by manual override
- Standard integral optical position indicator



EAC

### Technical specifications

<b>Media temperature:</b>	-20 to 60 °C
<b>Ambient temperature:</b>	10 to 40 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 10 to 50
<b>Connection types:</b>	Solvent cement socket   Spigot   Threaded connection   Union end
<b>Connection standards:</b>	DIN   ISO
<b>Body materials:</b>	PVC-U, grey   PVDF
<b>Supply voltages:</b>	120 V AC, 50/60 Hz   230 V AC, 50/60 Hz   24 V AC, 50/60 Hz   24 V DC
<b>Conformities:</b>	EAC   UL

Go online!



GW-205



# GEMÜ 8259

## Electrically operated solenoid valve

The GEMÜ 8259 2/2-way direct acting solenoid valve has a brass or stainless steel valve body. All media wetted parts are made of FPM, NBR, PTFE, EPDM, brass or stainless steel. The valve is suitable for inert liquids and gases.

### Features

- Direct acting, normally open or normally closed
- Valve operates without minimum pressure differential
- High flow rates
- Compact design
- Simple coil replacement without tools (Click-on®)
- Suitable for vacuum applications
- Explosion protected solenoids acc. to ATEX available as an option
- UL and CSA approval available
- Various threaded connections per nominal size



### Technical specifications

<b>Media temperature:</b>	-10 to 110 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 20 bar
<b>Nominal sizes:</b>	DN 2 to 5
<b>Connection type:</b>	Threaded connection
<b>Connection standards:</b>	DIN   ISO   NPT
<b>Body materials:</b>	1.4408, investment casting material   CW617N, brass
<b>Supply voltages:</b>	110 V AC, 50 Hz   230 V AC, 50 Hz   24 V DC
<b>Conformities:</b>	ATEX   EAC

Go online!



GW-8259







## Check valves and strainers






Check valves are used if you want to ensure that the medium flows in only one direction in a system. This involves the closing element being blocked in one direction using a spring or gravity, and unblocked by the volumetric flow in the other direction. Two designs can basically be distinguished here – check valves with angle seat globe valve bodies and standard check valves.

## Check valves and strainers

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# Overview

GEMÜ type	RSK	ZRSK	560	N560	CV
					
<b>Design</b>	Check valve	Check valve	Check valve	Check valve	Check valve
<b>Media temperature</b>	-10 to 120 °C	-10 to 200 °C	-10 to 180 °C	5 to 80 °C	0 to 130 °C
<b>Operating pressure</b>	1 to 10 bar	1 to 16 bar	0,2 to 25 bar	0 to 16 bar	0 to 6 bar
<b>Nominal sizes</b>	DN 32 to 600	DN 32 to 600	DN 6 to 50	DN 10 to 100	DN 4 to 20
<b>Body materials</b>					
	-	●	-	-	-
	-	●	-	-	-
	-	●	-	-	-
1.4408	-	●	●	-	-
1.4435	-	-	●	-	-
1.4435 (BN2)	-	-	●	-	-
PP	●	-	-	-	-
PP-H	-	-	-	●	-
PTFE	-	-	-	-	●
PVC-U	●	-	-	●	-
PVDF	●	-	-	-	-
<b>Conformities</b>					
ATEX	-	●	●	●	-
EAC	●	●	●	-	●
FDA	-	●	●	-	-
Oxygen	-	-	●	-	-

# GEMÜ RSK

## Plastic check valve

GEMÜ RSK is a plastic check valve with integrated flange seal. The valve body, disc and seal are available in various materials.

The GEMÜ RSK is clamped between two flanges during installation. The centring is based on the outside diameter of the housing

### Features

- Weight and space-saving construction
- Short length
- Simple construction
- Option with return spring



EAC

### Technical specifications

<b>Media temperature:</b>	-10 to 120 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	1 to 10 bar
<b>Nominal sizes:</b>	DN 32 to 600
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   DIN   EN   ISO
<b>Body materials:</b>	PP   PVC-U, grey   PVDF
<b>Seal materials:</b>	FKM   NBR   PTFE
<b>Disc materials:</b>	PP-H   PVC-U   PVDF
<b>Conformities:</b>	EAC

Go online!



# GEMÜ ZRSK

## Metal check valve

GEMÜ ZRSK is a metal check valve with integrated flange seal. The valve body, disc and seal are available in various materials.

The GEMÜ ZRSK is clamped between two flanges during installation. The centring is based on the outside diameter of the housing

### Features

- Weight and space-saving construction
- Short length
- Simple construction
- Option with return spring



### Technical specifications

<b>Media temperature:</b>	-10 to 200 °C
<b>Ambient temperature:</b>	20 to 95 °C
<b>Operating pressure :</b>	1 to 16 bar
<b>Nominal sizes:</b>	DN 32 to 600
<b>Connection types:</b>	Flange
<b>Connection standards:</b>	ANSI   DIN   EN   ISO
<b>Body materials:</b>	1.4408, investment casting material
<b>Seal materials:</b>	EPDM   FKM   NBR   PTFE
<b>Disc materials:</b>	1.0460, galvanized cast steel material   1.4408, investment casting material   1.4571, forged material   2.0975, bronze casting material
<b>Conformities:</b>	ATEX   EAC   FDA

Go online!



# GEMÜ 560

## Check valve, angle seat design

The GEMÜ 560 check valve comprises an angle seat valve body in stainless steel. The valve has either a PTFE or PFA seat for tight shut off. The valve is available with various connections.

### Features

- High flow rates due to angle seat design
- Seven different connection codes for worldwide use



### Technical specifications

<b>Media temperature:</b>	-10 to 180 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	0,2 to 25 bar
<b>Nominal sizes:</b>	DN 6 to 50
<b>Connection types:</b>	Clamp   Flange   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   ASME   DIN   EN   ISO   SMS
<b>Body materials:</b>	1.4408, investment casting material   1.4435 (BN2), forged material   1.4435, investment casting material
<b>Seal materials:</b>	PFA   PTFE
<b>Conformities:</b>	ATEX   EAC   FDA   Oxygen

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GW-560



# GEMÜ N560

## Check valve

The GEMÜ N560 check valve comprises an angle seat globe valve body made of plastic (either PVC-U or PP-H). The sealing elements are manufactured from EPDM and FPM.

### Features

- Easy to service
- High flow rates due to angle seat design
- Low weight



### Technical specifications

<b>Media temperature:</b>	5 to 80 °C
<b>Ambient temperature:</b>	5 to 50 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 10 to 100
<b>Body configurations:</b>	2/2-way body
<b>Connection types:</b>	Flange   Solvent cement socket   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   DIN   EN
<b>Body materials:</b>	PP-H, natural   PVC-U
<b>Seat seal materials:</b>	EPDM   FKM
<b>Conformities:</b>	ATEX

Go online!



GW-N560



# GEMÜ CV

## Check valve

The GEMÜ CV metal-free check valve comprises a PTFE body. All functional parts are also made of PTFE. PFA, PVDF and CPFA materials are available for the union nuts in the flare connections. Sealing is O-ring-free.

### Features

- Long life seal characteristics
- O-ring free seal system
- Compact design
- Low opening pressure
- Special versions available for direct integration into a block valve

EAC



### Technical specifications

<b>Media temperature:</b>	0 to 130 °C
<b>Ambient temperature:</b>	0 to 100 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 4 to 20
<b>Connection types:</b>	Flare
<b>Body materials:</b>	PTFE
<b>Seal materials:</b>	PTFE
<b>Conformities:</b>	EAC

Go online!



# GEMÜ N570

## Strainer

The GEMÜ N570 strainer has a body made of plastic (either PVC-U or PP-H). The sealing elements are manufactured from EPDM and FPM. Contaminants in the medium are retained by the integrated filter insert.

### Features

- Easy to service
- Low weight
- Corrosion resistant plastic body



### Technical specifications

<b>Media temperature:</b>	5 to 80 °C
<b>Ambient temperature:</b>	5 to 50 °C
<b>Operating pressure :</b>	0 to 16 bar
<b>Nominal sizes:</b>	DN 15 to 50
<b>Connection types:</b>	Clamp   Flange   Solvent cement socket   Spigot   Threaded connection
<b>Connection standards:</b>	ANSI   DIN   EN   ISO
<b>Body materials:</b>	PP-H, natural   PVC-U
<b>Seal materials:</b>	EPDM   FKM
<b>Conformities:</b>	ATEX

Go online!



GW-N570







# Control systems

# Controlling with valves

In many areas of application for valves, simply shutting off the relevant medium is not sufficient. Instead, a control option is required.

According to DIN 19226 Part 1, control is defined as follows: Control is a process in which a variable (controlled variable) is continuously measured, compared with another variable (reference variable) and adjusted to be in line with the reference variable. The characteristic feature of control is the closed control action in which the controlled variable continuously influences itself in the action path of the control circuit. Various control tasks are pending within a single process. As a result, the areas of use for control valves are also extremely versatile:

*Further information can be found in the valve information section.*

## Flow control

- Hot and cold water feed for parts cleaning
- Cooling cast moulds
- Carbonation of beverages
- Inoculation of biocultures
- Flow monitoring in WFI loops (water for injections)

## Pressure and back pressure control

- EPS foaming (steam temperature)
- Chemical circulation systems
- Pressure maintenance in short-term heater systems and analytical apparatus
- Gas injection for foodstuff
- Filling pressure control
- Pressure maintenance in WFI loops

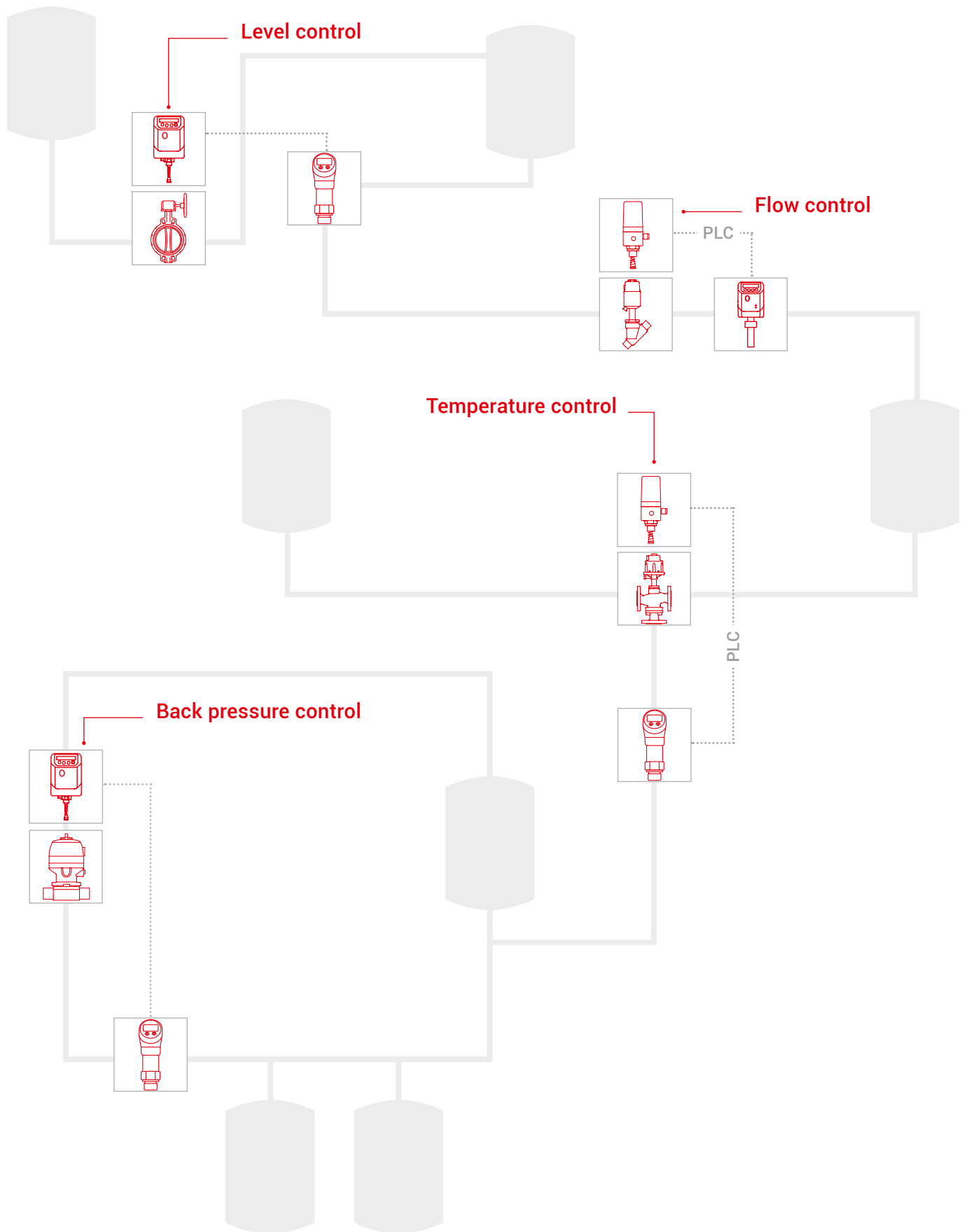
## Level control

- Electroplating baths
- Highly precise dosing and control of trace elements, additives, growth promoters, flavourings or colourings in beverages, foodstuff and pharmaceutical products

## Temperature control

- Cooling systems for server rooms
- Heating biogas fermentation tanks
- Sterilization in place (SIP)





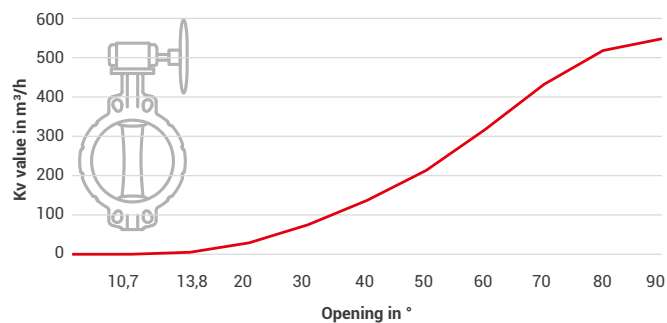
# Overview of valve group controllability

Control valves affect the volumetric flow indirectly via the opening and the accompanying unblocked cross-section. The functional principle of the control valve used has a decisive impact on the control accuracy here. It can generally be controlled using virtually all valve groups, but, depending on the requirements, there are advantages and disadvantages that you have to bear in mind:

## Controlling with butterfly valves

Butterfly valves can also be used as control valves when they are in the intermediate position. Three different control characteristics can be realized within a small stroke distance:

- Opening up to 25° = smallest possible flow volume increase
- Opening up to 65° = large flow volume increase
- Opening up to 90° = small flow volume increase

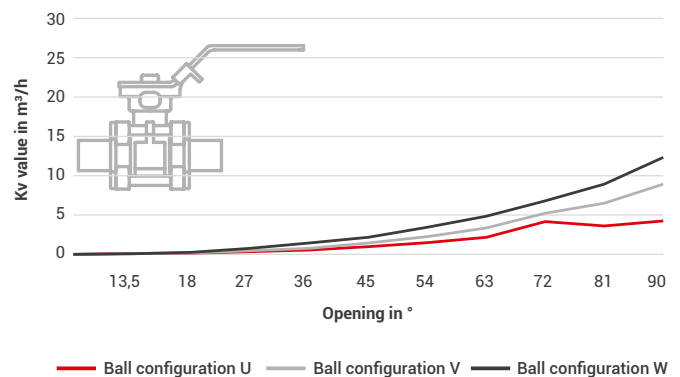


Typical control characteristic for butterfly valves

## Controlling with ball valves

Ball valves also allow a relatively large cross-section with little rotation. This reduces control accuracy.

