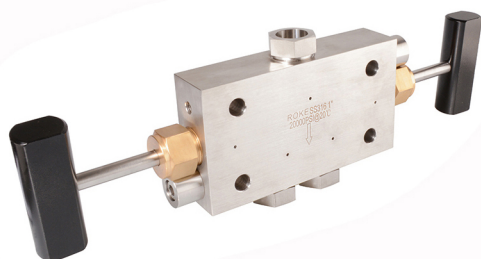
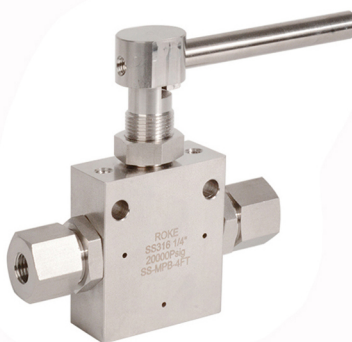
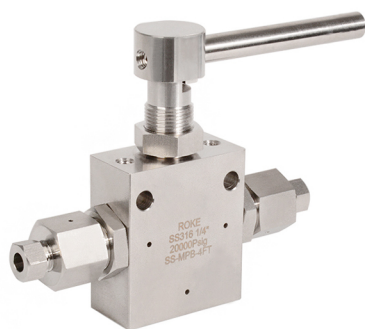


Medium and High Pressure Valves



ROKE
Valves ,Fittings and Tubing

www.chinaroke.com

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Medium Pressure Needle Valves

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HCO Series 60,000psig	22
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Medium Pressure Needle Valves

MNL Series

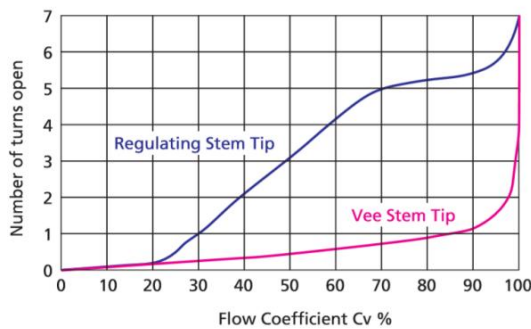
Max Working Pressure: 15,000 psig (1034 bar)

Working Temperature Range: -100°F~600°F (-73°C~316°C)

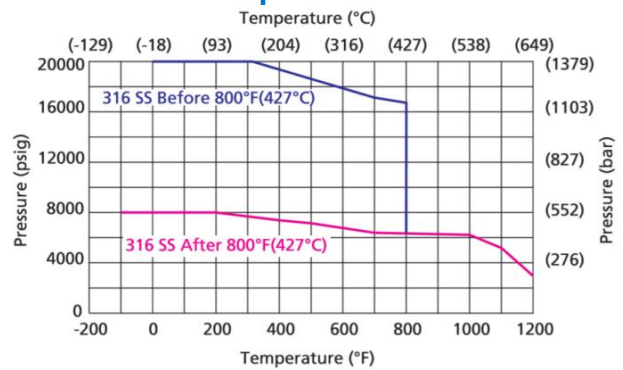
Features

- High tensile 316 Stainless Steel for valve body and 17-4PH Stainless Steel for lower stem
- Selected materials of packing gland and upper stem for optimum thread cycle life and reduced handle torque
- Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Non-rotating stem and bar stock body design
- Easy to assemble and replace packing
- Packing located under stem threads
- Reliable locking device for packing gland
- Options for Vee or Regulating stem tips

Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve



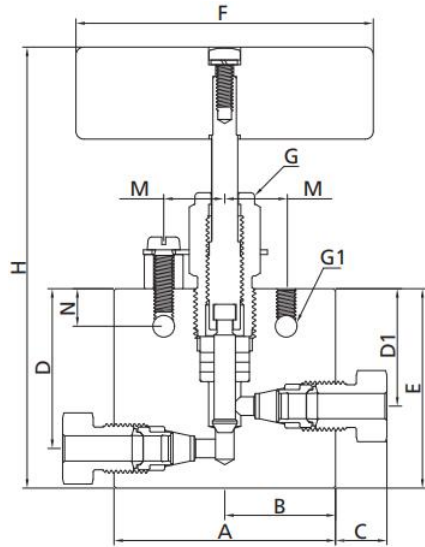
Standard Materials of Construction

Item	Component	Material	
1	Handle	SS or Aluminum	
2	Handel Screw	Stainless Steel	
3	Upper Stem	SS316/A479	
4	Packing Gland	C63000/B150	
5	Locking Screw	Stainless Steel	
6	Locking Plate	SS304/A240	
7	Packing Ring	C63000/B150	
8	Packing	PTFE/RPTFE/Graphite	
9	Packing Washer	17-4PH SS/A564	
10	Lower Stem	17-4PH SS/A564	
11	Body	SS316/A479	
12	Front Ferrule	SS316/A479	
13	Rear Ferrule	SS316/A479	
14	Nut	SS316/A479	

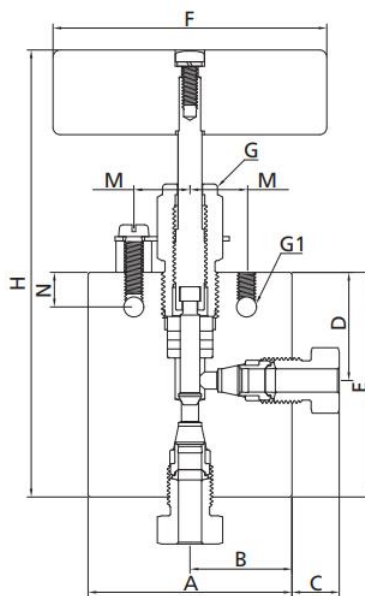
Ordering Information and Dimensions

Tubing Connection, 2-Way

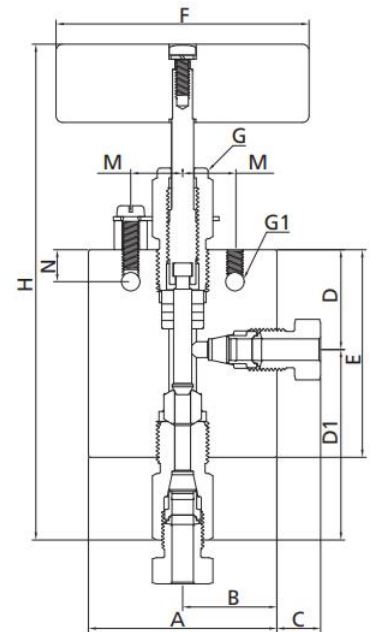
Straight



Angle



Angle(replaceable Seat)



Straight

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNL-FT2	1/8	0.094	1.81	0.91	0.44	1.06	0.81	1.38	1.75	0.63	0.17	3.13	0.56	0.31	0.63
	Tube OD	(2.39)	(46.1)	(23.1)	(11.2)	(26.9)	(20.6)	(35.1)	(44.5)	(15.9)	(4.3)	(79.6)	(14.2)	(7.9)	(15.9)
-MNL-FT4	1/4	0.188	2.33	1.17	0.52	1.62	1.19	2.00	3.00	0.75	0.22	4.92	0.62	0.38	0.75
	Tube OD	(4.77)	(59.2)	(29.6)	(13.3)	(41.2)	(30.2)	(50.8)	(76.2)	(19.1)	(5.6)	(125)	(15.8)	(9.7)	(19.1)
-MNL-FT6	3/8	0.25	2.27	1.13	0.54	1.62	1.19	2.00	3.00	0.75	0.22	4.96	0.62	0.38	0.750
	Tube OD	(6.35)	(57.6)	(28.8)	(13.6)	(41.2)	(30.2)	(50.8)	(76.2)	(19.1)	(5.6)	(126)	(15.8)	(9.7)	(19.1)
-MNL-FT8	1/2	0.375	2.86	1.43	0.60	2.38	1.75	2.88	4.00	1.00	0.34	6.22	0.69	0.50	1.00
	Tube OD	(9.53)	(72.7)	(36.4)	(15.3)	(60.5)	(44.5)	(73.2)	(102)	(25.4)	(8.6)	(158)	(17.5)	(12.7)	(25.4)

Angle

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNL-FT2-2	1/8	0.094	1.81	0.91	0.44	0.81	/	1.56	1.75	0.63	0.17	3.84	0.56	0.31	0.63
	Tube OD	(2.39)	(46.1)	(23.1)	(11.2)	(20.6)	/	(39.6)	(44.5)	(15.9)	(4.3)	(97.6)	(14.2)	(7.9)	(15.9)
-MNL-FT4-2	1/4	0.188	2.33	1.17	0.52	1.19	/	2.44	3.00	0.75	0.22	5.28	0.62	0.38	0.75
	Tube OD	(4.77)	(59.2)	(29.6)	(13.3)	(30.2)	/	(61.9)	(76.2)	(19.1)	(5.6)	(134)	(15.8)	(9.7)	(19.1)
-MNL-FT6-2	3/8	0.25	2.27	1.13	0.54	1.19	/	2.44	3.00	0.75	0.22	5.33	0.62	0.38	0.750
	Tube OD	(6.35)	(57.6)	(28.8)	(13.6)	(30.2)	/	(61.9)	(76.2)	(19.1)	(5.6)	(135)	(15.8)	(9.7)	(19.1)
-MNL-FT8-2	1/2	0.375	2.86	1.43	0.60	1.75	/	3.38	4.00	1.00	0.34	6.70	0.69	0.50	1.00
	Tube OD	(9.53)	(72.7)	(36.4)	(15.3)	(44.5)	/	(85.9)	(102)	(25.4)	(8.6)	(170)	(17.5)	(12.7)	(25.4)

Angle (Replace Seat)

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNL-FT2-3	1/8	0.094	1.81	0.91	0.44	0.81	1.44	1.56	1.75	0.63	0.17	3.45	0.56	0.31	0.63
	Tube OD	(2.39)	(46.1)	(23.1)	(11.2)	(20.6)	(36.5)	(39.6)	(44.5)	(15.9)	(4.3)	(87.5)	(14.2)	(7.9)	(15.9)
-MNL-FT4-3	1/4	0.188	2.33	1.17	0.52	1.19	2.05	2.25	3.00	0.75	0.22	5.52	0.62	0.38	0.75
	Tube OD	(4.77)	(59.2)	(29.6)	(13.3)	(30.2)	(52.0)	(57.2)	(76.2)	(19.1)	(5.6)	(140)	(15.8)	(9.7)	(19.1)
-MNL-FT6-3	3/8	0.25	2.27	1.13	0.54	1.19	2.32	2.25	3.00	0.75	0.22	5.59	0.62	0.38	0.750
	Tube OD	(6.35)	(57.6)	(28.8)	(13.6)	(30.2)	(59.0)	(57.2)	(76.2)	(19.1)	(5.6)	(142)	(15.8)	(9.7)	(19.1)
-MNL-FT8-3	1/2	0.375	2.86	1.43	0.60	1.75	2.68	3.25	4.00	1.00	0.34	6.96	0.69	0.50	1.00
	Tube OD	(9.53)	(72.7)	(36.4)	(15.3)	(44.5)	(68.1)	(82.6)	(102)	(25.4)	(8.6)	(177)	(17.5)	(12.7)	(25.4)

Note: 1. G is the drill dimension of packing gland mounting hole

2. G1 is the dimension of bracket mounting hole.

3. Panel mounting drill size: 0.25" all valves.

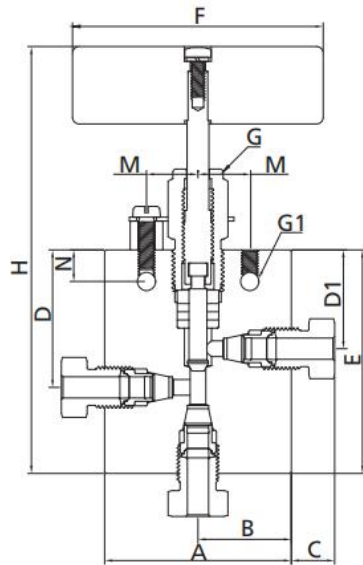
4. H is the dimension of stem in closed position.

