

Screwed Bonnet Needle Valves



Needle Valves

Design & Features

- Hard (Vee) or Delrin® Soft Seat/Tip
- Orifice sizes from 0.172 to 0.438 in.
- Flow Coefficients (Cv) from 0.37 to 2.70
- Straight or angle flow patterns
- Optional panel mount
- Handle options available
- Non-wetted stem threads

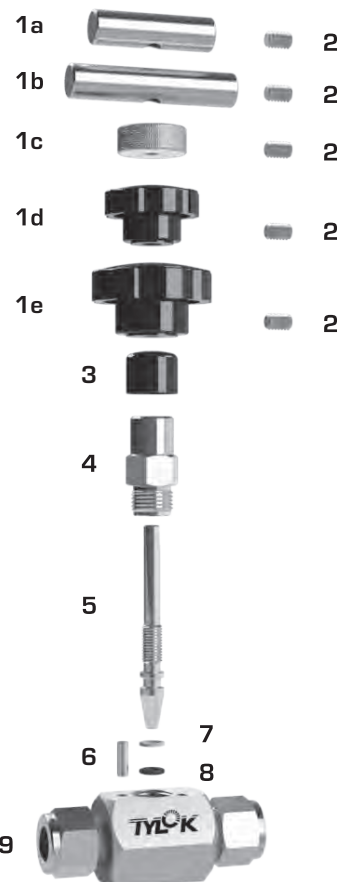
Specifications	316 Stainless		Brass		*Steel	
	Hard Seat	Soft Seat	Hard Seat	Soft Seat	Hard Seat	Soft Seat
Pressure Rating ¹ psig [bar]	10,000 (689)	6,000 (413)	6,000 (413)	3,000 (206)	10,000 (689)	6,000 (413)
Temperature Rating ² °F [°C]	-10 to 200 (-23 to 93)		-10 to 200 (-23 to 93)		-10 to 200 (-23 to 93)	

* Steel valves are Zinc, Nickel plated for corrosion resistance

- For pressure ratings of valves with the tube fitting end connections, see CBC-Lok® or CS-Lok® catalogs
- Temperature ratings based on working temperatures of standard stem seals
See o-ring/packing options for temperature ratings of optional stem seals and soft seat valve
- Valves with PTFE packings have a max pressure rating of 6000 psi.

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 ¹	Vinyl		
4	Valve Bonnet	316 SS	Brass	Steel
5	Valve Stem	Chrome-plated 316 SS	316 SS	
6	Bonnet Lock Pin ¹	316 SS	N/A	Steel
7	Stem Back-up Ring	PTFE		
8	Stem O-ring	Fluorocarbon FKM		
9	Valve Body	316 SS	Brass	Steel



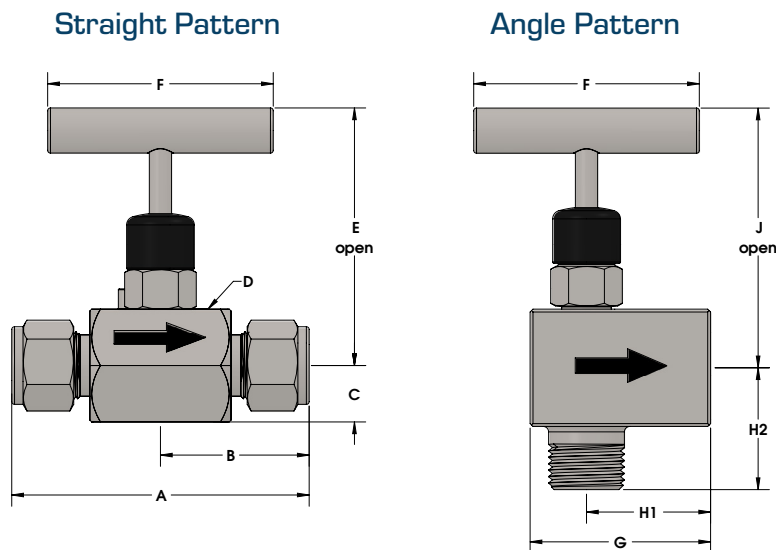
Testing

Tylok Screwed Needle Valves are 100% Helium leak tested to 1x10⁻⁴ ml/s ensuring performance and reliability

Screwed Bonnet Needle Valves

CBC-Lok® double ferrule tube ends are completely interchangeable with Swagelok® and Parker A-Lok® tube ends.

