

ANDERSON GREENWOOD H1 HAND VALVES

Large bore, 3/8" (9.5 mm) diameter orifice, general purpose soft-seated hand valve for pressures to 6000 psig (414 barg)



FEATURES

- Soft seat replaceable valve operates in dirty service with repetitive bubble-tight shutoff.
- Packing below threads prevents lubricant washout, thread corrosion, process contamination and eliminates galling.
- Dust cover protects stem from lubricant contamination.
- Safety back seating prevents stem blowout or accidental removal and provides a metal-to-metal secondary stem seal while in the fully open position.
- ENC plated 316 SS stem prevents galling or freezing of stem threads. CS valves use a 303 SS stem for 'hard-to-soft' contact, to prevent galling.
- Rolled stem and bonnet threads provide additional strength.
- Mirror stem finish in the packing area provides smooth operation and extends packing life.
- Straight-through flow path means high flow capacity, bi-directional flow and rodding capabilities.
- Metal-to-metal body-to-bonnet seal in constant compression prevents bonnet thread corrosion, eliminates possible tensile breakage and gives a reliable seal point.

GENERAL APPLICATION

A general purpose, soft-seated hand valve designed for safe, repetitive bubble-tight closure, simple maintenance and a long, reliable cycle life which is available to meet NACE requirements.

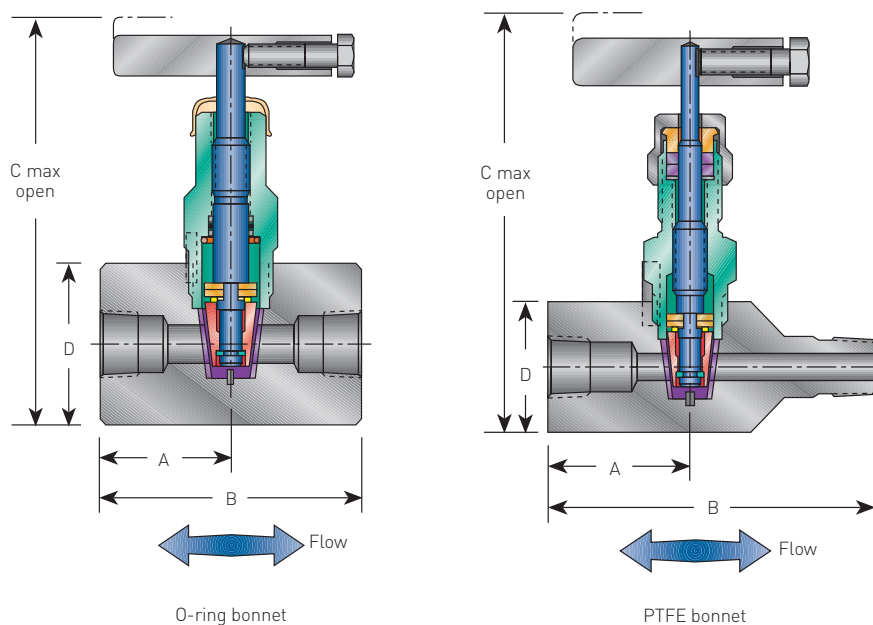
TECHNICAL DATA

Materials:	CS, SS, Hastelloy [®]
Seats:	Soft
Connections:	1/2"; 3/4"; 1" NPT
Pressure (max.):	6000 psig (414 barg)
Temperature (max.):	500°F (260°C)

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H1 Specifications^[2] - 3/8 inch (9.5 mm) diameter orifice

Dimension, inches (mm)



