



**bürkert**  
FLUID CONTROL SYSTEMS



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# Product Overview Process and Control Valves

**Bürkert Fluid Control Systems**  
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## Modular Process Valve Market Leader

Across thousands of individual solutions and spanning dynamic conditions of global competition our mission is to work towards your success. We have decades of global experience and we have always been positioned at the forefront of process valve technology.

Our innovative approach to your success is to secure your process efficiency, lower your downtime, increase your safety and boost your competitive advantage. We intend to collaborate with you where we can share our process control and valve experience. All of our combined knowledge is available to you through consultation, engineering support, selection and commissioning of valve systems.

We want to be your partner in process automation by offering you solutions for your application across the industry, be it in food and beverage, dairy, pharma or general process automation. With our technical expertise in the process industry, we are ready to offer you the most suitable automation concept to suite your application requirements.

Whether you need a single component or a customized system solution, we always focus on optimum process reliability, efficiency and economy and with our certified quality system in accordance with ISO 9000 – 9004 we do it right and on time.

Everyone in our organisation is interested in listening to you with the aim of presenting you with only the most appropriate solution fluently in your daily application language.



# Welcome to the Fascinating World of Fluid Control Systems

Measurement and control: When it comes to working with liquids and gases, we are at your side – as a manufacturer of sophisticated products, as a problem-solver with an eye for the big picture, and as a partner offering you reliable advice. Since we started in 1946, we have developed into one of the world's leading suppliers of Fluid Control Systems. At the same time we have kept our status as a family-owned business with a foundation of strong basic values to highlight the way we think and act.

## EXPERIENCE

There are things which are not inherently yours. You have to gather them bit by bit. You receive them from others. And you constantly have to acquire them anew. That is what makes them so valuable. Experience is one of those things. For instance, because of our many years of experience with process valves, we can provide our extensive services to you – from consulting, development, and 3D CAD simulating to testing and after-sales service. Whether individual product solutions or a pioneering new system for the entire control process: Benefit from our experience.

## COURAGE

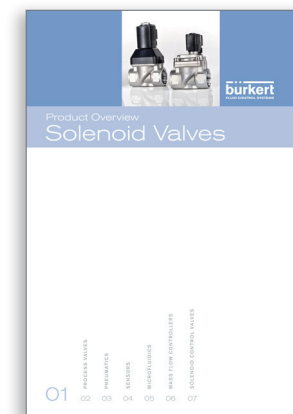
Those who only work toward optimizing things that already exist will eventually reach the limits – technically, financially, or personally. In order to overcome these limits, courage is needed: the courage to be different and trust one's own ideas; the courage to venture into the unknown, searching for new ways to develop products that have never existed before. We have this courage. By pooling and utilizing our competencies across all sectors, you benefit from our cumulative knowledge of valves, actuators, pilots and controllers.

## CLOSENESS

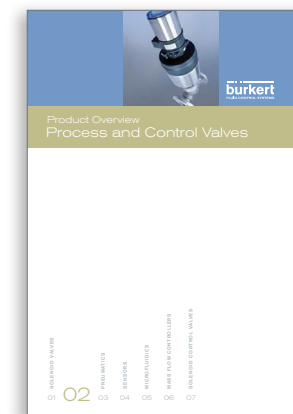
There are things we simply take for granted. Only when they are gone, do we realize how important these things really were. This applies in particular to closeness. Without closeness, it is very difficult to build relationships and a good understanding of one another. As an established medium-sized company, we know that. And that is why we are always there for you. Working with you, we develop the best possible solutions for your projects in the area of process control. Our global presence in 35 locations enables us to press ahead with technical innovations for our customers around the world.

# Bürkert Product Program

We are one of the few suppliers on the market to cover the complete control loop. Our current product range extends from solenoid valves through process and analytical valves to pneumatic actuators and sensors.



*Bürkert offers a remarkable range of servo assisted and direct acting solenoid valves. Read more about them in this brochure.*



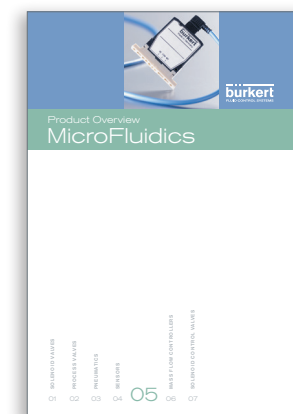
*Bürkert offers unlimited modularity for process control with angle-seat, globe and diaphragm valves in the widest range of configurations.*



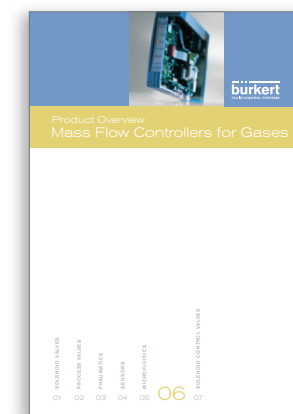
*Here you can find our product range of pneumatic valves, valve units and automation systems as well as information on our control cabinet building.*



*Here you can find our sensors, transmitters and controllers for measuring and controlling flow, temperature, pressure, level, pH/ORP and conductivity.*



*The brochure contains an overview of Bürkert miniature valves and micro pumps, which allow for precise and safe handling of small volumes of liquids.*



*This brochure provides technical background information as well as a detailed product overview for the mass flow controller and meter product range.*



*This brochure presents our solenoid control valves including their respective features, functions and typical applications.*



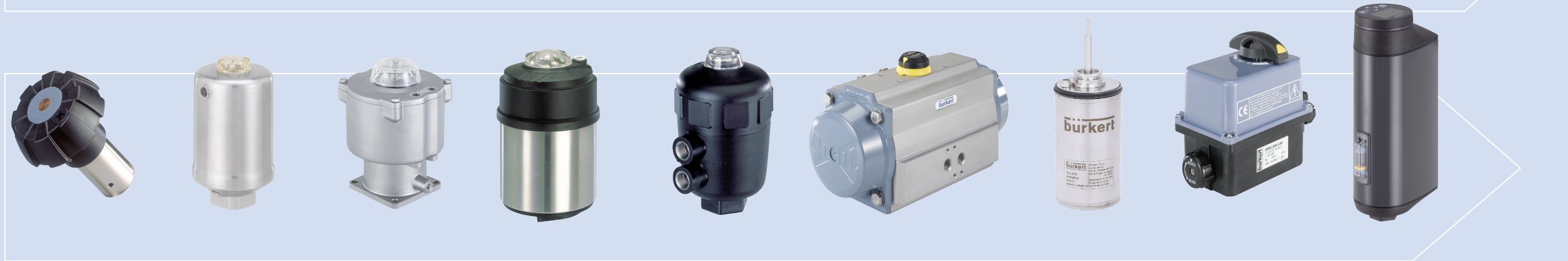
# Make Your Perfect Valve

Making your life simpler, our groundbreaking innovation has created a remarkable range of attractive and hardworking valve elements which can be combined to give the user the best possible fit for purpose. With unlimited modularity, Bürkert saves you time by offering valves for media from slurries to steam and from de-ionized water to hydrochloric acid to offer peace of mind with the sure knowledge you have chosen experience and quality.

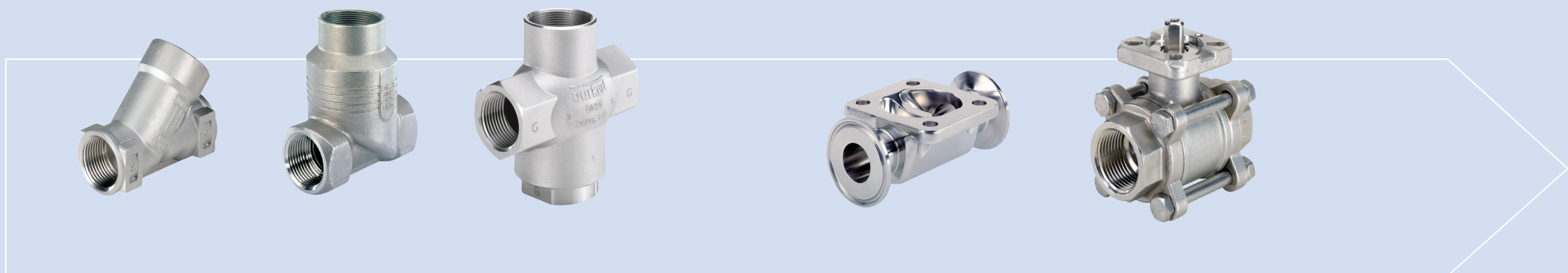
Automation units



Valve actuator (manual, pneumatic or electromotive)



Valve body





# Pneumatic actuation – Continuous control

To make sure your work runs hitch-free, Bürkert provides a perfectly harmonized system: Our control valves are endowed with an integrated position or process controller which guarantees functional safety, a long actuator service life and consistently high regulating quality. The system is well known for providing an optimal control precision and for its unique ELEMENT design with integrated control air routing. By being independent of external tubing, we ensure an easy and safe installation.

## Positioners and process controller TopControl for integrated mounting on process valves

Type 8692  
Positioner



Type 8693  
Process controller



Type 8694  
Positioner BASIC



Type 8696  
Positioner BASIC  
for Bürkert's 50 mm  
actuator



## Process valves ELEMENT series

Type 2300  
Angle seat control valve



Type 2301  
Globe control valve



Type 2301  
Diaphragm control valve



## Control valvesystem

Angle seat control  
valvesystems



Globe control  
valvesystems



Diaphragm control  
valvesystems



# Pneumatic actuation – On/Off control

To meet all of our customers' individual requirements, we offer a wide product range of on/off control valves with integrated control heads or cost effective pneumatic control units. The compact and light weight design with fully integrated automation functionality is a main advantage. Furthermore it is designed and optimized for decentralized process automation.

Pneumatic control units and control heads for integrated mounting on process valves

Type 8691  
Control head



Type 8695  
Control head for Bürkert's  
50 mm actuator



Type 8690  
Pneumatic control unit



Type 8697  
Pneumatic control unit /  
Feedback



On/Off Process valves  
ELEMENT Series

Type 2100  
Angle seat valve



Type 2101  
Globe valve



Type 2301  
Diaphragm valve



On/Off Control  
valvesystem

Angle seat On/Off  
valvesystems



Globe On/Off  
valvesystems



Diaphragm On/Off  
valvesystems





# Electromotive actuation – Continuous and On/Off control

To ensure the best solution for every application and customer need, the modular concept allows any combination of different valve bodies and process interfaces. As high efficiency is extremely important, this concept has no need of compressed air. That is why it is ideal for mobile applications, where compressed air is limited or unavailable.

To guarantee flexibility and safety, we provide an adaptable universal actuator for all valve types.

Electromotive valve actuator (EVA) with integrated automation unit



## Continuous control

Electromotive angle seat control valve Type 3360



Electromotive globe control valve Type 3361



Electromotive diaphragm control valve Type 3363



## On/Off control

Electromotive angle seat valve Type 3320



Electromotive angle seat valve Type 3321



Electromotive diaphragm valve Type 3323

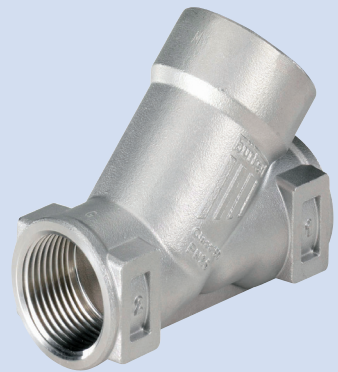


## Valve body variants

We assist you to choose the correct valve for your application. Starting with the body you can select valves to control slurries, steam, aggressive liquids and materials which must remain pure. We offer four main methods for controlling fluids from our world renowned angle seat pattern to a range of quarter turn solutions. The choice is yours...

### Angle seat

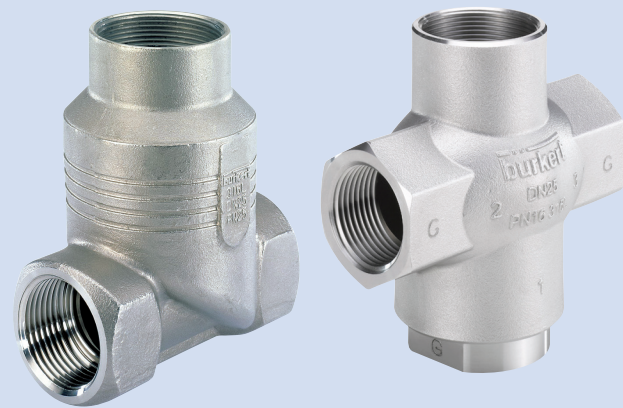
- High flow rates
- Tight shutoff
- High cycle life



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### Globe

- Best control characteristics
- 2 or 3 way versions
- Compact design
- High cycle life



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### Diaphragm

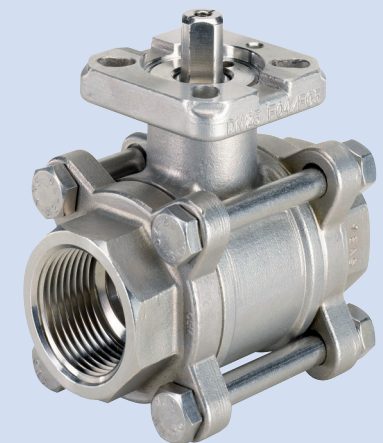
- High quality stainless steel bodies for hygienic applications
- Simple 2-way valves, T- or Tank valves up to customized valve manifolds
- Plastic bodies for highest chemical resistances



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### Additional Body Solutions

- Wide range of ball and butterfly valves and
- Highest flow rates
- Moderate duty



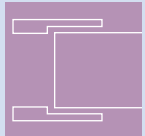
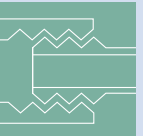

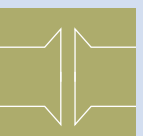
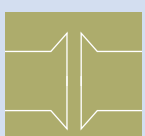
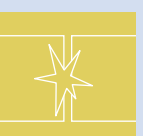
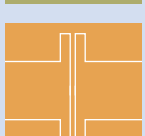
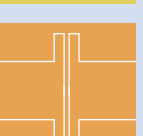
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## Body Connections

We build a vast array of valves for a dispersed and diverse global process control market. Regional and industry based requirements are taken care of by our internal modular simplicity. No matter where you are in the world and which industry norm you are trying to meet, we have your connection.