CS-Lok® single ferrule tube ends are completely interchangeable with Parker CPI® tube ends.

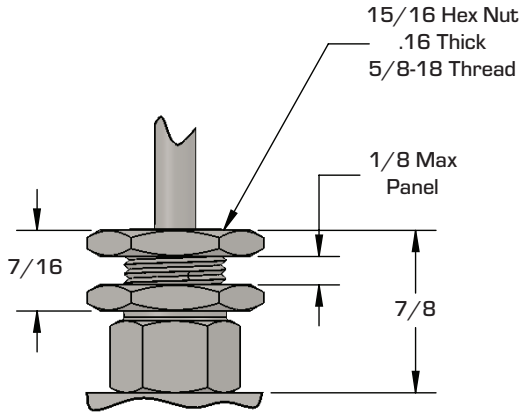


End Connections		Basic Part Number	Orifice in (mm)	Cv Hard Seat (Soft Seat/Tip)	Dimensions in. (mm)									
Inlet/Outlet	Size in.				A	B	C	D	E	*F	G	H1	H2	J
CBC-Lok® Tube Fittings	1/4	4-6DD-4	0.172 [4.4]	0.37 [0.37]	2.46 [62.5]	1.23 [31.2]	0.33 [8.4]	3/4" SQ	2.17 [55.1]	1.81 [46]	-	-	-	-
	3/8	6-6DD-6			3.08 [78.2]	1.54 [39.1]	0.37 [9.4]		2.13 [54.1]		-	-	-	-
	1/2	8-6DD-8	0.187 [4.8]	0.44	3.30 [83.8]	1.65 [41.9]	0.63 [16]	1-1/4" HEX	3.16 [80.3]	2.50 [63.5]	-	-	-	-
CS-Lok® Tube Fittings	1/4	4-6SS-4	0.172 [4.8]	0.37 [0.37]	2.46 [62.5]	1.23 [31.2]	0.33 [8.4]	3/4" SQ	2.17 [55.1]	1.81 [46]	-	-	-	-
	3/8	6-6SS-6			3.08 [78.2]	1.54 [39.1]	0.37 [9.4]		2.13 [54.1]		-	-	-	-
	1/2	6-8SS-6	0.187 [4.8]	0.44	3.30 [83.8]	1.65 [41.9]	0.63 [16]	1-1/4" HEX	3.16 [80.3]	2.50 [63.5]	-	-	-	-
Female NPT	1/8	2-6FF-2	0.172 [4.4]	0.42 [0.42]	1.81 [46]	0.91 [23]	0.38 [9.7]	3/4" SQ	2.09 [53.1]	1.81 [46]	1.25 [31.8]	0.88 [22.4]	0.88 [22.4]	2.09 [53.1]
	1/4	4-6FF-4									1.50 [38.1]	1.13 [28.7]	1.13 [28.7]	
	3/8	6-6FF-6	0.187 [4.8]	0.44 [0.76]	2.50 [63.5]	1.25 [31.7]	0.63 [16]	1-1/4" HEX	3.16 [80.3]	2.50 [63.5]	-	-	-	-
	1/2	8-6FF-8									2.00 [50.8]	1.38 [35.1]	1.38 [35.1]	3.66 [93]
	3/4	12-6FF-12	0.438 [11.1]	2.70	4.25 [108]	2.13 [54]	1.25 [31.8]	2-1/4" HEX	4.25 [108]	4.25 [108]	-	-	-	-
	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 [4.4]	0.42 [0.42]	1.81 [46]	0.91 [23]	0.38 [9.7]	3/4" SQ	2.09 [53.1]	1.81 [46]	1.25 [31.8]	0.88 [22.4]	0.72 [18.3]	2.09 [53.1]
	1/4	4-6MM-4									1.50 [38.1]	1.13 [28.7]	0.88 [22.4]	
Male/Female NPT	1/8	2-6MF-2	0.172 [4.4]	0.42 [0.42]	1.81 [46]	0.91 [23]	0.38 [9.7]	3/4" SQ	2.09 [53.1]	1.81 [46]	1.25 [31.8]	0.88 [22.4]	0.72 [18.3]	2.09 [53.1]
	1/4	4-6MF-4									1.75 [50.8]	1.13 [28.7]	0.88 [22.4]	
	1/2	8-6MF-8	0.44 [0.76]	0.44 [0.76]	3.50 [88.9]	1.25 [31.8]	0.63 [16]	1-1/4" HEX	3.16 [80.3]	2.50 [63.5]	2.00 [50.8]	1.38 [35.1]	1.38 [35.1]	3.66 [93]
	3/4	12-6MF-12	0.438 [11.1]	2.70	5.25 [133.4]	2.13 [54]	1.25 [31.8]	2-1/4" HEX	4.25 [108]	4.25 [108]	-	-	-	-
	1	16-6MF-16									-	-	-	-
	1-1/4	20-6MF-20									-	-	-	-
1-1/2	24-6MF-24	-									-	-	-	