DIMENSIONS

End connection ^[1]	A	B	C O-ring	C PTFE	D	Valve weight lb (kg)
1/2" F x 1/2" F	1.50 (38.1)	3.00 (76.2)	5.76 (146.3)	5.49 (139.4)	1.75 sq (44.5)	3.6 (1.6)
1/2" M x 1" F	1.88 (47.6)	4.38 (111.3)	5.76 (146.3)	5.49 (139.4)	1.75 sq (44.5)	3.6 (1.6)
3/4" F x 3/4" F	2.00 (50.8)	4.00 (101.6)	6.26 (159.0)	6.00 (152.4)	2.25 hex (57.2)	5.4 (2.5)
3/4" M x 3/4" F	2.00 (50.8)	5.00 (127.0)	6.26 (159.0)	6.00 (152.4)	2.25 hex (57.2)	5.4 (2.5)
1" F x 1" F	2.00 (50.8)	4.00 (101.6)	6.26 (159.0)	6.00 (152.4)	2.25 hex (57.2)	5.4 (2.5)
1" M x 1" F	2.00 (50.8)	5.00 (127.0)	6.26 (159.0)	6.00 (152.4)	2.25 hex (57.2)	5.4 (2.5)

NOTES

1. Valve C_v 3.0 maximum.
2. For Hastelloy® and -SG3 call factory for dimensions and weights.

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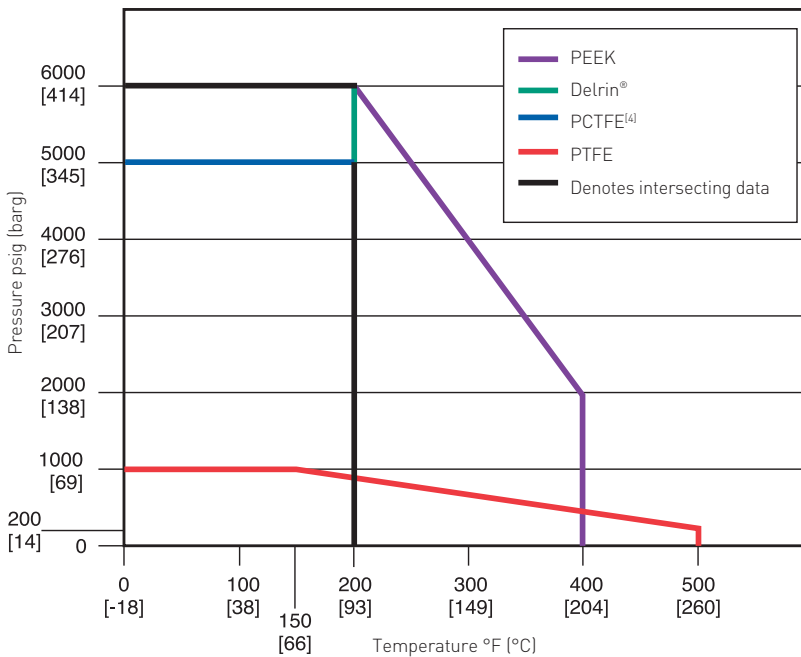
BONNET ASSEMBLIES

H1 series valves feature a soft-seated bonnet assembly which has a rotating stem and non-rotating plug. The stem threads are rolled and lubricated to prevent galling and reduce operating torque. It is available with a PTFE packing, which is adjustable in service or with a FKM O-ring and PTFE back-up ring. All bonnets are assembled with a bonnet locking pin to prevent accidental removal while in service.

STANDARD MATERIALS

Valve	Body and bonnet	Stem	Packing	Seat ^[2]
CS ^[1]	A108 ^[1]	A581-303	PTFE or NBR O-ring with PTFE backup ring	Delrin [®]
SS	A479-316	A276-316	PTFE or FKM O-ring with PTFE backup ring	Delrin [®]
SG ^[3]	A479-316	Monel [®] R405	PTFE or FKM O-ring with PTFE backup ring	Delrin [®]
SG3 ^[5]	Hastelloy [®] C-276	Hastelloy [®] C-276	PTFE or FKM O-ring with PTFE backup ring	Delrin [®]

PRESSURE VS. TEMPERATURE



PRESSURE AND TEMPERATURE RATINGS

Seat	3/8 inch (9.5 mm) orifice
Delrin [®]	6000 psig at 200°F (414 barg at 93°C)
PCTFE ^[4]	5000 psig at 200°F (345 barg at 93°C)
PEEK	6000 psig at 200°F (414 barg at 93°C) 2000 psig at 400°F (138 barg at 204°C)
PTFE	1000 psig at 150°F (69 barg at 66°C)
	200 psig at 500°F (14 barg at 260°C)

