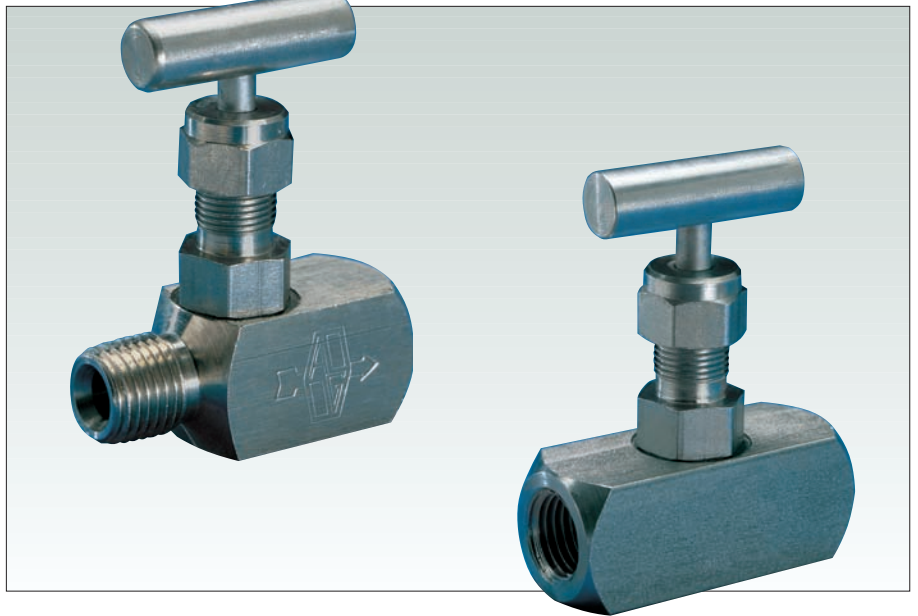


Mini Valves – H5

6000 psig [414 barg]



Product Overview

The H5 Mini Valves facilitate safe, compact, and economical installations. They are excellent for straight isolation.

Valve seating is interchangeable between 'Hard' or 'Soft' without changing the bonnet assembly or removing valve from the installation. This feature of the H5 greatly extends the valve life.

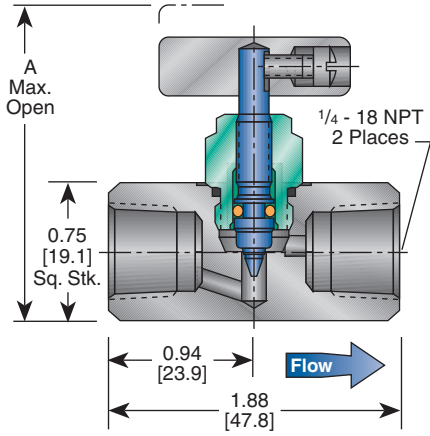
Features and Benefits

- **Packing below threads (O-ring bonnet)** prevents lubricant washout, thread corrosion, and keeps solids from entering thread area, which can cause galling. It also prevents process contamination.
- **Adjustable packing** – Teflon® and GRAFOIL® packed bonnets adjust easily, decreasing packing replacement downtime and increasing valve life.
- **Safety back seating** prevents stem blowout or accidental removal while in operation and provides a metal-to-metal secondary stem seal while in the full open position.
- **Chrome plating of 316 SS stem** prevents galling or freezing of stem threads when similar metals mate. CS valves use a 303 SS stem.
- **Rolled threads** provide additional thread strength. The stem, bonnet, and male NPT threads are rolled, not cut.
- **Mirror stem finish** burnished to a 16 RMS finish in the packing area enables smooth stem operation and extending packing life.
- **One-piece handle design** prevents loss of the valve handle due to vibration or during maintenance.
- **Soft or metal seat for bubble-tight shutoff** is field replaceable for easy maintenance.
- **Extended valve life** – if soft seat becomes damaged it can be removed, leaving a metal seated valve.

