

SCREWED BONNET NEEDLE VALVES



SCREWED BONNET NEEDLE VALVES

Design Features

- Hard [Vee] or Delrin® Soft Seat/Tip
- Straight or angle flow patterns
- Optional panel mount
- Handle options available
- Non-wetted stem threads
- Valves are 100% Helium leak tested to 1×10^{-6} ml/s ensuring performance and reliability.

Material	Maximum Pressure Rating, psig		
	316 Stainless	Carbon Steel	Brass
O-Ring Stem Seal, Hard Seat, 1/2" and Smaller	10,000	10,000	6,000
O-Ring Stem Seal, Hard Seat, 3/4" to 1-1/2" NPT	8,000	8,000	
Delrin Soft Seat / Tip	6,000	6,000	
Graphite Packing, Hard Seat			
PTFE Packing, Hard Seat			

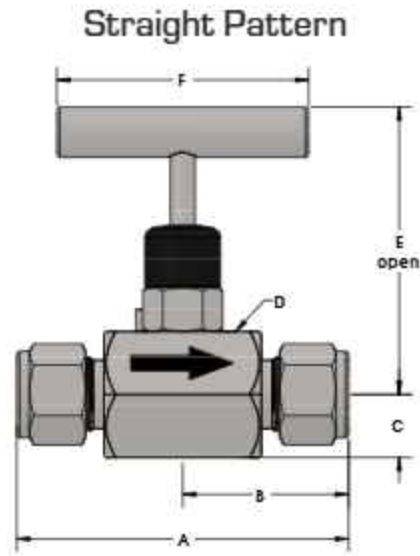
Materials of Construction

#	Component	316 SS	Brass	Steel
1a	Mini "T" Handle	316 SS	N/A	Steel
1b	"T" Handle	316 SS	N/A	Steel
1c	Round Knurled Handle	316 SS	Brass	Steel
1d	1-3/8" Plastic Handle	Phenolic		
1e	1-3/4" Plastic Handle	Phenolic		
2	Set Screw	316 SS	Steel	
3	Dust Cap*	Vinyl		
4	Valve Bonnet	316 SS	Brass	Steel
5	Valve Stem	Chrome-plated 316 SS	316 SS	
6	Bonnet Lock Pin*	316 SS	N/A	Steel
7	Stem Back-up Ring	PTFE		
8	Stem O-ring	Fluorocarbon FKM		
9	Valve Body	316 SS	Brass	Steel

* Not applicable to all configurations



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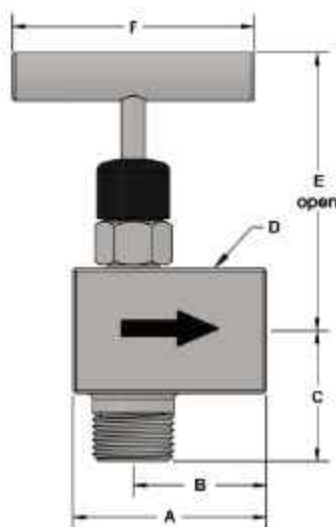


End Connections			Dimensions						Hard Seat		Soft Seat/Tip	
Inlet/ Outlet	Size	Part Number	Orifice	A	B	C	D	E	F*	Cv	F*	Cv
CBC-Lok® Tube Fittings	1/4	4-6DD-4	0.172	2.46	1.23	0.33	3/4" SQ	2.17	1-13/16	0.37	1-3/8	0.37
	3/8	6-6DD-6		3.08	1.54	0.37		2.13				
	1/2	8-6DD-8	0.187	3.30	1.65	0.63	1-1/4" HEX	3.16	2-1/2	0.44	2-1/2	0.44
CS-Lok® Tube Fittings	1/4	4-6SS-4	0.172	2.46	1.23	0.33	3/4" SQ	2.17	1-13/16	0.37	1-3/8	0.37
	3/8	6-6SS-6		3.08	1.54	0.37		2.13				
	1/2	8-6SS-8	0.187	3.30	1.65	0.63	1-1/4" HEX	3.16	2-1/2	0.44	2-1/2	0.44
Female NPT	1/8	2-6FF-2	0.172	1.81	0.91	0.38	3/4" SQ	2.09	1-13/16	0.42	1-3/8	0.42
	1/4	4-6FF-4										
	3/8	6-6FF-6	0.187	2.50	1.25	0.63	1-1/4" HEX	3.16	2-1/2	0.44	2-1/2	0.76
	1/2	8-6FF-8										
	3/4	12-6FF-12	0.438	4.25	2.13	1.25	2-1/4" HEX	4.25	4-1/4	2.70	4-1/4	4.00
	1	16-6FF-16										
	1-1/4	20-6FF-20										
	1-1/2	24-6FF-24										
Male NPT	1/8	2-6MM-2	0.172	1.81	0.91	0.38	3/4" SQ	2.09	1-13/16	0.42	1-3/8	0.42
	1/4	4-6MM-4										
	1/8	2-6MF-2	0.172	1.81	0.91	0.38	3/4" SQ	2.09	1-13/16	0.42	1-3/8	0.42
	1/4	4-6MF-4										
Male/Female NPT	1/2	8-6MF-8	0.44	3.50	1.25	0.63	1-1/4" HEX	3.16	2-1/2	0.44	2-1/2	0.76
	3/4	12-6MF-12	0.438	5.25	2.13	1.25	2-1/4" HEX	5.25	4-1/4	2.70	4-1/4	4.00
	1	16-6MF-16										
	1-1/4	20-6MF-20										
	1-1/2	24-6MF-24										

