

Globe Valve Selection Guide

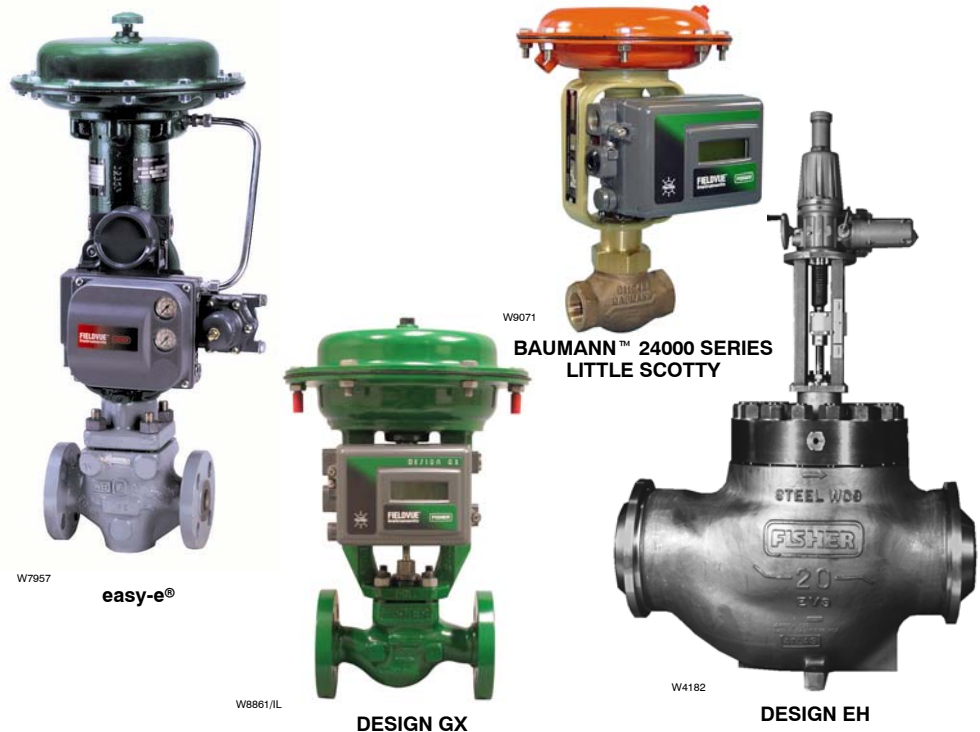


Figure 1. Typical Fisher® Sliding-Stem Control Valves

- These straight-pattern (globe), angle-pattern, and three-way valves offer a broad range of types, sizes, and materials--from DN15 to 600 (0.5 to 24-inch) low-flow valves to DN 500 (20-inch) and larger for demanding high-pressure steam and hydrocarbon service (see figure 1).
- FIELDVUE® digital valve controllers offer digital control and remote diagnostics. The traditional proven line of Fisher® positioners, controllers, transmitters, and switches also is available.
- ENVIRO-SEAL® and HIGH-SEAL™ packing systems are available on many designs to assist in compliance with environmental emissions requirements.
- Whisper Trim® and Cavitrol® anti-noise and anti-cavitation trims are available for most designs.
- These products deliver excellent dynamic performance to minimize process variability, providing opportunities to improve your financial performance.
- For European requirements, complies with PED, ATEX, and EMC directives.



Low-Flow Valves (26000, 24000SB, 51000)