H5 Specifications³

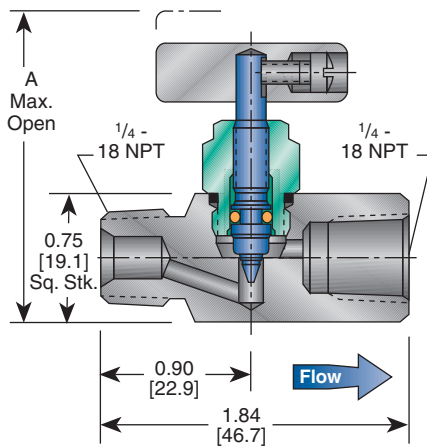
6000 psig [414 barg]

Dimensions, inches [mm]



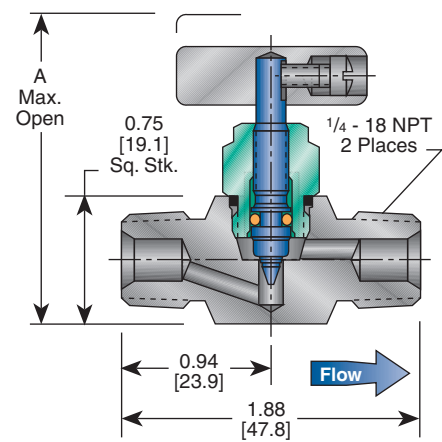
Maximum Open – Dimension A

O-ring	Teflon®	GRAFOIL®
2.00 [50.8]	2.60 [66.0]	3.07 [78.0]



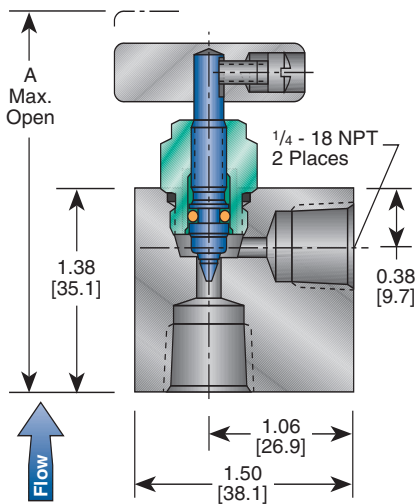
Maximum Open – Dimension A

O-ring	Teflon®	GRAFOIL®
2.00 [50.8]	2.60 [66.0]	3.07 [78.0]



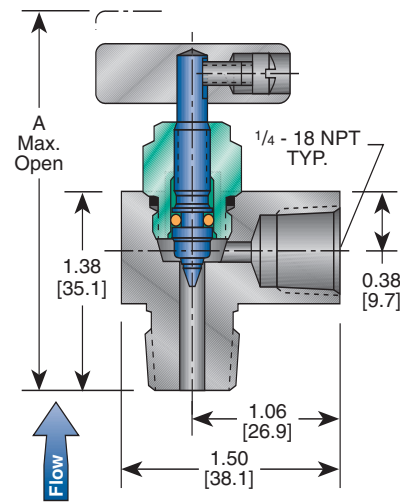
Maximum Open – Dimension A

O-ring	Teflon®	GRAFOIL®
2.00 [50.8]	2.60 [66.0]	3.07 [78.0]



Maximum Open – Dimension A

O-ring	Teflon®	GRAFOIL®
2.64 [67.1]	3.23 [82.0]	3.71 [94.2]



Maximum Open – Dimension A

O-ring	Teflon®	GRAFOIL®
2.66 [67.6]	3.26 [82.8]	3.73 [94.7]

Notes

1. Approximate valve weight: 0.5 lb [23 kg].
Seat orifice size 0.136-inch [3.5 mm] diameter.
2. Valve C_v Soft Seat 0.27 maximum.
Valve C_v Hard Seat 0.31 maximum.
3. For Hastelloy® and -SG3 call factory for dimensions and weights.