* Soft stem tips use a smaller length handle.

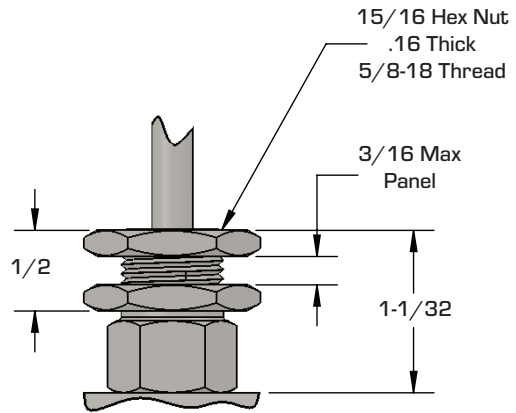
* Special configuration options are shown as general guidelines, not all options are available with every configuration.

Panel Mount Details



Dimensions for:

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

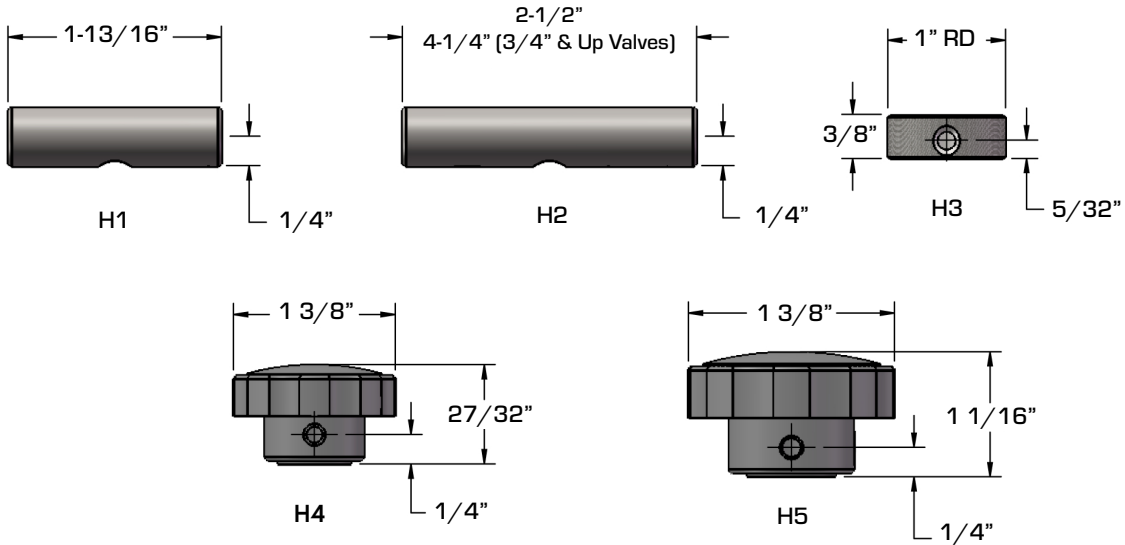


Dimensions for:

