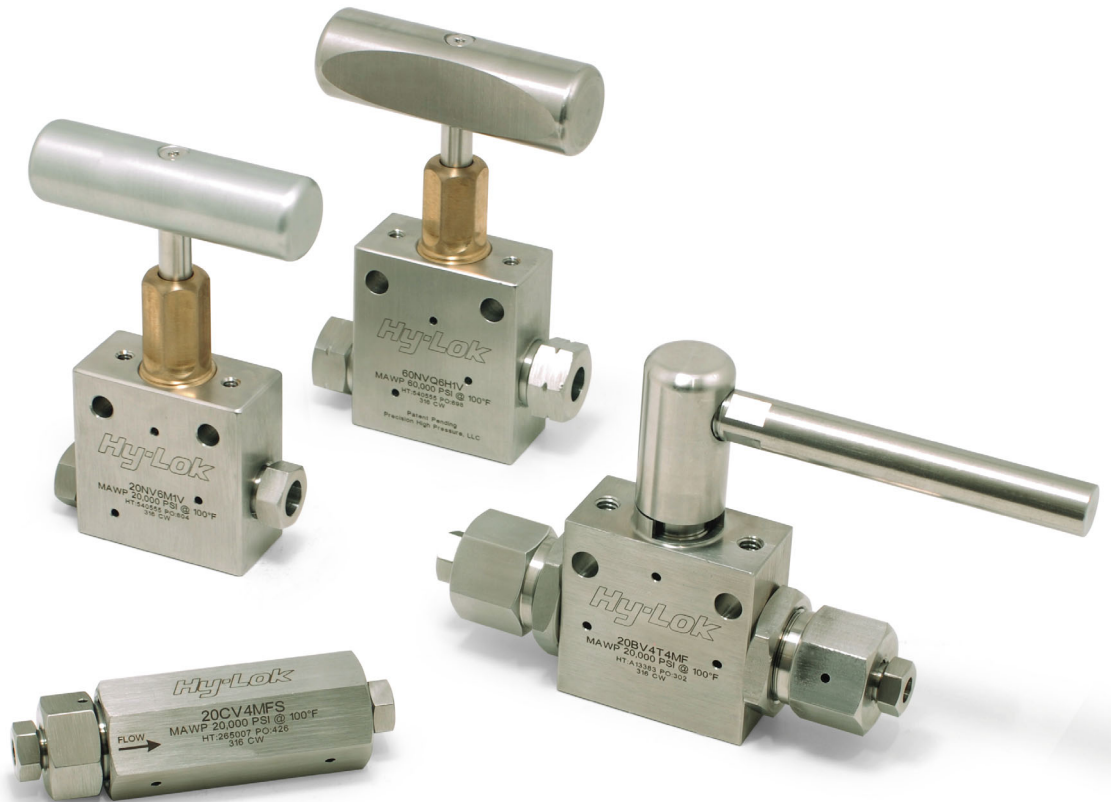


# Hy-Lok



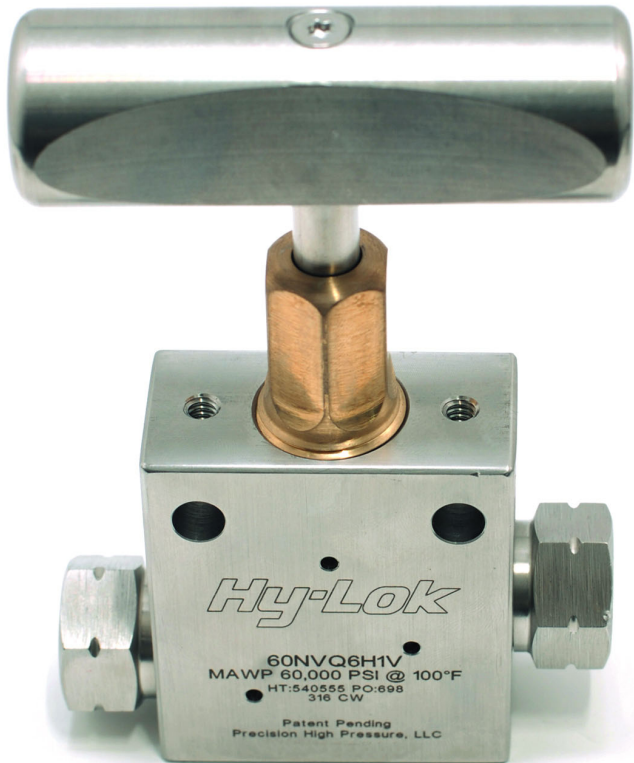
## High Pressure Valves

for 10,000 psig to 60,000 psig rating



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## NPT Needle Valves 10,000 - 15,000 psig

### Specifications

- MAWP up to 15,000 psig (1034 bar)
- Temperature Ratings : -100 °F to 600 °F (-73 °C to 316 °C)
- Quick Turn Needle Valve is optional

### Features & Benefits

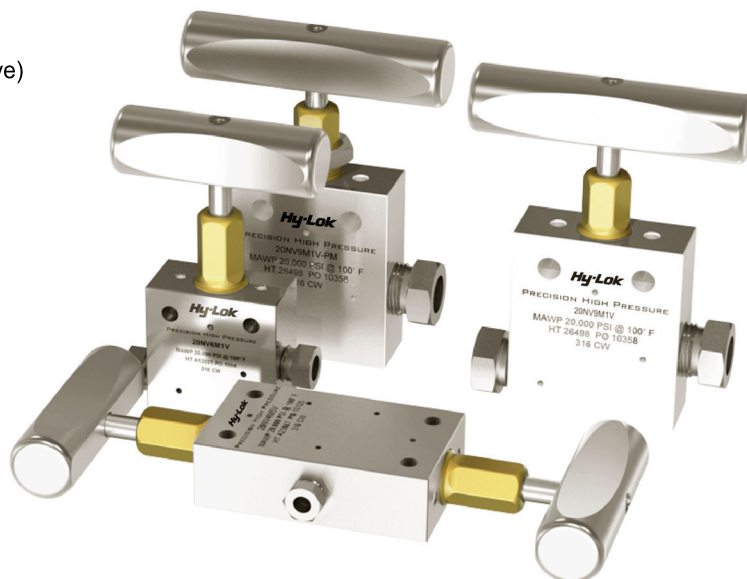
- Standard valve fully opens in as little as 3 1/2 turns / Quick turn needle valve (1 3/4 turns).
- Solid stainless steel handle.
- Stem is lifted off of the seat more than 2X faster than conventional valves, which reduces throttling and therefore increases seat life. (Quick Turn Needle Valve)
- Less than half the number of turns to fully open compared to competitor's valves. Less operator fatigue when opening/closing. (Quick Turn Needle Valve)
- Stainless steel captive fixing screw with stainless spring for easier handle removal. Eliminates dropped or misplaced fixing screw.
- 4 - sided tapered stem for maximum handle contact. No chance of the handle slipping or loosening on stem.
- Two - piece, heavy - duty, non - rotating stem for a robust and reliable assembly.
- Bi - directional flow capability. Simplifies system designs.
- Packing gland/body thread interface consists of a preload locking internal thread form that is resistant to vibration. Eliminates the need for an external locking device.
- Double sided weep holes for easier leakage verification.
- Complete material traceability.

### Options

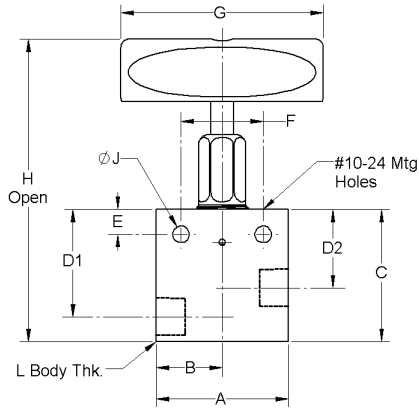
- Air Actuators for Remote Valve Operation - See Page 16 or ordering information
- Can be manufactured to meet NACE MR - 0175
- Grafoil Packing for temperature up to 800 °F (427 °C)
- Extended Stuffing Box for temperature up to 1200 °F (649 °C)
- For Valve to be manufactured to NACE MR - 0175 add - NACE to end of part number. Pressure rating will change due to NACE, contact factory for revised pressure rating.
- Example : 20NV6M1V - SOG (Standard Needle Valve)  
: 20NVQ6M1V - SOG (Quick Turn Needle Valve)

### Materials

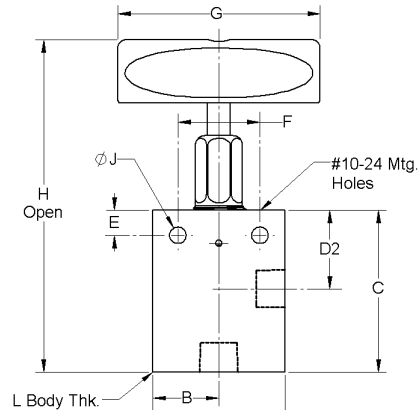
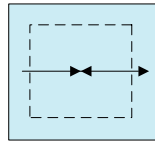
- Body - 316 cold worked stainless steel
- Packing - Glass filled Teflon
- Stem - 17 - 4 PH



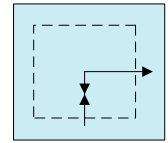
## Standard NPT Needle Valves



**2-Way Straight**



**2-Way Angle**



### 2-Way Straight

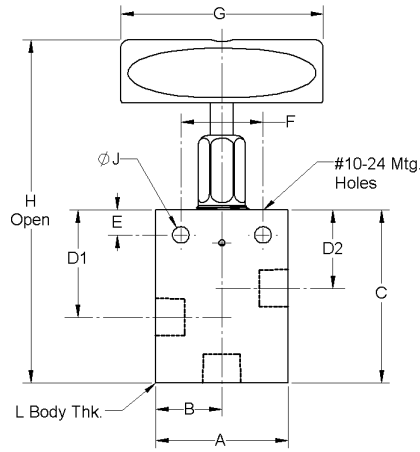
Pressure Rating	Connection Type	End Connection Size in.	Ordering Number	Orifice in. (mm)	Dimensions in. (mm)										
					A	B	C	D1	D2	E	F	G	H	J	L
15,000 psig	Female NPT	1/4	15NV4N1	0.25 (6.4)	2.00 (50.8)	1.00 (25.4)	2.00 (50.8)	1.63 (41.3)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	4.84 (123.0)	0.25 (6.4)	1.00 (25.4)
		3/8	15NV6N1	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	2.88 (73.2)	2.38 (60.4)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	5.46 (139.0)	0.34 (8.7)	1.00 (25.4)
		1/2	15NV8N1	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	3.00 (76.2)	2.38 (60.4)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	5.58 (142.0)	0.34 (8.7)	1.50 (38.1)

### 2-Way Angle

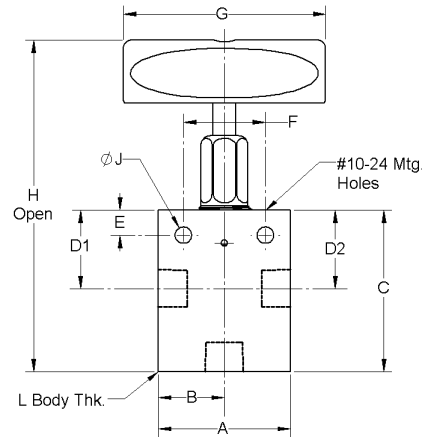
Pressure Rating	Connection Type	End Connection Size in.	Ordering Number	Orifice in. (mm)	Dimensions in. (mm)									
					A	B	C	D2	E	F	G	H	J	L
15,000 psig	Female NPT	1/4	15NV4N2	0.25 (6.4)	2.00 (50.8)	1.00 (25.4)	2.44 (62.0)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	5.28 (134.1)	0.25 (6.4)	1.00 (25.4)
		3/8	15NV6N2	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	3.38 (85.9)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	5.96 (152.0)	0.34 (8.7)	1.00 (25.4)
		1/2	15NV8N2	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	3.38 (85.9)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	5.96 (152.0)	0.34 (8.7)	1.50 (38.1)

\* If you want to order Quick Turn type, insert "Q" in front of size in ordering number  
 e.g. 15NVQ\*4N1 (2-way straight) / 15NVQ\*4N2 (2-way angle)

## Standard NPT Needle Valves



**3-Way 2 Inlet**



**3-Way 2 Outlet**

### 3-Way 2 Inlet

Pressure Rating	Connection Type	End Connection Size in.	Ordering Number	Orifice in. (mm)	Dimensions in. (mm)										
					A	B	C	D1	D2	E	F	G	H	J	L
15,000 psig	Female NPT	1/4	15NV4N3	0.25 (6.4)	2.00 (50.8)	1.00 (25.4)	2.62 (66.5)	1.63 (41.3)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	5.46 (139.0)	0.25 (6.4)	1.00 (25.4)
		3/8	15NV6N3	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	3.62 (85.9)	2.38 (60.4)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	6.20 (157.5)	0.34 (8.7)	1.00 (25.4)
		1/2	15NV8N3	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	3.62 (85.9)	2.38 (60.4)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	6.20 (157.5)	0.34 (8.7)	1.50 (38.1)

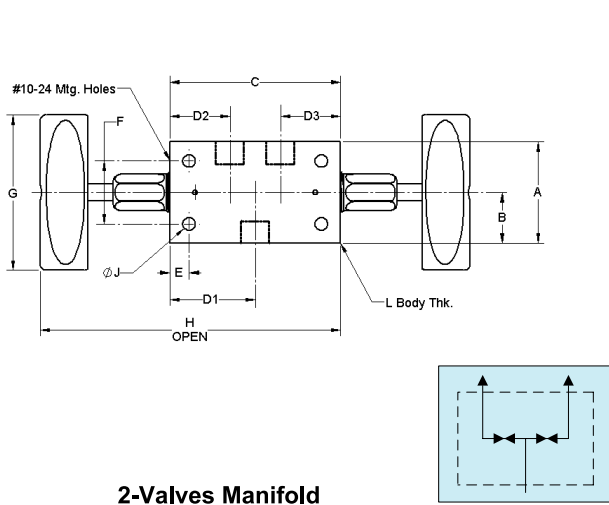
### 3-Way 2 Outlet

Pressure Rating	Connection Type	End Connection Size in.	Ordering Number	Orifice in. (mm)	Dimensions in. (mm)									
					A	B	C	D1	E	F	G	H	J	L
15,000 psig	Female NPT	1/4	15NV4N4	0.25 (6.4)	2.00 (50.8)	1.00 (25.4)	2.44 (62.0)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	5.28 (134.1)	0.25 (6.4)	1.00 (25.4)
		3/8	15NV6N4	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	3.38 (85.9)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	5.96 (152.0)	0.34 (8.7)	1.00 (25.4)
		1/2	15NV8N4	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	3.38 (85.9)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	5.96 (152.0)	0.34 (8.7)	1.50 (38.1)

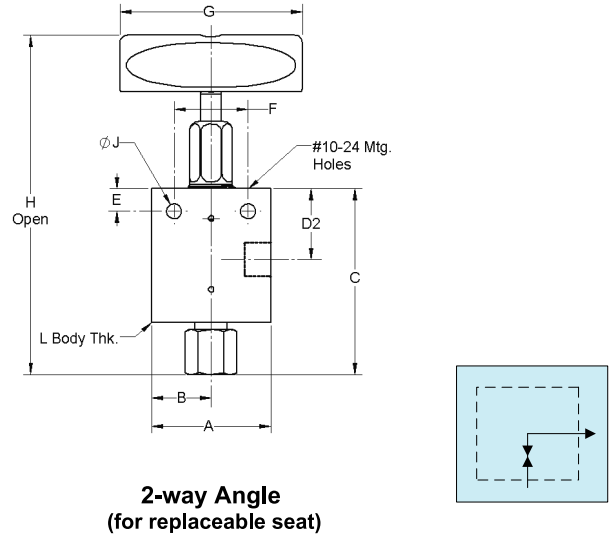
\* If you want to order Quick Turn type, insert "Q" in front of size in ordering number  
 e.g. 15NVQ\*4N3 (3-way 2 Inlet) / 15NVQ\*4N4 (3-way 2 Outlet)

Dimensions, in inches (millimeters), are for reference only and are subject to change.

## Standard NPT Needle Valves



**2-Valves Manifold**



**2-way Angle  
(for replaceable seat)**

### 2-Valves Manifold

Pressure Rating	Connection Type	End Connection Size in.	Ordering Number	Orifice in. (mm)	Dimensions in. (mm)											
					A	B	C	D1	D2	D3	E	F	G	H	J	L
15,000 psig	Female NPT	1/4	15NV4N5	0.25 (6.4)	2.00 (50.8)	1.00 (25.4)	3.38 (85.9)	1.69 (42.9)	1.19 (30.2)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	9.06 (230.1)	0.25 (6.4)	1.00 (25.4)
		3/8	15NV6N5	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	5.12 (130.0)	2.56 (65.0)	1.75 (44.5)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	10.28 (261.1)	0.34 (8.7)	1.00 (25.4)
		1/2	15NV8N5	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	5.12 (130.0)	2.56 (65.0)	1.75 (44.5)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	10.28 (261.1)	0.34 (8.7)	1.50 (38.1)

### Replaceable Seat

Pressure Rating	Connection Type	End Connection Size in.	Ordering Number	Orifice in. (mm)	Dimensions in. (mm)									
					A	B	C	D2	E	F	G	H	J	L
15,000 psig	Female NPT	1/4	15NV4N6	0.25 (6.4)	2.00 (50.8)	1.00 (25.4)	3.30 (83.8)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	6.19 (157.2)	0.25 (6.4)	1.00 (25.4)
		3/8	15NV6N6	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	4.51 (114.6)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	7.09 (180.1)	0.34 (8.7)	1.00 (25.4)
		1/2	15NV8N6	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	4.62 (117.3)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	7.20 (182.9)	0.34 (8.7)	1.50 (38.1)

\* If you want to order Quick Turn type, insert "Q" in front of size in ordering number  
e.g. 15NVQ\*4N5 (2-valves manifold) / 15NVQ\*4N6 (Replaceable seat)

## NPT Check Valves 10,000 - 15,000 psig

### Specifications

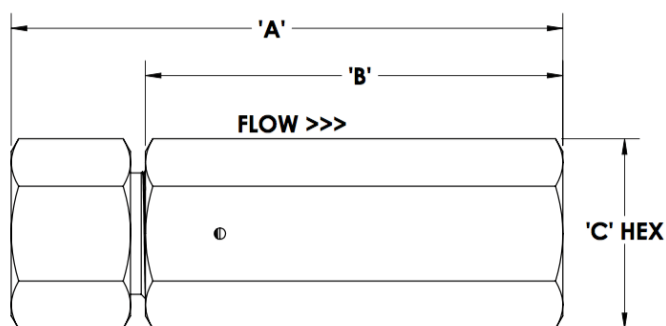
- MAWP up to 15,000 psig (1034 bar)
- Temperature Ratings
  - Metal Seat : -420 °F to 1200 °F ( -251 °C to 648 °C)
  - Soft Seat : -65 °F to 250 °F ( -54 °C to 121 °C)
- Nominal Cracking Pressure : 15 psig (1 bar)
- PEEK is standard material of soft seat
- NPT Check valves come standard with female end connections

### Features

- Prevents reverse flow which may cause damage to a pressure system
- Metal cone ring option offers metal - to - metal seat for high temperature applications
- Standard PEEK seat for optimum performance
- Complete material traceability
- Can be manufactured to meet NACE MR - 0175

### Materials

- 316 cold worked stainless steel is standard



Pressure Rating	Connection Type	End Connection Size in.	Ordering Number (Metal Seat)	Ordering Number (Soft Seat)	Orifice in. (mm)	Dimensions in. (mm)		
						A	B	C
15,000 psig	Female NPT	1/4	15CV4NFM	15CV4NFS	0.19 (4.8)	3.20 (81.3)	2.50 (63.5)	1.00 (25.4)
		3/8	15CV6NFM	15CV6NFS	0.22 (5.6)	3.56 (90.4)	2.66 (66.0)	1.13 (28.7)
		1/2	15CV8NFM	15CV8NFS	0.36 (9.1)	4.63 (117.6)	3.50 (88.9)	1.38 (35.1)
10,000 psig		3/4	10CV12NFM	10CV12NFS	0.52 (13.1)	5.63 (143.0)	4.38 (111.3)	1.75 (44.5)
		1	10CV16NFM	10CV16NFS	0.69 (17.5)	7.00 (177.8)	5.25 (133.4)	2.13 (54.1)

Dimensions, in inches (millimeters), are for reference only and are subject to change.

