

## TY-FLO® Needle Valves



# TY-FLO® Needle Valves

## Design/Features

- Hard (Vee) or Delrin® Soft Seat/Tip
- Orifice sizes from 0.172 to 0.438 in.
- Flow Coefficients ( $C_v$ ) 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 <sup>1</sup> psig (bar)	10,000 (689)	6,000 (413)	6,000 (413)	3,000 (206)	10,000 (689)	6,000 (413)
Temperature Rating <sup>2</sup> °F (°C)	-10 to 200 (-23 to 93)		-10 to 200 (-23 to 93)		-10 to 200 (-23 to 93)	

<sup>1</sup> For pressure ratings of valves with tube fitting end connections, see CBC-Lok® or CS-Lok® catalogs.

<sup>2</sup> Temperature ratings based on working temperature of standard stem seals.

See o-ring/packing options for temperature ratings of optional stem seals and soft seat valve.

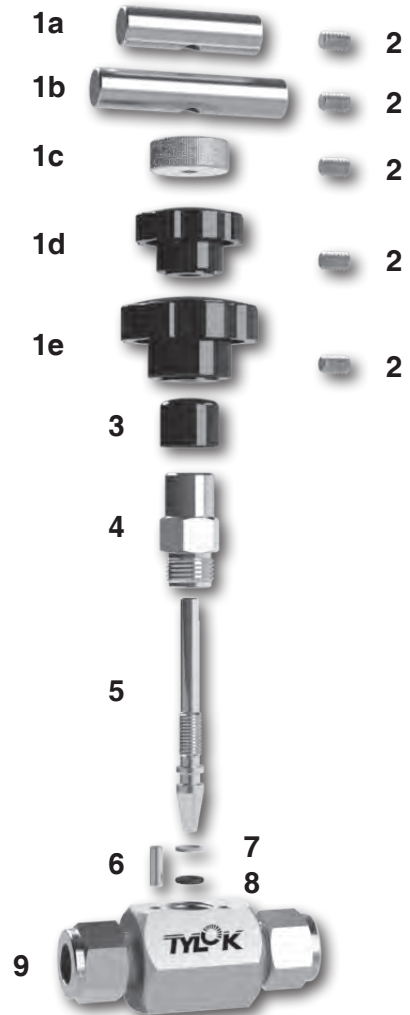
## Materials of Construction

#	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 <sup>1</sup>	Vinyl		
4	Valve Bonnet	316 SS	Brass	Steel
5	Valve Stem	Chrome-plated 316 SS	316 SS	
6	Bonnet Lock Pin <sup>1</sup>	316 SS	N/A	Steel
7	Stem Back-up Ring	Teflon®		
8	Stem O-Ring	Viton®		
9	Valve Body	316 SS	Brass	Steel

<sup>1</sup> Hex Bar Stock and 1/2" Angle Valves only

## Testing

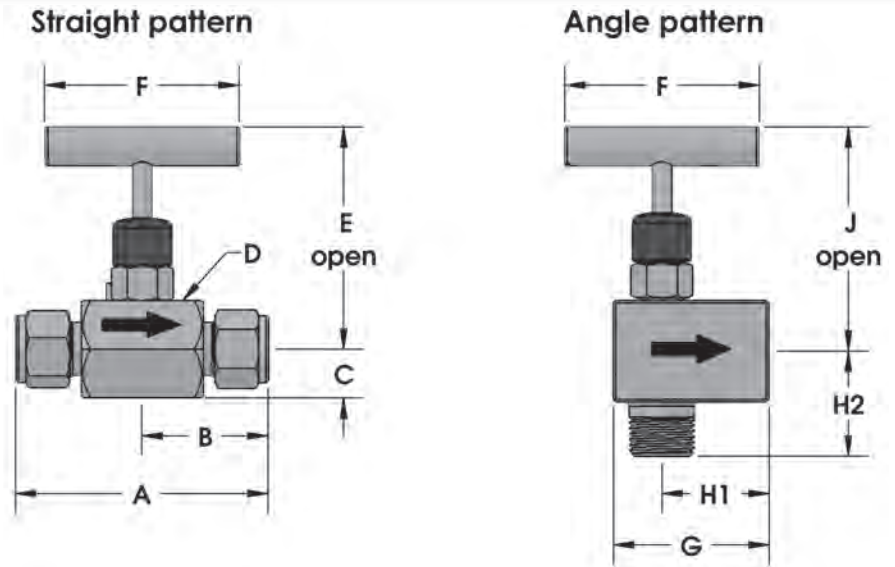
Tylok TY-FLO® Needle Valves are 100% Helium leak tested to 1 x 10<sup>-4</sup> ml/s ensuring performance and reliability.