H5 Specifications

6000 psig [414 barg]

Standard Materials – Hard Seat

Valve	Body	Bonnet	Stem	Packing	Seat	Handle ²
CS ¹	A108	A108	A581-303	Teflon® or BUNA-N O-ring	Integral	Round
SS	A479-316	A479-316	A276-316	Teflon®, Viton® or GRAFOIL® O-ring	Integral	Tee
Brass	B16	B16	A581-303	Teflon® or BUNA-N O-ring	Integral	Round
SG ³	A479-316	A479-316	Monel® R405	Teflon® or Viton® O-ring	Integral	Tee
SG ³⁶	Hastelloy® C-276	Hastelloy® C-276	Hastelloy® C-276	Teflon® or Viton® O-ring	Integral	Tee

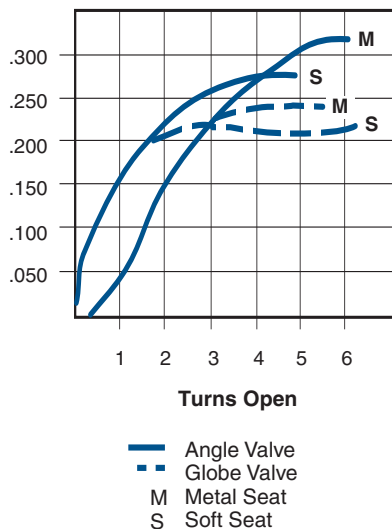
Standard Materials – Soft Seat

Valve	Body	Bonnet	Stem	Packing	Flow Washer	Seat	Handle ²
CS ¹	A108	A108	A581-303	Teflon® or BUNA-N O-ring	A479-316	Delrin® ⁴	Round
SS	A479-316	A479-316	A276-316	Teflon® or Viton® O-ring	A479-316	PCTFE ⁵	Tee
Brass	B16	B16	A581-303	Teflon® or BUNA-N O-ring	A479-316	Delrin® ⁴	Round
SG ³	A479-316	A479-316	Monel® R405	Teflon® or Viton® O-ring	A479-316	PCTFE ⁵	Tee
SG ³⁶	Hastelloy® C-276	Hastelloy® C-276	Hastelloy® C-276	Teflon® or Viton® O-ring	Hastelloy® C-276	PCTFE ⁵	Tee

Notes

- CS is zinc cobalt plated to prevent corrosion.
- Tee handle is SS; Round handle is CS.
- SG (Sour Gas) meets the requirements of NACE MR0175/ISO 15156-3 Corrigendum 2 (for Chloride conditions ≤ 50 mg/l [ppm]) and NACE MR0103-2005.
- PEEK available.
- PCTFE (Polychlorotrifluoroethylene) is the exact equivalent of Kel-F®.
- SG3 (Sour Gas) meets the requirements of NACE MR0175/ISO 15156-3 Corrigendum 2 (for Chloride conditions > 50 mg/l [ppm]).

H5 Metal and Soft Seated Flow Characteristics



Formula

Liquids

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

Where:

Q_L = Flow (gpm)

ρ = Density of Liquid (lb/ft³)

P_1 = Upstream Pressure (psia)

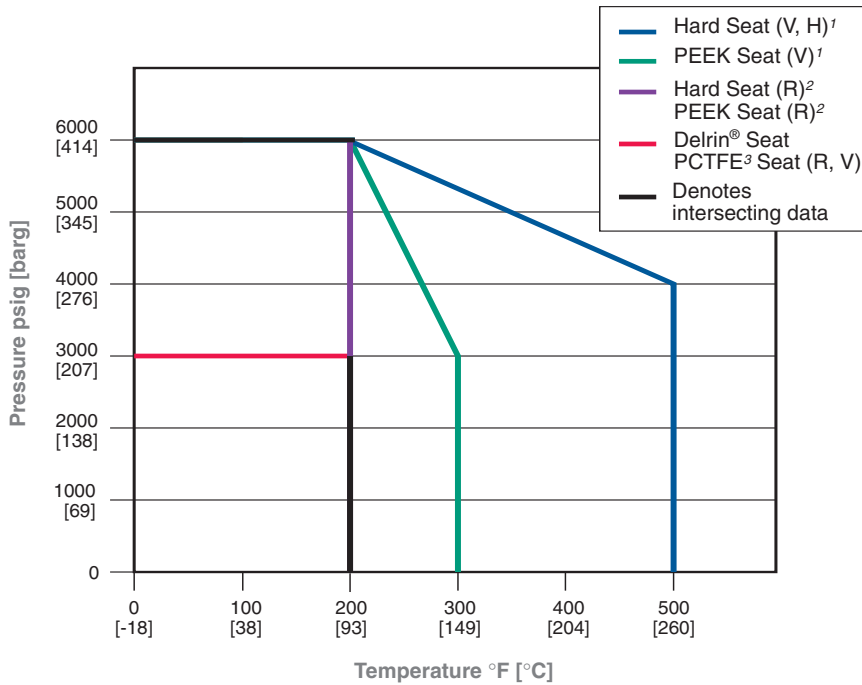
P_2 = Downstream Pressure (psia)

