

Bellows-Sealed Valves

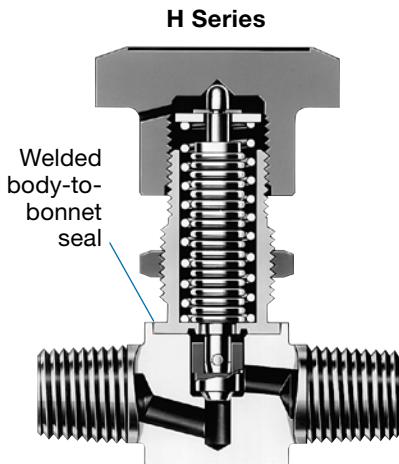


H Series

- Compact size
- Working pressures up to 1000 psig (68.9 bar)
- Temperatures up to 600°F (315°C)

Features

- Flow coefficients (C_v) from 0.11 to 0.28
- Precision-formed metal bellows and nonrotating stem tip for reliable, repetitive shutoff
- Variety of end connections—Swagelok® tube fittings, female and male NPT, integral male and welded female VCR® fittings, tube socket and tube butt weld ends, and tube extensions
- Panel and bottom mounting



316 SS body material

Technical Data

Body-to-Bellows Seal	Valve Body Material	Stem Tip	C_v	Internal Volume ^① in. ³ (cm ³)	Series
Weld	316 SS	Stainless steel	0.11	0.08 (1.3)	2H
			0.20		2H2
			0.28		4H

① Determined using valves with Swagelok tube fitting end connections.

Pressure-Temperature Ratings

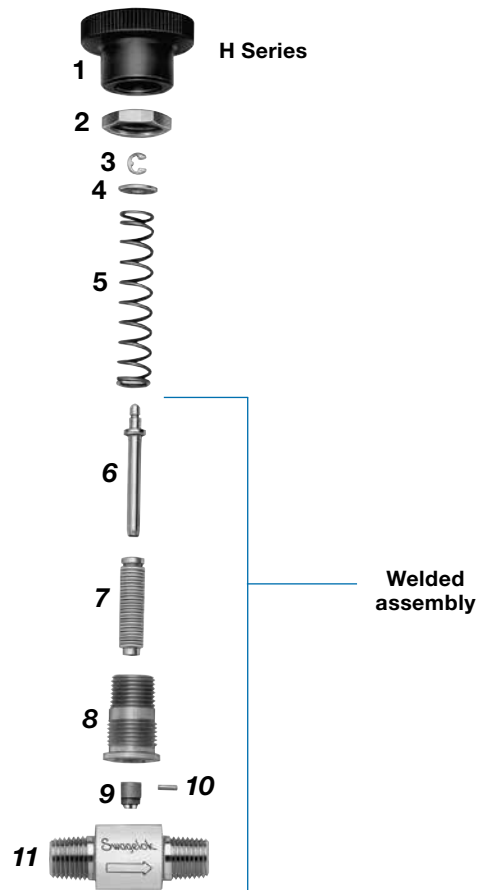
Material	316 SS
Temperature, °F (°C)	Working Pressure, psig (bar)
-80 (-62) to -40 (-40)	1000 (68.9)
-20 (-28) to 100 (37)	1000 (68.9)
200 (93)	1000 (68.9)
300 (148)	1000 (68.9)
400 (204)	1000 (68.9)
500 (260)	1000 (68.9)
600 (315)	1000 (68.9)

Materials of Construction

Component	Material Grade/ASTM Specification
1 Handle	Green-anodized aluminum/B211
2 Panel mount nut	316 SS/A479
3 Retaining ring	S15700
4 Washer	316 SS/A240
5 Spring	S17700/AMS 5678
6 Stem	316 SS/A479
7 Bellows	321 SS/A269
8 Bonnet adapter	316 SS/A479
9 Stem tip	S17400/A564
10 Stem pin	420 SS
11 Body	316 SS/A479
Nonwetted lubricant	Molybdenum disulfide-based paste
Wetted lubricant	—

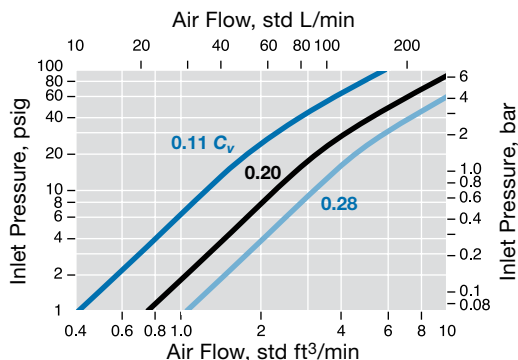
Wetted components listed in *italics*.

- ⚠ To increase service life, ensure proper valve performance, and prevent leakage, apply only as much torque as is required to achieve positive shutoff.
- ⚠ Lubricate threads on bonnet and handle periodically for increased valve life.