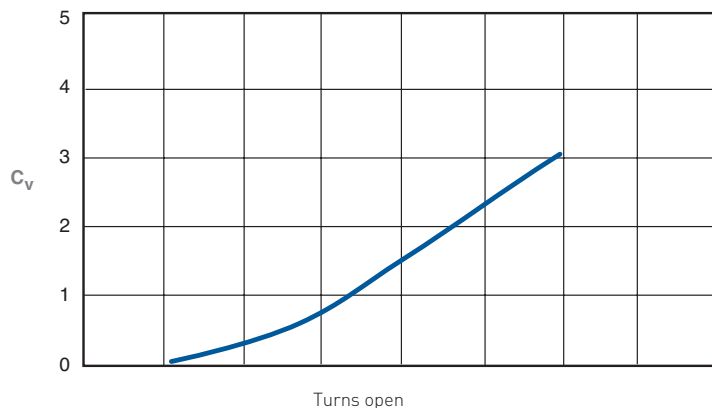
NOTES

- CS is zinc chromate plated to prevent corrosion.
- PCTFE, PEEK, and PTFE are available.
- SG (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions ≤ 50 mg/l [ppm]) and NACE MR0103.
- PCTFE (Polychlorotrifluoroethylene) is the exact equivalent of Kel-F[®].
- SG3 (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions > 50 mg/l [ppm]).
- Minimum temperature for PTFE packed valves: -70°F (-57°C).

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FLOW CHARACTERISTICS



3/8 inch (9.5 mm) orifice, CV 3.0 maximum

LIQUIDS

$$Q_L = C_V \sqrt{\frac{(P_1 - P_2) (62.4)}{\rho}}$$

Where:

- Q_L = Flow (gpm)
- Q_v = Flow (scfm)
- ρ = Density of liquid (lb/ft³)
- P₁ = Upstream pressure (psia)
- P₂ = Downstream pressure (psia)
- T = Flowing temperature (°R) [°R = °F + 460]
- ρ (water) = 62.4 lb/ft³ at 60°F (16°C)
- S.G = Specific gravity of gas (M.W. of air/28.96)
- S.G air = 1000
- S.G nitrogen = 0.967
- S.G oxygen = 1.105
- S.G helium = 0.138
- S.G hydrogen = 0.0696

GASES - where P₂ > .5P₁

$$Q_V = 23.18 C_V \sqrt{\frac{(P_1 - P_2) P_2}{(S.G)T}}$$

GASES - where P₂ < .5P₁

$$Q_V = \frac{(11.59) P_1 C_V}{\sqrt{S.G (T)}}$$

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SELECTION GUIDE - H1 SPECIFICATIONS - 3/8 INCH (9.5 MM) ORIFICE

Example:	H1	V	D	S	-4	B	-SG
Packing							
V	PTFE						
R	FKM O-ring with PTFE backup ring						
Seat							
D	Delrin® (standard)						
K	PCTFE ¹⁾						
E	PEEK						
V	PTFE						
Material							
C	CS						
S	316 SS						
J	Hastelloy®						
Connections (bi-directional)							
4	1/2 inch F x 1/2 inch F						
48	1/2 inch F x 1 inch M						
6Q	3/4 inch F x 3/4 inch F						
66Q	3/4 inch F x 3/4 inch M						
8Q	1 inch F x 1 inch F						
88Q	1 inch F x 1 inch M						
Connection style							
B	Female socket weld						
C	Male socket weld						
Options							
HD	Hydro testing (MSS-SP-61)						
OC00	Oxygen clean (OC)						
OC01	Gaseous oxygen clean (GOC)						
PMI00	PMI body only						
SG	[SG] NACE edition 2003 /MR0103						
SG3	[SG] MR0175/ISO15156-3 latest						
SS	All 316 SS construction						

NOTE

1. PCTFE (Polychlorotrifluoroethylene) is the exact equivalent of Kel-F®.