Type	Norms available
Threads	ISO, NPT, RC
Solvent weld	ISO
Union	True union
Clamp	ISO, BS, DIN, ASME BPE
Welded	ASME BPE, BS OD, ISO, DIN
Flange	ANSI, DIN, JIS

Plastics		Metals	
Solvent		Thread	
Union		Clamp	
Clamp		Weld	
Flange		Flange	

Additional valves also employ Quick-CONNECT (BBS) for ultrapure process systems using clamp, DIN union or flange connections. Details can be found in our Hygienic Processing Pharmaceutical brochure.

## Body Materials

Our core competencies include modelling, machining and molding a vast array of engineering materials. We can supply materials compatibility advice and we know the material requirements inside many application environments. Our research and development laboratory is equipped to respond to our customers' demands for leading edge solutions and our efforts are focused towards your process success.

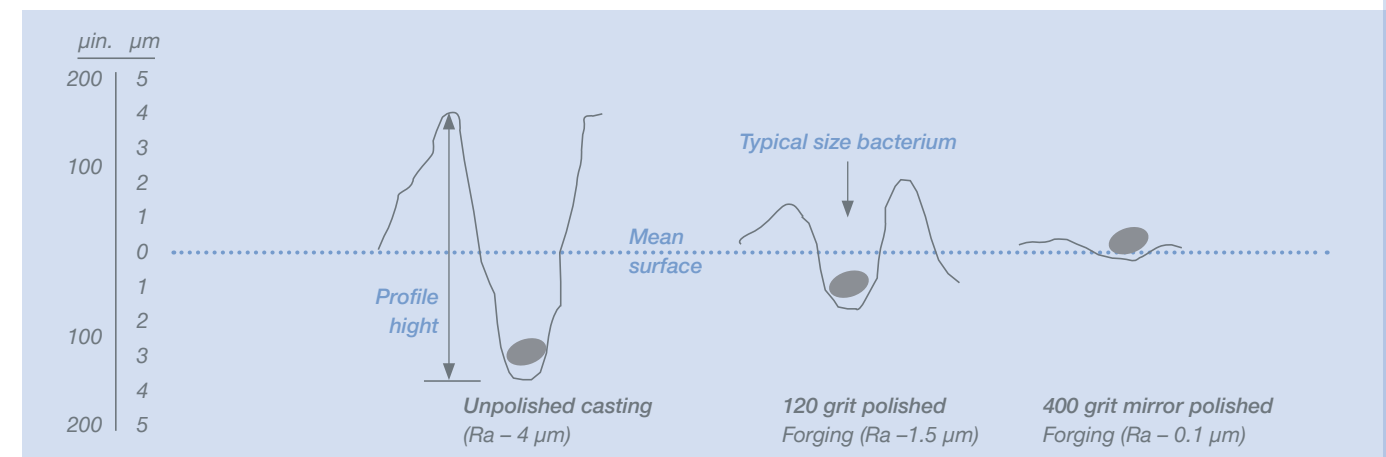
Metals used for bodies are	Engineered plastics used for bodies are
304	PVC
316L	PVDF
CF8M	PP
1.4571	
1.4435	
1.4435 BN2	
ASME BPE	
Hastelloy	
Titanium	
Tantalum	

## Body Finishes

All our valve bodies are machined and finished in house employing the latest computer controlled machines, the most dedicated people and the best measurement equipment.

Standard metallic body finishes in  $\mu\text{m}$  are listed below. Additionally electro-polishing is a common request from our clients which we have also made an internal competence.

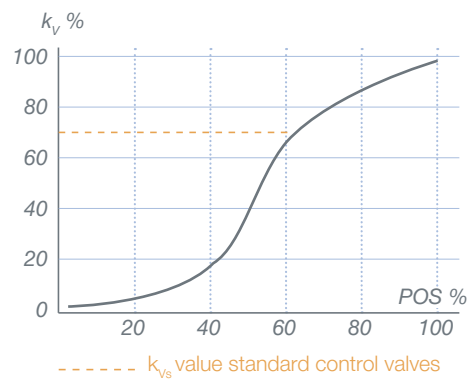
Surface finish											
Ra $\mu\text{m}$	6.3	3.2	2.7	1.6	0.89	0.75	0.625	0.51	0.375	0.28	0.25
Ra $\mu\text{Inch}$	250	128	108	64	35	30	25	20	15	11	10
Grit					150		180	240	280	320	330



## Angle Seat Continuous Control Valves

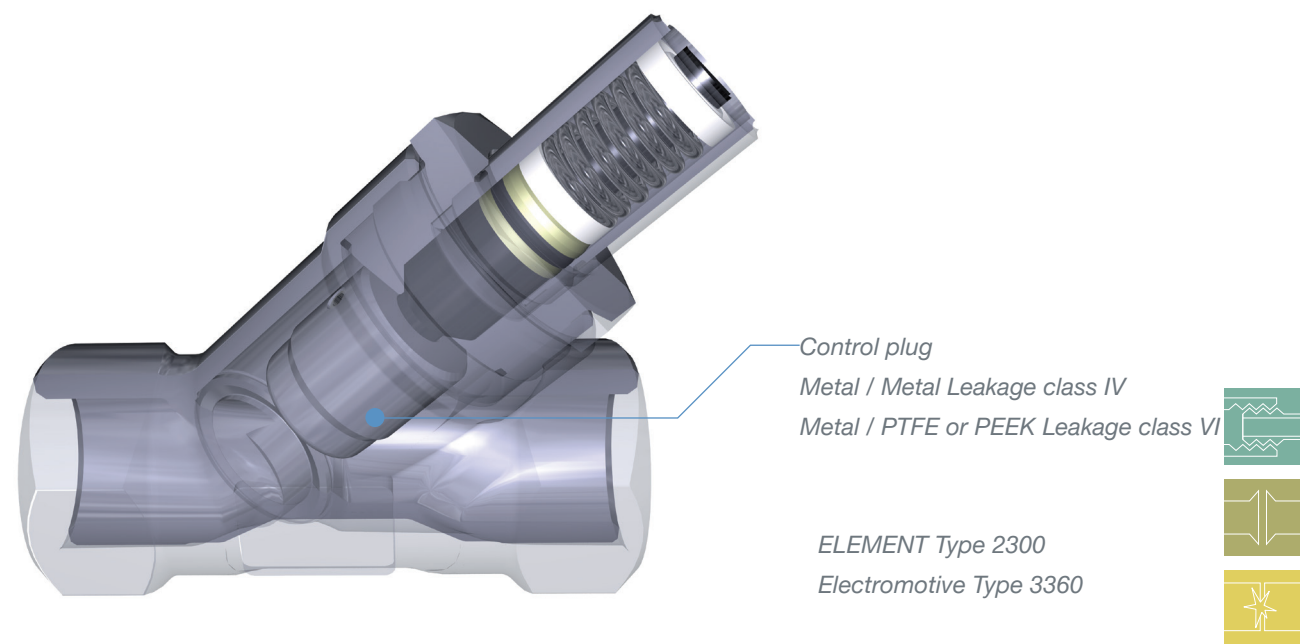
An uncomplicated control valve with large flows perfectly suited to steam, heat exchange and flow control applications. Our groundbreaking innovation provides you with superior features as standard. Bürkert has continuously improved its angle seat control valve to meet our customers' demanding environments.

### Flow Characteristics



Uncomplicated and updated configuration and sizing tools are available online backed up with our local technical support.

Media	Neutral gases, water, alcohol, oils, fuel, hydraulic mediums, salt solution, alkali solutions, organic solvents, steam, optional variants for oxygen and fuel gas
Valve Body	Stainless Steel
Port connection	Weld, Thread, Clamp
Port connection size	DN 10 - 65; NPS 3/8" - 2 1/2"
Flow coefficient	Kv 5 to 90 m <sup>3</sup> /h; Cv 5.8 to 104 GPM (US)
Media Pressure	Vacuum up to 25 bar
Media Temperature	-40 to 230 °C
Approvals	Drinking water Fuel gases Oxygen

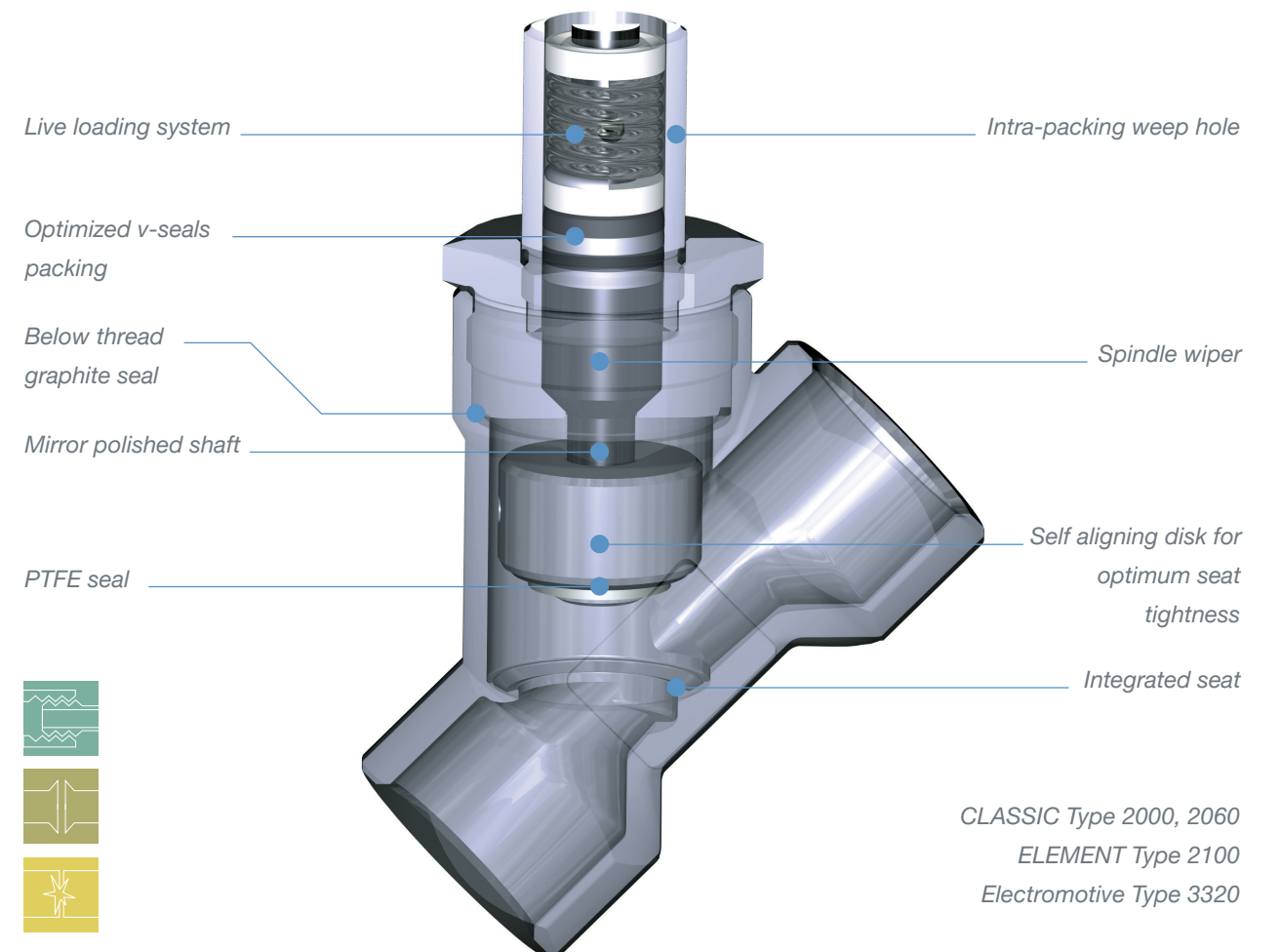


## Angle Seat On/Off Valves

The ideal alternative to complex actuated ball valves, the angle seat valve configuration is a real fit and forget solution. Bürkert's quality is evident. We are known as the market leader with this pattern and it is deployed successfully around the world in thousands of customer's machines and factories.

- **Flow below the seat – for all media. For soft opening and closing and waterhammer free operation**  
**For waterhammer free operation.**
- **Flow above the seat – for compressible media such as gases and steam.**  
**Allows use of smaller actuator.**

Media	Neutral gases, water, alcohol, oils, fuel, hydraulic mediums, salt solution, alkali solutions, organic solvents, steam, optional variants for oxygen and fuel gas
Valve Body	Gunmetal, Stainless steel
Port connection	weld, thread, clamp
Port connection size	DN 10 - 80; NPS 3/8" - 3"
Flow coefficient	Kv 2.4 to 140 m <sup>3</sup> /h; Cv 2.8 to 162 GPM (US)
Media Pressure	Vacuum up to 25 bar
Media Temperature	-40 to 230 °C
Approvals	Drinking water Fuel gases Oxygen





## Globe Continuous Control Valves

A winning solution for many demanding control applications, the globe control valve is the standard in many industries. Bürkert's idea is to take the standard to a new level in a compact, light weight envelope. These valves exhibit effective valve characteristics for continuous variation of the flow as a function of the parabolic plug position guided by a linear low friction stem.

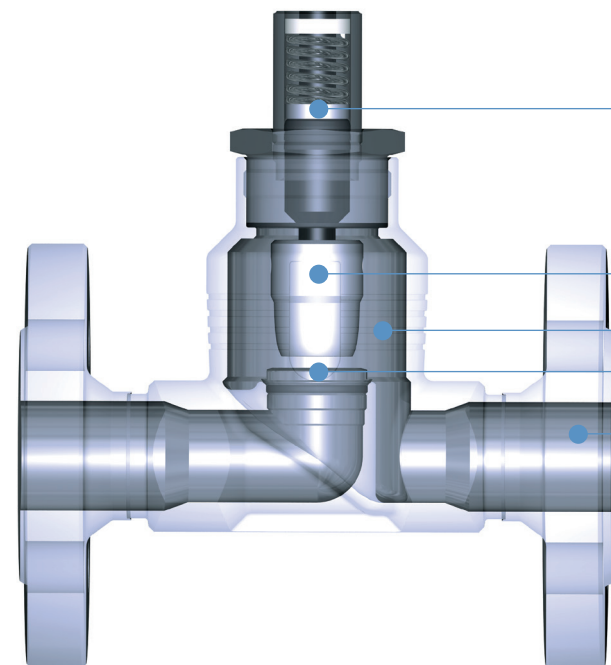
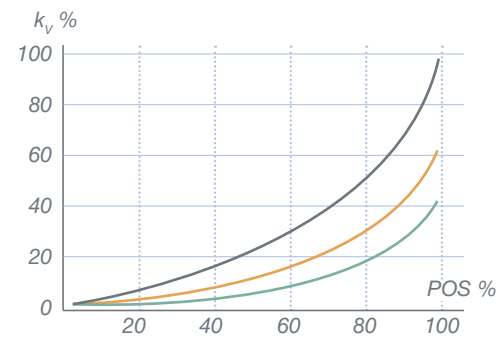
Stainless steel or PTFE seals to give either Class IV or Class VI shutoff and each body size has a range of control plugs and corresponding replaceable seats for perfect sizing of any throttling application. State of the art online sizing tools make valve sizing easy and can even predict life-time considering cavitation, flashing, choking and flow speed.

