

Baumann™ General Utility & Industrial Valves



Baumann™
Products

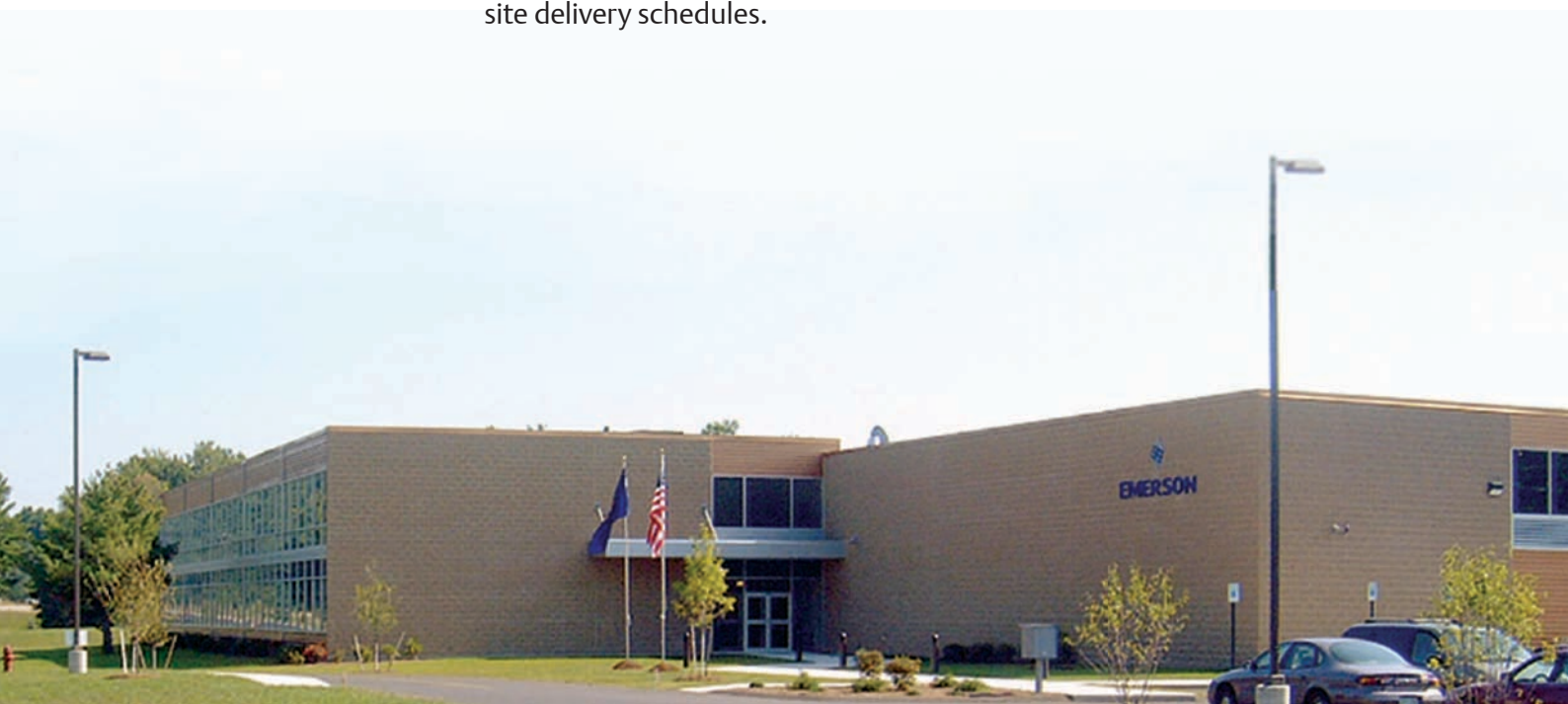
Experienced Leaders Providing Quality Industrial Control Solutions Since 1978

Fisher Controls International LLC, Baumann™ Control Valves, is an ISO 9001 certified, PED compliant manufacturer of general utility, precision micro flow, sanitary control valves, and low noise static resistance plates, serving the food and beverage, fine chemical, industrial semiconductor, pharmaceutical, biotechnology, and renewable fuels industry segments.