5. All dimensions for reference only and subject to change.

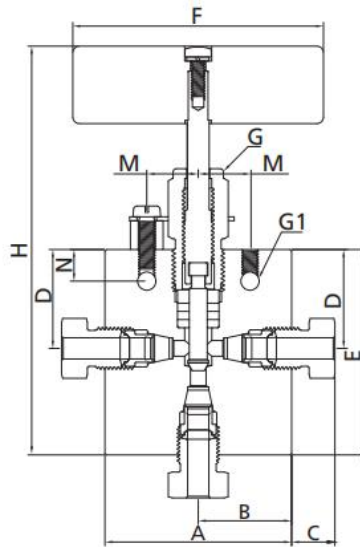
Ordering Information and Dimensions

Tubing Connection, 3-Way

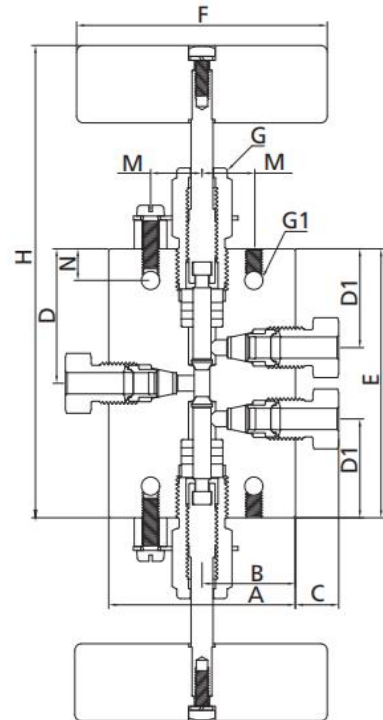
2 on pressure



1 on pressure



2 stem manifold



2 On Pressure

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNL-FT2-4	1/8 Tube OD	0.094 (2.39)	1.81 (46.1)	0.91 (23.1)	0.44 (11.2)	1.06 (26.9)	0.81 (20.6)	1.85 (46.9)	1.75 (44.5)	0.63 (15.9)	0.17 (4.3)	3.45 (87.5)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
-MNL-FT4-4	1/4 Tube OD	0.188 (4.77)	2.33 (59.2)	1.17 (29.6)	0.52 (13.3)	1.62 (41.2)	1.19 (30.2)	2.79 (70.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.52 (140)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
-MNL-FT6-4	3/8 Tube OD	0.25 (6.35)	2.27 (57.6)	1.13 (28.8)	0.54 (13.6)	1.62 (41.2)	1.19 (30.2)	2.76 (70.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.59 (142)	0.62 (15.8)	0.38 (9.7)	0.750 (19.1)
-MNL-FT8-4	1/2 Tube OD	0.375 (9.53)	2.86 (72.7)	1.43 (36.4)	0.60 (15.3)	2.38 (60.5)	1.75 (44.5)	3.80 (96.6)	4.00 (102)	1.00 (25.4)	0.34 (8.6)	6.96 (177)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)

1 On Pressure

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNL-FT2-5	1/8 Tube OD	0.094 (2.39)	1.81 (46.1)	0.91 (23.1)	0.44 (11.2)	0.81 (20.6)	/	1.56 (39.6)	1.75 (44.5)	0.63 (15.9)	0.17 (4.3)	3.32 (84.3)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
-MNL-FT4-5	1/4 Tube OD	0.188 (4.77)	2.33 (59.2)	1.17 (29.6)	0.52 (13.3)	1.19 (30.2)	/	2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.32 (135)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
-MNL-FT6-5	3/8 Tube OD	0.25 (6.35)	2.27 (57.6)	1.13 (28.8)	0.54 (13.6)	1.19 (30.2)	/	2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.40 (137)	0.62 (15.8)	0.38 (9.7)	0.750 (19.1)
-MNL-FT8-5	1/2 Tube OD	0.375 (9.53)	2.86 (72.7)	1.43 (36.4)	0.60 (15.3)	1.75 (44.5)	/	3.38 (85.9)	4.00 (102)	1.00 (25.4)	0.34 (8.6)	6.70 (170)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)

2 Stem Manifold

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNL-FT2-5	1/8 Tube OD	0.094 (2.39)	1.81 (46.1)	0.91 (23.1)	0.44 (11.2)	1.12 (28.5)	0.81 (20.6)	2.25 (57.2)	1.75 (44.5)	0.63 (15.9)	0.17 (4.3)	4.00 (102)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
-MNL-FT4-5	1/4 Tube OD	0.188 (4.77)	2.33 (59.2)	1.17 (29.6)	0.52 (13.3)	1.69 (42.9)	1.19 (30.2)	3.38 (85.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.28 (160)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
-MNL-FT6-5	3/8 Tube OD	0.25 (6.35)	2.27 (57.6)	1.13 (28.8)	0.54 (13.6)	1.69 (42.9)	1.19 (30.2)	3.38 (85.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.34 (161)	0.62 (15.8)	0.38 (9.7)	0.750 (19.1)
-MNL-FT8-5	1/2 Tube OD	0.375 (9.53)	2.86 (72.7)	1.43 (36.4)	0.60 (15.3)	2.56 (65.0)	1.75 (44.5)	5.12 (130)	4.00 (102)	1.00 (25.4)	0.34 (8.6)	8.46 (215)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)

Note: 1. G is the drill dimension of packing gland mounting hole

2. G1 is the dimension of bracket mounting hole.

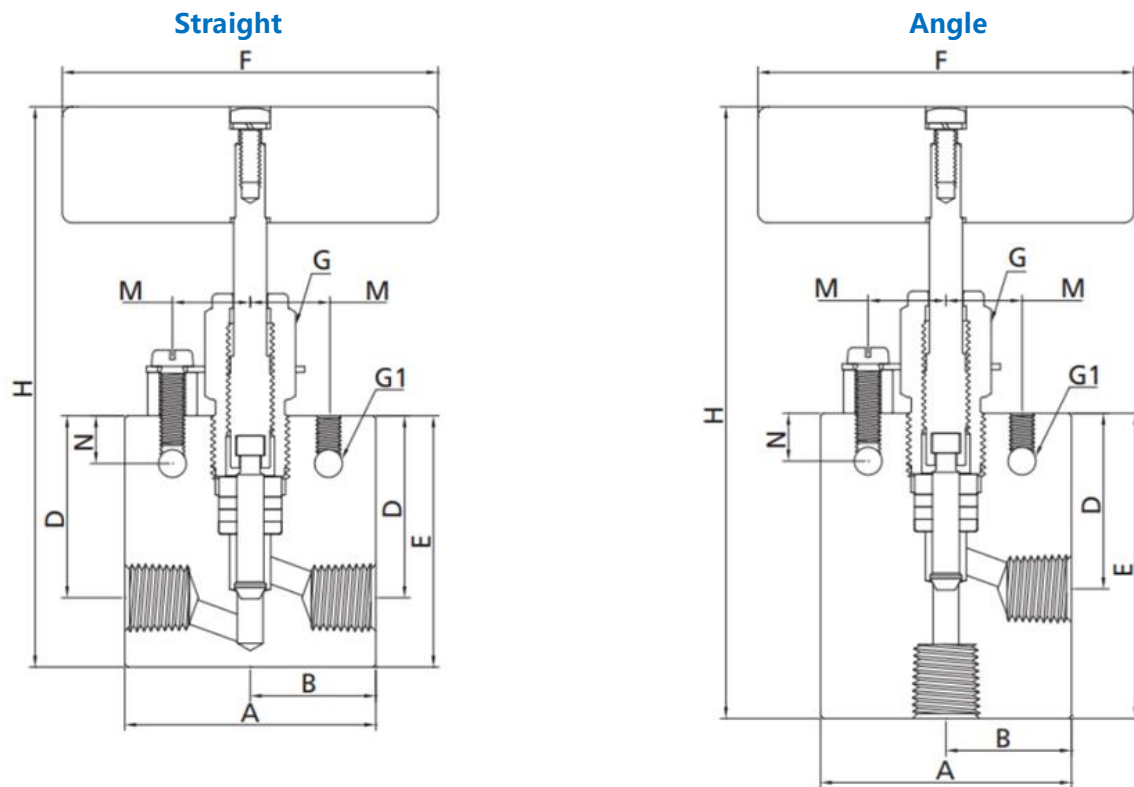
3. Panel mounting drill size: 0.25" all valves.