* Brass Default is 1" Round Knurled Nut

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Angle Pattern

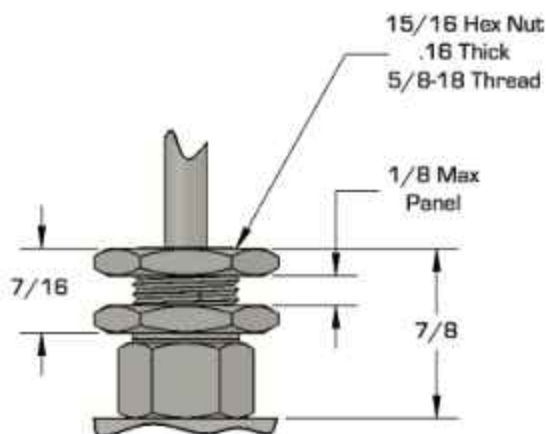


End Connections			Dimensions						Hard Seat	
Inlet/ Outlet	Size	Part Number	Orifice	A	B	C	D	E	F*	Cv
Female NPT	1/8	2-6FF-2-A	0.172	1.25	0.88	0.88	3/4	2.09	1-13/16	0.42
	1/4	4-6FF-4-A		1.50	1.13	1.13	3/4			
	1/2	8-6FF-8-A	0.187	2.00	1.38	1.38	1-1/4	3.66	2-1/2	0.44
Male NPT	1/8	2-6MM-2-A	0.172	1.25	0.88	0.72	3/4	2.09	1-13/16	0.42
	1/4	4-6MM-4-A		1.50	1.13	0.88	3/4			
Male/Female NPT	1/8	2-6MF-2-A		1.25	0.88	0.72	3/4		1-13/16	0.42
	1/4	4-6MF-4-A		1.75	1.13	0.88	3/4			
	1/2	8-6MF-8-A	0.187	2.00	1.38	1.38	1-1/4	3.66	2-1/2	0.44

* Brass Default is 1" Round Knurled Nut

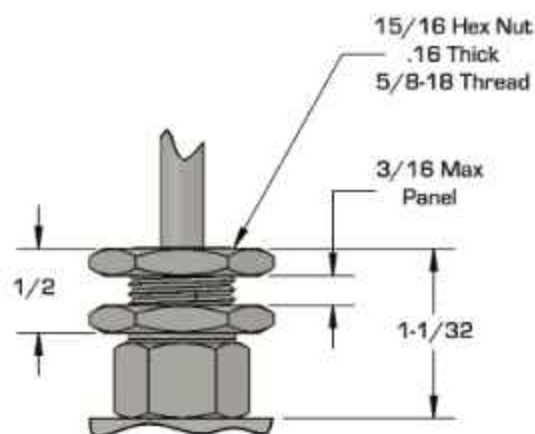
SCREWED BONNET NEEDLE VALVES

Panel Mount Details



Dimensions for:

