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Catalog No. H-100NVT  
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# Multi-Turn Shut-off Valves

for Instrumentation  
(Needle, Toggle, Gate, Bleed & Purge Valve)



**HY-LOK CORPORATION**

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### NV Series Integral Bonnet Needle Valves

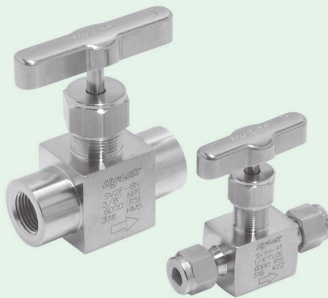


- Pressure : 5,000 psig (340bar) @ 100°F (38°C)
- Temperature : -65°F to 600°F (-54°C to 315°C)
- Materials : 316 Stainless Steel, Brass, Carbon Steel, Alloy 400
- Body Pattern : Straight, Angle
- Stem : Rotating Vee Tip, Regulating Tip, Soft Tip
- CV : 0.09 ~ 1.8
- Orifice : 2.0mm ~ 9.5mm (0.079" ~ 0.374")

**Applications**

Instrument isolation / General service / Test stands

### SV Series Integral Bonnet Needle Valves



- Pressure : 6,000 psig (413 bar) @ 100°F (38°C)
- Temperature : -65°F to 600°F (-54°C to 315°C)
- Materials : 316 Stainless Steel, Alloy 400
- Body Pattern : Straight, Angle
- Stem : Rotating Vee Tip, Regulating Tip, Soft Tip
- CV : 0.37 ~ 0.73
- Orifice : 4.3mm ~ 6.3mm (0.169" ~ 0.248")

**Applications**

Test Valves / Pilot plants

### GB Series Union Bonnet Needle Valves

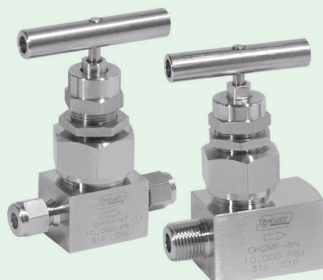


- Pressure : 6,000 psig (413 bar) @ 100°F (38°C)
- Temperature : -65°F to 1,200°F (-54°C to 648°C)
- Materials : 316 Stainless Steel, Carbon Steel, Alloy 400
- Body Pattern : Straight, Angle
- Stem : Non-Rotating Vee Tip, Non-Rotating Ball Tip, Regulating Soft Tip
- CV : 0.35 ~ 2.2
- Orifice : 4.0mm ~ 11.0mm (0.157" ~ 0.433")

**Applications**

Handling corrosives / High temperature service /  
Radioactive and hot condensate

### GH Series High Pressure & Temperature Union Bonnet Needle Valves



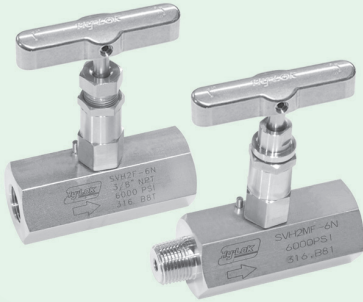
- Pressure : 10,000 psig (689 bar) @ 100°F (38°C)
- Temperature : -65°F to 1,200°F (-54°C to 648°C)
- Materials : 316 Stainless Steel
- Body Pattern : Straight
- Stem : Regulating Tip, Non-Rotating Ball Tip
- CV : 0.35 ~ 0.86
- Orifice : 4.0mm ~ 6.4mm (0.157" ~ 0.252")

**Applications**

Handling corrosives / High temperature and pressure service /  
Radioactive and hot condensate

## Specification

### SVH Series High Pressure Screwed Bonnet Bar Stock Needle Valves

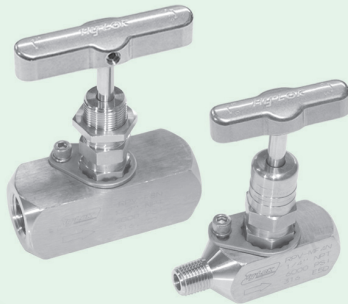


- Pressure : 10,000 psig (689 bar) @ 100°F (38°C)
- Temperature : -65°F to 1,200°F (-54°C to 648°C)
- Materials : 316 Stainless Steel, Carbon Steel, Alloy 400
- Body Pattern : Straight, Angle
- Stem : Non-Rotating Vee Tip, Non-Rotating Ball Tip
- CV : 0.52
- Orifice : 5.0mm (0.197")

#### Applications

Instrument isolation / Gas / Vapor or Liquid

### RP Series Rising Plug Valves

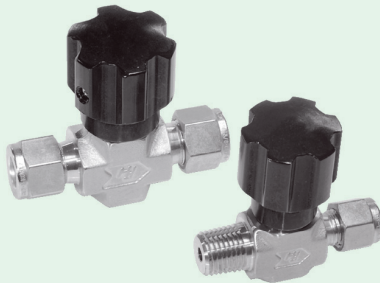


- Pressure : 6,000 psig (413 bar) @ 100°F (38°C)
- Temperature : -20°F to 400°F (-29°C to 204°C)
- Materials : 316 Stainless Steel
- Body Pattern : Straight
- Stem : Non-Rotating Vee Tip & Soft Seat
- CV : 1.77
- Orifice : 6.3mm (0.248")

#### Applications

Sour gas service / Handling slurries or solid impurities

### NSNV Series Non-rotating Stem Needle Valve



- Pressure : 3,000 psig (206 bar) @ 100°F (38°C)
- Temperature : -20°F to 450°F (-28°C to 232°C)
- Materials : 316 Stainless Steel, Brass, Alloy 400
- Body Pattern : Straight, Angle
- Stem : Soft Tip
- CV : 0.12 ~ 0.53
- Orifice : 2.4mm ~ 5.6mm (0.093" ~ 0.218")

#### Applications

Sampling System or Cylinders.

### TG Series Toggle Valves

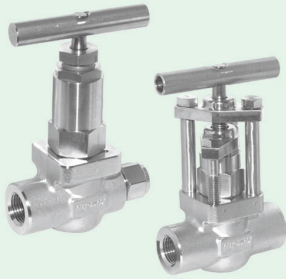


- Pressure : 300 psig (20 bar) @ 100°F (38°C)
- Temperature : -20°F to 200°F (-28°C to 93°C)
- Materials : 316 Stainless Steel, Brass
- Body Pattern : Straight, Angle
- Stem : Soft tip
- CV : 0.11 ~ 0.7
- Orifice : 2.0mm ~ 6.4mm (0.079" ~ 0.252")

#### Applications

Test Valves / Pilot plants

**G Series Gate Valves**



- Pressure : 3,600 psig (248bar) @ 100°F(38°C)
- Temperature : -65°F to 1500°F (-54°C to 816°C)
- Materials : 316 Stainless Steel / A105 / Alloy400
- Stem : Gate
- CV : 2.6 ~ 26.3
- Orifice : 6.4mm ~ 19.0mm(0.252" ~ 0.748")

**Applications**

Instrument Isolation / High temperature service / Handling slurries or solid impurities

**BLV Series Bleed & Purge Valves / VP Series Vent Plugs**



- Pressure : 10,000 psig (689 bar) @ 100°F (38°C)
- Temperature : -65°F to 850°F (-54°C to 454°C)
- Materials : 316 Stainless Steel, Carbon Steel, Alloy 400
- Body Pattern : Angle
- Stem : Rotating Vee Tip
- Orifice : BLV Series [3.2mm (0.125")]  
VP Series [6, 8mm (0.234", 0.315")]

**Applications**

Venting or purging of liquids and gases

**BAP Series Bleed & Purge Valve**

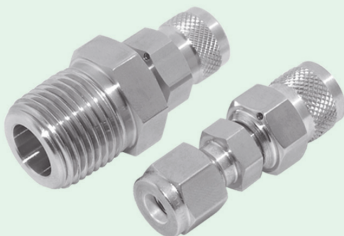


- Pressure : 7,100 psig (500 bar) @ 100°F (38°C)
- Temperature : -20°F to 600°F (-28°C to 315°C)
- Materials : 316 Stainless Steel, Carbon Steel
- Body Pattern : Angle
- Stem : Rotating Vee Tip
- Orifice : 3mm ~ 4mm (0.118" ~ 0.157")

**Applications**

Venting or purging of liquids and gases

**PV Series Bleed & Purge Valves**



- Pressure : 4,000 psig (275 bar) @ 100°F (38°C)
- Temperature : -65°F to 600°F (-54°C to 315°C)
- Materials : 316 Stainless Steel, Carbon Steel, Alloy 400
- Body Pattern : Straight

**Applications**

Venting or purging of liquids and gases

## Pressure & Temperature Rating

Series	Page	Material		Temperature Range	Pressure Rating		
		Body	Packing		@ 38°C (100°F)	@ Max. Temp.	
NV	7~8	Stainless Steel	PTFE	-54°C to 232°C (-65°F to 450°F)	344 bar (5,000 psig)	236 bar (3,435 psig)	
			PEEK	-54°C to 315°C (-65°F to 600°F)		215 bar (3,130 psig)	
		Brass	PTFE	-54°C to 204°C (-65°F to 400°F)	206 bar (3,000 psig)	26 bar (390 psig)	
			PEEK				
		Carbon Steel	PTFE	-29°C to 176°C (-20°F to 350°F)	206 bar (3,000 psig)	180 bar (2,615 psig)	
			PEEK				
		Alloy 400 (Monel)	PTFE	-54°C to 232°C (-65°F to 450°F)	206 bar (3,000 psig)	164 bar (2,380 psig)	
			PEEK	-54°C to 260°C (-65°F to 500°F)		163 bar (2,375 psig)	
SV	7, 9	Stainless Steel	PTFE	-54°C to 232°C (-65°F to 450°F)	413 bar (6,000 psig)	284 bar (4,130 psig)	
			PEEK	-54°C to 315°C (-65°F to 600°F)		259 bar (3,760 psig)	
		Alloy 400 (Monel)	PTFE	-54°C to 232°C (-65°F to 450°F)	344 bar (5,000 psig)	274 bar (3,970 psig)	
			PEEK	-54°C to 260°C (-65°F to 500°F)		273 bar (3,960 psig)	
GB SVH2	10~11	Stainless Steel	PTFE	-54°C to 232°C (-65°F to 450°F)	413 bar (6,000 psig)	284 bar (4,130 psig)	
			PEEK	-54°C to 315°C (-65°F to 600°F)		259 bar (3,760 psig)	
			Graphite	-54°C to 648°C (-65°F to 1200°F)		118 bar (1,715 psig)	
	13~14	Carbon Steel	PTFE	-28°C to 176°C (-20°F to 350°F)	413 bar (6,000 psig)	360 bar (5,230 psig)	
			PEEK				
			Graphite				
	Alloy 400 (Monel)	PTFE	-54°C to 232°C (-65°F to 450°F)	344 bar (5,000 psig)	274 bar (3,970 psig)		
		PEEK	-54°C to 260°C (-65°F to 500°F)		273 bar (3,960 psig)		
Graphite							
GH	10, 12	Stainless Steel	PTFE	-54°C to 232°C (-65°F to 450°F)	689 bar (10,000 psig)	512 bar (7,435 psig)	
			PEEK	-54°C to 315°C (-65°F to 600°F)		466 bar (6,770 psig)	
			Graphite	-54°C to 648°C (-65°F to 1200°F)		212 bar (3,085 psig)	
SVH1	13~14	Stainless Steel	PTFE	-54°C to 232°C (-65°F to 450°F)	689 bar (10,000 psig)	344 bar (5,000 psig)	
		Carbon Steel		-28°C to 176°C (-20°F to 350°F)		482 bar (7,000 psig)	
RP	15~16	Stainless Steel	POM (Seat)	-28°C to 121°C (-20°F to 250°F)	413 bar (6,000 psig)	69 bar (1,000 psig)	
			PEEK (Seat)	-28°C to 204°C (-20°F to 400°F)		69 bar (1,000 psig)	
NSNV	17~18	Stainless Steel	PCTFE (Seat)	-28°C to 93°C (-20°F to 200°F)	206 bar (3,000 psig)	177 bar (2,580 psig)	
			PEEK (Seat)	-28°C to 232°C (-20°F to 450°F)		142 bar (2,065 psig)	
		Brass	PCTFE (Seat)	-28°C to 93°C (-20°F to 200°F)		206 bar (3,000 psig)	161 bar (2,350 psig)
			PEEK (Seat)	-28°C to 204°C (-20°F to 400°F)			26.8 bar (390 psig)
		Alloy 400 (Monel)	PCTFE (Seat)	-28°C to 93°C (-20°F to 200°F)		206 bar (3,000 psig)	181 bar (2,640 psig)
			PEEK (Seat)	-28°C to 232°C (-20°F to 450°F)			163 bar (2,380 psig)
TG	19~22	Stainless Steel	PTFE (Seat)	-28°C to 93°C (-20°F to 200°F)	20 bar (300 psig)	20 bar (300 psig)	
			PEEK (Seat)				
		Brass	PTFE (Seat)				
			PEEK (Seat)				
G	23	Stainless Steel	PTFE	-54°C to 232°C (-65°F to 450°F)	248 bar (3600 psig)	14.1 bar (205 psig)	
			Graphite	-54°C to 816°C (-65°F to 1500°F)			
		Carbon Steel	PTFE	-28°C to 176°C (-20°F to 350°F)	206 bar (3000 psig)	164 bar (2,380 psig)	
			Graphite				
		Alloy 400	PTFE	-54°C to 232°C (-65°F to 450°F)	206 bar (3000 psig)	163 bar (2,375 psig)	
			Graphite	-54°C to 260°C (-65°F to 500°F)			
BLV,VP	25, 28	Stainless Steel	N/A	-54°C to 454°C (-65°F to 850°F)	689 bar (10,000 psig)	419 bar (6,085 psig)	
		Carbon Steel		-28°C to 232°C (-20°F to 450°F)		572 bar (8,315 psig)	
		Alloy 400 (Monel)		-54°C to 260°C (-65°F to 500°F)		545 bar (7,920 psig)	
BAP	26	Stainless Steel	N/A	-28°C to 315°C (-20°F to 600°F)	413 bar (6,000 psig)	172 bar (2,500 psig)	
		Carbon Steel		-28°C to 176°C (-20°F to 350°F)		205 bar (2,985 psig)	
PV	27	Stainless Steel	N/A	-54°C to 315°C (-65°F to 600°F)	275 bar (4,000 psig)	172 bar (2,500 psig)	
		Carbon Steel		-28°C to 176°C (-20°F to 350°F)		205 bar (2,985 psig)	
		Brass		-28°C to 176°C (-20°F to 350°F)		50.9 bar (740 psig)	

Peek is not recommended for service with aromatic heat transfer fluids or concentrated sulfuric and nitric acids.

Other limitations may apply.

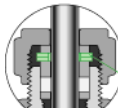
Extreme temperature fluctuations may require packing adjustment.

When valves with Hy-Lok Tube Fitting end connection are connected to tubing, the working pressure of tubing must be considered in the calculation of total system working pressure.

## Features

### Packing Nut

- allows smooth packing adjustment.