4. H is the dimension of stem in closed position.

5. All dimensions for reference only and subject to change.

Ordering Information and Dimensions

Pipe Connection, 2-Way



Straight

Part NO.	Thread Size	Orifice In.(mm)	Working Pressure Psig(bar)	Dimension in.(mm)										
				A	B	D	E	F	G	G1	H	M	N	ThK
-MNL-FN2	1/8 NPT	0.079 (2.00)	15000 (1034)	1.50 (38.1)	0.75 (19.1)	0.826 (20.6)	1.25 (31.8)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.00 (76.2)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
-MNL-FN4	1/4 NPT	0.204 (5.20)	15000 (1034)	2.00 (50.8)	1.00 (25.4)	1.41 (35.8)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.89 (124)	0.63 (15.9)	0.38 (9.7)	0.75 (19.1)
-MNL-FN6	3/8 NPT	0.219 (5.56)	15000 (1034)	2.50 (63.5)	1.25 (31.8)	1.41 (35.8)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.89 (124)	0.63 (15.9)	0.38 (9.7)	1.00 (25.4)
-MNL-FN8	1/2 NPT	0.312 (7.90)	15000 (1034)	3.00 (76.2)	1.50 (38.1)	2.06 (52.3)	2.88 (73.2)	4.00 (102)	1.00 (25.4)	0.34 (8.6)	6.18 (157)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
-MNL-FN12	3/4 NOT	0.44 (11.2)	10000 (689)	3.50 (88.9)	1.75 (44.5)	2.63 (66.8)	3.75 (95.3)	10.24 (260)	1.19 (30.2)	0.44 (11.2)	7.44 (189)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)
-MNL-FN16	1 NPT	0.56 (14.2)	10000 (689)	4.12 (104.6)	2.06 (52.3)	3.31 (84.1)	4.61 (117)	10.24 (260)	1.62 (41.2)	0.56 (14.2)	9.45 (240)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Angle

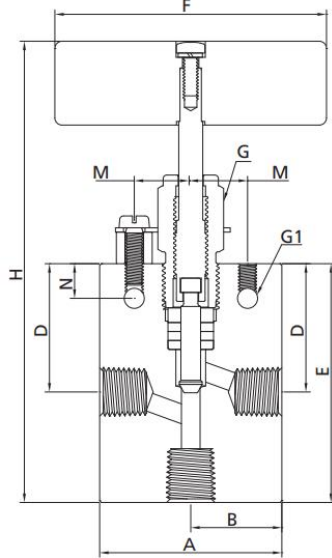
Part NO.	Thread Size	Orifice In.(mm)	Working Pressure Psig(bar)	Dimension in.(mm)										
				A	B	D	E	F	G	G1	H	M	N	ThK
-MNL-FN2-2	1/8 NPT	0.079 (2.00)	15000 (1034)	1.50 (38.1)	0.75 (19.1)	0.826 (20.6)	1.38 (34.9)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.13 (79.5)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
-MNL-FN4-2	1/4 NPT	0.204 (5.20)	15000 (1034)	2.00 (50.8)	1.00 (25.4)	1.41 (35.8)	2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.32 (135)	0.63 (15.9)	0.38 (9.7)	0.75 (19.1)
-MNL-FN6-2	3/8 NPT	0.219 (5.56)	15000 (1034)	2.50 (63.5)	1.25 (31.8)	1.41 (35.8)	2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.32 (135)	0.63 (15.9)	0.38 (9.7)	1.00 (25.4)
-MNL-FN8-2	1/2 NPT	0.312 (7.90)	15000 (1034)	3.00 (76.2)	1.50 (38.1)	2.06 (52.3)	3.38 (85.9)	4.00 (102)	1.00 (25.4)	0.34 (8.6)	6.70 (170)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
-MNL-FN12-2	3/4 NOT	0.44 (11.2)	10000 (689)	3.50 (88.9)	1.75 (44.5)	2.63 (66.8)	4.25 (108)	10.24 (260)	1.19 (30.2)	0.44 (11.2)	7.92 (201)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)
-MNL-FN16-2	1 NPT	0.44 (11.2)	10000 (689)	4.12 (104.6)	2.06 (52.3)	3.31 (84.1)	5.12 (130)	10.24 (260)	1.62 (41.2)	0.56 (14.2)	9.92 (252)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

- Note: 1. G is the drill dimension of packing gland mounting hole
 2. G1 is the dimension of bracket mounting hole.
 3. Panel mounting drill size: 0.25" all valves.
 4. H is the dimension of stem in closed position.
 5. All dimensions for reference only and subject to change.

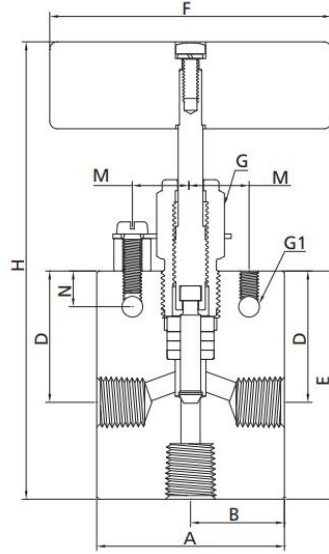
Ordering Information and Dimensions

Pipe Connection, 3-Way

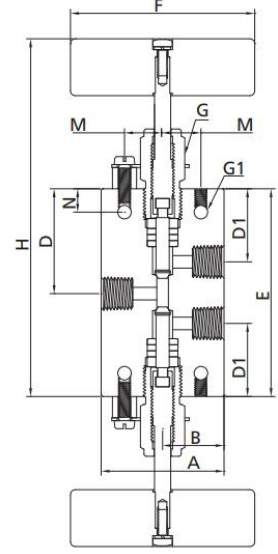
2 on pressure



1 on pressure



2 stem manifold



2 On Pressure

Part NO.	Thread Size	Orifice In.(mm)	Working Pressure Psig(bar)	Dimension in.(mm)											
				A	B	D	D1	E	F	G	G1	H	M	N	ThK
-MNL-FN2-3	1/8 NPT	0.079 (2.00)	15000 (1034)	1.50 (38.1)	0.75 (19.1)	0.826 (20.6)	/	1.57 (40.0)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.33 (84.6)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
-MNL-FN4-3	1/4 NPT	0.204 (5.20)	15000 (1034)	2.00 (50.8)	1.00 (25.4)	1.41 (35.8)	/	2.62 (66.6)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.51 (140)	0.63 (15.9)	0.38 (9.7)	0.75 (19.1)
-MNL-FN6-3	3/8 NPT	0.219 (5.60)	15000 (1034)	2.50 (63.5)	1.25 (31.8)	1.41 (35.8)	/	2.62 (66.6)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.51 (140)	0.63 (15.9)	0.38 (9.7)	1.00 (25.4)
-MNL-FN8-3	1/2 NPT	0.312 (7.90)	15000 (1034)	3.00 (76.2)	1.50 (38.1)	2.06 (52.3)	/	3.62 (92.0)	4.00 (102)	1.00 (25.4)	0.34 (8.6)	6.93 (176)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
-MNL-FN12-3	3/4 NPT	0.44 (11.2)	10000 (689)	3.50 (88.9)	1.75 (44.5)	2.63 (66.8)	/	4.61 (117)	10.24 (260)	1.19 (30.2)	0.44 (11.2)	8.39 (213)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)
-MNL-FN16-3	1 NPT	0.56 (14.2)	10000 (689)	4.12 (104.6)	2.06 (52.3)	3.31 (84.1)	/	5.87 (149)	10.24 (260)	1.62 (41.2)	0.56 (14.2)	10.71 (272)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

1 On Pressure

Part NO.	Thread Size	Orifice In.(mm)	Working Pressure Psig(bar)	Dimension in.(mm)											
				A	B	D	D1	E	F	G	G1	H	M	N	ThK
-MNL-FN2-4	1/8 NPT	0.079 (2.00)	15000 (1034)	1.50 (38.1)	0.75 (19.1)	0.826 (20.6)	/	1.38 (34.9)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.13 (79.5)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
-MNL-FN4-4	1/4 NPT	0.204 (5.20)	15000 (1034)	2.00 (50.8)	1.00 (25.4)	1.41 (35.8)	/	2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.32 (135)	0.63 (15.9)	0.38 (9.7)	0.75 (19.1)
-MNL-FN6-4	3/8 NPT	0.219 (5.60)	15000 (1034)	2.50 (63.5)	1.25 (31.8)	1.41 (35.8)	/	2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.32 (135)	0.63 (15.9)	0.38 (9.7)	1.00 (25.4)
-MNL-FN8-4	1/2 NPT	0.312 (7.90)	15000 (1034)	3.00 (76.2)	1.50 (38.1)	2.06 (52.3)	/	3.38 (85.9)	4.00 (102)	1.00 (25.4)	0.34 (8.6)	6.70 (170)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
-MNL-FN12-4	3/4 NPT	0.44 (11.2)	10000 (689)	3.50 (88.9)	1.75 (44.5)	2.63 (66.8)	/	4.25 (108)	10.24 (260)	1.19 (30.2)	0.44 (11.2)	7.91 (201)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)
-MNL-FN16-4	1 NPT	0.56 (14.2)	10000 (689)	4.12 (104.6)	2.06 (52.3)	3.31 (84.1)	/	5.12 (130)	10.24 (260)	1.62 (41.2)	0.56 (14.2)	9.96 (253)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

2 Stem Manifold

Part NO.	Thread Size	Orifice In.(mm)	Working Pressure Psig(bar)	Dimension in.(mm)											
				A	B	D	D1	E	F	G	G1	H	M	N	ThK
-MNL-FN2-5	1/8 NPT	0.079 (2.00)	15000 (1034)	1.50 (38.1)	0.75 (19.1)	1.01 (25.6)	0.68 (17.2)	2.02 (51.2)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.77 (95.8)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
-MNL-FN4-5	1/4 NPT	0.204 (5.20)	15000 (1034)	2.00 (50.8)	1.00 (25.4)	1.69 (42.9)	1.19 (30.2)	3.38 (85.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.22 (158)	0.63 (15.9)	0.38 (9.7)	0.75 (19.1)
-MNL-FN6-5	3/8 NPT	0.219 (5.60)	15000 (1034)	2.50 (63.5)	1.25 (31.8)	1.69 (42.9)	1.19 (30.2)	3.38 (85.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.22 (158)	0.63 (15.9)	0.38 (9.7)	1.00 (25.4)
-MNL-FN8-5	1/2 NPT	0.312 (7.90)	15000 (1034)	3.00 (76.2)	1.50 (38.1)	2.56 (65.0)	1.75 (44.5)	5.12 (130)	4.00 (102)	1.00 (25.4)	0.34 (8.6)	8.46 (215)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
-MNL-FN12-5	3/4 NPT	0.44 (11.2)	10000 (689)	3.50 (88.9)	1.75 (44.5)	3.25 (82.6)	2.25 (57.2)	6.50 (165)	10.24 (260)	1.19 (30.2)	0.44 (11.2)	10.28 (261)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)
-MNL-FN16-5	1 NPT	0.56 (14.2)	10000 (689)	4.12 (104.6)	2.06 (52.3)	3.75 (95.3)	2.81 (71.4)	7.52 (191)	10.24 (260)	1.62 (41.2)	0.56 (14.2)	12.32 (313)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Medium Pressure Needle Valves

MPN Series

Working Pressure: 20,000 psig (1379 bar)

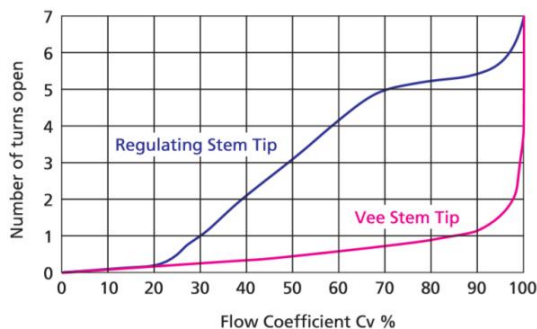
Working Temperature Range: -100°F~600°F (-73°C~316°C)

Tubing sizes: 1/4", 3/8", 9/16", 3/4" and 1"