## High Pressure Valves

### Medium and High Pressure Needle Valves 20,000 - 60,000 psig

#### Specifications

- MAWP up to 60,000 psig (4136 bar)
- Temperature Ratings : -100 °F to 600 °F (-73 °C to 316 °C)
- Quick Turn Needle Valve is optional

#### Features & Benefits

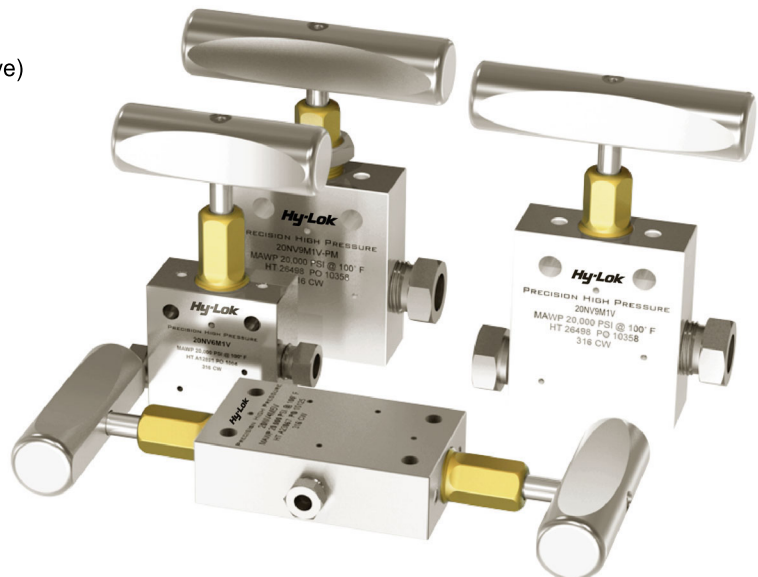
- Standard valve fully opens in as little as 3 1/2 turns / Quick turn needle valve (1 3/4 turns).
- Solid stainless steel handle.
- Stem is lifted off of the seat more than 2X faster than conventional valves, which reduces throttling and therefore increases seat life. (Quick Turn Needle Valve)
- Less than half the number of turns to fully open compared to competitor's valves. Less operator fatigue when opening/closing. (Quick Turn Needle Valve)
- Stainless steel captive fixing screw with stainless spring for easier handle removal. Eliminates dropped or misplaced fixing screw.
- 4 - sided tapered stem for maximum handle contact. No chance of the handle slipping or loosening on stem.
- Two - piece, heavy - duty, non - rotating stem for a robust and reliable assembly.
- Bi - directional flow capability. Simplifies system designs.
- Packing gland/body thread interface consists of a preload locking internal thread form that is resistant to vibration. Eliminates the need for an external locking device.
- Double sided weep holes for easier leakage verification.
- Complete material traceability.

#### Options

- Air Actuators for Remote Valve Operation - See Page 16 or ordering information
- Can be manufactured to meet NACE MR - 0175
- Grafoil Packing for temperature up to 800 °F (427 °C)
- Extended Stuffing Box for temperature up to 1200 °F (649 °C)
- For Valve to be manufactured to NACE MR - 0175 add - NACE to end of part number. Pressure rating will change due to NACE, contact factory for revised pressure rating.
- Example : 20NV6M1V - SOG (Standard Needle Valve)  
: 20NVQ6M1V-SOG (Quick Turn Needle Valve)

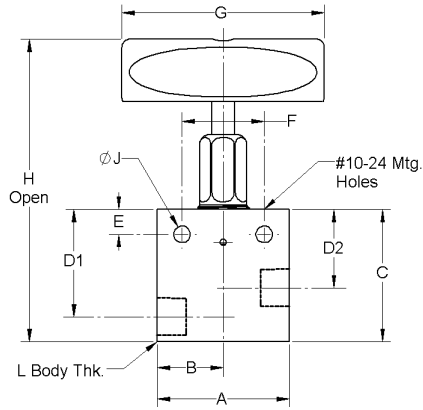
#### Materials

- Body - 316 cold worked stainless steel
- Packing - Glass filled Teflon
- Stem - 17 - 4 PH

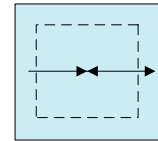




Standard Needle Valves



2-Way Straight



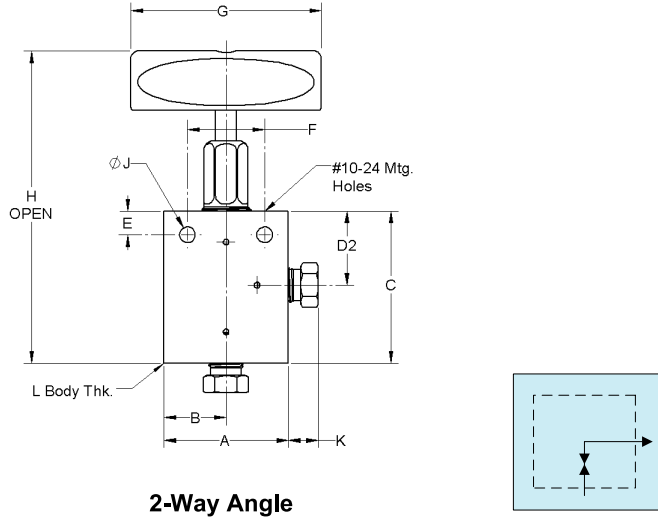
Pressure Rating	Connection Type	End Connection Size in.	Ordering Number	Orifice in. (mm)	Dimensions in. (mm)											
					A	B	C	D1	D2	E	F	G	H	J	K	L
20,000 psig	Medium Pressure Cone & Thread	1/4	20NV4M1	0.13 (3.2)	2.00 (50.8)	1.00 (25.4)	2.00 (50.8)	1.63 (41.3)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	4.84 (123.0)	0.25 (6.4)	0.38 (9.7)	1.00 (25.4)
		3/8	20NV6M1	0.20 (5.1)	2.00 (50.8)	1.00 (25.4)	2.00 (50.8)	1.63 (41.3)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	4.84 (123.0)	0.25 (6.4)	0.48 (12.2)	1.00 (25.4)
		9/16	20NV9M1	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	2.88 (73.2)	2.38 (60.5)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	5.46 (139.0)	0.34 (8.7)	0.68 (17.3)	1.00 (25.4)
30,000 psig	High Pressure Cone & Thread	1/4	30NV4H1	0.09 (2.4)	2.00 (50.8)	1.00 (25.4)	2.00 (50.8)	1.50 (38.1)	1.12 (28.5)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	4.74 (120.4)	0.28 (7.1)	0.59 (15.0)	1.00 (25.4)
		3/8	30NV6H1	0.13 (3.2)	2.00 (50.8)	1.00 (25.4)	2.00 (50.8)	1.50 (38.1)	1.12 (28.5)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	4.74 (120.4)	0.28 (7.1)	0.72 (18.3)	1.00 (25.4)
		9/16	30NV9H1	0.13 (3.2)	2.62 (66.5)	1.31 (33.3)	2.44 (62.0)	1.56 (39.6)	1.12 (28.5)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.18 (131.6)	0.28 (7.1)	1.00 (25.4)	1.50 (38.1)
60,000 psig	High Pressure Cone & Thread	1/4	60NV4H1	0.06 (1.6)	2.00 (50.8)	1.00 (25.4)	2.12 (53.8)	1.69 (42.9)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	4.89 (124.2)	0.28 (7.1)	0.59 (15.0)	1.00 (25.4)
		3/8	60NV6H1	0.06 (1.6)	2.00 (50.8)	1.00 (25.4)	2.25 (57.2)	1.69 (42.9)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.02 (127.5)	0.28 (7.1)	0.72 (18.3)	1.00 (25.4)
		9/16	60NV9H1	0.01 (0.03)	2.62 (66.5)	1.31 (33.3)	2.50 (63.5)	1.75 (44.5)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.27 (133.9)	0.28 (7.1)	1.00 (25.4)	1.50 (38.1)

\* If you want to order Quick Turn type, insert "Q" in front of size in ordering number e.g. 20NVQ\*4M1 (Medium Pressure) / 30NVQ\*4H1 (High Pressure)

Dimensions, in inches (millimeters), are for reference only and are subject to change.

# High Pressure Valves

## Standard Needle Valves

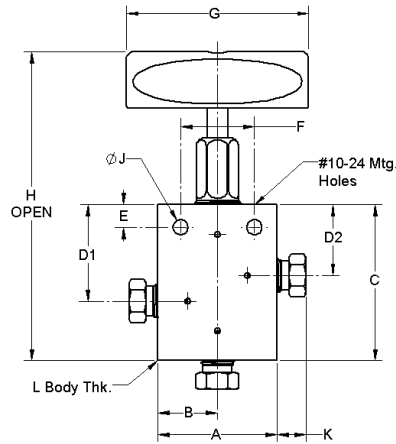


Pressure Rating	Connection Type	End Connection Size in.	Ordering Number	Orifice in. (mm)	Dimensions in. (mm)										
					A	B	C	D2	E	F	G	H	J	K	L
20,000 psig	Medium Pressure Cone & Thread	1/4	20NV4M2	0.13 (3.2)	2.00 (50.8)	1.00 (25.4)	2.44 (62.0)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	5.28 (134.1)	0.25 (6.4)	0.38 (9.7)	1.00 (25.4)
		3/8	20NV6M2	0.20 (5.1)	2.00 (50.8)	1.00 (25.4)	2.44 (62.0)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	5.28 (134.1)	0.25 (6.4)	0.48 (12.2)	1.00 (25.4)
		9/16	20NV9M2	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	3.38 (85.9)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	5.96 (151.4)	0.34 (8.7)	0.68 (17.3)	1.00 (25.4)
30,000 psig	High Pressure Cone & Thread	1/4	30NV4H2	0.09 (2.4)	2.00 (50.8)	1.00 (25.4)	2.00 (50.8)	1.12 (28.5)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	4.74 (120.4)	0.28 (7.1)	0.59 (15.0)	1.00 (25.4)
		3/8	30NV6H2	0.13 (3.2)	2.00 (50.8)	1.00 (25.4)	2.12 (53.8)	1.12 (28.5)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	4.86 (123.4)	0.28 (7.1)	0.72 (18.3)	1.00 (25.4)
		9/16	30NV9H2	0.13 (3.2)	2.62 (66.5)	1.31 (33.3)	2.44 (62.0)	1.12 (28.5)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.18 (131.6)	0.28 (7.1)	1.00 (25.4)	1.50 (38.1)
60,000 psig	High Pressure Cone & Thread	1/4	60NV4H2	0.06 (1.6)	2.00 (50.8)	1.00 (25.4)	2.38 (60.5)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.15 (130.8)	0.28 (7.1)	0.59 (15.0)	1.00 (25.4)
		3/8	60NV6H2	0.06 (1.6)	2.00 (50.8)	1.00 (25.4)	2.62 (66.5)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.39 (136.9)	0.28 (7.1)	0.72 (18.3)	1.00 (25.4)
		9/16	60NV9H2	0.01 (0.03)	2.62 (66.5)	1.31 (33.3)	2.81 (71.4)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.58 (141.7)	0.28 (7.1)	1.00 (25.4)	1.50 (38.1)

\* If you want to order Quick Turn type, insert "Q" in front of size in ordering number  
 e.g. 20NVQ\*4M2 (Medium Pressure) / 30NVQ\*4H2 (High Pressure)

Dimensions, in inches (millimeters), are for reference only and are subject to change.

Standard Needle Valves



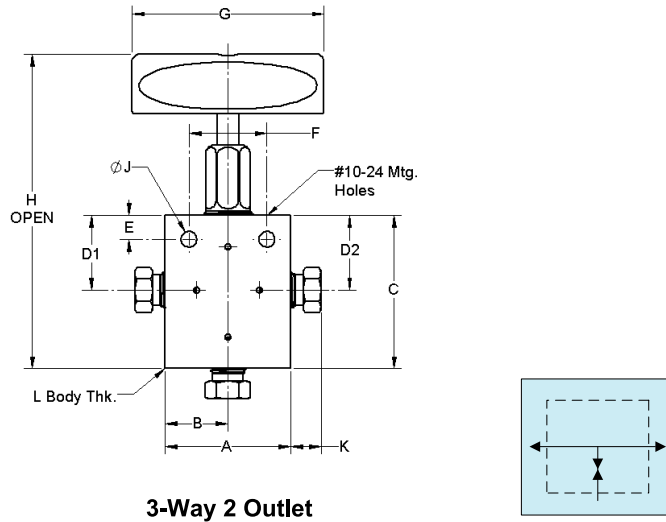
3-Way 2 Inlet

Pressure Rating	Connection Type	End Connection Size in.	Ordering Number	Orifice in. (mm)	Dimensions in. (mm)											
					A	B	C	D1	D2	E	F	G	H	J	K	L
20,000 psig	Medium Pressure Cone & Thread	1/4	20NV4M3	0.13 (3.2)	2.00 (50.8)	1.00 (25.4)	2.62 (66.5)	1.63 (41.3)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	5.46 (138.7)	0.25 (6.4)	0.38 (9.7)	1.00 (25.4)
		3/8	20NV6M3	0.20 (5.1)	2.00 (50.8)	1.00 (25.4)	2.62 (66.5)	1.63 (41.3)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	5.46 (138.7)	0.25 (6.4)	0.48 (12.2)	1.00 (25.4)
		9/16	20NV9M3	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	3.63 (92.2)	1.75 (44.5)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	6.21 (157.7)	0.34 (8.7)	0.68 (17.3)	1.00 (25.4)
30,000 psig	High Pressure Cone & Thread	1/4	30NV4H3	0.09 (2.4)	2.00 (50.8)	1.00 (25.4)	2.12 (53.8)	1.50 (38.1)	1.12 (28.5)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	4.86 (123.4)	0.28 (7.1)	0.59 (15.0)	1.00 (25.4)
		3/8	30NV6H3	0.13 (3.2)	2.00 (50.8)	1.00 (25.4)	2.50 (63.5)	1.50 (38.1)	1.12 (28.5)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.24 (133.1)	0.28 (7.1)	0.72 (18.3)	1.00 (25.4)
		9/16	30NV9H3	0.13 (3.2)	2.62 (66.5)	1.31 (33.3)	2.88 (73.2)	1.56 (39.6)	1.12 (28.5)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.62 (142.7)	0.28 (7.1)	1.00 (25.4)	1.50 (38.1)
60,000 psig	High Pressure Cone & Thread	1/4	60NV4H3	0.06 (1.6)	2.00 (50.8)	1.00 (25.4)	2.38 (60.5)	1.69 (42.9)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.15 (130.8)	0.28 (7.1)	0.59 (15.0)	1.00 (25.4)
		3/8	60NV6H3	0.06 (1.6)	2.00 (50.8)	1.00 (25.4)	2.75 (69.9)	1.69 (42.9)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.52 (140.2)	0.28 (7.1)	0.72 (18.3)	1.00 (25.4)
		9/16	60NV9H3	0.01 (0.03)	2.62 (66.5)	1.31 (33.3)	3.03 (77.0)	1.75 (44.5)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.82 (147.8)	0.28 (7.1)	1.00 (25.4)	1.50 (38.1)

\* If you want to order Quick Turn type, insert "Q" in front of size in ordering number e.g. 20NVQ\*4M3 (Medium Pressure) / 30NVQ\*4H3 (High Pressure)

# High Pressure Valves

## Standard Needle Valves

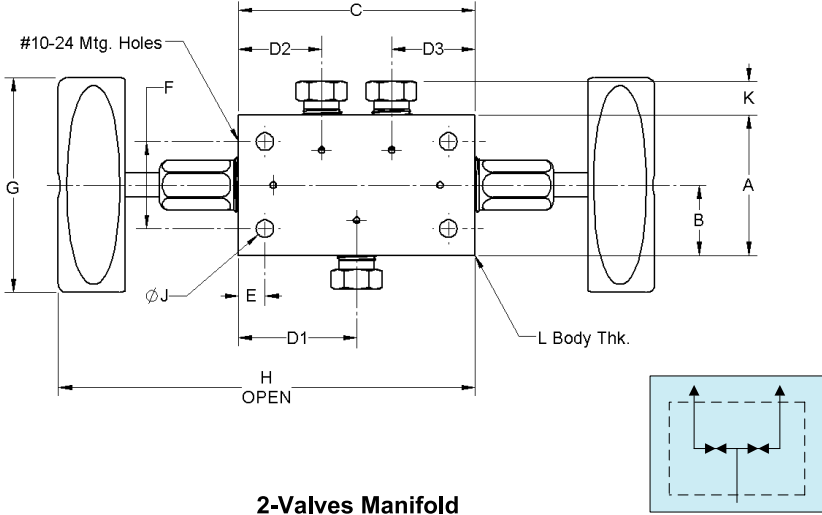


Pressure Rating	Connection Type	End Connection Size in.	Ordering Number	Orifice in. (mm)	Dimensions in. (mm)											
					A	B	C	D1	D2	E	F	G	H	J	K	L
20,000 psig	Medium Pressure Cone & Thread	1/4	20NV4M4	0.13 (3.2)	2.00 (50.8)	1.00 (25.4)	2.44 (62.0)	1.19 (30.2)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	5.28 (134.1)	0.25 (6.4)	0.38 (9.7)	1.00 (25.4)
		3/8	20NV6M4	0.20 (5.1)	2.00 (50.8)	1.00 (25.4)	2.44 (62.0)	1.19 (30.2)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	5.28 (134.1)	0.25 (6.4)	0.48 (12.2)	1.00 (25.4)
		9/16	20NV9M4	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	3.38 (85.9)	1.75 (44.5)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	5.96 (151.4)	0.34 (8.7)	0.68 (17.3)	1.00 (25.4)
30,000 psig	High Pressure Cone & Thread	1/4	30NV4H4	0.09 (2.4)	2.00 (50.8)	1.00 (25.4)	2.00 (50.8)	1.12 (28.5)	1.12 (28.5)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	4.74 (120.4)	0.28 (7.1)	0.59 (15.0)	1.00 (25.4)
		3/8	30NV6H4	0.13 (3.2)	2.00 (50.8)	1.00 (25.4)	2.12 (53.8)	1.12 (28.5)	1.12 (28.5)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	4.86 (123.4)	0.28 (7.1)	0.72 (18.3)	1.00 (25.4)
		9/16	30NV9H4	0.13 (3.2)	2.62 (66.5)	1.31 (33.3)	2.44 (62.0)	1.12 (28.5)	1.12 (28.5)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.18 (131.6)	0.28 (7.1)	1.00 (25.4)	1.00 (25.4)
60,000 psig	High Pressure Cone & Thread	1/4	60NV4H4	0.06 (1.6)	2.00 (50.8)	1.00 (25.4)	2.38 (60.5)	1.31 (33.3)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.15 (130.8)	0.28 (7.1)	0.59 (15.0)	1.00 (25.4)
		3/8	60NV6H4	0.06 (1.6)	2.00 (50.8)	1.00 (25.4)	2.62 (66.5)	1.31 (33.3)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.39 (136.9)	0.28 (7.1)	0.72 (18.3)	1.00 (25.4)
		9/16	60NV9H4	0.01 (0.03)	2.62 (66.5)	1.31 (33.3)	2.81 (71.4)	1.31 (33.3)	1.31 (33.3)	0.38 (9.7)	1.50 (38.1)	3.00 (76.2)	5.58 (141.7)	0.28 (7.1)	1.00 (25.4)	1.50 (38.1)

\* If you want to order Quick Turn type, insert "Q" in front of size in ordering number e.g. 20NVQ\*4M4 (Medium Pressure) / 30NVQ\*4H4 (High Pressure)

Dimensions, in inches (millimeters), are for reference only and are subject to change.