Disc Spring

\* Live-Loaded System (Optional)

### Stem Threads

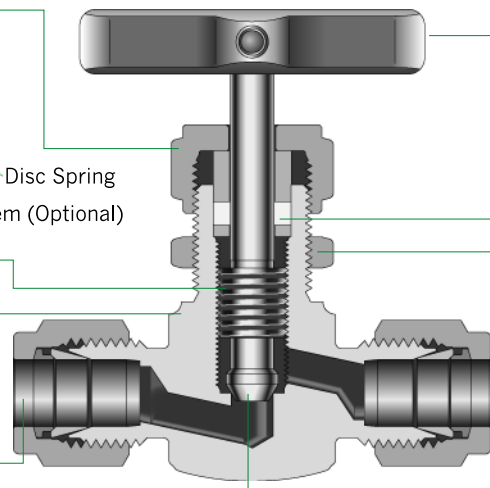
- are rolled and electroless nickel plated for maximum service life.

### Integral Bonnet

- is available with straight and angle pattern.

### Variety of End Connections

- include Hy-Lok tube fittings, male/female NPT threads, male/female ISO threads.



### Best Suited Standard Handles

- Include sintered stainless steel, black phenolic knob, and black aluminum bar depending upon valve type.

### Packing Materials

- are available in PTFE (standard) and PEEK.(option)

### Panel Mounting Nut

- allows easy mounting. (NV series standard)
- is optional at SV Series.

### Variety of Stem Tips

- include vee, regulating, and soft seat with PCTFE



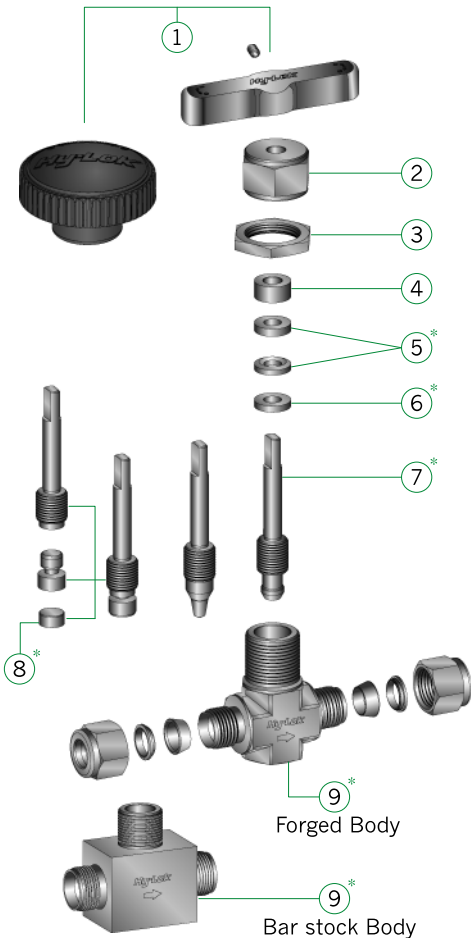
Vee Tip



Regulating Tip



Soft Seat Tip



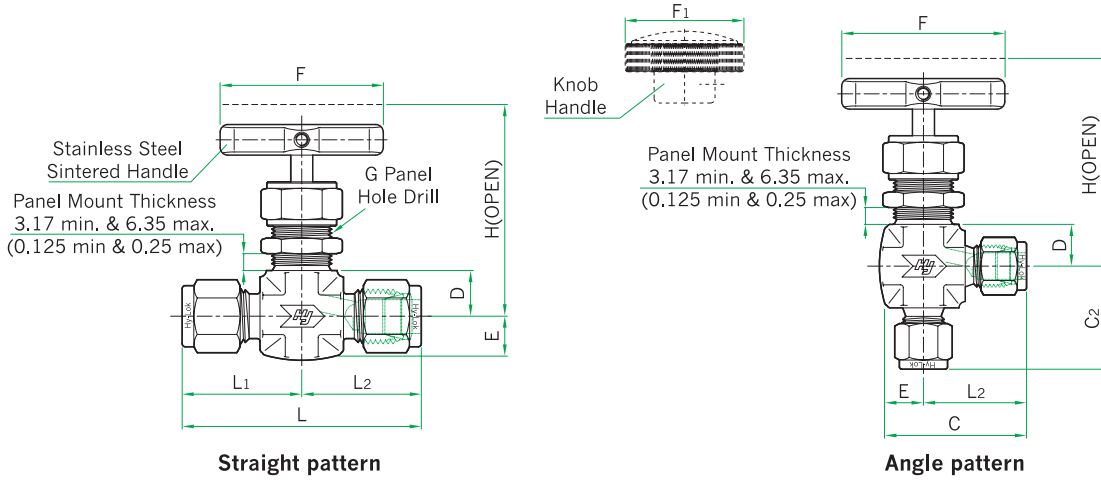
## Materials of Construction

Description		Grade / ASTM Specification				
		Valve Body Materials				
		SS 316	Brass	Carbon Steel	Alloy 400	
1	Handle	Sintered	Stainless Steel	-	-	Stainless Steel
	Others	-	-	Black Phenolic Knob	Aluminum Bar	-
2	Packing Nut	SS 316 / A479	C 360 / B16	1020 / A108	Alloy 400 / B164	
3	Panel Nut	SS 316 / A276		SS 316 / A479	SS 316 / A276	SS 316 / A479
4	Gland					SS 316 / A479
5	Packing*	PTFE				
6	Packing Washer*	SS 316 / A479			Alloy 400 / B164	
7	Stem*	Vee	SS 316 / A479	C 360 / B16	SS 316 / A479	Alloy 400 / B164
		Regulating				
		Soft Seat				
8	Soft Tip*	PCTFE				
9	Body*	NV	SS316 / A479 or SS316 / A182	C 377 / B283	A105 or 1020 / A108	Alloy 400 / B564
		SV		-	-	Alloy 400 / B164

Note : "\*"marked are wetted parts.  
 Black phenolic knob is standard for brass body and soft seat stem valves.  
 Black aluminum bar handle are available as an options.  
 Panel nut (3) is optional at SV Series.

# NV Series Integral Bonnet Needle Valve

## Table of Dimensions

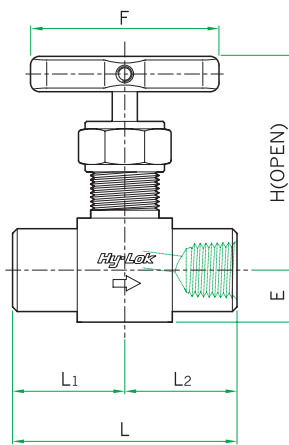


Basic Part No.	Orifice Hole	Cv	End Connection		Dimensions																
			Inlet	Outlet	L	L1	L2	C2	C	D	E	F1	F	G	H						
NV1	F -2N	2.0 (0.08)	0.09	1/8" Female NPT		42.0 (1.65)	21.0 (0.83)	21.0 (0.83)	21.0 (0.83)	30.5 (1.20)	11.0 (0.43)	9.5 (0.37)	38.0 (1.50)	45.0 (1.77)	13.5 (0.53)	51.2 (2.02)					
	M -2N			1/8" Male NPT		21.0 (0.83)	20.0 (0.79)	21.0 (0.83)	29.5 (1.16)												
	MH-2N2T			1/8" Male NPT	1/8" Hy-Lok	47.0 (1.85)	26.0 (1.02)	26.0 (1.02)	26.0 (1.02)	35.5 (1.40)		9.5 (0.37)									
	H -2T			1/8" Hy-Lok		52.0 (2.05)	26.0 (1.02)	26.0 (1.02)	26.0 (1.02)	35.5 (1.40)											
	F -3M			3mm Hy-Lok		52.0 (2.05)	26.0 (1.02)	26.0 (1.02)	26.0 (1.02)	35.5 (1.40)											
NV2	F -2N	4.3 (0.17)	0.37	1/8" Female NPT		42.0 (1.65)	21.0 (0.83)	21.0 (0.83)	21.0 (0.83)	30.5 (1.20)	11.0 (0.43)	9.5 (0.37)	38.0 (1.50)	45.0 (1.77)	13.5 (0.53)	51.2 (2.02)					
	M -2N			1/8" Male NPT		42.0 (1.65)	21.0 (0.83)	21.0 (0.83)	21.0 (0.83)	30.5 (1.20)											
	M -4N			1/4" Male NPT		50.0 (1.97)	25.0 (0.98)	25.0 (0.98)	25.0 (0.98)	34.5 (1.36)											
	MH-4N4T			1/4" Male NPT	1/4" Hy-Lok	53.8 (2.12)	28.8 (1.13)	28.8 (1.13)	28.8 (1.13)	38.3 (1.51)											
	H -6M			6mm Hy-Lok		57.6 (2.27)	28.8 (1.13)	28.8 (1.13)	28.8 (1.13)	38.3 (1.51)											
	H -4T			1/4" Hy-Lok		57.6 (2.27)	28.8 (1.13)	28.8 (1.13)	28.8 (1.13)	38.3 (1.51)											
	H -8M			8mm Hy-Lok		59.2 (2.33)	29.6 (1.17)	29.6 (1.17)	29.6 (1.17)	39.1 (1.54)											
NV3	F -4N	6.3 (0.25)	0.73	1/4" Female NPT		56.0 (2.20)	28.0 (1.10)	28.0 (1.10)	28.0 (1.10)	41.0 (1.61)	13.5 (0.53)	13.0 (0.51)	50.0 (1.97)	64.0 (2.52)	20.0 (0.79)	63.6 (2.50)					
	F -4R			1/4" Female ISO		56.0 (2.20)											28.0 (1.10)	28.0 (1.10)	28.0 (1.10)	41.0 (1.61)	
	MF -4N			1/4" Male NPT	1/4" Female NPT	61.2 (2.41)											33.2 (1.31)	33.2 (1.31)	33.2 (1.31)	46.2 (1.82)	
	MH-4N6T			1/4" Male NPT	3/8" Hy-Lok	61.2 (2.41)	33.2 (1.31)	33.2 (1.31)	33.2 (1.31)	46.2 (1.82)											
	M -6N			3/8" Male NPT		58.0 (2.28)	29.0 (1.14)	29.0 (1.14)	29.0 (1.14)	42.0 (1.65)											
	MH-6N6T			3/8" Male NPT	3/8" Hy-Lok	62.2 (2.45)	29.0 (1.14)	29.0 (1.14)	29.0 (1.14)	46.2 (1.82)											
	MH-6N8T			3/8" Male NPT	1/2" Hy-Lok	65.0 (2.56)	36.0 (1.42)	36.0 (1.42)	36.0 (1.42)	49.0 (1.93)											
	H -10M			10mm Hy-Lok		66.4 (2.61)	33.2 (1.31)	33.2 (1.31)	33.2 (1.31)	46.2 (1.82)											
	H -6T			3/8" Hy-Lok		66.4 (2.61)	33.2 (1.31)	33.2 (1.31)	33.2 (1.31)	46.2 (1.82)											
	H -12M			12mm Hy-Lok		72.0 (2.83)	36.0 (1.42)	36.0 (1.42)	36.0 (1.42)	49.0 (1.93)											
	H -8T			1/2" Hy-Lok		72.0 (2.83)	36.0 (1.42)	36.0 (1.42)	36.0 (1.42)	49.0 (1.93)											
NV4	F -6N	9.5 (0.37)	1.8	3/8" Female NPT		76.0 (2.99)	38.0 (1.50)	38.0 (1.50)	38.0 (1.50)	57.0 (2.24)	19.0 (0.75)	19.0 (0.75)	63.5 (2.50)	76.0 (2.99)	22.5 (0.89)	91.7 (3.61)					
	F -6R			3/8" Female ISO													76.0 (2.99)	38.0 (1.50)	38.0 (1.50)	38.0 (1.50)	57.0 (2.24)
	F -8N			1/2" Female NPT													76.0 (2.99)	38.0 (1.50)	38.0 (1.50)	38.0 (1.50)	57.0 (2.24)
	F -8R			1/2" Female ISO													76.0 (2.99)	38.0 (1.50)	38.0 (1.50)	38.0 (1.50)	57.0 (2.24)
	M -8N			1/2" Male NPT													76.0 (2.99)	38.0 (1.50)	38.0 (1.50)	38.0 (1.50)	57.0 (2.24)
	MF -8N			1/2" Male NPT	1/2" Female NPT												76.0 (2.99)	38.0 (1.50)	38.0 (1.50)	38.0 (1.50)	57.0 (2.24)
	H -8T			1/2" Hy-Lok													97.0 (3.82)	48.5 (1.91)	48.5 (1.91)	48.5 (1.91)	67.5 (2.66)
	H -12T			3/4" Hy-Lok													97.0 (3.82)	48.5 (1.91)	48.5 (1.91)	48.5 (1.91)	67.5 (2.66)

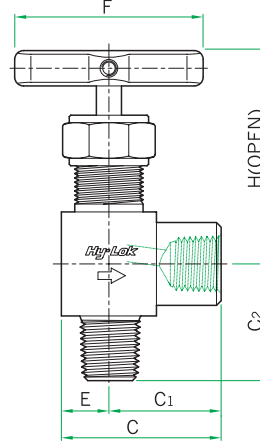
Dimensions in millimeters(inch) are for reference only, subject to change  
 Dimensions shown with Hy-Lok nuts in finger-tight position, Where applicable  
 Ordering information refer to page 30.



Table of Dimensions



Straight pattern



Angle pattern

Basic Part No.	Orifice Hole	Cv	End Connections		Dimensions									
			Inlet	Outlet	L	L1	L2	C	C1	C2	E	F	H	
SV1	F -4N	4.3 (0.17)	0.37	1/4" Female NPT		47.6 (1.87)	23.8 (0.94)	23.8 (0.94)	36.5 (1.44)	25.4 (1.00)	25.4 (1.00)	11.2 (0.44)	45.0 (1.77)	51.0 (2.00)
	F -4R			1/4" Female ISO										
	M -4N			1/4" Male NPT		49.2 (1.87)		24.6 (0.97)	35.8 (1.41)	24.6 (0.97)	25.2 (0.99)			
	MF -4N			1/4" Male NPT	1/4" Female NPT	48.4 (1.91)	24.6 (0.97)	23.8 (0.94)	36.5 (1.44)	25.4 (1.00)	26.2 (1.03)			
	MH-4N4T			1/4" Male NPT	1/4" Hy-Lok	53.3 (2.10)		28.7 (1.13)	39.8 (1.57)	28.7 (1.13)	29.7 (1.17)			
	H -4T			1/4" Hy-Lok		62.4 (2.46)	31.2 (1.23)	31.2 (1.23)						
SV2	F -6N	6.3 (0.25)	0.73	3/8" Female NPT		64.0 (2.52)	32.0 (1.26)	32.0 (1.26)	48.6 (1.91)	31.8 (1.25)	31.8 (1.25)	16.8 (0.66)	64.0 (2.52)	63.0 (2.48)
	F -8N			1/2" Female NPT							35.8 (1.41)			
	F -8R			1/2" Female ISO							31.0 (1.22)			
	MF -6N			3/8" Male NPT	3/8" Female NPT	64.3 (2.53)	32.5 (1.28)			35.8 (1.41)				
	MF -8N			1/2" Male NPT	1/2" Female NPT	63.6 (2.50)	31.8 (1.25)							
	MF -12N8N			3/4" Male NPT	1/2" Female NPT	73.7 (2.90)		41.9 (1.65)						
	MH-6N8T			3/8" Male NPT	1/2" Hy-Lok	78.2 (3.08)	39.1 (1.54)	39.1 (1.54)						
	H -6T			3/8" Hy-Lok		83.8 (3.30)	41.9 (1.65)	41.9 (1.65)						
	H -8T			1/2" Hy-Lok										

Dimensions in millimeters(inch) are for reference only, subject to change  
 Dimensions shown with Hy-Lok nuts in finger-tight position , Where applicable  
 Ordering information refer to page 30.