### Flow Characteristics

3  $k_{vs}$  values per body size as standard feature with seat reductions the optimum flow characteristics for the application can be selected.

Medium temperature and pressure and ambient operating conditions per Globe On/Off specifications

Media	Neutral gases, water, alcohol, oils, fuel, hydraulic mediums, salt solution, alkali solutions, organic solvents, steam, optional variants for oxygen and fuel gas
Valve Body	Stainless steel
Port connection	flange, weld, thread, clamp
Port connection size	DN 10 - 100; NPS 3/8" - 4"
Flow coefficient	Kv 0.1 to 140 m <sup>3</sup> /h; Cv 0,12 to 162 GPM (US)
Media Pressure	Vacuum up to 25 bar
Media Temperature	-40 to 230 °C
Approvals	Drinking water Fuel gases Oxygen



Extreme long life packing system

Control plug (minimum 3 sizes)

Expansion chamber

Seat (3 sizes)

Full range of process connections

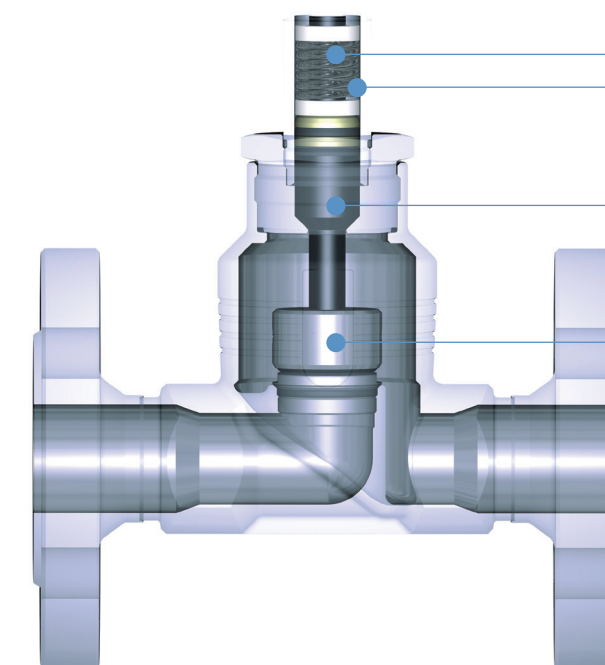
Valve materials, connections and nominal pressure per globe On/Off specifications.

ELEMENT Type 2301  
Electromotive Type 3363

## Globe On/Off Valves

A compact alternative to many pneumatically actuated valves, this globe pattern valve is especially convenient for smaller spaces or for connections requiring flanges. It is a fit and forget solution which carries Bürkert's angle valve quality.

Media	Neutral gases, water, alcohol, oils, fuel, hydraulic mediums, salt solution, alkali solutions, organic solvents, steam, optional variants for oxygen and fuel gas
Valve Body	Stainless Steel
Port connection	Flange, Weld, Thread, Clamp
Port connection size	DN 10 - 100; NPS 3/8" - 4"
Flow coefficient	Kv 4.7 to 165 m <sup>3</sup> /h; Cv 5.4 to 190 GPM (US)
Media Pressure	Vacuum up to 25 bar
Media Temperature	-40 to 230 °C
Approvals	Drinking water Fuel gases Oxygen



Self-adjusting packing  
Intra-packing weep hole

Optimized wiper

Self aligning disk for positive seal tightness

Various connections are possible.

CLASSIC Type 2012  
ELEMENT Type 2101  
Electromotive Type 3321

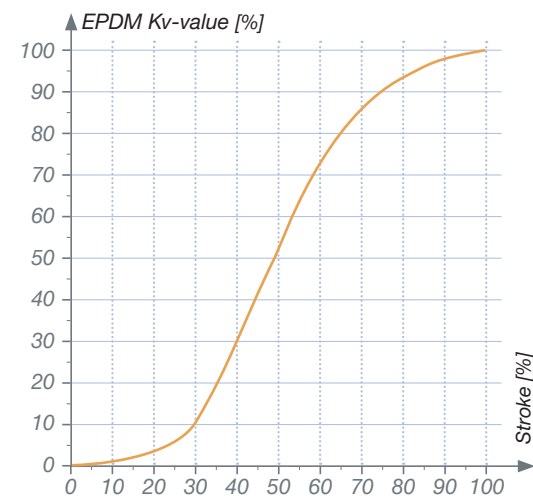


## Diaphragm Continuous Control Valves

The weir pattern is quite unique in its ability to control very pure substances where a minimum of wetted materials and dead volumes are absolutely required although using a diaphragm valve without proper understanding of its inherent flow profile would present difficulties.

With the help of our range of very smart positioning software our diaphragm technology can be made to respond to the challenge of accurate and reliable flow and pressure control.

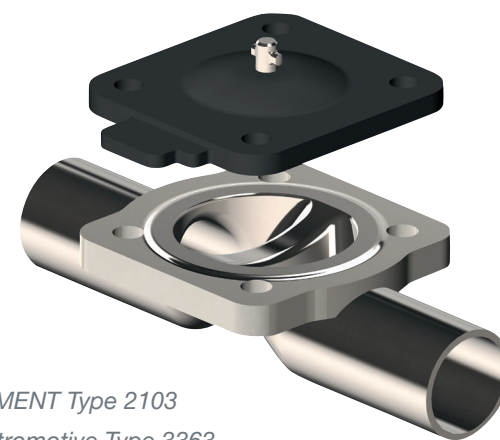
Our customers get all the resistance and drain-ability advantages of the weir pattern valve mixed with accurate control characteristics.



Valve Body	Forged Stainless Steel 316L/1.4435 BN2 Stainless Steel Tube 316L/1.4435 BN2 Investment Cast 316L/1.4435 PVC PVDF PP
Diaphragm Material	EPDM, PTFE/EPDM, Advanced PTFE/EPDM, GYLON®/EPDM laminated
Port Connection Stainless Steel	Weld, Clamp
Port Connection Plastic	Solvent, Union, Flange
Port connection size	DN 15 - 100; NPS 1/2" - 4"
Flow coefficient	Kv 3 to 235 m³/h; Cv 3.5 to 270 GPM (US)
Media Pressure	Vacuum up to 10 bar
Media Temperature	-10 to 143 °C (Steam sterilisation up to 150 °C for 60 min)
Approvals	USP Class VI

For the precise control of small volumes the bellow control valve (Type 2380) the perfect supplement for the diaphragm control valves.

A PTFE bellow eliminates contamination risks is robust, suitable for any media and comes with all necessary approvals. The stainless steel body is easy to clean and available in many configurations.



ELEMENT Type 2103  
Electromotive Type 3363  
CLASSIC types 2730, 2731 for  
65 - 100 (2 1/2" - 4")



## Diaphragm On/Off Valves

Available in a wide range of plastic and metallic materials, this isolated and media resistant design has an excellent reputation for versatility and reliability in both aseptic and in industrial applications where corrosive, pure or abrasive media are controlled.

The diaphragm is the key performance component within a modular architecture and is relied on to provide leak-tight shutoff to the downstream side of the weir, to atmosphere and to the actuator mechanism.

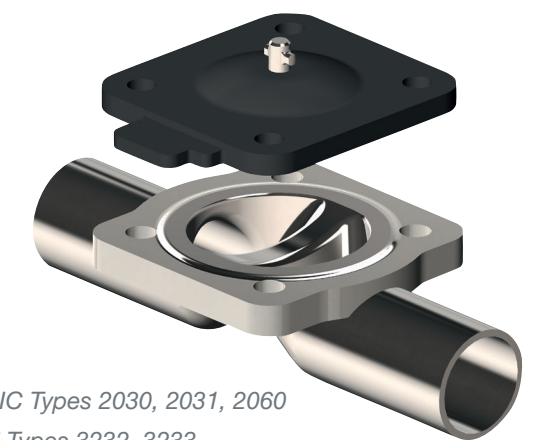
Standard and customized diaphragm materials are offered for requirements of temperature, chemical resistance or specific USP certifications.

We continuously develop our understanding of all aspects of polymer and rubber technology, diaphragm design and lean production techniques.

The bodies can be provided to meet many surface finish requirements and usually are accompanied by a host of quality and industry specific certifications or approvals.

The weir pattern of the valve has a very favorable flow characteristic and is also drainable and abrasion resistant. We deliver cast and forged stainless steel, hydro-formed bodies and plastics with many different process connections to a wide variety of customers who expect their particular solution works every time.

Valve Body	Forged Stainless Steel 316L/1.4435 BN2 Stainless Steel Tube 316L/1.4435 BN2 Investment Cast 316L/1.4435 PVC PVDF PP
Diaphragm Material	EPDM, PTFE/EPDM, Advanced PTFE/EPDM, GYLON®/EPDM laminated
Port Connection Stainless Steel	Weld, Clamp
Port Connection Plastic	Solvent, Union, Flange
Port connection size	DN 6 - 100; NPS 1/4" - 4"
Flow coefficient	Kv 1 to 235 m³/h; Cv 1,3 to 270 GPM (US)
Media Pressure	Vacuum up to 10 bar
Media Temperature	-10 to 143 °C (Steam sterilisation up to 150 °C for 60 min)
Approvals	USP Class VI



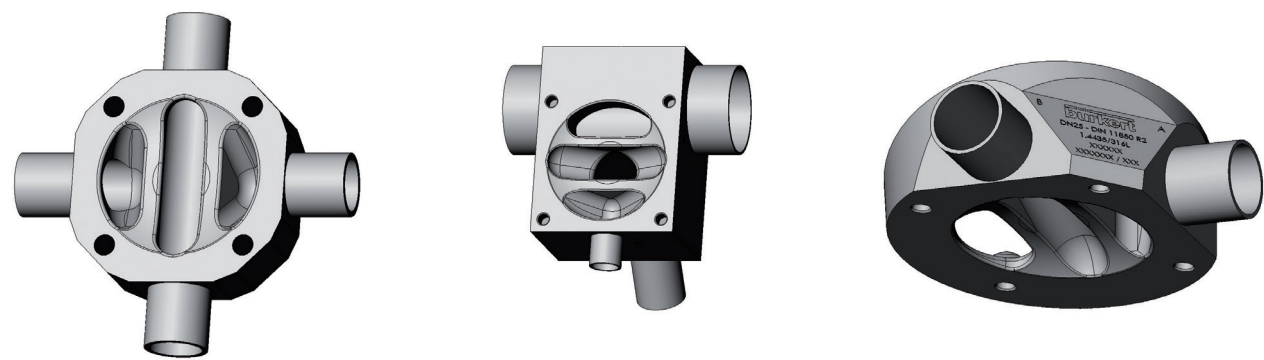
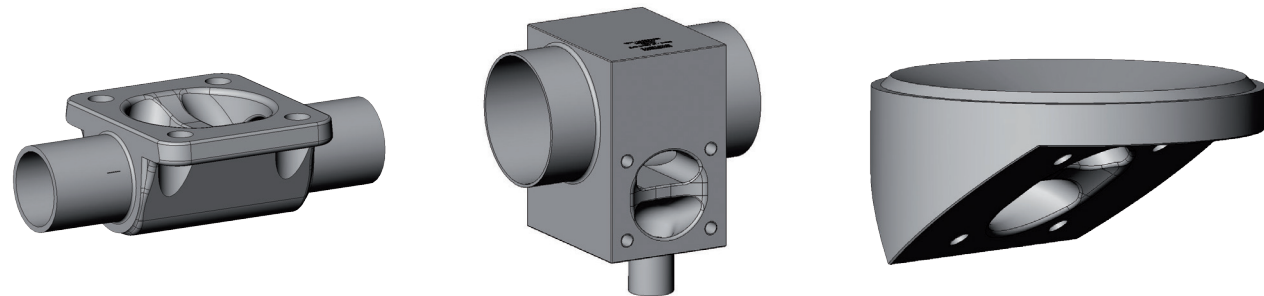
CLASSIC Types 2030, 2031, 2060  
Manual Types 3232, 3233  
ELEMENT Type 2103, 2060  
Electromotive Type 3323