Standard Needle Valves



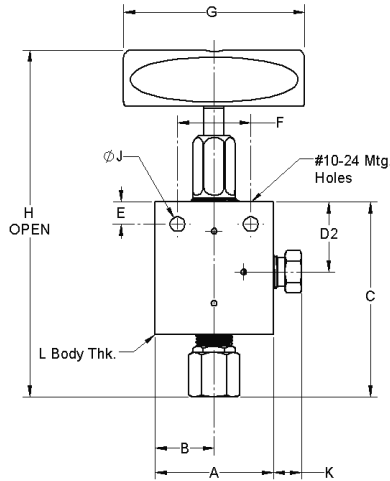
2-Valves Manifold

Pressure Rating	Connection Type	End Connection Size in.	Ordering Number	Orifice in. (mm)	Dimensions in. (mm)												
					A	B	C	D1	D2	D3	E	F	G	H	J	K	L
20,000 psig	Medium Pressure Cone & Thread	1/4	20NV4M5	0.13 (3.2)	2.00 (50.8)	1.00 (25.4)	3.38 (85.9)	1.69 (42.9)	1.19 (30.2)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	9.06 (230.1)	0.25 (6.4)	0.38 (9.7)	1.00 (25.4)
		3/8	20NV6M5	0.20 (5.1)	2.00 (50.8)	1.00 (25.4)	3.38 (85.9)	2.56 (65.0)	1.75 (44.5)	1.75 (44.5)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	9.06 (230.1)	0.25 (6.4)	0.48 (12.2)	1.00 (25.4)
		9/16	20NV9M5	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	5.12 (130.0)	2.56 (65.0)	1.75 (44.5)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	10.28 (261.1)	0.34 (8.7)	0.68 (17.3)	1.00 (25.4)
30,000 psig	High Pressure Cone & Thread	1/4	30NV4H5	0.09 (2.4)	2.00 (50.8)	1.00 (25.4)	3.06 (77.7)	1.53 (38.9)	1.12 (28.4)	1.12 (28.4)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	8.54 (216.9)	0.28 (7.1)	0.59 (15.0)	1.00 (25.4)
		3/8	30NV6H5	0.13 (3.2)	2.00 (50.8)	1.00 (25.4)	3.25 (82.6)	1.62 (41.2)	1.12 (28.4)	1.12 (28.4)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	8.73 (221.7)	0.28 (7.1)	0.72 (18.3)	1.00 (25.4)
		9/16	30NV9H5	0.13 (3.2)	2.62 (66.5)	1.31 (33.3)	3.75 (95.3)	1.88 (47.8)	1.12 (28.4)	1.12 (28.4)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	9.23 (234.4)	0.28 (7.1)	1.00 (25.4)	1.50 (38.1)
60,000 psig	High Pressure Cone & Thread	1/4	60NV4H5	0.06 (1.6)	2.00 (50.8)	1.00 (25.4)	3.44 (87.4)	1.72 (43.7)	1.31 (33.3)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	8.98 (228.1)	0.28 (7.1)	0.59 (15.0)	1.00 (25.4)
		3/8	60NV6H5	0.06 (1.6)	2.00 (50.8)	1.00 (25.4)	3.75 (95.3)	1.88 (47.8)	1.31 (33.3)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	9.29 (236.0)	0.28 (7.1)	0.72 (18.3)	1.00 (25.4)
		9/16	60NV9H5	0.01 (0.03)	2.62 (66.5)	1.31 (33.3)	4.12 (104.7)	2.06 (52.3)	1.31 (33.3)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	9.66 (245.4)	0.28 (7.1)	1.00 (25.4)	1.50 (38.1)

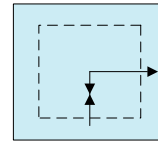
\* If you want to order Quick Turn type, insert "Q" in front of size in ordering number e.g. 20NVQ\*4M5 (Medium Pressure) / 30NVQ\*4H5 (High Pressure)

# High Pressure Valves

## Standard Needle Valves



**2-way Angle**  
(for replaceable seat)



Pressure Rating	Connection Type	End Connection Size in.	Ordering Number	Orifice in. (mm)	Dimensions in. (mm)										
					A	B	C	D2	E	F	G	H	J	K	L
20,000 psig	Medium Pressure Cone & Thread	1/4	20NV4M6	0.13 (3.2)	2.00 (50.8)	1.00 (25.4)	3.30 (83.8)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	6.04 (153.4)	0.25 (6.4)	0.38 (9.7)	1.00 (25.4)
		3/8	20NV6M6	0.20 (5.1)	2.00 (50.8)	1.00 (25.4)	3.30 (83.8)	1.19 (30.2)	0.38 (9.7)	1.24 (31.5)	3.00 (76.2)	6.04 (153.4)	0.25 (6.4)	0.48 (12.2)	1.00 (25.4)
		9/16	20NV9M6	0.31 (7.9)	2.50 (63.5)	1.25 (31.8)	4.63 (117.6)	1.75 (44.5)	0.50 (12.7)	1.38 (35.0)	4.00 (102.0)	7.21 (183.1)	0.34 (8.7)	0.68 (17.3)	1.00 (25.4)
30,000 psig	High Pressure Cone & Thread	1/4	30NV4H6	0.09 (2.4)	2.00 (50.8)	1.00 (25.4)	3.12 (79.2)	1.12 (28.5)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	5.83 (148.1)	0.28 (7.1)	0.59 (15.0)	1.00 (25.4)
		3/8	30NV6H6	0.13 (3.2)	2.00 (50.8)	1.00 (25.4)	3.39 (86.1)	1.12 (28.5)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	6.09 (154.7)	0.28 (7.1)	0.72 (18.3)	1.00 (25.4)
		9/16	30NV9H6	0.13 (3.2)	2.62 (66.5)	1.31 (33.3)	3.82 (97.0)	1.19 (30.2)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	6.52 (165.6)	0.28 (7.1)	1.00 (25.4)	1.50 (38.1)
60,000 psig	High Pressure Cone & Thread	1/4	60NV4H6	0.06 (1.6)	2.00 (50.8)	1.00 (25.4)	3.45 (87.6)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	6.19 (157.2)	0.28 (7.1)	0.59 (15.0)	1.00 (25.4)
		3/8	60NV6H6	0.06 (1.6)	2.00 (50.8)	1.00 (25.4)	3.75 (95.3)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	6.49 (164.8)	0.28 (7.1)	0.72 (18.3)	1.00 (25.4)
		9/16	60NV9H6	0.01 (0.03)	2.62 (66.5)	1.31 (33.3)	4.00 (101.6)	1.31 (33.3)	0.38 (9.7)	1.38 (35.0)	3.00 (76.2)	6.74 (171.2)	0.28 (7.1)	1.00 (25.4)	1.50 (38.1)

\* If you want to order Quick Turn type, insert "Q" in front of size in ordering number e.g. 20NVQ\*4M6 (Medium Pressure) / 30NVQ\*4H6 (High Pressure)

Dimensions, in inches (millimeters), are for reference only and are subject to change.

## Medium and High Pressure Check Valves 20,000 - 60,000 psig

### Specifications

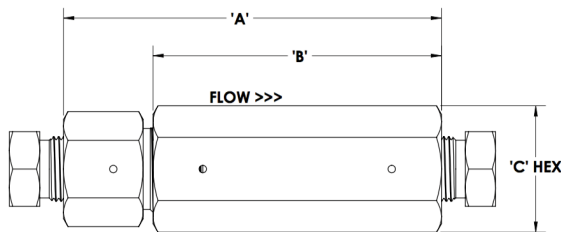
- MAWP up to 60,000 psig (4136 bar)
- Temperature Ratings
  - Metal Seat : -420 °F to 1200 °F (-251 °C to 648 °C)
  - Soft Seat : -65 °F to 250 °F (-54 °C to 121 °C)
- Nominal Cracking Pressure : 15 psig (1 bar)
- PEEK is standard material of soft seat
- NPT Check valves come standard with female end connections

### Features

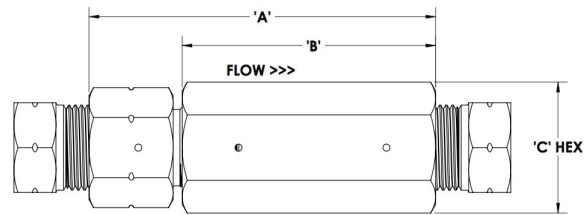
- Prevents reverse flow which may cause damage to a pressure system
- Metal cone ring option offers metal - to - metal seat for high temperature applications
- Standard PEEK seat for optimum performance
- Complete material traceability
- Can be manufactured to meet NACE MR - 0175

### Materials

- 316 cold worked stainless steel is standard



Medium Pressure 20,000 psig



High Pressure 60,000 psig

Pressure Rating	Connection Type	End Connection Size in.	Ordering Number (Metal Seat)	Ordering Number (Soft Seat)	Orifice in. (mm)	Dimensions in. (mm)		
						A	B	C
20,000 psig	Medium Pressure Cone & Thread	1/4	20CV4MFM	20CV4MFS	0.13 (3.2)	3.07 (78.0)	2.50 (63.5)	1.00 (25.4)
		3/8	20CV6MFM	20CV6MFS	0.22 (5.6)	3.48 (88.4)	2.66 (66.0)	1.13 (28.7)
		9/16	20CV9MFM	20CV9MFS	0.36 (9.1)	4.76 (120.9)	3.50 (88.9)	1.38 (35.1)
		3/4	20CV12MFM	20CV12MFS	0.52 (13.1)	5.63 (143.0)	4.38 (111.3)	1.75 (44.5)
		1	20CV16MFM	20CV16MFS	0.69 (17.5)	7.00 (177.8)	5.25 (133.4)	2.13 (54.1)
60,000 psig	High Pressure Cone & Thread	1/4	60CV4HFM	60CV4HFS	0.09 (2.4)	3.26 (82.8)	2.50 (63.5)	1.25 (31.8)
		3/8	60CV6HFM	60CV6HFS	0.13 (3.2)	3.75 (95.3)	2.75 (69.9)	1.25 (31.8)
		9/16	60CV9HFM	60CV9HFS	0.19 (4.8)	4.63 (117.6)	3.38 (85.9)	1.50 (38.1)

Note : Larger sizes available by request

Dimensions, in inches (millimeters), are for reference only and are subject to change.

# High Pressure Valves

## Air Actuators for Needle Valves

Air Actuators for Remote Valve Operation

### Types

- Normally Closed - Air is required to open the valve
- Normally Open - Air is required to close the valve
- Double Action - Open or close the valve using air pressure

### Ordering Information

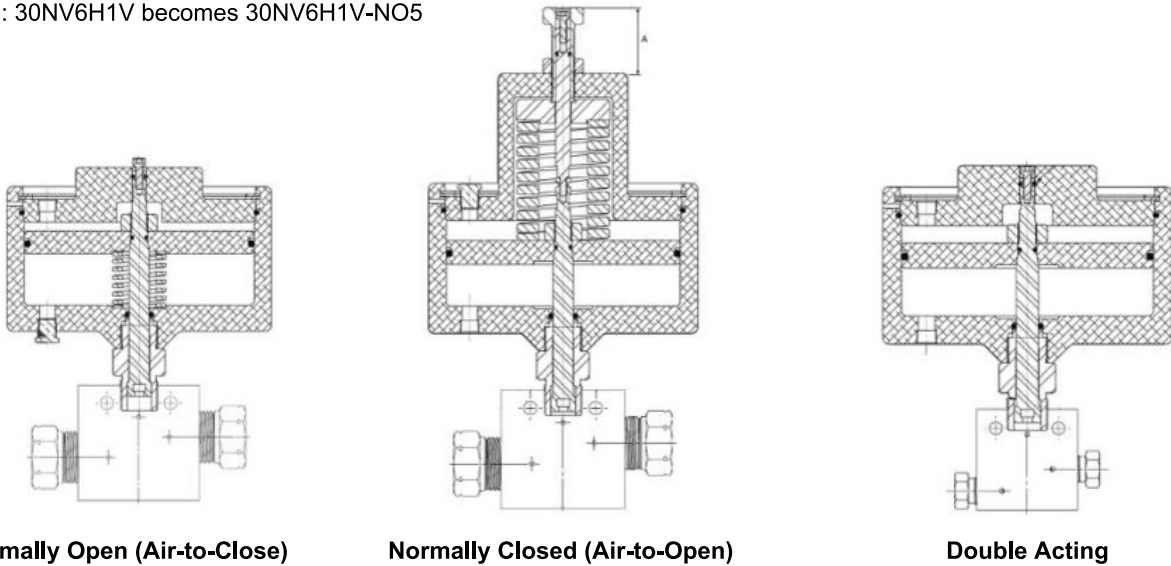
Normally Closed (Air-to-Open) : -NC5

Normally Open (Air-to-Close) : -NO5

Double Acting : -DA5



Example : 30NV6H1V becomes 30NV6H1V-NO5



Normally Open (Air-to-Close)

Normally Closed (Air-to-Open)

Double Acting

### Actuator Settings

VALVE TYPE	Air Actuator Type					
			NOS (Air-to-Close)			
	AIR PRESSURE TO FULL TRAVEL (psig)	MAWP psig @ 100 °F	AIR PRESSURE TO FULL TRAVEL (psig)	MAWP psig @ 100 °F	AIR PRESSURE TO FULL TRAVEL (psig)	MAWP psig @ 100 °F
15NV4N	80	15,000	65	15,000	50	15,000
15NV6N	100	15,000	100	15,000	95	15,000
15NV8N	100	14,000	100	15,000	95	15,000
20NV4M	80	20,000	65	20,000	50	20,000
20NV6M	80	20,000	65	20,000	50	20,000
20NV9M	100	14,000	100	17,000	95	20,000
30NV4H	85	30,000	70	30,000	55	30,000
30NV6H	85	30,000	70	30,000	55	30,000
30NV9H	85	30,000	70	30,000	55	30,000
60NV4H	100	60,000	95	60,000	75	60,000
60NV6H	100	60,000	95	60,000	75	60,000
60NV9H	100	60,000	95	60,000	75	60,000



## Ball Valves

### Specifications

- MAWP up to 20,000 psig (1380 bar)
- Temperature Ratings : - 20 °F to 400 °F (-28 °C to 204 °C)
- Port Sizes : 3/16", 1/4", 3/8" or 1/2"
- Flow Patterns : 2 - way, 3 - way Switching, 3 - way Diverting

### Connection Types

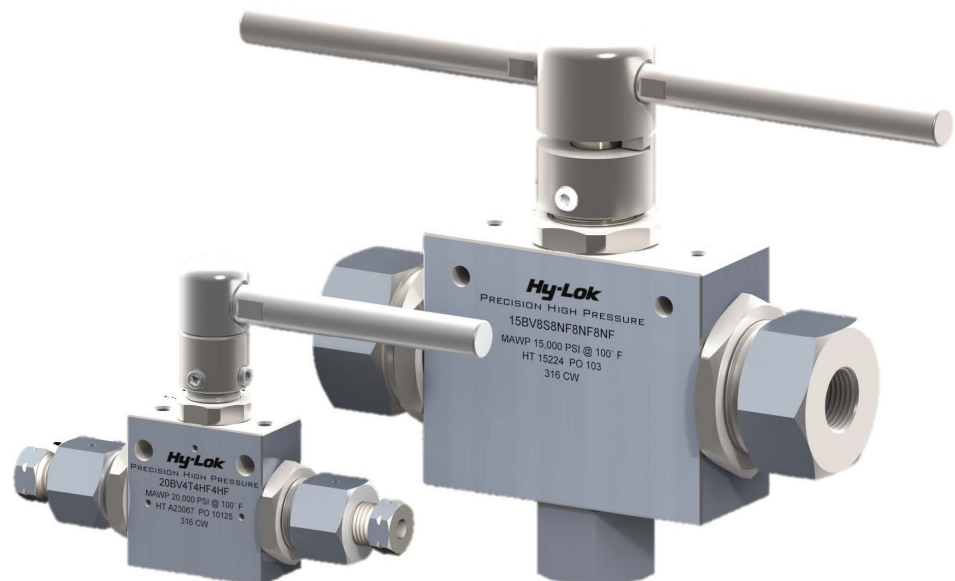
- Bi - directional trunnion style for optimal performance
- Three standard mounting options

### Materials

- Body / Side Adapter / Stem - 316 cold worked stainless steel
- Packing - Glass filled Teflon
- Seats - PEEK
- Seals - FKM
- Bearings - Nitronic 60

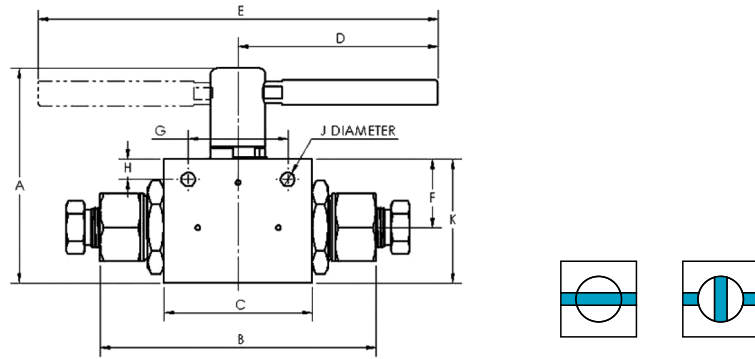
### Options

- Available with electric actuators



# High Pressure Valves

## Ball Valves



**2-Way Trunnion**

### 1/4" Orifice

Orifice in. (mm)	Pressure Rating	End Connection Type	End Connection Size in.	Ordering Number	
0.25 (6.4)	15,000 psig	Female NPT	1/4	15BV4T4NF	
			3/8	15BV4T6NF	
			1/2	15BV4T8NF	
	20,000 psig	Medium Pressure Cone & Thread	1/4	20BV4T4MF	
			3/8	20BV4T6MF	
			9/16	20BV4T9MF	
			High Pressure Cone and Thread	1/4	20BV4T4HF
				3/8	20BV4T6HF
9/16	20BV4T9HF				

**Dimensions in. (mm)**

A	B	C	D	E	F	G	H	J	K	Block Thickness
3.83 (97.3)	4.35 (110.5)	2.00 (50.8)	3.98 (101.1)	---	1.13 (28.7)	1.50 (38.1)	0.44 (11.2)	0.28 (7.1)	2.00 (50.8)	1.00 (25.4)

### 3/8" Orifice

Orifice in. (mm)	Pressure Rating	End Connection Type	End Connection Size in.	Ordering Number
0.38 (9.5)	15,000 PSI	Female NPT	1/4	15BV6T4NF
			3/8	15BV6T6NF
			1/2	15BV6T8NF
	20,000 PSI	Medium Pressure Cone & Thread	3/8	20BV6T6MF
			9/16	20BV6T9MF
			3/4	20BV6T12MF

**Dimensions in. (mm)**

A	B	C	D	E	F	G	H	J	K	Block Thickness
4.34 (110.2)	5.54 (140.7)	3.00 (76.2)	4.02 (102.1)	---	1.38 (35.1)	2.00 (50.8)	0.41 (10.4)	0.28 (7.1)	2.50 (63.5)	1.38 (35.1)

### 1/2" Orifice

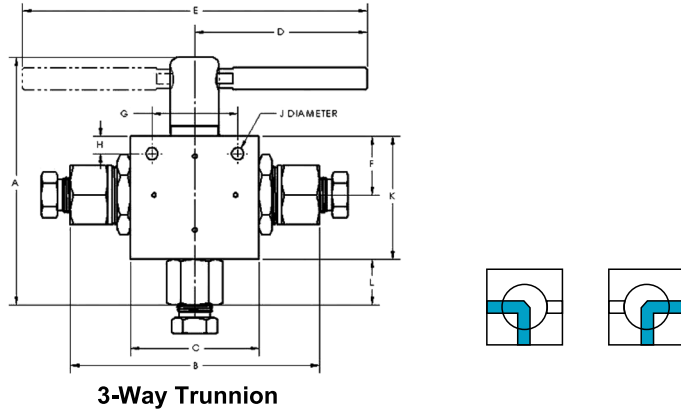
Orifice in. (mm)	Pressure Rating	End Connection Type	End Connection Size in.	Ordering Number
0.50 (12.7)	15,000 PSI	Female NPT	1/2	15BV8T8NF
	10,000 PSI		3/4	10BV8T12NF
			1	10BV8T16NF
	15,000 PSI	Medium Pressure Cone & Thread	3/4	15BV8T12MF
			1	15BV8T16MF

**Dimensions in. (mm)**

A	B	C	D	E	F	G	H	J	K	Block Thickness
5.57 (141.5)	7.69 (195.3)	4.13 (104.9)	5.13 (130.3)	10.26 (260.6)	1.76 (44.7)	3.00 (76.2)	0.50 (12.7)	0.28 (7.1)	3.09 (78.5)	1.75 (44.5)

Dimensions, in inches (millimeters), are for reference only and are subject to change.

Ball Valves



3-Way Trunnion

3/16" Orifice

Orifice in. (mm)	Pressure Rating	End Connection Type	End Connection Size in.	Ordering Number	
				90° Diverting	180° Switching
0.19 (4.8)	15,000 PSI	Female NPT	1/4	15BV3D4NF	15BV3S4NF
			3/8	15BV3D6NF	15BV3S6NF
			1/2	15BV3D8NF	15BV3S8NF
	20,000 PSI	Medium Pressure Cone & Thread	1/4	20BV3D4MF	20BV3S4MF
			3/8	20BV3D6MF	20BV3S6MF
			9/16	20BV3D9MF	20BV3S9MF
		High Pressure Cone and Thread	1/4	20BV3D4HF	20BV3S4HF
			3/8	20BV3D6HF	20BV3S6HF
9/16	20BV3D9HF	20BV3S9HF			

Dimensions in. (mm)											
A	B	C	D	E	F	G	H	J	K	L	Block Thickness
5.64 (143.3)	4.72 (119.9)	2.50 (63.5)	3.37 (85.6)	—	1.13 (28.7)	1.50 (38.1)	0.43 (10.9)	0.28 (7.1)	2.25 (57.2)	0.96 (24.4)	1.00 (25.4)

3/8" Orifice

Orifice in. (mm)	Pressure Rating	End Connection Type	End Connection Size in.	Ordering Number	
				90° Diverting	180° Switching
0.38 (9.5)	15,000 PSI	Female NPT	1/4	15BV6D4NF	15BV6S4NF
			3/8	15BV6D6NF	15BV6S6NF
			1/2	15BV6D8NF	15BV6S8NF
		Medium Pressure Cone & Thread	3/8	15BV6D6MF	15BV6S6MF
			9/16	15BV6D9MF	15BV6S9MF
			3/4	15BV6D12MF	15BV6S12MF

Dimensions in. (mm)											
A	B	C	D	E	F	G	H	J	K	L	Block Thickness
5.78 (146.8)	5.80 (147.3)	3.00 (76.2)	4.02 (102.1)	—	1.38 (35.1)	2.00 (50.8)	0.41 (10.4)	0.28 (7.1)	2.88 (73.2)	1.06 (26.9)	1.38 (35.1)

1/2" Orifice

Orifice in. (mm)	Pressure Rating	End Connection Type	End Connection Size in.	Ordering Number	
				90° Diverting	180° Switching
0.50 (12.7)	10,000 PSI	Female NPT	1/2	10BV8D8NF	10BV8S8NF
			3/4	10BV8D12NF	10BV8S12NF
			1	10BV8D16NF	10BV8S16NF
		Medium Pressure Cone & Thread	3/4	10BV8D12MF	10BV8S12MF
			1	10BV8D16MF	10BV8S16MF

Dimensions in. (mm)											
A	B	C	D	E	F	G	H	J	K	L	Block Thickness
7.83 (198.9)	7.77 (197.4)	4.13 (104.9)	5.12 (130.0)	10.25 (260.4)	1.66 (42.2)	3.00 (76.2)	0.50 (12.7)	0.28 (7.1)	3.34 (84.8)	1.70 (43.2)	1.75 (44.5)

Dimensions, in inches (millimeters), are for reference only and are subject to change.