Baumann was acquired by Emerson®, a fortune 100 U.S. company listed on the New York stock exchange, and was integrated into the Emerson Process Management family of companies. With this acquisition, Baumann became an integral part of the world's largest global supplier of control valves and instrumentation serving the final control element needs of our global customers

Emerson delivers the true potential of your facility through an unparalleled combination of industry experts, best-in-class technologies, and PlantWeb... the best-in-class systems architecture for next generation digital plants.

Baumann is committed to *Uncompromising Customer Service* and is dedicated in its pursuit to meeting customer application requirements and critical on site delivery schedules.



Reliable Process Control Valves

Best in Class Technologies Through Intelligent Design

Computer aided design optimization has produced products that are the lowest weight in their class, ensuring the end user of reduced installation, pipe hanger and maintenance costs. Together with our compact, multi-spring diaphragm actuators, our valves provide exceptionally low dead band and hysteresis. We take pride with providing remarkably tight shut-off by lapping every metal seated plug to its mating seat ring. Stainless steel fasteners and powder coat anticorrosion paint for actuator yokes and diaphragm cases assure long service life. Each control valve undergoes three separate tests before it passes rigorous Baumann™ quality inspection procedures.

Baumann™ industrial process control valves are intended for use in general utility service applications such as pressure, flow and temperature control in the textile, pharmaceutical, biotechnology, specialty chemical, semiconductor and industrial heating, ventilation and air conditioning markets.

Markets Served:

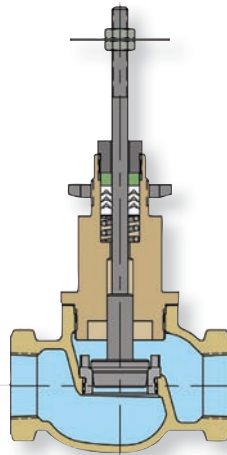
- Aerospace
- Chemical
- Industrial Gases
- Industrial HVAC
- Biofuels
- Pulp & Paper
- Life Sciences
- Pharmaceuticals
- Food & Beverage
- Cosmetics
- Waste Water Management



24000 Little Scotty™ Industrial Control Valve



For precise temperature, pressure, and flow control of non-corrosive liquids and steam



The Baumann Little Scotty™ valve is the undisputed bronze control valve leader in the general service application range. Unique among bronze globe valves with the ability to handle a wide range of flow requirements. This bronze valve has replaceable stainless steel, alloy, and hard trim options, tight shutoff and low dead band. Like all Baumann™ products, we proudly design and build these valves at our facility located in Portsmouth, NH, USA.

Little Scotty™ Bronze

- Compact, light weight design reduces installed piping costs
- Sizes 1/2" through 2"
- NPT and BSPT end connections
- Superior dual plug and stem guiding provides increased stability during plug travel
- High quality type 316 or 416 stainless steel valve trim
- Multiple trim capacity reductions available to meet changing process requirements
- Multi-spring, field reversible actuator with reduced deadband permits direct operation from remote 3-15 psi signal
- Epoxy powder coated actuator with stainless steel fasteners for maximum corrosion resistance
- Entire actuator and yoke can be removed from the valve assembly while maintaining packing integrity ensuring user safety
- FIELDVUE® Digital Valve Controller available for remote calibration and online diagnostics



24000C Carbon Steel Control Valves

Ideal for industrial grade control requirements where a flanged connection is preferred