- Square Bar Stock
- 1/4" and Smaller Angle Valves



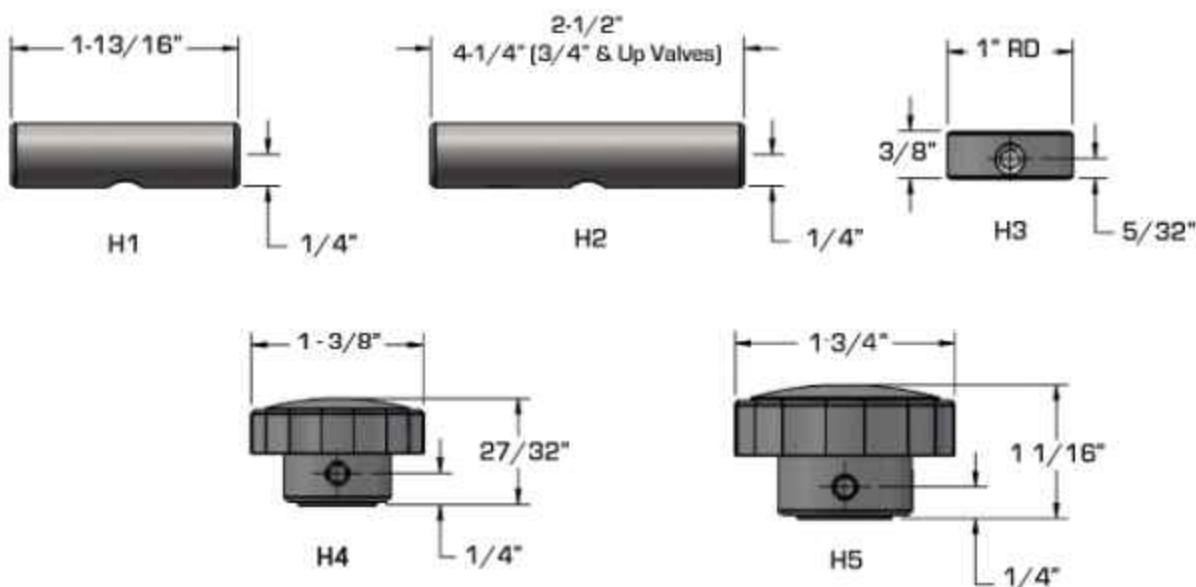
Dimensions for:

- Hex Bar Stock
- 1/2" Angle Valves

Handle Options

1 - 13/16" (Hard Seat)

1 - 3/8" (Delrin® Soft Seat/Tip)