# GB, GH Series Union Bonnet Needle Valve

## Features

### Handle

- is available in sintered stainless steel and black phenolic knob.

### Stem Threads

- are rolled and electroless nickel plated for maximum service life.

### Panel Mounting Nut

- allows easy mounting.(standard)

### Rugged Body

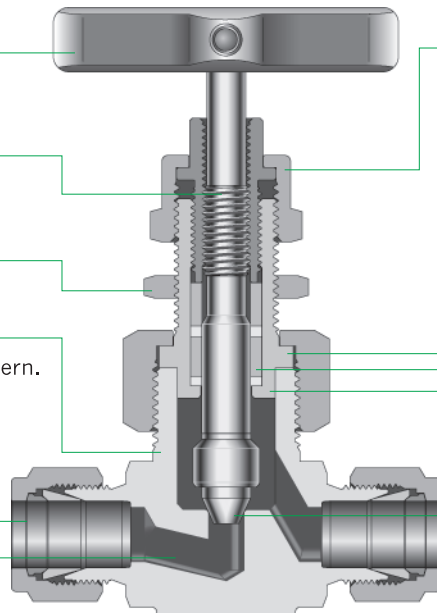
- is available with straight and angle pattern.

### Variety of End Connections

- include Hy-Lok tube fitting, male/female NPT/ISO threads, and socket weld Ends.

### Variety of Orifice Sizes

- include 4.0mm(GB1, GH1 series), 6.4mm(GB2, GH2 series), 11.0mm (GB3 series)



### Locking Nut

- prevents packing bolt from loosening.

### Metal Seal Bonnet - to - Body Construction

- ensures safety.

### Stem Packing

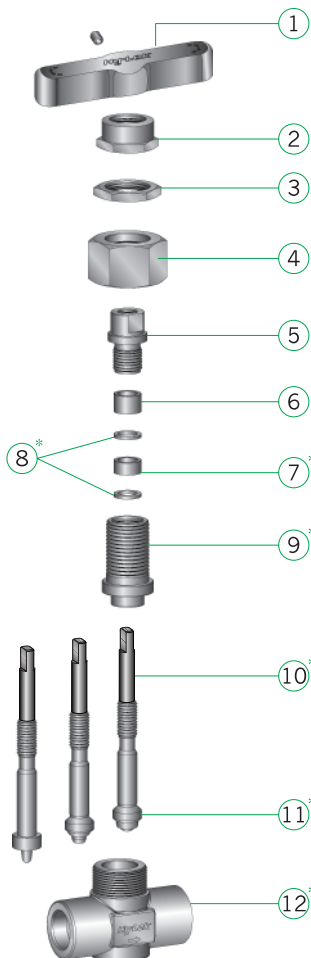
- available in PTFE(Standard) PEEK and Graphite

### Back Seating

- provides anti - blow out of stem.

### Variety of Stem Tips

- include non - rotating Vee(standard) non-rotating ball, soft seat, regulating soft seat and non - rotating regulating tip.(optional)



Ball Tip



Soft Seat Tip



Regulating Soft Seat Tip



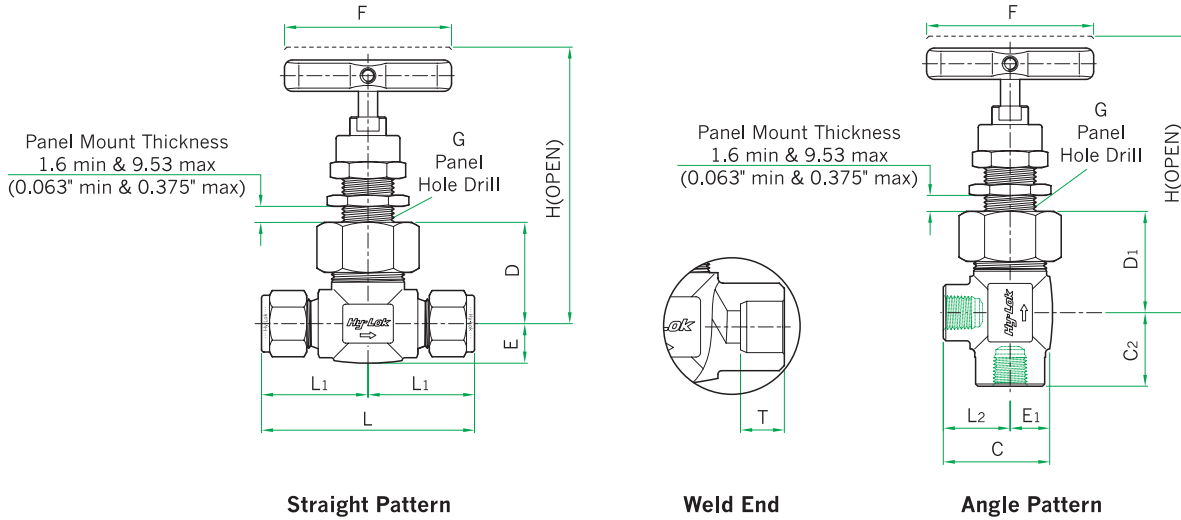
Regulating Tip

## Materials of Construction

Description		Grade / ASTM Specification			
		Valve Body Materials			
		SS316	Carbon Steel	Alloy 400	
1	Handle	Sintered	Stainless Steel	-	Stainless Steel
		Bar	-	Aluminum Bar	-
2	Packing Nut	SS316 / A276	1020 / A108	SS316 / A276	
3	Panel Nut				
4	Bonnet Nut				
5	Packing Bolt	SS316 / A479			
6	Gland	SS316 / A276		Alloy 400 / B164	
7	Packing *	PTFE			
8	Packing Washer *	Glass Filled PTFE			
9	Bonnet *	SS316 / A479	1020 / A108	Alloy 400 / B164	
10	Stem *	SS316 / A479			
11	Stem Tip *	Vee	SS630 / A564		Alloy K500 / B865
		Ball			
		Regulating			
		Soft			
12	Body *	SS316 / A479 or SS316 / A182	A105 or 1020 / A108	Alloy 400 / B164 or Alloy 400 / B564	

Note : \* \* marked are wetted parts.

Table of Dimensions

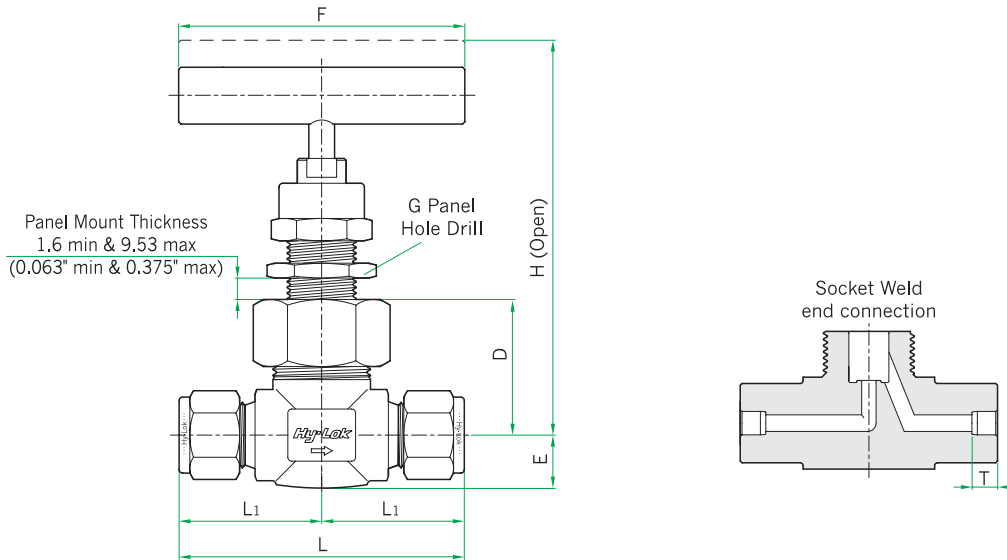


Basic Part No.	Orifice Hole	Cv	End Connection		Dimensions																	
			Inlet	Outlet	L	L1	L2	C	C2	D	D1	E	E1	F	G	H Straight	H Angle	T				
GB1	F -2N	4.0 (0.16)	0.35	1/8" Female NPT		50.8 (2.00)	25.4 (1.00)	23.0 (0.91)	32.6 (1.28)													
	F -4N			1/4" Female NPT		52.4 (2.06)	26.2 (1.03)			25.4 (1.00)			32.6 (1.28)								82.6 (3.25)	
	M -4N			1/4" Male NPT		50.8 (2.00)	25.4 (1.00)	25.4 (1.00)	35.0 (1.38)													
	MF-4N			1/4" Male NPT	1/4" Female NPT	52.4 (2.06)	26.2 (1.03)	23.0 (0.91)	32.6 (1.28)			27.8 (1.09)		11.5 (0.45)	11.5 (0.45)	45 (1.77)	15.1 (0.59)	77.8 (3.06)				
	H -6M			6mm Hy-Lok		61.9 (2.44)	31.0 (1.22)	29.4 (1.16)	38.9 (1.53)	33.7 (1.33)												
	H -4T			1/4" Hy-Lok								27.8 (1.09)										77.8 (3.06)
	SW-4T			1/4" Tube Weld		46.0 (1.81)	23.0 (0.91)	22.3 (0.88)	31.8 (1.03)	26.2 (1.19)												7.2 (0.28)
	H -8M			8mm Hy-Lok		61.9 (2.44)	31.0 (1.22)	29.4 (1.16)	38.9 (1.53)	33.7 (1.33)												
GB2	F -4N	6.4 (0.25)	0.86	1/4" Female NPT		57.2 (2.25)	28.6 (1.13)	25.4 (1.00)	39.6 (1.56)	28.6 (1.13)										96.9 (3.81)		
	F -6N			3/8" Female NPT																	93.7 (3.69)	
	H -10M			10mm Hy-Lok		73.0 (2.87)	36.5 (1.44)	33.7 (1.33)	47.9 (1.89)	37.6 (1.48)											90.5 (3.56)	
	H -6T			3/8" Hy-Lok																		
	H -12M			12mm Hy-Lok		77.8 (3.06)	38.9 (1.53)	36.2 (1.43)	50.4 (1.98)	40.2 (1.58)		34.0 (1.34)	34.0 (1.34)	14.2 (0.56)	14.2 (0.56)	64 (2.52)	19.9 (0.78)	93.7 (3.69)				
	H -8T			1/2" Hy-Lok																		
	SW-4P			1/4" Pipe Weld																		10.0 (0.39)
	SW-6T			3/8" Tube Weld		57.2 (2.25)	28.6 (1.13)	25.4 (1.00)	39.6 (1.56)	28.6 (1.13)												93.7 (3.69)
	SW-8T			1/2" Tube Weld							25.4 (1.00)											95.3 (3.75)
GB3	F -8N	11.0 (0.43)	2.2	1/2" Female NPT		79.4 (3.13)	39.7 (1.56)	33.3 (1.31)	50.8 (2.00)	39.7 (1.56)	46.1 (1.81)	47.0 (1.85)	15.9 (0.63)	17.5 (0.69)						121.5 (4.78)		
	F -12N			3/4" Female NPT		82.6 (3.25)	41.3 (1.63)	41.3 (1.63)	61.3 (2.43)	38.0 (1.50)	48.4 (1.91)	49.5 (1.95)	19.9 (0.78)	20.5 (0.81)							122.4 (4.82)	
	F -16N			1" Female NPT		92.1 (3.63)	46.0 (1.81)	-	-	-	54.0 (2.13)	-	25.4 (1.00)	-	-						129.4 (5.09)	
	MF-8N			1/2" Male NPT	1/2" Female NPT	79.4 (3.13)	39.7 (1.56)	33.3 (1.31)	50.8 (2.00)	39.7 (1.56)	46.0 (1.81)	47.0 (1.85)	15.9 (0.63)	17.5 (0.69)							121.5 (4.78)	
	MF-12N			3/4" Male NPT	3/4" Female NPT	82.6 (3.25)	41.3 (1.63)	-	-	-	48.4 (1.91)	-	19.9 (0.78)	-	-						122.4 (4.82)	
	MF-16N			1" Male NPT	1" Female NPT	92.1 (3.63)	46.0 (1.81)	-	-	-	54.0 (2.13)	-	25.4 (1.00)	-	-						129.4 (5.09)	
	H -12M			12mm Hy-Lok																		
	H -8T			1/2" Hy-Lok		100.0 (3.94)	50.0 (1.97)	47.0 (1.85)	61.1 (2.41)	50.0 (1.97)		46.0 (1.81)	47.0 (1.85)	17.5 (0.69)	17.5 (0.69)							121.5 (4.78)
	H -12T			3/4" Hy-Lok																		122.4 (4.82)
	H -16T			1" Hy-Lok																		
	SW-8P			1/2" Pipe Weld								47.6 (1.87)	-	17.5 (0.69)	-	-						123.1 (4.85)
	SW-8T			1/2" Tube Weld		79.4 (3.13)	39.7 (1.56)	33.3 (1.31)	50.8 (2.00)	39.7 (1.56)	42.9 (1.69)	47.6 (1.87)	51.0 (2.00)	19.0 (0.75)	19.0 (0.75)							126.4 (4.98)
	SW-12T			3/4" Tube Weld								46.0 (1.81)	51.0 (2.00)	15.9 (0.63)	15.9 (0.63)							11.1 (0.44)

Dimensions in millimeters(inch) are for reference only, subject to change  
 Dimensions shown with Hy-Lok nuts in finger-tight position , Where applicable  
 Ordering information refer to page 30.

# GH Series Union Bonnet Needle Valve

## Table of Dimensions



Basic Part No.	Orifice Hole	Cv	End Connections		Dimensions								
			Inlet	Outlet	L	L1	D	E	F	G	H	T	
GH1	F -2N	4.0 (0.157)	0.35	1/8" Female NPT		71.4 (2.81)	35.7 (1.40)	35.1 (1.38)	12.7 (0.50)	64 (2.52)	20.6 (0.81)	84.1 (3.31)	7.1 (0.28)
	F -4N			1/4" Female NPT									
	M -4N			1/4" Male NPT									
	MF -4N			1/4" Male NPT	1/4" Female NPT								
	H -4T			1/4" Hy-Lok									
	SW -4T			1/4" Tube Socket Weld									
GH2	F -4N	6.4 (0.252)	0.86	1/4" Female NPT		79.5 (3.13)	39.8 (1.56)	46.0 (1.81)	16.0 (0.63)	76 (2.99)	26.9 (1.06)	105 (4.13)	-
	F -8N			1/2" Female NPT									
	M -8N			1/2" Male NPT									
	MF -8N			1/2" Male NPT	1/2" Female NPT	82.6 (3.25)	41.3 (1.63)					49.3 (1.94)	

Dimensions in millimeters(inch) are for reference only, subject to change  
 Dimensions shown with Hy-Lok nuts in finger-tight position , Where applicable  
 Ordering information refer to page 30.