Compact Carbon

For Industrial Grade Requirements

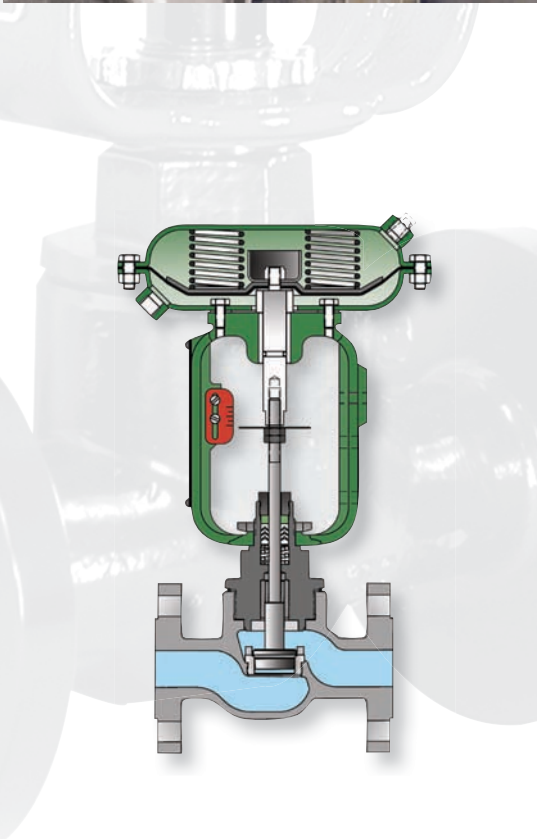
The 24000C compact control valve is positioned to take advantage of the trend toward industrial grade requirements in a range of applications spanning from general utility to special applications. It exhibits low hysteresis and deadband, excellent control characteristics, tight shutoff, and rugged long lasting construction. Valves can operate via direct pneumatic signal to actuator or with Fisher IP and PP positioners.

This industrial control valve is intended for general utility service in pressure, flow and temperature control applications for the food and beverage, textile, pharmaceutical, semiconductor and industrial heating, ventilation and air conditioning markets.

24000C Technical Specifications:

VALVE TYPE	ASME	EN	
NOMINAL SIZE	0.5, 0.75, 1.0, 1.5, & 2 inch	DN 15, 20, 25, 40, & 50	
BODY PRESSURE RATING	CL150 per ASME B16.34	PN 40 per EN 1092-2	
END CONNECTIONS	Mates with ASME CL150RF Flanges per ASME B16.5	Mates with PN 10-40 Flanges per EN 1092-2	
FLANGE FINISH	ASME 250 to 125 Ra circular lay	EN 500 to 300 Ra circular lay	
FACE-TO-FACE DIMENSIONS	Consistent with EN 588-2 (same as ISA S75.03)	Consistent with EN 558-1	
TEMPERATURE RANGE	-20°F to 450°F (-29°C to 232°C)		
CHARACTERISTIC	Equal Percentage or Linear		
SEAT LEAKAGE CL IV* (Metal Sealing - std)	0.01% of Rated Valve Capacity (Cv)		
SEAT LEAKAGE CL VI* (PTFE Sealing - optional)	Nominal Port Diameter (in.)	Bubbles / Minute	Milliliters / Minute
	≤1	1	.15
	1.5	2	.30
	2	3	.45