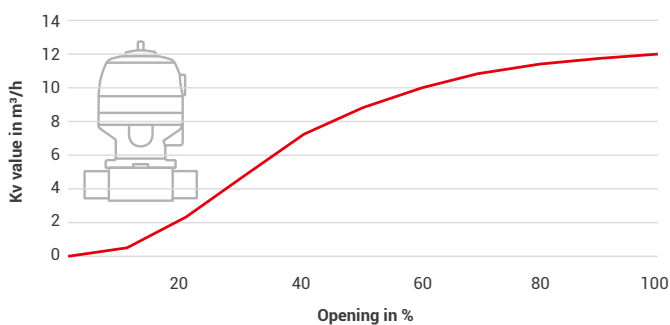
By using what has become known as an orifice plate, relatively constant control characteristics can, nevertheless, be achieved.



Typical control characteristic for ball valves

## Controlling with diaphragm valves

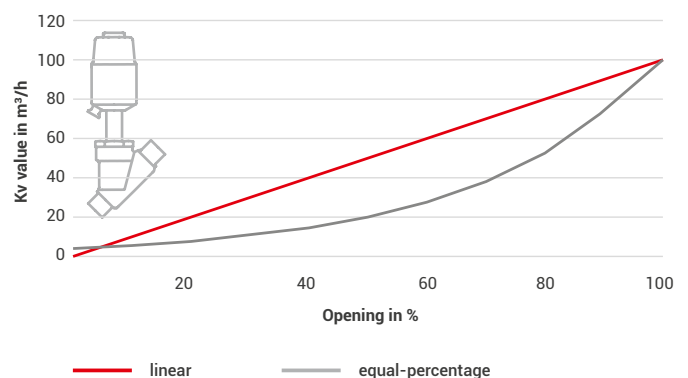
The controllable area is between 20% and 80% of the maximum achievable Kv value for the respective GEMÜ diaphragm size. This combines various nominal sizes and pipe standards (inside diameter).



Typical control characteristic for diaphragm valves

## Controlling with globe valves

Due to the long stroke and other design advantages, globe valves are especially well-suited to precise control tasks. A suitable globe valve, the right flow restrictor and a suitable positioner are necessary for optimum functionality.



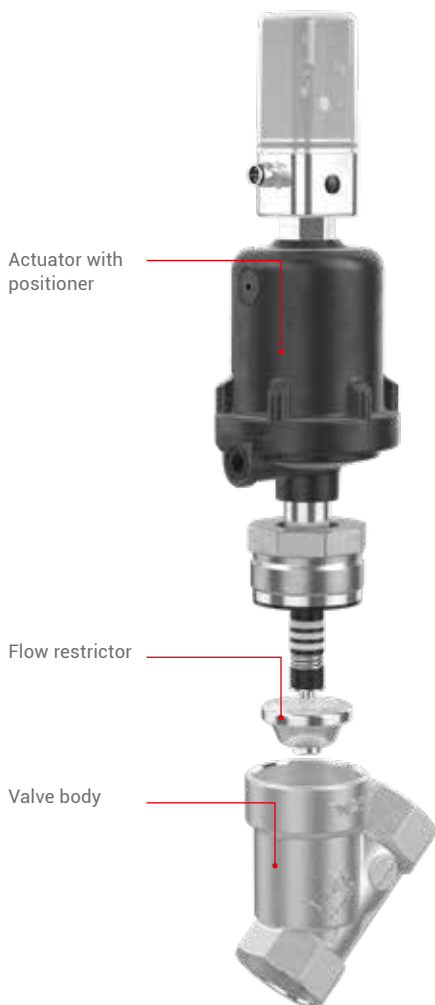
Typical control characteristic for globe valves

# Globe valves as control valves

Thanks to the long stroke distance, combined with the small increase in cross-section at the valve seat, GEMÜ globe valves are ideally suited to control tasks. Moreover, they are distinguished by jolt-free actuation and a long service life in terms of switching frequency.

## This is how a globe valve becomes a control valve **Flow restrictors with different geometries**

With increasing opening of the valve, the flow restrictor changes the ring-shaped gap at the valve seat providing a defined control characteristic. Depending on the type of globe valve and the nominal size, flow restrictors may have widely different geometries.



Regulating needles are used for very small nominal sizes and high pressures because they can control with high precision. For larger diameters, modified regulating cones or regulating cages are preferred for weight reasons.

The most frequently used control characteristics are linear and equal-percentage 1:25 and 1:50. Linear means that the flow increases linearly with the opening stroke of the valve. The flow is 50% at the 50% open valve position. This provides good valve control over the whole stroke range. The equal-percentage control characteristics have the character of an exponential function. In the lower range, with an opening stroke of approx. 20% to 60%, these valves can be very finely controlled depending on the valve stroke.



Regulating needle



Regulating cone



Regulating cage

The incorrect design of control valves can result in poor control results or premature wear. This is why GEMÜ places particular importance on the precise design of the control valves.

Our technical advisors and specification sheet can help you to design control valves.



## Control systems



## Description

In addition to the individual control valve, GEMÜ also supplies complete control systems. The valve type is then always preceded by the prefix PCS. For example, GEMÜ PCS 550 refers to a system solution based on valve type GEMÜ 550.

In addition to the control valve, the control system also includes the mounting kit, the appropriate controller and the compressed air line.

## Features

- Linear or modified equal-percentage control characteristics
- Three actuators available (plastic, aluminium, stainless steel)
- PI or PID control can be selected
- Simple and fast commissioning
- Functional safety in accordance with IEC 61508 and IEC 61511 (SIL), depending on the valve type
- Gland packing suitable for vacuum of up to 20 mbar, depending on the valve type
- ATEX on request
- Depending on choice of controller, process and/or position control is possible



# Overview of control systems



GEMÜ PCS 514

GEMÜ PCS 550

GEMÜ PCS 554

GEMÜ PCS 530

GEMÜ PCS 532

GEMÜ PCS 534

GEMÜ PCS 536

For pneumatic actuators, our positioners and process controllers are fitted ex works and tested and delivered as an entire system.

Not only can you obtain all components from a single source, you also reduce the effort required for logistics and installation of the system on-site, as well as for documentation.



For motorized actuators, the controller is mostly fully integrated. These actuators are an optimum alternative to control valves in sterile environments or when considering service life.

If required, the positioner in question can also be commissioned at the place of use by GEMÜ service engineers.



# Modular system for control systems

With the GEMÜ modular system, we offer you the opportunity to put together a suitable valve in line with your requirements. Discover all configuration options at [www.gemu-group.com](http://www.gemu-group.com)

## Positioners and process controllers

GEMÜ 1434  $\mu$ Pos | GEMÜ 1435 ePos | GEMÜ 1436 cPos | GEMÜ 1436 eco cPos



## Actuators

Metal | Plastic



## Flow restrictors

Regulating needle | Regulating cage | Regulating cone



## Bodies

Angle seat body | Straight seat body



Configure your valve online  
at [www.gemu-group.com](http://www.gemu-group.com)



## Positioners and process controllers

In process automation, positioners and process controllers take on the task of putting the installed valves in the desired position and achieving a defined process variable (e.g. temperature, pressure, volumetric flow). To do this, they compare the desired/set variable with the actual variable and output a corresponding positioning signal to the positioning element (control module) in the event of a deviation.

Our product range for valve process automation also comprises electro-pneumatic positioners for valves with pneumatic quarter turn or linear actuators.

### Information for selecting positioners

A controlled system achieves optimum functionality not only through the selection of the positioner. All system components must be optimally adapted to each other. If this is not achieved, poor positioning and control results will be observed. The greater the requirements with regard to control accuracy, positioning ratio, cavitation and optimum operating and procurement costs are, the more carefully the selection must be made.

*Further information can be found in the valve information section.*

Independent of the correct valve design, the valve must be positioned with the positioner and the necessary sensors at the "correct place" in the pipe system. Only then is optimum functionality guaranteed.





With electro-pneumatic positioners, you should install pressure and flow sensors, for example, upstream of the valve, but temperature and pH value sensors downstream of the valve, whilst considering the required inlet/outlet distances.



# Positioners and process controllers

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# Overview

GEMÜ type	1434 µPos	1436 eco cPos	1435 ePos	1436 cPos
				
<b>Controller type</b>	Positioner	Positioner	Positioner	Positioner and process controller
<b>Ambient temperature</b>	0 to 60 °C	0 to 60 °C	-20 to 60 °C	0 to 60 °C
<b>Supply voltage</b>	24 V DC	24 V DC	24 V DC	24 V DC
<b>Flow rate</b>				
15 NI/min	●	-	-	-
150 l/min	-	●	-	●
200 l/min	-	●	-	●
300 l/min	-	-	-	●
50 NI/min	-	-	●	-
90 NI/min	-	-	●	-
<b>Measuring range</b>				
Max. 30 mm, linear	●	●	●	●
Max. 50 mm, linear	-	●	●	●
Max. 75 mm, linear	-	●	●	●
Max. 90°, radial	-	●	●	●
<b>Electrical connection types</b>				
Cable gland	-	-	●	-
Connectors	●	●	●	●
<b>Communication modes</b>				
DeviceNet	-	-	-	●
Profibus	-	-	-	●
ProfiNet	-	-	-	●
<b>Programmable outputs</b>				
No	●	●	-	-
Yes	-	-	●	●
<b>Input option</b>				
No	●	●	-	-
Yes	-	-	●	●
<b>Conformities</b>				
EAC	●	●	●	●

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 1434 $\mu$ Pos

## Intelligent electro-pneumatic positioner

The GEMÜ 1434  $\mu$ Pos digital electro-pneumatic positioner is used to control small to medium nominal size process valves with single acting linear actuators. The solid compact housing has a transparent cover. LEDs for status indication are integrated. Due to factory preconfiguration, this product does not require a display with operating keys. Pneumatic and electrical connections are arranged so as to save space and enable easy access. All these features make the GEMÜ 1434  $\mu$ Pos a cost-effective solution for control valves with basic requirements.

### Features

- No air consumption when idle
- Simple mounting to various valve actuators
- Simple commissioning due to automatic initialisation
- Speed<sup>AP</sup> function for fast mounting and initialisation
- Easy operation due to balanced pre-configuration
- Compact design



EAC

### Technical specifications

<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Mode of action:</b>	Single acting
<b>Flow rate:</b>	15 NI/min
<b>Measuring range:</b>	Max. 30 mm, linear
<b>Supply voltage:</b>	24 V DC
<b>Electrical connection types:</b>	M12 plug   M12 socket
<b>Conformity:</b>	EAC

Go online!



GW-1434



# GEMÜ 1436 eco cPos

## Intelligent electro-pneumatic positioner

The GEMÜ 1436 eco cPos digital electro-pneumatic positioner is used to control process valves with single acting linear or quarter turn actuators. The positioner, travel sensor, switching valves and status LEDs are integrated into the robust and compact housing. Due to factory preconfiguration, this product does not require a display with operating keys. The pneumatic and electrical connections are arranged in one mounting direction to save space and enable easy access. All these features make this positioner a cost-effective solution for control valves with basic requirements.

### Features

- No air consumption when idle
- Simple mounting to various valve actuators
- Simple commissioning due to automatic initialisation
- Speed<sup>AP</sup> function for fast mounting and initialisation
- Easy operation due to balanced pre-configuration
- High flow rates



### Technical specifications

<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	1,5 to 7 bar
<b>Mode of action:</b>	Single acting
<b>Flow rate:</b>	150 l/min   200 l/min
<b>Measuring range:</b>	Max. 30 mm, linear   Max. 50 mm, linear   Max. 75 mm, linear   Max. 90°, radial
<b>Supply voltage:</b>	24 V DC
<b>Electrical connection types:</b>	M12 connector
<b>Conformity:</b>	EAC

Go online!





# GEMÜ 1435 ePos

## Intelligent electro-pneumatic positioner

The GEMÜ 1435 ePos digital electro-pneumatic positioner is used to control process valves with single acting or double acting linear or quarter turn actuators, and detects the position of the valve using an external travel sensor. It has a robust aluminium housing with protected operating buttons and an LCD display which allows the product to be individually adapted to the control task. The operating times can be adjusted by integrated throttles. Connection and mounting to NAMUR is also possible. Therefore, the GEMÜ 1435 ePos is an optimal solution for control tasks with high requirements, especially in applications with harsh environmental conditions.

### Features

- Simple handling and commissioning
- Simple electrical connection by detachable terminals
- Automatically optimises the valve control during initialisation
- No air consumption when idle
- Robust coated aluminium housing



EAC

### Technical specifications

<b>Ambient temperature:</b>	-20 to 60 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Mode of action:</b>	Double acting   Single acting
<b>Flow rate:</b>	50 NI/min   90 NI/min
<b>Measuring range:</b>	Max. 30 mm, linear   Max. 50 mm, linear   Max. 75 mm, linear   Max. 90°, radial
<b>Supply voltage:</b>	24 V DC
<b>Electrical connection types:</b>	M12 cable gland   M12 connector   M16 cable gland
<b>Conformity:</b>	EAC

Go online!



GW-1435





# GEMÜ 1436 cPos

## Intelligent positioner and integrated process controller

The GEMÜ 1436 cPos digital electro-pneumatic positioner has an optional integrated process controller to control process valves with single acting or double acting linear or quarter turn actuators. When using the optional process controller, the signals from the sensors (e.g. flow, level, pressure, temperature) are detected and the media adjusted according to the specified set value. GEMÜ 1436 cPos has a robust aluminium housing with protected operating buttons and an LCD display which allows the product to be individually adapted to complex control tasks. With additional equipment, the positioner can be used directly in fieldbus environments.

### Features

- Digital inputs (option) for variable function control for automation
- Fieldbus interfaces e.g. Profibus DP, Profinet and DeviceNet (option)
- No air consumption when idle
- Simple mounting to various valve actuators
- Access rights via different user levels
- High flow rates



DeviceNet

EAC

PI

### Technical specifications

<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	1,5 to 7 bar
<b>Mode of action:</b>	Double acting   Single acting
<b>Flow rate:</b>	150 l/min   200 l/min   300 l/min
<b>Measuring range:</b>	Max. 30 mm, linear   Max. 50 mm, linear   Max. 75 mm, linear   Max. 90°, radial
<b>Supply voltage:</b>	24 V DC
<b>Electrical connection types:</b>	M12 connector
<b>Communication modes:</b>	DeviceNet   Profibus   ProfiNet
<b>Conformity:</b>	EAC

Go online!



GW-1436





## Pressure control valves

## Description

Pressure control valves are employed to regulate the pressure within a process and ensure a constant operating pressure or system pressure. They control the upper pressure limits, prevent pressure peaks and/or balance out pressure fluctuations. GEMÜ offers three types of pressure control valves:

1. Pressure reducing valves ensure a consistently reduced outlet pressure.
2. Pressure retaining valves, by contrast, control the pressure in the piping upstream of the valve (inlet pressure).
3. Pressure relief valves are used in piping systems to avoid pressure surges and media surpluses.