## High Pressure Valves

### Double Block and Bleed Valves

#### Specifications

- MAWP up to 20,000 psig (1380 bar)
- Temperature Ratings : -100 °F to 450 °F (-73 °C to 232 °C)

#### Connection Types

- NPT
- MP and HP Cone & Threaded

#### Features & Benefits

- Standard Needle Valve internals

#### Configurations

- Ball x Needle x Ball
- Needle x Needle x Needle

#### Options

- Grafoil Packing for temperature up to 1200 °F (649 °C)

#### Materials

- Body - 316 cold worked stainless steel
- Packing - Glass filled Teflon
- Seats - PEEK
- Stem - 15 - 5 PH

Double Block and Bleed Valves are custom designed to meet the unique needs of each customer. Contact us to discuss your requirements.



### Custom Manifolds

Precision High Pressure manufactures custom designed high quality manifolds to meet the unique needs of each individual customer.

- Custom Manifolds reduce installation time and minimize space requirements
- Can withstand pressures up to 60,000 psig
- Hy-Lok custom manifolds are available in a wide range of connection sizes and types including NPT and Cone & Threaded
- Lengths to 96" are available
- Available in a wide variety of materials

Let us design it for you! All customers will receive a design drawing for final approval before manufacturing commences.

#### Information needed for quotation

1. Material type
2. Required pressure rating
3. If possible, a sketch including:
  - a. Manifold layout with desired dimensions
  - b. Placement of ports
  - c. Mounting hole locations if required



### SAFETY in VALVE SELECTION

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

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Catalog No, H-HPV Aug, 2017



[www.hy-lok.com](http://www.hy-lok.com)

Catalog No. H-100NVT  
Sep. 2013

# 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

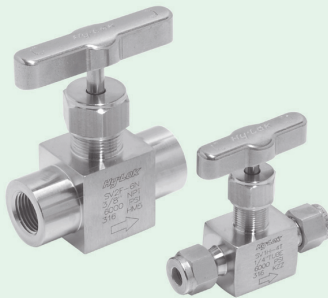


- Pressure : 5,000 psig (340bar) @ 100°F (38°C)
- Temperature : -65°F to 600°F (-54°C to 315°C)
- Materials : 316 Stainless Steel, Brass, Carbon Steel, Alloy 400
- Body Pattern : Straight, Angle
- Stem : Rotating Vee Tip, Regulating Tip, Soft Tip
- CV : 0.09 ~ 1.8
- Orifice : 2.0mm ~ 9.5mm (0.079" ~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

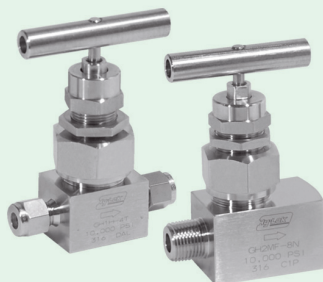


- Pressure : 6,000 psig (413 bar) @ 100°F (38°C)
- Temperature : -65°F to 1,200°F (-54°C to 648°C)
- Materials : 316 Stainless Steel, Carbon Steel, Alloy 400
- Body Pattern : Straight, Angle
- Stem : Non-Rotating Vee Tip, Non-Rotating Ball Tip, Regulating Soft Tip
- CV : 0.35 ~ 2.2
- Orifice : 4.0mm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



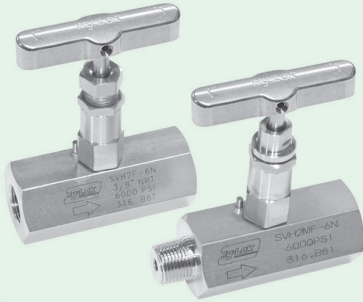
- Pressure : 10,000 psig (689 bar) @ 100°F (38°C)
- Temperature : -65°F to 1,200°F (-54°C to 648°C)
- Materials : 316 Stainless Steel
- Body Pattern : Straight
- Stem : Regulating Tip, Non-Rotating Ball Tip
- CV : 0.35 ~ 0.86
- Orifice : 4.0mm ~ 6.4mm (0.157" ~ 0.252")

**Applications**

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

## Specification

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

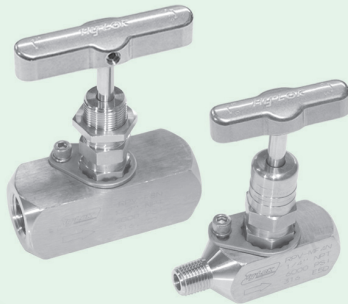


- Pressure : 10,000 psig (689 bar) @ 100°F (38°C)
- Temperature : -65°F to 1,200°F (-54°C to 648°C)
- Materials : 316 Stainless Steel, Carbon Steel, Alloy 400
- Body Pattern : Straight, Angle
- Stem : Non-Rotating Vee Tip, Non-Rotating Ball Tip
- CV : 0.52
- Orifice : 5.0mm (0.197")

#### Applications

Instrument isolation / Gas / Vapor or Liquid

### RP Series Rising Plug Valves

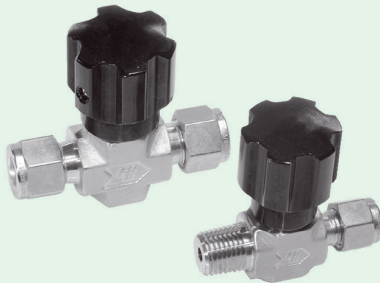


- Pressure : 6,000 psig (413 bar) @ 100°F (38°C)
- Temperature : -20°F to 400°F (-29°C to 204°C)
- Materials : 316 Stainless Steel
- Body Pattern : Straight
- Stem : Non-Rotating Vee Tip & Soft Seat
- CV : 1.77
- Orifice : 6.3mm (0.248")

#### 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



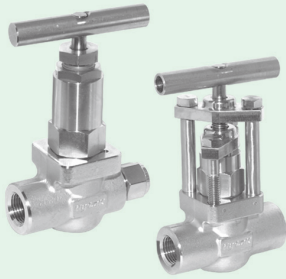
- Pressure : 300 psig (20 bar) @ 100°F (38°C)
- Temperature : -20°F to 200°F (-28°C to 93°C)
- Materials : 316 Stainless Steel, Brass
- Body Pattern : Straight, Angle
- Stem : Soft tip
- CV : 0.11 ~ 0.7
- Orifice : 2.0mm ~ 6.4mm (0.079" ~ 0.252")

#### 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**

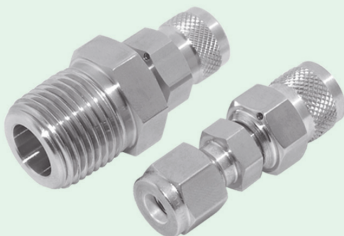


- Pressure : 7,100 psig (500 bar) @ 100°F (38°C)
- Temperature : -20°F to 600°F (-28°C to 315°C)
- Materials : 316 Stainless Steel, Carbon Steel
- Body Pattern : Angle
- Stem : Rotating Vee Tip
- Orifice : 3mm ~ 4mm (0.118" ~ 0.157")

**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				-54°C to 260°C (-65°F to 500°F)
		Alloy 400	PTFE	-54°C to 232°C (-65°F to 450°F)	206 bar (3000 psig)	164 bar (2,380 psig)	
			Graphite	-54°C to 260°C (-65°F to 500°F)		163 bar (2,375 psig)	
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.

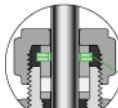
Extreme temperature fluctuations may require packing adjustment.

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

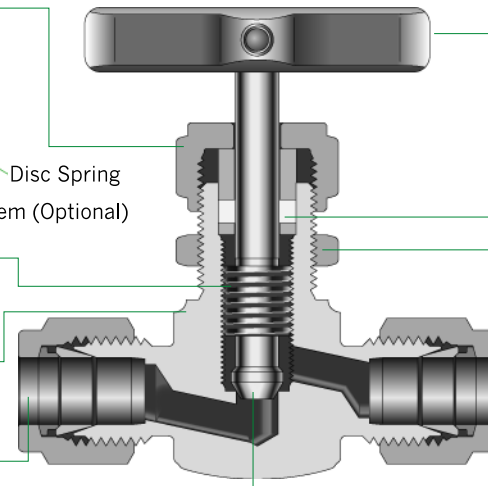
- are rolled and electroless nickel plated for maximum service life.

### 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



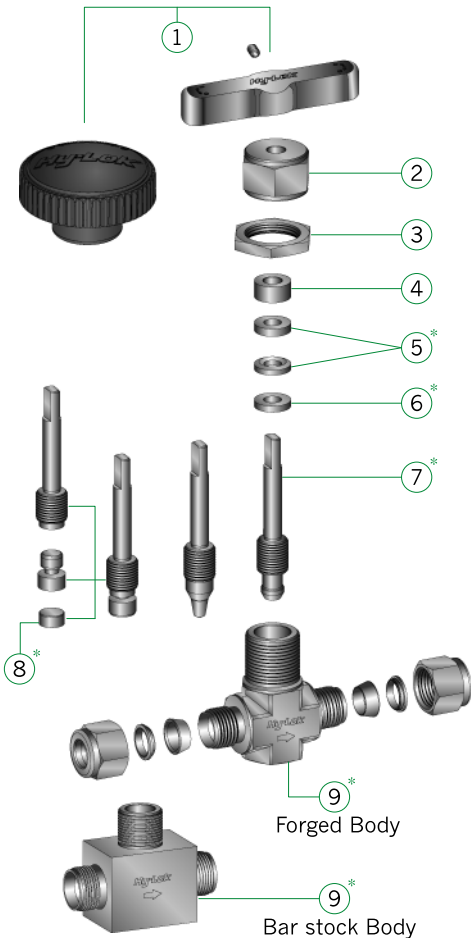
Vee Tip



Regulating Tip



Soft Seat Tip



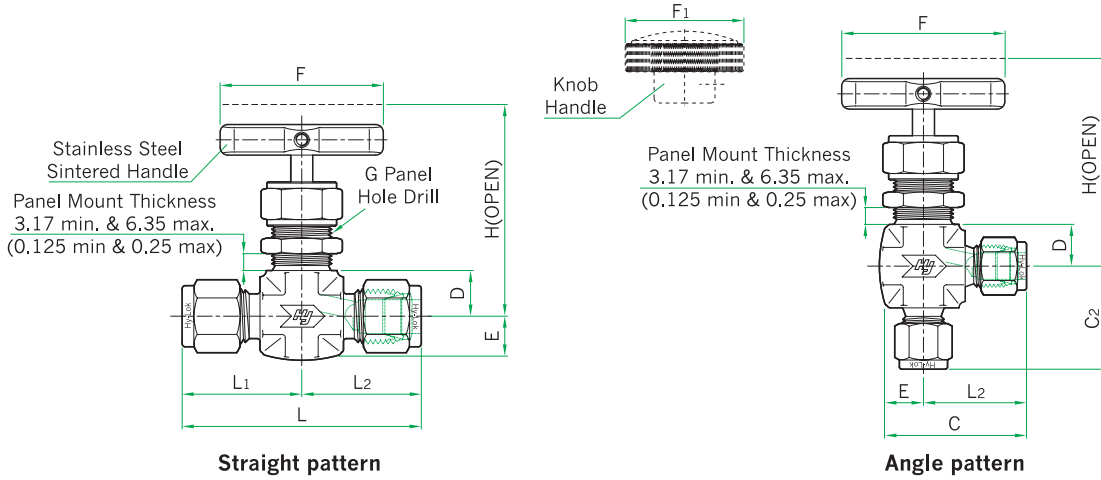
## Materials of Construction

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	
4	Gland	SS 316 / A479				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

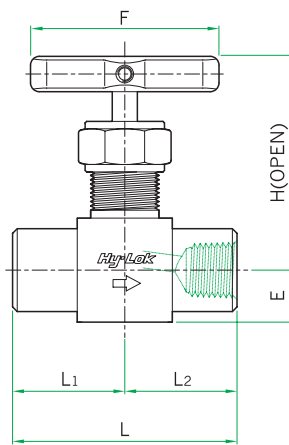
## Table of Dimensions



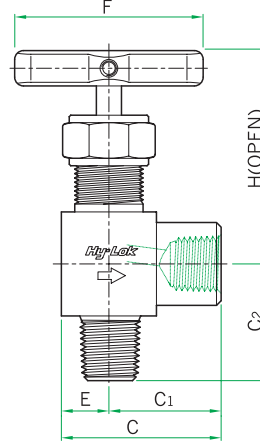
Basic Part No.	Orifice Hole	Cv	End Connection		Dimensions														
			Inlet	Outlet	L	L1	L2	C2	C	D	E	F1	F	G	H				
NV1	F -2N	2.0 (0.08)	0.09	1/8" Female NPT		42.0 (1.65)	21.0 (0.83)	21.0 (0.83)	21.0 (0.83)	30.5 (1.20)	11.0 (0.43)	9.5 (0.37)	38.0 (1.50)	45.0 (1.77)	13.5 (0.53)	51.2 (2.02)			
	M -2N			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)	35.5 (1.40)	
	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		50.0 (1.97)	25.0 (0.98)	25.0 (0.98)	25.0 (0.98)	34.5 (1.36)									
	M -4N			1/4" Male NPT													53.8 (2.12)	28.8 (1.13)	28.8 (1.13)
	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		59.2 (2.33)	29.6 (1.17)	29.6 (1.17)	29.6 (1.17)	39.1 (1.54)									
	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															
	MF -4N			1/4" Male NPT	1/4" Female NPT	61.2 (2.41)	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)	46.2 (1.82)											
	M -6N			3/8" Male NPT		58.0 (2.28)	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)	46.2 (1.82)											
	MH-6N8T			3/8" Male NPT	1/2" Hy-Lok	65.0 (2.56)	36.0 (1.42)	49.0 (1.93)											
	H -10M			10mm Hy-Lok		66.4 (2.61)	33.2 (1.31)	46.2 (1.82)											
	H -6T			3/8" Hy-Lok		66.4 (2.61)	33.2 (1.31)	46.2 (1.82)											
	H -12M			12mm Hy-Lok		72.0 (2.83)	36.0 (1.42)	49.0 (1.93)											
	H -8T			1/2" Hy-Lok		72.0 (2.83)	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															
	F -8N			1/2" Female NPT															
	F -8R			1/2" Female ISO															
	M -8N			1/2" Male NPT															
	MF -8N			1/2" Male NPT	1/2" Female NPT														
	H -8T			1/2" Hy-Lok													97.0 (3.82)	48.5 (1.91)	67.5 (2.66)
	H -12T			3/4" Hy-Lok													97.0 (3.82)	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

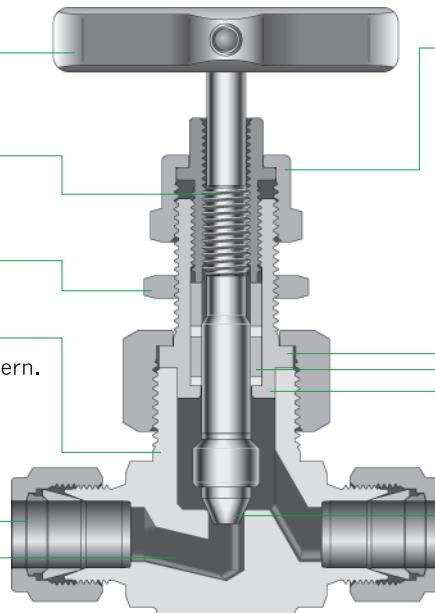
- is available with straight and angle pattern.

### 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

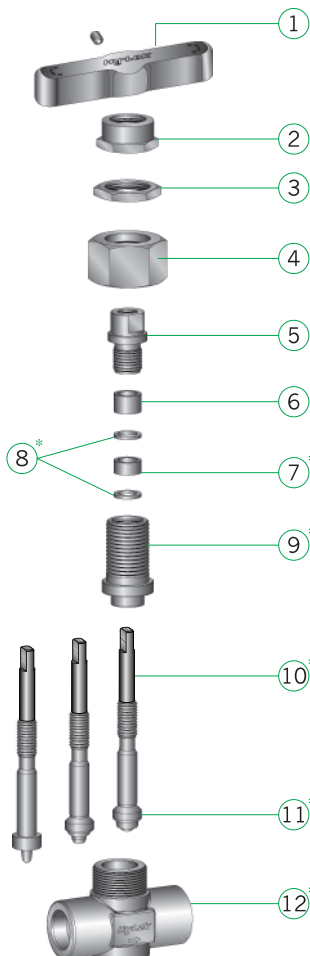
- available in PTFE(Standard) PEEK and Graphite

### 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



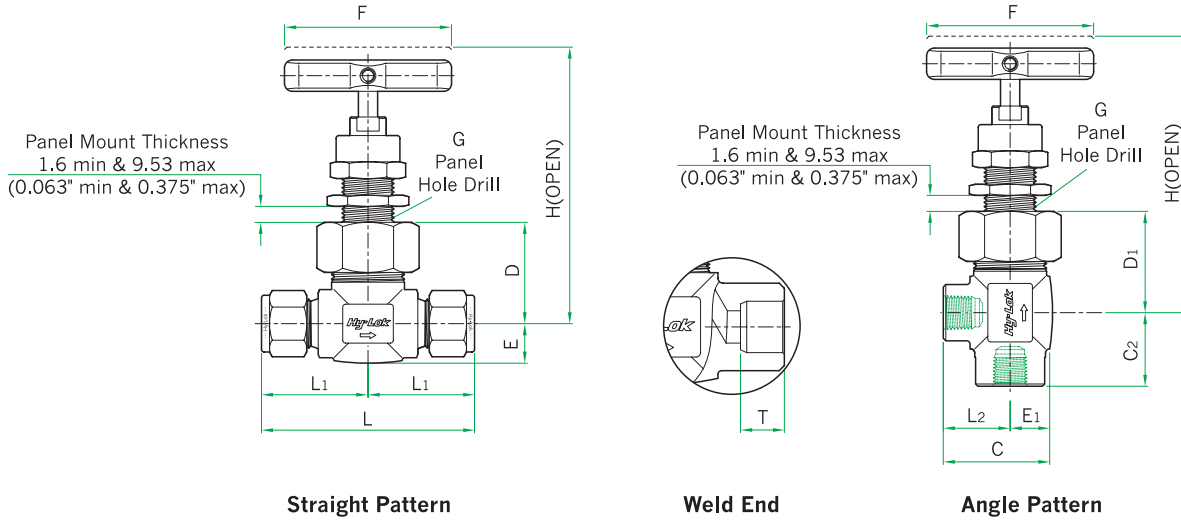
Regulating Tip

## 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

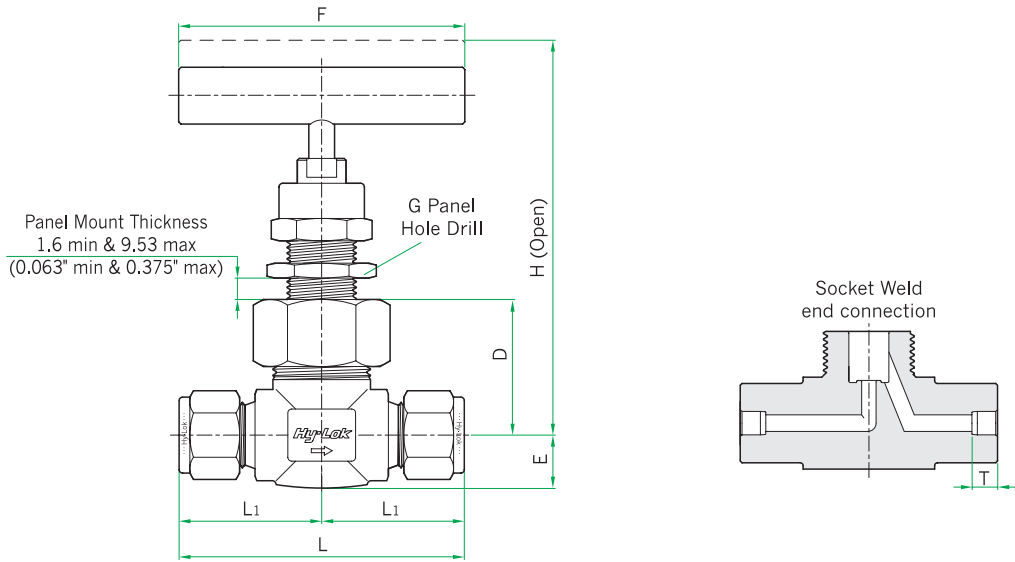


Basic Part No.	Orifice Hole	Cv	End Connection		Dimensions																	
			Inlet	Outlet	L	L1	L2	C	C2	D	D1	E	E1	F	G	H Straight	H Angle	T				
GB1	F -2N	4.0 (0.16)	0.35	1/8" Female NPT		50.8 (2.00)	25.4 (1.00)	23.0 (0.91)	32.6 (1.28)													
	F -4N			1/4" Female NPT		52.4 (2.06)	26.2 (1.03)			25.4 (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)							126.2 (4.97)
	SW-12T			3/4" Tube Weld								46.0 (1.81)	51.0 (2.00)	15.9 (0.63)	15.9 (0.63)							126.4 (4.98)

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

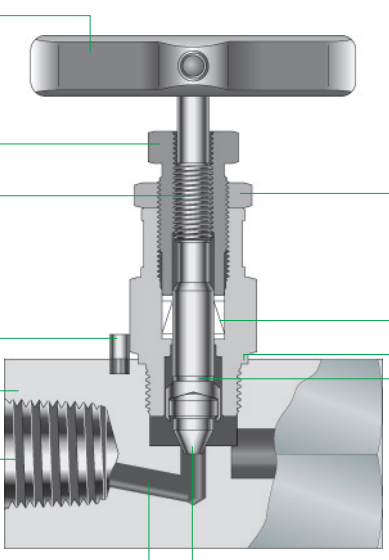
- prevents accidental removal in service.