* Tests with air @ 3.5 bar / 50 psi different



24000S Stainless Steel Control Valves

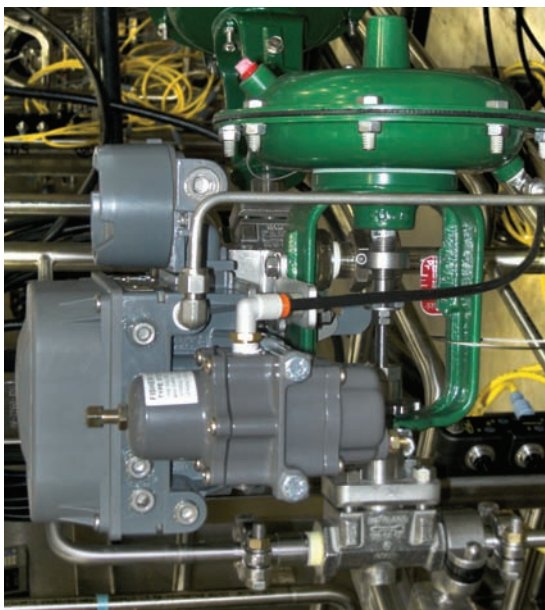


Compact design is the ideal choice for mildly corrosive applications

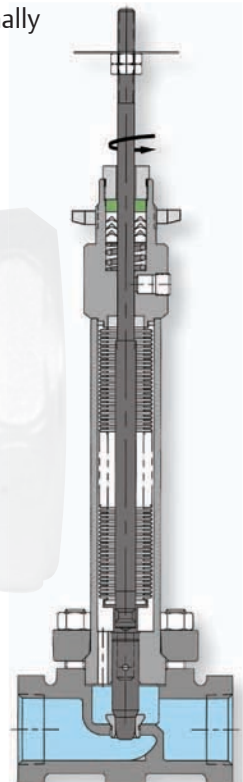
Corrosion Resistant Stainless Steel

- Compact and light weight design reduces installed piping costs
- High quality type 316 or 416 stainless steel valve internals
- Sizes 1/2" through 3"
- Multiple trim capacity reductions available to meet changing process requirements
- End Connections: NPT, Butt weld, Specialty Fittings.
- Unique NOLEEK® bellows seal bonnet system is ideally suited for nonlethal applications where standard packing arrangements are a problem, such as heat transfer fluids in temperature control modules
- Epoxy powder coated actuator with stainless steel fasteners for maximum corrosion resistance
- Extension bonnets available for temperatures ranging from -320°F (-160°C) to 1000°F (537°C)

This economical line of versatile pneumatic control valves may be used for the control of pressure, temperature, level and flow. The type 316 stainless steel body will withstand mildly corrosive fluids, yet is economical enough to use in applications where carbon steel is normally specified.



24000S Control Valve with Butt-welded Ends



24000CVF Carbon and 24000SVF Stainless Steel Flanged Control Valves

Incorporating some of the latest in control valve technology

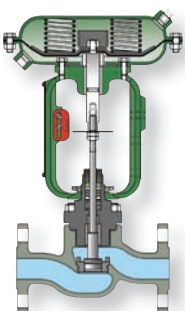


24000CVF/SVF Technical Specifications

VALVE TYPE	ASME		EN
NOMINAL SIZE	0.5, 0.75, 1.0, 1.5, & 2 inch		DN 15, 20, 25, 40, & 50
BODY PRESSURE RATING	CL150 or CL300 per ASME B16.34		PN 40 per EN 1092-1
END CONNECTIONS	CL150RF or 300RF Flanges per ASME B16.5		PN 10-40 Flanges per EN 1092-1
FACE-TO-FACE DIMENSIONS	Consistent with ISA S75.03		Consistent with EN 558-1
SEATING MATERIAL	PTFE Soft Seat	151 Trim	-20°F to 350°F (-29°C to 177°C)
		177, 577, 677 Trim	-100°F to 450°F (-73°C to 232°C)
	Metal Seat	102, 548, 588, 688 Trim	-320°F to 850°F (-195°C to 454°C)
PACKING & BONNET COMBINATIONS	BONNET STYLE	PACKING	TEMPERATURE LIMIT
	Standard Bonnet	Spring Loaded PTFE Packing	-100°F to 450°F (-73°C to 232°C)
		ENVIRO-SEAL®	-50°F to 450°F (-46°C to 232°C)
		Graphite	-100°F to 450°F (-73°C to 232°C)
	Extension Bonnet (B)	Spring Loaded PTFE Packing	-100°F to 450°F (-73°C to 232°C)
		ENVIRO-SEAL®	-50°F to 450°F (-46°C to 232°C)
		Graphite	-300°F to 850°F (-184°C to 454°C)
Bellows (B)	NOLEEK® Bellows	-320°F to 750°F (-195°C to 399°C)	
CHARACTERISTIC	Equal Percentage or Linear		



Note A: Temperature limits apply to seating or packing arrangements only. Complete valve assembly temperature limits may differ, refer to appropriate pressure/temperature ratings. For more information on packing selection, reference Fisher Packing Selection Guidelines for Sliding-Stem Valves, Bulletin Number 59.1:062.
 Note B: Extension bonnets and Bellows bonnets are not available with the 24000CVF carbon steel valves.