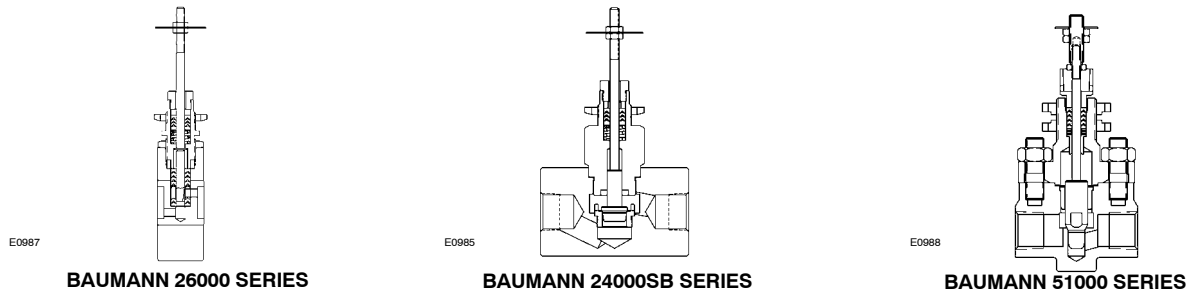


Figure 2. Fisher® Low-Flow Valves

BAUMANN 26000 SERIES (see figure 2)	BAUMANN 24000SB SERIES (see figure 2)	BAUMANN 51000 SERIES (see figure 2)
Applications		
Suited for demanding pH control of acid or caustic solutions in paper mills, chemical, and life science facilities	Throttling control of high-pressure low flow rates	Throttling control of high-pressure low flow rates
Style		
Single-seated, stem-guided globe valve PTFE lined Unbalanced	Single-seated, stem-guided globe valve Unbalanced Screwed-in seat ring Metal or soft seats	Single-seated, stem-guided globe valve Unbalanced
Sizes		
1.0 inch	0.25, 0.75, and 1.0 inches	0.25 and 0.5 inches
Ratings		
10.3 Bar CWP (150 psig CWP)	207 Bar CWP (3000 psig CWP)	207 Bar CWP (3000 psig CWP)
End Connections		
Wafer (flangeless design) installs between Class 150 or 300 RF and PN 10 through 25 line flanges	Threaded NPT (standard) Buttweld Flanged, ASME and EN available	Threaded G (metric) or NPT female
Valve Body Materials		
316/316L SST (ASTM A479 S31600/S31603, Annealed), PTFE core	Barstock ASTM A479 S31600/S31603 Dual Certified, Alloys available	CF8M (316 stainless steel) / Hastelloy C
Valve Plug and Seat Ring (Trim) Materials		
Tantalum (ASTM B365 R05200 cold worked) Hastelloy C276 (ASTM B574 N10276, 35 HRC Max) plug options PTFE seating material	Nitronic 60 (Cv ≤ 2.5) 316 Stainless Steel (Cv ≥ 3.8) Soft seat is ASTM A479 S31600 with PTFE insert	316 stainless steel with PTFE seat Hastelloy C with PTFE seat
Flow Characteristics and Maximum Flow Coefficients		
Modified equal percentage Maximum Cv from 0.001 to 4.2	Linear / Metal Seat Modified Equal Percentage / PTFE seat Linear / PTFE seat Equal Percentage / PTFE seat Equal Percentage / Metal seat Maximum Cv from 0.0005 to 6.8	Modified equal percentage Maximum Cv from 0.00013 to 2.5
Shutoff Class (IEC 60534-4 and ANSI/FCI 70-2)		
Class IV (Cv's of 2.5 and 4.2) Class VI (Cv's of 0.001 through 1.0)	Class IV (standard with metal seats) Class VI (with optional soft seats)	Class VI (standard) Class IV (available)
Available Actuator Types (refer to pages 9 and 10)		
Baumann™ 32in ² sliding-stem spring and diaphragm actuator Electric actuators available	Baumann 32in ² , 54in ² , or 70in ² sliding-stem spring and diaphragm actuators Electric actuators available	Baumann 16in ² pneumatic actuator Electric actuators available

Utility Valves (24000, 24000D, 24000SVF/CVF)