- Hex Bar Stock
- 1/2" Angle Valves

Needle Valves

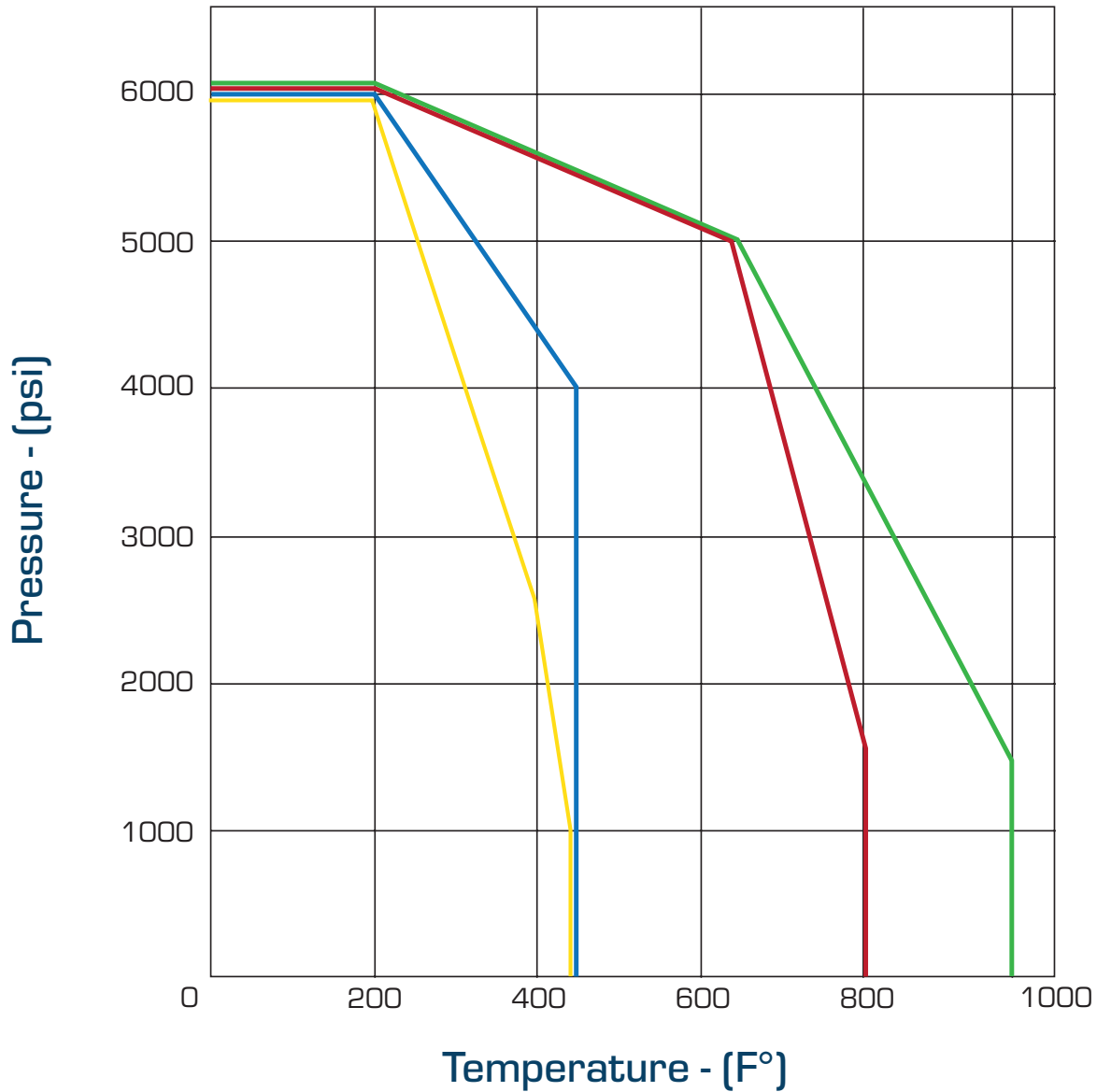
Handle Options



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.