- Long life actuator diaphragm
- Rugged ductile iron actuator yoke
- Post guided contoured plug
- Multiple reduced trims available
- Indexed bonnet seating controls gasket compression
- ASME and DN flanges available
- Optimized flow path offers high flow capacity
- 316 and 416 stainless steel trim available



The 24000SVF stainless valve features a wide variety of options to satisfy cryogenic and elevated temperature processes.

24003 Little Scotty™ 3-Way Control Valve



3-way globe valve ideally suited for the control of flow or temperature where mixing or diverting service is required

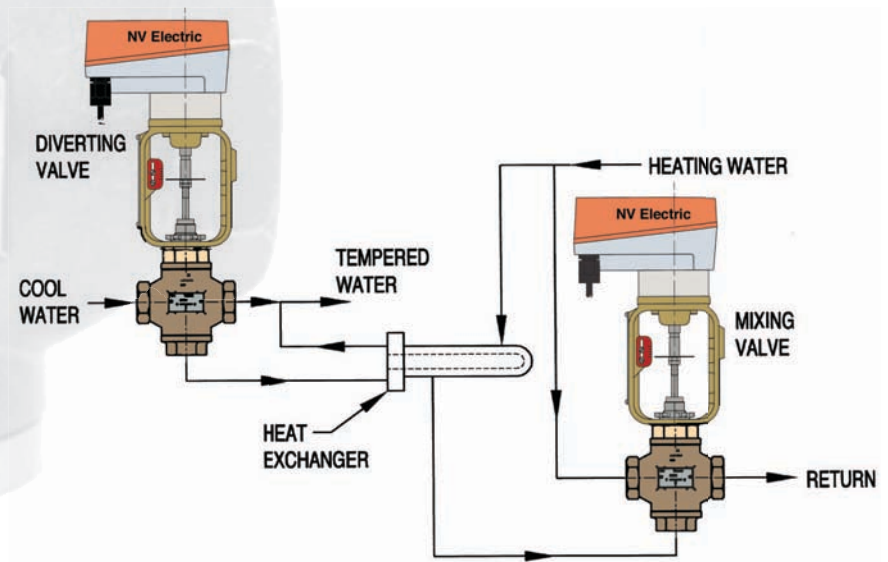
3-Way Industrial Control

- Sizes 1/2" through 2"
- Several end connection options to choose from to meet your piping standards
- Compact and light weight design reduces installed piping costs
- ENVIRO-SEAL® packing available for increased packing life and integrity
- FIELDVUE® Digital Valve Controller available for remote calibration and diagnostics



Three-way, bronze or 316 stainless steel control valve is ideally suited for cases where it is necessary to combine two fluids or to divert a single fluid for the temperature control of jacketed vessels and glycol chilling systems as commonly found in the food and beverage industry.

Each valve is equipped with a multi-spring, field reversible pneumatic diaphragm actuator, or the NV electric spring return actuator to provide precise control typical of Baumann™ industrial quality control valves.



24000SB Barstock Control Valve

316L stainless steel barstock valve body and bonnet is suitable for process pressures to 3000 psig (206.9 bar)



Low Flow, High Pressure Barstock

This unique barstock valve is recommended for low flow, high pressure applications and is ideal for desuperheat or spray control and high pressure tank filling.

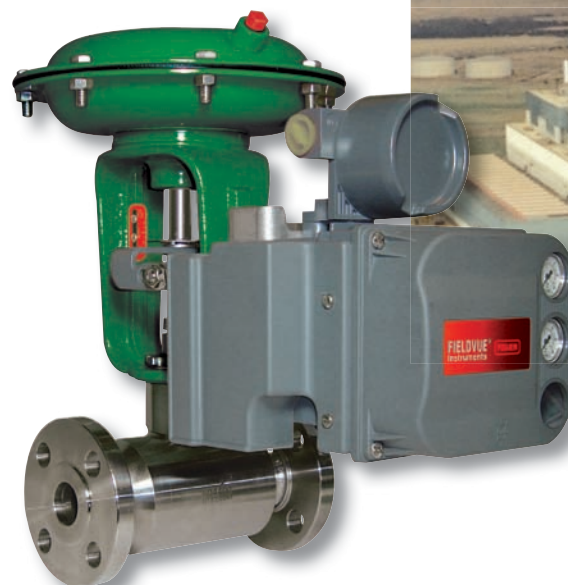
A variety of end connections ranging from threaded (standard), buttweld, flanged, and specialty fittings add versatility to this high pressure product line.