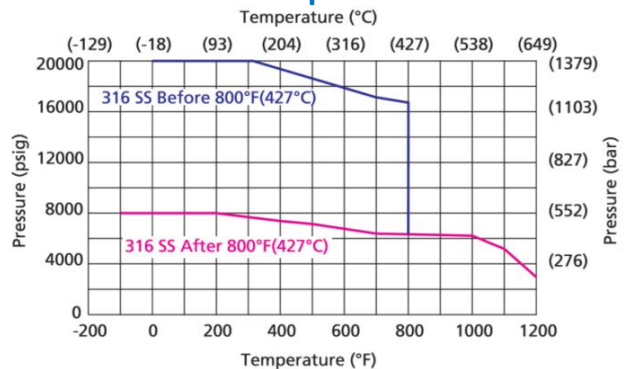
Features

- High tensile 316 Stainless Steel for valve body and 17-4PH Stainless Steel for lower stem
- Selected materials of packing gland and upper stem for optimum thread cycle life and reduced handle torque
- Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Non-rotating stem and bar stock body design
- Easy to assemble and replace packing
- Packing located under stem threads
- Reliable locking device for packing gland
- Options for Vee or Regulating stem tips

Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve Data



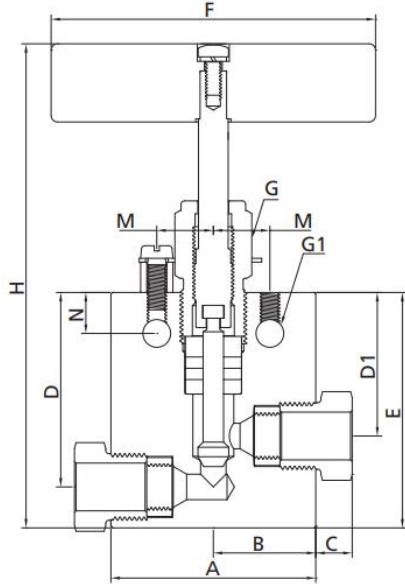
Standard Materials of Construction

Item	Component	Material
1	Handle	SS or Aluminum
2	Handel Screw	Stainless Steel
3	Upper Stem	SS316/A479
4	Packing Gland	C63000/B150
5	Locking Screw	Stainless Steel
6	Locking Plate	SS304/A240
7	Packing Ring	C63000/B150
8	Packing	PTFE/RPTFE glass/Graphite/Extended stuffing box with Graphite
9	Packing Washer	17-4PH SS/A564
10	Lower Stem	17-4PH SS/A564
11	Body	SS316/A479
12	Collar	SS316/A479
13	Gland	SS316/A479

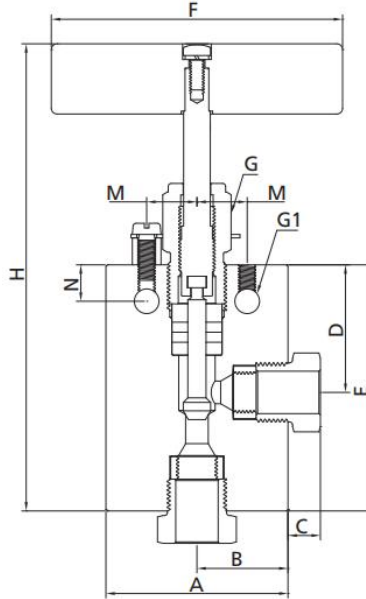
Ordering Information and Dimensions

Tubing Connection, 2-Way

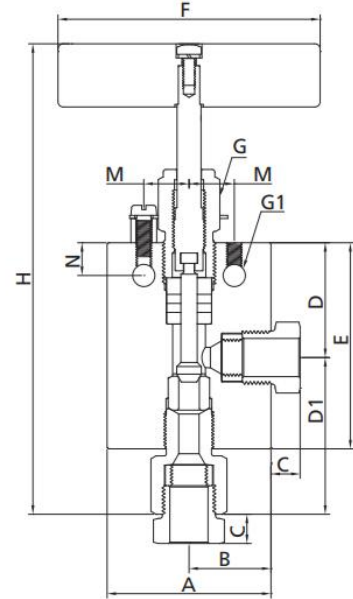
Straight



Angle



Angle(replaceable Seat)



Straight

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNM-4FT	1/4	0.125 (3.2)	2.00 (50.8)	1.00 (25.4)	1.62 (41.2)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.85 (123)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
-MNM-6FT	3/8	0.204 (5.2)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.750 (19.1)	0.22 (5.6)	4.89 (124)	0.62 (15.8)	0.38 (9.7)	0.750 (19.1)
-MNM-9FT	9/16	0.312 (7.9)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.37 (60.3)	1.75 (44.5)	2.88 (73.2)	4.00 (102)	1.00 (25.4)	0.34 (8.6)	6.18 (157)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
-MNM-12FT	3/4	0.438 (11.1)	3.00 (76.2)	1.50 (38.1)	1.60 (15.2)	3.00 (76.2)	2.25 (57.2)	3.75 (95.3)	10.25 (260)	1.19 (30.2)	0.44 (11.2)	7.37 (187)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
-MNM-16FT	1	0.562 (14.3)	4.13 (105)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	4.64 (118)	10.25 (260)	1.62 (41.2)	0.56 (14.2)	9.45 (240)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Angle

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNM-4FT-2	1/4	0.125 (3.2)	2.00 (50.8)	1.00 (25.4)	1.62 (41.2)	1.19 (30.2)	/	2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.28 (134)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
-MNM-6FT-2	3/8	0.204 (5.2)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)	/	2.44 (61.9)	3.00 (76.2)	0.750 (19.1)	0.22 (5.6)	5.33 (135)	0.62 (15.8)	0.38 (9.7)	0.750 (19.1)
-MNM-9FT-2	9/16	0.312 (7.9)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	/	3.38 (85.9)	4.00 (102)	1.00 (25.4)	0.34 (8.6)	6.69 (170)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
-MNM-12FT-2	3/4	0.438 (11.1)	3.00 (76.2)	1.50 (38.1)	1.60 (15.2)	2.25 (57.2)	/	4.25 (108)	10.25 (260)	1.19 (30.2)	0.44 (11.2)	7.87 (200)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
-MNM-16FT-2	1	0.562 (14.3)	4.13 (105)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	/	5.12 (130)	10.25 (260)	1.62 (41.2)	0.56 (14.2)	9.94 (253)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

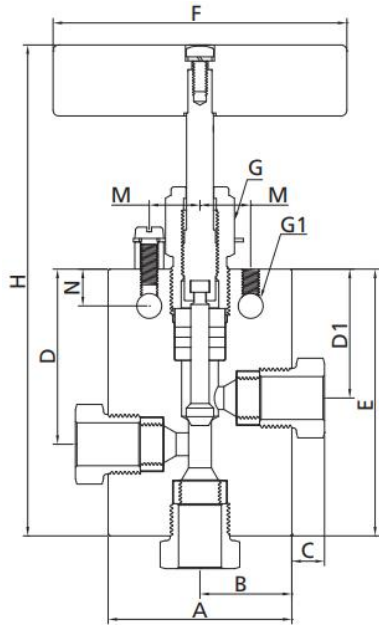
Angle (Replace Seat)

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNM-4FT-3	1/4	0.125 (3.2)	2.00 (50.8)	1.00 (25.4)	1.62 (41.2)	1.19 (30.2)	2.13 (54.0)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.10 (155)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
-MNM-6FT-3	3/8	0.204 (5.2)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)	2.13 (54.0)	2.25 (57.2)	3.00 (76.2)	0.750 (19.1)	0.22 (5.6)	6.16 (156)	0.62 (15.8)	0.38 (9.7)	0.750 (19.1)
-MNM-9FT-3	9/16	0.312 (7.9)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	2.50 (63.5)	3.13 (79.4)	4.00 (102)	1.00 (25.4)	0.34 (8.6)	7.58 (192)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
-MNM-12FT-3	3/4	0.438 (11.1)	3.00 (76.2)	1.50 (38.1)	1.60 (15.2)	2.25 (57.2)	3.44 (87.4)	4.25 (108)	10.25 (260)	1.19 (30.2)	0.44 (11.2)	9.30 (236)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
-MNM-16FT-3	1	0.562 (14.3)	4.13 (105)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	4.22 (107)	5.25 (133)	10.25 (260)	1.62 (41.2)	0.56 (14.2)	11.86 (301)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

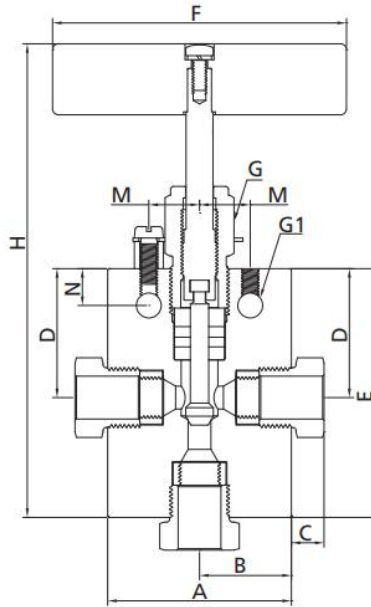
Ordering Information and Dimensions

Tubing Connection, 3-Way

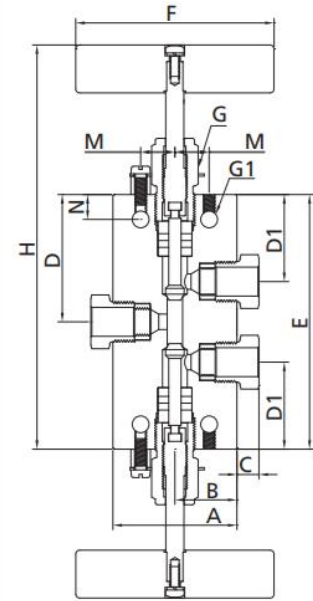
2 on pressure



1 on pressure



2 stem manifold



2 On Pressure

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNM-4FT-4	1/4	0.125 (3.2)	200 (50.8)	1.00 (25.4)	1.62 (41.2)	1.62 (41.2)	1.19 (30.2)	2.63 (66.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.47 (139)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
-MNM-6FT-4	3/8	0.204 (5.2)	200 (50.8)	1.00 (25.4)	0.44 (11.2)	1.62 (41.2)	1.19 (30.2)	2.63 (66.7)	3.00 (76.2)	0.750 (19.1)	0.22 (5.6)	4.52 (140)	0.62 (15.8)	0.38 (9.7)	0.750 (19.1)
-MNM-9FT-4	9/16	0.312 (7.9)	250 (63.5)	1.25 (31.8)	0.55 (14.0)	2.37 (60.3)	1.75 (44.5)	3.63 (92.1)	4.00 (102)	1.00 (25.4)	0.34 (8.6)	6.94 (176)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
-MNM-12FT-4	3/4	0.438 (11.1)	300 (76.2)	1.50 (38.1)	1.60 (40.6)	3.00 (76.2)	2.25 (57.2)	4.63 (118)	10.25 (260)	1.19 (30.2)	0.44 (11.2)	8.24 (209)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
-MNM-16FT-4	1	0.562 (14.3)	413 (105)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	5.88 (149)	10.25 (260)	1.62 (41.2)	0.56 (14.2)	10.7 (272)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