## Features

### Handle

- sintered stainless steel handle.

### Packing Bolt

- allows easy packing adjustment for leak tight seal.

### Stem Threads

- are rolled and electroless nickel plated for maximum service life.

### Stop Pin

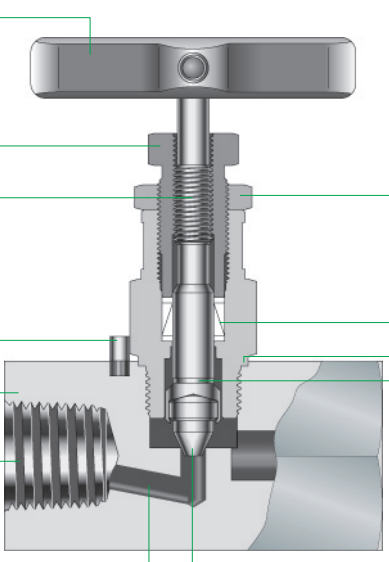
- prevents accidental removal in service.

### Rugged Body

- available in straight and angle pattern.

### Variety of End Connection

- Hy-Lok Tube Fittings, Male & Female ISO threads, Male & Female NPT.



### Locking Nut

- prevents packing bolt from loosening.

### Packing

- below stem threads
- isolates stem thread from process
- prevents stem lubricant washout
- is PTFE standard with reinforced packing washer and grafoil available upon request.

### Metal Seal

- construction ensure safety

### Back Seating

- provides anti-blow out of stem and secondary stem seal

### Orifice Size

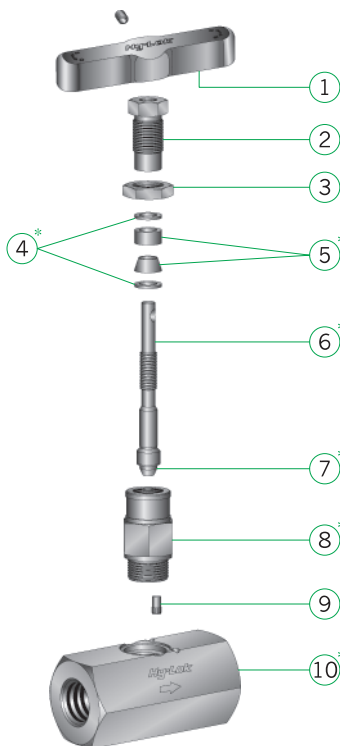
- 5.0mm (0.2 inch)



Ball Tip

### Variety Stem Tips

- includes non-rotating vee(standard) and ball tip(optional)



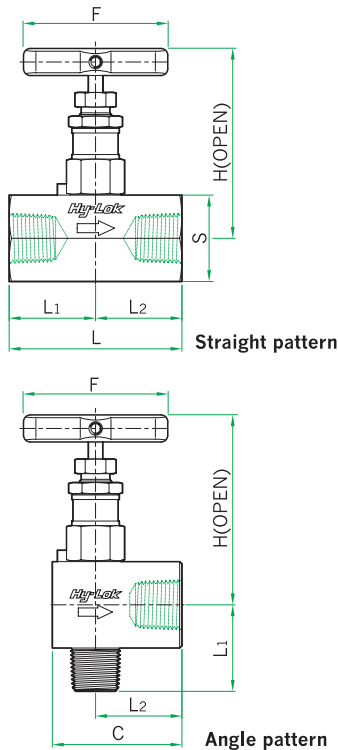
## Materials of Construction

Description		Grade / ASTM Specification			
		Valve Body Materials			
		SS 316	Carbon Steel	Alloy 400	
1	Handle	Sintered	Stainless Steel	-	Stainless Steel
	Others	-	-	Aluminum Bar	-
2	Packing Bolt	SS316 / A479			
3	Lock Nut	SS 316 / A276			
4	Packing Washer*	Reinforced PTFE			
5	Packing*	PTFE			
6	Stem*	SS316 / A479		Alloy 400 / B164	
7	Stem Tip*	Vee	SS630 / A564		Alloy K500 / B865
		Ball			
8	Bonnet*	SS 316 / A479	1020 / A108	Alloy 400 / B164	
9	Stop Pin	Stainless Steel			
10	Body*	SS 316 / A479	1020 / A108	Alloy 400 / B164	

Note : "\*"marked are wetted parts.

# SVH series High Pressure Screwed Bonnet Bar Stock Needle Valve

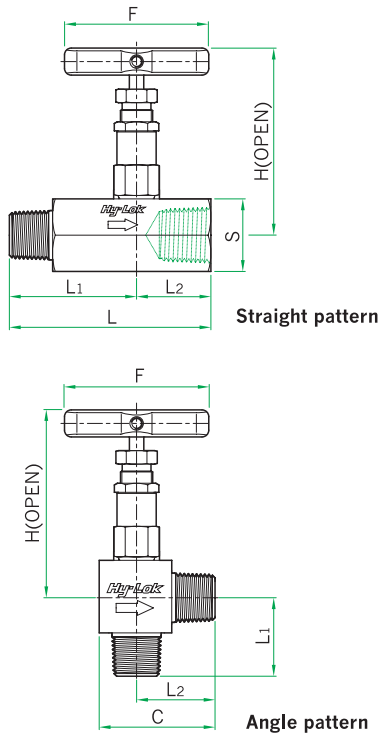
## Table of Dimensions (SVH1 Series)



Basic Part No.	Orifice Hole	Cv	End Connections		Dimensions						
			Inlet	Outlet	L	L1	L2	C	S	F	H
SVH1	5.0 (0.197)	0.52	1/4" Female NPT		76.2 (3.00)	38.1 (1.50)	38.1 (1.50)	57.2 (2.25)	38.1 (1.50)		90.0 (3.54)
			1/2" Female NPT								
			3/4" Female NPT		84.0 (3.31)	42.0 (1.65)	42.0 (1.65)	62.5 (2.46)	41.0 (1.61)	64.0 (2.52)	91.5 (3.60)
			1/4" Male NPT	1/4" Female NPT	76.2 (3.00)	38.1 (1.50)					
			3/8" Male NPT	3/8" Female NPT	82.2 (3.24)	44.1 (1.74)	38.1 (1.50)	57.2 (2.25)	38.1 (1.50)	90.0 (3.54)	
			1/2" Male NPT	1/2" Female NPT	87.1 (3.43)	49.0 (1.93)					

All dimensions in millimeters(inch).  
Ordering information refer to page 30.

## Table of Dimensions (SVH2 Series)



Basic Part No.	Orifice Hole	Cv	End Connections		Dimensions						
			Inlet	Outlet	L	L1	L2	C	S	F	H
SVH2	5.0 (0.197)	0.52	1/4" Female NPT		76.2 (3.00)	38.1 (1.50)	38.1 (1.50)	54.1 (2.13)	32.0 (1.26)	64.0 (2.52)	88.5 (3.48)
			3/8" Female NPT								
			1/2" Female NPT								
			3/4" Female NPT					57.2 (2.25)	38.1 (1.50)	91.5 (3.60)	
			1/2" Male NPT	1/2" Female NPT	88.9 (3.50)	56.1 (2.21)	32.8 (1.29)	48.8 (1.92)	32.0 (1.26)	88.5 (3.48)	
			3/4" Male NPT	3/4" Female NPT	114.3 (4.50)	76.2 (3.00)	38.1 (1.50)	57.2 (2.25)	38.1 (1.50)	91.5 (3.60)	
			3/8" Hy-Lok		91.2 (3.59)	45.6 (1.80)	45.6 (1.80)	61.6 (2.43)	32.0 (1.26)	88.5 (3.48)	
			1/2" Hy-Lok		96.2 (3.79)	48.1 (1.89)	48.1 (1.89)	64.1 (2.52)			
			1/4" Pipe Socket Weld		65.0 (2.56)	32.5 (1.28)	32.5 (1.28)	48.5 (1.91)			
			1/2" Pipe Socket Weld								
			1/4" Pipe S.W.	1/4" Female NPT	76.2 (3.00)	38.1 (1.50)	38.1 (1.50)	54.1 (2.13)			
			1/2" Pipe S.W.	1/2" Female NPT							

Dimensions in millimeters(inch) are for reference only, subject to change  
Dimensions shown with Hy-Lok nuts in finger-tight position, Where applicable  
Ordering information refer to page 30.

## Features

### Robust Bar Handle

- sintered stainless steel handle.

### Stem Thread

- is to prevent particle build-up and for long life.
- is above the packing to prevent fluid contamination.

### Bonnet Loking Plate

- ensures no disassembly.

### Variety of End Connections

- include male/female NPT and Male/Female ISO/BSP. Female Hy-Lok Tube Fittings.

### POM Cone Seat

- is standard for easier replacement and PEEK is also available as option.

### Internal Seal

- prevent ingress of foreign materials into the actuating threads.

### Panel Mount

- is available as option.

### Non - Rotating Stem Tip

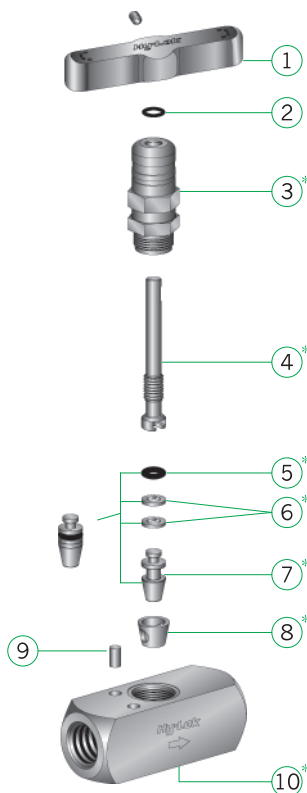
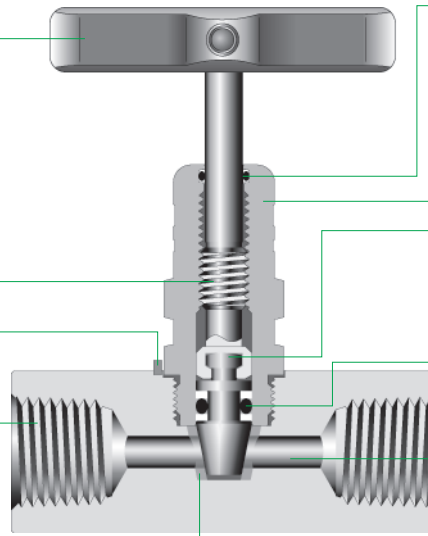
- ensures positive sealing minimizing seat wear-out.

### Viton O - Ring with Back - up Ring

- is Standard.

### Orifice in Straight Flow Path

- ensures max Cv.



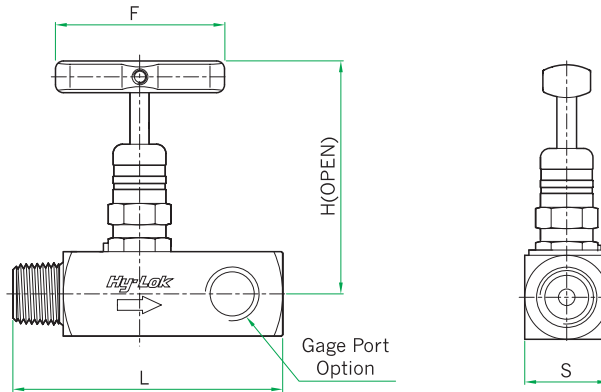
## Materials of Construction

Description		Grade / ASTM Specification
		Valve Body Materials
		SS 316
1	Handle	Stainless Steel
2	Seal	Viton
3	Bonnet *	SS 316 / A479
4	Stem *	
5	Stem Seal *	Viton
6	Back up Ring *	PTFE
7	Stem Tip *	SS 316 / A479
8	Seat *	POM
9	Pin	Stainless Steel
10	Body *	SS 316 / A479

Note : " \* " marked are wetted parts.

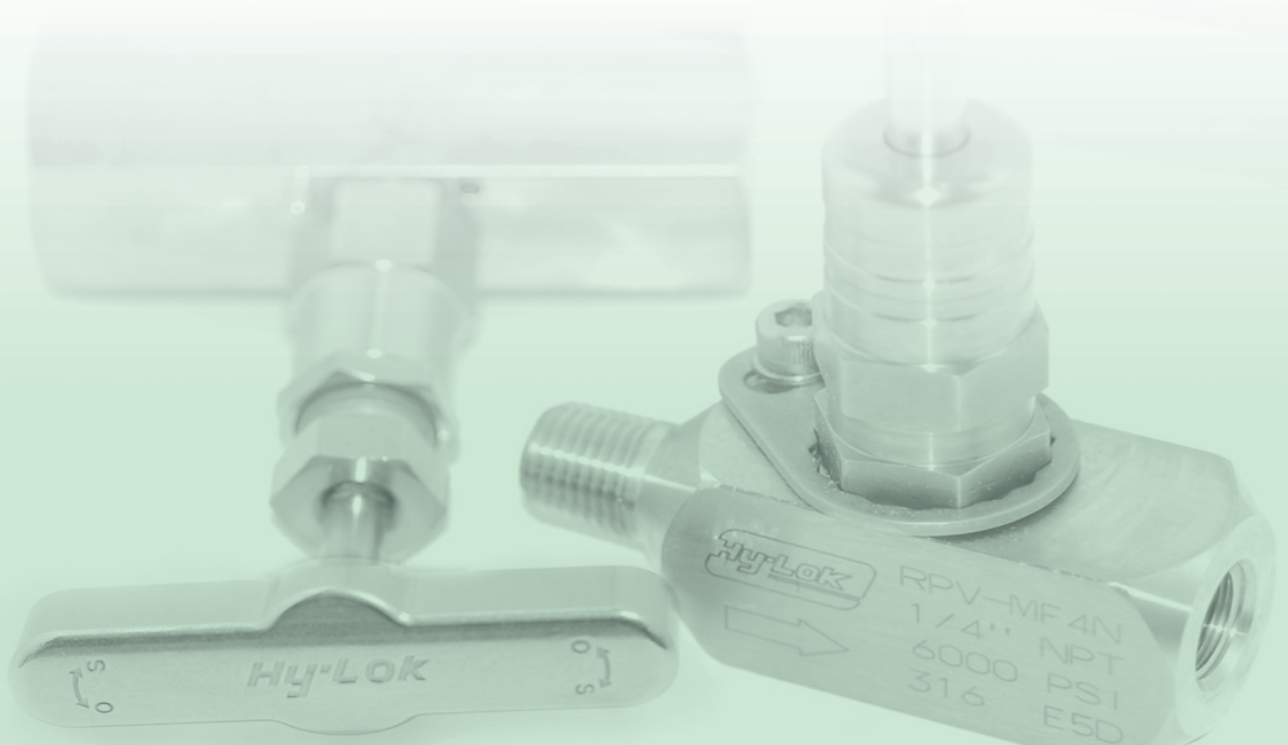
# RP Series Rising Plug Valve

## Table of Dimensions



Basic Part No.		Orifice Hole	Cv	End Connections		Dimensions			
				Inlet	Outlet	L	S	F	H
RPV	F -4N	6.3 (0.25)	1.77	1/4" Female NPT		62.0 (2.44)	25.4 (1.00)	60 (2.36)	95.4 (3.75)
	MF-4N			1/4" Male NPT	1/4" Female NPT	74.0 (2.91)			
	F -8N			1/2" Female NPT		84.0 (3.31)	32.0 (1.26)		
	MF-8N			1/2" Male NPT	1/2" Female NPT	90.0 (3.54)			
	MF-12N8N			3/4" Male NPT	1/2" Female NPT				

Dimensions in millimeters (inch) are for reference only, subject to change. Ordering information refer to page 30.