### 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

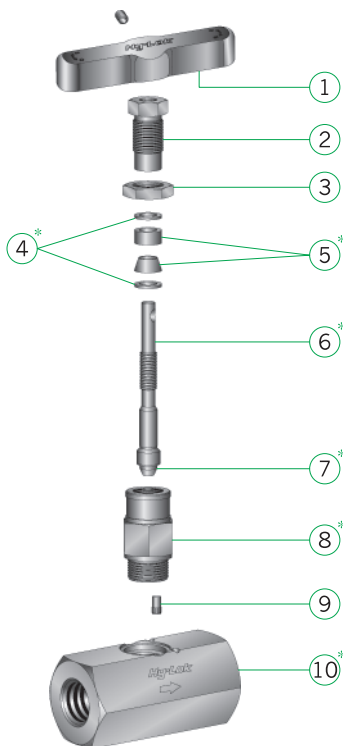
- 5.0mm (0.2 inch)



Ball Tip

### Variety Stem Tips

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



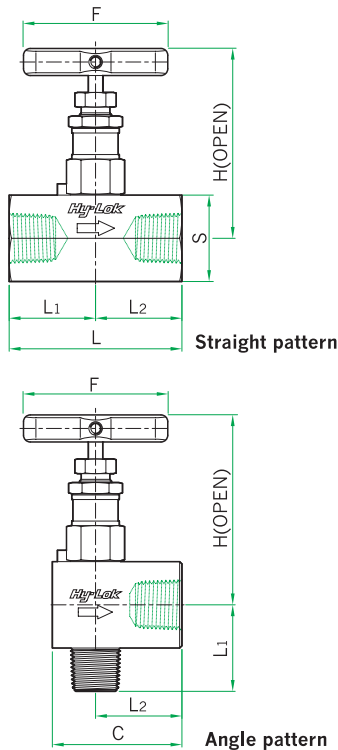
## Materials of Construction

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

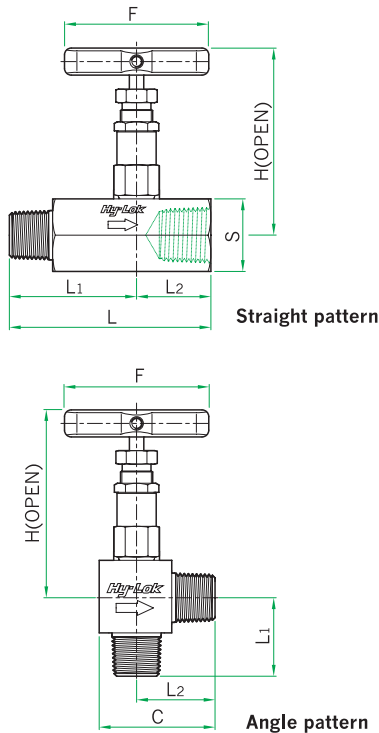
## Table of Dimensions (SVH1 Series)



Basic Part No.	Orifice Hole	Cv	End Connections		Dimensions						
			Inlet	Outlet	L	L <sub>1</sub>	L <sub>2</sub>	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)	64.0 (2.52)	90.0 (3.54)
			1/2" Female NPT								91.5 (3.60)
			3/4" Female NPT		84.0 (3.31)	42.0 (1.65)	42.0 (1.65)	62.5 (2.46)	41.0 (1.61)		90.0 (3.54)
			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)		
			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	L <sub>1</sub>	L <sub>2</sub>	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					57.2 (2.25)	38.1 (1.50)		91.5 (3.60)
			1/2" Female NPT								
			3/4" Female NPT								
			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)			
			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)	32.0 (1.26)	88.5 (3.48)	
			1/2" Pipe Socket Weld								
			1/4" Pipe S.W.	1/4" Female NPT							
			1/2" Pipe S.W.	1/2" Female NPT	76.2 (3.00)	38.1 (1.50)	38.1 (1.50)	54.1 (2.13)			

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

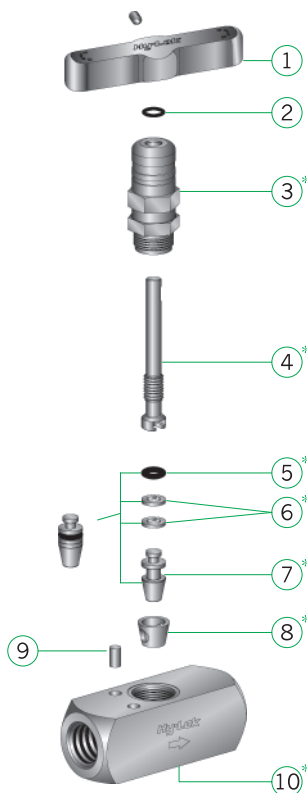
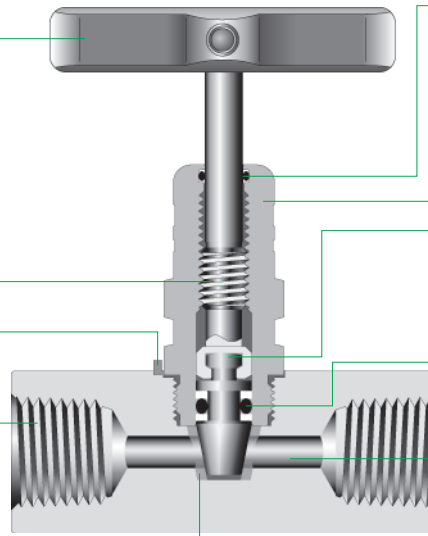
- ensures positive sealing minimizing seat wear-out.

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

- is Standard.

### Orifice in Straight Flow Path

- ensures max Cv.



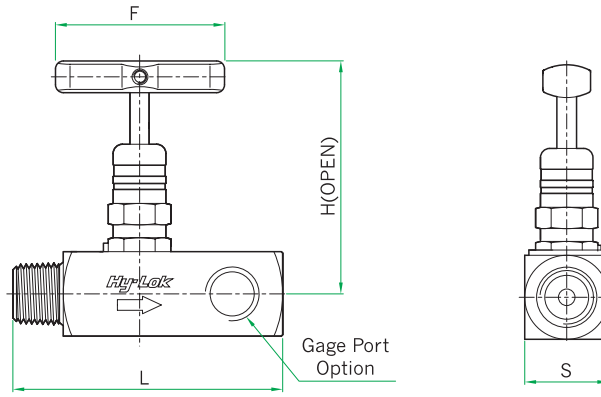
## Materials of Construction

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.

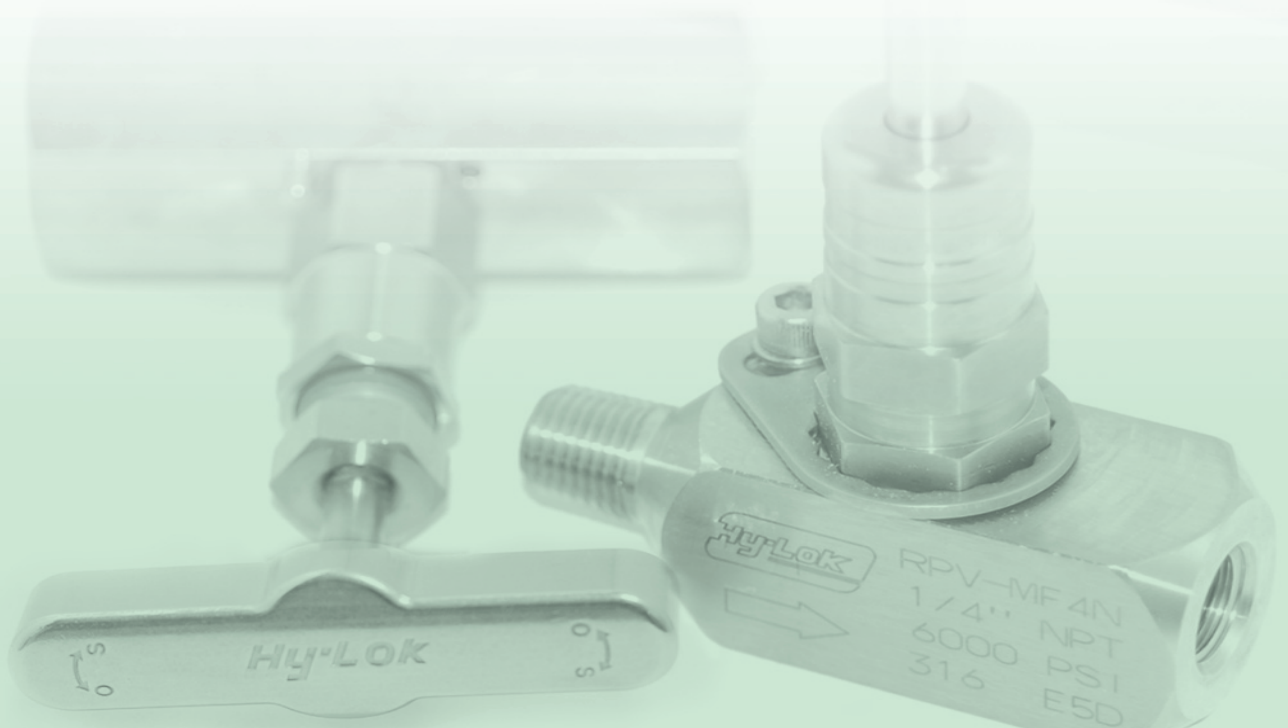
# RP Series Rising Plug Valve

## 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

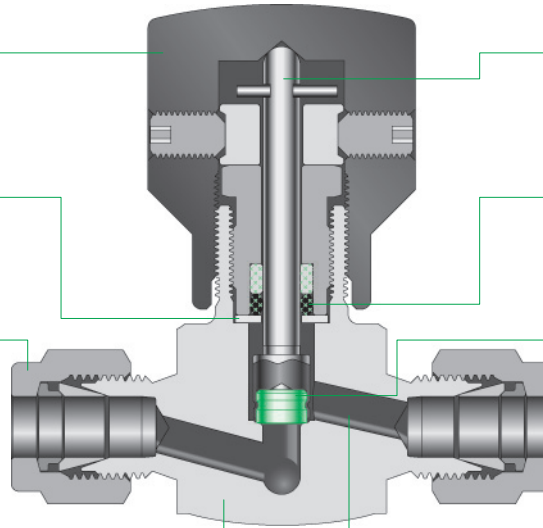
- provides sealing in fully open position

### 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

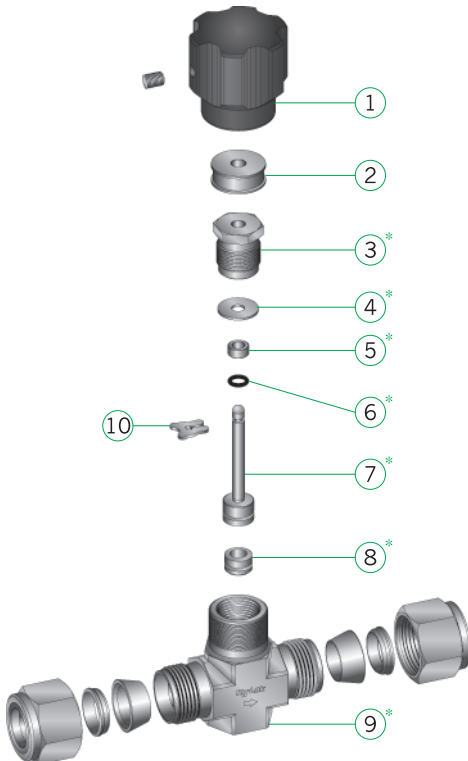
- needs no adjustment

### 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),



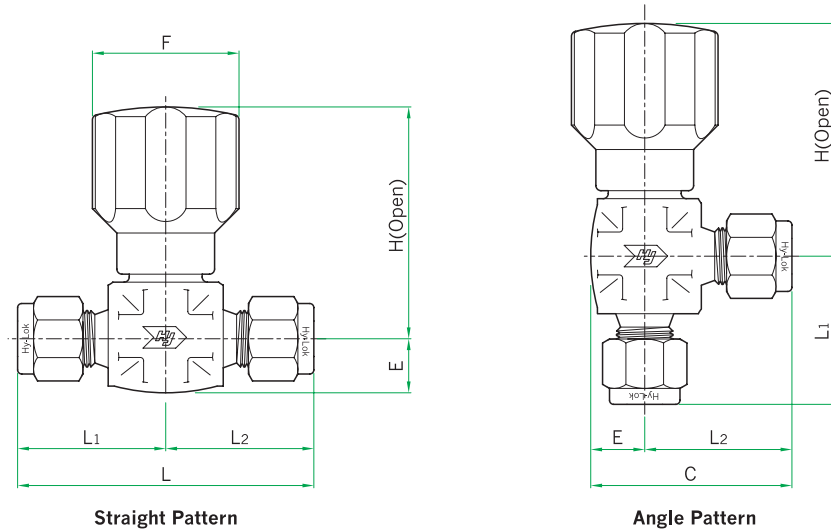
## Materials of Construction

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

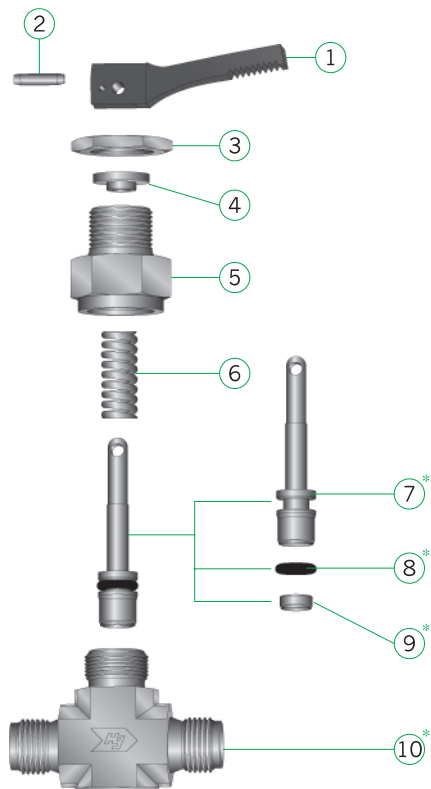
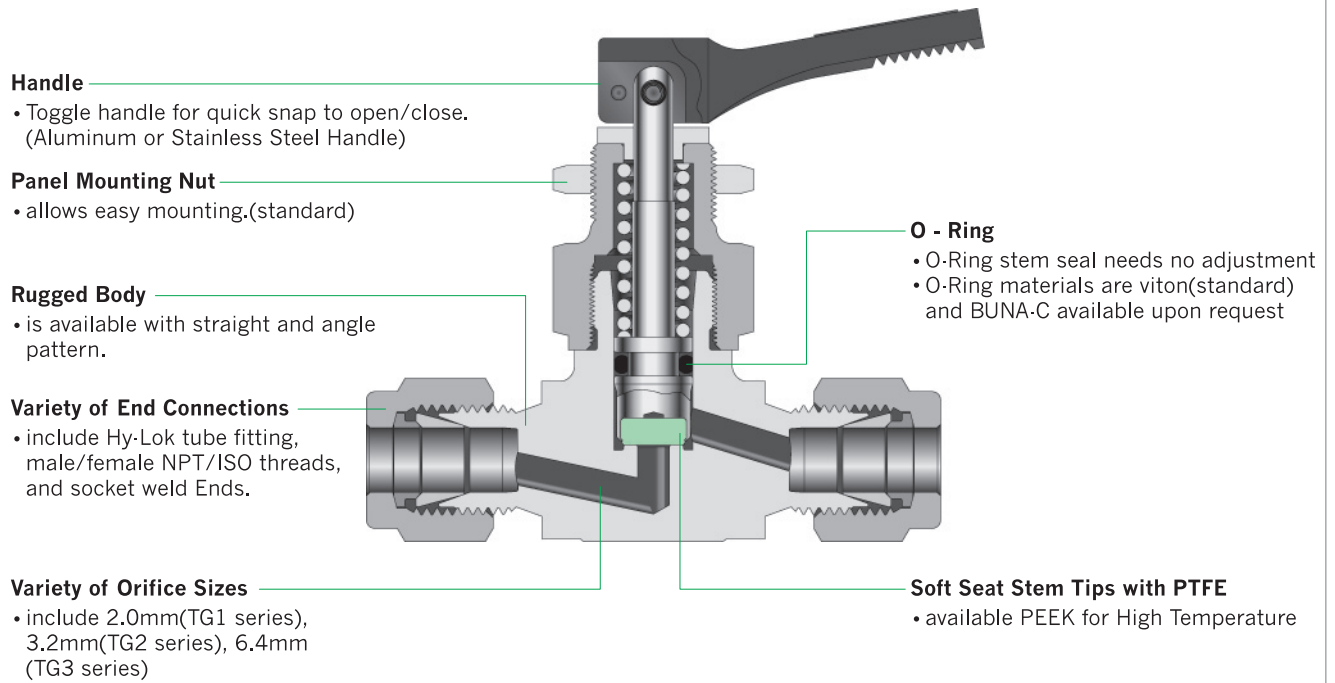
## Table of Dimensions



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)					
	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)
	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" Male NPT					24.9 (0.98)	28.7 (1.13)	
	MH	-4N4T-				1/4" Hy-Lok							
	MH	-4N6M-			6mm Hy-Lok	53.8 (2.12)							
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

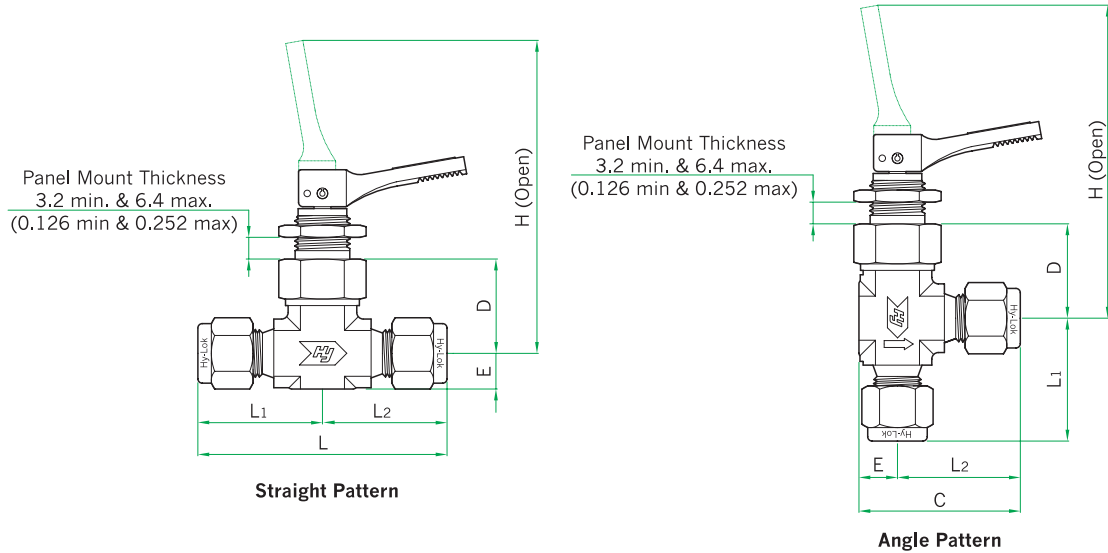


## Materials of Construction

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

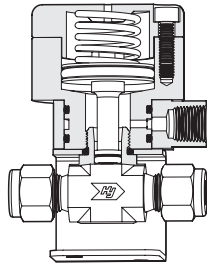


Basic Part No.			Orifice	Cv	End Connection		Dimensions						
					Inlet	Outlet	L	L1	L2	C	E	D	H
TG1	H	-2T-	2,0 (0,08)	0,11	1/8" Hy-Lok	1/8" Hy-Lok	49,8 (1,96)	24,9 (0,98)		32,9 (1,30)	8,0 (0,31)	21,9 (0,86)	72,2 (2,84)
	H	-3M-			3mm Hy-Lok	3mm Hy-Lok							
	M	-2N-			1/8" Male NPT	1/8" Male NPT	38,1 (1,50)	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)			

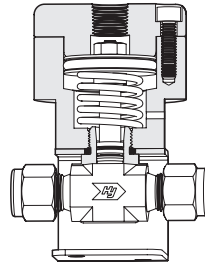
Dimensions in millimeters(inch) are for reference only, subject to change  
 Dimensions shown with Hy-Lok nuts in finger-tight position, where applicable.  
 Ordering information refer to page 30.