## Features

- All media wetted parts are made of highly resistant plastic
- Very good control characteristics due to geometric optimizations based on many years of experience
- No auxiliary power required
- Low maintenance
- Can be installed irrespective of location




## Applications

- Water treatment plants
- Chemical plants
- Ultra pure water applications
- HP and UPW plants
- Desalination plants
- Swimming pools
- Aquacultures
- Sewage treatment plants
- Mining

## Pressure control valves

---

# Overview

GEMÜ type	N082 / N182	N086 / N186	N085 / N185
			
<b>Design</b>	Pressure reducers	Pressure retaining valves	Pressure relief valves
<b>Media temperature</b>	-20 to 100 °C	-20 to 100 °C	-20 to 100 °C
<b>Operating pressure</b>	0 to 10 bar	0 to 10 bar	0 to 10 bar
<b>Nominal sizes</b>	DN 10 to 100	DN 10 to 100	DN 10 to 100
<b>Connection types</b>			
Flange	•	•	•
Spigot	•	•	•
Union end	•	•	•
<b>Body materials</b>			
PP-B	•	•	•
PVC-U	•	•	•
PVDF	•	•	•
<b>Conformities</b>			
EAC	•	•	•

# GEMÜ N082 / N182

## Pressure reducer

The GEMÜ N082 / N182 pressure reducers ensure that a constant outlet pressure is maintained in process plant utilizing the pressure differential. If the pressure rises on the outlet side, the spring force is lower and the valve closes as the spring is raised. The pressure is reduced until the spring force and the outlet pressure are the same. If the pressure falls, the valve opens as the spring force presses against the diaphragm surface via the control aperture. The outlet pressure can be read off a diaphragm-protected pressure gauge and the spring force adjusted using an adjusting screw as required.

### Features

- The working pressure can be very easily adjusted using a set screw and secured with the integrated lock nut. If required, the setting that has been made can be lead sealed
- The flow-efficient design of the valve body ensures good flow rate values
- Control errors are kept to a minimum due to the large control face and the spiral spring
- The actuator is hermetically separated from the medium



EAC

### Technical specifications

<b>Media temperature:</b>	-20 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 10 to 100
<b>Connection types:</b>	Flange   Spigot   Union end
<b>Connection standards:</b>	DIN   EN   ISO
<b>Body materials:</b>	PP-B   PVC-U, grey   PVDF
<b>Conformities:</b>	EAC

Go online!



GW-N082



GW-N182



# GEMÜ N086 / N186

## Pressure retaining valve

The GEMÜ N086 / N186 pressure retaining valves are used to provide a constant back pressure in process plant. If the inlet pressure rises above a preset value, the diaphragm is raised against the spring force. The valve opens and the excess pressure can escape into the outlet line. If the pressure on the inlet side is reduced, the valve closes as the spring force pushes the diaphragm against the seal seat. The spring force can be adjusted as required using an adjusting screw and secured with the lock nut.

### Features

- The working pressure can be very easily adjusted using a set screw and secured with the integrated lock nut. If required, the setting that has been made can be lead sealed
- The flow-efficient design of the valve body ensures good flow rate values
- Control errors are kept to a minimum due to the large control face and the spiral spring
- The actuator is hermetically separated from the medium



EAC

### Technical specifications

<b>Media temperature:</b>	-20 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 10 to 100
<b>Connection types:</b>	Flange   Spigot   Union end
<b>Connection standards:</b>	DIN   EN   ISO
<b>Body materials:</b>	PP-B   PVC-U, grey   PVDF
<b>Conformities:</b>	EAC

Go online!



GW-N086



GW-N186



# GEMÜ N085 / N185

## Pressure relief valve

The GEMÜ N085 / N185 pressure relief valves protect the plant and the piping system against gauge pressure and reduce pressure peaks. The third pipe spigot enables the valve to be installed in the main pipe. If the pressure increases, the spring is raised and the valve opens. The pressure is reduced to the preset value and can escape via the third pipe spigot into an adjacent pipe. If the pressure falls, the spring force presses the diaphragm in the direction of the seal seat and it is closed. The spring force can be adjusted as required using an adjusting screw.

### Features

- Valve adjustments can also be made under working pressure
- The optimization of piston, springs and control face ensures good control characteristics
- The actuator is hermetically separated from the medium



EAC

### Technical specifications

<b>Media temperature:</b>	-20 to 100 °C
<b>Ambient temperature:</b>	0 to 60 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 10 to 100
<b>Connection types:</b>	Flange   Spigot   Union end
<b>Connection standards:</b>	DIN   EN   ISO
<b>Body materials:</b>	PP-B   PVC-U, grey   PVDF
<b>Conformities:</b>	EAC

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GW-N085



GW-N185









# Measurement and control technology



## Electrical position indicators and combi switchboxes

Monitoring the valves installed is essential for all automated processes or systems with particular safety or quality requirements. The end positions of process valves can be measured using electrical position indicators. This is why position indicators are often also designated as limit switches or actuators. A signal transmits the position of the valve, measured using the integrated sensor, to the plant control system. In comparison with electrical position indicators, combi switchboxes also have integrated pilot valves.

Our electrical position indicators and combi switchboxes can be adapted to the pneumatic actuators of globe and diaphragm valves, as well as to quarter turn valves such as butterfly valves and ball valves. Our products range from programmable position indicators and combi switchboxes with automatic initialization through to systems with proximity switches or microswitches and solutions for the explosion-proof area. AS-Interface, DeviceNet and IO-Link are available as communication interfaces.








## Electrical position indicators

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# Overview

GEMÜ type	1215	1230 / 1231 / 1232	1201 / 1211 / 1214	1205	1234
					
<b>Linear measuring range</b>		2 to 20 mm	2 to 70 mm	2 to 70 mm	1 to 10 mm
<b>Radial measuring range</b>					
<b>Ambient temperature</b>	-15 to 60 °C	-20 to 60 °C	-20 to 60 °C	-20 to 60 °C	-10 to 70 °C
<b>Optical position indicators</b>					
High visibility LED	-	-	-	-	-
Mechanical	●	-	-	-	-
On-site LED	-	●	-	-	●
<b>Electrical connection types</b>					
Cable gland	●	●	●	●	-
Connectors	●	●	●	-	●
Threaded connection	-	-	-	-	-
<b>Switch types</b>					
2-wire proximity switch (NAMUR)	-	●	●	-	-
Microswitch	●	●	●	●	-
3-wire proximity switch	-	●	●	-	-
<b>Communication modes</b>					
AS-Interface	-	-	-	-	-
DeviceNet	-	-	-	-	-
IO-Link	-	-	-	-	-
<b>Supply voltage</b>					
10 - 30 V DC	-	●	●	-	-
24 V DC	●	●	●	-	●
250 V AC	●	●	●	●	-
8 V DC	-	●	●	-	-
<b>Conformities</b>					
ATEX	●	●	●	●	-
CSA	-	●	-	-	-
EAC	●	●	●	●	●
ETL Listed C US	-	-	-	-	-
IECEX	-	-	-	-	-
NEC 500	-	-	-	-	-
SIL	-	-	-	-	-
UL	-	●	-	-	-

Technical data depends on the respective configuration - see datasheet or Product Selection Tool



GEMÜ type	1235 / 1236	1242	1225	LSC	LSF
					
<b>Linear measuring range</b>	2,0 to 74,4 mm	2 to 46 mm			
<b>Radial measuring range</b>	0 to 90°	0 to 90°	0 to 90°	0 to 90°	0 to 90°
<b>Ambient temperature</b>	-10 to 70 °C	0 to 60 °C	0 to 70 °C	-25 to 80 °C	-25 to 85 °C
<b>Optical position indicators</b>					
High visibility LED	●	●	-	-	-
Mechanical	-	-	-	●	-
On-site LED	●	●	●	●	●
<b>Electrical connection types</b>					
Cable gland	-	-	●	●	-
Connectors	●	●	-	●	●
Threaded connection	-	-	-	●	-
<b>Switch types</b>					
2-wire proximity switch (NAMUR)	-	-	-	●	●
Microswitch	-	-	●	●	-
3-wire proximity switch	-	-	-	●	●
<b>Communication modes</b>					
AS-Interface	-	●	-	-	-
DeviceNet	-	●	-	-	-
IO-Link	●	●	-	-	-
<b>Supply voltage</b>					
10 - 30 V DC	-	-	-	●	●
24 V DC	●	●	●	●	-
250 V AC	-	-	-	-	-
8 V DC	-	-	-	●	●
<b>Conformities</b>					
ATEX	-	●	-	●	●
CSA	-	●	-	-	●
EAC	●	●	●	-	-
ETL Listed C US	-	●	-	-	-
IECEX	-	●	-	●	●
NEC 500	-	●	-	-	-
SIL	-	●	-	●	-
UL	-	-	-	-	●

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 1215

## Electrical position indicator

The GEMÜ 1215 electrical position indicator indicates one position of the valve. It is designed so that it can be mounted to GEMÜ valves via a female thread in the actuator housing. It can be used up to a switching cycle number of 10<sup>6</sup>.

### Features

- The housing can be rotated through 360°
- In addition to electrical position indication an optical position indicator is also installed
- Compact, solid housing



### Technical specifications

<b>Ambient temperature:</b>	-15 to 60 °C
<b>Supply voltages:</b>	24 V DC   250 V AC
<b>Protection class:</b>	IP 65
<b>Electrical connection types:</b>	Cable gland   Connectors
<b>Switch types:</b>	Microswitch
<b>Conformities:</b>	ATEX   EAC

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GW-1215



# GEMÜ 1230 / 1231 / 1232

## Electrical position indicators

GEMÜ 1230/1231/1232 electrical position indicators are suitable for mounting on pneumatically operated linear valves. The position of the valve spindle is reliably detected and reported to the plant control system via microswitches or inductive proximity switches, using play-free and non-positive mounting. The product has been designed specially for valves with a stroke from 2 to 20 mm.

### Features

- Simple mounting and retrofitting to GEMÜ linear actuators
- Compact, solid housing
- Option with LED indication
- Adjustable switch point tolerances
- Can be fitted to GEMÜ valves or third-party actuators



### Technical specifications

<b>Ambient temperature:</b>	-20 to 60 °C
<b>Linear measuring range:</b>	2 to 20 mm
<b>Supply voltages:</b>	10 - 30 V DC   24 V DC   250 V AC   8 V DC
<b>Protection class:</b>	IP 65
<b>Electrical connection types:</b>	Cable gland   Connectors
<b>Switch types:</b>	2-wire proximity switch (NAMUR)   Microswitch   3-wire proximity switch
<b>Conformities:</b>	ATEX   CSA   EAC   UL

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GW-1230



GW-1231



GW-1232



# GEMÜ 1201 / 1211 / 1214

## Electrical position indicators

GEMÜ 1201/1211/1214 electrical position indicators are suitable for mounting on pneumatically operated linear valves. The position of the valve spindle is reliably detected and reported to the plant control system via microswitches or inductive proximity switches, using play-free and non-positive mounting. The product has been designed specially for valves with a stroke of 2 to 60 mm.

### Features

- Simple mounting and retrofitting to GEMÜ linear actuators
- Attachment to other valve makes possible
- Compact, solid housing
- Low-wear switches, contactless detection



### Technical specifications

<b>Ambient temperature:</b>	-20 to 60 °C
<b>Linear measuring range:</b>	2 to 70 mm
<b>Supply voltages:</b>	10 - 30 V DC   24 V DC   250 V AC   8 V DC
<b>Protection class:</b>	IP 65
<b>Electrical connection types:</b>	Cable gland   Connectors
<b>Switch types:</b>	2-wire proximity switch (NAMUR)   Microswitch   3-wire proximity switch
<b>Conformities:</b>	ATEX   EAC

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GW-1201



GW-1211



GW-1214



# GEMÜ 1205

## Electrical position indicator ATEX

The GEMÜ 1205 electrical position indicator has electro-mechanical microswitches in a flameproof enclosure. Two valve positions, open and/or closed can be remotely indicated.

### Features

- Can be fitted to GEMÜ valves or third-party actuators
- Compact, solid aluminium housing
- Adjustable switch point tolerances



### Technical specifications

<b>Ambient temperature:</b>	-20 to 60 °C
<b>Linear measuring range:</b>	2 to 70 mm
<b>Supply voltages:</b>	250 V AC
<b>Protection class:</b>	IP 65
<b>Electrical connection types:</b>	Cable gland
<b>Switch types:</b>	Microswitch
<b>Conformities:</b>	ATEX   EAC

Go online!



GW-1205



# GEMÜ 1234

## Electrical position indicator

The GEMÜ 1234 electrical position indicator for linear actuators has a microprocessor controlled intelligent position sensor with an integrated analogue travel sensor system. Optical position indication is made by LEDs.

### Features

- Adjustable switch point tolerances
- Open / Closed position feedback as standard
- Quick cable connection
- Easy to fit
- On-site end position programming
- Can be fitted to GEMÜ valves or third-party actuators



EAC

### Technical specifications

<b>Ambient temperature:</b>	-10 to 70 °C
<b>Linear measuring range:</b>	1 to 10 mm
<b>Supply voltages:</b>	24 V DC
<b>Protection class:</b>	IP 65
<b>Electrical connection types:</b>	Connectors
<b>Conformities:</b>	EAC

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GW-1234



# GEMÜ 1235 / 1236

## Electrical position indicator

GEMÜ 1235 / 1236 electrical position indicators are suitable for mounting on pneumatically operated linear actuators. The position of the valve spindle is reliably electronically detected and evaluated using play-free and non-positive mounting. Intelligent microprocessor controlled functions make commissioning and support during operation easier. The current position of the valve is displayed via high visibility LEDs and fed back via electrical signals.

### Features

- Communication and programming interface IO-Link
- Adjustable switch point tolerances
- Speed<sup>AP</sup> function for fast mounting and initialisation
- High visibility position indicator by LED
- Can be fitted to GEMÜ valves or third-party actuators
- On-site or remote end position programming via programming input



EAC

IO-Link

### Technical specifications

<b>Ambient temperature:</b>	-10 to 70 °C
<b>Linear measuring range:</b>	2,0 to 74,4 mm
<b>Radial measuring range:</b>	0 to 90°
<b>Supply voltages:</b>	24 V DC
<b>Protection class:</b>	IP 67
<b>Electrical connection types:</b>	Connectors
<b>Communication modes:</b>	IO-Link
<b>Conformities:</b>	EAC

Go online!



GW-1235



GW-1236



# GEMÜ 1242

## Electrical position indicator

The GEMÜ 1242 electrical position indicator is suitable for mounting to pneumatically operated linear actuators. Secure connection to valve spindle means reliable feedback signal. Intelligent microprocessor controlled functions make commissioning and support during operation easier. The current position of the valve is displayed via high visibility LEDs and fed back via electrical signals. The GEMÜ 1242 has been specially designed for valves with a stroke of 2 to 46 mm.

### Features

- Fieldbus connection AS-Interface and DeviceNet (optional)
- Communication and programming interface IO-Link
- Adjustable switch point tolerances
- Speed<sup>AP</sup> function for fast mounting and initialisation
- High visibility position indicator by LED
- Can be fitted to GEMÜ valves or third-party actuators
- On-site or remote end position programming via programming input



DeviceNet



IO-Link



### Technical specifications

<b>Ambient temperature:</b>	0 to 60 °C
<b>Linear measuring range:</b>	2 to 46 mm
<b>Radial measuring range:</b>	0 to 90°
<b>Supply voltages:</b>	24 V DC
<b>Protection class:</b>	IP 67
<b>Electrical connection types:</b>	Connectors
<b>Communication modes:</b>	AS-Interface   DeviceNet   IO-Link
<b>Conformities:</b>	ATEX   CSA   EAC   ETL Listed C US   IECEx   NEC 500   SIL

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GW-1242





# GEMÜ 1225

## Electrical position indicator

The GEMÜ 1225 electrical position indicator for GEMÜ 410, 411, 415, 417, 423 and 428 butterfly valves has two adjustable trip cams which are positively operated by the switching shaft.