Pressure vs. Temperature

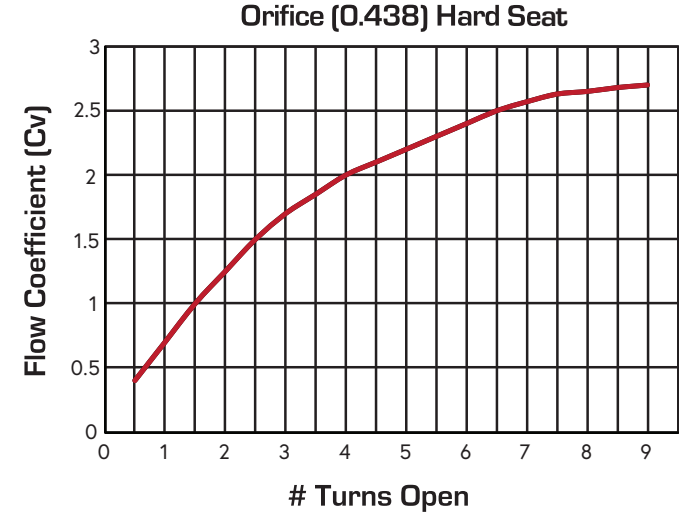
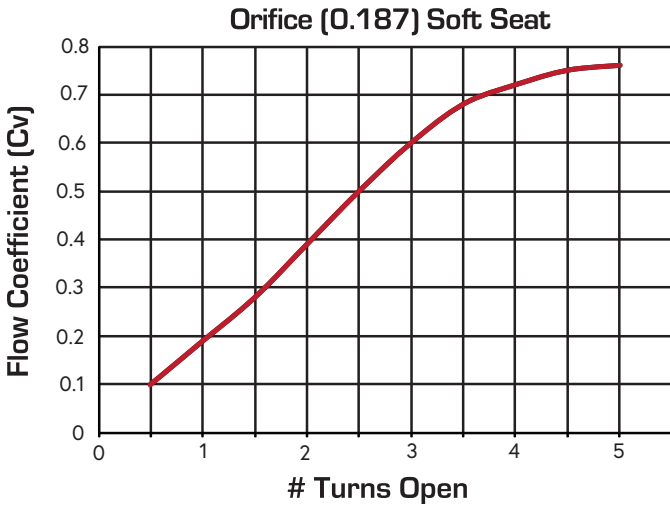
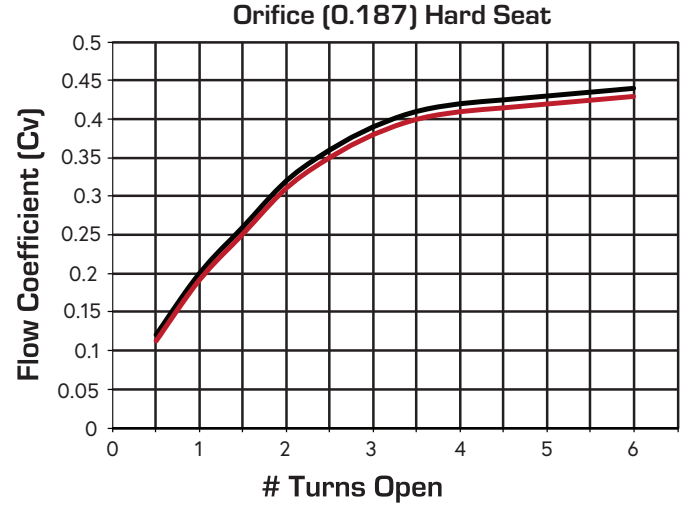
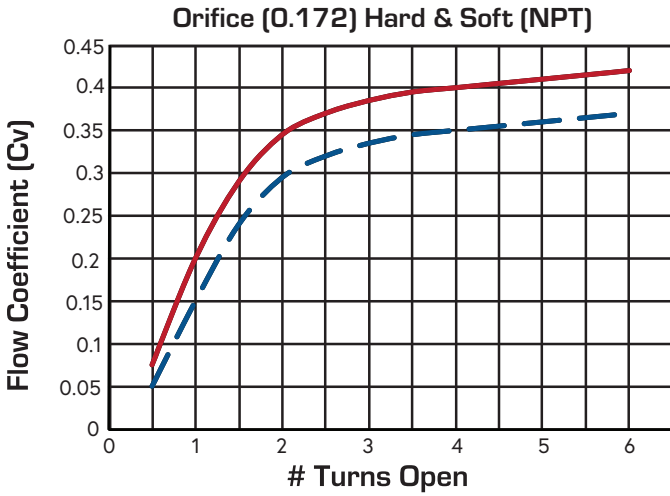