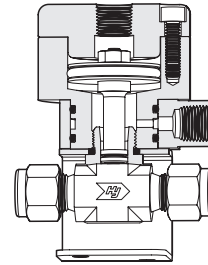
## Pneumatically Actuated Valves



[ 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

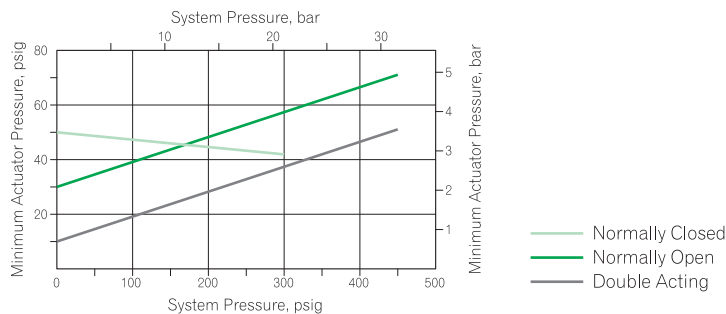
No.	Component	Material
1	Cover	Black anodized aluminum
2	Housing	
3	Port	
4	Piston	Aluminum
5	Bolt	SS304
6	Spring	SS302
7	O-ring	Viton
8	Mounting Bracket	SS304

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

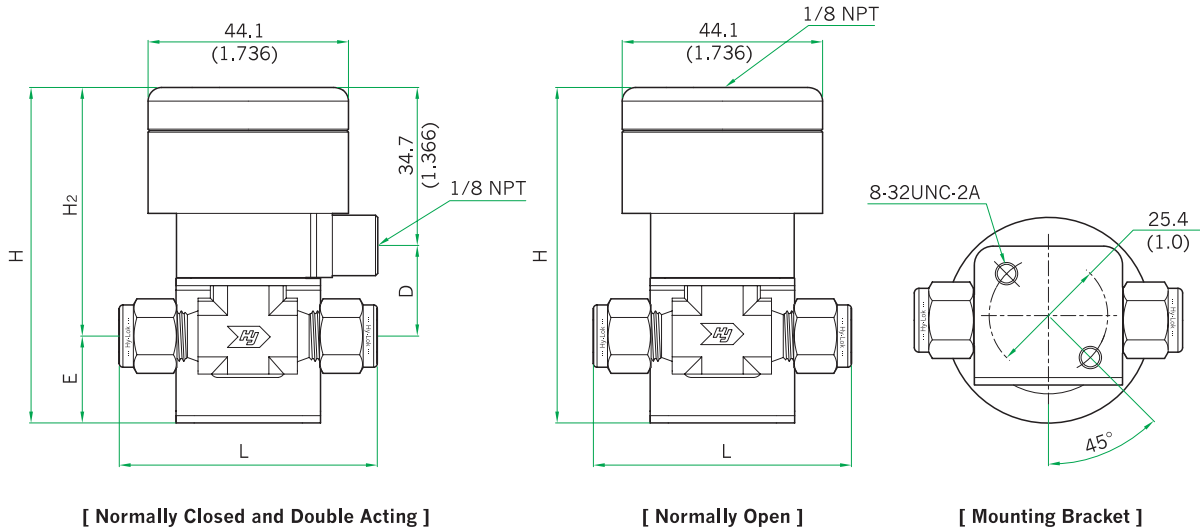


### Technical Data

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**

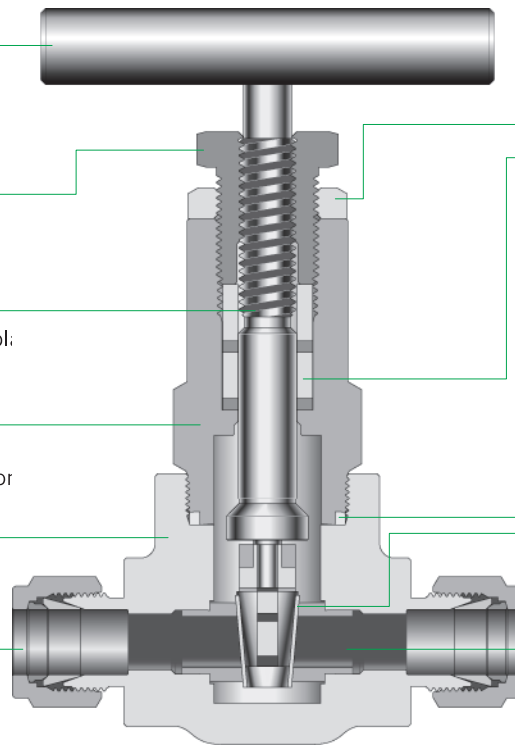
- provides anti-blow out of stem and secondary stem seal function

**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**

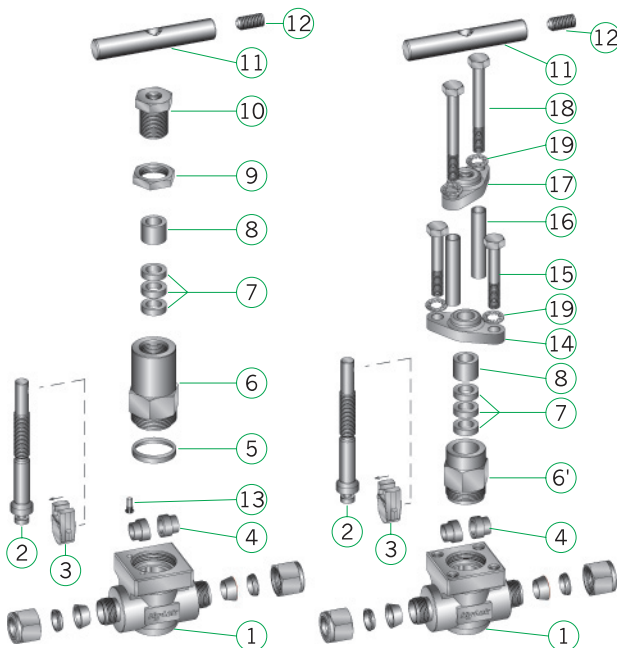
- Long cycle life.

**Orifice Size**

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

GT

GTY



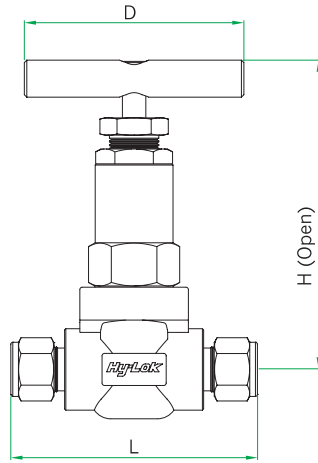
## Materials of Construction

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		

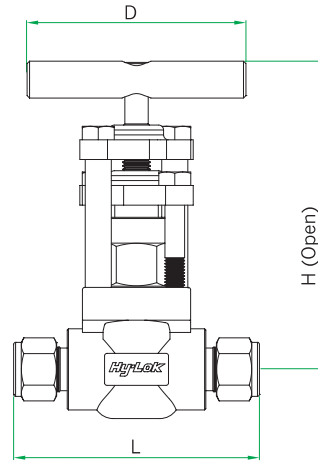
Note : " \* " marked are wetted parts.  
"HF" Stellite Hardfacing.

# 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				1/2" Female NPT	1/2" Female NPT			
	H-	8T	Reduced			1/2" Hy-Lok	1/2" Hy-Lok			100
	H-	12T	5/8" Hy-Lok			5/8" Hy-Lok				
	SW-	6P	Full			3/8" Pipe Weld	3/8" Pipe Weld			86
	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				3/4" Female NPT	3/4" Female NPT			
	H-	12T	Reduced			3/4" Hy-Lok	3/4" Hy-Lok			115
	H-	16T	1" Hy-Lok			1" Hy-Lok				
	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				1" Female NPT	1" Female NPT			
	H-	16T	Reduced			1" Hy-Lok	1" Hy-Lok			146
	SW-	12P	Full			3/4" Pipe Weld	3/4" Pipe Weld			
	SW-	16P	Reduced			1" Pipe Weld	1" Pipe Weld			127

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

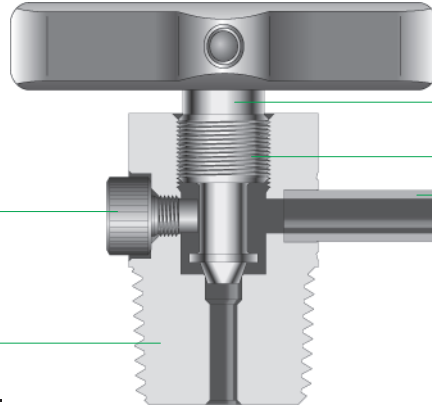
## Features

### 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

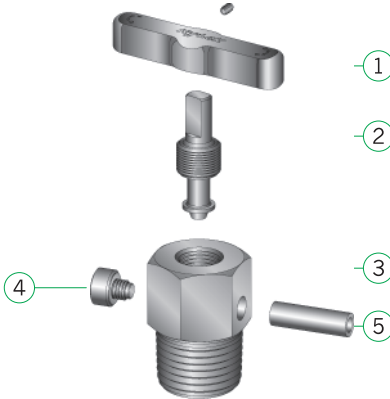
- available in Hex. Head Stem

### Stem Thread and Tips

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

### Bleed Tube

- available in barbed vent tube

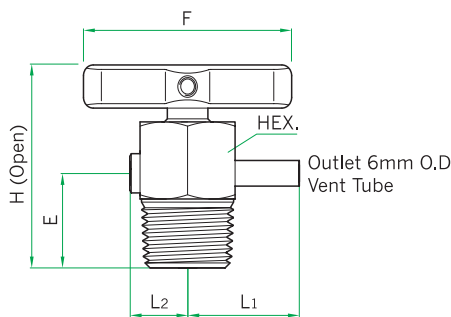


## Materials of Construction

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

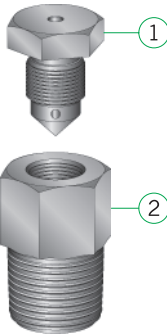
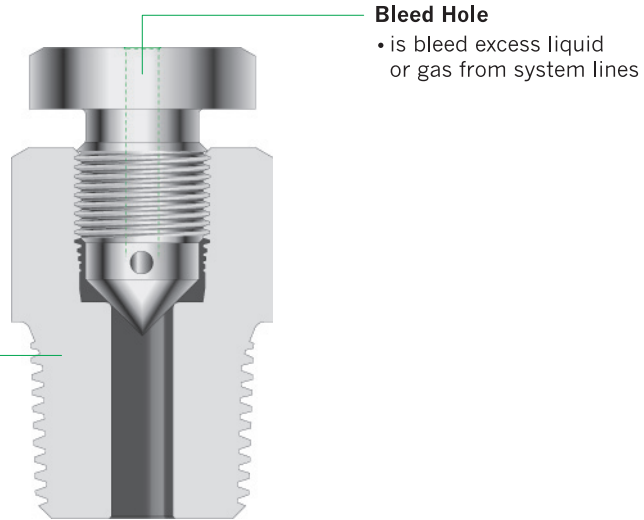


Basic Part No.	Orifice (Cv)	Inlet End Connections	Dimensions					
			L1	L2	E	F	H	HEX.
BLV	3.2 (0.126)	1/8" Male NPT	23,9 (0,94)	14,3 (0,56)	19,1 (0,75)	32 (1,26)	41,0 (1,61)	15,8 (5/8)
		1/4" Male NPT						
		3/8" Male NPT					44,0 (1,73)	
		1/2" Male NPT						22,2 (7/8)
		SAE 7/16-20	26,1 (1,03)	15,1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

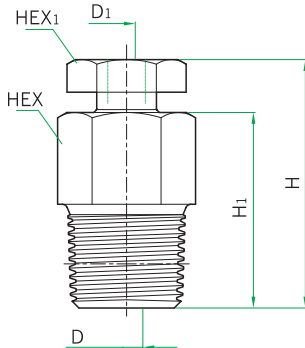
**Variety of End Connections**  
 include Hy-Lok tube fitting,  
 • male/female NPT/ISO/SAE threads.



## 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

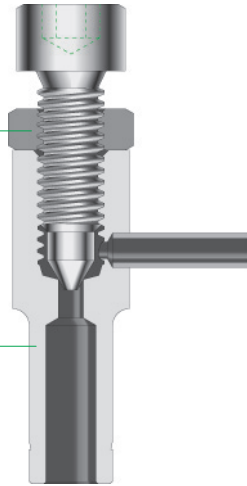
Basic Part No.	Inlet End Connections	Dimensions						
		H	H <sub>1</sub>	D	D <sub>1</sub>	HEX	HEX <sub>1</sub>	
VP	M 4N	1/4" Male NPT	42,7 (1.68)	33 (1.30)	6 (0.24)	3,2 (0.13)	22 (0.87)	19 (0.75)
	M 6N	3/8" Male NPT						
	M 8N	1/2" Male NPT						
	M 12N	3/4" Male NPT	43,7 (1.72)	34 (1.34)			27 (1.06)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

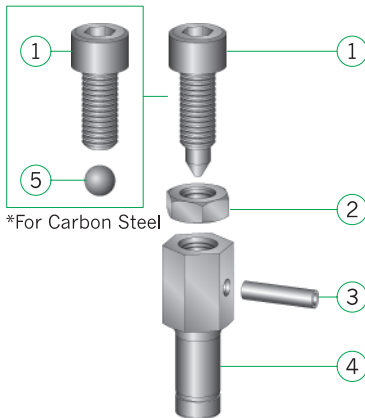
## Features

- **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

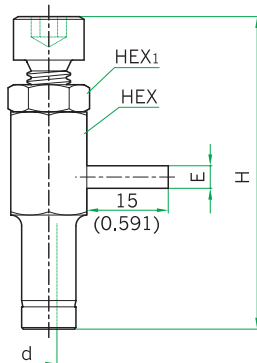


## Materials of Construction

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)					BAP	-81	6A(10.5mm) JIS Pipe Stub	57 (2.24)	3 (0.12)		14 (0.55)	13 (0.51)
	-08	8mm Tube Stub		3 (0.12)	4 (0.16)	14 (0.55)	13 (0.51)		-82	8A(13.8mm) JIS Pipe Stub	72 (2.83)		4 (0.16)		
	-10	10mm Tube Stub	57 (2.24)						-83	10A(17.3mm) JIS Pipe Stub	74 (2.91)		4 (0.16)	27 (1.06)	19 (0.75)
	-12	12mm Tube Stub	58 (2.28)						-84	15A(21.7mm) JIS Pipe Stub	76 (2.99)		6 (0.24)	30 (1.18)	
	-15	15mm Tube Stub							-85	20A(27.2mm) JIS Pipe Stub	79 (3.11)				
	-16	16mm Tube Stub	74 (2.91)						-01R	1/8" PT	51 (2.00)	3 (0.12)		4 (0.16)	
	-18	18mm Tube Stub				27 (1.06)	19 (0.75)		-02R	1/4" PT	53 (2.09)			14 (0.55)	13 (0.51)
	-20	20mm Tube Stub	75 (2.95)	4 (0.16)	6 (0.24)				-03R	3/8" PT	54 (2.13)	4 (0.16)		6 (0.24)	
	-22	22mm Tube Stub	76 (2.99)						-04R	1/2" PT	69 (2.72)				
	-25	25mm Tube Stub	78 (3.07)												
	-28	28mm Tube Stub				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

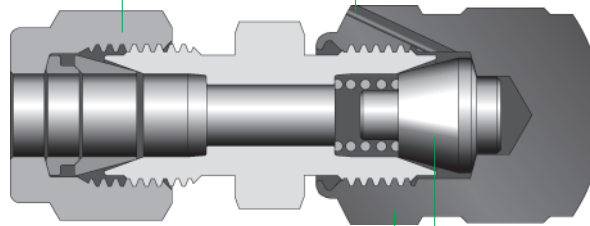
## Features

### 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

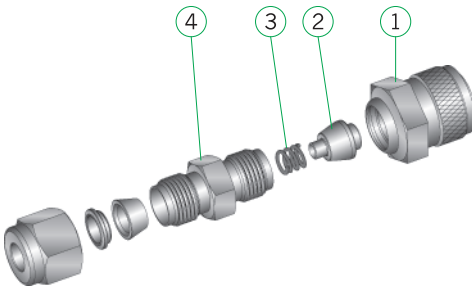


### Knured Cap

- is swaged to body to prevent accidental disassembly

### Poppet

- available in PTFE poppet

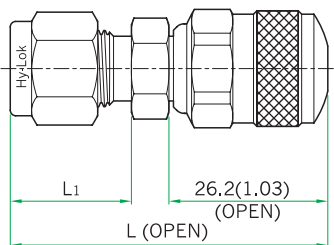


## Materials of Construction

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

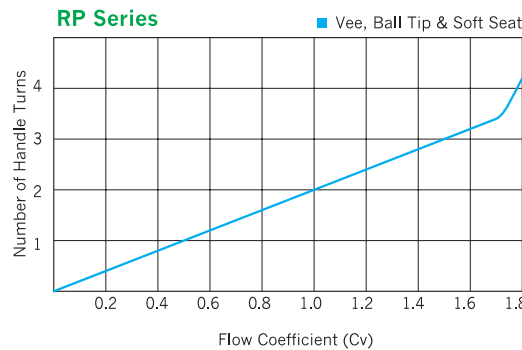
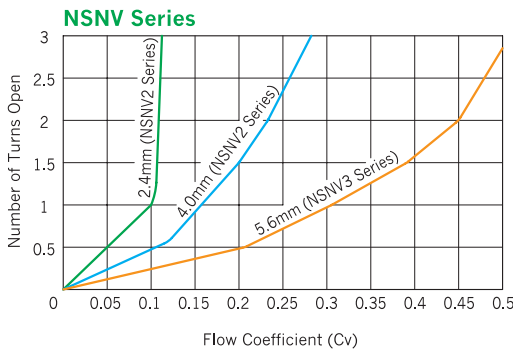
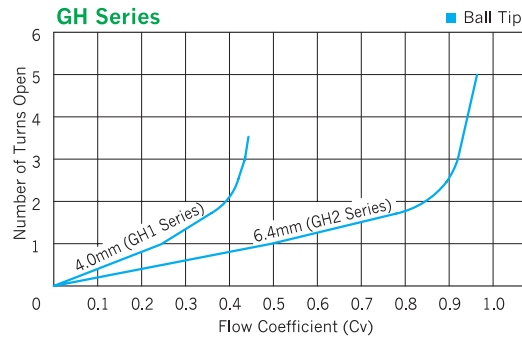
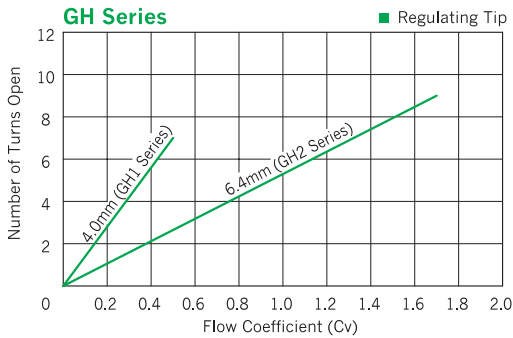
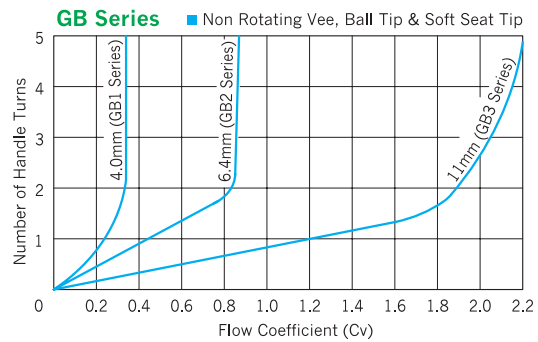
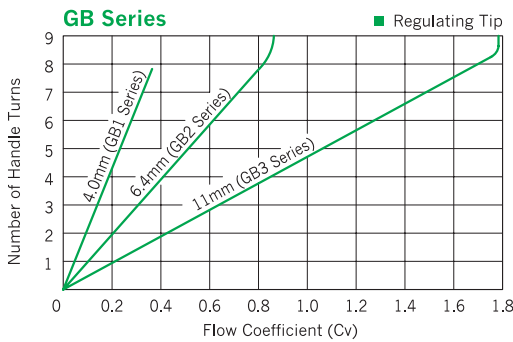
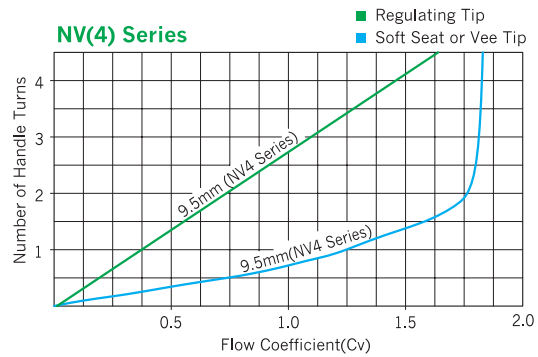
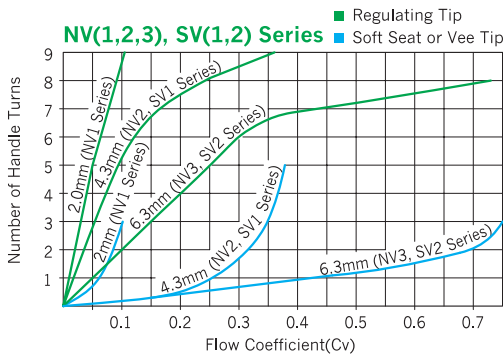


Basic Part No.	Inlet End Connections	Dimensions		Basic Part No.	Inlet End Connections	Dimensions			
		L	L <sub>1</sub>			L	L <sub>1</sub>		
PV	F -2N	1/8" Female NPT	39,6 (1,56)	13,5 (0,53)	PV	H -2T	1/8" Hy-Lok	46,7 (1,84)	15,24 (0,59)
	F -4N	1/4" Female NPT	44,4 (1,75)	18,3 (0,72)		H -4T	1/4" Hy-Lok	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