### Features

- Can be fitted on quarter turn valves
- Retrofitting possible
- Integrated LED display



ERC

### Technical specifications

<b>Ambient temperature:</b>	0 to 70 °C
<b>Radial measuring range:</b>	0 to 90°
<b>Supply voltages:</b>	24 V DC
<b>Protection class:</b>	IP 45
<b>Electrical connection types:</b>	Cable gland
<b>Switch types:</b>	Microswitch

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GW-1225



# GEMÜ LSC

## Limit switch box for quarter turn actuators

The GEMÜ LSC limit switch box is suitable for mounting to manually and pneumatically operated quarter turn valves. It is also fitted with an optical position indicator for visual confirmation of position.

### Features

- Adjustable switch point tolerances
- Compact, solid housing
- Can be attached to all quarter turn valves in accordance with the VDI/VDE 3845 standard interface
- Simple mounting and retrofitting to quarter turn actuators
- Up to four position feedback messages
- Solenoid valve connection (optional)
- 3D optical position indicator (optional)
- OPEN/CLOSE LED display (optional)
- Low temperatures to -40 °C (optional)



### Technical specifications

<b>Ambient temperature:</b>	-25 to 80 °C
<b>Radial measuring range:</b>	0 to 90°
<b>Supply voltages:</b>	10 - 30 V DC   24 V DC   8 V DC
<b>Protection class:</b>	IP 67
<b>Electrical connection types:</b>	Cable gland   Connectors   Threaded connection
<b>Switch types:</b>	2-wire proximity switch (NAMUR)   Microswitch   3-wire proximity switch
<b>Conformities:</b>	ATEX   IECEx   SIL

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# GEMÜ LSF

## Inductive dual sensor for quarter turn valves

The GEMÜ LSF inductive dual sensor is suitable for mounting to manually and pneumatically operated quarter turn valves. It is also fitted with an optical position indicator for visual confirmation of position.

### Features

- Simple mounting and retrofitting to quarter turn actuators
- Compact, solid housing
- Can be attached to all quarter turn valves in accordance with the VDI/VDE 3845 standard interface
- OPEN/CLOSED LED display



### Technical specifications

<b>Ambient temperature:</b>	-25 to 85 °C
<b>Radial measuring range:</b>	0 to 90°
<b>Supply voltages:</b>	10 - 30 V DC   8 V DC
<b>Protection class:</b>	IP 67
<b>Electrical connection types:</b>	Connectors
<b>Switch types:</b>	2-wire proximity switch (NAMUR)   3-wire proximity switch
<b>Conformities:</b>	ATEX   CSA   IECEx   UL




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## Combi switchboxes

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# Overview

GEMÜ type	4240	4241	4242
			
<b>Linear measuring range</b>	5 to 75 mm	5 to 75 mm	2 to 75 mm
<b>Radial measuring range</b>	0 to 90°	0 to 90°	0 to 90°
<b>Ambient temperature</b>	0 to 60 °C	0 to 50 °C	0 to 60 °C
<b>Flow rate</b>			
14 NI/min	-	-	•
23 NI/min	-	-	•
250 NI/min	•	•	•
<b>Electrical connection types</b>			
Cable gland	•	•	-
Connectors	-	•	•
<b>Switch types</b>			
2-wire proximity switch (NAMUR)	•	•	-
Microswitch	•	-	-
3-wire proximity switch	•	-	-
<b>Communication modes</b>			
AS-Interface	-	-	•
DeviceNet	-	-	•
IO-Link	-	-	•
<b>Supply voltage</b>			
24 V DC	•	-	•
8 V DC	•	•	-
<b>Conformities</b>			
ATEX	-	•	•
EAC	-	•	•
ETL Listed C US	-	-	•
IECEX	-	•	•
SIL	-	-	•

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 4240

## Combi switchbox

The GEMÜ 4240 combi switchbox is suitable for mounting to pneumatically operated linear actuators. The position of the valve spindle is reliably detected electronically and reported via microswitches or proximity switches, using play-free and non-positive mounting. Integrated pilot valves enable direct activation of the process valve connected to them. The product has been designed specially for valves with a stroke of 5 to 75 mm.

### Features

- Position feedback via microswitches, optionally via 2-wire NAMUR proximity switches or 3-wire proximity switches
- Adjustable switch point tolerances using locking levers
- Can be fitted to GEMÜ valves or third-party actuators
- Integrated manual override



### Technical specifications

<b>Ambient temperature:</b>	0 to 60 °C
<b>Linear measuring range:</b>	5 to 75 mm
<b>Radial measuring range:</b>	0 to 90°
<b>Flow rate:</b>	250 NI/min
<b>Supply voltages:</b>	24 V DC   8 V DC
<b>Protection class:</b>	IP 65, IP 67
<b>Electrical connection types:</b>	Cable gland
<b>Switch types:</b>	2-wire proximity switch (NAMUR)   Microswitch   3-wire proximity switch

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GW-4240



# GEMÜ 4241

## Combi switchbox

The GEMÜ 4241 combi switchbox is suitable for mounting to pneumatically operated linear actuators. The position of the valve spindle is reliably electronically detected and fed back via the play-free and non-positive mounting by means of a 2-wire proximity switch (NAMUR). Integrated pilot valves enable direct activation of the process valve connected to them.

### Features

- Position feedback via 2-wire proximity switch (NAMUR)
- Adjustable switch point tolerances using locking levers
- Can be fitted to GEMÜ valves or third-party actuators
- Integrated manual override
- Explosion protection for zone 1 and 21



### Technical specifications

<b>Ambient temperature:</b>	0 to 50 °C
<b>Linear measuring range:</b>	5 to 75 mm
<b>Radial measuring range:</b>	0 to 90°
<b>Flow rate:</b>	250 NI/min
<b>Supply voltages:</b>	8 V DC
<b>Protection class:</b>	IP 65, IP 67
<b>Electrical connection types:</b>	Cable gland   Connectors
<b>Switch types:</b>	2-wire proximity switch (NAMUR)
<b>Conformities:</b>	ATEX   EAC   IECEx

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GW-4241



# GEMÜ 4242

## Combi switchbox with integrated pilot valve

The GEMÜ 4242 combi switchbox is suitable for mounting to pneumatically operated linear actuators. The position of the valve spindle is reliably electronically detected and evaluated using play-free and non-positive mounting. Integrated pilot valves enable direct activation of the process valve connected to them. Intelligent microprocessor controlled functions make commissioning and support during operation easier. The current position of the valve is displayed via high visibility LEDs and fed back via electrical signals.

### Features

- Fieldbus connection AS-Interface and DeviceNet (optional)
- Communication and programming interface IO-Link
- Adjustable switch point tolerances
- Speed<sup>AP</sup> function for fast mounting and initialisation
- High visibility position indicator by LED
- Can be fitted to GEMÜ valves or third-party actuators
- On-site or remote end position programming via programming input
- Integrated manual override



DeviceNet



IO-Link



### Technical specifications

<b>Ambient temperature:</b>	0 to 60 °C
<b>Linear measuring range:</b>	2 to 75 mm
<b>Radial measuring range:</b>	0 to 90°
<b>Flow rate:</b>	14 NI/min   23 NI/min   250 NI/min
<b>Supply voltages:</b>	24 V DC
<b>Electrical connection types:</b>	Connectors
<b>Protection class:</b>	IP 65, IP 67
<b>Communication modes:</b>	AS-Interface   DeviceNet   IO-Link
<b>Conformities:</b>	ATEX   EAC   ETL Listed C US   IECEx   SIL

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GW-4242













## Pilot valves

Pilot valves are used to control pneumatic actuators. Pilot valves are generally electromagnetically operated. A pressure differential for operating the valve is also used here. This has the advantage that small electro solenoid actuators can also control high operating pressures in the valve.




Our GEMÜ product range includes pilot valves for direct mounting on pneumatic valve actuators, as well as single valves, valve batteries and complete valve manifolds for assembly in a control cabinet.



# Overview

GEMÜ type	0322	0324	0326	8303 002
				
<b>Media temperature</b>	-10 to 50 °C	-10 to 50 °C	-10 to 50 °C	-10 to 60 °C
<b>Ambient temperature</b>	-10 to 50 °C	-10 to 50 °C	-10 to 50 °C	-10 to 60 °C
<b>Operating pressure</b>	0 to 10 bar	0 to 10 bar	0 to 10 bar	1 to 10 bar
<b>Nominal sizes</b>	DN 2 to 2	DN 2 to 2	DN 2 to 2	DN 2 to 2
<b>Electrical connection types</b>				
Plug, design A	•	•	•	•
Plug, design B	-	-	-	-
M12 plug	•	•	•	-
<b>Supply voltages</b>				
110 V AC, 50 Hz	-	-	-	•
110 V AC, 50/60 Hz	-	-	-	-
12 V DC	-	-	-	-
120 V AC, 50/60 Hz	•	•	•	-
230 V AC, 50 Hz	-	-	-	•
230 V AC, 50/60 Hz	•	•	•	-
24 V AC, 50 Hz	-	-	-	•
24 V AC, 50/60 Hz	•	•	•	-
24 V DC	•	•	•	•
<b>Connection types</b>				
Threaded connection	•	•	•	•
<b>Body materials</b>				
Aluminium casting	-	-	-	-
CW617N	-	-	-	•
PA	•	•	•	-
<b>Conformities</b>				
ATEX	•	•	•	•
EAC	•	•	•	•
SIL	•	•	•	-

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

GEMÜ type	8500	8505	8506
			
<b>Media temperature</b>	-10 to 60 °C	-10 to 50 °C	-10 to 50 °C
<b>Ambient temperature</b>	-10 to 60 °C	0 to 50 °C	-10 to 50 °C
<b>Operating pressure</b>	2,5 to 10 bar	1 to 10 bar	2 to 8 bar
<b>Nominal sizes</b>	DN 7 to 7	DN 4 to 7	DN 6 to 6
<b>Electrical connection types</b>			
Plug, design A	-	•	•
Plug, design B	•	•	-
M12 plug	-	-	-
<b>Supply voltages</b>			
110 V AC, 50 Hz	-	-	•
110 V AC, 50/60 Hz	•	-	-
12 V DC	•	-	-
120 V AC, 50/60 Hz	-	-	-
230 V AC, 50 Hz	-	•	•
230 V AC, 50/60 Hz	•	-	-
24 V AC, 50 Hz	-	•	•
24 V AC, 50/60 Hz	•	-	-
24 V DC	•	•	•
<b>Connection types</b>			
Threaded connection	•	•	•
<b>Body materials</b>			
Aluminium casting	•	•	•
CW617N	-	-	-
PA	-	-	-
<b>Conformities</b>			
ATEX	•	-	-
EAC	-	•	•
SIL	•	-	-

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 0322

## Electrically operated pilot solenoid valve

The GEMÜ 0322 directly controlled 3/2-way pilot solenoid valve is designed for direct mounting or for modular battery mounting by using clips. The body is made of plastic. The coil is plastic encapsulated.

### Features

- Robust design
- Coil easy to replace
- Option: integrated LED (M12 version)
- Multi-functional application possibilities due to various designs
- Modular battery mounting



### Technical specifications

<b>Media temperature:</b>	-10 to 50 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal size:</b>	DN 2
<b>Electrical connection types:</b>	Plug, design A   M12 plug
<b>Supply voltages:</b>	120 V AC, 50/60 Hz   230 V AC, 50/60 Hz   24 V AC, 50/60 Hz   24 V DC
<b>Connection types:</b>	Threaded connection
<b>Connection standards:</b>	DIN   ISO
<b>Body materials:</b>	PA
<b>Conformities:</b>	ATEX   EAC   SIL

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GW-0322



# GEMÜ 0324

## Electrically operated pilot solenoid valve

The GEMÜ 0324 directly controlled 3/2-way pilot solenoid valve is designed for direct mounting to pneumatically operated valves. The body is made of plastic. The coil is plastic encapsulated.

### Features

- Robust design
- Coil easy to replace
- Option: integrated LED (M12 version)
- Multi-functional application possibilities due to various designs
- Modular battery mounting



### Technical specifications

<b>Media temperature:</b>	-10 to 50 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal size:</b>	DN 2
<b>Electrical connection types:</b>	Plug, design A   M12 plug
<b>Supply voltages:</b>	120 V AC, 50/60 Hz   230 V AC, 50/60 Hz   24 V AC, 50/60 Hz   24 V DC
<b>Connection types:</b>	Threaded connection
<b>Connection standards:</b>	DIN   ISO
<b>Body materials:</b>	PA
<b>Conformities:</b>	ATEX   EAC   SIL

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GW-0324



# GEMÜ 0326

## Electrically operated pilot solenoid valve

The GEMÜ 0326 directly controlled 3/2-way pilot solenoid valve is designed for mounting to a compact aluminium rail as a valve battery for mounting in control cabinets or as a valve manifold near the pneumatic components to be controlled. The body is made of plastic. The coil is plastic encapsulated.

### Features

- Robust design
- Coil easy to replace
- Option: integrated LED (M12 version)
- Multi-functional application possibilities due to various designs
- Modular battery mounting



### Technical specifications

<b>Media temperature:</b>	-10 to 50 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal size:</b>	DN 2
<b>Electrical connection types:</b>	Plug, design A   M12 plug
<b>Supply voltages:</b>	120 V AC, 50/60 Hz   230 V AC, 50/60 Hz   24 V AC, 50/60 Hz   24 V DC
<b>Connection types:</b>	Threaded connection
<b>Connection standards:</b>	DIN   ISO
<b>Body materials:</b>	PA
<b>Conformities:</b>	ATEX   EAC   SIL

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GW-0326





# GEMÜ 8303 002

## Electrically operated pilot solenoid valve

The GEMÜ 8303 3/2-way pilot solenoid valve requires differential pressure. The housing is made from aluminium or stainless steel. The plastic encapsulated coil is detachable.

### Features

- Optional installation position
- Simple coil replacement without tools (Click-on®)
- The solenoid can be replaced without removing the valve body from the piping
- Standard silenced venting



### Technical specifications

<b>Media temperature:</b>	-10 to 60 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	1 to 10 bar
<b>Nominal size:</b>	DN 2
<b>Electrical connection types:</b>	Plug, design A
<b>Supply voltages:</b>	110 V AC, 50 Hz   230 V AC, 50 Hz   24 V AC, 50 Hz   24 V DC
<b>Connection types:</b>	Threaded connection
<b>Connection standards:</b>	DIN
<b>Body materials:</b>	1.4581   Aluminium
<b>Conformities:</b>	ATEX   EAC

Go online!



002



# GEMÜ 8500

## Electrically operated pilot solenoid valve

The GEMÜ 8500 servo assisted 3/2 or 5/2-way pilot solenoid valve is indirectly controlled. The body is made of aluminium. The plastic encapsulated coil is detachable. The piston valve has a soft elastomer seal.

