

Industrial Excess Flow Valves

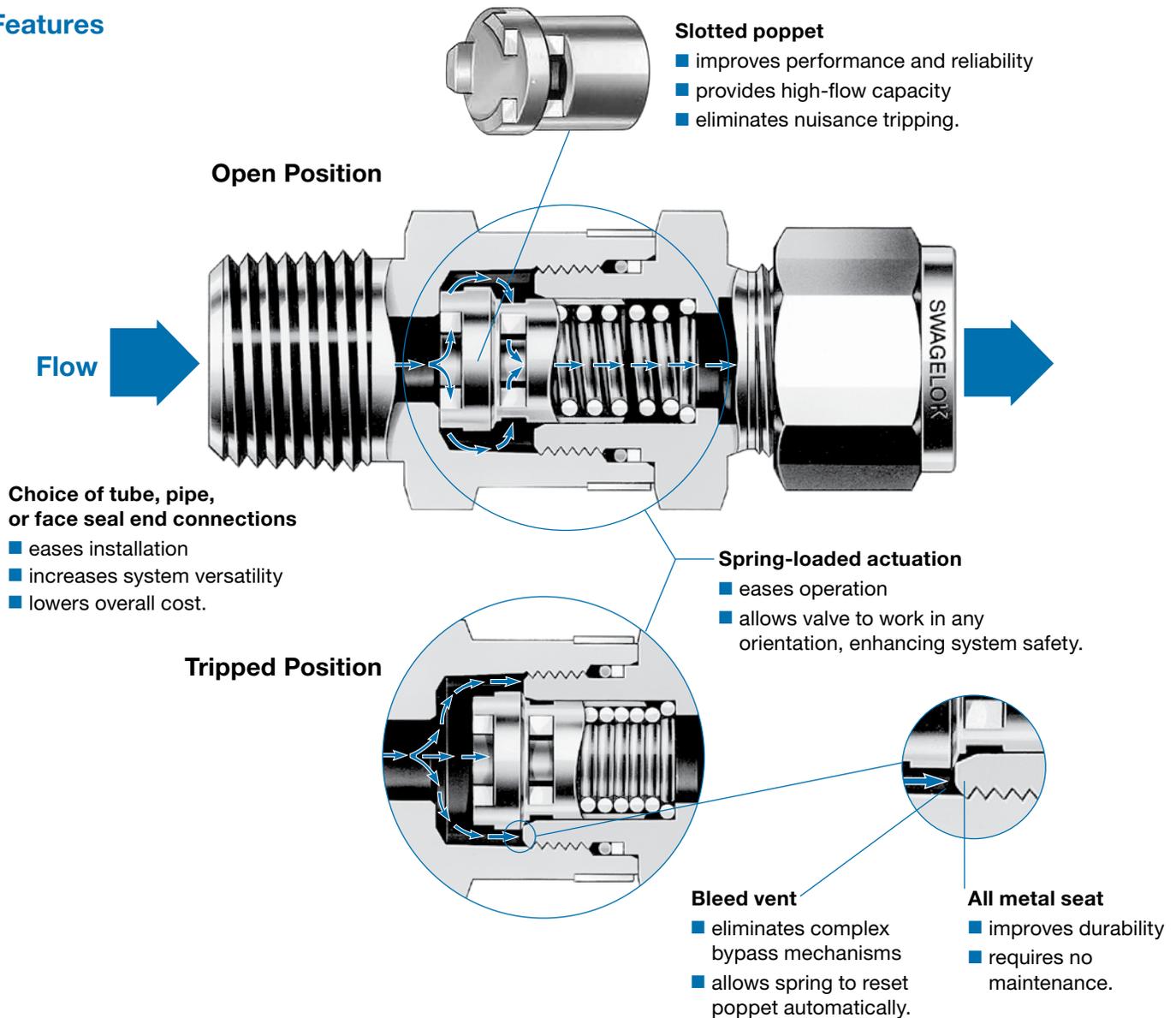
Stop uncontrolled release of system media if downstream line ruptures



XS Series

- Pressures up to 6000 psig (413 bar)
- Temperatures up to 400°F (204°C)
- 1/8 to 1/2 in. and 6 to 12 mm end connections
- Stainless steel construction

Features



Operation

The spring-loaded poppet remains in the open position during normal system operation. Should an excess flow condition occur downstream, the poppet rapidly moves to the tripped position, stopping uncontrolled release of system media. When the system pressure equalizes through the bleed vent, the spring automatically resets the poppet to the open position. The flow through the bleed vent of a standard^① XS series valve is less than 1 % of the flow rate in the trip range.