Special alloy constructions available; high nickel based alloys and Alloy 20 round-out the basic type 316L stainless steel offering.

- Sizes 1/2", 3/4", and 1' available
- Multiple trim capacity reductions available to meet changing process requirements
- Optional extended bonnet for applications ranging from -320°F (-160°C) to 1000°F (537°C)
- Available ENVIRO-SEAL® packing system to meet critical emission control requirements
- FIELDVUE® Digital Valve Controller available for remote calibration and diagnostics (see photo)



LOW FLOW TRIMS AVAILABLE
(Cv ratings as low as 0.00013)



21000 Elastomer Lined Butterfly Control Valve



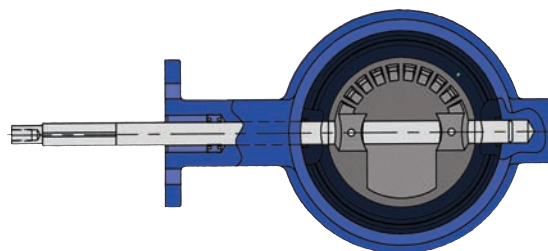
Unique angle seating disk design minimizes liner shearing especially on non-lubricated dry gas service

- 21000 valve sizes range from 2 inch to 6 inch
- Type 316SS angle seating disc with choice of EPDM or Nitrile (NBR) elastomer liners for extended service life
- DVC2000/6000 FIELDVUE® Digital Valve Controllers
- 3660 P/P & 3661 I/P Positioners with gain and damping adjustments for tuning valve to process loop dynamics (Intrinsically safe option)
- 3710 P/P & 3720 I/P characterized cam positioners (NEMA 3 explosion proof)



Unique Butterfly Disk Design

Unique disk design divides the flow stream into a series of smaller jets, thereby substantially reducing noise levels usually encountered with conventional butterfly valves when utilized on gas and steam services. The point of highest velocity tends to be downstream of the liner surface, thereby also reducing pressure recovery on liquid throttling applications minimizing the potential for cavitation and erosion damage typically associated with conventional elastomer lined butterfly valves.



The ideal control valve for larger flow applications requiring tight shutoff

25000 Lo-T Butterfly Control Valve

Unique butterfly valve features a distinct metal seated multi-toothed disk that reduces noise and cavitation