### Features

- Optional installation position
- Standard manual override
- Rotatable solenoid coil
- Suitable for activating single or double acting pneumatic actuators
- Available with NAMUR connection as an option



### Technical specifications

<b>Media temperature:</b>	-10 to 60 °C
<b>Ambient temperature:</b>	-10 to 60 °C
<b>Operating pressure :</b>	2,5 to 10 bar
<b>Nominal size:</b>	DN 7
<b>Electrical connection types:</b>	Plug, design B
<b>Supply voltages:</b>	110 V AC, 50/60 Hz   12 V DC   230 V AC, 50/60 Hz   24 V AC, 50/60 Hz   24 V DC
<b>Connection types:</b>	Threaded connection
<b>Body materials:</b>	Aluminium
<b>Conformities:</b>	ATEX   SIL

Go online!



GW-8500



# GEMÜ 8505

## Electrically operated pilot solenoid valve

The GEMÜ 8505 servo assisted 4/2-way pilot solenoid valve is indirectly controlled. The body is made of aluminium. The plastic encapsulated coil is detachable.

### Features

- Optional installation position
- Standard manual override
- Battery mounting with central air supply possible
- The solenoid can be replaced without removing the valve body from the piping
- Technically advanced and proven construction



EAC

### Technical specifications

<b>Media temperature:</b>	-10 to 50 °C
<b>Ambient temperature:</b>	0 to 50 °C
<b>Operating pressure :</b>	1 to 10 bar
<b>Nominal sizes:</b>	DN 4 to 7
<b>Electrical connection types:</b>	Plug, design A   Plug, design B
<b>Supply voltages:</b>	230 V AC, 50 Hz   24 V AC, 50 Hz   24 V DC
<b>Connection types:</b>	Threaded connection
<b>Connection standards:</b>	DIN   ISO
<b>Body materials:</b>	Aluminium
<b>Conformities:</b>	EAC

Go online!



GW-8505



# GEMÜ 8506

## Electrically operated pilot solenoid valve

The GEMÜ 8506 servo assisted 3/2 or 5/2-way pilot solenoid valve is indirectly controlled. The body is made of aluminium. The plastic encapsulated coil is detachable.

### Features

- Optional installation position
- The solenoid can be replaced without removing the valve body from the piping
- The coil can be rotated by 90°
- Simple conversion from 3/2-way valve to 5/2-way valve



EAC

### Technical specifications

<b>Media temperature:</b>	-10 to 50 °C
<b>Ambient temperature:</b>	-10 to 50 °C
<b>Operating pressure :</b>	2 to 8 bar
<b>Nominal size:</b>	DN 6
<b>Electrical connection types:</b>	Plug, design A
<b>Supply voltages:</b>	110 V AC, 50 Hz   230 V AC, 50 Hz   24 V AC, 50 Hz   24 V DC
<b>Connection types:</b>	Threaded connection
<b>Body materials:</b>	Aluminium
<b>Conformities:</b>	EAC

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GW-8506







## Flowmeter

With the help of a flowmeter, the volume of a liquid or gas that flows through a pipe can be determined. GEMÜ offers various functional principles for this:

### **Variable area flowmeter**

A measuring float is lifted by the volumetric flow in a conical metering tube until equilibrium is achieved between the weight of the measuring float and the force caused by the flow resistance. The measuring float is lifted higher or lower according to the volumetric flow.

### **Turbine flowmeter**

A turbine wheel in the flowmeter is driven by the volumetric flow. The flow velocity can be determined by measuring the rotational speed. The measuring turbines here provide various electrical output signals for further processing.

### **Magnetically inductive flowmeter**

A magnetically inductive flowmeter is suitable only for electrically conductive media. The functional principle is based on Faraday's law of electromagnetic induction.






## Variable area flowmeter

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# Overview

GEMÜ type	800	850	840
			
<b>Measuring range - Liquids</b>	0,5 to 33000 l/h	0,1 to 1600 l/h	2500 to 50000 l/h
<b>Measuring range - Gases</b>	0,2 to 450 Nm <sup>3</sup> /h	0,02 to 37,5 Nm <sup>3</sup> /h	
<b>Media temperature</b>	-20 to 120 °C	-20 to 120 °C	5 to 90 °C
<b>Operating pressure</b>	0 to 15 bar	0 to 15 bar	0 to 10 bar
<b>Nominal sizes</b>	DN 20 to 65	DN 10 to 25	DN 65 to 65
<b>Connection types</b>			
Flange	•	•	-
Spigot	•	•	•
Union end	•	•	-
<b>Metering tube materials</b>			
PA	•	•	-
PSU	•	•	-
PVC-U	•	•	•
<b>Float materials</b>			
PP, black	•	•	•
PVC-U, red	•	•	•
PVDF	•	•	-
Stainless steel 1.4571	•	•	-
<b>Conformities</b>			
ATEX	-	•	-
EAC	•	•	•

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 800

## Variable area flowmeter

The GEMÜ 800 flowmeter operates according to the variable area principle and has a transparent metering tube. The scale printed onto the metering tube is suited to the medium. Dovetail sections moulded onto the metering tube allow for easy mounting of adjustable visual flow indicators, limit switches and a continuous readout transmitter.

### Features

- Good level of accuracy, simple operation
- Corrosion resistant plastic body
- Clear and large size printed scale
- ATEX version available as an option
- Over 500 standard scales and 13,000 special scales are available with further scales on request



EAC

### Technical specifications

<b>Measuring range - Liquids:</b>	0,5 to 33000 l/h
<b>Measuring range - Gases:</b>	0,2 to 450 Nm <sup>3</sup> /h
<b>Error of measurement:</b>	± 1% of final value and ± 3% of measured value
<b>Media temperature:</b>	-20 to 120 °C
<b>Operating pressure :</b>	0 to 15 bar
<b>Nominal sizes:</b>	DN 20 to 65
<b>Connection types:</b>	Flange   Spigot   Union end
<b>Metering tube materials:</b>	PA   PSU   PVC-U
<b>Float materials:</b>	PP, black   PVC-U, red   PVDF   Stainless steel 1.4571
<b>Conformities:</b>	EAC

Go online!



GW-800



# GEMÜ 850

## Variable area flowmeter

The GEMÜ 850 flowmeter operates according to the variable area principle and has a transparent metering tube. The scale printed onto the metering tube is suited to the medium. Dovetail sections moulded onto the metering tube allow for easy mounting of adjustable visual flow indicators, limit switches and a continuous readout transmitter.

### Features

- Good level of accuracy, simple operation
- Corrosion resistant plastic body
- Clear and large size printed scale
- ATEX version available as an option
- Over 500 standard scales and 13,000 special scales are available with further scales on request



### Technical specifications

<b>Measuring range - Liquids:</b>	0,1 to 1600 l/h
<b>Measuring range - Gases:</b>	0,02 to 37,5 Nm <sup>3</sup> /h
<b>Error of measurement:</b>	± 1% of final value and ± 3% of measured value
<b>Media temperature:</b>	-20 to 120 °C
<b>Operating pressure :</b>	0 to 15 bar
<b>Nominal sizes:</b>	DN 10 to 25
<b>Connection types:</b>	Flange   Spigot   Union end
<b>Metering tube materials:</b>	PA   PSU   PVC-U, transparent
<b>Float materials:</b>	PP, black   PVC-U, red   PVDF   Stainless steel 1.4571
<b>Conformities:</b>	ATEX   EAC

Go online!



GW-850



# GEMÜ 840

## Variable area flowmeter

The GEMÜ 840 flowmeter operates according to the part flow principle. The device consists of three parts: Main flow unit, part flow unit and manual diaphragm valve.

### Features

- Good level of accuracy, simple operation
- Impact resistant, corrosion resistant
- Large measuring range 3 - 50 m<sup>3</sup>/h (depending on orifice diameter)
- Part flow metering tube can also be easily replaced without downtime



EAC

### Technical specifications

<b>Measuring range - Liquids:</b>	2500 to 50000 l/h
<b>Media temperature:</b>	5 to 90 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal size:</b>	DN 65
<b>Connection types:</b>	Spigot
<b>Metering tube materials:</b>	PVC-U
<b>Float materials:</b>	PP, black   PVC-U, red
<b>Conformities:</b>	EAC

Go online!



GW-840








## Electrical flowmeters

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# Overview of electrical flowmeters

GEMÜ type	3020	3021	3030 mFlow
			
<b>Measuring range - Liquids</b>	120 to 25000 l/h	120 to 25000 l/h	180 to 1150000 l/h
<b>Media temperature</b>	-20 to 80 °C	-20 to 80 °C	0 to 135 °C
<b>Max. operating pressure</b>	10 bar	10 bar	10 bar
<b>Nominal sizes</b>	DN 25 to 50	DN 25 to 50	DN 25 to 300
<b>Connection types</b>			
Flange	-	-	•
Spigot	-	-	•
Union end	•	•	•
Weld-in sleeve	-	-	•
<b>Metering tube materials</b>			
1.4435	-	-	•
PVC-U	•	•	-
PVDF	•	•	-
<b>Electrical connection types</b>			
Plug, design A	•	•	-
M12 plug	-	•	•
M12 socket	-	-	•
<b>Supply voltage</b>			
24 V DC	•	•	•
<b>Conformities</b>			
EAC	•	•	•

Technical data depends on the respective configuration - see datasheet or Product Selection Tool

# GEMÜ 3020

## Flow transmitter, turbine

GEMÜ 3020 is a turbine flow transmitter. The measuring transducer is separated from the medium flowing through the measurement unit. It has integrated flow rectifiers. The measuring transducer uses industrial standard measurement signals and is works calibrated.

### Features

- Very low pressure loss
- Short inlet/outlet distances
- Precise volume flow measurement
- Integrated flow rectifier



EAC

### Technical specifications

<b>Measuring range - Liquids:</b>	120 to 25000 l/h
<b>Error of measurement:</b>	± 1 % of final value
<b>Media temperature:</b>	-20 to 80 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 25 to 50
<b>Connection types:</b>	Union end
<b>Metering tube materials:</b>	PVC-U   PVDF
<b>Electrical connection types:</b>	Plug, design A
<b>Supply voltages:</b>	24 V DC
<b>Conformities:</b>	EAC

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GW-3020





# GEMÜ 3021

## Flow transmitter, turbine

GEMÜ 3021 is a turbine flow transmitter. The keypad at the front of the unit enables simple setting of measurement units, required display values etc.

### Features

- Simple operation
- Process adaptable
- Freely scalable measuring range
- Integrated flow rectifier
- Short inlet/outlet distances
- Totalizer or batch controller types available
- Relay outputs available



EAC

### Technical specifications

<b>Measuring range - Liquids:</b>	120 to 25000 l/h
<b>Error of measurement:</b>	± 1 % of final value
<b>Media temperature:</b>	-20 to 80 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 25 to 50
<b>Connection types:</b>	Union end
<b>Metering tube materials:</b>	PVC-U   PVDF
<b>Electrical connection types:</b>	Plug, design A   M12 plug
<b>Supply voltages:</b>	24 V DC
<b>Conformities:</b>	EAC

Go online!



GW-3021



# GEMÜ 3030 mFlow

## Magnetically inductive flowmeter

The GEMÜ 3030 mFlow flowmeter is based on the magnetically inductive measurement principle. It is suitable for electrically conductive media. Operation is carried out using a membrane keypad positioned on the front of the body with a backlit display.

### Features

- Same measurement device can be used for different nominal sizes
- No moving parts in the medium
- Access rights via different user levels
- Integrated Web browser capability
- Simple commissioning and versatile operating facilities
  - Fascia keys
  - PC connection with Internet browser
  - Fieldbus interfaces e.g. Profibus-DP



EAC

### Technical specifications

<b>Measuring range - Liquids:</b>	180 to 1150000 l/h
<b>Error of measurement:</b>	± 1 % of final value
<b>Media temperature:</b>	0 to 135 °C
<b>Operating pressure :</b>	0 to 10 bar
<b>Nominal sizes:</b>	DN 25 to 300
<b>Connection types:</b>	Flange   Spigot   Union end   Weld-in sleeve
<b>Metering tube materials:</b>	1.4435
<b>Electrical connection types:</b>	M12 plug   M12 socket
<b>Supply voltages:</b>	24 V DC
<b>Conformities:</b>	EAC

Go online!



GW-3030







## Pressure and temperature measurement devices

The pressure and temperature of a medium can be measured with the help of pressure and/or temperature measurement devices. These parameters are an important basis for process control, monitoring and automation.

GEMÜ offers electrical measuring transducers and switches for this. Pressure and temperature switches are actuated depending on the medium's pressure or temperature. Measuring transducers convert the pressure or temperature into an electrical signal that can be transmitted to the plant control system. In addition, our range includes pressure measurement devices for sanitary/hygienic applications.

# GEMÜ 3140

## Pressure transducer and pressure switch

The GEMÜ 3140 pressure transducer/switch is ideal for precise measurements in a wide pressure range. The sensor is suitable for use with both highly viscous and contaminated media and is also suitable for corrosive media due to its high-quality material selection. A variety of electrical and mechanical connections are available, depending on the version. The LED display version boasts a rotatable 4-digit display.

### Features

- Featuring a rotatable LED display and IO-Link interface, depending on version
- Suitable for highly viscous, contaminated and corrosive media
- Appropriate in-line housing optionally available
- ATEX and SIL2 design optionally available
- Accuracy 0.5% FSO (in accordance with IEC 60770)
- Optional installation position
- Ceramic sensor



### Technical specifications

<b>Measuring range:</b>	0 to 40 bar
<b>Error of measurement:</b>	± 0.5 % of final value
<b>Media temperature:</b>	-40 to 125 °C
<b>Operating pressure :</b>	0 to 40 bar
<b>Housing material:</b>	1.4404
<b>Body materials:</b>	1.4404   PVDF
<b>Connection type:</b>	Threaded connection
<b>Output signals:</b>	0 - 10 V   0 - 20 mA   4 - 20 mA   NPN   PNP
<b>Conformities:</b>	ATEX   EAC   SIL   UL

Go online!



GW-3140



# GEMÜ 3240

## Temperature transducer and temperature switch

The GEMÜ 3240 temperature transducer/switch is ideal for precise measurements in a wide temperature range. The sensor is suitable for both highly viscous, as well as contaminated media. It is also suitable for corrosive media thanks to the high-quality material selection. Furthermore, it stands out thanks to its extremely short installation length. The electrical output signals can optionally be changed over between power, current or switching outputs.

### Features

- With rotatable LED display and IO-Link interface
- Suitable for highly viscous, contaminated and corrosive media
- Switching output as standard
- Switchable electrical output
- Accuracy in accordance with IEC60770: 0.35% FSO
- Extremely short installation length
- Temperature sensor PT1000 / class A



EAC

### Technical specifications

<b>Temperature measuring range:</b>	-40 to 150 °C
<b>Error of measurement:</b>	± 0.35 % of final value
<b>Media temperature:</b>	-40 to 150 °C
<b>Operating pressure :</b>	0 to 160 bar
<b>Housing material:</b>	1.4404
<b>Body materials:</b>	1.4404   PVDF
<b>Connection type:</b>	Threaded connection
<b>Output signals:</b>	0 - 10 V   4 - 20 mA   NPN   PNP
<b>Conformities:</b>	EAC

Go online!



GW-3240







# Connection technology

# GEMÜ FlareStar PFA fittings

Over 100 different types of fitting are produced under cleanroom conditions in compliance with DIN 16901-140. The fitting bodies are made of PFA, while the union nuts are made of PFA, PVDF or CPFA. We stock all the connections available on the market too.