## Features

### Handle

- Aluminum handle with black anodizing

### Back Seating

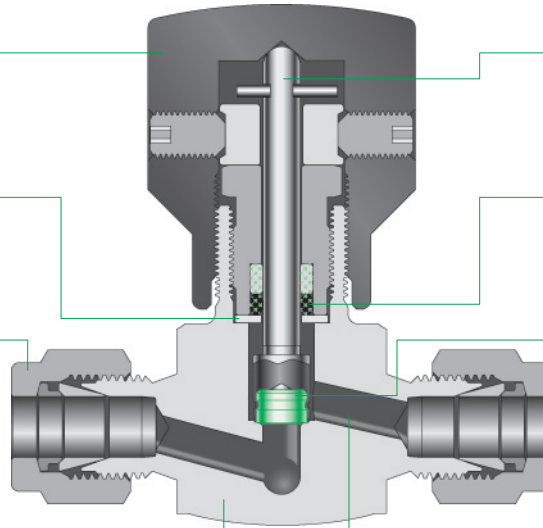
- provides sealing in fully open position

### Variety of End Connections

- include Hy-Lok tube fitting and male/female NPT/ISO threads

### Integral Bonnet with One Piece Body

- is available with straight and angle pattern



### Non - Rotating Stem

- ensures positive sealing

### Viton O - Ring with Back - up Ring

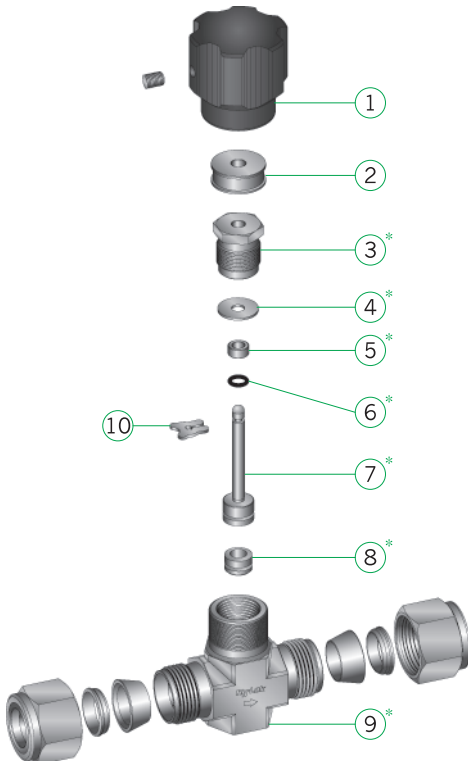
- needs no adjustment

### Soft Seat Stem Tips

- Soft seat with PCTFE

### Variety of Orifice Sizes

- include 2.4mm(NSNV 1 series), 4.0mm(NSNV 2 series), 5.6mm(NSNV 3 series),



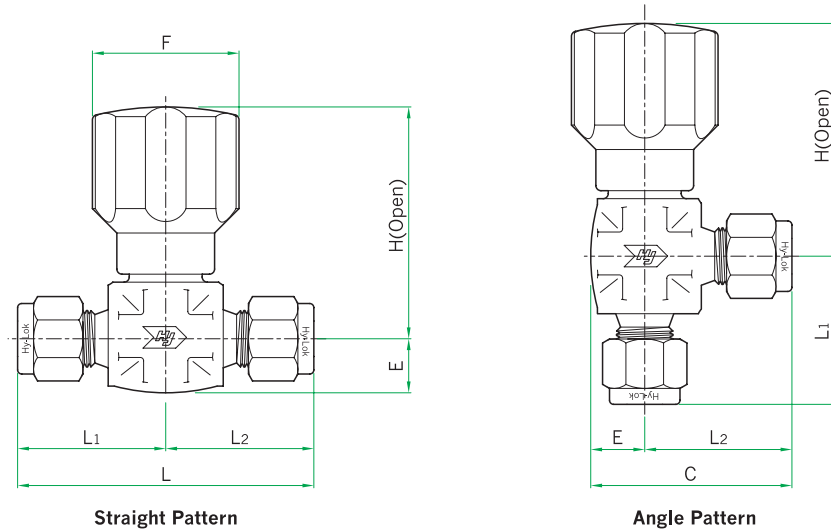
## Materials of Construction

No.	Component	Grade / ASTM Specification		
		Valve Body Materials		
		SS316	Brass	Alloy 400
1	Handle	Aluminum		
2	Handle Spool	Aluminum		
3	Packing Bolt *	SS316 / A479	C360 / B16	Alloy 400 / B164
4	Stem Washer*	SS316 / A276		
5	Back up Ring*	PTFE		
6	O-Ring*	Viton		
7	Stem*	SS316 / A479	Alloy 400 / B164	
8	Stem Tip*	PCTFE		
9	Body*	SS316 / A182	C377 / B283	Alloy 400 / B564
10	Stop Ring	Carbon Steel		

Note : " \* " marked are wetted parts.  
Molybdenum disulfide and fluoro carbon based lubricant in used.

# NSNV Series Non-rotating Stem Needle Valve

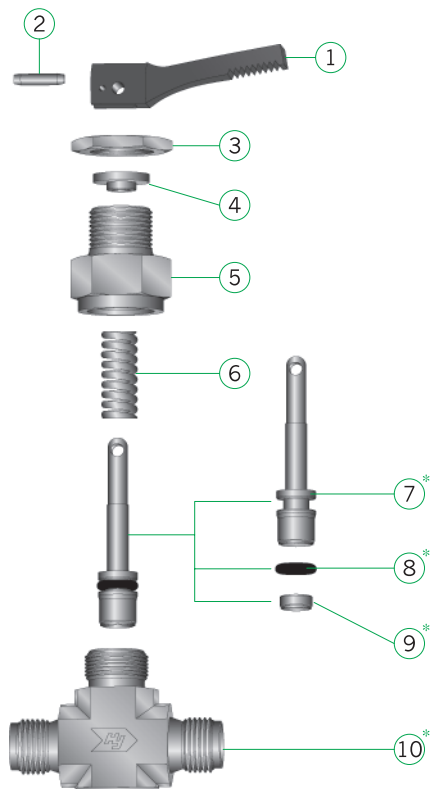
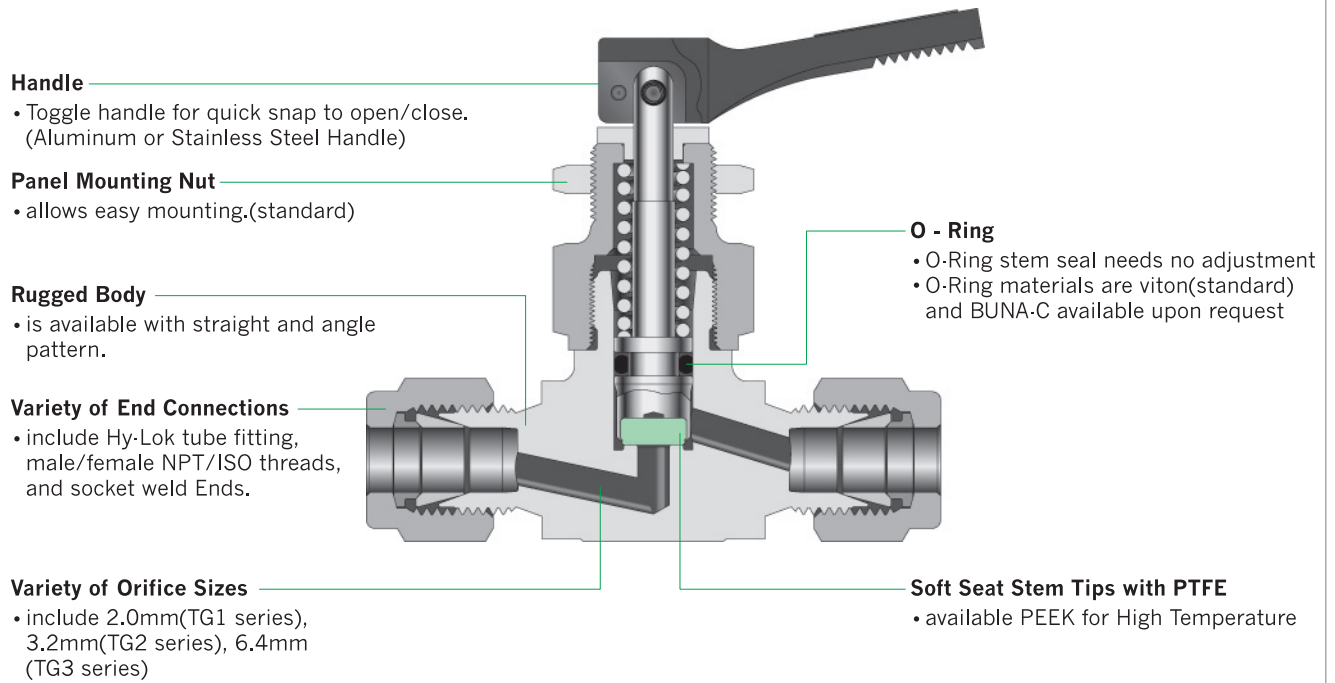
## Table of Dimensions



Basic Part No.			Cv	Orifice	End Connection		Dimensions						
					Inlet	Outlet	L	L1	L2	E	C	F	H
NSNV1	H	-2T-	0.12	2.4 (0.093)	1/8" Hy-Lok	1/8" Hy-Lok	55.9 (2.20)	27.9 (1.10)	27.9 (1.10)	7.9 (0.31)	35.8 (1.41)	28.5 (1.12)	48.0 (1.89)
	MH	-2N4T-			1/8" Male NPT	1/4" Hy-Lok	47.0 (1.85)	19.0 (0.75)			23.9 (0.94)		
	MF	-2N-				1/8" Female NPT	42.9 (1.69)		31.8 (1.25)				
NSNV2	H	-4T-	0.27	4.0 (0.156)	1/4" Hy-Lok	1/4" Hy-Lok	57.6 (2.27)	28.7 (1.13)	28.7 (1.13)	9.7 (0.38)	38.4 (1.51)	28.5 (1.12)	48.0 (1.89)
	H	-6M-			6mm Hy-Lok	6mm Hy-Lok	50.0 (1.97)	24.9 (0.98)	12.7 (0.50)	34.5 (1.36)			
	M	-4N-			1/4" Male NPT	1/4" Hy-Lok					53.8 (2.12)		
	MH	-4N4T-				6mm Hy-Lok	24.9 (0.98)	28.7 (1.13)	9.7 (0.38)	38.4 (1.51)			
	MH	-4N6M-			6mm Hy-Lok								
NSNV3	H	-6T-	0.53	5.6 (0.218)	3/8" Hy-Lok	3/8" Hy-Lok	65.5 (2.58)	32.8 (1.29)	32.8 (1.29)	12.7 (0.50)	45.5 (1.79)	32.0 (1.26)	52.5 (21.8)
	M	-4N-			1/4" Male NPT	1/4" Male NPT	57.2 (2.25)	28.4 (1.12)	28.4 (1.12)		41.1 (1.62)		
	M	-6N-			3/8" Male NPT	3/8" Male NPT				14.2 (0.56)	42.6 (1.68)		
	F	-4N-			1/4" Female NPT	1/4" Female NPT	53.8 (2.12)	26.9 (1.06)	26.9 (1.06)	12.7 (0.50)	39.6 (1.56)		
	MH	-4N6T-			1/4" Male NPT	3/8" Hy-Lok	60.5 (2.38)	24.9 (0.98)	28.7 (1.13)		45.5 (1.79)		
	MF	-4N-				1/4" Female NPT	55.6 (2.19)	28.4 (1.12)	26.9 (1.06)	39.6 (1.56)			
	MF	-8N4N-			1/2" Male NPT		63.5 (2.50)	31.8 (1.25)	31.8 (1.25)	14.2 (0.56)	46.0 (1.81)		

Dimensions in millimeters(inch) are for reference only, subject to change  
 Dimensions shown with Hy-Lok nuts in finger-tight position, where applicable.  
 Ordering information refer to page 30.

## Features

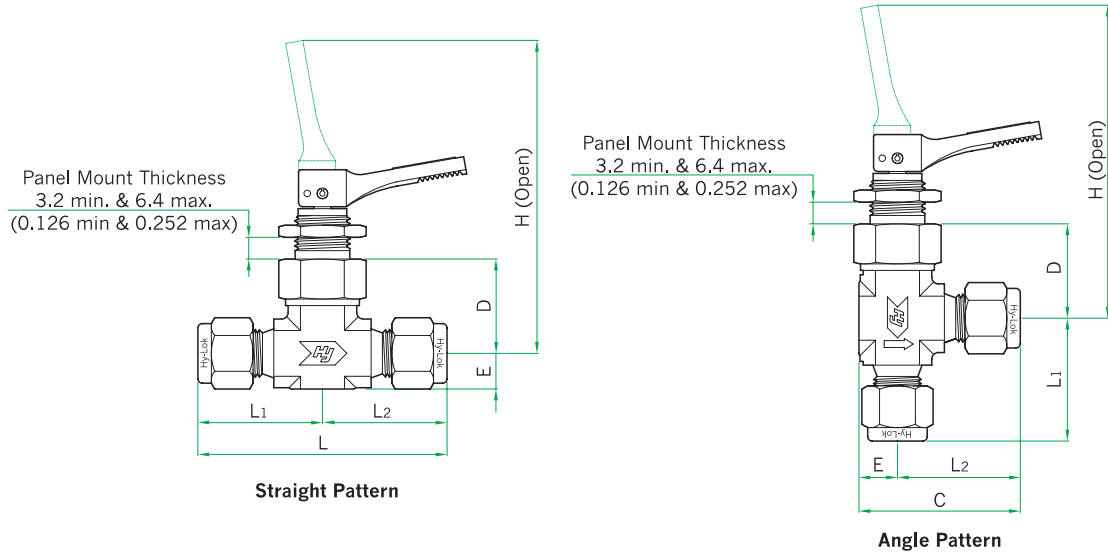


## Materials of Construction

No.	Component	Grade / ASTM Specification	
		Valve Body Materials	
		Stainless Steel	Brass
1	Handle	Nylon	
2	Pin	SS302	
3	Panel Nut	SS316 / A276	C360 / B16
4	Washer	Nylon	
5	Packing Nut	SS316 / A479	C360 / B16
6	Spring	SS302	
7	Stem*	SS316 / A479	
8	Stem O-ring*	Viton	
9	Stem Tip*	PTFE	
10	Body*	SS316 / A182	C377 / B283

Note : " \* " marked are wetted parts.  
Molybdenum disulfide and fluoro-carbon based lubricant in used.