1 On Pressure

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNM-4FT-5	1/4	0.125 (3.2)	200 (50.8)	1.00 (25.4)	0.38 (9.7)	1.19 (30.2)	/	2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.28 (134)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
-MNM-6FT-5	3/8	0.204 (5.2)	200 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)	/	2.44 (61.9)	3.00 (76.2)	0.750 (19.1)	0.22 (5.6)	5.33 (135)	0.62 (15.8)	0.38 (9.7)	0.750 (19.1)
-MNM-9FT-5	9/16	0.312 (7.9)	250 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	/	3.38 (85.9)	4.00 (102)	1.00 (25.4)	0.34 (8.6)	6.69 (170)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
-MNM-12FT-5	3/4	0.438 (11.1)	300 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	/	4.25 (108)	10.25 (260)	1.19 (30.2)	0.44 (11.2)	7.87 (200)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
-MNM-16FT-5	1	0.562 (14.3)	413 (105)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	/	5.12 (130)	10.25 (260)	1.62 (41.2)	0.56 (14.2)	9.94 (253)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

2 Stem Manifold

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNM-4FT-6	1/4	0.125 (3.2)	200 (50.8)	1.00 (25.4)	0.38 (9.7)	1.69 (42.9)	1.19 (30.2)	3.38 (85.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.23 (158)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
-MNM-6FT-6	3/8	0.204 (5.2)	200 (50.8)	1.00 (25.4)	0.44 (11.2)	1.69 (42.9)	1.19 (30.2)	3.38 (85.7)	3.00 (76.2)	0.750 (19.1)	0.22 (5.6)	6.26 (159)	0.62 (15.8)	0.38 (9.7)	0.750 (19.1)
-MNM-9FT-6	9/16	0.312 (7.9)	250 (63.5)	1.25 (31.8)	0.55 (14.0)	2.56 (65.1)	1.75 (44.5)	5.13 (130)	4.00 (102)	1.00 (25.4)	0.34 (8.6)	8.44 (214)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
-MNM-12FT-6	3/4	0.438 (11.1)	300 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	6.50 (165)	10.25 (260)	1.19 (30.2)	0.44 (11.2)	10.11 (257)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
-MNM-16FT-6	1	0.562 (14.3)	413 (105)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	7.50 (190)	10.25 (260)	1.62 (41.2)	0.56 (14.2)	12.32 (313)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

- Note: 1. G is the drill dimension of packing gland mounting hole
 2. G1 is the dimension of bracket mounting hole.
 3. Panel mounting drill size: 0.25" all valves.
 4. H is the dimension of stem in closed position.
 5. All dimensions for reference only and subject to change.

Medium Pressure Needle Valves

MPH Series

Working Pressure: 30,000 psig (2068 bar)

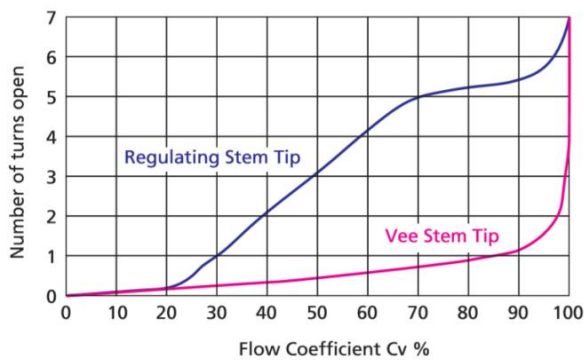
Working Temperature Range: -100°F~600°F (-73°C~316°C)

Tubing sizes: 1/4", 3/8" and 9/16"

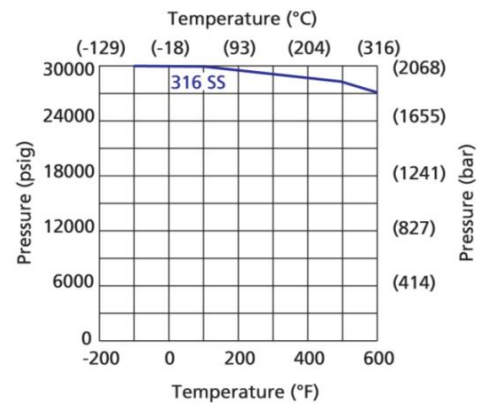
Features

- High tensile 316 Stainless Steel for valve body and 17-4PH Stainless Steel for lower stem
- Selected materials of packing gland and upper stem for optimum thread cycle life and reduced handle torque
- Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Non-rotating stem and bar stock body design
- Easy to assemble and replace packing
- Packing located under stem threads
- Reliable locking device for packing gland
- Options for Vee or Regulating stem tips

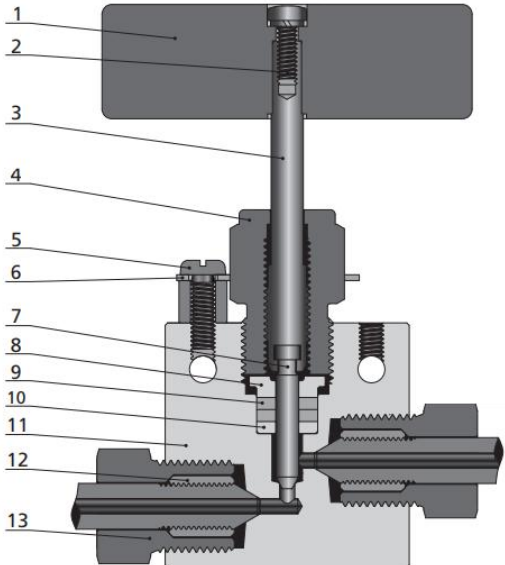
Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve Data



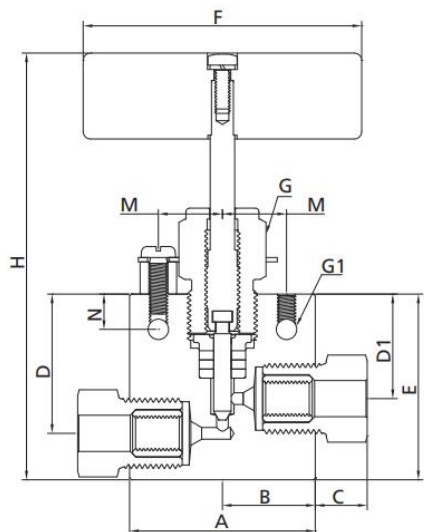
Standard Materials of Construction

	Item	Component	Material
	1	Handle	SS or Aluminum
	2	Handel Screw	Stainless Steel
	3	Upper Stem	SS316/A479
	4	Packing Gland	C63000/B150
	5	Locking Screw	Stainless Steel
	6	Locking Plate	SS04/A240
	7	Lower Stem	17-4PH SS/A564
	8	Packing Ring	C63000/B150
	9	Packing	PTFE/RPTFE
	10	Packing Washer	17-4PH SS/A564
	11	Body	SS316/A479
	12	Collar	SS316/A479
13	Gland	SS316/A479	

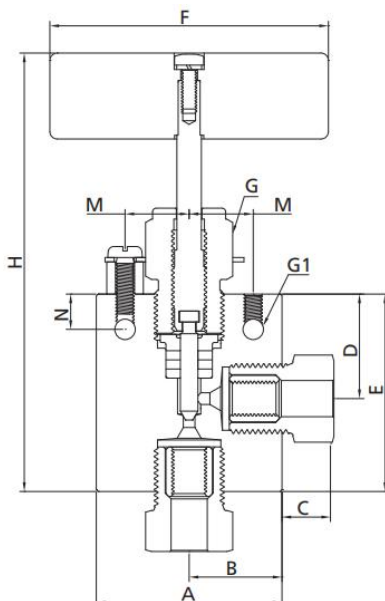
Ordering Information and Dimensions

Tubing Connection, 2-Way

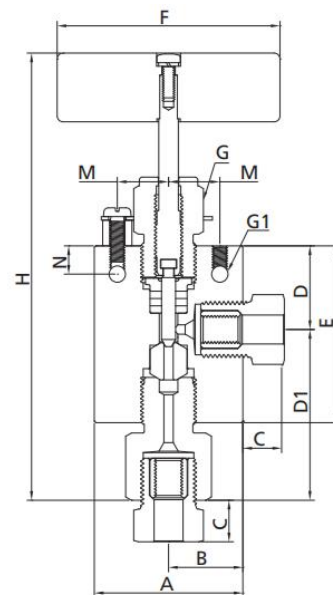
Straight



Angle



Angle (replaceable seat)



Straight

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNH-4FT	1/4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.50 (38.1)	1.12 (28.5)	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-MNH-6FT	3/8	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.50 (38.1)	1.12 (28.5)	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-MNH-9FT	9/16	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.56 (39.6)	1.12 (28.5)	2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.13 (130)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Angle

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNH-4FT-2	1/4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)	/	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-MNH-6FT-2	3/8	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)	/	2.25 (57.2)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-MNH-9FT-2	9/16	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.5)	/	2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.13 (130)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

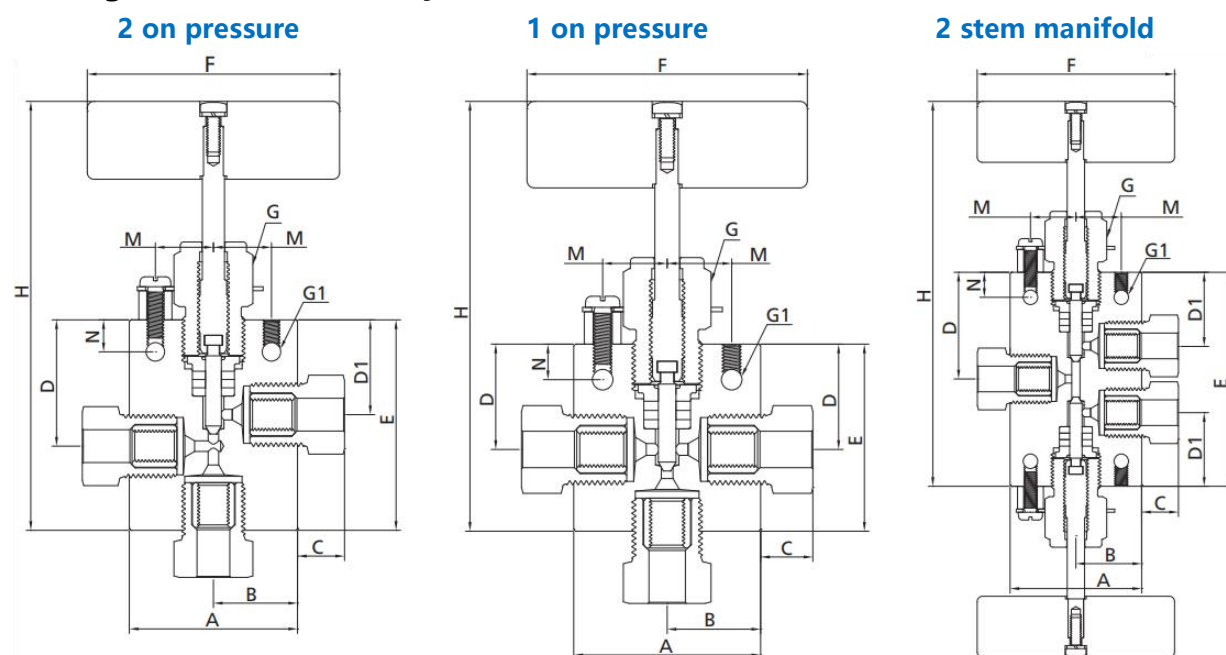
Angle (Replace Seat)

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNH-4FT-3	1/4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)	2.06 (52.3)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.88 (149)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-MNH-6FT-3	3/8	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)	2.31 (58.6)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.12 (155)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-MNH-9FT-3	9/16	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.5)	2.55 (65.0)	2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.39 (162)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

- Note: 1. G is the drill dimension of packing gland mounting hole
 2. G1 is the dimension of bracket mounting hole.
 3. Panel mounting drill size: 0.25" all valves.
 4. H is the dimension of stem in closed position.
 5. All dimensions for reference only and subject to change.