ρ (water) = 62.4 lb/ft³ @ 60°F [16°C]

H5 Specifications

6000 psig [414 barg]

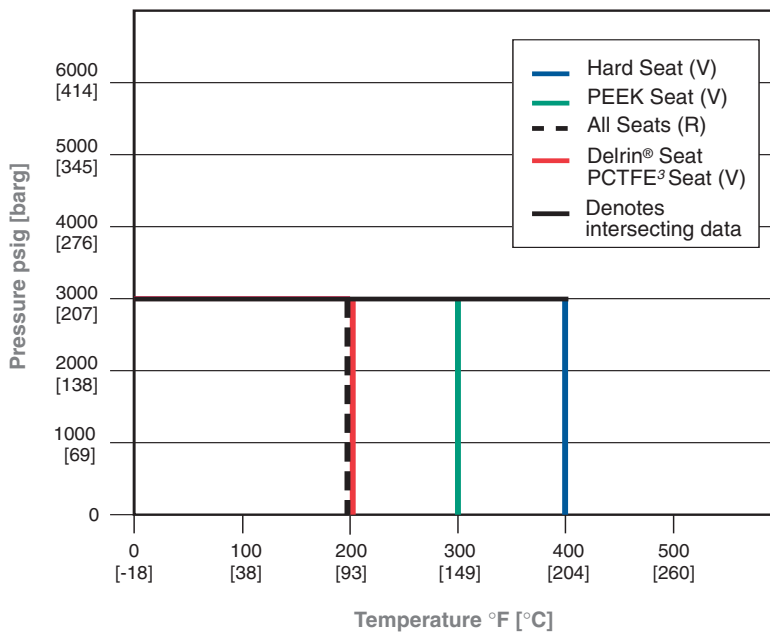
Pressure vs. Temperature – CS and SS Valves



Notes

1. (V or H) = with Teflon® or GRAFOIL® bonnet assemblies.
2. (R) = with O-ring bonnet assembly.
3. PCTFE (Polychlorotrifluoroethylene) is the exact equivalent of Kel-F®.

Pressure vs. Temperature – Brass Valves



H5 Specifications

6000 psig [414 barg]

Pressure and Temperature Ratings¹

Seat	Teflon® or GRAFOIL® Bonnet ²			
	CS and SS Valves		Brass Valves	
Hard	6000 psig @ 200°F 4000 psig @ 500°F	[414 barg @ 93°C] [276 barg @ 260°C]	3000 psig @ 400°F	[207 barg @ 204°C]
Delrin® and PCTFE ³	3000 psig @ 200°F	[207 barg @ 93°C]	3000 psig @ 200°F	[207 barg @ 93°C]
PEEK	6000 psig @ 200°F 3000 psig @ 300°F	[414 barg @ 93°C] [207 barg @ 149°C]	3000 psig @ 300°F	[207 barg @ 149°C]

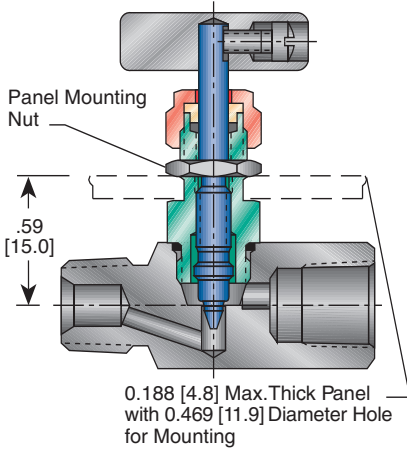
Seat	O-ring Bonnet			
	CS and SS Valves		Brass Valves	
Hard	6000 psig @ 200°F	[414 barg @ 93°C]	3000 psig @ 200°F	[207 barg @ 93°C]
Delrin® and PCTFE ³	3000 psig @ 200°F	[207 barg @ 93°C]	3000 psig @ 200°F	[207 barg @ 93°C]
PEEK	6000 psig @ 200°F	[414 barg @ 93°C]	3000 psig @ 200°F	[207 barg @ 93°C]