## Features

- For leak free performance with minimum dead space in ultra pure fluid applications
- High reliability, even in high vibration applications
- Simple operation
- Available as "Space saver version", for space-saving connection
- Over 1000 different versions for commonly available connections



## Technical specifications

<b>Media temperature:</b>	20 to 200 °C
<b>Operating pressure :</b>	0 to 6 bar
<b>Nominal sizes:</b>	DN 4 to 32
<b>Connection types:</b>	Flare   Flare SpaceSaver   Spigot   Threaded connection
<b>Materials:</b>	PFA   PTFE   PVDF

# GEMÜ TubeStar Tube

TubeStar is a product range comprising ultra-pure and standard PFA tubing.  
The tubes are particularly suitable for applications with high-purity media and other chemicals.

## Features

- The values from the dynamic leach out tests are well below the SEMI F57 standard (high purity version)
- Outstanding chemical and physical properties
  - High-purity design, Teflon® PFA 450 HP (Chemours)
- Excellent pressure resistance
- Good flexural fatigue strength
- High transparency



## Technical specifications

<b>Media temperature:</b>	-70 to 250 °C
<b>Operating pressure :</b>	2 to 20 bar
<b>Tube sizes:</b>	1/4" to 1 1/4"
<b>Materials:</b>	PFA



## Accessories

# Valve mounting accessories

GEMÜ 1040  
Mounting plate



GEMÜ 205 process solenoid valves can be fitted to the GEMÜ 1040 mounting plate.

GEMÜ 1041  
Mounting and compensating plate



GEMÜ 1041 is a mounting and compensating plate which serves to mount and align GEMÜ plastic diaphragm valves with union ends.

GEMÜ 1050  
Mounting plate



GEMÜ 1050 is a mounting set for mounting pilot valves on a DIN rail.

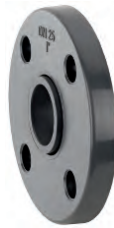
# Connection accessories

**GEMÜ 1035**  
Union end



The GEMÜ 1035 union end can be used for GEMÜ plastic valves and flowmeters and is available in various materials (PVC-U, PP, PVDF) and nominal sizes (DN 10 to 100).

**GEMÜ 1034**  
Full face flange with solvent cement socket



The GEMÜ 1034 plastic flange is suitable for GEMÜ plastic valves.

**GEMÜ 1031**  
Threaded socket



The GEMÜ 1031 threaded socket is suitable for GEMÜ plastic valves with weld or solvent cement spigots.

**GEMÜ CF**  
Union nut



The GEMÜ CF union nut is suitable for GEMÜ plastic valves with flare connection. It is available in PFA, PVDF or carbon fibre reinforced PFA. All parts are manufactured in cleanroom conditions and have extremely high chemical resistance.

**GEMÜ 2023**  
Pneumatic fitting



We offer various pneumatic fittings under the GEMÜ 2023 model. Various connection sizes are available with female thread, male thread, connector, plug-in nipple or quick connectors.

**GEMÜ 1219**  
Cable socket / cable plug M12



The GEMÜ 1219 is a connector (cable socket / cable plug) M12, 5-pin. Straight and/or 90° angled plug type. Defined cable length or with threaded connection without cable. Various materials available for the fixing nut.

# Connection accessories

**GEMÜ 1470**  
NAMUR control air adapter



The GEMÜ 1470 adapter makes it possible to connect the control air connector on the defined NAMUR interface.

**GEMÜ 2022**  
Exhaust air throttle



GEMÜ 2022 is a metal or plastic exhaust air throttle. It allows the actuator speed to be regulated by restricting the emission of air. Various connection sizes are available with female thread, male thread, connector, plug-in nipple or quick connectors.

**GEMÜ 1750**  
Silencer



The GEMÜ 1750 silencer can be used to reduce the noise caused by leaking compressed air. It is available either in brass or plastic.

**GEMÜ 1755**  
Double threaded nipple



GEMÜ 1755 is a metal double nipple and is available in various materials and designs.



# Commissioning and maintenance accessories

**GEMÜ CFSTF**  
Service tool for flare union nuts



The GEMÜ CFSTF service tool is used for the assembly of GEMÜ CF flare union nuts in PFA, PVDF and carbon fibre reinforced PFA. A precisely defined torque can be achieved when using it in combination with a torque wrench.

**GEMÜ 1098**  
Flaring mandrel



The GEMÜ 1098 flaring mandrel is an assembly tool for flare connections.

**GEMÜ WG600**  
Angle gauge



To simplify the assembly of 2/2-way diaphragm valve bodies made from stainless steel, we have developed a patented angle gauge. The angle gauge allows the correct mounting position of a diaphragm valve body to be set quickly and easily.

**GEMÜ PPF**  
Multifunction adapter



With the GEMÜ PPF multifunction adapter, the penetration of foreign particles during the installation of diaphragm valves can be prevented. It can also be used to conduct welding gas when welding the bodies onto the piping. It is also possible to supply and conduct passivation media or to carry out an endoscopic examination of the weld seams.

**GEMÜ SERVICE-IO-LINK-KIT**  
Programming set



The GEMÜ service IO-Link set comprises an IO-Link master, an adapter and a cable gland. The programming set is suitable for all GEMÜ IO-Link interfaces.

**GEMÜ 1434 000 Z IK**  
Initialisation kit



The GEMÜ 1434 000 Z IK initialization kit is intended for on-site initializing of GEMÜ 1434 µPos and GEMÜ 1436 eco cPos intelligent positioners. The initialization kit is connected to the system's connection cable on the one side and to the positioner's connector plug on the other. You can disconnect it again when initialization is complete.

# Clamping devices

## GEMÜ 1107

Tool to keep actuator open



The GEMÜ 1107 tool to keep the actuator open holds pneumatically operated diaphragm valves in the open position even if no control medium is applied to them. You can choose to secure it using a padlock. The GEMÜ 1107 tool to keep the actuator open can, for example, be used for autoclaving.

## GEMÜ 1109

Tool to keep actuator closed



The GEMÜ 1109 tool to keep the actuator closed holds diaphragm valves in the closed position, even if a control medium is applied to them. You can choose to secure this using a padlock.

# Position indicators and travel sensors

## GEMÜ 1300

Optical position indicator with transparent cap



GEMÜ 1300 is a plastic optical position indicator with transparent cap for pneumatically operated globe and diaphragm valves.

## GEMÜ 1310

Optical position indicator with transparent cap



GEMÜ 1310 is a plastic optical position indicator with transparent cap for pneumatically operated globe and diaphragm valves. It has an indicator spindle with metal core. There is also the option to connect two mounting brackets for proximity switches.

## GEMÜ 4231

Travel sensor for quarter turn actuators



The GEMÜ 4231 travel sensor is intended for the attachment to valves with quarter turn actuators with 90° travel and is used to determine the valve position. It is used as a travel sensor for the GEMÜ 1434  $\mu$ Pos, GEMÜ 1435 ePos and GEMÜ 1436 cPos intelligent positioners, which can be connected using either the open cable ends or an M12 cable connector (depending on the design and/or selection of the controller).

## GEMÜ 4232

Travel sensor for linear actuators



The GEMÜ 4232 travel sensor is intended for the attachment to valves with linear actuators and is used to determine the valve position. It is used as a travel sensor for the GEMÜ 1434  $\mu$ Pos, GEMÜ 1435 ePos and GEMÜ 1436 cPos intelligent positioners, which can be connected using either the open cable ends or an M12 cable connector (depending on the design and/or selection of the controller).

# Stroke limiters

**GEMÜ 1101 / 1104 / 1110 /  
1114 / 1151 / 1152 / 1161**  
Opening stroke limiter



Pneumatic linear actuators of GEMÜ butterfly valves, ball valves, diaphragm valves and globe valves are not fully opened by opening stroke limiters. This limits the maximum flow through a valve. The opening stroke limiter is available either with handwheel, transparent cap, position indicator or manual override.

**GEMÜ 1108**  
Closing stroke limiter



GEMÜ 1108 is a mechanical closing stroke limiter with integrated optical position indicator and transparent cap for pneumatically operated linear actuators. It is used when open/close valves should not be closed fully and a minimal flow should be ensured.

**GEMÜ 1106**  
Opening stroke and closing  
stroke limiter



The GEMÜ 1106 stroke limiter limits both the opening and closing of a valve, thereby setting a minimum and maximum flow. It is available with or without a stainless steel or plastic protective cap.

**GEMÜ 1118**  
Seal adjuster



The GEMÜ 1118 seal adjuster is a closing stroke limiter that can only be adjusted within the lower stroke range. In these cases, it reduces the compression of the diaphragm on the sealing weir, thereby increasing the diaphragm service life.

**GEMÜ 1116**  
Opening stroke limiter with  
seal adjuster



The GEMÜ 1116 model combines an opening stroke limiter with a diaphragm protection function. This allows the opening stroke to be set as required. The closing stroke can only be adjusted within the lower stroke range.

# Manual override

GEMÜ 1002  
Handwheel



GEMÜ 1002 is a manual override for pneumatic linear actuators for diaphragm, globe and control valves. An integral optical position indicator is standard. The manual override cannot be used as a closing stroke limiter.

GEMÜ 1450  
NAMUR mounting bracket



GEMÜ 1450 is a NAMUR mounting bracket for pneumatically operated diaphragm valves and globe valves. An integral optical position indicator is standard. The product is available either with or without handwheel as a manual override. It has height adjustable trip cams. The mounting parts are included.

GEMÜ 1460 / 1461  
NAMUR mounting bracket



GEMÜ 1460 / 1461 is a NAMUR mounting bracket for pneumatically operated diaphragm valves and globe valves. The product is available either with or without handwheel as a manual override. It has height adjustable trip cams. The mounting parts are included.

# Sensor accessories

**GEMÜ 1200**  
Proximity switch



The GEMÜ 1200 proximity switch is a sensor that detects the valve position contactlessly and displays it via an electrical signal.

**GEMÜ 1210**  
Mounting bracket for proximity switches



The GEMÜ 1210 is an enclosed proximity switch mount in stainless steel for two proximity switches M8 x 1 or M12 x 1 (only suitable for GEMÜ 550 and GEMÜ 650). An integral optical position indicator is standard. The basic version does not contain any proximity switches.

**GEMÜ 1216**  
Mounting bracket for proximity switches



GEMÜ 1216 is an open proximity switch mount for two proximity switches M8 x 1 for pneumatically operated linear actuators. It has two adjustable trip cams and can be ordered either with or without stroke limiter. The switching interval is dependent on the proximity switches used. The basic version does not contain any proximity switches.

**GEMÜ 125x**  
Limit switches



Limit switches with bistable reed contact (change-over contact or make contact) can be combined with GEMÜ flowmeters with magnetic float. They can be easily mounted and adjusted by clamping them onto the flowmeter. The electrical connection is via a cable gland. An ATEX version is available on request.

**GEMÜ 127x**  
Instrument sensor



Instrument sensors are suitable for continuous flow monitoring of GEMÜ flowmeters with magnetic float. They can be easily mounted and adjusted by clamping them onto the flowmeter. The electrical connection is via a cable gland.

**GEMÜ 1276**  
Digital display unit



The GEMÜ 1276 digital display unit is available as types M11 (4-digit) and M21, M31 (5-digit). The device can be programmed at the front using a disconnectable keypad. Programming is made using the easy to understand menu guidance.

# Accessories for fieldbus systems

GEMÜ 4150

AS-Interface extension plug



The AS Interface Extension Plug serves to extend the network cable length from the current 100 m to 200 m without a repeater. This is a passive component without an address in the AS-Interface fieldbus system. At the same time, the extension plug serves as a voltage monitor. Low voltages are signalled by the integrated LED. The extension plug can also be employed in a standard network in order to improve the signal quality and to reduce possible existing telegram error rate.





Valve knowledge

# Highly automated butterfly valve manufacture

At GEMÜ, we place great importance on carrying out the most important production steps in-house, allowing us to monitor the processes that are decisive for quality. The high level of vertical integration of our automated butterfly valve manufacture is an example of this. With the help of state-of-the-art robot technology and a sophisticated transport system, the unmachined parts of our butterfly valves are then mechanically machined precisely. Using a whirl-sintering method, we also coat the butterfly valve bodies with an even layer of high-strength corrosion protection.



All manufacturing steps are involved in producing a robust coating. All mechanical machining measures, from sand blasting through to powder coating, are precisely synchronized with each other.



### Mechanical processing

All butterfly valve bodies are milled in one clamping position in our state-of-the-art machining centre at GEMÜ Valves China. This allows us to achieve precise shape and positional tolerances.



### Sand blasting

We take strict care in further processing that the moulded parts are free from oil, grease, salt and other impurities. Moulding sand, rust and casting flash from the unmachined part is removed from the surface by sand blasting.



### Heating

To keep the workpiece at a uniform surface temperature without oxidation, a heating line passes through the butterfly valve body. To comply with our standards of quality, avoiding blue/purple oxidized cast iron is very much a priority.



### Coating and hardening

Using the whirl-sintering method, the butterfly valve body is immersed in a basin with coating powder. The powder melts on to the hot butterfly valve body and therefore interconnects to form a robust and durable surface. The residual heat in the workpiece causes it to harden.



### Inspection

GEMÜ always carries out a final inspection at the end of the manufacturing process. Each GEMÜ butterfly valve is tested before delivery for quality features such as pressure, tightness and torque.

# Connections

GEMÜ offers you a huge variety of connections for easily and properly connecting the valves with the piping.

Which connection type is most suitable depends on the operating requirements and parameters, such as pressure and temperature. Essentially, the connections in pipeline and system construction are subdivided into two categories:

- Detachable connection: The piping can be disconnected again, for example for maintenance purposes. This includes union ends, clamps, threads, flare connections and flanges.
- Non-detachable connection: The piping is connected without an additional seal, minimizing weak points and deadlegs. Examples include solvent cement sockets and spigots.





### Union end

Union ends comprise a threaded spigot with male thread, a union nut with corresponding female thread, an insert as a union and a seal (O-ring). By replacing the insert, a variety of thread variants can be covered. Union ends are frequently used in plastic piping and for small nominal sizes.



### Clamp

The clamp connection combines two clamp connectors with one intermediate gasket and is locked down with a hinged clip. Valves can therefore be replaced very quickly. Thanks to the minimal deadleg design, barely any waste materials remain in the seal area. This connection type is frequently used for stainless steel lines of small nominal sizes.



### Flange

Grooved or loose flanges are joined together at the flange connection using nuts and bolts. They are sealed using a gasket. A liner is used as a gasket for wafer-type valves. This connection is suitable for large nominal sizes as well as high temperatures and operating pressures.



### Flare

Flare connections are a type of clamp connection. They involve a flared tube being slipped over a fitting body equipped with male thread and fixed in place with a union nut. This type of connection is mainly used for high-purity applications.



### Thread

Threaded connections have a female or male thread and can be screwed together with the appropriate counterpart. A special threaded connection is, for example, a union end. For hygienic and sterile connections, there are also aseptic unions, in which a female union and threaded spigot are screwed together with a union nut.



### Spigot

With this connection type, the valve is connected to the piping by welding (butt weld spigot) or solvent cementing (solvent cement spigots). This minimizes the deadleg in the area around the connections. Whilst special tools are used for welding, plastics such as PVC can be solvent cemented easily and without the need for expensive tools.

# Kv value

## Kv value definition:

The Kv value is the flow coefficient of a valve. It is used as a calculation basis for designing and planning processes. Valves of different designs and nominal sizes can be compared with each other using the Kv value.

As valves always have an influence on the volumetric flow, the correct selection of the valve in terms of the Kv value is very important.