Ordering Information and Dimensions

Tubing Connection, 3-Way



2 On Pressure

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNH-4FT-4	1/4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.50 (38.1)	1.12 (28.5)	2.12 (53.9)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.81 (122)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-MNH-6FT-4	3/8	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.50 (38.1)	1.12 (28.5)	2.50 (63.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.19 (132)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-MNH-9FT-4	9/16	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.56 (39.6)	1.12 (28.5)	2.88 (73.2)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.57 (142)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

1 On Pressure

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNH-4FT-5	1/4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)	/	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.08 (155)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-MNH-6FT-5	3/8	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)	/	2.25 (57.2)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.39 (162)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-MNH-9FT-5	9/16	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.5)	/	2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.76 (176)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

2 Stem Manifold

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-MNH-4FT-6	1/4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.53 (38.9)	1.12 (28.5)	3.06 (77.7)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.75 (146)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-MNH-6FT-6	3/8	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.62 (41.2)	1.12 (28.5)	3.25 (82.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.94 (151)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-MNH-9FT-6	9/16	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.88 (47.8)	1.12 (28.5)	3.75 (95.3)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.44 (164)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

- Note: 1. G is the drill dimension of packing gland mounting hole
 2. G1 is the dimension of bracket mounting hole.
 3. Panel mounting drill size: 0.25" all valves.
 4. H is the dimension of stem in closed position.
 5. All dimensions for reference only and subject to change.

High Pressure Needle Valves

UPN Series

Working Pressure: 60,000 psig (4137 bar)

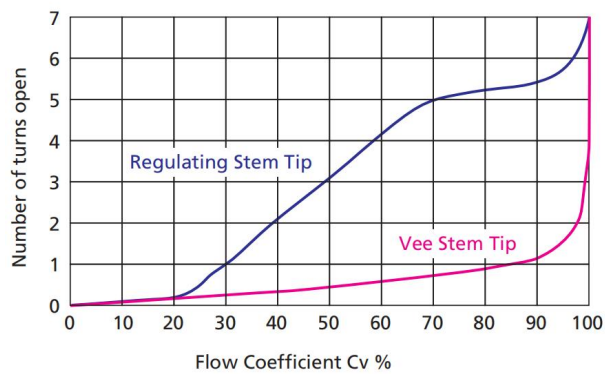
Working Temperature Range: -100°F~600°F (-73°C~316°C)

Tubing sizes: 1/4", 3/8" and 9/16"

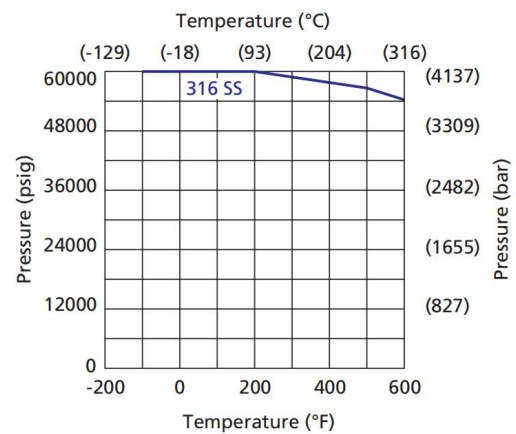
Features

- High tensile 316 Stainless Steel for valve body and 17-4PH Stainless Steel for lower stem
- Selected materials of packing gland and upper stem for optimum thread cycle life and reduced handle torque
- Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Non-rotating stem and bar stock body design
- Easy to assemble and replace packing
- Packing located under stem threads
- Reliable locking device for packing gland
- Options for Vee or Regulating stem tips

Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve Data



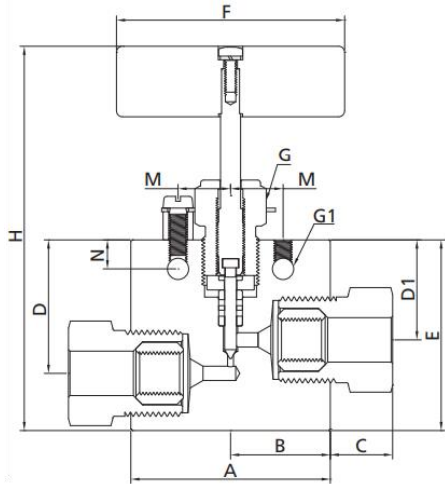
Standard Materials of Construction

Item	Standard Materials of Construction	
	Component	Material
1	Handle	SS or Aluminum
2	Handel Screw	Stainless Steel
3	Upper Stem	SS316/A479
4	Packing Gland	C63000/B150
5	Locking Screw	Stainless Steel
6	Locking Plate	SS04/A240
7	Packing Ring	17-4PH SS/A564
8	Packing	Nylon/RPTFE
9	Retain Ring	PEEK
10	Packing Washer	17-4PH SS/A564
11	Lower Stem	17-4PH SS/A564
12	Body	SS316/A479
13	Collar	SS316/A479
14	Gland	SS316/A479

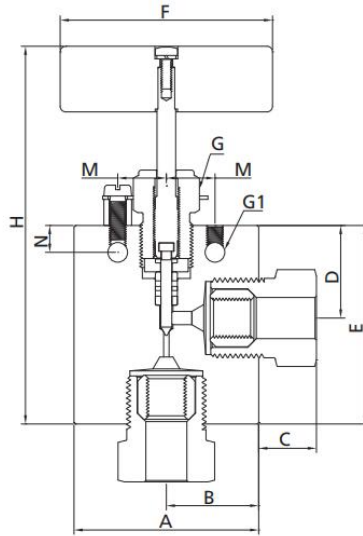
Ordering Information and Dimensions

Tubing Connection, 2-Way

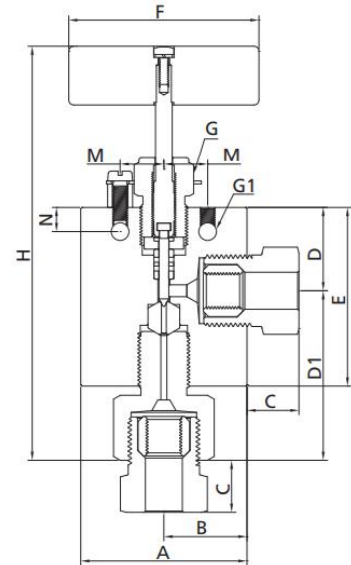
Straight



Angle



Angle (replaceable seat)



Straight

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-HNV-4FT	1/4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.69 (42.9)	1.31 (33.3)	2.13 (54.0)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.77 (121)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-HNV-6FT	3/8	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.69 (42.9)	1.31 (33.3)	2.25 (57.2)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.89 (124)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-HNV-9FT	9/16	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.75 (44.5)	1.31 (33.3)	2.50 (63.5)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.14 (131)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Angle

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-HNV-4FT-2	1/4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.69 (42.9)	/	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.02 (128)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-HNV-6FT-2	3/8	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.69 (42.9)	/	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (134)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-HNV-9FT-2	9/16	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.75 (44.5)	/	2.81 (71.4)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.45 (139)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Angle (Replace Seat)

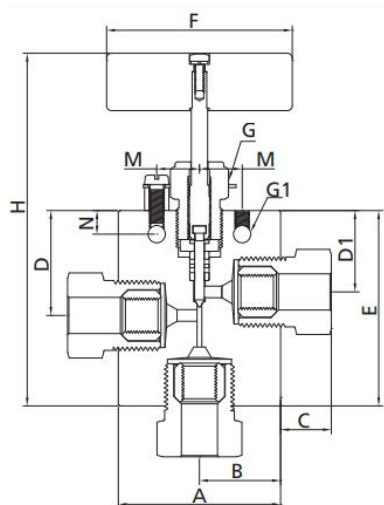
Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-HNV-4FT-3	1/4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.31 (33.3)	2.12 (53.9)	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.07 (154)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-HNV-6FT-3	3/8	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.31 (33.3)	2.36 (59.9)	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.30 (160)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-HNV-9FT-3	9/16	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.31 (33.3)	2.68 (68.8)	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.65 (169)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

- Note: 1. G is the drill dimension of packing gland mounting hole
 2. G1 is the dimension of bracket mounting hole.
 3. Panel mounting drill size: 0.25" all valves.
 4. H is the dimension of stem in closed position.
 5. All dimensions for reference only and subject to change.

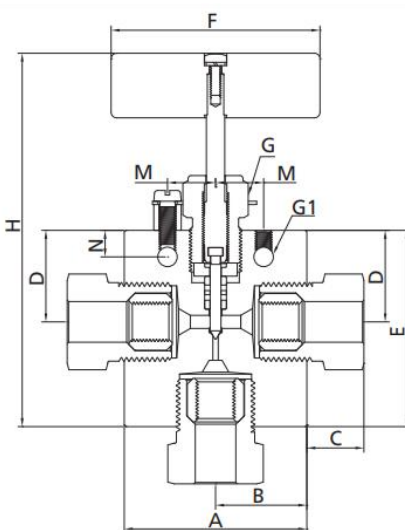
Ordering Information and Dimensions

Tubing Connection, 3-Way

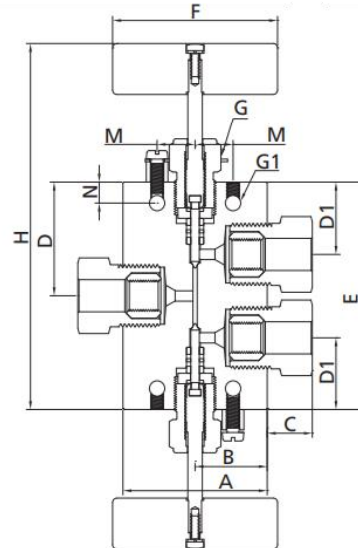
2 on pressure



1 on pressure



2 stem manifold



2 On Pressure

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-HNV-4FT-4	1/4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.69 (42.9)	1.31 (33.3)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (128)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-HNV-6FT-4	3/8	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.69 (42.9)	1.31 (33.3)	2.75 (68.9)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.34 (136)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-HNV-9FT-4	9/16	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.75 (44.5)	1.31 (33.3)	3.03 (77.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.67 (144)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

1 On Pressure

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-HNV-4FT-5	1/4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.31 (33.3)	/	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.02 (128)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-HNV-6FT-5	3/8	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.31 (33.3)	/	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (134)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-HNV-9FT-5	9/16	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.31 (33.3)	/	2.81 (71.4)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.45 (139)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

2 Stem Manifold

Part NO.	Tube Size	Orifice In.(mm)	Dimension in.(mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	ThK
-HNV-4FT-6	1/4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.72 (43.7)	1.31 (33.3)	3.44 (87.4)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.08 (155)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-HNV-6FT-6	3/8	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.88 (47.8)	1.31 (33.3)	23.75 (95.3)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.39 (162)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
-HNV-9FT-6	9/16	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	2.06 (52.3)	1.31 (33.3)	4.12 (105)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.76 (172)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

- Note: 1. G is the drill dimension of packing gland mounting hole
 2. G1 is the dimension of bracket mounting hole.
 3. Panel mounting drill size: 0.25" all valves.
 4. H is the dimension of stem in closed position.
 5. All dimensions for reference only and subject to change.