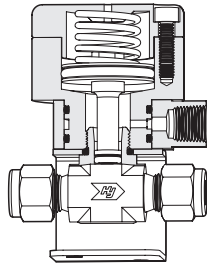
## Table of Dimensions



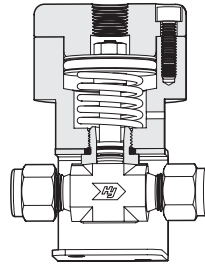
Basic Part No.			Orifice	Cv	End Connection		Dimensions						
					Inlet	Outlet	L	L1	L2	C	E	D	H
TG1	H	-2T-	2,0 (0,08)	0,11	1/8" Hy-Lok	1/8" Hy-Lok	49,8 (1,96)	24,9 (0,98)		32,9 (1,30)	8,0 (0,31)	21,9 (0,86)	72,2 (2,84)
	H	-3M-			3mm Hy-Lok	3mm Hy-Lok							
	M	-2N-			1/8" Male NPT	1/8" Male NPT	38,1 (1,50)	19,0 (0,75)		27,0 (1,06)			
	MH	-2N2T-			1/8" Male NPT	1/8" Hy-Lok	43,9 (1,73)	19,0 (0,75)	24,9 (0,98)	32,9 (1,30)			
TG2	H	-4T-	3,2 (0,125)	0,20	1/4" Hy-Lok	1/4" Hy-Lok	57,4 (2,26)	28,7 (1,13)		36,9 (1,45)	8,2 (0,32)	21,7 (0,85)	72,0 (2,83)
	H	-6M-			6mm Hy-Lok	6mm Hy-Lok							
	H	-8M-			8mm Hy-Lok	8mm Hy-Lok	56,4 (2,22)	28,2 (1,11)		36,4 (1,43)			
	F	-2N-			1/8" Female NPT	1/8" Female NPT	41,4 (1,63)	20,6 (0,81)		28,8 (1,13)			
	M	-2N-			1/8" Male NPT	1/8" Male NPT	43,7 (1,72)	21,8 (0,86)		30,0 (1,18)			
	M	-4N-			1/4" Male NPT	1/4" Male NPT	49,8 (1,96)	24,9 (0,98)		34,4 (1,35)			
	MH	-4N4T-			1/4" Male NPT	1/4" Hy-Lok	53,6 (2,11)	24,9 (0,98)	28,7 (1,13)	38,2 (1,50)			
	MF	-2N-			1/8" Male NPT	1/8" Female NPT	41,4 (1,63)	20,6 (0,81)		28,8 (1,13)			
TG3	H	-6T-	6,4 (0,25)	0,70	3/8" Hy-Lok	3/8" Hy-Lok	65,5 (2,58)	32,8 (1,29)		45,8 (1,80)	13,0 (0,51)	26,9 (1,06)	90,4 (3,56)
	H	-8T-			1/2" Hy-Lok	1/2" Hy-Lok	71,1 (2,80)	35,6 (1,40)		48,6 (1,91)			
	H	-10M-			10mm Hy-Lok	10mm Hy-Lok	69,1 (2,72)	34,5 (1,36)		47,5 (1,87)			
	H	-12M-			12mm Hy-Lok	12mm Hy-Lok	74,2 (2,92)	37,1 (1,46)		50,1 (1,97)			
	F	-4N-			1/4" Female NPT	1/4" Female NPT	53,8 (2,12)	26,9 (1,06)		39,9 (1,57)			
	M	-6N-			3/8" Male NPT	3/8" Male NPT	57,2 (2,25)	28,4 (1,12)		41,4 (1,63)			

Dimensions in millimeters(inch) are for reference only, subject to change  
 Dimensions shown with Hy-Lok nuts in finger-tight position, where applicable.  
 Ordering information refer to page 30.

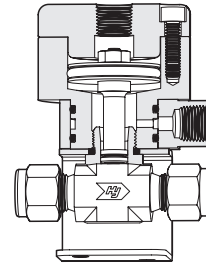
## Pneumatically Actuated Valves



[ Normally Closed ]



[ Normally Open ]



[ Double Acting ]

### Actuator Types

Type	Material		
	O-ring	Stem Tip	Washer
Standard	Viton	PTFE	Nylon
Low temperature	BUNA-C		
High temperature	Viton	PEEK	PEEK

### Material of Construction

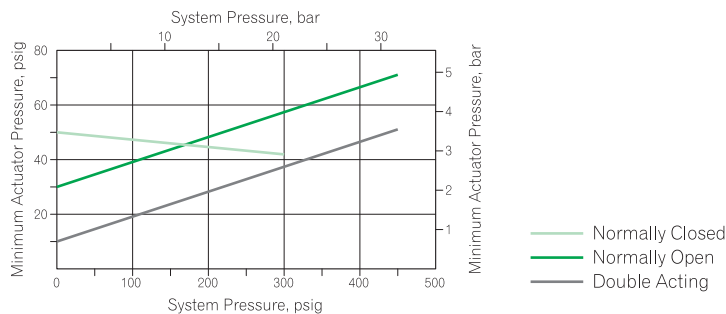
No.	Component	Material
1	Cover	Black anodized aluminum
2	Housing	
3	Port	
4	Piston	Aluminum
5	Bolt	SS304
6	Spring	SS302
7	O-ring	Viton
8	Mounting Bracket	SS304

See page18 for other materials of construction.

### Actuation Modes

- Normally closed : Air opens, spring closes
- Normally open : Air closes, spring opens
- Double acting : Air opens and closes

### Pneumatic Actuator Performance

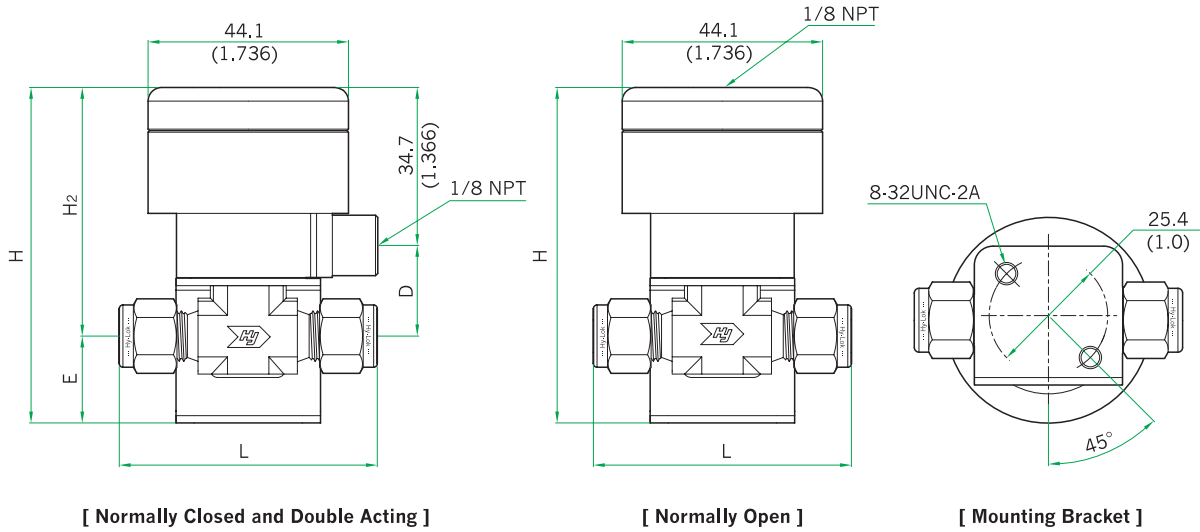


### Technical Data

Actuator Type	Temperature Rating °F ( °C )	Working Pressure, psig (bar)			Actuator Pressure Rating, psig (bar)
		Normally Closed	Normally Open	Double Acting	
Standard	-20 to 200 (-28 to 93)	300 (20.6)	450 (31.0)	50 (31.0)	150 (10.3)
Low temperature	-65 to 200 (-53 to 93)				
High temperature	-20 to 400 (-28 to 204)				

# TG Series Toggle Valve

## Table of Dimensions



[ Normally Closed and Double Acting ]

[ Normally Open ]

[ Mounting Bracket ]

Basic Part No.			Orifice in. (mm)	Cv	End Connection		Dimensions				
					Inlet	Outlet	L	D	E	H	H <sub>2</sub>
TG1	H	-2T-	2.0 (0.08)	0.11	1/8" Hy-Lok	1/8" Hy-Lok	49.8 (1.96)	20.1 (0.79)	19.0 (0.75)	73.8 (2.90)	54.8 (2.16)
	M	-2N-			1/8" Male NPT	1/8" Male NPT	38.1 (1.50)				
	MH	-2N2T-			1/8" Hy-Lok	1/8" Hy-Lok	43.9 (1.73)				
TG2	H	-4T-	3.2 (0.125)	0.20	1/4" Hy-Lok	1/4" Hy-Lok	57.4 (2.26)	19.9 (0.78)	19.2 (0.76)	73.8 (2.90)	54.6 (2.15)
	H	-6M-			6mm Hy-Lok	6mm Hy-Lok	56.4 (2.22)				
	H	-8M-			8mm Hy-Lok	8mm Hy-Lok					
	F	-2N-			1/8" Female NPT	1/8" Female NPT	41.4 (1.63)				
	M	-4N-			1/4" Male NPT	1/4" Male NPT	49.8 (1.96)				
	MH	-4N4T-			1/4" Hy-Lok	1/4" Hy-Lok	53.6 (2.11)				

Dimensions in millimeters(inch) are for reference only, subject to change  
 Dimensions shown with Hy-Lok nuts in finger-tight position, where applicable.  
 Ordering information refer to page 30.



## Features

**Handle**

- is robust stainless steel bar handle.

**Packing Bolt**

- allows easy packing adjustment for leak tight seal.

**Stem Threads**

- is rolled and electroless nickel pl; for maximum operating life.

**Back Seating**

- provides anti-blow out of stem and secondary stem seal function

**Rugged Body**

- is machined from forging.

**Variety of End Connections**

- Hy-Lok Tube End.  
Male & Female ISO threads  
Male & Female NPT threads  
and socket weld Ends.

**Locking Nut**

- prevents loosening of packing bolt.

**Packing**

- located below stem threads
- isolates stem thread from process
- prevents stem lubricant washout
- is PTFE as a standard with reinforced packing washer and grafoil is also available upon request.

**Metal & Graphited Seal Bonnet to Body construction**

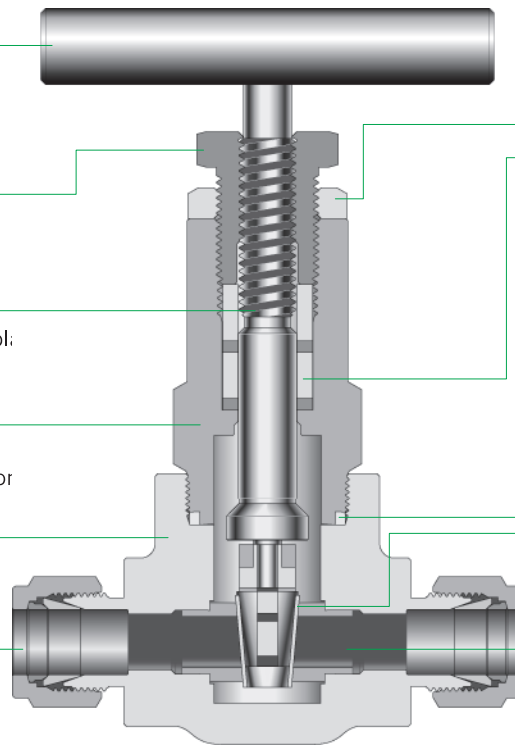
- construction reinforces safety

**Seat ring & Wedge Stellite hard facing**

- Long cycle life.

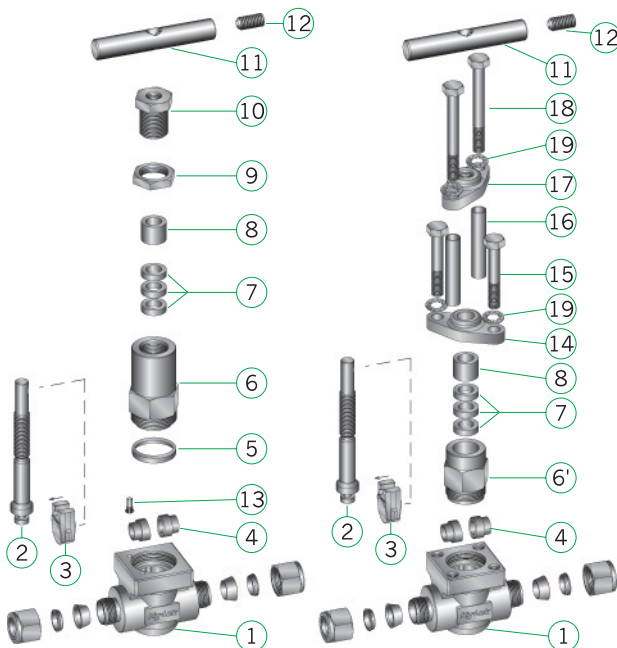
**Orifice Size**

- 6.4mm (GT1V Series)
- 10.0mm (GT2V Series)
- 12.7mm (GT3V Series)
- 19.0mm (GT4V Series)



GT

GTY



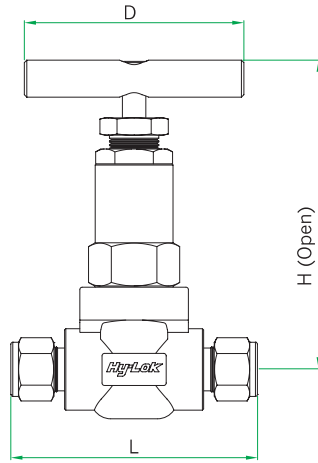
## Materials of Construction

Description	Grade / ASTM Specification		
	Valve Body Materials		
	SS316	A105	Alloy 400
1 Body*	SS316 / A182	A105	Alloy 400 / B564
2 Stem*	SS316 / A479		Alloy 400 / B164
3 Wedge*	HF CF8M / A351		UNS N04400
4 Seat Ring*	HF SS316 / A479		Alloy 400 / B164
5 Bonnet Packing	Grafoil		
6,6' Bonnet*	SS316 / A479	A105	Alloy 400 / B164
7 Stem Packing	PTFE (Available Grafoil)		
8 Packing Gland	SS316 / A479		
9 Bonnet Nut	SS316 / A479		
10 Packing Bolt	SS316 / A479		
11 Bar Handle	Stainless Steel		
12 Handle Screw			
13 Stop Pin			
14 Gland Flange	SS316 / A182 or A479		
15 Yoke Packing Bolt	B8M / A193	B7 / A193	B8M / A193
16 Yoke Support	SS316 / A269		
17 Yoke Flange	SS316 / A182 or A479		
18 Yoke Bolt	B8M / A193	B7 / A193	B8M / A193
19 Washer	Stainless Steel		

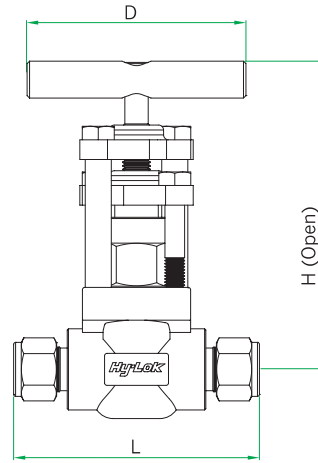
Note : " \* " marked are wetted parts.  
"HF" Stellite Hardfacing.