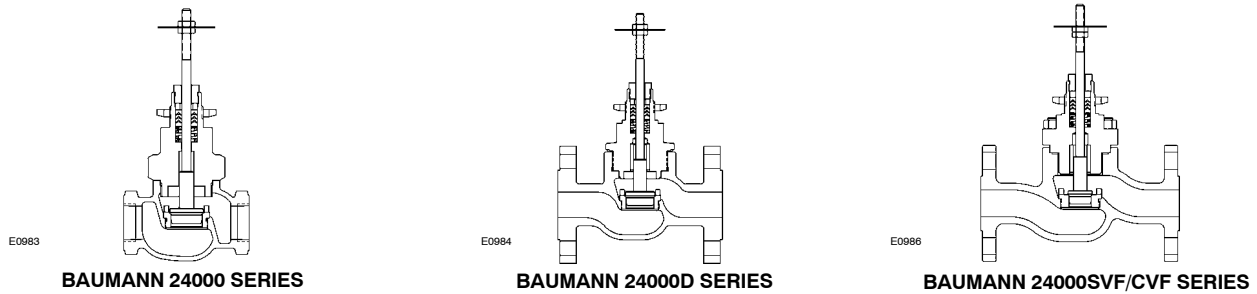


Figure 3. Fisher® Utility Valves

BAUMANN 24000 SERIES (see figure 3)	BAUMANN 24000D SERIES (see figure 3)	BAUMANN 24000SVF/CVF SERIES (see figure 3)
Applications		
Bronze utility valve for pressure, flow, or temperature control in the textile, life science, semiconductor, industrial HVAC, food and beverage, and other industries	Ductile iron flanged utility valve for pressure, flow, or temperature control in the textile, pharmaceutical, semiconductor, heating, air conditioning, food and beverage, and other industries	Flanged carbon and stainless steel utility valve for use in life sciences, specialty chemical, corrosive service, and other industries
Style		
Single-seated, stem-guided globe valve Unbalanced Screwed-in seat ring Metal or soft seats	Single-seated, stem-guided globe valve Unbalanced Screwed-in seat ring Metal or soft seats	Single-seated, stem-guided globe valve Unbalanced Screwed-in seat ring Metal or soft seats
Sizes		
0.5 through 2 inches	0.5 through 2 inches; DN 15, 20, 25, 40, and 50	0.5 through 2 inches; DN 15, 20, 25, 40, and 50
Ratings		
ASME B16.24	ASME Class 150 or PN40 per EN 1092	ASME Class 150 or 300 or PN40 per EN 1092
End Connections		
Screwed NPT female	Mates with ASME Class 150RF or PN10-40 flanges per EN 1092	24000S: Screwed NPT 24000SVF/CVF: ASME Class 150 or 300 raised-face flanges or PN40 flanges per EN 1092
Valve Body Materials		
ASTM B62 Grade C83600 bronze	Cast Ductile Iron (DIN 1693 GGG 40)	24000SVF: ASTM A351 CF3M 24000CVF: ASTM A216 WCC and GP240GH WN 1.0619
Valve Plug and Seat Ring (Trim) Materials		
316 stainless steel (standard) 416 stainless steel (available) Soft seat is ASTM A479 S31600 with PTFE insert	316 stainless steel (standard) 416 stainless steel (available) Soft seat is ASTM A479 S31600 with PTFE insert	316 stainless steel Soft seat is ASTM A479 S31600 with PTFE insert
Flow Characteristics and Maximum Flow Coefficients		
Linear or equal percentage Maximum C _v from 0.20 to 50.0	Linear or equal percentage Maximum C _v from 0.20 to 52.9	Linear or equal percentage Maximum C _v from 0.005 to 61.0
Shutoff Class (IEC 60534-4 and ANSI/FCI 70-2)		
Class IV (standard with metal seats) Class VI (with optional soft seats)	Class IV (standard with metal seats), Class VI (with optional soft seats)	Class IV (standard with metal seats) Class VI (with optional soft seats)
Available Actuator Types (refer to pages 9 and 10)		
Baumann 32in ² , 54in ² , or 70in ² sliding-stem spring and diaphragm actuators Electric actuators available	Baumann 32in ² , 54in ² , or 70in ² sliding-stem spring and diaphragm actuators Electric actuators available	Baumann 32in ² , 54in ² , or 70in ² sliding-stem spring and diaphragm actuators Electric actuators available

General-Service and Heavy-Duty Valves (GX, EZ, and ES)