Medium Pressure Ball Valves

MBV Series

Working Pressure: MBV-15K 15,000 psig (1034 bar)

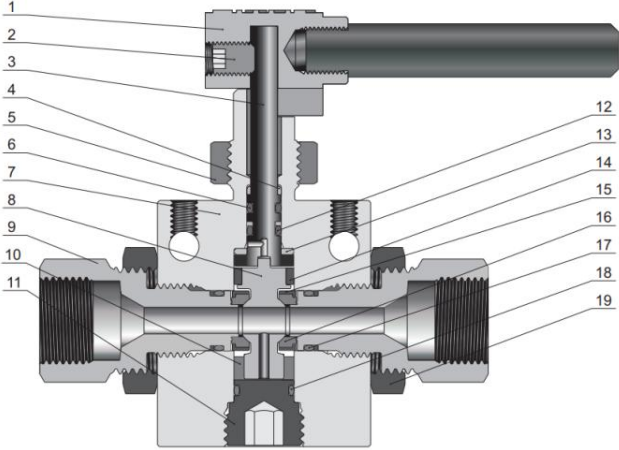
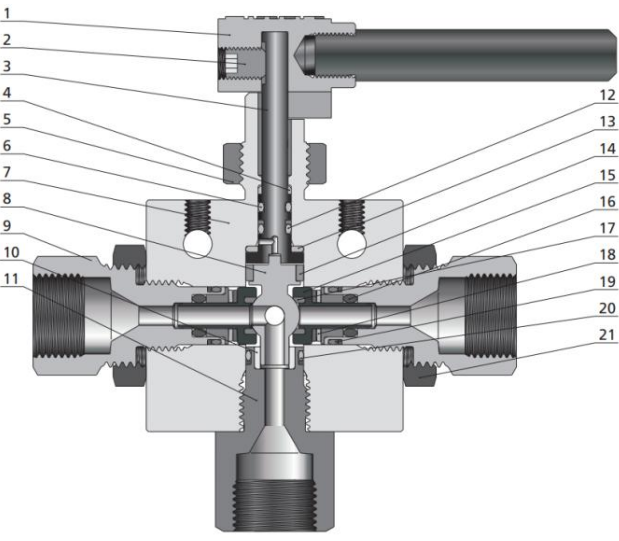
MBV-20K 20,000 psig (1379 bar)

Working Temperature Range: 0°F~400°F (-18°C~204°C)

Features

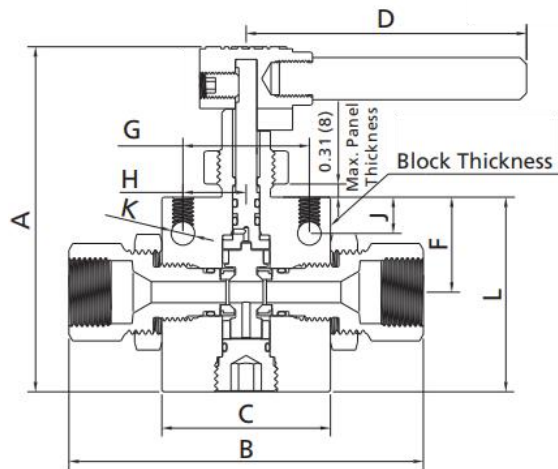
- High tensile 316 Stainless Steel as body material.
- PEEK seats offer excellent resistance to chemicals, heat and abrasion.
- Trunnion mounted stem design.
- Full-port flow path to minimize pressure drop.
- 2-way and 3-way valve configurations.
- Bidirectional flow for 2-way valves.
- Wide selection of tube and pipe end fittings available.
- Pneumatic actuator optional with air pressure from 80 psig to 116 psig (5.5 bar to 8 bar) .

Standard Materials of Construction

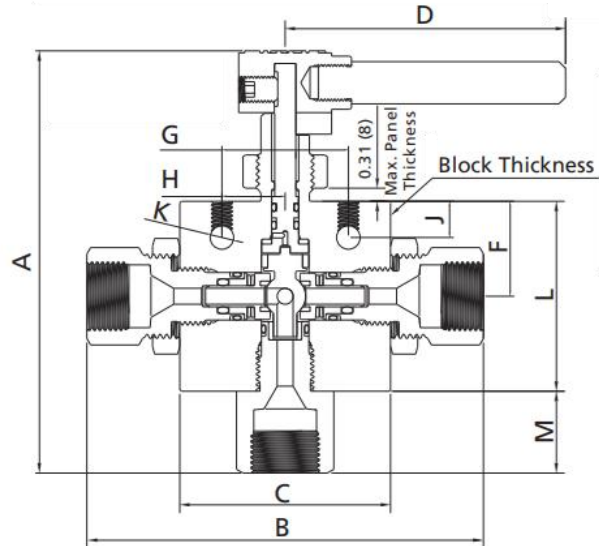
2-way Straight Valves		Item	Component	Material
		1	Handle	Stainless Steel
		2	Handel Screw	Stainless Steel
		3	Stem	SS316
		4	Stem Backup	PEEK
		5	Panel Nut	SS316
		6	Stem O-Ring	Fluorocarbon FKM
		7	Body	SS316
		8	Ball	SS316
		9	Seat Gland	SS316
		10	Ball Bearing	PEEK
		11	Plug	SS316
		12	Stem O-Ring	Fluorocarbon FKM
		13	Thrust Washer	PEEK
		14	Ball Bearing	PEEK
		15	Seat Retainer	SS316
		16	Seat	PEEK
		17	Seat Gland O-Ring	Fluorocarbon FKM
		18	Plug O-Ring	Fluorocarbon FKM
		19	Lock Nut	SS316
3-way Straight Valves		Item	Component	Material
		1	Handle	Stainless Steel
		2	Handel Screw	Stainless Steel
		3	Stem	SS316
		4	Stem Backup	PEEK
		5	Panel Nut	SS316
		6	Stem O-Ring	Fluorocarbon FKM
		7	Body	SS316
		8	Ball	SS316
		9	Seat Gland	SS316
		10	Ball Bearing	PEEK
		11	Bottom Gland	SS316
		12	Stem O-Ring	Fluorocarbon FKM
		13	Thrust Washer	PEEK
		14	Ball Bearing	PEEK
		15	Seat Retainer	SS316
		16	Seat	PEEK
		17	Seat Gland O-Ring	Fluorocarbon FKM
		18	Belleville Washer	S17700
		19	Seat Gland O-Ring	Fluorocarbon FKM
		20	Bottom Gland O-Ring	Fluorocarbon FKM
		21	Lock Nut	SS316

Dimensions

2-way Straight Valves



3-way Valves



2-way

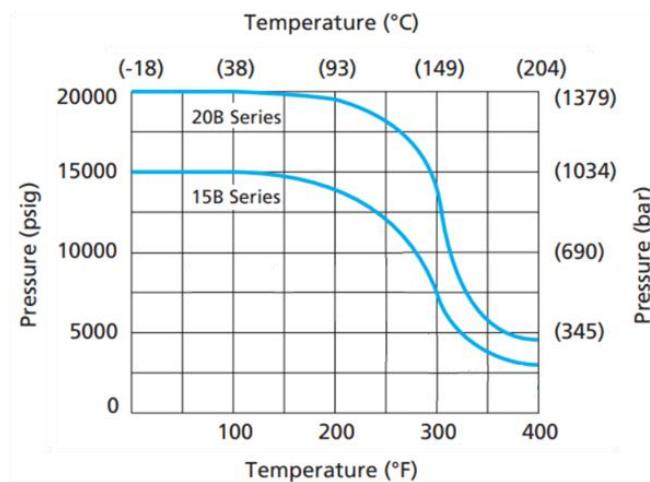
Part NO.	Orifice In.	Dimension in.(mm)											
		A	B	C	D	F	G	H	J	K	L	M	Block Thk
SS-MPBVF4-	1/4	4.09 (104)	4.19 (106)	2.00 (50.8)	3.33 (84.5)	1.13 (28.6)	1.50 (38.1)	0.75 (19.1)	0.43 (10.9)	0.28 (7.1)	2.31 (58.6)	/	1.00 (25.4)
SS-MBV-F6-	3/8	4.84 (121)	5.53 (140)	3.00 (76.2)	4.96 (126)	1.38 (34.9)	2.00 (50.8)	1.00 (25.4)	0.41 (10.3)	0.28 (7.1)	2.95 (74.9)	/	1.38 (34.9)
SS-MBV-F8-	1/2	5.39 (137)	7.73 (196)	4.12 (105)	/	1.66 (42.2)	3.00 (76.2)	1.50 (38.1)	0.50 (12.7)	0.28 (7.1)	3.52 (89.4)	/	1.75 (44.5)

3-way

Part NO.	Orifice In.	Dimension in.(mm)											
		A	B	C	D	F	G	H	J	K	L	M	Block Thk
SS-MBV-F3-3W-	3/16	5.00 (127)	4.69 (119)	2.50 (63.5)	3.33 (84.5)	1.13 (28.6)	1.50 (38.1)	0.75 (19.1)	0.43 (10.9)	0.28 (7.1)	2.25 (57.2)	0.48 (12.3)	1.00 (25.4)
SS-MBV-F6-3W-	3/8	5.88 (149)	5.53 (140)	3.00 (76.2)	4.96 (126)	1.38 (34.9)	2.00 (50.8)	1.00 (25.4)	0.41 (10.3)	0.28 (7.1)	2.95 (74.9)	1.89 (30.2)	1.38 (34.9)

NOTE: All dimensions are for reference only and are subject to change.