## Additional Body Solutions

### Block solution with widest range of configurations

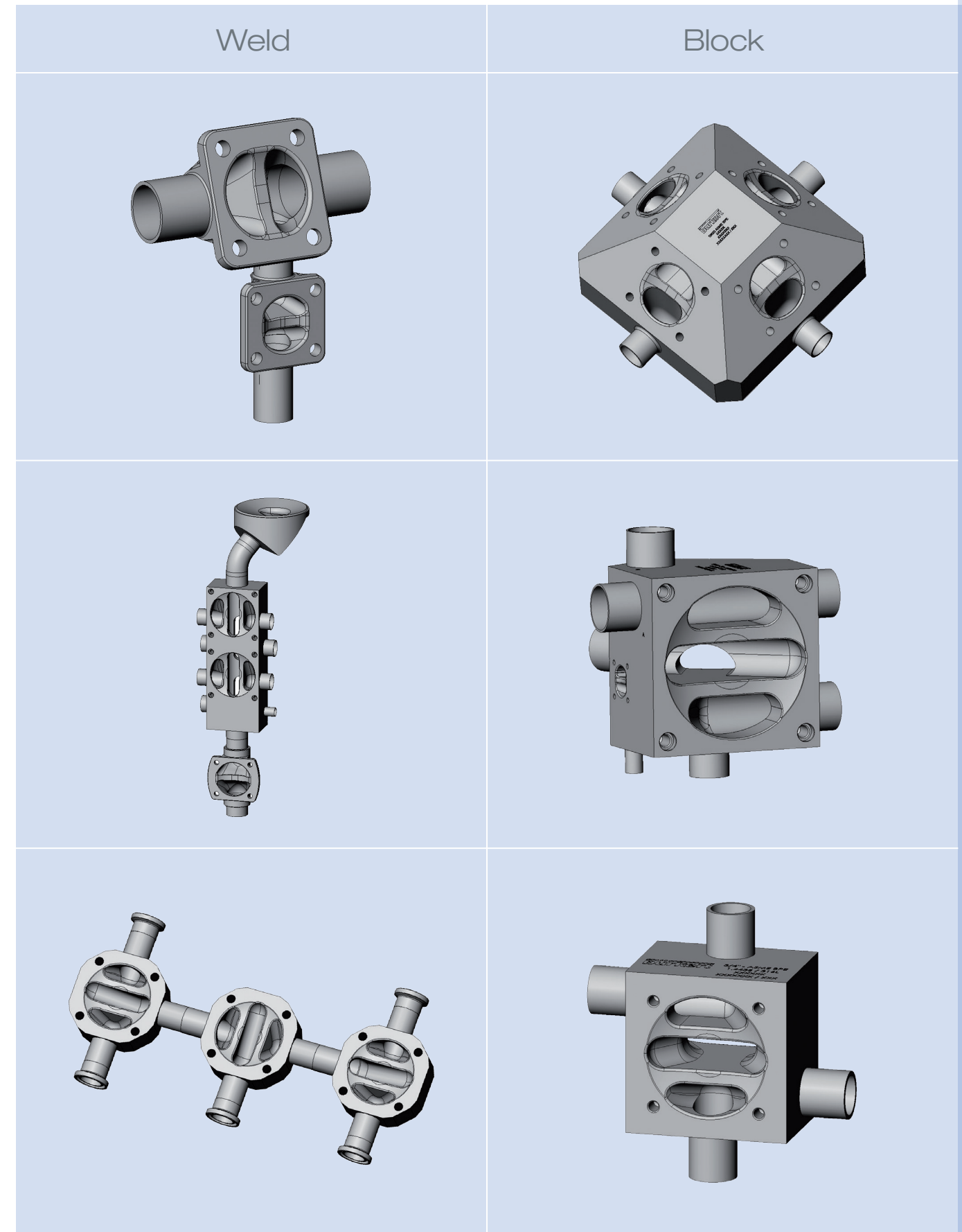
We truly have more to offer when it comes to diaphragm valves. Because we take the design back to first principles and build on our experience. The patented Robo pattern also adds endless possibilities which simply cannot be achieved with combinations of standard diaphragm valves. We do our best to help you visualize the benefits with online configurators and descriptive quotations and our people are trained to offer you only the best solution in your daily application language.



*In-line*

*Zero-static Tee*

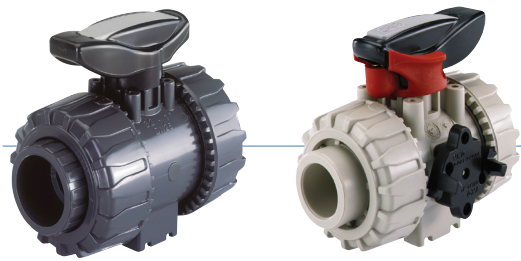
*Tank bottom*



## Additional Body Solutions

### Quarter turn valves – Ball valves

All the quarter turn valves can be actuated manually, electrically or pneumatically and can also employ all of the possible feedback and control modules available from one source.



#### Types 2657

True Union plastic ball valves, particularly suitable for industrial applications, where high performances and long time reliability are required. Longevity of the seals in situations where vibration or thermal expansion occurs.

### Quarter turn valves – Butterfly valves



#### Type 2674 – Plastic butterfly valves

Wafer style plastic butterfly valves are perfectly suited for a wide range of large line diameter. They can be manually, pneumatically or electrically actuated. Up to DN 300.

### Type 8805 – Two piece ball valves with pneumatic actuator

Compact two piece full port ball valves. Stainless steel, a range of threaded ready to accept a locking device. Investment cast stainless steel body with blow-out proof stem.



### Type 2671 – Metal butterfly valves

2-way butterfly valve which can be manually, electrically or pneumatically operated. Body material is cast iron with a stainless disc. Available in size DN 40 to DN 300 these valves compliment our total process offering.



### Type 8805 – Three piece ball valves with pneumatic actuator

Compact three piece full port body in stainless steel for a variety of applications with a range of end connection options.

# Valve Actuators Overview

Our wide range of valves require an equally flexible system of operators. At the center is our uncompromising modularity. Both manual and automated solutions are engineered with simplicity in mind.

Manual	CLASSIC	ELEMENT	Dual	Rotary pneumatic	Rotary electric	Electromotive
<ul style="list-style-type: none"> <li>▪ Simple</li> <li>▪ Long life</li> <li>▪ Direct</li> </ul>	<ul style="list-style-type: none"> <li>▪ Long life</li> <li>▪ Trusted</li> <li>▪ Interface ready</li> </ul>	<ul style="list-style-type: none"> <li>▪ Intelligence ready</li> <li>▪ Internally routed air</li> <li>▪ Beautiful</li> </ul>	<ul style="list-style-type: none"> <li>▪ Unique</li> <li>▪ Intelligent</li> <li>▪ Resistant</li> </ul>	<ul style="list-style-type: none"> <li>▪ Flexible</li> <li>▪ Interface ready</li> <li>▪ Light</li> </ul>	<ul style="list-style-type: none"> <li>▪ Robust</li> <li>▪ No air required</li> <li>▪ Slow &amp; precise</li> </ul>	<ul style="list-style-type: none"> <li>▪ Highest precision</li> <li>▪ Fast</li> <li>▪ No air required</li> </ul>
						
<p>Page 30</p>	<p>Page 32</p>	<p>Page 34</p>	<p>Page 36</p>	<p>Page 37</p>	<p>Page 38</p>	<p>Page 40</p>



## Manual

The simplest and non-automated operation of valves plays an important role in all plants and machinery. Bürkert offers a wide range of manually operated valves and the operators are constructed to offer reliability and long life. Handwheels and levers must operate a wide variety of valves sizes from DN 8 to DN 150 and our program has evolved to be able to offer a wide range of materials and options. We concentrate on using materials which offer long term stability in demanding environments like PPS and stainless steel. Many of the manual solutions must offer the ability to be locked, stroke adjustment, digital or dial position indication and electrical feedback switches.



*Stainless handwheel and bonnet with visual indication and lockable option*



*Range of simple lever operators for ball and butterfly valves including lockable functions*



*Precision PPS bonnet and handwheel for small diaphragm valves*

Valve sizes	Materials	Features
DN 8 to DN 200	PPS x stainless, stainless x stainless	Locking, stroke adjustment, position indicator, feedback switches

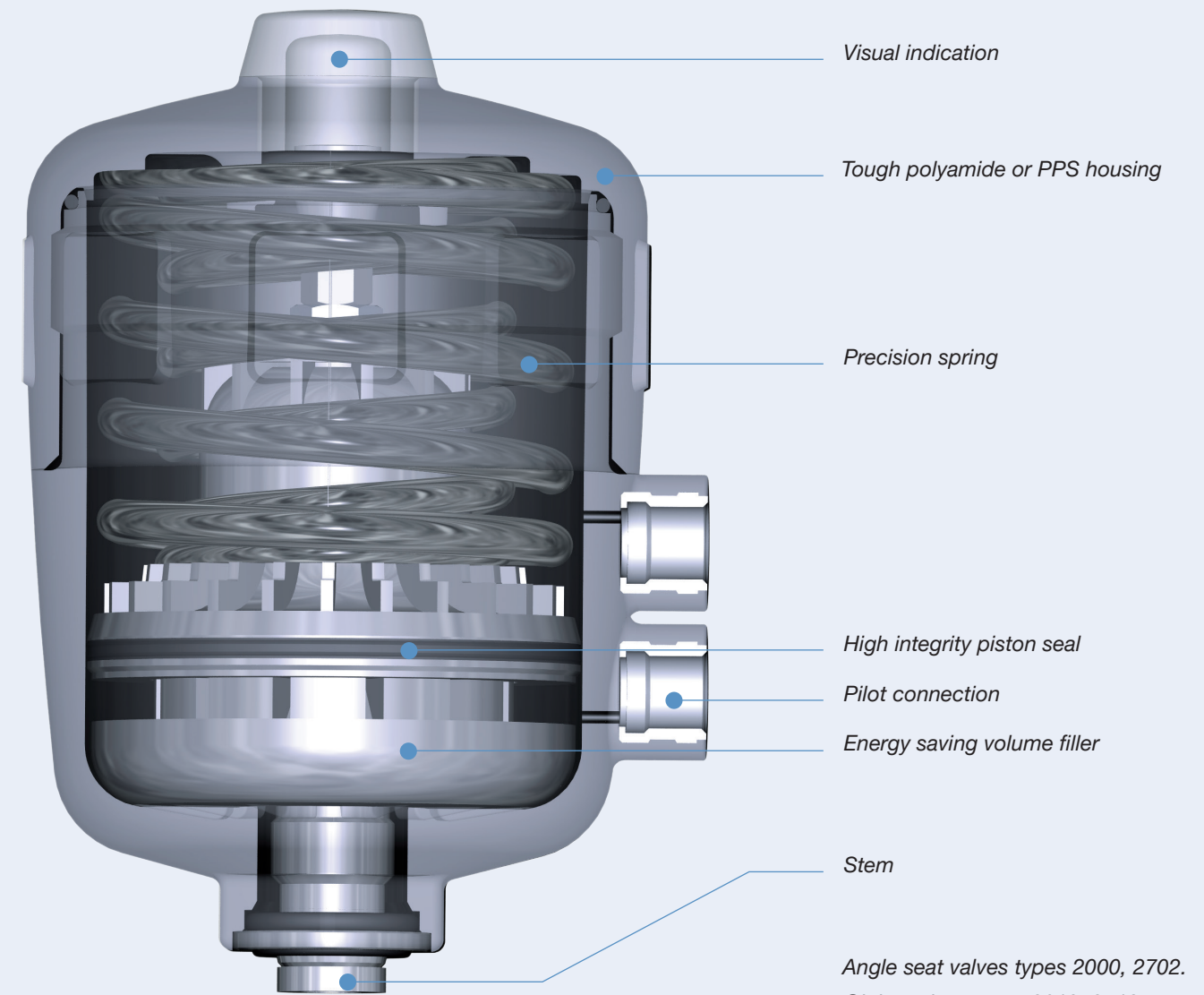




## CLASSIC

This actuator has been installed around the world in factories and in machines for an extremely wide variety of duties. It is known universally as the fit and forget actuator which just keeps going. The actuator is designed to use less energy through the use of clever volume fillers which do not impede the stroke and lasts longer because of the fact that each actuator part is molded in house according to our high quality standards and assembled almost completely within robot cells. The integrity of the inner surface of the cylinder and the flexible N-ring seal are the roots of the amazing lifespan.

A large range of diameters (40 mm, 50 mm, 63 mm, 80 mm, 100 mm, 125 mm, 175 mm, 225 mm) means that you only invest in what you need. The actuator employs polyamide (PA) for standard applications and polyphenylsulphone (PPS) for high ambient temperatures or superior chemical resistance. For applications with high hygienic standards another type of actuator made completely from stainless steel with smooth surface is also available.



Visual indication

Tough polyamide or PPS housing

Precision spring

High integrity piston seal

Pilot connection

Energy saving volume filler

Stem

Angle seat valves types 2000, 2702.

Globe valves types 2012, 2712.

Diaphragm valves types 2030, 2031,

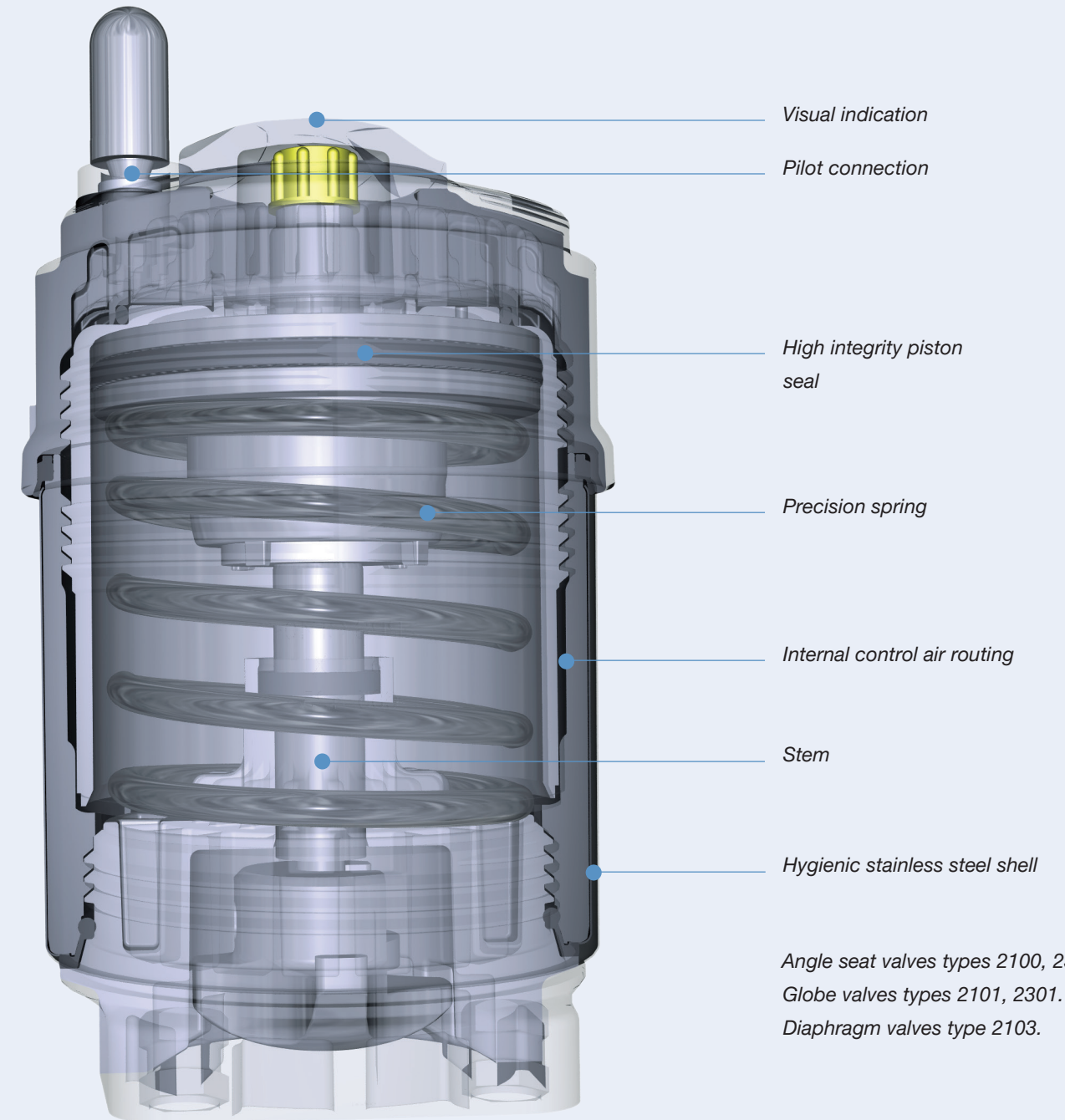
3230, 2730, 2731.