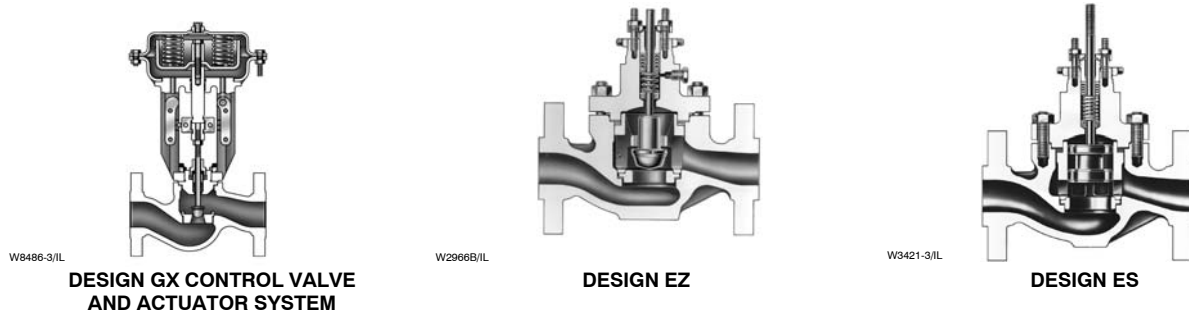


Figure 4. General-Service and Heavy-Duty Valves

DESIGN GX (see figure 4)	DESIGN EZ (see figure 4)	DESIGN ES (see figure 4)
Applications		
Compact, state-of-the-art control valve and actuator system designed to control a wide range of process liquids, gases, and vapors. Capable of air supply pressures to 6.0 barg (87 psig), allowing valve shutoff at high pressure drops.	Heavy-duty general service for controlling liquids and gases, including viscous and other hard-to-handle fluids. UOP applications	Heavy-duty, general-service valve for clean liquids and gases. Positive shutoff at seat
Style		
Single port, flow up globe style valve Stem-guided or port-guided Balanced or unbalanced Screwed-in seat ring	Single-seated, post-guided globe or angle valve Unbalanced Seat ring retained by spacer Metal or soft seats	Cage-guided globe or angle valve Unbalanced Cage-retained seat
Sizes		
DN 15, 20, 25, 40, 50, 80, and 100 0.5, 0.75, 1, 1.5, 2, 3, and 4-inch	DN 15, 20, 25, 40, 50, 80, and 100 0.5, 0.75, 1, 1.5, 2, 3, and 4-inch	ES: DN 15 through 200 (0.5 through 8-inch) EWS: DN 100 x 50 through 600 x 500 (4 x 2 through 24 x 20 inches)
Ratings		
PN 10 to 40, Class 150 and 300	PN 16, 25, 40, 63 and 100 and Class 125, 150, 300, and 600	PN 10, 16, 25, 40, 63, or 100 and Class 150, 300, or 600
End Connections		
Flanged raised-face per EN 1092-1 and ASME B16.5	Screwed NPT female, flat- or raised-face flanged, ring-type joint, socket-weld, and buttwelding ends	Screwed NPT female, flat- or raised-face flanged, ring-type joint, socket-weld and buttwelding ends
Valve Body Materials		
EN: 1.0619 steel, 1.4409 stainless steel, or Hastelloy C (CW2M) ANSI: ASME SA216 WCC steel, ASME SA351 CF3M stainless steel, or Hastelloy C (CW2M)	Steel, alloy steel, stainless steel (to EN, ASME, or ASTM specifications)	Steel, alloy steel, stainless steel (to EN, ASME, or ASTM specifications)
Valve Plug and Seat Ring (Trim) Materials		
Stainless steel (316L) with optional alloy 6 hardfacing or PTFE soft seat	Stainless steel with or without alloy 6 on seat or seat and guide Soft seat is PTFE	Stainless steel with or without alloy 6 on seat or seat and guide Soft seat is PTFE
Flow Characteristics and Maximum Flow Coefficients		
Equal percentage or linear Maximum C_v from 0.0389 to 183.5	Quick opening, linear, or equal percentage Maximum C_v from 4.47 to 190	Quick opening, linear, or equal percentage Maximum C_v from 6.53 to 1110
Shutoff Class (IEC 60534-4 and ANSI/FCI 70-2)		
Class IV (standard with metal seats), Class V (optional with metal seats), or Class VI (optional with PTFE seats)	Class IV (standard with metal seats), Class V (optional with metal seats), or Class VI (with optional soft seats)	Class IV (standard with metal seats), Class V (optional with metal seats), or Class VI (with optional soft seats)
Available Actuator Types (refer to pages 9 and 10)		
Design GX multi-spring, pneumatic diaphragm	Type 657 or Type 667 spring and diaphragm; Type 585C piston	Type 657 or Type 667 spring and diaphragm; Type 585C piston

Heavy-Duty and Severe-Service Valves (ED, ET, HP, and EH)

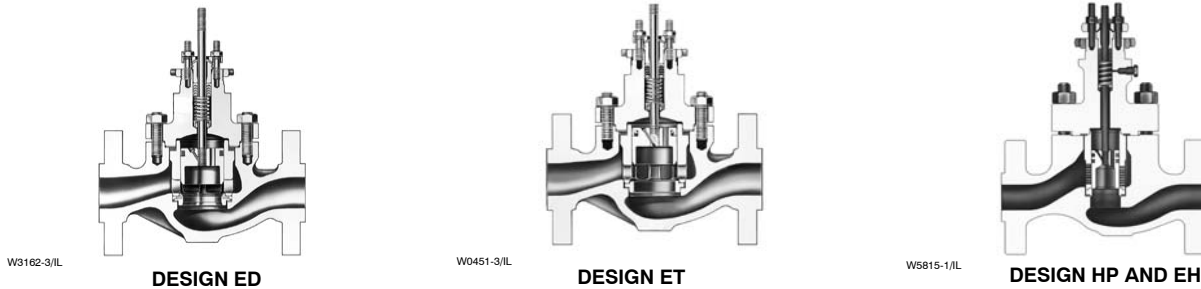


Figure 5. Heavy-Duty and Severe-Service Valves (ED, ET, HP, and EH)