^① Medium- and low-flow springs are available as an option. For valves with either of these spring options, the flow through the bleed vent may be greater than 1 % of the flow rate in the trip range. See the Swagelok XS Series Excess Flow Valve technical report, MS-06-11, for more details.

Pressure-Temperature Ratings

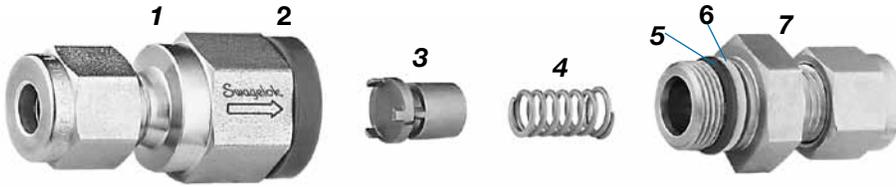
Ratings based on fluorocarbon FKM O-rings. See **Optional O-Ring Materials**, page 4.

Pressure ratings may be limited by the end connection. See **Ordering Information and Dimensions**, page 4.

| ASME Class | 2500 |
|-----------------------|------------------------------|
| Material Group | 2.2 |
| Material Name | 316 SS |
| Temperature, °F (°C) | Working Pressure, psig (bar) |
| -10 (-23) to 100 (37) | 6000 (413) |
| 200 (93) | 5160 (355) |
| 250 (121) | 4910 (338) |
| 300 (148) | 4660 (321) |
| 400 (204) | 4280 (294) |

For more information about valves with tube fitting end connections, see Swagelok® Tubing Data, MS-01-107.

Materials of Construction



| Component | Material Grade/ ASTM Specification |
|-----------------------|---------------------------------------|
| 1 Inlet body | 316 SS/A479 |
| 2 Identification ring | Polyetherimide |
| 3 Poppet | 316 SS/A479 |
| 4 Spring | 302 SS/A313 |
| 5 O-ring | Fluorocarbon FKM |
| 6 Backup ring | PTFE ^① /D1710 |
| 7 Outlet body | 316 SS/A479 |
| Lubricant | PTFE-based |

Wetted components listed in *italics*.

① PEEK also available; see **Ordering Information**, page 4.

Testing

Every XS series valve is factory tested for proper operation.

Cleaning and Packaging

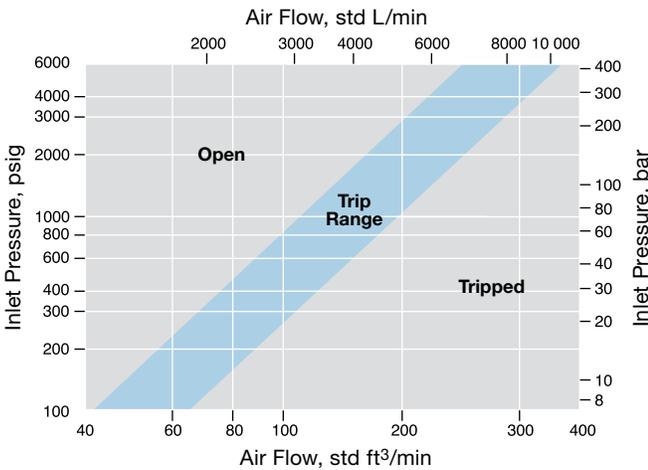
Swagelok XS series valves with VCR or VCO end connections are processed in accordance with Swagelok *Special Cleaning and Packaging (SC-11)*, MS-06-63, to ensure compliance with product cleanliness requirements stated in ASTM G93 Level C.

Swagelok XS series valves with other end connections are processed in accordance with Swagelok *Standard Cleaning and Packaging (SC-10)*, MS-06-62; special cleaning and packaging are available as an option.