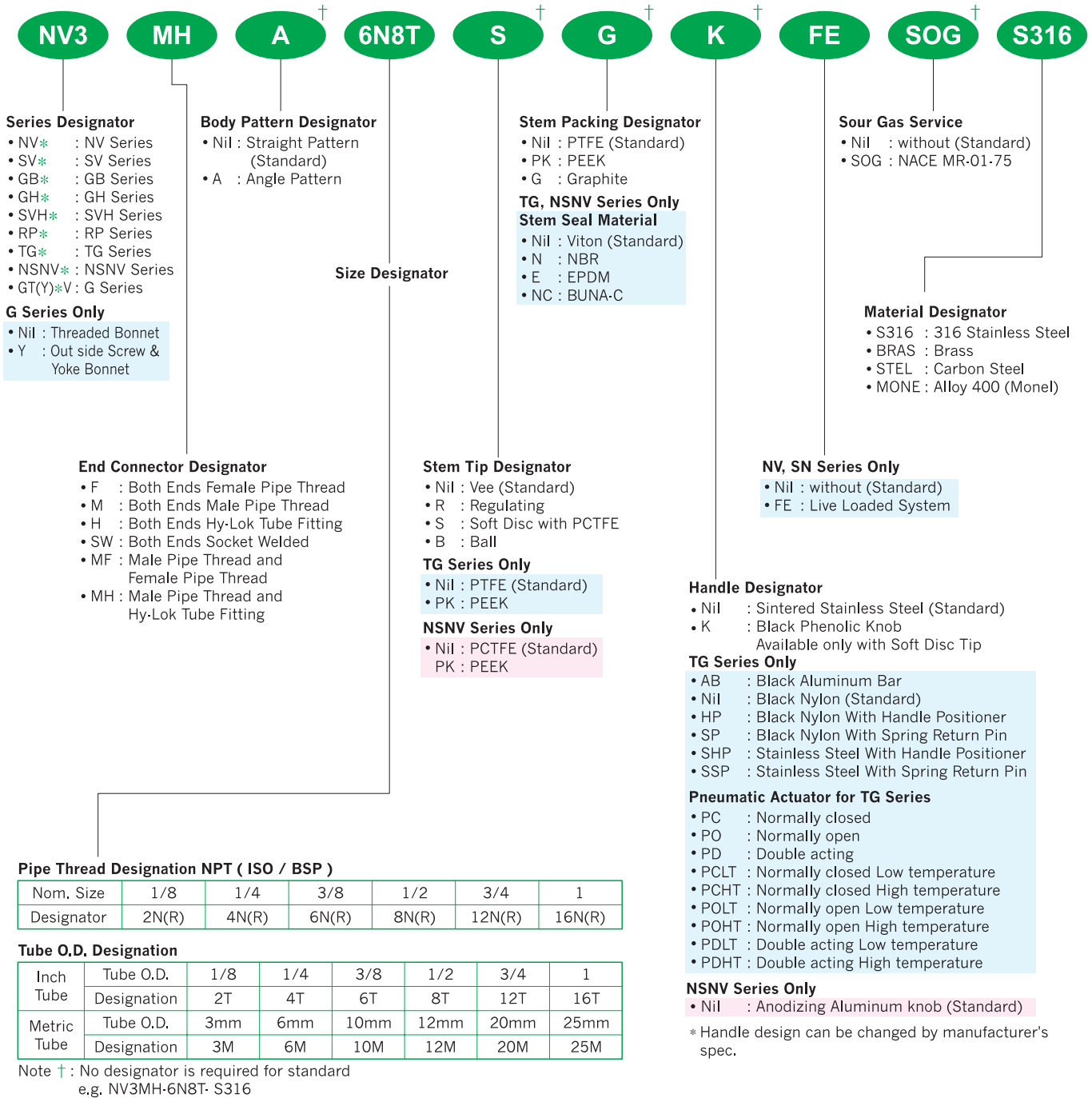
- 100% factory tested.
- Each needle valve is tested with nitrogen @ 69 bar (1000 psig) to Max. leak rate of 0.1 SCCM.
- Hydrostatic shell test is performed at 1.5 times the working pressure as an option.
- Optional tests are available upon request.

### Sour Gas Service

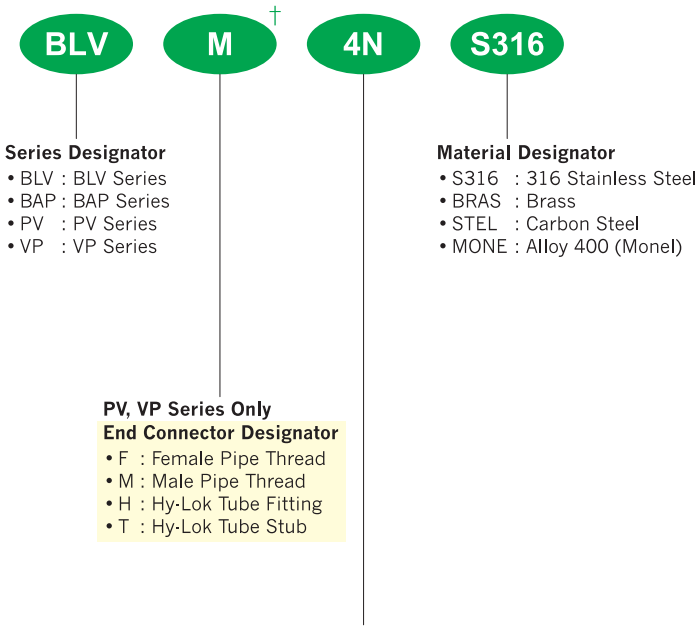
- Valves are available in materials which comply with standard NACE MR-01-75 latest revision relating to metallic materials offering optimum resistance to sulfide stress cracking

# 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.



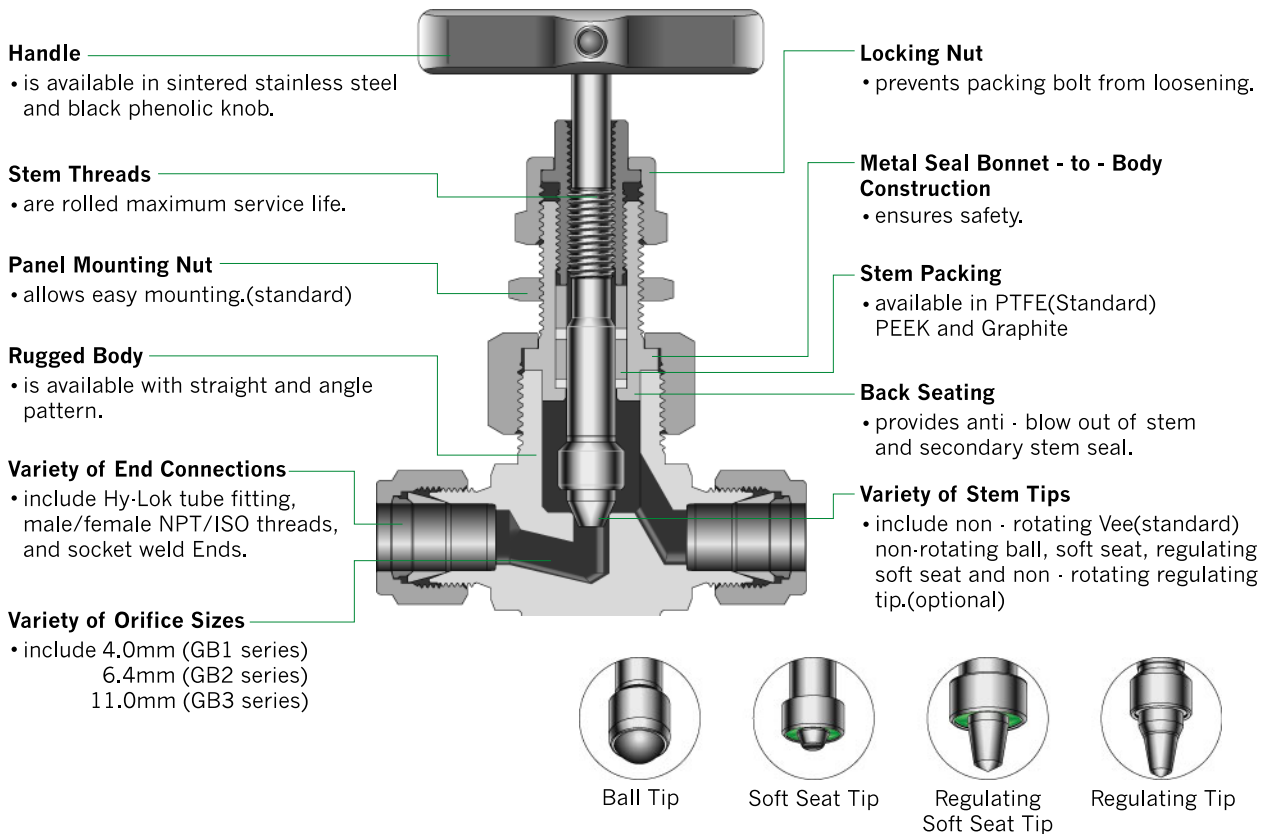
Distributed by :

# Hy-Lok GB Series

## Union Bonnet Valves



Catalog No. H-102NV  
Oct. 2014



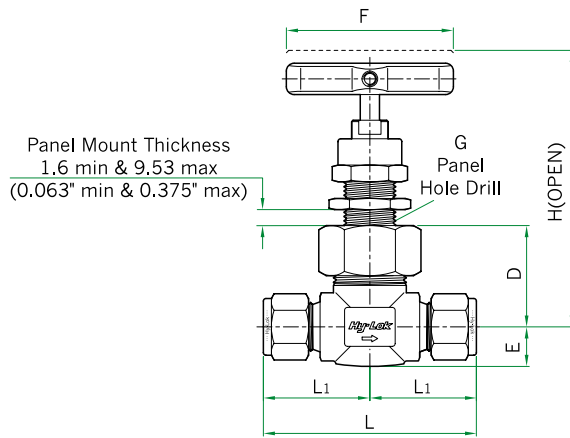
## Features

- **Pressure rating** up to 6,000 psig (413bar) @ 100°F (38°C)
- **Temperature rating** from -65°F to 450°F (-54°C to 232°C) with standard PTFE packing and up to 1,200°F (648°C) with optional Graphite packing
- **Body materials** available in 316 stainless steel, carbon steel, and alloy 400
- **100% factory tested.**

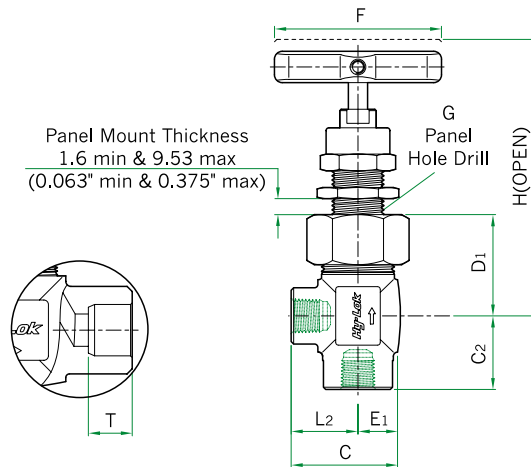


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**Straight Pattern**



**Weld End**

**Angle Pattern**

## 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)	25.4 (1.00)	27.8 (1.09)	32.6 (1.28)	11.5 (0.45)	11.5 (0.45)	45 (1.77)	15.1 (0.59)	77.8 (3.06)	82.6 (3.25)	-	
	F -4N			1/4" Female NPT		52.4 (2.06)	26.2 (1.03)													
	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)											
	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																
	SW -4T			1/4" Tube Weld		46.0 (1.81)	23.0 (0.91)	22.3 (0.88)	31.8 (1.25)	26.2 (1.03)										
	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)	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)	96.9 (3.81)	-	
	F -6N			3/8" Female NPT																
	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)										
	H -6T			3/8" Hy-Lok				33.5 (1.32)	47.7 (1.88)	37.5 (1.48)										
	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)										
	H -8T			1/2" Hy-Lok				36.0 (1.42)	50.2 (1.98)	40.0 (1.57)										
	SW -4P			1/4" Pipe Weld						28.6 (1.13)										
	SW -6T			3/8" Tube Weld		57.2 (2.25)	28.6 (1.13)	25.4 (1.00)	39.6 (1.56)	25.4 (1.00)										
SW -8T	1/2" Tube Weld																		10.0 (0.39)	
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)	76 (2.99)	26.2 (1.03)	121.5 (4.78)	122.4 (4.82)	-	
	F -12N			3/4" Female NPT		82.6 (3.25)	41.3 (1.63)	41.3 (1.63)	61.8 (2.43)	38.0 (1.50)	48.4 (1.91)	49.5 (1.95)	19.9 (0.78)	20.5 (0.81)						
	F -16N			1" Female NPT		92.1 (3.63)	46.0 (1.81)	-	-	-	54.0 (2.13)	-	25.4 (1.00)	-						-
	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)						
	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)	-						
	MF -16N			1" Male NPT	1" Female NPT	92.1 (3.63)	46.0 (1.81)	-	-	-	54.0 (2.13)	-	25.4 (1.00)	-						
	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)						
	H -12T			3/4" Hy-Lok				-	-	-	-	-	-	19.0 (0.75)						
	H -16T			1" Hy-Lok				-	-	-	-	-	-	-						
	SW -8P			1/2" Pipe Weld							47.6 (1.87)	-	17.5 (0.69)	-						
	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)	46.0 (1.81)	47.6 (1.87)	15.9 (0.63)						
	SW -12T			3/4" Tube Weld							52.3 (2.06)	39.7 (1.56)	51.0 (2.00)	19.0 (0.75)						

All dimensions in millimeters(inch.) Dimensions shown with Hy-Lok nuts in finger - tight position, where applicable.

## Technical Data

### Materials of Construction

Description	Grade / ASTM Specification		
	Valve Body Materials		
	SS316	Carbon Steel	Alloy 400
Handle	Stainless Steel	Aluminum	Stainless Steel
Lock Nut	SS316 / A479 or A276	1020 / A108 JIS 4051 S20C	SS316 / A479 or A276
Packing Bolt	SS630 / A564		
Packing Gland	SS316 / A479 or A276	SS316 / A479 or A276	
Packing Support*	Reinforced PTFE		
Stem Packing*	PTFE		
Bonnet*	SS316 / A479	1020 / A108 JIS 4051 S20C	Alloy 400 / B164
Stem*	Vee Tip	SS316 / A479 or A276	Alloy 400 / B164
	Ball Tip		
	Soft Tip		
	Regulating		
Body*	SS316 / A479 or A182	1020 / A108 JIS 4051 S20C	Alloy 400 / B164

**Note** : "\*"marked are wetted parts.  
Nickel anti-seize lubricant for PTFE packed valves and fluorinated grease for PEEK and Graphite foil packed valves.

### Temperature vs Working Pressure

Temperature	Pressure (psig) @ Temperature Rating			
	ASME Group	2,2	NA	3,4
	Materials	SS316	Carbon Steel†	Alloy 400
	ASME Class	2500	NA	2500
-65°F(-54°C)	100 °F ( 38 °C)	6000	6000	5000
	200 °F ( 93 °C)	5160	5420	4400
	300 °F (148 °C)	4660	5320	4120
	350 °F (176 °C)	4470	5230	4050
	400 °F (204 °C)	4280	-	3980
	450 °F (232 °C)	4130	-	3970

- † Rated at a low temperature of -20°F(-29°C)
- To determine kPa, multiply psig by 6.89 and bar by 0.0689.
  - When valves with Hy-Lok fitting end connections are connected to tubing, the working pressure of tubing must be considered in the calculation of total system working pressure.

### Sour Gas Service

- is provided to meet NACE Standard MR-01-75.

### Testing

- Each valve is tested with nitrogen @ 1000psig(69bar) to a max leak rate of 0.1SCCM.
- Hydrostatic shell test is performed at 1.5 times the working pressure.
- Optional tests are available upon request.

### Temperature and Pressure Rating

Body Material	Stem Tip	Temperature Rating	Pressure Rating @ -65°F ~ 100°F (-54°C ~ 38°C)
316 Stainless Steel	NR Vee, NR Ball Regulating	-65°F ~ 450°F (-54°C ~ 232°C)	6000 psig
	NR Soft seat (PCTFE)	-65°F ~ 200°F (-54°C ~ 93°C)	
Carbon Steel	NR Vee, NR Ball, Regulating	-20°F ~ 350°F (-29°C ~ 176°C)	6000 psig
	NR Soft Seat (PCTFE)	-20°F ~ 200°F (-29°C ~ 93°C)	
Alloy 400 (monel)	NR Vee, NR Ball, Regulating	-65°F ~ 450°F (-54°C ~ 232°C)	5000 psig
	NR Soft Seat (PCTFE)	-65°F ~ 200°F (-54°C ~ 93°C)	

- NR stands for non-rotating.
- The above ratings are for a standard valve with PTFE packing. For optional packing materials, refer to the table shown below.
- Extreme temperature fluctuations may require packing adjustment.

### Packing and Body Materials vs Temperature and Pressure Rating

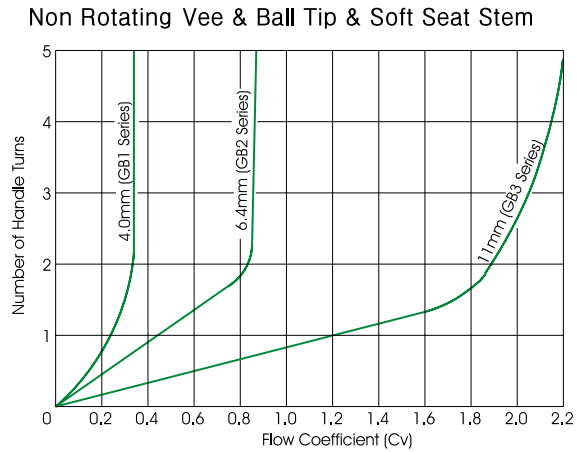
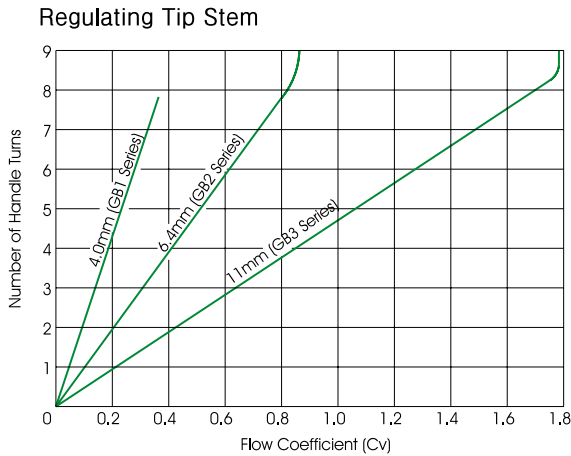
Packing Material	Body Material	Temperature	Pressure @ Temp Rating
PTFE (Standard)	316 Stainless Steel	-65°F ~ 450°F (-54°C ~ 232°C)	4130 psig
	Alloy 400*		3970 psig
PEEK †	316 Stainless Steel	-65°F ~ 600°F (-54°C ~ 315°C)	3760 psig
	Alloy 400*		-65°F ~ 500°F (-54°C ~ 260°C)
Graphite	316 Stainless Steel	-65°F ~ 1200°F (-54°C ~ 648°C)	1715 psig
	Carbon Steel	-20°F ~ 350°F (-29°C ~ 176°C)	5230 psig
	Alloy 400*	-65°F ~ 500°F (-54°C ~ 260°C)	3960 psig

- \* Not applicable over 500°F(260°C).
- † PEEK is not recommended for service with aromatic heat transfer fluids or concentrated sulfuric and nitric acids. Other limitations may apply.

### Handles

- Standards are black aluminum bar for carbon steel body and stainless steel bar for SS316 and Alloy 400 body.