## ELEMENT

The ELEMENT actuators combine the engineering excellence of the CLASSIC actuators with a fresh new look. Chemical resistance and solid modular connections mix with the beautiful lines of a stainless steel valve with no external tubes or connections. The ELEMENT actuators are built to take advantage by internal control air supply so, unlike any other actuator system, each time the actuator strokes the spring chamber is replenished by clean instrument air. This means:

- no corrosion of the actuator springs
- no dirt inside the actuator
- no humidity transmitted into the control head through the spindle
- no biological contamination inside the actuator
- longer life

Highly cylindrical, precision molded parts reduce the chances of friction making these actuators perfect for both On/Off and control duties increasing the availability of fast, accurate control valve solutions wherever you are in the world.



Visual indication

Pilot connection

High integrity piston seal

Precision spring

Internal control air routing

Stem

Hygienic stainless steel shell

Angle seat valves types 2100, 2300.

Globe valves types 2101, 2301.

Diaphragm valves type 2103.

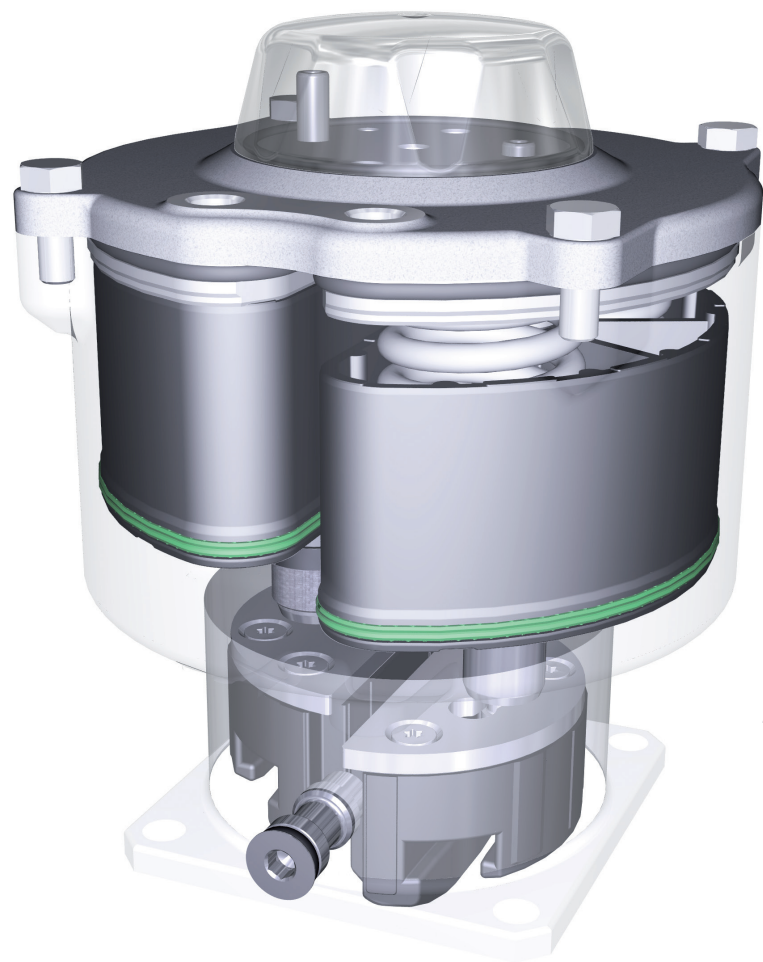


## Dual (Robolux)

Actuator specifically designed for our unique multiway multiport valves. Compact, smart and reliable they keep providing process efficiency and higher yields.

Inside the stainless steel actuator there are two individual pistons to drive a shared diaphragm on two seats. The patented Robolux technology eliminates dead legs and minimizes the volume of the flow system.

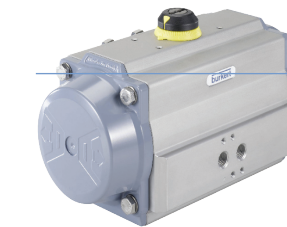
Optimized feedback and control heads allow a compact and hygienic automation, according to the complete Bürkert concept for decentralized automation.



Type 2036 Robolux  
multiway multiport valve

## Pneumatic actuators

Bürkert's pneumatic rotary actuator program is characterized by its versatility and thus offers the possibility of drawing from a portfolio that has the right actuator for almost any application.



### Type 2051 und Type 2052

Pneumatic rotary actuators for rotary valves such as ball valves and butterfly valves. The helical gear drive principle converts the axial force of the air pressure into a torque which operates a rotary valve. The intelligent design with low frictional resistance uses less air than comparable devices, yet provides fast response times. The connection between actuator and valve is established via a mechanical universal interface according to ISO 5211. The position of the ball valve or butterfly valve can in turn be monitored on a control system via a series of robust feedback devices (type 1061). For modulating control, the actuator can be perfectly integrated into the Bürkert portfolio of side control positioners (8791/2/3).



The actuators are available in different housing materials and with various coatings to suit the application.

Type 2051 is available as a pure aluminum actuator. Type 2052 is available both as an aluminium actuator with cataphoretic coating and as a polyamide version.



### Type 2053

The 2053 pneumatic actuator enables automated operation of ball valves and butterfly valves. A linear stroke movement of the actuator piston is converted into a 90° rotary movement of the actuator shaft. The interface on the valve side is designed according to ISO 5211. In addition, the rotary actuator can be combined with the ELEMENT actuators and positioners of the Series 8791/2/3/4.

The welded design of the stainless steel housing also makes the actuator 100% maintenance-free and recommends it especially for hygienic applications. Its slim design also makes it ideal for space-critical applications.

The air consumption per stroke cycle is very low due to the small cylinder volume. This ensures a considerable energy saving potential.



## Rotary electric

Bürkert's electrical actuators provide torques to suit many applications from 20 to 100 Nm. The actuators offer fast rotation times with all standard AC and DC voltages and using rugged electrical connections. Connection to many types of quarter turn valves is made through the ISO flange fixation from F03 to F07 with a female star drive adaptor. The actuators deliver both On/Off and analogue control through signal inputs and outputs of 0/4 - 20 mA and 0 - 10 VDC.



**Type 3003**

Electric rotary actuator with a torque of 20 - 100Nm.

**Type 3004**

Electric rotary actuator with Ex protection and a torque of 25 - 300Nm. The manual override on the larger actuator models is via a handwheel. Thanks to its IP67 classification, the actuator is also ideally suited for outdoor applications.



**Type 3005**

Electric rotary actuator with a torque of 25 - 300Nm. The manual override on the larger actuator models is via a handwheel. Thanks to its IP67 classification, the actuator is also ideally suited for outdoor applications.





## Electromotive Actuator

The innovative electromotive linear actuator with fully integrated automation offers a good alternative to traditional pneumatically actuated solutions for applications where highest precision, smart diagnostics and travel speed programmability, simplicity of design and efficient operation without compressed air counts.

The electromotive linear actuator consists of a brushless direct current motor, gears and a threaded spindle, all put together to form a single unit for fast and easy installation. The valve spindle, which is connected to the threaded spindle, transfers the force to the control cone.

Valve housing and actuator adaption are identical to our approved pneumatic seat valve program. As a result, the actuator can be combined with different process valve bodies (DN 15...50) to form a fully automated electromotive process valve making it even easier for our customer to select a right valve for their application.





# Control and Communication

Bürkert offers the widest range of equipment to actuate, monitor, network, position and process control into the field. Each component is the product of cross functional mechanical and electrical engineering innovation and exacting laboratory testing. Each of the building blocks is ready to be included in your complete automation strategy.

	Positioners	Process controllers	Control heads	Feedback switches	Pilot valves
	<ul style="list-style-type: none"> <li>▪ Display or blind</li> <li>▪ TUNE Function</li> <li>▪ Accurate</li> </ul>	<ul style="list-style-type: none"> <li>▪ ProcessTUNE enabled</li> <li>▪ On-board PID</li> <li>▪ Graphic display</li> </ul>	<ul style="list-style-type: none"> <li>▪ Modular</li> <li>▪ Networking</li> <li>▪ Teachable</li> </ul>	<ul style="list-style-type: none"> <li>▪ Secure</li> <li>▪ Flexible</li> <li>▪ Protected</li> </ul>	<ul style="list-style-type: none"> <li>▪ Simple</li> <li>▪ Reliable</li> <li>▪ Manual override</li> </ul>
					
	Page 44	Page 48	Page 54	Page 60	Page 62
Actuate			▪	▪	▪
Monitor	▪	▪	▪	▪	
Network	▪	▪	▪		
Position	▪	▪			
Control		▪			

# Electropneumatic Positioners

Precise and safe process control can be critical to the reliability of the whole plant. With our complete range of positioners you get the most reliable process control you could ever imagine. The positioners are easy to operate and offer a wide range of unique features which can be individually configured to meet your needs and application requirements



Type	8692	8694 BASIC	8696 BASIC	8792	8791 BASIC	8791 Remote IP 20	8635
Speciality	Large backlit display Simple, robust mounting without external air tubes	Blind version for perfect positioning with TUNE function	Extremely compact blind version for perfect positioning with TUNE function	Mountable to linear and rotary actuators, Easy Start-up via TUNE function Remote mountable	Mountable to linear and rotary actuators Easy Start-up via TUNE function Remote mountable	Cabinet based blind version for perfect positioning with TUNE function	Mountable to linear and rotary actuators, Robust design Intrinsically safe Remote mountable
Input	4 - 20 mA, 0 - 20 mA, 0 - 5 VDC, 0 - 10 VDC Binary input	4 - 20 mA Binary input	4 - 20 mA Binary input	4 - 20 mA, 0 - 20mA, 0 - 5 VDC, 0 - 10 VDC Binary input	4 - 20 mA, 0 - 20mA, Binary input	4 - 20 mA Binary input	4 - 20 mA, 0 - 10 VDC Binary input
Measurement	Contactless inductive sensor	Contactless inductive sensor	Contactless inductive sensor	Potentiometer Contactless inductive sensor (remote)	Potentiometer Contactless inductive sensor (remote)	Contactless inductive sensor (remote)	Potentiometer
Communication	PROFIBUS DP-V1, DeviceNet, Ethernet/IP, PROFINET, Modbus TCP, Bürkert system bus (bÜS)	AS-Interface, IO-Link, Bürkert system bus (bÜS)	IO-Link Bürkert system bus (bÜS)	PROFIBUS DP-V1, DeviceNet, Ethernet/IP, PROFINET, Modbus TCP, Bürkert system bus (bÜS)	AS-Interface IO-Link Bürkert system bus (bÜS)	AS-Interface	
Output	Binary (2) 4 - 20 mA	4 - 20 mA (position)	4 - 20 mA (position)	Binary (2) 4 - 20 mA	4 - 20 mA	4 - 20 mA	Binary (2) 4 - 20 mA
Features	<ul style="list-style-type: none"> <li>Integrated control air routing and control air recycling</li> <li>Diagnostics</li> <li>Hygienic design</li> <li>ATEX II cat. 3GD, IECEx</li> </ul>	<ul style="list-style-type: none"> <li>DIP switch / software operation</li> <li>Integrated control air routing and control air recycling</li> <li>Hygienic design</li> <li>ATEX II cat. 3GD, IECEx</li> </ul>	<ul style="list-style-type: none"> <li>DIP switch / software operation</li> <li>Integrated control air routing and control air recycling</li> <li>Hygienic design</li> <li>ATEX II cat. 3GD, IECEx</li> </ul>	<ul style="list-style-type: none"> <li>Backlit graphic display</li> <li>Diagnostics</li> <li>Mounting acc. to NAMUR / IEC 60534-6-1, VDI/VDE 3835 (60534-6-2)</li> <li>Single and double acting</li> <li>ATEX II cat. 3GD, IECEx</li> </ul>	<ul style="list-style-type: none"> <li>DIP switch / software operation</li> <li>Mounting acc. to NAMUR / IEC 60534-6-1, VDI/VDE 3835 (60534-6-2)</li> <li>Single and double acting</li> <li>ATEX II cat. 3GD, IECEx</li> </ul>	<ul style="list-style-type: none"> <li>DIP switch / software operation</li> <li>Remote cabinet mounting IP20</li> <li>Single and double acting</li> </ul>	<ul style="list-style-type: none"> <li>Display inside case</li> <li>Mounting acc. to NAMUR / IEC 60534-6-1, VDI/VDE 3835 (60534-6-2)</li> <li>2-wire device</li> <li>ATEX II cat. 2GD, IECEx</li> </ul>

## Positioners Functional Advantages

A positioner is made from three distinct parts; a displacement transducer for detecting the position of the valve in its stroke, some control electronics, and finally, a set of valves to supply or release the pneumatic power.