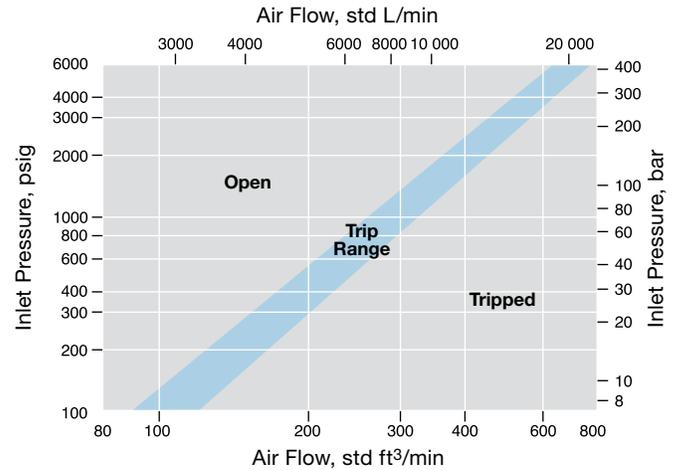
Flow Data at 70°F (20°C)

Springs with lower trip ranges are available. See the Swagelok XS Series Excess Flow Valve technical report, MS-06-11.

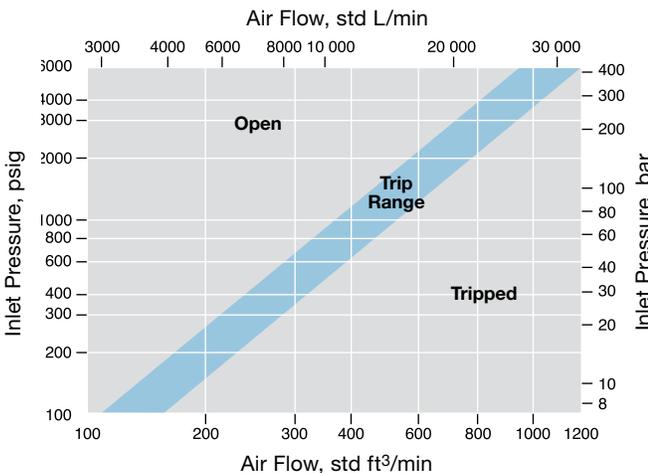
XS4 Series Air



XS6 Series Air



XS8 Series Air



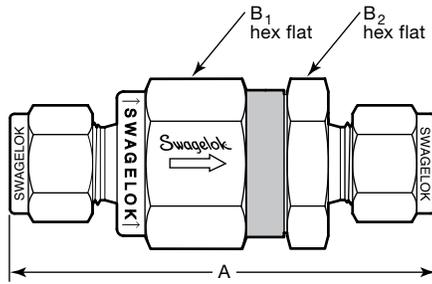
XS4, XS6, XS8 Series Water

| Series | C _v | Trip Range U.S. gal/min (L/min) |
|--------|----------------|------------------------------------|
| XS4 | 0.5 | 3.9 to 5.8 (14.7 to 21.9) |
| XS6 | 1.1 | 8.2 to 10.0 (31.0 to 37.8) |
| XS8 | | 11.2 to 14.9 (42.3 to 56.3) |

Ordering Information and Dimensions

Dimensions are for reference only and are subject to change.

Select an ordering number.



Optional O-Ring Materials

Fluorocarbon FKM O-rings are standard. For an optional O-ring material, add a designator to the ordering number.

| O-ring Material | Designator | Temperature Rating °F (°C) |
|--------------------|------------|----------------------------|
| Buna N | -BU | -40 to 250 (-40 to 121) |
| Ethylene propylene | -EP | -50 to 300 (-45 to 148) |
| Kalrez® | -KZ | -10 to 400 (-23 to 204) |
| Neoprene | -NE | -40 to 250 (-40 to 121) |

Example: SS-XSS4-BU

PEEK Backup Ring

For a PEEK backup ring, add **-PK** to the ordering number.