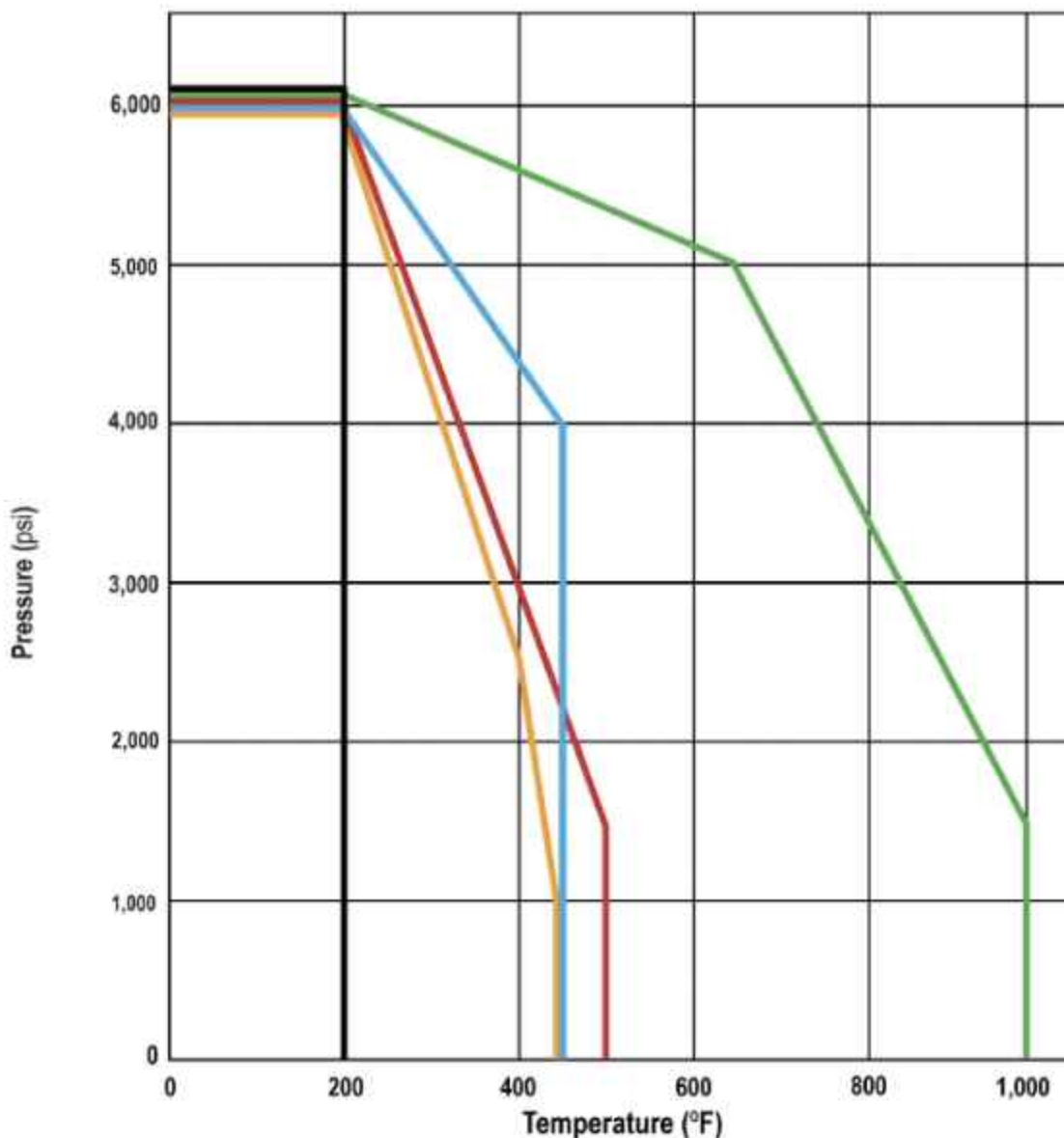


Standard Handles	316 SS	Brass	Steel
Square Bar Stock and 1/4" Small Angle Valves	H1	H3	H1
Hex Bar Stock and 1/2" Angle Valves	H2	N/A	H2

The handle material will always match the valve body, unless otherwise specified.