DESIGN ED (see figure 5)	DESIGN ET (see figure 5)	DESIGN HP and EH (see figure 5)
Applications		
easy-e [®] heavy-duty, general- and severe-service valve for clean liquids and gases with higher pressure drops but where tight shutoff is not required	easy-e [®] heavy-duty, general- and severe-service valve for tight shutoff with clean liquids and gases with higher pressure drops and temperatures to 232°C (to 316°C with optional seal materials)	For high-pressure and severe-service applications. Available with special trim to combat noise and cavitation. Often used in power generation applications
Style		
Cage-guided globe or angle valve Balanced trim Cage-retained seat	Cage-guided globe or angle valve Balanced trim Cage-retained seat	Cage-guided globe or angle valve Balanced or unbalanced trim
Sizes		
DN 25 through 200 and 1 through 8 (ED) DN 100 x 50 through 600 x 500 and 4 x 2 through 24 x 20 inches (EWD)	DN 25 through 200 and 1 through 8 (ET) DN 100 x 50 through 600 x 500 and 4 x 2 through 24 x 20 inches (EWT)	DN 25 through 500 and 1 through 20 inches
Ratings		
PN 10, 16, 25, 40, 63, or 100, and Class 150, 300, or 600	PN 10, 16, 25, 40, 63, or 100, and Class 150, 300, or 600	DIN PN 160, 250, 420 and Class 900, 1500, 2500, or intermediate ANSI ratings
End Connections		
Screwed NPT female, flat- or raised-face flanged, ring-type joint, socket-weld and buttwelding ends	Screwed NPT female, flat- or raised-face flanged, ring-type joint, socket-weld and buttwelding ends	Raised-face flanged, ring-type joint, socket-weld and buttwelding ends Expanded ends
Valve Body Materials		
Steel, alloy steel, stainless steel (to EN, ASME, or ASTM specifications)	Steel, alloy steel, stainless steel (to EN, ASME, or ASTM specifications)	Steel, alloy steel, stainless steel (to EN, ASME, or ASTM specifications)
Valve Plug and Seat Ring (Trim) Materials		
Stainless steel with or without alloy 6 on seat or seat and guide	Stainless steel with or without alloy 6 on seat or seat and guide. Soft seat is PTFE	Stainless steel with or without alloy 6 on seat or seat and guide
Flow Characteristics and Maximum Flow Coefficients		
Quick opening, linear, or equal percentage Maximum C _v from 17.2 to 6500	Quick opening, linear, or equal percentage Maximum C _v from 17.2 to 6500	Linear, equal percentage or characterized Maximum C _v from 0.354 to 2600
Shutoff Class (IEC 60534-4 and ANSI/FCI 70-2)		
Class II (standard) Class III or IV (optional depending on size)	Standard Air Test: 0.05 mL/min/psid/inch of port diameter (standard with soft seat) Class IV (standard with metal seats), Class V (optional with soft or metal seats)	Class II, III, IV or V (depending on size and construction)
Available Actuator Types (refer to pages 9 and 10)		
Type 657 or Type 667 spring and diaphragm; Type 585C piston	Type 657 or Type 667 spring and diaphragm; Type 585C piston	Type 657 or Type 667 spring and diaphragm; Type 585C piston

Globe Valve Selection Guide

Three-Way Valves, Cryogenic, and Lined Valve (YD and YS, ET-C and EZ-C, and RSS)

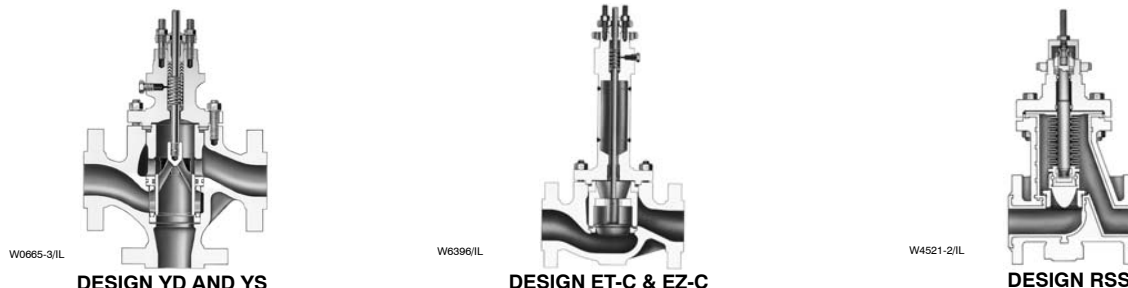


Figure 6. Three-Way, Cryogenic, and Lined Valve (YD and YS, ET-C and EZ-C, and RSS)