Example: SS-XSS4-PK

| End Connections | | Pressure Rating at 100°F (37°C) psig (bar) | Ordering Number | Series | Dimensions, in. (mm) | | |
|----------------------------------|---------|---|-----------------|--------|----------------------|----------------|----------------|
| Inlet/Outlet | Size | | | | A | B ₁ | B ₂ |
| Fractional Swagelok tube fitting | 1/4 in. | 6000 (413) | SS-XSS4 | XS4 | 2.43 (61.7) | 11/16 | |
| | 3/8 in. | | SS-XSS6 | XS6 | 2.75 (69.9) | 1 | |
| | 1/2 in. | | SS-XSS8 | XS8 | 2.97 (75.4) | 1 | |
| Metric Swagelok tube fitting | 6 mm | 6000 (413) | SS-XSS6MM | XS4 | 2.43 (61.7) | 11/16 | |
| | 8 mm | | SS-XSS8MM | XS6 | 2.70 (68.6) | 1 | |
| | 10 mm | | SS-XSS10MM | XS6 | 2.80 (71.1) | 1 | |
| | 12 mm | | SS-XSS12MM | XS8 | 2.96 (75.2) | 1 | |
| Female NPT | 1/8 in. | 6000 (413) | SS-XSF2 | XS4 | 1.87 (47.5) | 11/16 | |
| | 1/4 in. | 6000 (413) | SS-XSF4 | XS4 | 2.12 (53.8) | 1 | |
| | 3/8 in. | 5300 (365) | SS-XSF6 | XS6 | 2.55 (64.8) | 1 | |
| | 1/2 in. | 4900 (337) | SS-XSF8 | XS8 | 3.03 (77.0) | 1 1/16 | |
| Male NPT | 1/8 in. | 6000 (413) | SS-XSM2 | XS4 | 1.79 (45.5) | 11/16 | |
| | 1/4 in. | | SS-XSM4 | XS4 | 2.17 (55.1) | 1 | |
| | 3/8 in. | | SS-XSM6 | XS6 | 2.36 (59.9) | 1 | |
| | 1/2 in. | | SS-XSM8 | XS8 | 2.73 (69.3) | 1 | |
| Male NPT/ Swagelok tube fitting | 1/4 in. | 6000 (413) | SS-XSM4S4 | XS4 | 2.30 (58.4) | 11/16 | |
| | 3/8 in. | | SS-XSM6S6 | XS6 | 2.56 (65.0) | 1 | |
| | 1/2 in. | | SS-XSM8S8 | XS8 | 2.85 (72.4) | 1 | |
| Male/female NPT | 1/4 in. | 6000 (413) | SS-XSM4F4 | XS4 | 2.13 (54.1) | 11/16 | |
| | 3/8 in. | 5300 (365) | SS-XSM6F6 | XS6 | 2.46 (62.5) | 1 | |
| | 1/2 in. | 4900 (337) | SS-XSM8F8 | XS8 | 2.89 (73.4) | 1 | 1 1/16 |
| Male ISO ^① | 1/4 in. | 6000 (413) | SS-XSM4RT | XS4 | 2.17 (55.1) | 11/16 | |
| | 1/2 in. | | SS-XSM8RT | XS8 | 2.74 (69.6) | 1 | |
| Female ISO ^① | 1/2 in. | 5100 (351) | SS-XSF8RT | XS8 | 3.29 (83.6) | 1 1/16 | |
| Male SAE/MS | 1/2 in. | 4600 (316) | SS-XSM8ST | XS8 | 2.48 (63.0) | 1 | |
| Female SAE/MS | 1/2 in. | 4600 (316) | SS-XSF8ST | XS8 | 2.74 (69.6) | 1 | |
| Male VCR fitting | 1/4 in. | 6000 (413) | SS-XSVCR4 | XS4 | 2.28 (57.9) | 11/16 | |
| | 1/2 in. | 4300 (296) | SS-XSVCR8 | XS8 | 2.73 (69.3) | 1 | |
| Male VCO fitting | 1/4 in. | 6000 (413) | SS-XSVCO4 | XS4 | 1.98 (50.3) | 11/16 | |
| | 1/2 in. | | SS-XSVCO8 | XS8 | 2.36 (59.9) | 1 | |

Dimensions shown with Swagelok nuts finger-tight.

① See specifications: ISO 7/1, BS EN 10226-1, DIN 2999, JIS B0203.

Special Cleaning and Packaging

Swagelok XS series valves with VCR or VCO end connections are processed in accordance with Swagelok *Special Cleaning and Packaging (SC-11)*, MS-06-63, to ensure compliance with product cleanliness requirements stated in ASTM G93 Level C.

To order special cleaning and packaging for XS series valves with other end connections, add **-SC11** to the valve ordering number.

Example: SS-XSS4-SC11

Safe Product Selection

When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

Caution: Do not mix or interchange parts with those of other manufacturers.

Oxygen Service Hazards

For more information about hazards and risks of oxygen-enriched systems, see the Swagelok *Oxygen System Safety* technical report, MS-06-13.

Warranty Information

Swagelok products are backed by The Swagelok Limited Lifetime Warranty. For a copy, visit swagelok.com or contact your authorized Swagelok representative.

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