# TY-FLO® 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.

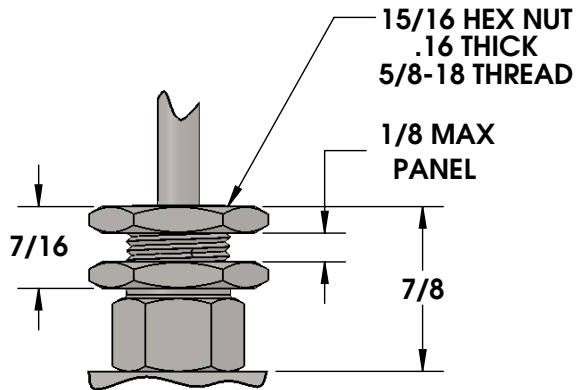


## Valve Dimension Table

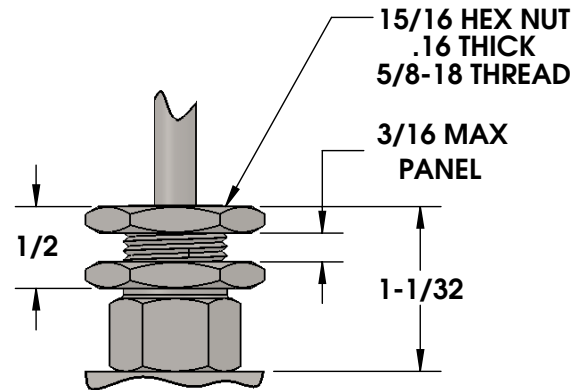
End Connections		Basic Part Number	Orifice in. (mm)	C <sub>v</sub> Hard Seat (Soft Seat/Tip)	Dimensions, in. (mm)									
Inlet/Outlet	Size, in.				A	B	C	D	E	F	G	H1	H2	J
CBC-Lok® tube fittings	1/4	4-6DD-4	0.172 (4.4)	0.37 (0.37)	2.46 (62.5)	1.23 (31.2)	0.33 (8.4)	3/4" SQ	2.17 (55.1)	1.81 (46)	-	-	-	-
	3/8	6-6DD-6	0.187 (4.8)		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 (4.4)	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	6-6SS-6	0.187 (4.8)		3.08 (78.2)	1.54 (39.1)	0.37 (9.4)	2.13 (54.1)	-		-	-	-	
	1/2	8-6SS-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)	-	-	-	-
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	0.172 (4.4)								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	0.187 (4.8)								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)	2-1/2" 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	0.172 (4.4)								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	0.172 (4.4)								1.50 (38.1)	1.13 (28.7)	0.88 (22.4)	
	1/2	8-6MF-8	0.187 (4.8)	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	0.187 (4.8)								-	-	-	-
	1	16-6MF-16	0.438 (11.1)	2.70	5.25 (133.4)	2.13 (54)	1.25 (31.8)	2-1/2" HEX	4.25 (108)	4.25 (108)	-	-	-	-
	1-1/4	20-6MF-20									-	-	-	-
1-1/2	24-6MF-24	-	-	-	-	-	-							

Dimensions shown with tube fitting ends finger-tight and standard configurations.  
Dimensions subject to change.