DESIGN YD and YS (see figure 6)	DESIGN ET-C and EZ-C (see figure 6)	DESIGN RSS (see figure 6)
Applications		
Three-way valves for flow-mixing or flow-splitting service. The Design YS unbalanced, and the Design YD is balanced.	easy-e[®] stainless steel cryogenic valves for liquefied natural gas and other special chemical and hydrocarbon applications with temperatures to -198°C	Lined valve for severely corrosive or toxic process fluids. An economic alternative to alloy bodies. Limited in pressure and temperature
Style		
Cage-guided three-way globe valves Balanced or unbalanced trim	Single-seated post-guided (EZ-C) or cage-guided (ET-C) globe valve Unbalanced (EZ-C) or balanced (ET-C) Metal seats	Fully lined, single-seated, unbalanced globe valve Includes bellows stem seal
Sizes		
0.5 through 6 inches	DN80 through 250 x 200 or 3 through 10 x 8 inches (ET-C) DN 15 through 100 or 1 through 4 inches (EZ-C)	1 through 4 inches (face-to-face dimensions to DIN or ANSI/ISA specifications)
Ratings		
Class 125, 150, 250, 300, or 600	PN 10, 16, 25, 40, 63, 100 and Class 150, 300, 600	Class 150 or 300
End Connections		
Screwed NPT female, flat- or raised-face flanged, ring-type joint, socket-weld and butt welding ends	Raised-face flanges	Raised-face flanges
Valve Body Materials		
Cast iron, steel, alloy steel, stainless steel (to ASME or ASTM specifications)	Stainless steel (to ASME or ASTM specifications)	Ductile iron with PFA liner
Valve Plug and Seat Ring (Trim) Materials		
Stainless steel	Stainless steel with or without alloy 6 hardfacing on seat	Valve Plug and Seat Ring: Pure modified (reinforced) PTFE Bellows: Heavy-duty PTFE (TFM1705) with 304L SST support rings [Bellows is PTFE for 0.5 and 0.75 valves]
Flow Characteristics and Maximum Flow Coefficients		
Linear Maximum C _v 8.42 to 567	Quick opening, linear, or equal percentage Maximum C _v from 13.2 to 924	Equal percentage Maximum C _v from 0.212 to 145
Shutoff Class (IEC 60534-4 and ANSI/FCI 70-2)		
Class II or IV (Design YD) Class IV or V (Design YS)	Class IV (standard) 0.05 mL/min/psid/inch of port diameter (optional for ET-C) or Class V (optional for EZ-C)	Class VI (soft seat)
Available Actuator Types (refer to pages 9 and 10)		
Type 657 or 667 spring and diaphragm; Type 585C piston	Type 657 or 667 spring and diaphragm; Type 585C piston	Type 657 or 667 spring and diaphragm; Type 585C piston

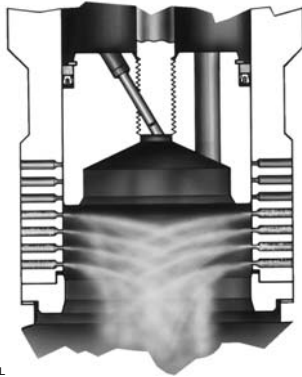
Other Valve Options

Cavitating Liquids...Cavitrol trim is available in many of these valves and in other severe-service valves. Cavitrol trim can minimize cavitation noise and damage in a properly sized valve.

Noisy Gases...Whisper Trim cages can substantially reduce noise in gas, vapor, and steam applications. Whisper Trim is available in several performance levels in many of these valves.

Materials for Sour Service...Fisher manufacturing offers materials and manufacturing procedures for compatibility with NACE MR0175-2002 and MR0103.

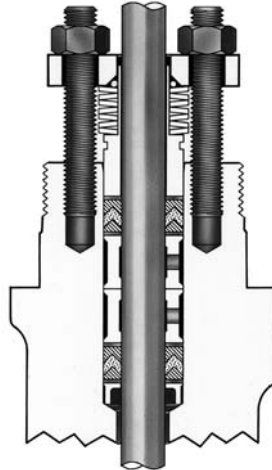
Protection Against Process Fluid Emissions...Optional ENVIRO-SEAL and HIGH-SEAL packing systems provide an improved stem seal to help prevent the loss of valuable or hazardous process fluids. These live-loaded systems provide longer packing life and reliability.



CAVITROL® TRIM FOR CONTROL OF LIQUID CAVITATION



WHISPER TRIM® III CAGE FOR REDUCTION OF NOISE IN GAS AND VAPOR APPLICATIONS



PTFE ENVIRO-SEAL® PACKING SYSTEM

Figure 7. Other Valve Products

Other Valve Products

Steam Conditioning Service

Fisher steam conditioning products accurately control steam for high efficiency in power generation, industrial processing, space heating, and auxiliary steam applications. Steam conditioning valves,

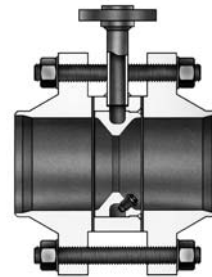
desuperheaters, and turbine bypass systems are available.

For a broad range of process control valves--beyond those mentioned here--contact your nearest sales office or sales representative.