# G Series Gate Valve

## Table of Dimensions



**Threaded Bonnet type**



**Outside Screw & Yoke type**

Basic Part No.		Port	Orifice Hole	Cv Factor	End Connection		Dimensions			
Series	Part No.				Inlet	Outlet	D	H	L	
GT1V GTY1V	F-	4N	Full	6,4mm (0.252)	2.6	1/4" Female NPT	1/4" Female NPT	64	100	70
	F-	6N				3/8" Female NPT	3/8" Female NPT			
	H-	6T	Reduced			3/8" Hy-Lok	3/8" Hy-Lok			78
	H-	8T	1/2" Hy-Lok			1/2" Hy-Lok	83			
	SW-	4P	Full			1/4" Pipe Weld	1/4" Pipe Weld			70
	SW-	6P	Reduced			3/8" Pipe Weld	3/8" Pipe Weld			
GT2V GTY2V	F-	6N	Full	10,0mm (0.394)	6.1	3/8" Female NPT	3/8" Female NPT	89	140	86
	F-	8N	Reduced			1/2" Female NPT	1/2" Female NPT			
	H-	8T				1/2" Hy-Lok	1/2" Hy-Lok			100
	H-	12T	5/8" Hy-Lok			5/8" Hy-Lok	86			
	SW-	6P	Full			3/8" Pipe Weld				3/8" Pipe Weld
	SW-	8P	Reduced			1/2" Pipe Weld	1/2" Pipe Weld			
GT3V GTY3V	F-	8N	Full	12,7mm (0.5)	11.3	1/2" Female NPT	1/2" Female NPT	110	170	100
	F-	12N	Reduced			3/4" Female NPT	3/4" Female NPT			
	H-	12T				3/4" Hy-Lok	3/4" Hy-Lok			115
	H-	16T	1" Hy-Lok			1" Hy-Lok	125			
	SW-	8P	Full			1/2" Pipe Weld	1/2" Pipe Weld			100
	SW-	12P	Reduced			3/4" Pipe Weld	3/4" Pipe Weld			
GT4V GTY4V	F-	12N	Full	19,0mm (0.748)	26.3	3/4" Female NPT	3/4" Female NPT	140	210	127
	F-	16N	Reduced			1" Female NPT	1" Female NPT			
	H-	16T				1" Hy-Lok	1" Hy-Lok			146
	SW-	12P	Full			3/4" Pipe Weld	3/4" Pipe Weld			127
	SW-	16P	Reduced			1" Pipe Weld	1" Pipe Weld			

Dimensions in millimeters(inches) are for reference only, subject to change.  
 Dimensions shown with Hy-Lok nuts in finger-tight position, where applicable  
 Ordering information refer to page 30



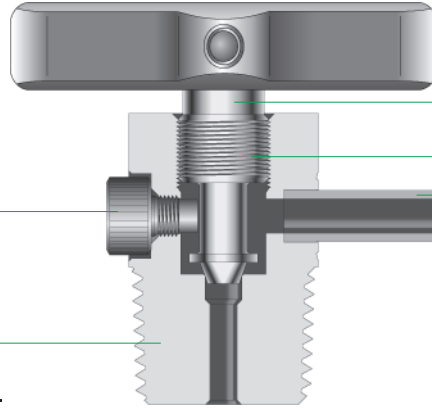
## Features

### Back Stop Screw

- Back stop screw prevents accidental remove of stem

### Variety of End Connections

- include Hy-Lok tube fitting, male/female NPT/ISO/SAE threads.



### Stem with Bar Handle

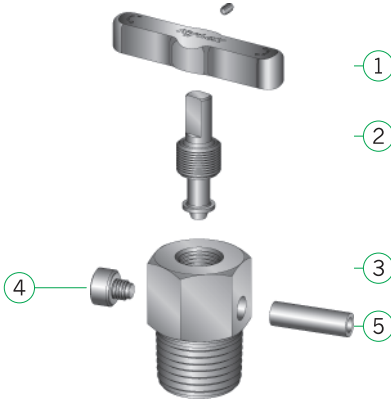
- available in Hex. Head Stem

### Stem Thread and Tips

- are rolled and electroless nickel plated for maximum service life.

### Bleed Tube

- available in barbed vent tube

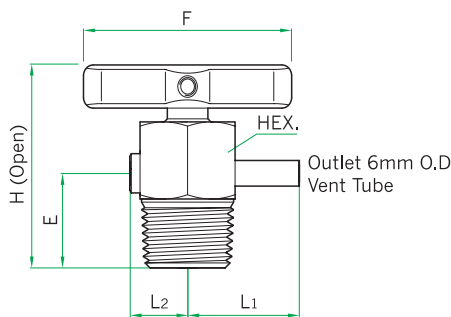


## Materials of Construction

Description	Grade / ASTM Specification		
	Valve Body Materials		
	SS316	Carbon Steel	Alloy 400
1 Handle	SS316		
2 Stem	SS316 / A479		Alloy 400 / B164
3 Body	SS316 / A479	1020 / A108 <sup>①</sup>	Alloy 400 / B164
4 Back Stop Screw	Stainless Steel		Alloy 400 / B164
5 Bleed Tube	SS316 / A269		Alloy 400 / B165

① Chrome 6-free plated for corrosion resistance

## Table of Dimensions

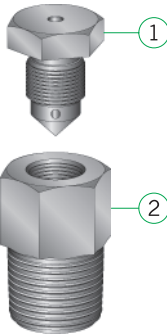
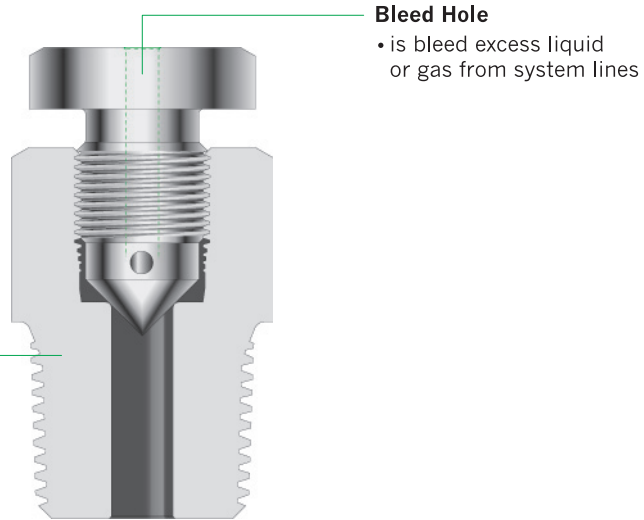


Basic Part No.	Orifice (Cv)	Inlet End Connections	Dimensions					
			L1	L2	E	F	H	HEX.
BLV	3.2 (0.126)	1/8" Male NPT	23,9 (0,94)	14,3 (0,56)	19,1 (0,75)	32 (1,26)	41,0 (1,61)	15,8 (5/8)
		1/4" Male NPT						
		3/8" Male NPT					44,0 (1,73)	
		1/2" Male NPT						22,2 (7/8)
		SAE 7/16-20	26,1 (1,03)	15,1 (0,59)	20,8 (0,82)	45 (1,77)	41,5 (1,63)	
		SAE 3/4-16					42,7 (1,68)	

Dimensions in millimeters(inch) are for reference only, subject to change  
Ordering information refer to page 30.

## Features

**Variety of End Connections**  
 include Hy-Lok tube fitting,  
 • male/female NPT/ISO/SAE threads.

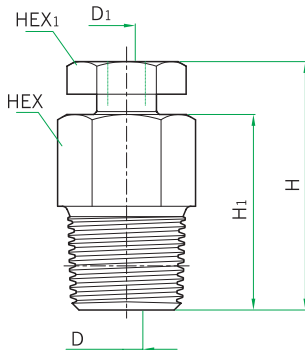


## Materials of Construction

Description		Grade / ASTM Specification		
		Valve Body Materials		
		SS 316	Carbon Steel	Alloy 400
1	Body	SS316 / A479	1020 / A108 <sup>Ⓛ</sup>	Alloy 400 / B164
2	Stem	SS316 / A479	1020 / A108	Alloy 400 / B164

Ⓛ Chrome 6-free plated for corrosion resistance

## Table of Dimensions



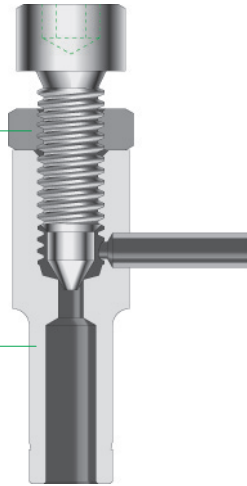
Basic Part No.	Inlet End Connections	Dimensions						
		H	H <sub>1</sub>	D	D <sub>1</sub>	HEX	HEX <sub>1</sub>	
VP	M 4N	1/4" Male NPT	42,7 (1.68)	33 (1.30)	6 (0.24)	3,2 (0.13)	22 (0.87)	19 (0.75)
	M 6N	3/8" Male NPT						
	M 8N	1/2" Male NPT						
	M 12N	3/4" Male NPT	43,7 (1.72)	34 (1.34)			27 (1.06)	
	M 16N	1" Male NPT	46,6 (1.83)	36,9 (1.45)			34,9 (1.37)	

Dimensions in millimeters(inch) are for reference only, subject to change  
 Ordering information refer to page 30.

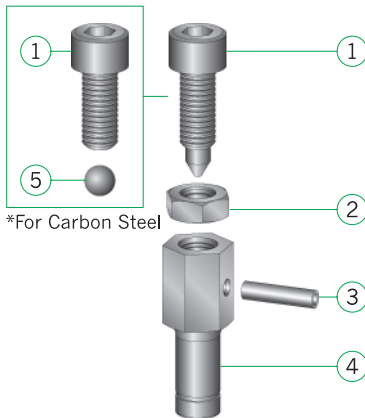
## Features

- **Locking Nut** prevents Stem Bolt from loosening.

- **Variety of End Connections**  
Size range from 6mm to 28mm for Tubing and 1/8" to 1/2" for Piping system



- **Bleed Tube**  
is bleed excess liquid or gas from system lines

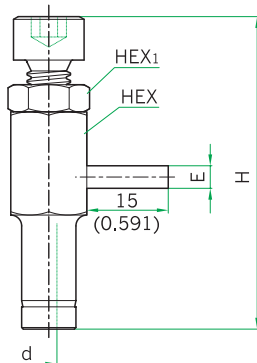


## Materials of Construction

Description	Grade / ASTM Specification	
	Valve Body Materials	
	SS 316	Carbon Steel <sup>①</sup>
1 Stem Bolt	Stainless Steel	Carbon Steel
2 Lock Nut	SS316 / A276	1020 / A108
3 Vent Tube	SS316 / A269	A179
4 Body	SS316 / A479	1020 / A108
5 Ball	-	Carbon Steel

① Chrome 6-free plated for corrosion resistance

## Table of Dimensions



Basic Part No.	Inlet End Connections	Dimensions					Basic Part No.	Inlet End Connections	Dimensions				
		H	d	E	HEX	HEX1			H	d	E	HEX	HEX1
BAP	-06 6mm Tube Stub	56 (2.20)	3 (0.12)	4 (0.16)	14 (0.55)	13 (0.51)	BAP	-81 6A(10.5mm) JIS Pipe Stub	57 (2.24)	3 (0.12)	4 (0.16)	14 (0.55)	13 (0.51)
	-08 8mm Tube Stub	57 (2.24)						-82 8A(13.8mm) JIS Pipe Stub	72 (2.83)				
	-10 10mm Tube Stub	58 (2.28)	-83 10A(17.3mm) JIS Pipe Stub	74 (2.91)	4 (0.16)	27 (1.06)		19 (0.75)					
	-12 12mm Tube Stub	74 (2.91)	-84 15A(21.7mm) JIS Pipe Stub	76 (2.99)									
	-15 15mm Tube Stub	75 (2.95)	4 (0.16)	6 (0.24)	27 (1.06)	19 (0.75)		-85 20A(27.2mm) JIS Pipe Stub	79 (3.11)	6 (0.24)	30 (1.18)		
	-16 16mm Tube Stub	76 (2.99)	4 (0.16)	6 (0.24)	27 (1.06)	19 (0.75)		-01R 1/8" PT	51 (2.00)	3 (0.12)	4 (0.16)	14 (0.55)	13 (0.51)
	-18 18mm Tube Stub	77 (3.03)						-02R 1/4" PT	53 (2.09)				
	-20 20mm Tube Stub	78 (3.07)	4 (0.16)	6 (0.24)	27 (1.06)	19 (0.75)		-03R 3/8" PT	54 (2.13)	4 (0.16)	6 (0.24)	14 (0.55)	13 (0.51)
	-22 22mm Tube Stub	79 (3.11)						-04R 1/2" PT	69 (2.72)				
	-25 25mm Tube Stub	80 (3.15)	4 (0.16)	6 (0.24)	27 (1.06)	19 (0.75)							
	-28 28mm Tube Stub	81 (3.19)						30 (1.18)					

Dimensions in millimeters (inch) are for reference only, subject to change  
Ordering information refer to page 30.