- Steel Needle Valve with Graphoil* Packing
- Steel or Stainless Steel Needle Valve with PTFE Packing
- Stainless Steel Needle Valve with Graphoil* Packing
- Brass Needle Valve with PTFE or Graphoil* Packing

Flow Data at 100°F (37°C)

- Orifice (0.172) Hard & Soft Seat (NPT)
- - Orifice (0.172) Hard & Soft Seat (Tube Fittings)

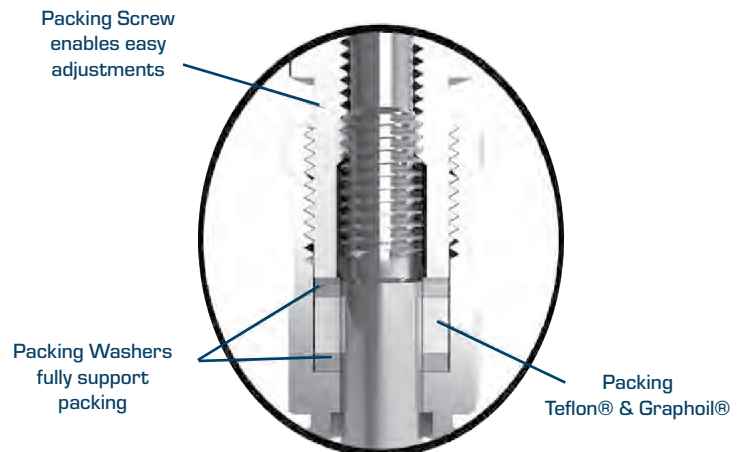
Needle Valves



O-Ring/Packing Options

Temperature Ratings:

- -10°F to 200°F with Fluorocarbon FKM O-Ring
- -65°F to 150°F with EPDM O-Ring
- -13°F to 300°F with Kalrez® O-Ring
- -65°F to 250°F with Teflon® O-Ring
- -20°F to 400°F with Graphoil® Packing
- -200°F max with Soft Seat/Tip Valves



Screwed Bonnet Needle Valves

Screwed 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, Graphoil® Packing and 1-3/4" phenolic handle is designed as follows.

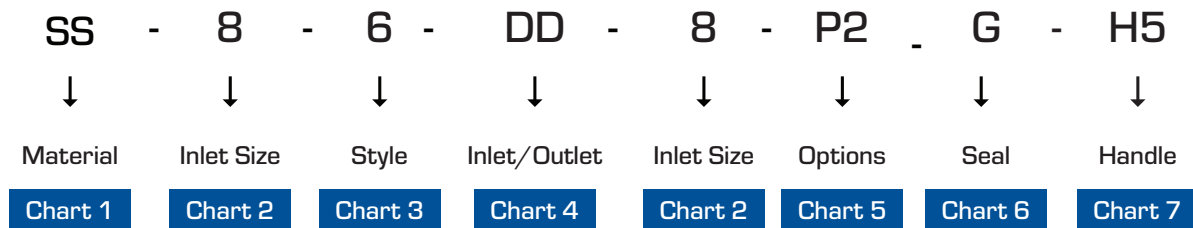


Chart 1- Material	
SS	Stainless Steel
S	Steel
B	Brass

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
MM	Male NPT	Male NPT
FF	Female NPT	Female NPT
MF	Male NPT	Female NPT

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

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

Chart 6- Stem Seal	
EM1	EPDM 80 O-Ring
KZ1	Kalrez® 3018 O-Ring
G	Graphoil® Packing
T	PTFE Packing

* Fluorocarbon FKM O-Ring is standard

* See handle options section for standard handles

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

Example: SS-6-6DD-6-P2-T

Designates a Stainless Steel Needle Valve with 3/8" CBC-Lok® Tube Fitting inlet to 3/8" CBC-Lok® Tube Fitting outlet with 2 nut panel mount option, and optional Teflon® Packing.