## Panel Mount Details

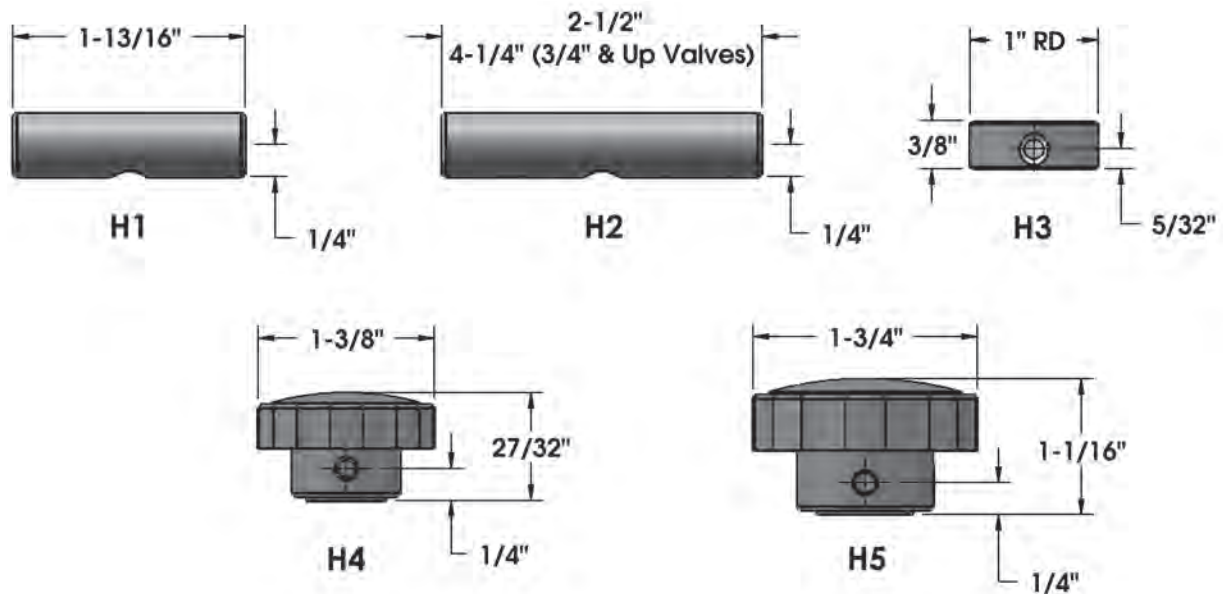


Dimensions For :  
 • Square Bar Stock  
 • 1/4" and Smaller  
 Angle Valves



Dimensions For :  
 • Hex Bar Stock  
 • 1/2" Angle Valves

## Handle Options

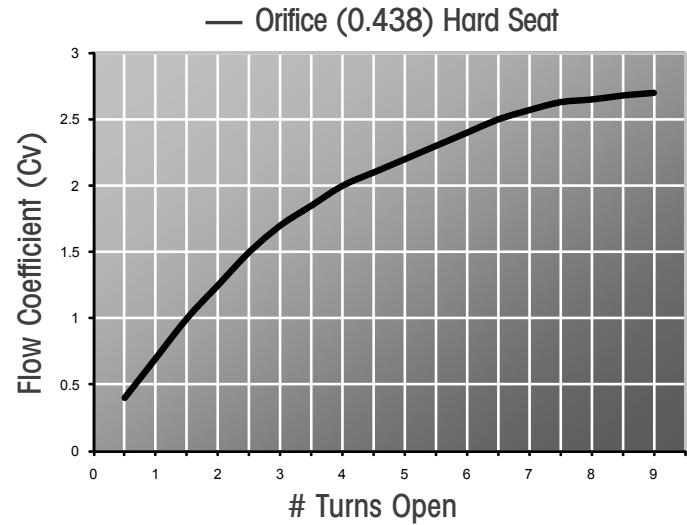
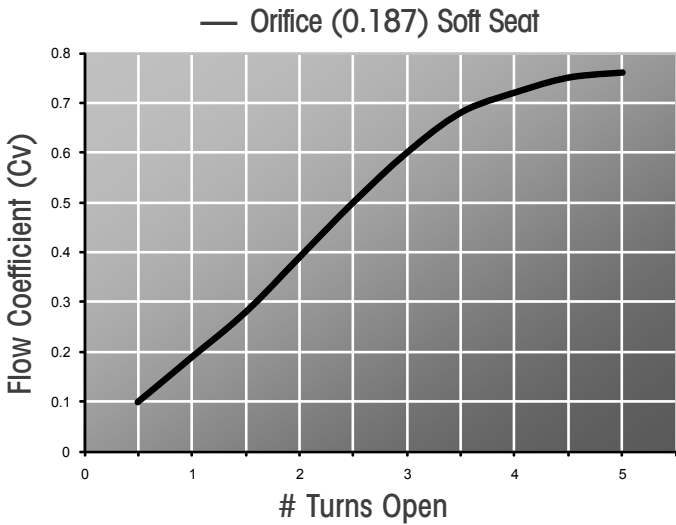
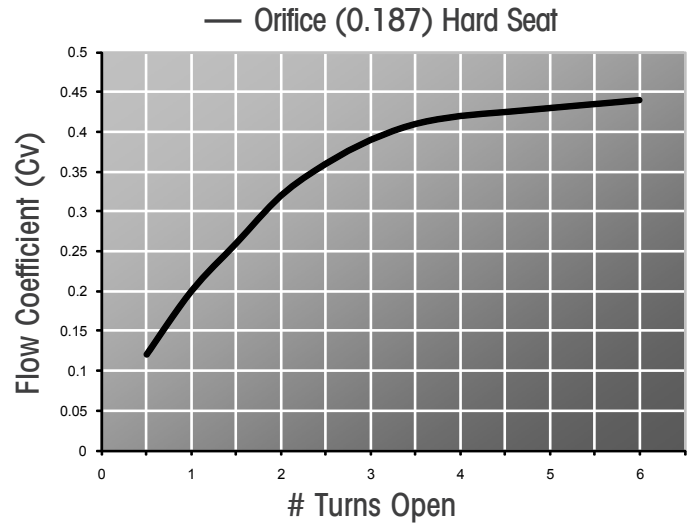
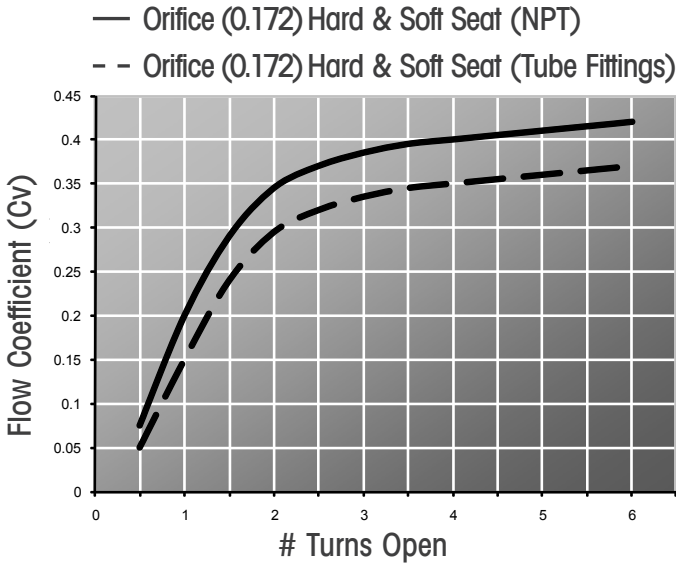