## Flow Coefficient (Cv) vs Number of Handle Turns



## Ordering Information

**GB2**

**Series Designator by Orifice Size**

- GB1 : 4.0mm Orifice
- GB2 : 6.4mm Orifice
- GB3 : 11.0mm Orifice

**MH**

**End Connection Designator**

- F : Both Ends Female Pipe Thread
- M : Both Ends Male Pipe Thread
- MF : Male & Female Pipe Thread
- H : Both Ends Hy-Lok Tube Fittings
- SW : Both Ends Socket Weld Ends
- MH : Male Pipe Thread & Hy-Lok Tube Fittings

**A**

**Body Pattern Designator\***

- Nil : Straight Pattern (Standard)
- A : Angle Pattern

**4N6T**

**Size Designator**

**PK**

**Stem Packing Material Designator\***

- Nil : PTFE(Standard)
- PK : PEEK
- G : Graphite

**R**

**Stem Tip Designator\***

- Nil : Non-Rotating Vee (Standard)
- R : Regulating
- S : Non-Rotating Soft Seat with PCTFE
- B : Non-Rotating Ball

**K**

**Handle Designator\***

- Nil : Standard
- K : Black Phenolic Knob Available only for GB1, and GB2 with soft seat stem

**SOG**

**Sour Gas Designator\***

- Nil : Without(Standard)
- SOG : NACE MR-01-75

**S316**

**Material Designator**

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

• NPT (ISO/BSP)

Thread(in.)	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

Fractional Tube	O.D.(in.)	1/8	1/4	3/8	1/2	3/4	1
	Designator	2T	4T	6T	8T	12T	16T
Metric Tube	O.D.(mm)	3	6	10	12	20	25
	Designator	3M	6M	10M	12M	20M	25M

**Note \*** : No designator is required for standard, e.g. GB2MH-4N6T-S316.

## SAFETY in VALVE SELECTION

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

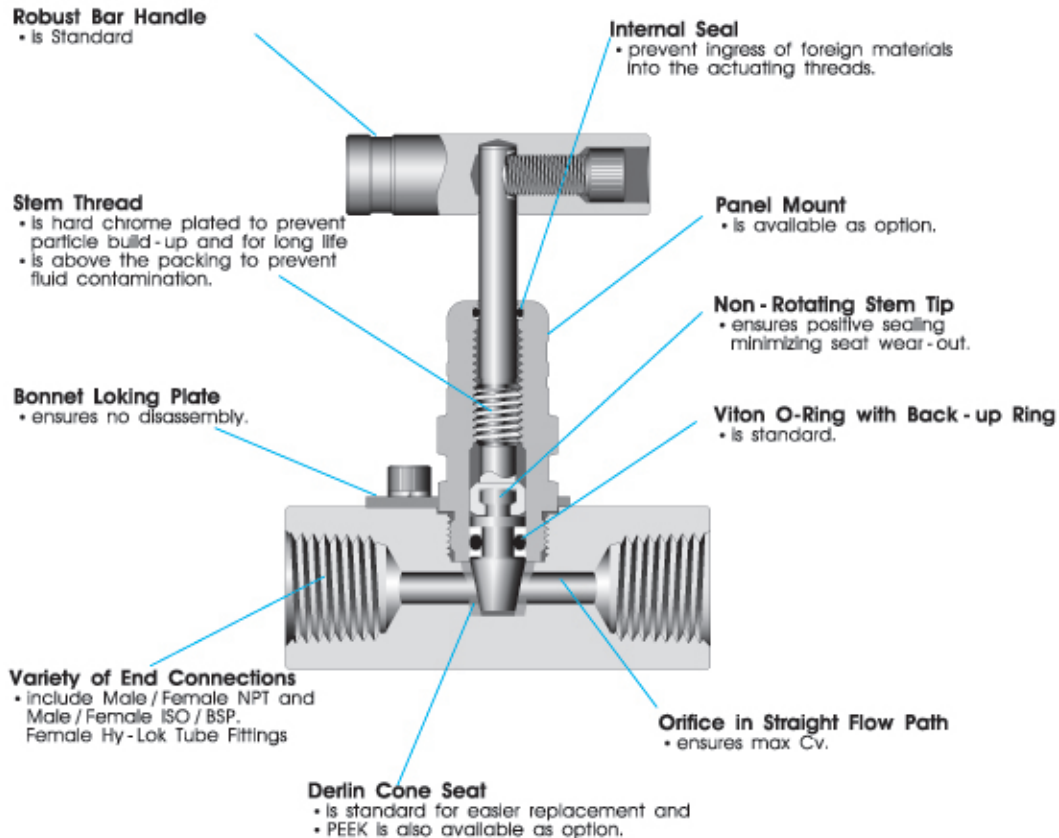


# Hy-Lok RP Series

## Rising Plug Valves



Catalog No. H-RP100  
Jan. 2002



## Features

- **Pressure rating** up to 6000psig @ 100°F (38°C)
- **Gauge port** available as option
- **SS316 body** as standard
- **Sour gas service** available.
- **100% factory tested**

## Materials of Construction

Description	Material / ASTM Specification
Body	A479 / SS 316
Bonnet	
Stem	
Tip	
Seat	Delrin Standard
Seal	Viton Standard
Handle Set	Stainless Steel
Locking Plate	Stainless Steel

## Temperature and Pressure Ratings

Seat Materials	Temperature Rating	Pressure Rating @ 100°F (38°C)	Pressure Rating @ Max Temperature
Delrin (standard)	-20°F~250°F (-29°C~121°C)	6,000 psig (413 bar)	1,000 psig @ 250°F(121°C)
PEEK (optional)	-20°F~400°F (-29°C~204°C)	6,000 psig (413 bar)	1,000 psig @ 400°F(204°C)

## Spare Seat

- available for maintenance as below

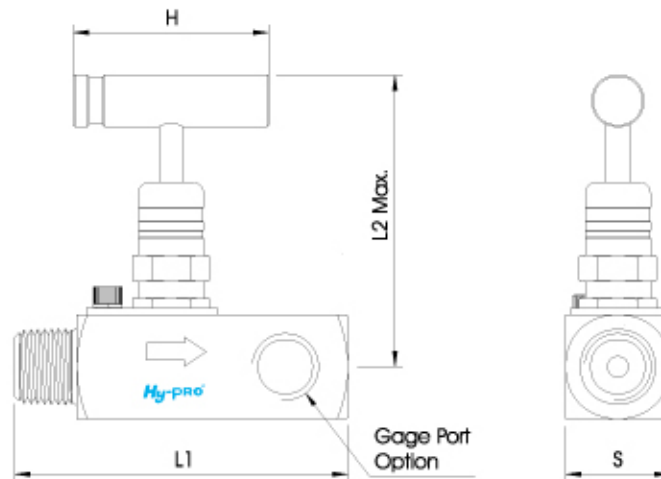
Part No.	Seat Materials	Q'ty / Pack
RPV - * - DS	Delrin Seat	1 pc
RPV - * - PK	PEEK Seat	1 pc

**Note** "\*" for end connection and size designator  
e.g. RPV-MF8N-PK (See Ordering Information)



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## Table of Dimensions

Basic Part No.	Orifice	Cv	End Connections		Dimensions					
			Inlet	Outlet	L1	L2	H	S		
RPV	F	-4N-	6.3	1.77	1/4" Female NPT	1/4" Female NPT	62.0	95.4	60	25.4
	MF	-4N-			1/4" Male NPT	1/4" Female NPT	74.0			
	F	-8N-			1/2" Female NPT	1/2" Female NPT	84.0	97.5		32.0
	MF	-8N-			1/2" Male NPT	1/2" Female NPT	90.0			
	MF	-12N8N-			3/4" Male NPT	1/2" Female NPT				

All dimensions in millimeters.

## Ordering Information

RPV

MF

G8N

12N

8N

PK

P

S316

**Valve Type Designator**

**End Connection Designator**

- F : Both Ends Female Pipe Thread
- MF: Male Pipe Thread & Female Pipe Thread

**Gauge Port Designator\***

- Nil : Without(Standard)
- G4N: 1/4" NPT
- G8N: 1/2" NPT

**Size Designator Inlet / Outlet**

- NPT (ISO/BSP)

Thread(in.)	1/4	1/2	3/4
Designator	4N(R)	8N(R)	12N(R)

**Seat Material Designator\***

- Nil : Delrin(Standard)
- PK : PEEK

**Body Material Designator**

- S316 : 316 Stainless Steel

**Panel Mounting Designator\***

- Nil : Without(Standard)
- P : With

**Note\*** : No designator is required for standard.  
e.g. RPV MF-12N 8N -S316

### QUALITY SYSTEM CERTIFICATES



ISO 9001  
CERTIFICATE NO. GQC 212

ASME SECT II (MO)  
CERTIFICATE NO. Q5C 584

### SAFETY in VALVE SELECTION

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

### TYPE APPROVALS (for Hy-Lok Tube Fittings)



American Bureau Shipping  
CERTIFICATE NO.00-BK50288-X



Lloyd's Register  
CERTIFICATE NO.01/10075



GERMANISCHER LLOYD  
CERTIFICATE NO.57798-91 HH



DET NORSKE VERITAS  
CERTIFICATE NO.P-9100



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# Hy-Lok SVH Series

## High Pressure Bar Stock Needle Valves



Catalog No. H - 103NV  
Jan. 2005

### Handle

- robust stainless steel bar handle.

### Packing Bolt

- allows easy packing adjustment for leak tight seal.

### Stem Threads

- rolled and hard chrome-plated for maximum service life.

### Stop Pin

- prevents accidental removal in service.

### Rugged Body

- available in straight and angle pattern.

### Variety of End Connections

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

**Orifice Size**  
• 5.0mm

### 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

### Variety Stem Tips

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

## Features

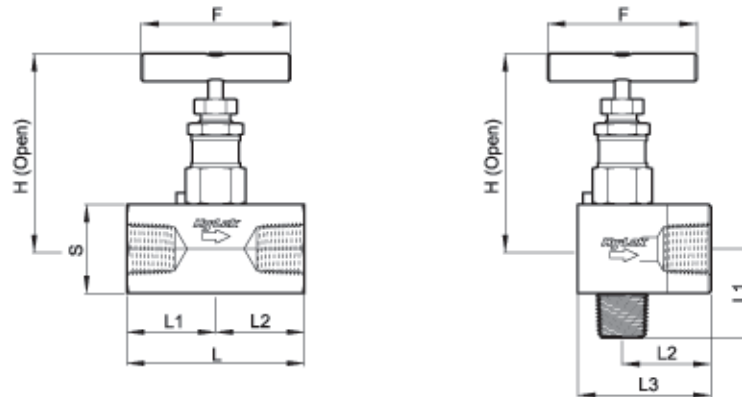
- **Pressure rating** up to 10,000psig(689 bar) @100°F(38°C)
- **Temperature range** from -65°F to 450°F(-23°C to 232°C) with standard PTFE packing and up to 1200°F (649°C) with optional grafoil packing.
- **Body materials** available in 316 stainless steel, carbon steel and alloy 400
- 100% factory tested



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## SVH1 for 10,000psig

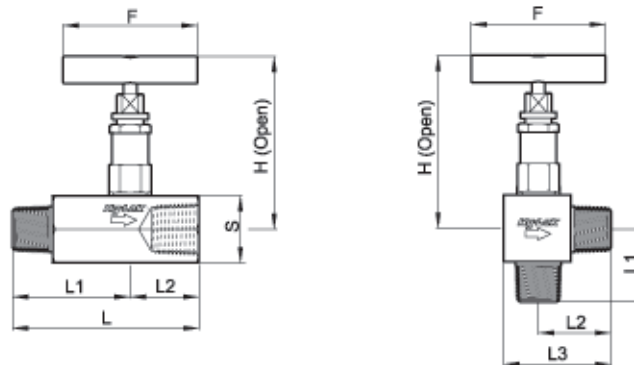


## Table of Dimensions

Basic Part NO.			Orifice Hole	Cv Factor	End Connection		Dimensions							
					Inlet	Outlet	L	L1	L2	L3	S	F	H	
SVH1	F	-4N-	0.197 (5.0)	0.52	1/4 Female NPT	1/4 Female NPT	3.00 (76.2)	1.50 (38.1)	1.50 (38.1)	2.25 (57.2)	1.50 (38.1)	2.52 (64.0)	3.54 (90.0)	
	MF	-4N-			1/4 Male NPT	1/4 Female NPT								
	F	-8N-			1/2 Female NPT	1/2 Female NPT	3.31 (84.0)	1.65 (42.0)	1.65 (42.0)	2.46 (62.5)	1.61 (41.0)			
	F	-12N-			3/4 Female NPT	3/4 Female NPT								
	MF	-6N-			3/8 Male NPT	3/8 Female NPT	3.24 (82.2)	1.74 (44.1)	1.50 (38.1)	2.25 (57.2)	1.50 (38.1)			3.54 (90.0)
	MF	-8N-			1/2 Male NPT	1/2 Female NPT	3.43 (87.1)	1.93 (49.0)	1.50 (38.1)	2.25 (57.2)	1.50 (38.1)			

Dimensions in inches and (millimeters) are for reference only, subject to change.

## SVH2 for 6,000psig



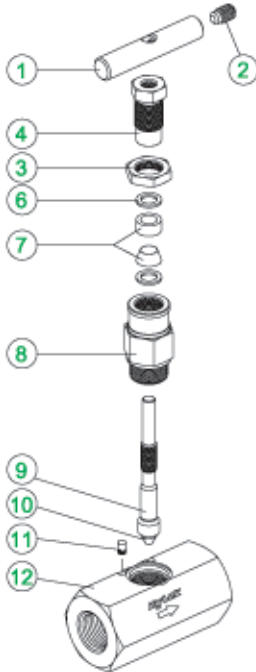
## Table of Dimensions

Basic Part NO.			Orifice Hole	Cv Factor	End Connection		Dimensions						
					Inlet	Outlet	L	L1	L2	L3	S	F	H
SVH2	F	-4N-	0.197 (5.0)	0.52	1/4 Female NPT	1/4 Female NPT	3.00 (76.2)	1.50 (38.1)	1.50 (38.1)	2.13 (54.1)	1.26 (32.0)	2.52 (64.0)	3.48 (88.5)
	F	-6N-			3/8 Female NPT	3/8 Female NPT				2.25 (57.2)	1.50 (38.1)		
	F	-8N-			1/2 Female NPT	1/2 Female NPT				2.25 (57.2)	1.50 (38.1)		
	F	-12N-			3/4 Female NPT	3/4 Female NPT	3.50 (88.9)	2.21 (56.1)	1.29 (32.8)	1.92 (48.8)	1.26 (32.0)	3.48 (88.5)	
	MF	-8N-			1/2 Male NPT	1/2 Female NPT							
	MF	-12N-			3/4 Male NPT	3/4 Female NPT	4.50 (114.3)	3.00 (76.2)	1.50 (38.1)	2.25 (57.2)	1.50 (38.1)		3.60 (91.5)
	H	-6T-			3/8 Hy-Lok	3/8 Hy-Lok	3.59 (91.2)	1.80 (45.6)	1.80 (45.6)	2.43 (61.6)	1.26 (32.0)	3.48 (88.5)	
	H	-8T-			1/2 Hy-Lok	1/2 Hy-Lok	3.79 (96.2)	1.89 (48.1)	1.89 (48.1)	2.52 (64.1)			
	SW	-4P-			1/4 Pipe Weld	1/4 Pipe Weld	2.56 (65.0)	1.28 (32.5)	1.28 (32.5)	1.91 (48.5)			
	SW	-8P-			1/2 Pipe Weld	1/2 Pipe Weld							
	SWF	-4P4N-			1/4 Pipe Weld	1/4 Female NPT							
	SWF	-8P8N-			1/2 Pipe Weld	1/2 Female NPT	3.00 (76.2)	1.50 (38.1)	1.50 (38.1)	2.13 (54.1)			

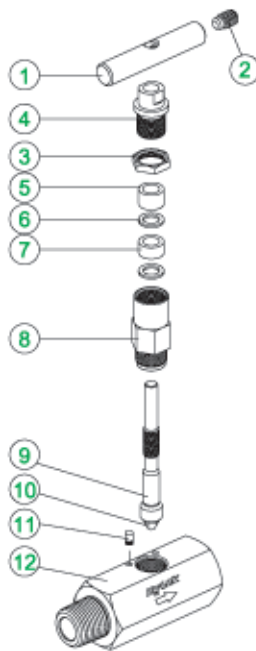
Dimensions in inches and (millimeters) are for reference only, subject to change.

## Technical Data

### SVH1



### SVH2



## Materials of Construction

Description	Grade / ASTM Specification		
	Valve Body Materials		
	316SS	Carbon Steel	Alloy 400
1 Handle	Stainless Steel	Aluminum	Stainless Steel
2 Set Screw	Stainless Steel		
3 Lock Nut	316SS / A479		
4 Packing Bolt	316SS / A479		
5 Packing Gland*	316SS / A479		
6 Packing Washer*	Reinforced PTFE		
7 Packing*	PTFE, Grafoil		
8 Bonnet*	316SS / A479	C.Steel / A105	Alloy 400 / B164
9 Stem*	316SS / A479		
10 Vee Tip*	630SS / A564		Alloy 500 / B865
10 Ball Tip*			
11 Stop Pin	Stainless Steel		
12 Body	316SS / A479	C.Steel / A105	Alloy 400 / B164

Note : "\*"marked are wetted parts.  
Grafoil is trade mark of UCAR

## Temperature and Pressure Rating

Series	Packing Material	Body Material	Temperature Range	Pressure Rating @ 100°F	Pressure Rating @ Max. Temperature
SVH1	PTFE	Stainless Steel	-65°F ~ 450°F (-54°C ~ 232°C)	10,000 psig	4,000 psig @ 500°F (276 bar @ 260°C)
		Carbon Steel	-20°F ~ 350°F (-29°C ~ 176°C)	10,000 psig	4,000 psig @ 500°F (276 bar @ 260°C)
SVH2	PTFE	Stainless Steel	-65°F ~ 450°F (-54°C ~ 232°C)	6,000 psig	4,130 psig @ 450°F (285 bar @ 232°C)
		Carbon Steel	-20°F ~ 350°F (-29°C ~ 176°C)	6,000 psig	5,230 psig @ 350°F (360 bar @ 176°C)
		Alloy 400	-65°F ~ 450°F (-54°C ~ 232°C)	5,000 psig	3,970 psig @ 450°F (274 bar @ 232°C)
	Grafoil	Stainless Steel	-65°F ~ 1200°F (-54°C ~ 648°C)	6,000 psig	1,715 psig @ 1200°F (118 bar @ 648°C)
		Carbon Steel	-20°F ~ 350°F (-29°C ~ 176°C)	6,000 psig	5,230 psig @ 350°F (360 bar @ 176°C)
		Alloy 400	-65°F ~ 500°F (-54°C ~ 260°C)	5,000 psig	3,960 psig @ 500°F <sup>@</sup> (273 bar @ 260°C)

@ Not applicable over 500°F(260°C)

## Testing

Each high pressure bar stock needle valve is tested with nitrogen @ 1000 psig (69 bar) to Max. leak rate of 0.1 SCCM. Hydrostatic shell test is performed at 1.5 times the working pressure as an option. Other tests are 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

## Maintenance Kits (See page 3)

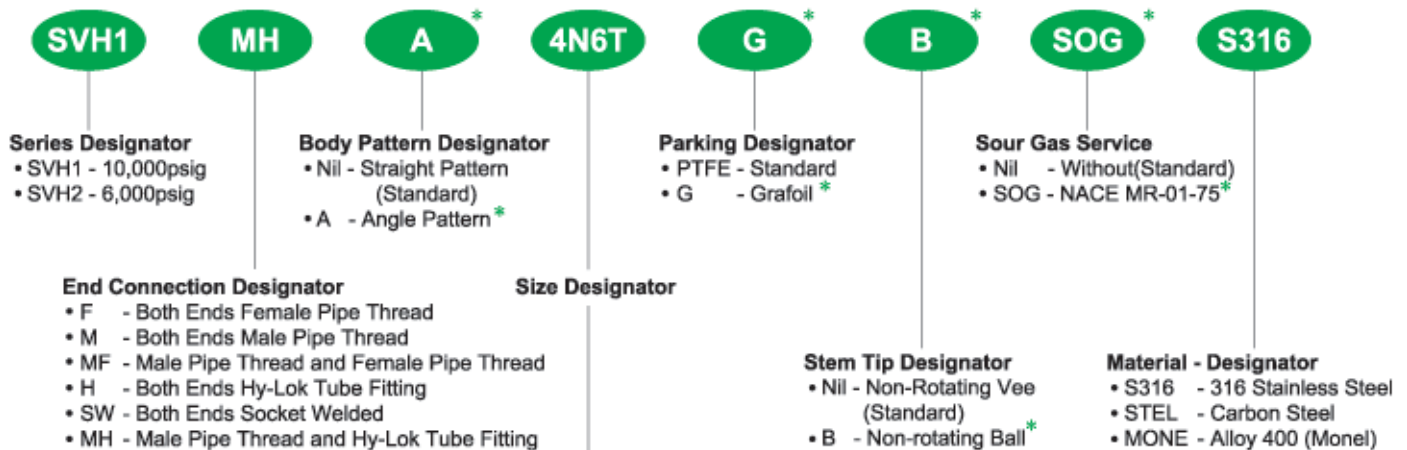
Basic Ordering No.	Valve Type	Component
KIT-SVH1-SET-**	SVH1	Bonnet, Stem tip, Stem, Packing, Packing Washer, Packing bolt, Handle, Lock nut, Set screw, Locking pin
KIT-SVH2-SET-**	SVH2	Bonnet, Stem tip, Stem, Packing, Packing Washer, Packing Gland, Packing bolt, Handle, Lock nut, Set screw, Locking pin

Stem Tip Shape	Designator
Vee	V
Ball	B

Packing Mat'l	Designator
PTFE	T
Grafoil®	G

\* For a complete ordering number, add the desired stem tip shape & packing material designator as a suffix to the maintenance kit basic ordering number  
 e.g : KIT-SVH1-SET-VT (Vee tip, PTFE stem packing)

## Ordering Information



### 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. SVH1F - 8N - S316

### ■ QUALITY SYSTEM CERTIFICATES



ISO 9001  
 CERTIFICATE NO.GQC 212

ASME SECT II (MO)  
 CERTIFICATE NO. QSC 584

### ■ TYPE APPROVALS (for Hy-Lok Tube Fittings)



American Bureau Shipping  
 CERTIFICATE NO.00-BK50288-X



Lloyd's Register  
 CERTIFICATE NO.01/10075



GERMANISCHER LLOYD  
 CERTIFICATE NO.57798-91 HH



DET NORSKE VERITAS  
 CERTIFICATE NO.P-9100

### SAFETY in VALVE SELECTION

Proper installation, material compatibility, operation and maintenance of the valves 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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