

# Bellows-Sealed Valves

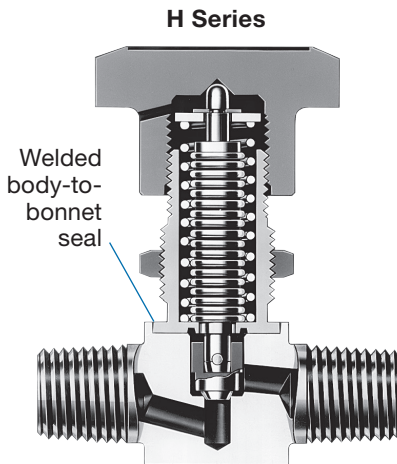


## H Series

- 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 <sup>①</sup> in. <sup>3</sup> (cm <sup>3</sup> )	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

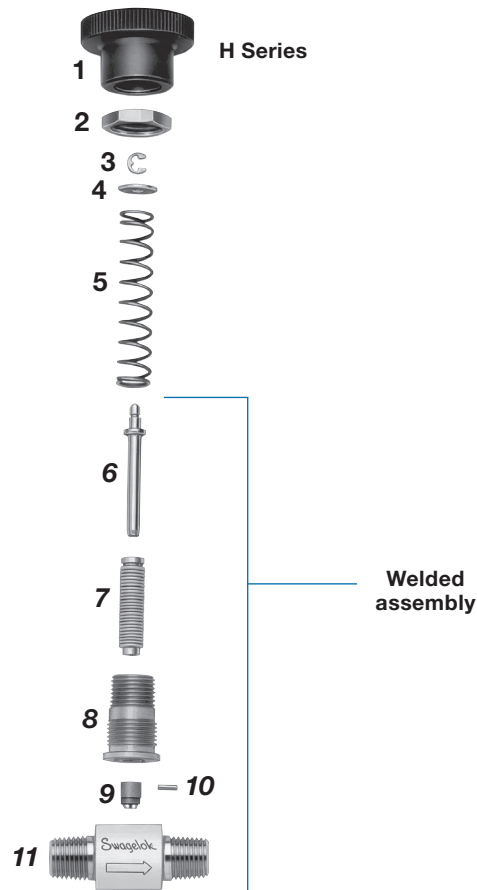
Material	316 SS
Temperature, °F (°C)	Working Pressure, psig (bar)
-80 (-62) to 600 (315)	1000 (68.9)

## 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	—

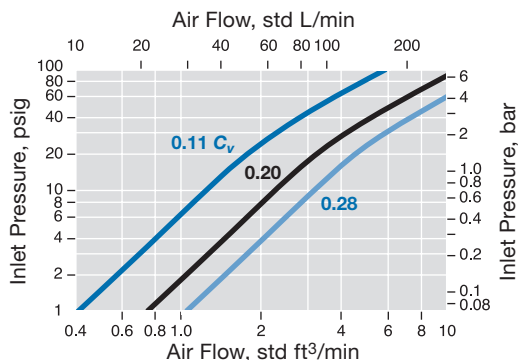
Wetted components listed in *italics*.

- ⚠ 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.

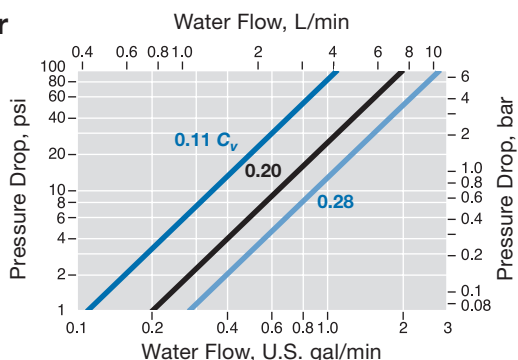


## Flow Data at 70°F (20°C)

### Air



### Water



## Testing

Every H series valve is helium leak tested to a maximum leak rate of  $4 \times 10^{-9}$  std cm<sup>3</sup>/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

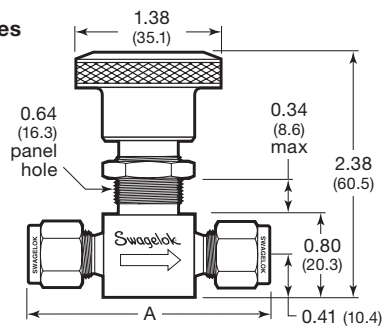
For more information about hazards and risks of oxygen-enriched systems, see the Swagelok *Oxygen System Safety* technical report, [MS-06-13](#).

## Ordering Information and Dimensions

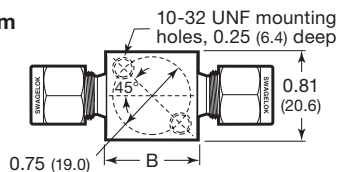
Select an ordering number.

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

### H Series



### Bottom



End Connections		C <sub>v</sub>	Ordering Number	Series	Dimensions, in. (mm)			
Type	Size				Orifice		A	B
					Body	Port		
<b>H series</b>								
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)	7.06 (179)		
	3 in. (76.3 mm) long	0.28	SS-4H-TN3	4H		7.47 (190)		

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-2HS

#### 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**

#### 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.**

#### 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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