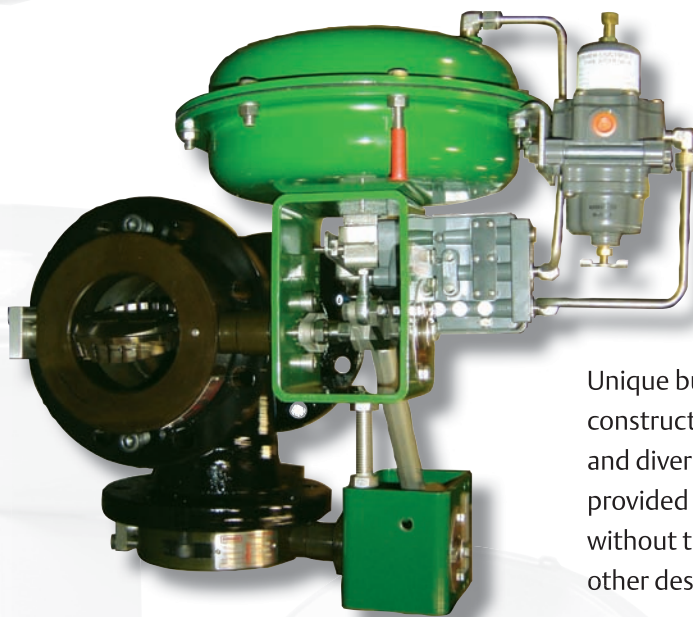


Low Torque, Low Noise Performance

- 25000 valve sizes range from 2 inch to 8 inch
- Available in carbon steel or 316 SS valve bodies suitable for process temperatures ranging from -320°F (160°C) to 1000°F (537°C)
- DVC2000/6000 FIELDVUE® Digital Valve Controllers
- 3660 P/P & 3661 I/P Positioners with gain and damping adjustments for tuning valve to process loop dynamics. (Intrinsically safe option)
- 3710 P/P & 3720 I/P characterized cam positioners (NEMA 3 explosion proof)



Angularly offset disk halves combine opposed dynamic torque characteristics, thereby providing a drastic overall torque reduction. This torque reduction allows for a substantial increase in the pressure drop capability of the valve without requiring oversize actuators.



Unique butterfly design is also available with 3-way construction suitable for larger capacity bypass and diverting applications. The entire assembly is provided by Baumann™ and offers ease of installation without the loose parts commonly associated with other designs.



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PlantWeb® architecture, and your favorite brands, including Micro Motion® and Rosemount®, provide the winning combination to deliver better process, plant and business results.

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Emerson Process Management
Fisher Controls International LLC
130 International Drive
Portsmouth, NH 03801
T +1(603) 766-8500
F +1(603) 766-8590
www.baumann.com



Baumann™ Sanitary Valves



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Introduction

One batch in a biotechnology facility can be worth tens of millions of dollars and any failure in the processing equipment will mean that batch's integrity cannot be validated and the batch must be discarded. Therefore, equipment reliability and ease of maintenance are key issues.

In many pharmaceutical and biotechnology applications, the process fluid will ultimately find itself inside the human body. Food and beverage manufacturers require reliable equipment and stable processes to ensure their products' taste, texture, color, and aroma come out the same every time. It is imperative that the development of bacterial growth and the addition of foreign matter into the process fluid be prevented. If such contamination occurred, it could cause lost product or a costly shutdown of the facility.

Manufacturers of cosmetics and self-care products have some of the same requirements as food and beverage manufacturers whereby they want product texture, color, and aroma to be repeatable and that products remain clean and uncontaminated.

Baumann™ sanitary valves are a different breed: excellent flow control, high rangeability, and compact size designed to meet the stringent demands of today's state-of-the-art facilities. And, as an added benefit, the ability to use the FIELDVUE™ digital valve controller means that your sanitary valves can become a proactive component of your process validation protocols in the life sciences industry.



Baumann™ 83000 and 84000 Sanitary Valves

Do your control valves prevent contaminant build up?

The Baumann 83000 and Baumann 84000 sanitary valves are designed to accurately control high purity fluids and gases without contamination between batches. These sanitary valves have tight control of flow rates by providing high positioning resolution. The valve bodies are designed to be self draining to prevent contaminant build up. The uniquely designed diaphragm in the Baumann 84000 allows for the control of fluids that require low shearing effects. In contrast, a typical parabolic plug design results in high shear which can damage biological cells, add bubbles to a film coating, or change the consistency of a food or cosmetic product.

Baumann 83000 Key Features

- Aseptic
- Polished metal diaphragm control valve
- Angle valve
- Class IV shutoff
- ASME BPE Class III
- Clean-in-Place (CIP) / Steam/Sanitize-in-Place (SIP)

Baumann 84000 Key Features

- Aseptic
- PTFE Diaphragm control valve
- Available in angle or inline valve body configurations
- Class VI shutoff
- ASME BPE Class III
- Clean-in-Place (CIP) / Steam/Sanitize-in-Place (SIP)



PROVEN RESULTS

APPLICATION:	Beer-feed line control
CHALLENGE:	Overfilling and underfilling of kegs and flow rate inconsistencies. Plant managers felt they were wasting up to 150 liters/day across all ten fill lines.
BENEFITS:	The Baumann 84000 sanitary valve with a FIELDVUE DVC2000 instrument is used to provide consistent flow control.
RESULTS:	Fill rates on each of the ten fill lines increased from 3 kegs per minute to 3.15 kegs per minute and the brewery achieved additional sales of \$18,360 per day!