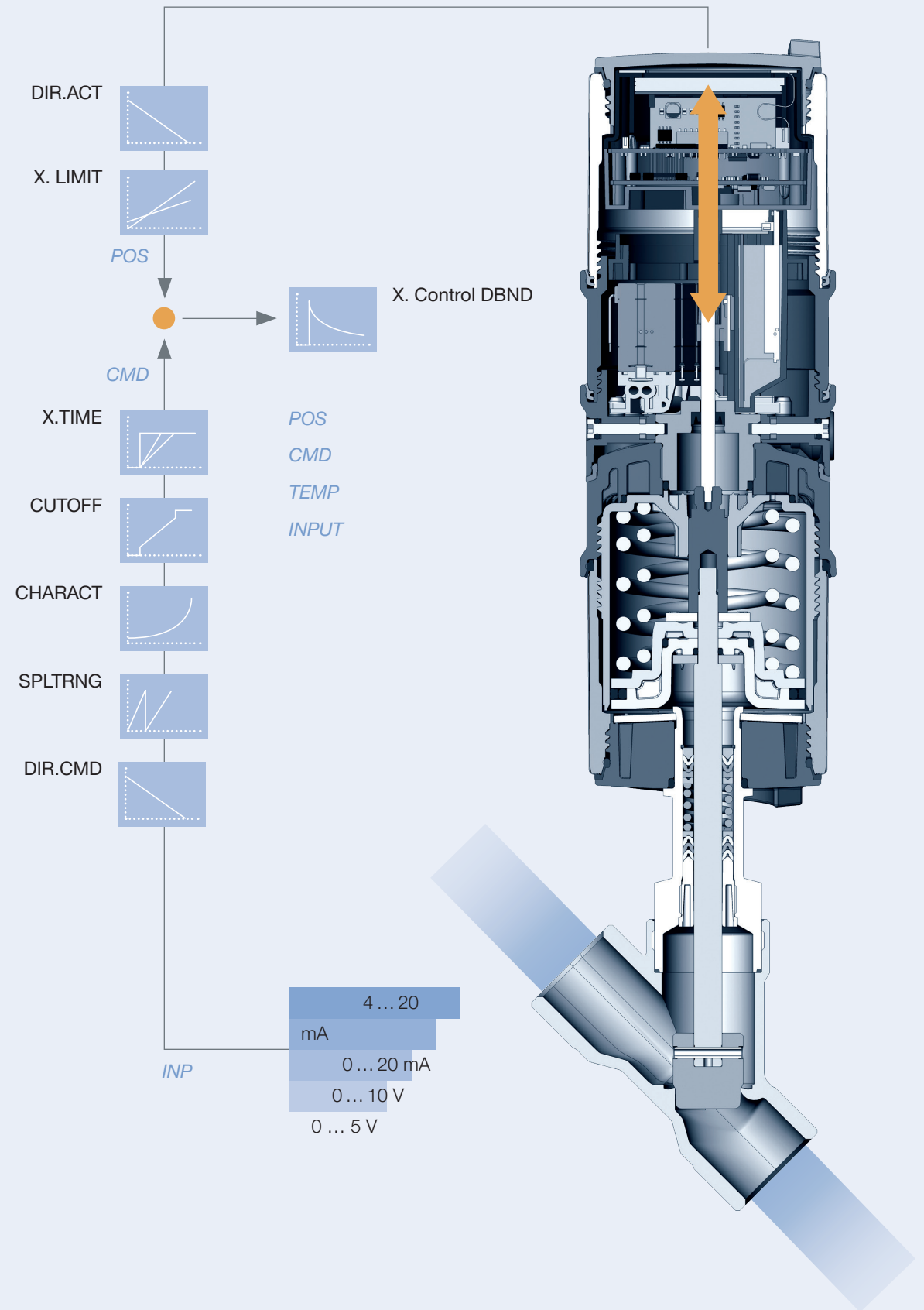
The pneumatic valves allow air in or out of the actuator according to the desired position. The displacement measures how far away from the desired position the valve is and the control electronics determine the amount of air which should be exhausted or added.

For basic operation the positioner only needs a command signal, air and power but these positioners are packed with lots of time and money saving extras, offer flexible opportunities for optimizing the function for the application.

Positioner specific valve software functions like close tight cut-off, inversion, free customized characteristic, start position, and split range provide the perfect collection of advantages.

These functions are selected as needed offering a complete automation concept for integration into the most up-to-date control systems. All Bürkert positioners are based on the same operating structure, which unites the features of simple and clear operation.

Designed for tough and agile process environments the positioner's design optimizes size, shape and cleanability, footprint and access code security.





# Electropneumatic Process Controllers with PID on Board

Bürkert was the pioneer of real on-valve process intelligence. Cross competence innovation in the interface between control electronics and mechanical precision resulted in a range of perfect decentralized control solutions to make your world simpler. Each one capable of replacing multiple components from traditional control loops, they are simple to install and configure.

With unique automatic ProcessTUNE function, commissioning is fast and safe saving you time and manpower during commissioning.



Type	8693	8793	8635
Speciality	Hygienic design for direct top mounting on process valves, Easy Start-up via process TUNE function, Diagnostics	Mountable to linear and rotary actuators, Easy Start-up via process TUNE function, Diagnostics, Remote mountable	Mountable to linear and rotary actuators, Robust design, Intrinsically safe, Remote mountable
Input	RTD (Pt100), Pulse, 4 - 20 mA	RTD (Pt100), Pulse, 4 - 20 mA	RTD (Pt100), Pulse, 4 - 20 mA
Measurement	Contactless inductive sensor	Potentiometer, Contactless inductive sensor (remote)	Potentiometer
Communication	DeviceNet, PROFIBUS DP-V1, Ethernet/IP, PROFINET, Modbus TCP, Bürkert system bus (bÜS)	DeviceNet, PROFIBUS DP-V1, Ethernet/IP, PROFINET, Modbus TCP, Bürkert system bus (bÜS)	
Output	4 - 20 mA, 2 binary	4 - 20 mA, 2 binary	4 - 20 mA, 2 binary
Features	<ul style="list-style-type: none"> <li>Process TUNE function</li> <li>Integrated control air routing and recycling</li> <li>ATEX II cat. 3GD, IECEx</li> </ul>	<ul style="list-style-type: none"> <li>Process TUNE function</li> <li>Backlit graphic display</li> <li>ATEX II cat. 3GD, IECEx</li> <li>Mounting acc. to NAMUR / IEC 60534-6-1, VDI/VDE 3835 (60534-6-2)</li> </ul>	<ul style="list-style-type: none"> <li>Process TUNE function</li> <li>Display inside case</li> <li>ATEX II cat. 2G, IECEx</li> <li>Mounting acc. to NAMUR / IEC 60534-6-1, VDI/VDE 3835 (60534-6-2)</li> </ul>

# Process Controller Functional Advantages

Process variables such as temperature, pressure, flow rate or level are crucial to process engineering sequences.

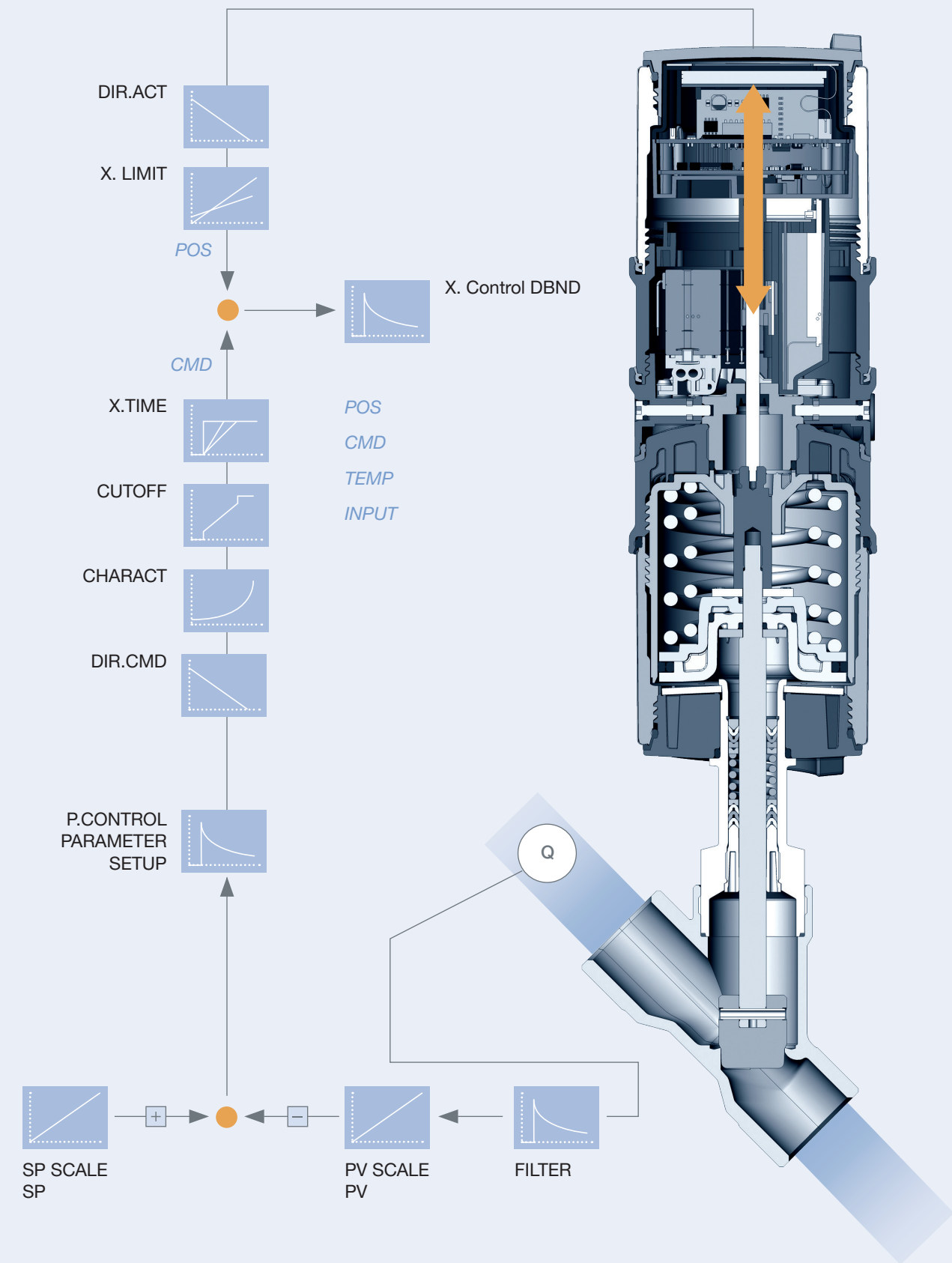
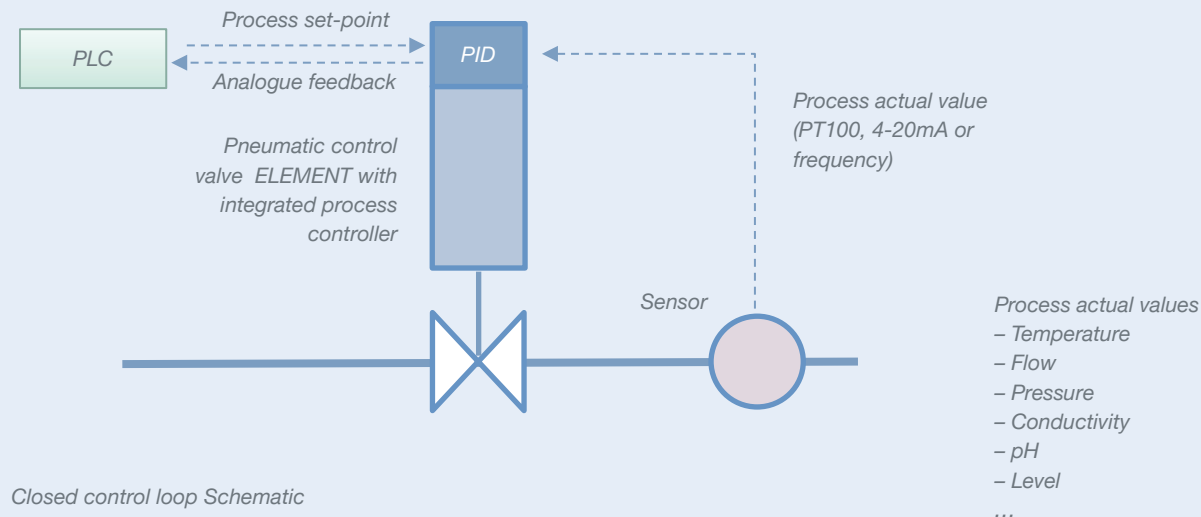
The actual process value is detected by means of a suitable sensor in the process and compared to the process set-point.

Depending on the magnitude and operational sign of control deviation, the process controller computes the position set-point for the position control loop. The process variable is then changed by opening or closing the valve. Continuous measurement of the actual process value and comparing it with the process set-point minimizes the control difference between the two values.

### Operating structure of the positioners

Inside this small package is an intuitive, fast reliable controller with advanced ProcessTUNE. Add to this specific valve software functions like close tight cut off, inversion, free customized characteristic, start position, and split range and you have the perfect collection of advantages.

Distributed intelligence with a clear connection through standard bus protocols, to the coordination and supervisory level is an important part of the design.



## Electromotive control valves with integrated position controller

Bürkert guarantees the required continuous flow and process control by offering electrically driven process valves with integrated position or process controller. Facing the challenge of a fast and stable flow control, Bürkert developed a high programmable travel speed and a valve control cone which is non-reactive to control media. The local operation and configuration is realized through an operation display with a touch screen. Thereby a fast and easy commissioning is ensured. High plant availability and safety are not a problem anymore: The integrated diagnostics can predict the need of maintenance and service in the near future.

As our customers' safety is in our focus permanently, Bürkert developed a programmable safety position in case of power failure. One outstanding feature is the mechanical position indicator being independent from electrical energy supply. To make your device status visible, an indication illuminated by a 360° led easily informs you about the actual conditions. The data storage on a SIM card allows you being able to rely on device-specific values and user settings. Adaptable fieldbus communication and smart service interface enable easy device integration into various industrial systems.

The outstanding precise and dynamic control does virtually not have a delay to the process signal. By acquiring our products you can be assured to accomplish a reliable and safe operation but also working with high efficiency and productivity. As a result of fast and safe commissioning the operation is particularly easy.