SCREWED BONNET NEEDLE VALVES

Screwed Bonnet Needle Valve with Packing Option
Pressure vs Temperature

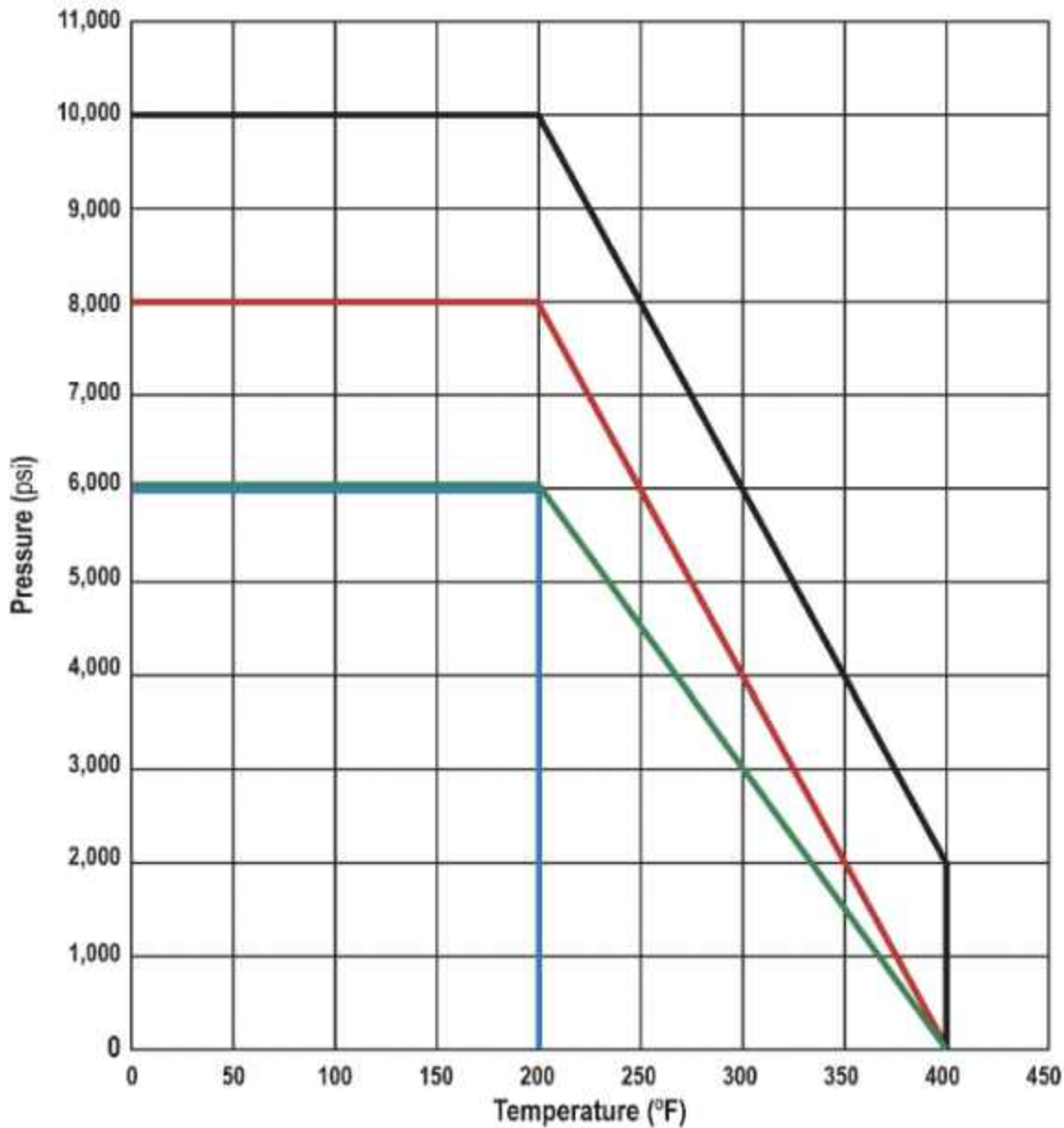


- Brass, Steel, or Stainless Steel Body; PTFE Packing; Delrin® Soft Seat / Tip; All Ends
- Brass Body; Graphite or PTFE Packing; Hard Seat; 3/8\" and Smaller Female and Male NPT Ends
- Steel Body; Graphite Packing; Hard Seat; All Ends
- Steel or Stainless Steel Body; PTFE Packing; Hard Seat; All Ends
- Stainless Steel Body; Graphite Packing, Hard Seat; All Ends

*For tubing and pipe working pressures, CBC-Lok® / CS-Lok® Section

SCREWED BONNET NEEDLE VALVES

Screwed Bonnet Needle Valves with O-Ring Stem Seals
Pressure vs Temperature



- Brass, Steel, or Stainless Steel Body; PTFE Packing; Delrin® Soft Seat / Tip; All Ends
- Brass Body; Hard Seat; 3/8" and Smaller Tube Ends or 1/4" and Smaller Female and Male NPT Ends
- Steel or Stainless Steel Body; Hard Seat; 1/2" and Smaller Ends
- Steel or Stainless Steel Body; Hard Seat; 3/4" to 1-1/2" Female and Male NPT Ends

* For tubing and pipe working pressures, CBC-Lok® / CS-Lok® Section

SCREWED BONNET NEEDLE VALVES

Screwed Bonnet Needle Valves are ordered as listed in this catalog by inserting the material code before the part number.

Special configurations available upon request.

Example: A Stainless Steel Needle Valve with 1/2" CBC-Lok® Tube Fitting inlet to 1/2" CBC-Lok® Tube Fitting outlet with 2 nut panel mount option, Graphite Packing and 1-3/4" phenolic handle is designed as follows:

SS	-	8	-	6		DD	-	8	-	P2	-	G	-	H5
↓		↓		↓		↓		↓		↓		↓		↓
Material		Inlet Size		Style		Inlet/Outlet		Outlet Size		Options		Seal Optional		Handle Optional
Chart 1		Chart 2		Chart 3		Chart 4		Chart 2		Chart 5		Chart 6		Chart 7

Chart 1- Material	
SS	Stainless Steel
S	Steel*
B	Brass**

* Zinc-Nickel plated

** Available for 1/4" ends and smaller

Chart 2- Valve Series	
Designator	Valve Size
2	1/8"
4	1/4"
6	3/8"
8	1/2"
12	3/4"
16	1"
20	1-1/4"
24	1-1/2"

Chart 3- Style	
6	Needle Valve

Chart 4- Inlet/Outlet Port		
Designator	Inlet	Outlet
DD	CBC-Lok® Tube Fitting	CBC-Lok® Tube Fitting
SS	CS-Lok® Tube Fitting	CS-Lok® Tube Fitting
FF	Female NPT	Female NPT
MF	Male NPT	Female NPT
MM	Male NPT	Male NPT

Chart 5- Options	
A	Angle Pattern
L	Delrin® Soft Stem/Seat
P1	Panel Mount (1 Nut)
P2	Panel Mount (2 Nut)

Chart 6- Stem Seal/Packing Options	
EM1	EPDM 80 O-Ring
KZ1	FFKM (Kalrez® or Equivalent)
G	Graphite Packing
T	PTFE Packing

Chart 7- Handle Options	
H1	Mini "T" Handle
H2	2-1/2" "T" Handle
H3	Round Knurled Handle
H4	1-3/8" Phenolic Handle
H5	1-3/4" Phenolic Handle
H9	2-3/8" Phenolic Handle

Special configuration options are shown as general guidelines, not all options are available with every configuration. Consult factory for details.