Kv	Kv value of an individual valve in conjunction with a stroke reading
Kv <sub>100</sub>	Kv value of an individual valve when open 100% (may deviate +/- 10% from Kv <sub>s</sub> )
Kv <sub>s</sub>	Kv value of a valve series at rated stroke

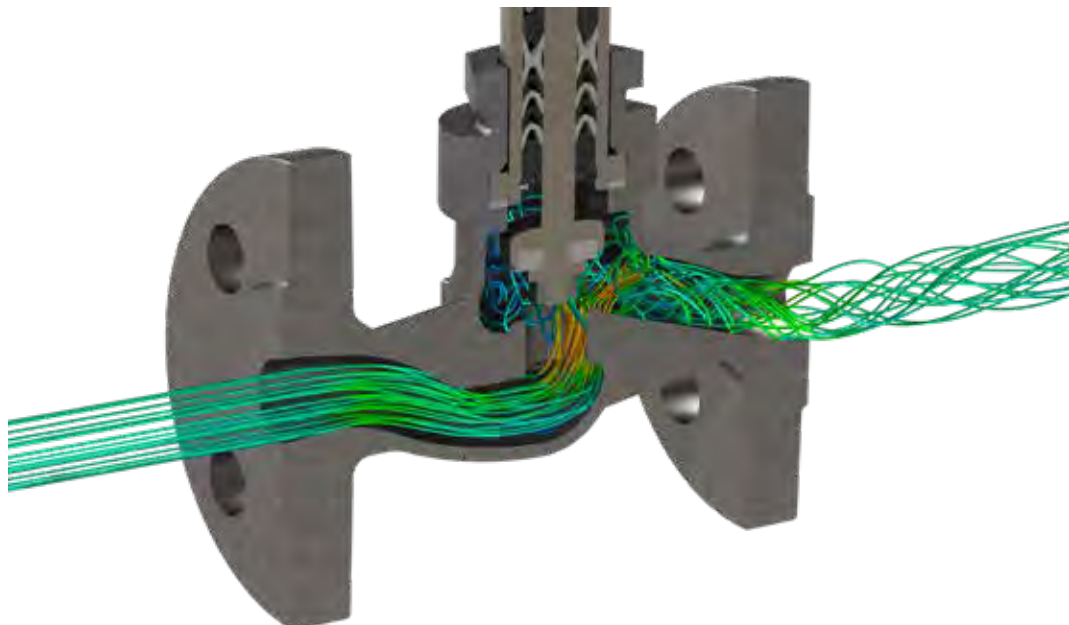
## Kv value determination:

In order to compare the varied geometries, valve designs and nominal sizes of different valves, the Kv value is always determined under the same conditions.

Medium:	Water (H <sub>2</sub> O)
Temperature:	5 to 40 °C
Pressure differential:	Δp between pressure inlet and pressure outlet side 1 bar
Measurement unit:	m <sup>3</sup> /h

In the US market, the data is usually in US gallons per minute. This value is designated as the Cv value.

<b>Cv value:</b> Measured in US gallons per minute, at a differential pressure Δp of 1 PSI with water
<b>Kv value:</b> Measured in m <sup>3</sup> per hour, at a differential pressure Δp of 1 bar with water
<b>1 Cv = 1.17 x Kv</b> <b>1 Kv = 0.86 x Cv</b>

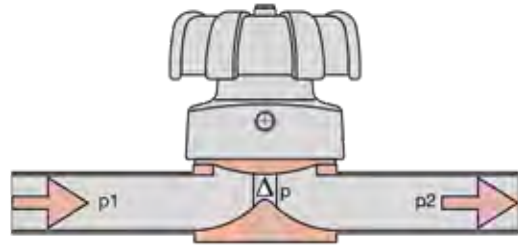


Globe valve flow simulation

### Calculation basis for Kv values:

Formulae are used here that take into account all the parameters and physical variables deviating from the test. Since liquids, gases and steam are subject to different laws, different formulae are also used.

The original calculation formulae are very extensive, so simplified standard formulae are used in most cases. Here, it is important that they cannot be fully abbreviated and that the units used for the Q value and the Kv value respectively are identical.



Pressure loss	Kv	for water	for liquid	for steam	for gases
$\Delta p < \frac{p_1}{2}$ ( $p_2 > \frac{p_1}{2}$ )	Kv	$= \frac{Q}{\sqrt{\Delta p}}$	$= \frac{Q}{31,6} \cdot \sqrt{\frac{\rho_1}{\Delta p}}$	$= \frac{\dot{m}}{31,6} \cdot \sqrt{\frac{v'}{\Delta p}}$	$= \frac{Q_N}{514} \cdot \sqrt{\frac{\rho_N \cdot T_1}{\Delta p \cdot p_2}}$
$\Delta p > \frac{p_1}{2}$ ( $p_2 < \frac{p_1}{2}$ )	Kv	$= \frac{Q}{\sqrt{\Delta p}}$	$= \frac{Q}{31,6} \cdot \sqrt{\frac{\rho_1}{\Delta p}}$	$= \frac{\dot{m}}{31,6} \cdot \sqrt{\frac{2 \cdot v''}{p_1}}$	$= \frac{Q_N}{257 \cdot p_1} \cdot \sqrt{\rho_N \cdot T_1}$

Kv	m <sup>3</sup> /h	Flow coefficient of the valve	$\rho_1$	kg/m <sup>3</sup>	Density of the material in the operating state T <sub>1</sub> and p <sub>2</sub>
Q	m <sup>3</sup> /h	Volumetric flow	$\rho_N$	kg/m <sup>3</sup>	Density of the gas at 0 °C and 1014 mbar
Q <sub>N</sub>	Nm <sup>3</sup> /h	Volumetric flow of the gas at 0 °C and 1014 mbar	v'	m <sup>3</sup> /kg	Spec. steam volume at T <sub>1</sub> and p <sub>2</sub>
$\dot{m}_{max}/\dot{m}_{min}$	kg/h	Maximum/minimum mass flow to be regulated	v''	m <sup>3</sup> /kg	Spec. steam volume at $\frac{p_1}{2}$ and T <sub>1</sub>
p <sub>1</sub>	bar	Absolute pressure upstream of the positioning element (at Q)	$\dot{m}$	kg/h	Mass flow
p <sub>2</sub>	bar	Absolute pressure downstream of the positioning element (at Q)	T <sub>1</sub>	K	Media temperature
Δp	bar	(Δp) - pressure differential p <sub>1</sub> - p <sub>2</sub> at Q			



# Configuration of a control circuit

According to DIN 19226, control or controlling is a process in which the variable to be controlled is continuously measured, compared with the reference variable and influenced in the sense of adjustment to the reference variable. The characteristic feature of control is the closed action circuit in which the controlled variable continuously influences itself within the control circuit.

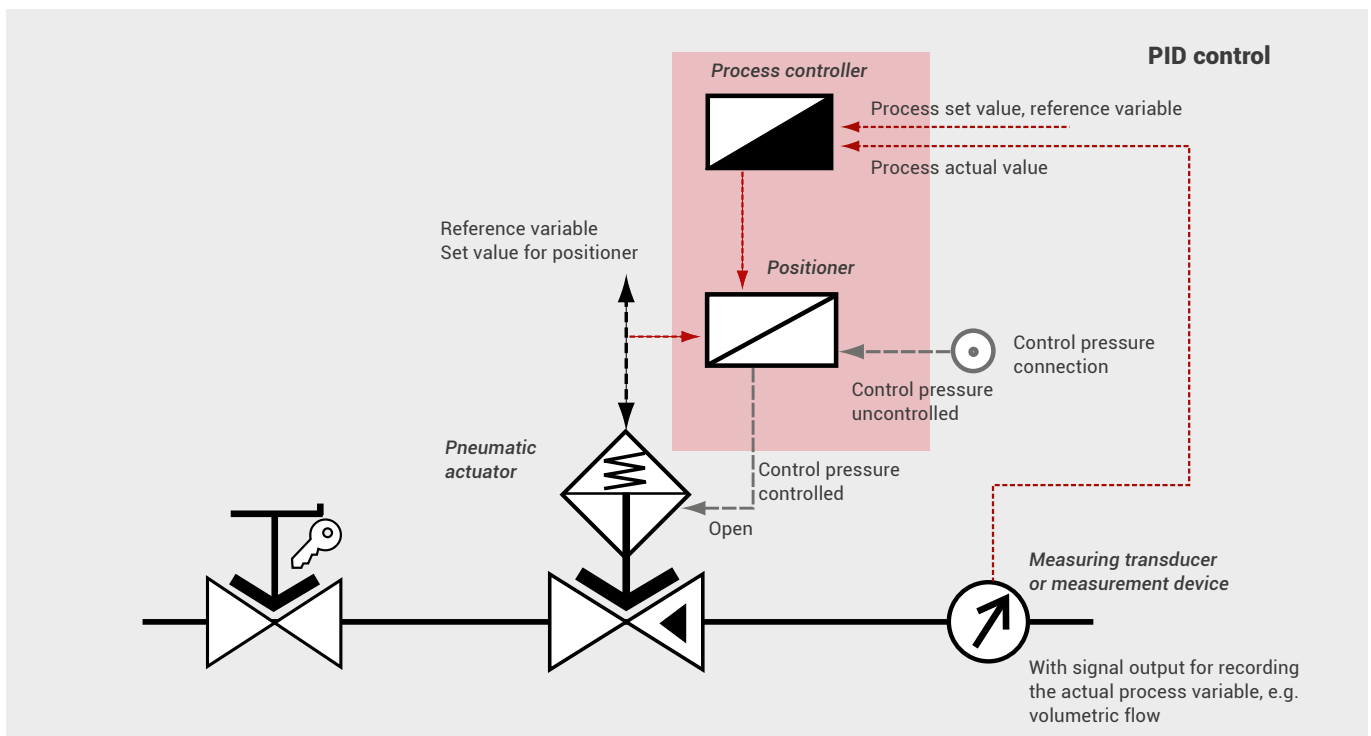
The right design of the control circuit is necessary for good, reliable functionality. The valve and the control or regulating device must be closely adapted to each other.

## Example: Electro-pneumatic process control

Positioners and process controllers are available as single and "2 in 1" devices. If the travel is measured mechanically, the positioner must be mounted directly on the positioning element (valve). With electronic travel detection, the positioner can be positioned away from the positioning element.

### The control is characterised by:

- Type of control/regulation
- Accuracy of the control
- Controlled system and its influential factors
- Controller type (2-point, 3-point, P, PI, PD, PID etc.)
- Control task (pressure, temperature, filling level, flow, pH value, etc.)
- Control range of the valve (Kv value)



The example shows a diaphragm valve with a pneumatic membrane actuator in control function "normally closed" (single acting) and a manually operated/lockable diaphragm valve. In the control of volumetric/mass flow, the measuring element (actual value transmitter) should be positioned upstream of the positioning element (valve).

In this way, the volumetric flow on the measurement device is damped so that the control does not experience sudden measuring step jumps. The actual value transmitter must be positioned downstream of the positioning element for pressure and temperature control.



### **Increase control accuracy, save costs – things to bear in mind**

The greater the accuracy of the control is, the higher the costs for the components and commissioning generally are. Under certain process conditions, high-precision controls can only be implemented after substantial effort. This is why you should consider very carefully before planning how accurate the control must be.

The design of a control circuit, the corresponding system layout and the selection of all the necessary components also depends on the level of control accuracy that is sought. The tighter the tolerances of the control are, the more precisely the components operate and the higher the reproducibility has to be. Tight tolerances for a control mean that the valve must be selected and designed very carefully:

- Exact calculation of the necessary minimum and maximum Kv value
- Design of the valve and the control fitting in line with this optimum control range
- Jolt-free actuator without sticking-slipping effect
- Long stroke distance, combined with small increase in cross-section at the valve seat
- How the valve controls depends on the design; for a shut-off function (close tight), an additional open/close valve may be required
- Selection of the right controller type and controller
- Precise coordination of process controller, positioner, valve, sensor system and measuring transducer



# Basic terms relating to valve control

## Open loop control

Control is to be understood as a process in which one or more process variables are influenced by one or more input variables of a system. The current state of the system is not normally taken into account. A control is an open action circuit without an automatic set-actual comparison. Faults are not detected by the system.

## Closed loop control

In a closed loop, the actual value and the controlled variable of a system are measured continuously and compared with the set value, the reference variable. This aims to ensure that the target variable is achieved and remains constant.

The difference between these two variables is the control difference or the control error. Depending on the measured difference, a positioning process is initiated to adapt the control difference to the reference variable. Regulation is therefore a closed loop process.

### Example:

To fill a container with a constant drain, a valve – the positioning element – is opened. The filling level and the filling speed can be influenced by the position of the valve. When the desired filling level has been reached or the filling speed is to be changed, the valve must be actuated again. By monitoring the process over a certain period of time and repeatedly readjusting the valve position, it will be possible to keep the filling level constant after a certain time. However, this example works only if the process does not change.

### Example:

The fermentation of biomass is strongly influenced by the ambient conditions, as different bacterial groups favour certain temperature ranges. To optimize the gas return, a constant process temperature of between 50 and 57 °C should be maintained in the fermentation tanks. Disturbance variables, e.g. external temperature, can be compensated for through temperature control. Control action is consequently taken if the target variable is exceeded or fallen short of. This is a closed action path.



### Discontinuous control

A process which takes place in several steps is known as discontinuous control. The correcting variable on the controller jumps back and forth between discrete values. Depending on how many states the correcting variable can adopt, it refers to two, three or multi-point controllers. A two-point controller has only two switching states, "OPEN" and "CLOSED".

Due to the erratic switching of the controller, the controlled variable fluctuates within a certain range around the set value. By installing energy stores and through the correct setting of time constants, the controlled variable can be kept constant without too great a fluctuation even in discontinuous control.

However, this also strongly depends on the controlled system to be designed, any disturbance variables and the selection of the positioning elements and sensors.

The fluctuation width of the controlled variable depends on different factors (e.g. reaction time of the control circuit, characteristic of the valve).

### Closed loop control

Continuous controllers intervene continuously in the process and influence the positioning element accordingly. The positioning process runs permanently. The correcting variable of the controller can adopt any value within the given fluctuation width.

A sensor continuously measures the process variable and passes on the signal to the positioner. This compares it with the set value and influences the valve position accordingly.





# Basic terms relating to valve control

## Controlled variable $x$ (actual value):

The variable to be controlled in a process is referred to as  $x$ . Controlled variables in plant engineering are, for example, temperature, pressure, flow, pH value, hardness.

## Reference variable $w$ (set value):

The reference variable indicates the value which the process variable should adopt. Its value in the form of an electrical variable (current or voltage), for example, is compared with the controlled variable  $x$ .

## Control difference $e = w - x$

The control difference is the difference between the controlled variable and the reference variable. It is the input variable for the controlled element. The control error is exactly the same size as the control difference but with the inverse sign.

## Correcting variable $y$

The correcting variable is the output variable of the controller and has a direct influence on the positioning element. It depends on the control parameters of the controller and the control error.

## Disturbance variable $z$

Factors which have an undesirable influence on a process and therefore change the controlled variables are referred to as disturbance variables.

## Positioning range $y_h$

The correcting variable  $y$  of a controller is within the positioning range. This can be defined accordingly depending on the controller used.

## Positioning element

The positioning element influences the process to match the controlled variable to the reference variable. Positioning elements in plant engineering are, for example, valves, pumps and heat transfer elements.

## Controlled element

The controlled element creates the correcting variable from the control difference. The controlled element is part of the controller.