W8740-2A

DESIGN TBX STEAM CONDITIONING VALVE



W6313/IL

DESIGN DVI DESUPERHEATER

Figure 8. Steam Conditioning Service

Globe Valve Actuators (Baumann, 657 and 667, 3024C, and 3025)

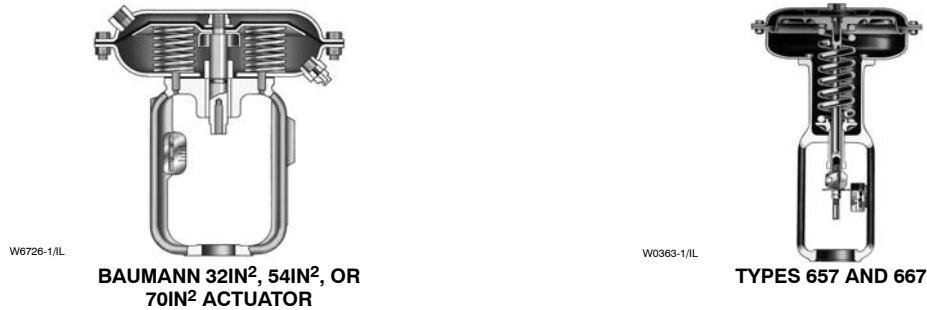


Figure 9. Globe Valve Actuators (Baumann™ 32In², 54 In², or 70 In², and 657 and 667)

BAUMANN (see figure 9)	TYPE 657 and 667 (see figure 9)
Features	
Compact, light-weight actuator designed for use with Baumann sliding-stem valves	Heavy-duty actuators
Style	
Spring-return pneumatic diaphragm	Spring-return pneumatic diaphragm
Typical Maximum Thrust, Newtons (Varies with Operating Pressure, Spring, and Construction)	
3750	10 000 to 200 000
Accessories	
Pneumatic or electro-pneumatic valve positioners, FIELDVUE digital valve controller, limit switch box, supply pressure filter-regulator, handwheel for 32in ² and 54in ² actuator	Pneumatic or electro-pneumatic valve positioners, FIELDVUE digital valve controller, limit switches, position transmitters, handwheels, travel stops, and supply pressure filter-regulator

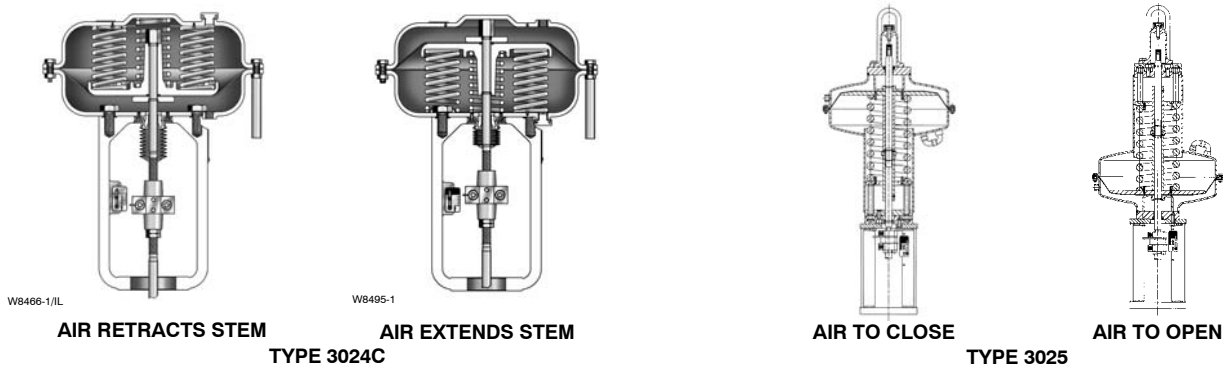


Figure 10. Globe Valve Actuators (3024C and 3025)

Type 3024C (see figure 10)	TYPE 3025 (see figure 10)
Features	
Compact, general-purpose actuator	Long travel, up to 200 mm (8 inches)
Style	
Spring-opposed pneumatic diaphragm	Spring-opposed pneumatic diaphragm
Typical Maximum Thrust, Newtons (Varies with Operating Pressure, Spring, and Construction)	
Air Retracts Stem, Size 45: 34800 Air Extends Stem, Size 45: 14700	Air to Close, Size P900: 70935 Air to Open, Size P900: 61200
Accessories	
Handwheels, adjustable travel stops, transducers, positioners, position transmitters, air relays, volume boosters, and solenoid valves are available for actuator mounting.	Handwheels, transducers, position transmitters, air relays, volume boosters, switching valves, lockable valves, limit switches, and solenoid valves are available for actuator mounting.