Notes

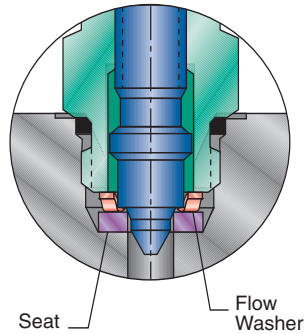
1. Pressure and temperature ratings are not shown on valve body.
2. GRAFOIL® packed bonnet comes complete with ball end stem; SS only.
3. PCTFE (Polychlorotrifluoroethylene) is the exact equivalent of Kel-F®.

H5 Options³

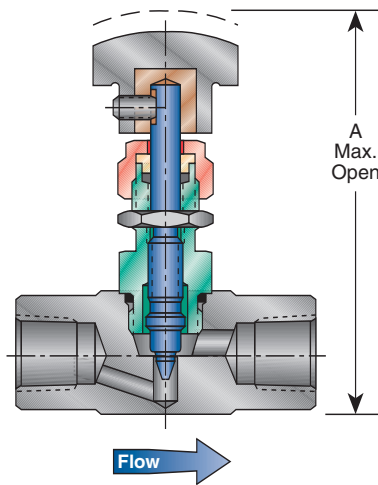
Optional Panel Mounting Nut¹, inches [mm]



Optional Soft Seat²



Optional Phenolic Handles²



Phenolic Handles are available in 1-inch [25 mm] diameter. Colors available are green, red, and black.

Phenolic Handles facilitate repeatable flow control, as well as enhance the appearance of panels, sample cylinders, and other associated products requiring premium performance throttling and/or isolation valves.

Maximum open dimension of any H5 with Phenolic Handles is calculated by adding 0.4-inch [10.2 mm] to the 'A' reference dimension for Teflon® Stem Seal on page 36.

Notes

1. Available with Teflon® packed bonnet.
2. Available on all H5 products.
3. For Hastelloy® and -SG3 call factory for dimensions and weights.

H5 Specifications

Ordering Information

	H5	V	D	S	- 22	- SG
Packing						
		V – Teflon® (standard for SS) R – O-ring H – GRAFOIL® (SS only) 500°F [260°C] max				
Seat						
		I – Integral D – Delrin® E – PEEK K – PCTFE ¹ (standard for SS)				
Material						
		B – Brass C – CS S – SS J – Hastelloy				
Connections (Inlet/Outlet)						
		2 – 1/4-inch F x 1/4-inch F 2A – 1/4-inch F x 1/4-inch F (Angle) 2M – 1/4-inch M x 1/4-inch M 22 – 1/4-inch M x 1/4-inch F 22A – 1/4-inch M x 1/4-inch F (Angle)				
Options						
		CLC – Chlorine Cleaning AL – Arctic Lubricant (low temperature service -70°F) - not available for CS valves HD – Hydrostatic Testing (100%) (MSS-SP-61) MS – Monel® Stem OC – Oxygen Cleaning PHB – Phenolic Black Handle (page 40) PHG – Phenolic Green Handle (page 40) PHR – Phenolic Red Handle (page 40) PM – Panel Mount (Teflon® packed only) (page 40) SG – (Sour Gas) meets the requirements of NACE MR0175/ISO 15156-3 Corrigendum 2 (for Chloride conditions ≤ 50 mg/l [ppm]) and NACE MR0103-2005 SG3 – (Sour Gas) meets the requirements of NACE MR0175/ISO 15156-3 Corrigendum 2 (for Chloride conditions > 50 mg/l [ppm]) SP – Special Requirement - please specify				

Note

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