# PV Series Bleed & Purge Valve

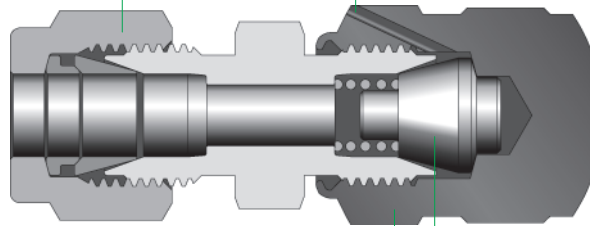
## Features

### Variety of End Connections

- Size range from 1/8" to 1/2" Tubing & Piping system

### Bleed Tube

- is bleed excess liquid or gas from system lines

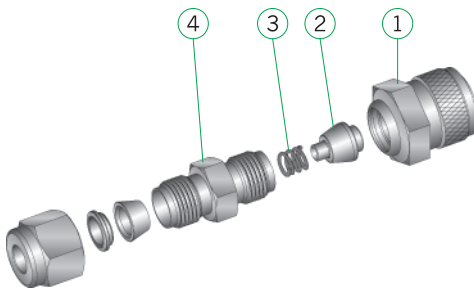


### Knured Cap

- is swaged to body to prevent accidental disassembly

### Poppet

- available in PTFE poppet

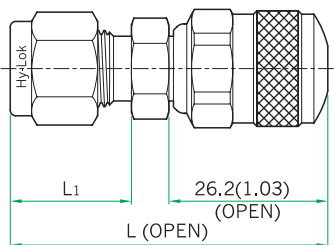


## Materials of Construction

Description	Grade / ASTM Specification		
	Valve Body Materials		
	SS 316	Carbon Steel <sup>①</sup>	Brass
1 Knured Cap	SS316 / A479	Carbon Steel	B16
2 Poppet	SS316 / A479		
3 Spring	Stainless Steel		
4 Body	SS316 / A479	1020 / A108	B16

① Chrome 6-free plated for corrosion resistance

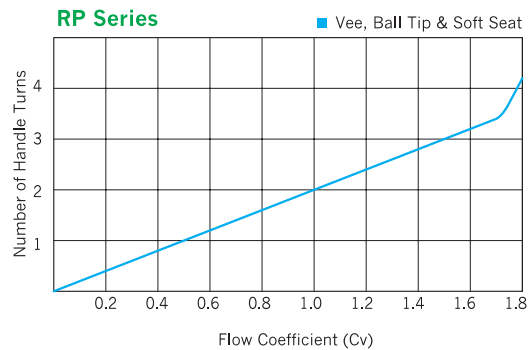
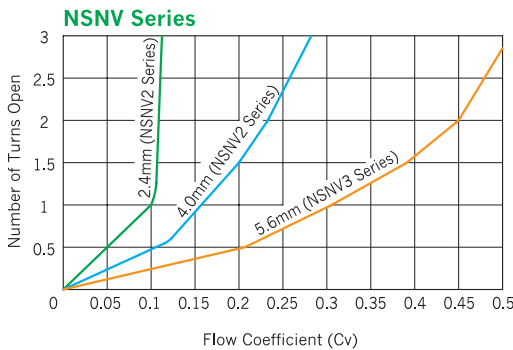
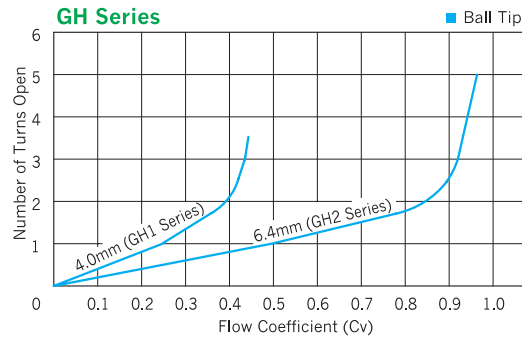
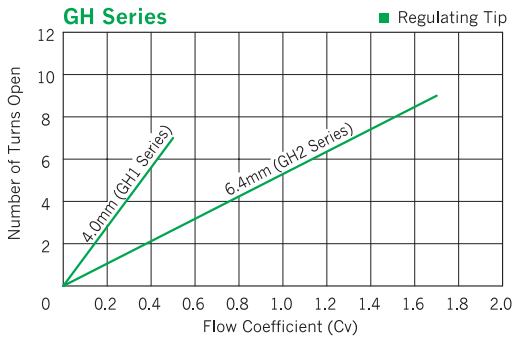
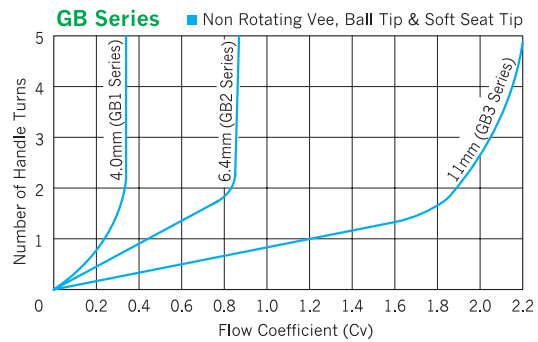
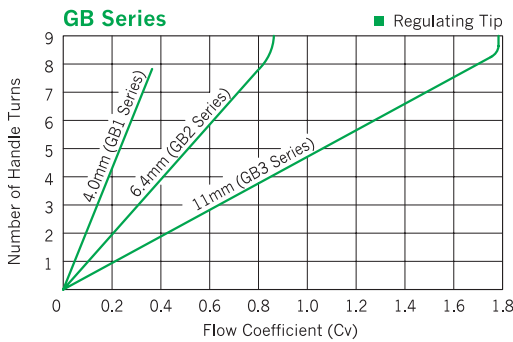
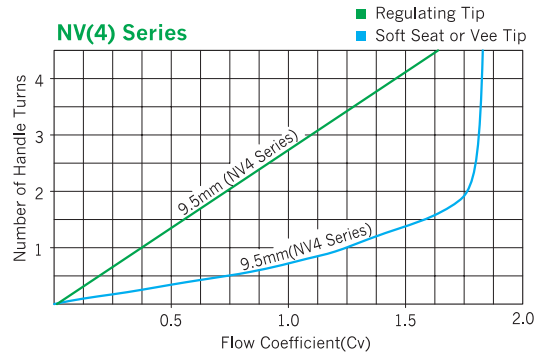
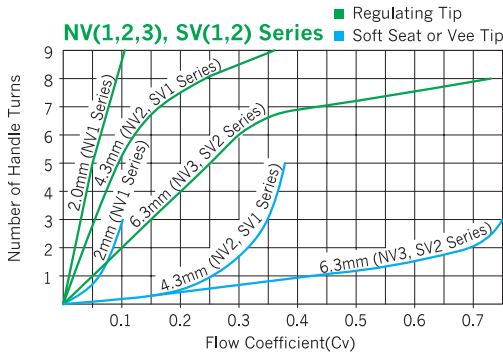
## Table of Dimensions



Basic Part No.	Inlet End Connections	Dimensions		Basic Part No.	Inlet End Connections	Dimensions			
		L	L <sub>1</sub>			L	L <sub>1</sub>		
PV	F -2N	1/8" Female NPT	39,6 (1,56)	13,5 (0,53)	PV	H -2T	1/8" Hy-Lok	46,7 (1,84)	15,24 (0,59)
	F -4N	1/4" Female NPT	44,4 (1,75)	18,3 (0,72)		H -4T	1/4" Hy-Lok	49,3 (1,94)	17,78 (0,69)
	F -6N	3/8" Female NPT	46,0 (1,81)	19,8 (0,78)		H -6T	3/8" Hy-Lok	51,6 (2,03)	19,3 (0,75)
	F -8N	1/2" Female NPT	50,3 (1,98)	24,6 (0,97)		H -8T	1/2" Hy-Lok	55,6 (2,19)	21,84 (0,88)
	M -2N	1/8" male NPT	41,1 (1,62)	9,7 (0,38)		H -6M	6mm Hy-Lok	49,3 (1,94)	17,7 (0,69)
	M -4N	1/4" male NPT	46,0 (1,81)	14,2 (0,56)		H -8M	8mm Hy-Lok	50,8 (2,0)	18,6 (0,72)
	M -6N	3/8" male NPT	46,7 (1,84)			T -4T	1/4 Tube Stub	47,5 (1,87)	16,0 (0,63)
	M -8N	1/2" male NPT	53,1 (2,09)	19,1 (0,75)		T -6T	3/8" Tube Stub	49,3 (1,94)	17,5 (0,69)
	M -4U	1/4", 7/16-20	42,9 (1,69)	9,7 (0,38)		T -8T	1/2" Tube Stub	54,6 (2,15)	23,1 (0,91)
	M -8U	1/2", 3/4-16	46,0 (1,81)	11,2 (0,44)					

Dimensions in millimeter(inch) are for reference only, subject to change  
 Dimensions shown with Hy-Lok nuts in finger-tight position, where applicable  
 Ordering information refer to page 30.

### Flow Coefficient (CV) VS Number of Handle Turns



### Testing

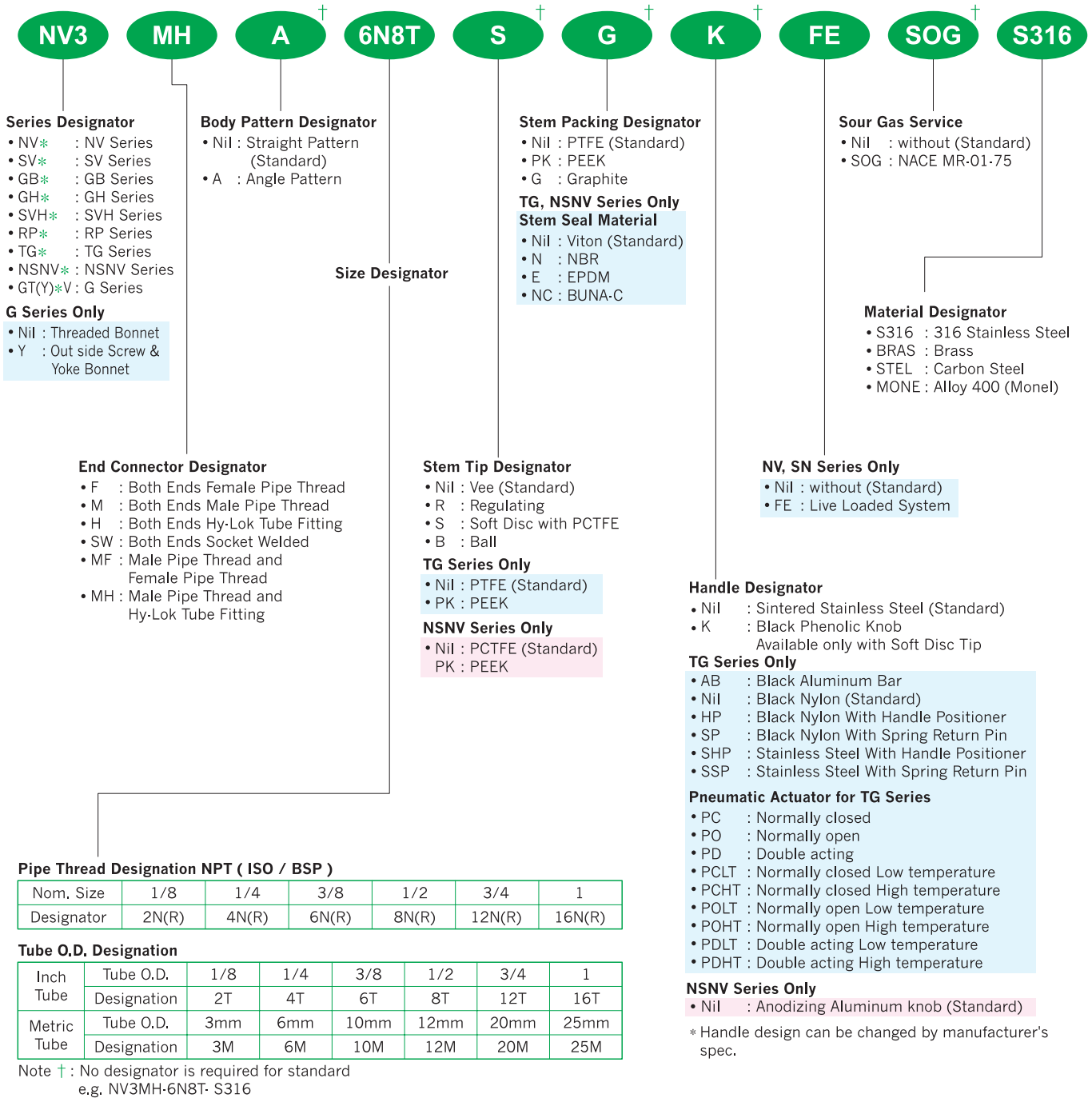
- 100% factory tested.
- Each needle valve is tested with nitrogen @ 69 bar (1000 psig) to Max. leak rate of 0.1 SCCM.
- Hydrostatic shell test is performed at 1.5 times the working pressure as an option.
- Optional tests are available upon request.

### Sour Gas Service

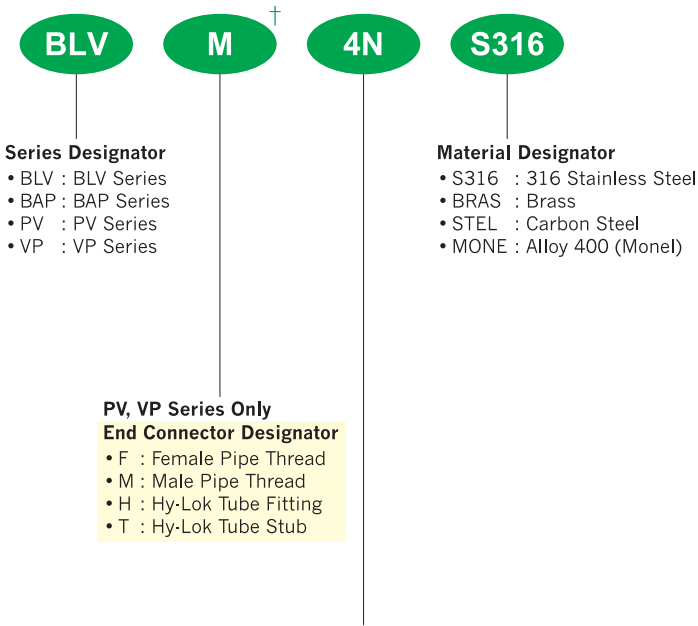
- Valves are available in materials which comply with standard NACE MR-01-75 latest revision relating to metallic materials offering optimum resistance to sulfide stress cracking

# Ordering Information

## • For Needle & Toggle Valves



• For Bleed & Purge Valves



**Series Designator**

- BLV : BLV Series
- BAP : BAP Series
- PV : PV Series
- VP : VP Series

**PV, VP Series Only  
End Connector Designator**

- F : Female Pipe Thread
- M : Male Pipe Thread
- H : Hy-Lok Tube Fitting
- T : Hy-Lok Tube Stub

**Material Designator**

- S316 : 316 Stainless Steel
- BRAS : Brass
- STEL : Carbon Steel
- MONE : Alloy 400 (Monel)

**Pipe Thread Designation NPT ( ISO / BSP )**

Nom. Size	1/8	1/4	3/8	1/2	3/4	1
Designator	2N(R)	4N(R)	6N(R)	8N(R)	12N(R)	16N(R)

**Tube O.D. Designation**

Inch Tube	Tube O.D.	1/8	1/4	3/8	1/2	3/4	1
	Designation	2T	4T	6T	8T	12T	16T
Metric Tube	Tube O.D.	3mm	6mm	10mm	12mm	20mm	25mm
	Designation	3M	6M	10M	12M	20M	25M

Note † : No designator is required for standard  
e.g. BLV - 8N - S316

**⚠ CAUTION**

Packing adjustment may be required during the valves service life.  
Valves that have not been cycled for a period of time may have a higher initial actuation torque.

**SAFETY in VALVE SELECTION**

Proper installation, materials compatibility, operation and maintenance of the valve is the responsibility of the user. The total system design must be taken into consideration to ensure optimal performance and safety.



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