Globe Valve Actuators (585C and 585CLS)



Figure 11. Globe Valve Actuators (585C and 585CLS)

TYPE 585C (see figure 11)	TYPE 585CLS (see figure 11)
Features	
Heavy-duty actuators	Heavy-duty actuators for large valves and valves with long travel
Style	
Double-acting piston or spring-bias piston	Double-acting piston
Typical Maximum Thrust, Newtons (Varies with Operating Pressure, Spring, and Construction)	
70300 at 10.3 bar operating pressure	100000 at 8.6 bar operating pressure
Accessories	
I/P transducers, pneumatic or electro-pneumatic valve positioners, FIELDVUE digital valve controller, limit switches, position transmitters, handwheels, travel stops, and supply pressure filter-regulator	I/P transducers, pneumatic valve positioners, limit switches, position transmitters, handwheels, travel stops, and supply pressure filter-regulator

Other actuators available are...

- Electrohydraulic actuator with or without integral pump and motor
- Full range of self-operated control valves
- Manual handwheel actuator

Valve Controllers and Positioners

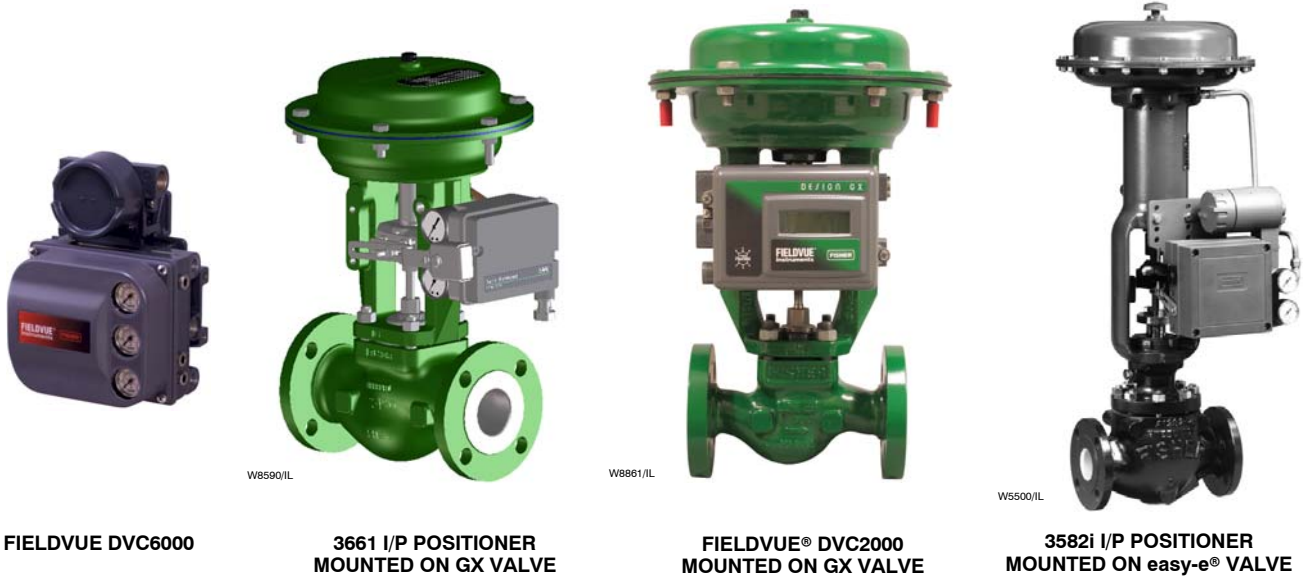


Figure 12. Valve Controllers and Positioners

FIELDVUE® Digital Valve Controller

FIELDVUE digital valve controllers are communicating, microprocessor-based controllers that convert a current signal to a pressure signal to operate the actuators.

Through the HART® or fieldbus communications protocol, the controller gives easy access to critical valve assembly information. AMS ValveLink® Software allows easy access to valve assembly performance characteristics. Vital information can be obtained without having to pull the valve from the line.

Performance Diagnostic tests, including On-Line Friction, Deadband Analysis, and Trending can be run while the valve is in service and operating. Valve Signature, Dynamic Error Band, and Step Response are displayed in an intuitive user-friendly environment that allows easy interpretation of data.

FIELDVUE models include the DVC6000 and DVC2000 with local user interface for calibration.

Pneumatic and Electro-Pneumatic Valve Positioners

Several pneumatic and electro-pneumatic valve positioners are available, including the 3660 P/P, 3661 I/P, 3582 P/P, and 3582i I/P positioners.

Note

Neither Emerson™, Emerson Process Management, Fisher, nor any of their affiliated entities assumes responsibility for the selection, use and maintenance of any product. Responsibility for the selection, use and maintenance of any product remains with the purchaser and end-user.

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