Modbus TCP



EtherNet/IP



Type	3360	3361	3363
Positioning speed	6 mm/s	6 mm/s	4 mm/s
Power supply	24 V DC	24 V DC	24 V DC
Input /Outputs	1 DI, 2 DO, 1 AI, 1 AO	1 DI, 2 DO, 1 AI, 1 AO	1 DI, 2 DO, 1 AI, 1 AO
Fieldbus communication	Ethernet/IP, Modbus TCP, PROFINET	Ethernet/IP, Modbus TCP, PROFINET	Ethernet/IP, Modbus TCP, PROFINET
Port connection size	DN 15 ... 50	DN 15 ... 50	DN 8... 50
Connection types	Flange, weld-end, threaded, clamp	Flange, weld-end, threaded, clamp	Weld-end, clamp

DI: Digital input, DO: Digital output, AI: Analog input, AO: Analog output



# Electropneumatic Control Heads

A control head mixes the benefits of local pilot with feedback in one package. Bürkert has the advantage of being able to control the quality of the components inside as they are our own standard products. Add one, two or three pilot valves with mechanical, inductive or sensorpad feedback. Then plug and work.



					
Type	8690	8697	8691	8695	8681
Speciality	Pneumatic control unit Simple, robust mounting without external air tubes	Extremely compact pneumatic control unit for small actuators Simple, robust mounting without external air tubes	Control head with LED status display Simple, robust mounting without external air tubes	Extremely compact control head for small actuators Simple, robust mounting without external air tubes	Universal Interface to hygienic and sterile valves Reliable IP protection rating for hygienic process technology
Pilot valves	1x 3/2- or 5/2-way with manual override	1x 3/2-way with manual override	1x 3/2- or 5/2-way with manual override	1x 3/2- or 2x 3/2-way with manual override	Up to 3x 3/2-way with manual override
Feedback	0...2 x mechanical or inductive	0...2 x mechanical or inductive	2 switch points on an analog contactless, wear-free displacement transmitter	2 switch points on an analog contactless, wear-free displacement transmitter	3 switch points on an analog contactless, wear-free displacement transmitter 1 external inductive switch
Communication			AS-Interface DeviceNet IO-Link Bürkert system bus (bÜS)	AS-Interface DeviceNet	AS-Interface DeviceNet, IO-Link Bürkert system bus (bÜS) / CANopen
Set-Up	Manually	Automatic end position adjustment	Simple, one button, reliable drive adaption by Teach function	Simple, one button, reliable drive adaption by Teach function	Simple, one button, reliable drive adaption by Teach function
Features	<ul style="list-style-type: none"> <li>On board air filter</li> <li>Flush function/positive pressure protected</li> <li>Internal control air routing and recycling</li> <li>ATEX II cat. 3GD and cat. 2GD, IECEx</li> </ul>	<ul style="list-style-type: none"> <li>Internal control air routing and recycling</li> <li>ATEX II cat. 3GD and cat. 2GD, IECEx</li> </ul>	<ul style="list-style-type: none"> <li>On board air filter</li> <li>Flush function/positive pressure protected</li> <li>Internal control air routing and recycling</li> <li>High-power LED status display</li> <li>ATEX II cat. 3GD, IECEx</li> </ul>	<ul style="list-style-type: none"> <li>Internal control air routing and recycling</li> <li>High-power LED status display</li> <li>ATEX II cat. 3GD, IECEx</li> </ul>	<ul style="list-style-type: none"> <li>High-power LED status display</li> <li>Flush function/positive pressure protected</li> <li>Magnetic tool for external manual override</li> <li>ATEX II Cat. 3GD, IECEx</li> </ul>

## Air Advantages

The ELEMENT range of control heads, positioners and controllers offer four technological breakthroughs which effect the efficiency and lifetime of all the actuators it is coupled with. Innovative thinking and acting has produced advantages which should easily find their way into solid engineering specifications as they will be appreciated in the field as they will save headaches, time and investment.

As well as the inherent good looks of the system these four points are tough to overlook.

### Housing protected by over pressure

In the housing of types 8690 and 8691 a slight overpressure is controlled via the integrated air venting valve to prevent ingress of water and accumulation of condensate. Possibly negative pressure by cold washdown is avoided. Creation and collection of condensate is prevented.

### Integrated air inlet filter

An easy to service stainless steel mesh filter protects against the infiltration of bigger particles after the plant installation und during the normal service. Functional safety and lifetime of the actuator and the actuation are optimised.

### Integrated pilot valve

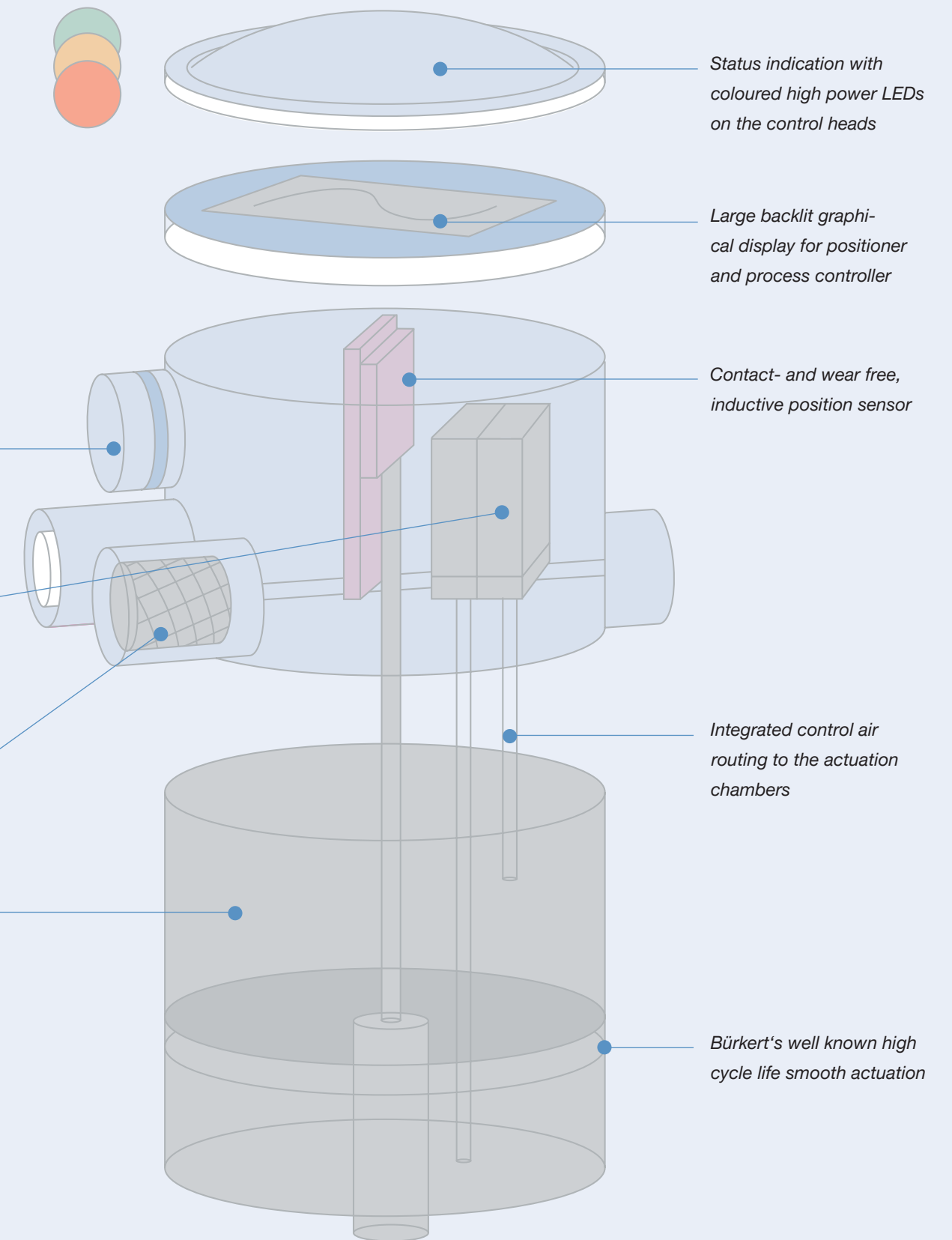
Proven Bürkert pilot valves with outstanding life time are used. Equipped with a manual actuation the in field operation of the process valve system is easy to handle. It enables the internal control air routing with compressed air recycling of the actuator.

### Compressed air recycling

By internal control air supply via the integrated pilot valve both chambers of the pneumatic actuator are charged with control air. With every power stroke- open and close- control flushes from the air vent of the actuation. In no case ambient atmosphere is drawn in the spring chamber.

This means:

- no corrosion of the actuator springs
- no contamination or humidity inside the actuator
- from the actuator chambers no humidity gets inside positioner and actuation
- no contamination of the plant environment by possible biological growth in the actuation chamber



## Electromotive On/Off valves with integrated automation unit

Bürkerts' innovative on/off valves provide an electrically driven process needed for shut-off operations. An advantage resulting of fully integrated automation is the nonexistent dependence on a pneumatic system, which leads to low installation and maintenance costs. With its programmable high travel speed, the electromotive on/off valve closes the gap to pneumatic solutions. The fast valve opening / closing comes with a soft closing mechanism to avoid hard impacts on the valve seat and other mechanical parts. On account of the local operation and configuration through DIP-switches and pushbuttons under the blind cap, a fast and easy commissioning is guaranteed. To constantly ensure a high plant availability and safety, the diagnostics support informs predictively if there will be a need of maintenance and service in the near future.

Special about the On/Off valve is the robust housing with superior IP-rating for both indoor and outdoor use as well as the programmable safety position in case of power failure. By illuminating by a 360° led, you can get a visible status indication about your device. Furthermore, we make it possible to indicate your mechanical position at any time, even independently from electrical energy supply.

The exceptionally fast and dynamic shut-off does virtually not have a delay to the process signal. To guarantee an extra-long service life, we use durable high quality components only.



Modbus TCP



EtherNet/IP



Type	3320	3321	3323
Closing time (100% stroke)	3.3 ... 4.5 s (travel speed 6 mm/s)	3.3 ... 4.5 s (travel speed 6 mm/s)	1.5...4.5s (travel speed 4 mm/s)
Power supply	24 V DC	24 V DC	24 V DC
Input /Outputs	1 DI, 2 DO	1 DI, 2 DO	1 DI, 2 DO
Fieldbus communication	Ethernet/IP, Modbus TCP, PROFINET	Ethernet/IP, Modbus TCP, PROFINET	Ethernet/IP, Modbus TCP, PROFINET
Valve body	Angle seat	Globe	Diaphragm
Port connection size	DN 15 ... 50	DN 15 ... 50	DN 8... 50
Connection types	Flange, weld-end, threaded, clamp	Flange, weld-end, threaded, clamp	Weld-end, clamp

DI: Digital input, DO: Digital output

## Electrical Feedback Switches

The security of knowing that a valve really switched is reassuring in many critical environments.

We have packaged switches into a variety of housings to cover a wide range of application environments. From general purpose mechanical switches to solutions for hazardous locations we offer reliable peace-of-mind.

### Inductive switches

A simple system which accepts standard inductive threaded sensors.



### Type 1060 – Simple open signal switch

This switch tells the operator that the valve has reached its fully open position. Reliable and inexpensive with SPDT 3A relays.



### Pneumatic Control Unit / Feedback Type 8697

Compact Control Unit in hygienic design for small actuators. 2-/3-wire mechanical or inductive switches capture and give feedback of the valve position. Approved for ATEX II cat. 3GD and 2GD and optionally available as intrinsically safe version. Optionally a pilot valve can be integrated to control single-acting actuators.

### Pneumatic Control Unit / Feedback Type 8690

2-/3-wire mechanical or inductive switches capture and give feedback of the valve position. Approved for ATEX II cat. 3GD and 2GD and optionally available as intrinsically safe version. Optionally a pilot valve can be integrated to control single- or double-acting actuators.





# Pneumatic Pilot Valves

It is your choice. From the simplest banjo valve to a fieldbus enabled off-road multichannel miracle. We fit within your flexible plant or latest blockbuster machine seamlessly.



**Types 6012P | 6014P – Banjo valves**

Multiple solutions based on our plunger style or pivoted armature valves. We offer a large range of voltages and process connections with all the right global certifications.



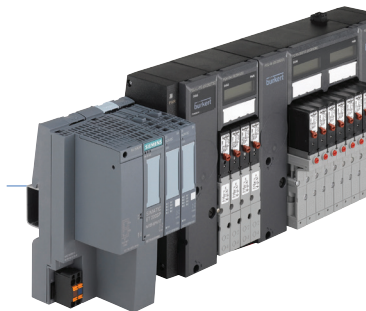
**Types 5470 | 6519 – Namur valves**

Simple and reliable set up is guaranteed by direct mount according to the namur standard interface. This solution is available in a large range of voltages and process connections.



**Manifold mount**

Valves arranged on metal or plastic manifolds where the environmental conditions demand the toughest solutions.



**AirLINE Quick – Typ 8647 mit Siemens ET 200SP**

The pneumatic valve island, Type 8647 AirLINE SP, is a modular, electropneumatic automation system consisting of connection modules and valve modules. It is perfectly designed for safe and complete integration into the decentralized peripheral system "SIMATIC ET 200SP" from Siemens. Type 8647 is used to integrate pneumatic pilot valves directly into the SIMATIC ET 200SP.



**AirLINE - Type 8652 optimized for process automation**

The pneumatic valve island Type 8652 AirLINE is especially developed for applications in process automation. New diagnosis functions can be visualized at the LC-Display. Both cleartext as well as symbols show information which makes easy to relate the shown diagnosis. This saves time during installation and commissioning.