## Dead zone

If a controlled variable only reacts to the changes at the positioning element after a certain time, we refer to controlled systems with dead zone. Examples of such controlled systems are compressible media pressure control or the continuing flow of a medium from a pipe into a container after a valve has been closed.

## Energy store

Control processes may run with delays due to the energy stores occurring in every controlled system. This is clearly seen in heating processes in systems. Pipes, containers and valves also have to achieve a temperature increase. At the same time, the energy loss to the environment increases with rising  $\Delta t$ . Energy stores have a damping effect on the temperature rise in the system in this case.



Controlled systems are basically characterised by their time behaviour. This determines the effort and the accuracy with which a control task can be tackled.

The jump response of the controlled system is used to represent this system dynamic. The jump response shows how the controlled variable reacts to changes in the correcting variable. Controlled systems are divided into four basic types by their timing. At the same time, a distinction must be made between systems with compensation and systems without compensation. In systems with compensation, a new end value is set whilst systems without compensation do not achieve a new equilibrium.

### **P controlled systems**

In P controlled systems, the controlled variable always changes proportionally to the correcting variable. Adaptation takes place without a time delay.

### **I controlled systems**

An I controlled system exhibits an integral behaviour and has no compensation. The controlled system does not achieve an equilibrium if the correcting variable is not zero. The correcting variable changes continuously so that the controlled variable rises or falls permanently.

### **Systems with dead zone**

In controlled systems with dead zone, the controlled variable only reacts to the positioning intervention after a certain delay. This frequently leads to oscillations, especially when the controlled variable and the correcting variable change periodically in relation to each other and

offset to the dead zone. Dead zones are usually caused in the process sequence or in the plant design (lead times, lag times, positioning of the sensor, controller and positioning element, etc.). Many of these influential variables can be optimized by appropriate plant design for control-specific requirements. Everything else must be influenced by an appropriate design of the control circuit.

### **Systems with energy stores**

Control processes may run with delays due to the use of energy stores occurring in every controlled system. This is clearly seen in heating processes in systems. Pipes, containers and valves also have to achieve a temperature increase. At the same time, the energy loss to the environment increases with rising  $\Delta t$ . Energy stores have a damping effect on the temperature change in this case. Compensation vessels and bladder accumulators in hydraulic systems, for example, have the same effect, they delay the change in pressure.

Whether and to what extent the energy stores influence the control dynamic is different in every system. It may be ignored in the design of the control circuit depending on the influence on the control circuit.

Complex controlled systems are usually a mixture of the four basic types above with and without compensation. For this reason, the most common positioners are also combinations of the types described above.



# Basic terms relating to valve control

## Controller selection and controller design

It is important to conduct an exact analysis of the controlled system in order to design the control circuit and its components. Make sure that valves are only assigned one function in a control circuit to guarantee perfect design and operation. The selection of the controller depends on the controlled system (integral or proportional), the delays and energy stores, the desired speed of the control and whether a remaining control error is acceptable.

The following brief characteristics can be used as a rough guideline:

- P controllers are used in easy to control systems in which a remaining control difference is acceptable.
- I controllers are suitable for systems with a low control dynamic. The systems should not contain any long delays.
- Proportional derivation controllers are suitable for systems with major delays in which a remaining control error is not a problem.
- PI controllers achieve a dynamic control behaviour. They can also be used for systems with delays.
- PID controllers are always used when the operating time of a PI controller is insufficient in systems with longer delays. PID controllers are the fastest and most accurate controllers for complex control tasks.

## Control tasks

The following table gives you an initial idea of which controls are to be preferred for different applications. It is only a rough guide; every controlled system must be designed to meet the requirements of the actual plant.

Application	Controller type		
	P	PI	PID
Pressure	○	●	●
Flow	–	●	○
Filling level	●	–	–
Temperature	○	●	●
pH value	○	●	●

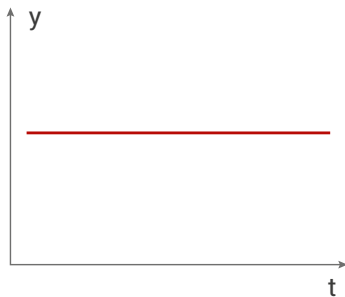
- Very suitable
- Conditionally suitable
- Not suitable

Controlled element	Control error	Actuating speed
P	permanent	fast
I	idle	slow
PD	permanent	very fast
PI	idle	fast
PID	idle	very fast

### P controller

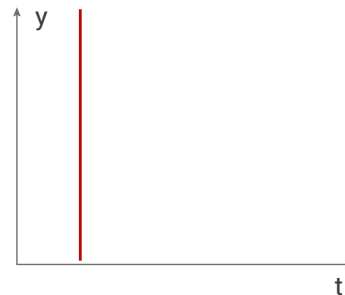
A P controller is a proportionally acting controller. The initial variable (correcting variable  $y$ ) is always proportional to the control difference. P controllers respond very quickly and have an immediate positioning effect. but they have a permanent control difference between the reference variable and the controlled variable.

The proportional action factor  $K_p$  to be set on the controller influences the reaction of the controller to a control error. A large  $K_p$  leads to a stronger control intervention and lower control errors. Too high a proportional action factor can, however, lead to oscillations.



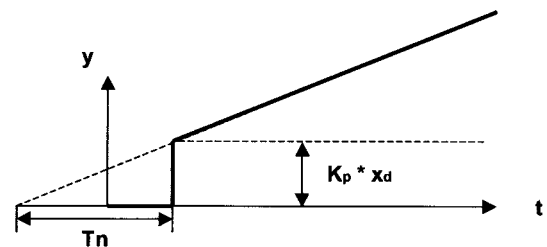
### D controllers

D controllers are controllers with a differentiating action. D controllers only affect the speed with which the control difference changes. They therefore react very quickly independently of the control difference. High positioning amplitudes are achieved even at low control difference. It does not recognise a constant control error. D controllers are only used in practice in connection with P and I controllers.



### PI controllers

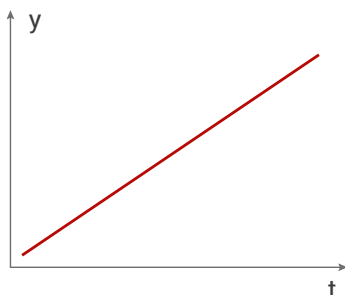
A P and an I controller are connected in parallel in a PI controller. It reacts very quickly and leads to a full control without remaining control error. The control behaviour is influenced by the proportional action factor  $K_p$  and the integral action time  $T_n$ . PI controllers are very variable in their control.



### I controllers

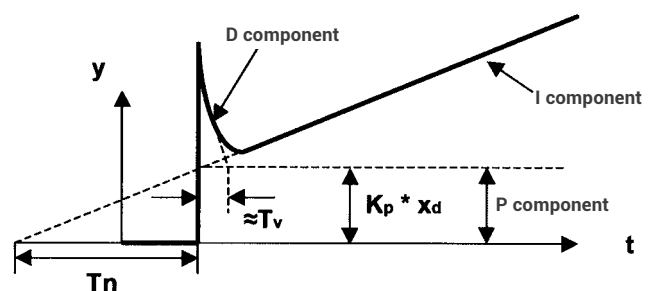
I controllers are integrally acting controllers. A proportional relation exists between control error and actuating speed. I controllers are slower than P controllers but eliminate the control difference completely. The I component in a controller therefore leads to an increase in the accuracy.

The speed of the controller depends on the integral action time  $T_n$ . The greater the integral action time, the slower the controller responds. This is because the correcting variable  $y$  only rises slowly. If too small an integral action time  $T_n$  is selected so that the controller reaches the specified reference variable faster, oscillations may occur.



### PID controller

In the PID controller, a D component is connected to the PI controller. This leads to faster transient oscillation of the control, i.e. reaching the idle state. PID controllers are particularly suitable for controlled systems with large energy stores, i.e. for higher order systems.



# Product directory

GEMÜ 0322.....	322	GEMÜ 1470.....	356	GEMÜ 563.....	120
GEMÜ 0324.....	323	GEMÜ 1750.....	356	GEMÜ 566.....	97
GEMÜ 0326.....	324	GEMÜ 1755.....	356	GEMÜ 600HP.....	65
GEMÜ 1002.....	361	GEMÜ 202.....	254	GEMÜ 601.....	36
GEMÜ 102.....	253	GEMÜ 2022.....	356	GEMÜ 612.....	36
GEMÜ 1031.....	355	GEMÜ 2023.....	355	GEMÜ 673.....	36
GEMÜ 1034.....	355	GEMÜ 205.....	255	GEMÜ 602.....	37
GEMÜ 1035.....	355	GEMÜ 225.....	249	GEMÜ 605.....	56
GEMÜ 1040.....	354	GEMÜ 3020.....	340	GEMÜ 625.....	56
GEMÜ 1041.....	354	GEMÜ 3021.....	341	GEMÜ 687.....	56
GEMÜ 1050.....	354	GEMÜ 3030 mFlow.....	342	GEMÜ 607.....	46
GEMÜ 1098.....	357	GEMÜ 312.....	126	GEMÜ 610.....	62
GEMÜ 1101.....	360	GEMÜ 314.....	127	GEMÜ 611.....	39
GEMÜ 1104.....	360	GEMÜ 3140.....	346	GEMÜ 671.....	39
GEMÜ 1110.....	360	GEMÜ 3240.....	347	GEMÜ 615.....	57
GEMÜ 1114.....	360	GEMÜ 352.....	128	GEMÜ 695.....	57
GEMÜ 1151.....	360	GEMÜ 354.....	129	GEMÜ 617.....	47
GEMÜ 1152.....	360	GEMÜ 410.....	187	GEMÜ 620.....	58
GEMÜ 1161.....	360	GEMÜ 411.....	170	GEMÜ 630.....	63
GEMÜ 1106.....	360	GEMÜ 415.....	183	GEMÜ 639 eSyStep.....	70
GEMÜ 1107.....	358	GEMÜ 4150.....	363	GEMÜ 649 eSyDrive.....	71
GEMÜ 1108.....	360	GEMÜ 417.....	175	GEMÜ 650 BioStar.....	54
GEMÜ 1109.....	358	GEMÜ 423.....	199	GEMÜ 653 BioStar.....	41
GEMÜ 1116.....	360	GEMÜ 4231.....	359	GEMÜ 654 BioStar.....	42
GEMÜ 1118.....	360	GEMÜ 4232.....	359	GEMÜ 655.....	43
GEMÜ 1200.....	362	GEMÜ 4240.....	314	GEMÜ 656.....	59
GEMÜ 1201.....	304	GEMÜ 4241.....	315	GEMÜ 660.....	55
GEMÜ 1211.....	304	GEMÜ 4242.....	316	GEMÜ 673P9.....	38
GEMÜ 1214.....	304	GEMÜ 428.....	195	GEMÜ 675.....	40
GEMÜ 1205.....	305	GEMÜ 480 Victoria.....	154	GEMÜ 698.....	72
GEMÜ 1210.....	362	GEMÜ 481 Victoria.....	180	GEMÜ 707.....	215
GEMÜ 1215.....	302	GEMÜ 487 Victoria.....	166	GEMÜ 710.....	230
GEMÜ 1216.....	362	GEMÜ 488 Victoria.....	192	GEMÜ 711.....	216
GEMÜ 1219.....	355	GEMÜ 490 Edessa.....	156	GEMÜ 717.....	222
GEMÜ 1225.....	309	GEMÜ 491 Edessa.....	182	GEMÜ 723.....	238
GEMÜ 1230.....	303	GEMÜ 497 Edessa.....	169	GEMÜ 728.....	235
GEMÜ 1231.....	303	GEMÜ 498 Edessa.....	194	GEMÜ 740.....	217
GEMÜ 1232.....	303	GEMÜ 505.....	94	GEMÜ 741.....	228
GEMÜ 1234.....	306	GEMÜ 507.....	95	GEMÜ 748.....	236
GEMÜ 1235.....	307	GEMÜ 514.....	100	GEMÜ 751.....	227
GEMÜ 1236.....	307	GEMÜ 52.....	252	GEMÜ 761.....	229
GEMÜ 1242.....	308	GEMÜ 530.....	106	GEMÜ 762.....	218
GEMÜ 125x.....	362	GEMÜ 532.....	107	GEMÜ 768.....	237
GEMÜ 1276.....	362	GEMÜ 533 eSyStep.....	116	GEMÜ 790.....	208
GEMÜ 127x.....	362	GEMÜ 534.....	108	GEMÜ 791.....	226
GEMÜ 1300.....	359	GEMÜ 536.....	109	GEMÜ 797.....	214
GEMÜ 1310.....	359	GEMÜ 537.....	96	GEMÜ 798.....	234
GEMÜ 1434 µPos.....	282	GEMÜ 539 eSyDrive.....	118	GEMÜ 800.....	334
GEMÜ 1434 000 Z IK.....	357	GEMÜ 543 eSyStep.....	117	GEMÜ 8253.....	246
GEMÜ 1435 ePos.....	284	GEMÜ 549 eSyDrive.....	119	GEMÜ 8257.....	247
GEMÜ 1436 cPos.....	285	GEMÜ 550.....	101	GEMÜ 8258.....	248
GEMÜ 1436 eco cPos.....	283	GEMÜ 553.....	130	GEMÜ 8259.....	256
GEMÜ 1450.....	361	GEMÜ 554.....	102	GEMÜ 8303 002.....	325
GEMÜ 1460.....	361	GEMÜ 555.....	103	GEMÜ 840.....	336
GEMÜ 1461.....	361	GEMÜ 560.....	264	GEMÜ 850.....	335



GEMÜ 8500.....	326
GEMÜ 8505.....	327
GEMÜ 8506.....	328
GEMÜ C50 iComLine .....	142
GEMÜ C51 iComLine .....	140
GEMÜ C57 iComLine .....	141
GEMÜ C60 CleanStar .....	66
GEMÜ C67 CleanStar .....	49
GEMÜ CF .....	355
GEMÜ CFSTF .....	357
GEMÜ CV .....	266
GEMÜ D450 .....	160
GEMÜ D451 .....	186
GEMÜ D457 .....	174
GEMÜ D458 .....	198
GEMÜ D480 Victoria .....	155
GEMÜ D481 Victoria .....	181
GEMÜ D487 Victoria .....	167
GEMÜ D488 Victoria .....	193
GEMÜ FlareStar .....	350
GEMÜ K410 .....	161
GEMÜ K415 .....	157
GEMÜ K715 .....	209
GEMÜ K740 .....	210
GEMÜ K762 .....	211
GEMÜ LSC .....	310
GEMÜ LSF.....	311
GEMÜ N082 .....	290
GEMÜ N182 .....	290
GEMÜ N085 .....	292
GEMÜ N185 .....	292
GEMÜ N086 .....	291
GEMÜ N186 .....	291
GEMÜ N560 .....	265
GEMÜ N570 .....	267
GEMÜ P500M .....	132
GEMÜ P600M .....	82
GEMÜ PC50 iComLine .....	143
GEMÜ PPF .....	357
GEMÜ R629 eSyLite .....	76
GEMÜ R639 eSyStep.....	77
GEMÜ R649 eSyDrive.....	78
GEMÜ R677 .....	48
GEMÜ R690 .....	64
GEMÜ R693 .....	79
GEMÜ RSK .....	262
GEMÜ S717 .....	223
GEMÜ SERVICE-IO-LINK-KIT.....	357
GEMÜ TubeStar .....	351
GEMÜ WG600.....	357
GEMÜ ZRSK.....	263

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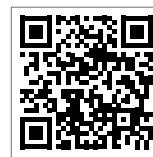
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