Baumann 85000 Sanitary Pinch Valve

Can you repeat tight control?

The Baumann 85000 sanitary pinch valve provides accurate and repeatable positioning to achieve unparalleled flow control. This sanitary valve has no physical contact with the process. The valve body cradles the process tubing which eliminates the need for a liner, thus eliminating the need for testing a liner for leachables and extractables. Reducing risks for cross-contamination can save biotech companies millions of dollars in lost batch product.

Baumann 85000 Key Features

- Automated pinch valve
- Up to 140 psi
- Tubing sizes up to .75 inches



PROVEN RESULTS

APPLICATION:	Automated trans-membrane pressure (TMP) control
CHALLENGE:	Pinching mechanism needs to provide good control, experienced issues with competitor's products.
BENEFITS:	PlantWeb™ digital plant architecture offers consistent product quality and better record keeping. Also, there is improved batch control, reduced operating cost, and lower financial risk.
RESULTS:	Faster, more accurate validation resulting in improved operations.

Baumann 87000 FLEXSLEEV Sanitary Valve

Can your control valve system handle sanitary slurry applications?

The Baumann 87000 FLEXSLEEV sanitary valve is highly recommended for fluids containing particulates such as glucose. This sanitary valve has the ability to control low flow rates and, like the 83000 and 84000, it is self draining, preventing contaminant build up. Process fluids flow around the outside of the tube resulting in low shear effects and therefore is ideal for use with suspended media. The 87000 prevents “dewatering” and clogging that often occurs in typical metal plug designs. This results in more uniform products and reduces unscheduled maintenance shutdowns.

Baumann 87000 Key Features

- Aseptic
- Handle vacuum service
- Class VI shutoff
- ASME BPE Class III
- Clean-in-Place (CIP) / Steam/Sanitize-in-Place (SIP)



PROVEN RESULTS

APPLICATION:	Nutrient feed to a bioreactor. A water and glucose mix that is fed to the cells to allow them to grow.
CHALLENGE:	Ability to pass glucose crystals. Also, required tight shutoff, wide rangeability, and an inline configuration.
BENEFITS:	The Baumann 87000 with a FIELDVUE DVC2000 provides accurate control and tight shutoff of the sanitary slurry process fluid.
RESULTS:	Nutrients were fed to the cells at the right rate, which allowed them to grow.

Baumann 89000 Sanitary Valve

Do you need a sanitary control valve that can handle large flow rates for your process?

The Baumann 89000 sanitary valve is well suited for the continuous control of sterile steam or water for injection. This sanitary valve offers tight control of large flow rates while protecting the process fluid from contamination. The stainless steel construction makes it ideal in corrosive environments. This sanitary valve also includes a self draining valve body which prevents contamination between batches.

Baumann 89000 Key Features

- Aseptic
- Plug style sanitary valve
- Class IV shutoff
- ASME BPE Class I
- Clean-in-Place (CIP) / Steam/Sanitize-in-Place (SIP)
- CIP/SIP



PROVEN RESULTS

APPLICATION:	Water for injection (WFI) back pressure control valve.
CHALLENGE:	To prevent contamination of the water by back-siphoning.
BENEFITS:	The Baumann 89000 sanitary valve is used to provide water for injection. It provides a drainable, electro-polished sanitary interior and has a modified equal percentage flow for optimum performance.
RESULTS:	This valve provides up to 6 inches and high flow capacities with wide rangeability. It controls constant back pressure in the WFI distribution system with multiple user points.



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Emerson Process Management
Marshalltown, Iowa 50158 USA
Sorocaba, 18087 Brazil
Chatham, Kent ME4 4QZ UK
Dubai, United Arab Emirates
Singapore 128461 Singapore
www.EmersonProcess.com/Fisher

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