Standard Handles	316 SS	Brass	Steel
Square Bar Stock and 1/4" and Smaller Angle Valves	H1	H3	H1
Hex Bar Stock and 1/2" Angle Valves	H2	N/A	H2

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

# TY-FLO® Needle Valves

## Flow Data at 100°F (37°C)



## O-Ring/Packing Options

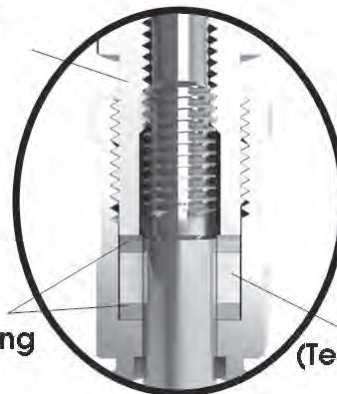
### Temperature Ratings:

- -10°F to 200°F with Viton® 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® Packing
- -20°F to 400°F with Grafoil® Packing
- 200°F max with Soft Seat/Tip Valves

Packing screw enables easy adjustments

Packing washers fully support packing

Packing (Teflon® or Grafoil®)

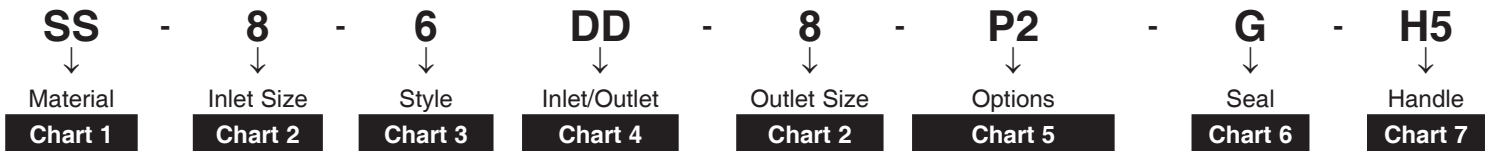


Packing style detail shown above

# How to order TY-FLO® Needle Valves

Ty-Flo® 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, Grafoil® packing and 1-3/4" phenolic handle is designated as follows.



## Chart 1 - Material

SS	Stainless Steel
B	Brass
S	Steel

## Chart 2 - Valve Size

Designator	Port 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
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## 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 nuts)

## Chart 6 - Stem Seal

(Viton O-Ring Standard)	
EM1	EPDM 80 O-Ring
KZ1	Kalrez® 3018 O-Ring
G	Grafoil® Packing
T	Teflon® Packing

## 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

\*See handle options section for standard handles

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

Designates a Stainless Steel needle valve, with a 3/8" CBC-Lok® tube fitting inlet to a 3/8" CBC-Lok® tube fitting outlet with a 2 nut panel mount option and optional Teflon® packing.

### Example: B-4-6FF-4-A

Designates a Brass angle needle valve with a 1/4" female NPT inlet to a 1/4" female NPT outlet.



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REGISTRATIONS & TYPE APPROVALS