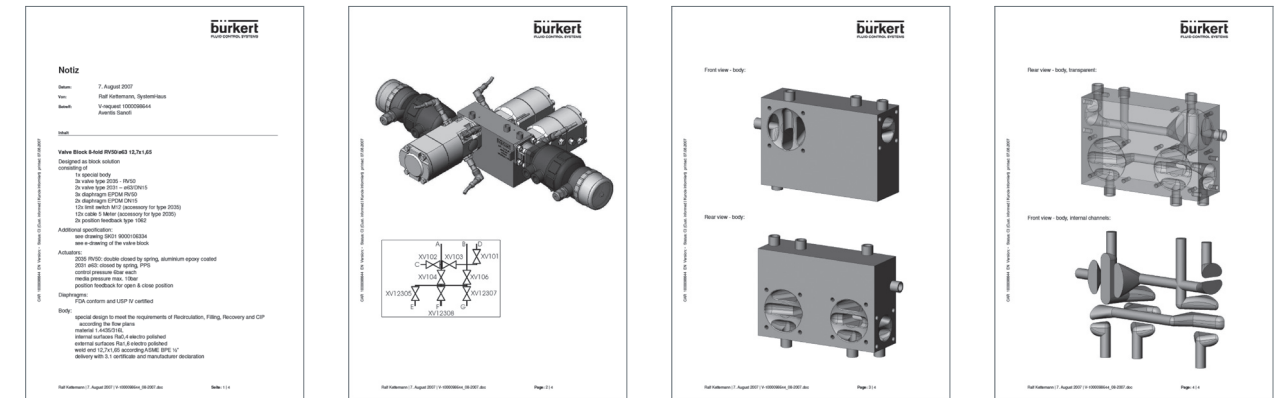
## Intuitive Intelligence Inside Valves

### Complete and adaptable to individual needs

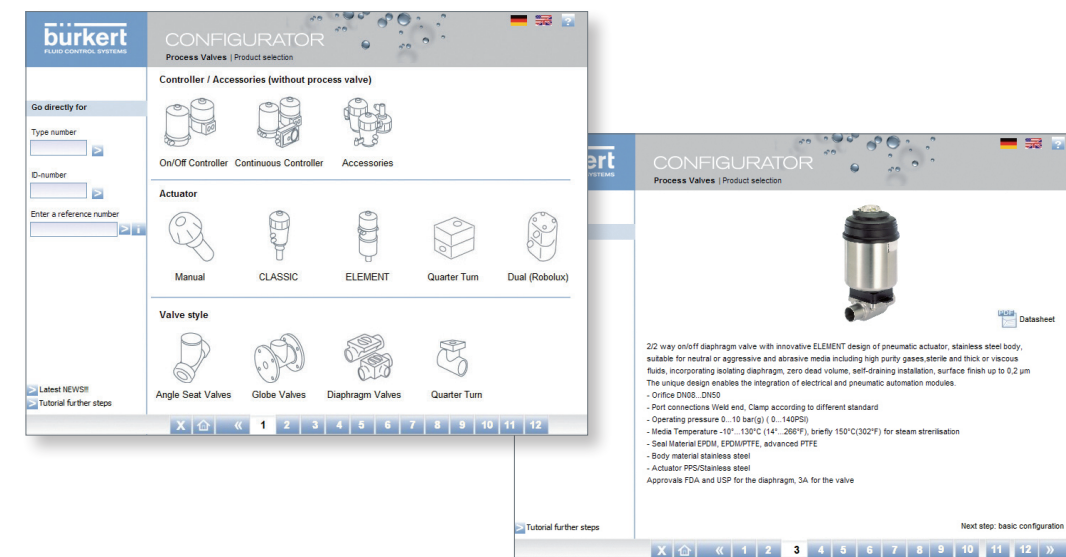
The innovative positioner and controller range offers a complete automation concept for integration into the most up-to-date control systems. Designed for tough and agile process environments the devices design is particularly suited to the specific requirements of users in the food, cosmetic, beverage and pharmaceutical industries in terms of size, shape and cleanability, footprint and access code security.

### Configuration and Sizing Software Tools

Uncomplicated and updated configuration tools are available online backed up with our local well trained and friendly technical support. We also optimize our commercial offers by including information to simplify your decisions such as drawing support for complex piping arrangements.



Typical total process valve solution offer





## Intelligent Technology in the Field

### The status quo:

#### Application-specific standardization of systems

As a key technology in the automation sector, fieldbus technology now offers a range of standardized bus systems that have been specialized and optimized for specific industries or specific applications.

Opening up this intelligent technology with optimum efficiency for the customer is a welcome and sought-after challenge for our team of consultants who, owing to their pioneering experience, process the crucial knowledge for developing future-oriented solutions. And what would highly qualified engineers find more motivating than an unsolved problem?

The fact that Bürkert has the "tickets" for the future-oriented fieldbus technology worldwide makes the choice simple for our customers, but "difficult" for our experts who wish to be challenged by new tasks.

#### Catching the right bus

The "evolution" of network technology has essentially developed from the principle of centralization through to distributed intelligence. Of course, this also necessitates components that comply with all aspects of the new "command structure". Maximum availability and minimum possible downtimes are but two key aspects of more efficient, i. e. advanced, operation of a system or installation which is based on future-proof fieldbus technology. It is certainly worth considering opting for a technology leader who has been involved right from the very start and who can therefore provide the appropriate solution to an individual problem as an integrated system. With Bürkert, you are riding the bus to the future.

### Networking:

#### Information on the future of networking

Various user associations track the ongoing evolution of individual bus systems. Visiting the following websites will fill you in on the latest developments:

- AS-International Association  
[www.as-international.net](http://www.as-international.net)
- CANopen  
[www.can-cia.de](http://www.can-cia.de)
- DeviceNet  
[www.odva.org](http://www.odva.org)
- Ethernet  
[www.iaona-eu.com](http://www.iaona-eu.com)  
[www.ida-group.org](http://www.ida-group.org)  
[www.odva.org](http://www.odva.org)  
[www.profibus.com](http://www.profibus.com)
- FOUNDATION Fieldbus  
[www.fieldbus.org](http://www.fieldbus.org)
- HART Communication Foundation  
[www.hartcomm.org](http://www.hartcomm.org)
- INTERBUS Club  
[www.interbusclub.com](http://www.interbusclub.com)
- PROFIBUS International (OI)  
[www.profibus.com](http://www.profibus.com)
- IO-Link  
[www.io-link.com](http://www.io-link.com)



CANopen



PROFI  
BUS



PROFI  
NET



EtherNet/IP™



Use IO-Link  
Universal · Smart · Easy





## Market Oriented Solutions

### Want more flexibility

Each level of our architecture can be adapted to provide real solutions. Our bodies can be manifolded together, our actuators can operate other types of valve and our control and communication structures can decentralize your intelligence and help you visualize what is happening in your plant or your machinery.

### Yoke mounted solutions

We have a long history of providing some of the leading control valve manufacturers with positioners they can rely on to make their process valves work more efficiently and communicate with the latest standards. All of the advantages of the ELEMENT software is available inside the latest side mount units.

### Sanitary solutions

Control heads, positioners and process controllers and actuators for sanitary valves for the brewing, beverage and dairy industries fit the environment perfectly. We can interface with your current solution or build a whole new system.

### Customized solutions

We can interface with many other sensor and valve technologies to produce plug and work systems for any control loop or array. We will listen with the intent of providing the correct solution in your daily application language.

### Quarter turn solutions

There are still many applications which require the use of a ball control valve. Here accuracy, repeatability and simple set up are important. Our new 8792 and 8793 are both designed to work right on top of your choice of ISO5211 actuator.



Type 8792/8937 fully functional positioner for adaptation to yoke or quarter turn valves.



Type 8791 – remote, cabinet mounted positioner



Type 8791 – Positioner BASIC



### Type 8840 Modular process valve cluster

Configurable valve cluster based on modular valve body of our tried and tested process valves requires no effort during installation. Depending on process requirements and type of automation control tops can be integrated.



### Yoke mount

Our 8793 fully equipped process controller can be mounted on any yoke. It accepts a large spectrum of signals from process sensors and can compare these to a given setpoint. This is true decentralized intelligence allowing you to control and visualize the process.



### Precision sanitary actuators and positioners

We have controlled a wide range of hygienic plug valves, weirless diaphragm valves and sanitary ball and butterfly valves.



### Systems with flexible software

We have developed market oriented solutions by having flexible control architectures which can meet industrial requirements quickly.



### Rack and pinion mount

Through the standard ISO connection it is simple to integrate all of our intelligence on any of your quarter turn drives.

## Approvals Behind our Success

Over the course of the years, individual directives and national standards have resulted in clear standards that have been implemented in national or international law by the legislature. These recognized regulations ensure that equipment items from different countries are compatible and that manufacturers adhere to a set of regulations regarding design and production.

These regulations relate to the following aspects:

- Protection against risks and dangers
- Interfaces between technical systems
- Testing and inspections of products
- Clear description of the content and the characteristics of products

Legal supervisory authorities require that system operators use only equipment which meets the necessary safety requirements pursuant to these regulations.

Bürkert has the largest number of valves which have been granted the corresponding global approvals.

### European approvals

The European approvals and CE mark must be considered in conjunction with one another. As products with CE marking comply with the specified safety regulations, these marked products must be accepted in all EU and EFTA states. A distinction is made between the regulated and unregulated area. The CE mark on Bürkert devices refers to

- Electromagnetic compatibility in the areas
- Low Voltage Directive with the following limits:
  - 75 – 1500 V for DC voltages
  - 50 – 1000 V for AC voltages
- Pressure Equipment Directive

In regulated areas, the requirement stipulates that an independent body must conduct an CE type examination:

- Pressure Equipment Directive
- Gas Appliances Directive
- ATEX Directive

In unregulated areas, it is the manufacturer's direct responsibility to attach the CE mark. In this case, a Declaration of Conformity may be required of the manufacturer, specifying the standards applied. Depending on the particular application, the following directives may apply to Bürkert:

- Low Voltage Directives
- Electromagnetic Compatibility Directive
- Vehicle Directives
- Medical Device Directives

### North American approvals

The American Occupational Safety and Health Administration (OSHA) drew up the OSHA Regulation. In Standard 29 CFR, the requirement for electrical installations or equipment stipulates that only installations or equipment which have been tested for the specified safety requirements by an NRTL (National Registered Test Laboratory) may be installed. The NRTLs specified include the following:

- Underwriters' Laboratories (UL) for UL-listed, UL-recognized, UL-classified
- Factory Mutual (FM)
- Canadian Standards Association (CSA)

The complete CSA approval, from the measurements to be carried out up to preparation of the documents can be conducted internally as we have achieved "Category Certification" status.

### Hazardous locations

Valves for ATEX Directives (formerly Explosion-Protection (EX) Directives) covers equipment, components and protection systems for use in hazardous areas. It also applies to safety facilities outside of hazardous areas if they are required for safe operation of equipment in the hazardous area with respect to the risk of explosion.

Details for all global directives can be found in our brochure Hazardous Locations.

### Hygienic approvals and norms

Many of our process valves are employed in hygienic processing areas which follow industry and governmental guidelines and regulations which include EC-Regulation 1935/2004, 3A certification, EHEDG guidelines and FDA compliance for both internal wetted materials or outside cleanable design. We have many years of experience which assure our clients that our equipment will fit their every requirement and back it up with the relevant traceable documentation.



## Added Value Systems

Bürkert has a unique perspective in the process control and instrumentation industry as we are the only single brand which combines a complete range of valves, instruments, pneumatic actuation, networking and controllers from a single source.

With our dedicated world-class engineers and our superlative manufacturing facilities we can deliver systems which meet your exact requirements.

Your reliable Bürkert sales consultant and our system engineers work in concert to ask the right questions and provide the right hardware. Transparent operations, up to date situation, review procedure, engineering change notices, portals through SAP and secure intranet are normal in our projects.

For a world class system experience, insist on Bürkert people to be part of your next project.



### 01 Connect

As a globally flexible, lean, focused and innovative company we are the partner of choice for fluid control systems in more than 35 countries. Whether you are in Stuttgart, Singapore, Chicago or Sydney, everywhere in the world, we are close to you and therefore know at first-hand about your specific tasks and problems.

Following our principle of "one face to the customer", you have a competent, reliable consultant by your side at all times, who listens to your needs and presents a solution in your daily application language ... crossing conventional boundaries and creating synergies between industries in pursuit of your ideal solution.

Systemhaus crews in Charlotte (USA), Suzhou (China), Dresden, Ingelfingen and Dortmund are continuously in innovation mode. They creatively engineer cost effective solutions to meet difficult process challenges for our customers.



### 02 Conceive & Innovate

Your project team starts working for you: from your reliable sales consultant, qualified industry specialists to dedicated system engineers – Bürkert puts the necessary experts together.

For the entire duration of the project they work together, combining their experience and clarifying all the requirements in close cooperation with you to come up with a feasible draft of your solution within the shortest timeframe.

CAD-created animations or simulations, combined with extended manufacturing, materials, tool design, construction and assembly knowledge enable us to provide a rough but firm production concept for your system at an early stage.



### 03 Plan & Specify

In Phase 3 the project is planned in detail. A specification sheet and refined solution concept are developed. This defines exactly what you expect from the system and what it must provide to ensure that all components meet your requirements.

At the end of this phase you are presented with a detailed product definition, a production specification and precise commercial conditions and agreements.

Structured project management based on open communication, effective coordination and thorough documentation ensures fast and reliable results.



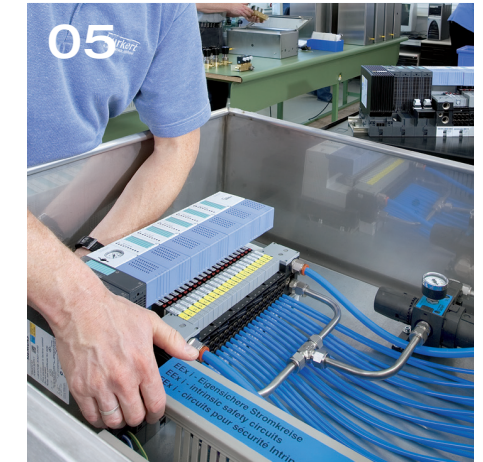
### 04 Do & Check

Good communication, coordination and documentation at all project phases make sure that we are on the right track, developing the right solution, to allow us to quickly move on to prototyping.

Thanks to the latest technology, we are able to build a prototype made of metal or plastic or a functional model to test flow for example within 24 hours.

We provide you with samples; we perform tests and, of course, obtain all the necessary local and global approvals to make sure the system can go to production.

From here we work in concert with one of our production facilities in Ingelfingen, Gerabronn, Criesbach, Öhringen or Triembach according to their individual core manufacturing competencies.



### 05 Complete

Our work does not end with the perfect delivery of components and systems. We offer a comprehensive program to our global clients interlinking services ranging from maintenance and service contracts, operator training and integrated logistics.

Our customer service is available around the clock, offering support through internet, telephone or our qualified, experienced people at your site.

We aim to provide only the utmost in customer experience. Something you will tell your friends about.



## Bürkert – Close to You

For up-to-date addresses  
please visit us at  
[www.burkert.com](http://www.burkert.com).