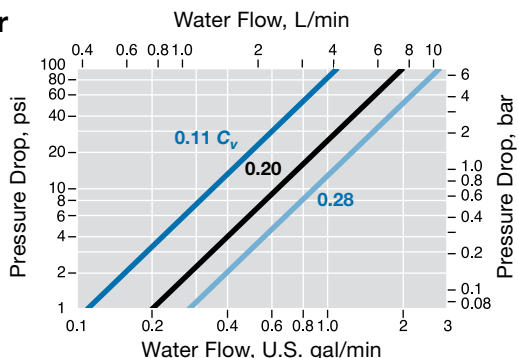


Flow Data at 70°F (20°C)

Air



Water



Testing

Every H series valve is helium leak tested to a maximum leak rate of 4×10^{-9} std cm³/s at the seat, envelope, and all seals.

Cleaning and Packaging

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

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

Oxygen Service Hazards

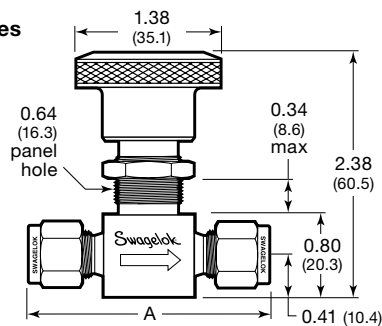
For more information about hazards and risks of oxygen-enriched systems, see the Swagelok *Oxygen System Safety* technical report, MS-06-13.

Ordering Information and Dimensions

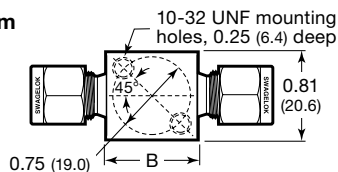
Select an ordering number.

Dimensions, in inches (millimeters), are for reference only and are subject to change.

H Series



Bottom



End Connections		C _v	Ordering Number	Series	Dimensions, in. (mm)			
Type	Size				Orifice		A	B
H series								
Swagelok tube fitting	1/8 in.	0.11	SS-2H	2H	0.148 (3.8)	0.082 (2.1)	2.09 (53.1)	0.88 (22.3)
	1/4 in.	0.28	SS-4H	4H		0.156 (4.0)	2.27 (57.7)	
	6 mm	0.28	SS-6H-MM	4H			1.94 (49.3)	1.04 (26.4)
Female NPT	1/4 in.	0.28	SS-4H4	4H		0.125 (3.2)	1.57 (39.9)	0.81 (20.6)
	1/8 in.	0.20	SS-2H2	2H2			1.94 (49.3)	0.82 (20.8)
Male NPT	1/4 in.	0.28	SS-4H2	4H		0.156 (4.0)	2.12 (53.8)	0.88 (22.3)
	1/4 in.	0.28	SS-4H-VCR	4H			3.68 (93.5)	0.82 (20.8)
Integral male VCR fitting	1/4 in.	0.28	SS-4H-V13	4H		2.57 (65.3)		
Socket welded female VCR fitting	1/4 in.	0.28	SS-4H-V51	4H		1.50 (38.1)		
Butt welded female VCR fitting	1/4 in.	0.28	SS-4H-TW	4H		7.06 (179)		
Tube socket and tube butt weld	1/4 and 3/8 in.	0.28	SS-4H-TH3	4H	7.47 (190)			
	Tube extension, 3 in. (76.3 mm) long	1/4 × 0.049 in.	0.28	SS-4H-TN3	4H			
	3/8 × 0.065 in.	0.28	SS-4H-TN3	4H				

Dimensions shown with Swagelok tube fitting nuts finger-tight.

Options and Accessories

H Series

Cobalt-Based Alloy Stem Tip



- For severe service applications
- Spherical stem tip is welded to stem
- Fluorinated-based lubricant is applied to stem tip

To order, add **S** to the valve ordering number. Example: SS-2H**S**

Special Cleaning and Packaging (SC-11)

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

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

Example: SS-2H-**SC11**

⚠ Warning: Do not mix/interchange Swagelok products or components not governed by industrial design standards, including Swagelok tube fitting end connections, with those of other manufacturers.

Introduction

Since 1947, Swagelok has designed, developed, and manufactured high-quality, general-purpose and specialty fluid system products to meet the evolving needs of global industries. Our focus is on understanding our customers' needs, finding timely solutions, and adding value with our products and services.

We are pleased to provide this global edition of the book-bound *Swagelok Product Catalog*, which compiles more than 100 separate product catalogs, technical bulletins, and reference documents into one convenient, easy-to-use volume. Each product catalog is up to date at the time of printing, with its revision number shown on the last page of the individual catalog. Subsequent revisions will supersede the printed version and will be posted on the Swagelok website and in the Swagelok electronic Desktop Technical Reference (eDTR) tool.

For more information, visit your Swagelok website or contact your authorized Swagelok sales and service representative.

Warranty Information

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

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.

WARNING

Do not mix/interchange Swagelok products or components not governed by industrial design standards, including Swagelok tube fitting end connections, with those of other manufacturers.

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