Pressure vs. Temperature Curve



Ordering Information and Dimensions

2-way						
Part NO.	Working Pressure	Orifice in.(mm)	Connection Orifice in.(mm)	Cv	Connection Type	Connection Size
SS-MBV-F8-FN12	10000psig (689bar)	1/2 (12.7)	0.50 (12.7)	10.2	Female NPT	3/4
SS-MBV-F8-FN16			0.50 (12.7)	10.2		1"
SS-MBV-F4-FN2	15000 psig (1034bar)	1/4 (6.4)	0.25 (6.4)	1.51	Female NPT	1/8
SS-MBV-F4-FN4			0.25 (6.4)	1.51		1/4
SS-MBV-F4-FN6			0.25 (6.4)	1.51		3/8
SS-MBV-F4-FN8			0.25 (6.4)	1.51		1/2
SS-MBV-F6-FN4	15000 psig (1034bar)	3/8 (9.5)	0.38 (9.5)	3.51	Female NPT	1/4
SS-MBV-F6-FN6			0.38 (9.5)	3.51		3/8
SS-MBV-F6-FN8			0.38 (9.5)	3.51		1/2
SS-MBV-F6-MTU-FT8			0.38 (9.5)	3.51	Medium Pressure Tube Unions (MTU)	1/2
SS-MBV-F6-MTU-FT9			0.38 (9.5)	3.51		9/16
SS-MBV-F8-MPC-T12	15000 psig (1034bar)	1/2 (12.7)	0.50 (12.7)	10.2	Medium Pressure Fitting (MPC)	3/4
SS-MBV-F8-MPC-T16			0.50 (12.7)	10.2		1"
SS-MBV-F8-MPC-T04	20000 psig (1379bar)	1/4 (6.4)	0.11 (2.8)	0.36	Medium Pressure Fitting (MPC)	1/4
SS-MBV-F8-MPC-T06			0.20 (5.1)	1.23		3/8
SS-MBV-F8-MPC-T09			0.25 (6.4)	1.51		9/16
SS-MBV-F4-MTU-FT2			0.09 (2.4)	0.26	中压卡套 MTU	1/8
SS-MBV-F4-MTU-FT4			0.19 (4.8)	1.27		1/4
SS-MBV-F4-MTU-FT6			0.25 (6.4)	1.51		3/8
SS-MBV-F4-MTU-FT8			0.25 (6.4)	1.51		1/2
SS-MBV-F8-MPC-T06	20000 psig (1379bar)	3/8 (9.5)	0.20 (5.1)	1.23	Medium Pressure Fitting (MPC)	3/8
SS-MBV-F8-MPC-T09			0.31 (7.9)	32.93		9/16
SS-MBV-F8-MPC-T12			0.38 (9.5)	3.51		3/4
SS-MBV-F4-MTU-FT8			0.38 (9.5)	3.51	Medium Pressure Tube Unions (MTU)	1/2
SS-MBV-F4-MTU-FT9			0.38 (9.5)	3.51		9/16
3-way						
Part NO.	Working Pressure	Orifice in.(mm)	Connection Orifice in.(mm)	Cv	Connection Type	Connection Size
SS-MBV-F8-FN12-3W	10000psig (689bar)	1/2 (12.7)	0.50 (12.7)	4.4	Female NPT	3/4
SS-MBV-F8-FN16-3W			0.50 (12.7)	4.4		1"
SS-MBV-F8-MPC-T12-3W			0.50 (12.7)	4.4	Medium Pressure Fitting (MPC)	3/4
SS-MBV-F8-MPC-T16-3W			0.50 (12.7)	4.4		1"
SS-MBV-F4-FN2-3W	15000 psig (1034bar)	3/16 (4.8)	0.19 (4.8)	0.5	Female NPT	1/8
SS-MBV-F4-FN4-3W			0.19 (4.8)	0.5		1/4
SS-MBV-F4-FN6-3W			0.19 (4.8)	0.5		3/8
SS-MBV-F4-FN8-3W			0.19 (4.8)	0.5		1/2
SS-MBV-F6-FN4-3W	15000 psig (1034bar)	3/8 (9.5)	0.33 (8.3)	2.1	Female NPT	1/4
SS-MBV-F6-FN6-3W			0.33 (8.3)	2.1		3/8
SS-MBV-F6-FN8-3W			0.33 (8.3)	2.1		1/2
SS-MBV-F6-MTU-FT8-3W			0.20 (5.1)	0.81	Medium Pressure Tube Unions (MTU)	1/2
SS-MBV-F6-MTU-FT9-3W			0.31 (7.9)	1.9		9/16
SS-MBV-F8-MPC-T12-3W			0.33 (8.3)	2.1		3/4
SS-MBV-F8-MPC-T04-3W	20000 psig (1379bar)	3/16 (4.8)	0.11 (2.8)	0.17	Medium Pressure Fitting (MPC)	1/4
SS-MBV-F8-MPC-T06-3W			0.19 (4.8)	0.5		3/8
SS-MBV-F8-MPC-T09-3W			0.19 (4.8)	0.5		9/16
SS-MBV-F4-MTU-FT4-3W			0.13 (3.2)	0.22	Medium Pressure Tube Unions (MTU)	1/4
SS-MBV-F4-MTU-FT6-3W			0.19 (4.8)	0.5		3/8
SS-MBV-F4-MTU-FT8-3W			0.19 (4.8)	0.5		1/2

Note: 3-way ball valve defaults to 180° direction change. If you need 90° switch, please add "- D" after the Part NO.

Medium Pressure Check Valves

O-ring Check Valves (MCO Series)

Max Working Pressure: 15,000 psig(1034 bar)

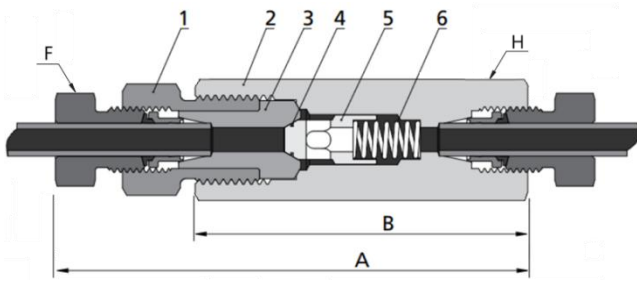
Working temperature range: 0°F to 400°F (-17.8°C to 204°C)

Features

- Cracking pressure: 14 psig~26 psig (0.97 bar~1.79 bar)
- When differential drops below cracking pressure, valve shuts off (Not for use as relief valve)
- Resilient O-ring seat design for noise-free closing and zero leakage.

Standard Materials of Construction

Tube Connection

Tube Connection					Item				Component				Material					
					1	Cover Gland	SS 316											
					2	Valve Body	SS 316											
					3	Cover	SS 316											
					4	O-ring	Fluorocarbon FKM											
					5	Poppet	SS 316											
					6	Spring	300 Series Stainless Steel											
						Lubricant	Molybdenum Disulfide /Fluorinated-based											
Ordering NO.	Connection Tube	Orifice In.(mm)	Cv	Working Pressure Psig(bar)	Dimensions in.(mm)													
					A	B	F (Hex)	H (Hex)										
-MCO-FT4	1/4 OD	0.19 (4.8)	0.63	15,000 (1034)	3.35 (85.0)	2.72 (69.2)	0.63 (15.9)	0.81 (20.6)										
-MCO-FT6	3/8 OD	0.25 (6.4)	1.70		3.72 (94.6)	3.13 (79.6)	0.75 (19.1)	1.00 (25.4)										
-MCO-FT8	1/2 OD	0.36 (9.1)	2.30		4.41 (112)	3.68 (93.5)	0.94 (23.8)	1.38 (34.9)										

Standard Materials of Construction

Female Connection

Female Connection

A detailed cross-sectional diagram of a female connection O-ring check valve. The assembly consists of a cover gland (1) on the left, a valve body (2) in the center, and a cover (3) on the right. An O-ring (4) is positioned between the valve body and the cover. A poppet (5) is located inside the valve body, held in place by a spring (6). The diagram includes dimension lines for A (total length), B (valve body length), F (cover gland length), and H (cover length).

Item	Component	Material
1	Cover Gland	SS 316
2	Valve Body	SS 316
3	O-ring	Fluorocarbon FKM
4	Poppet	SS 316
5	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum Disulfide /Fluorinated-based

Ordering NO.	Connection Tube	Orifice In.(mm)	Cv	Working Pressure Psig(bar)	Dimensions in.(mm)			
					A	B	F (Hex)	H (Hex)
-MCO-FN4	1/4 NPT	0.12 (3.1)	0.28	15,000 (1034)	3.30 (83.8)	2.38 (60.3)	0.94 (23.8)	0.94 (23.8)
-MCO-FN6	3/8 NPT	0.22 (5.6)	0.84		3.95 (100.3)	2.88 (73.2)	1.13 (28.6)	1.13 (28.6)
-MCO-FN8	1/2 NPT	0.36 (9.1)	2.30		5.07 (129)	3.88 (98.6)	1.38 (34.9)	1.38 (34.9)
-MCO-FN12	3/4 NPT	0.52 (13.2)	4.70	10,000 (689)	6.11 (155)	4.76 (121)	1.50 (38.1)	1.75 (44.5)
-MCO-FN16	1 NPT	0.69 (17.5)	7.40		7.33 (186)	5.75 (146)	1.75 (44.5)	1.88 (47.8)

Medium Pressure Check Valves

Ball Check Valves (MCB Series)

Max Working Pressure: 15,000 psig(1034 bar)

Working temperature range: -110°F to 800°F (-79°C to 427°C)

Features

- Cracking pressure: 14 psig~26 psig (0.97 bar~1.79 bar)
- Prevent reverse flow where leak-tight shut-off is not mandatory (Not for use as relief valve)
- Poppet designed essentially for axial flow with minimum pressure drop Optional materials of cover and ball poppet for longer life

Standard Materials of Construction

Tube Connection

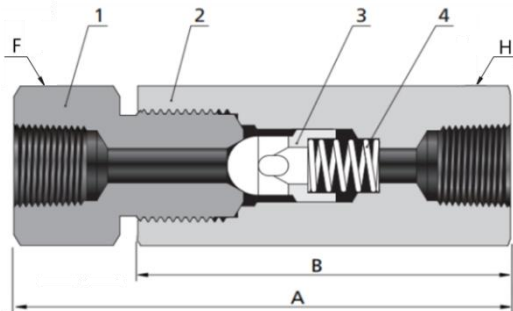
Tube Connection

Item	Component	Material
1	Cover Gland	SS 316
2	Valve Body	SS 316
3	Cover	SS 316
4	Ball Poppet	SS 316
5	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum Disulfide /Fluorinated-based

Ordering NO.	Connection Tube	Orifice In.(mm)	Cv	Working Pressure Psig(bar)	Dimensions in.(mm)			
					A	B	F (Hex)	H (Hex)
-MCO-FT4	1/4 OD	0.19 (4.8)	0.63	15,000 (1034)	3.35 (85.0)	2.72 (69.2)	0.63 (15.9)	0.81 (20.6)
-MCO-FT6	3/8 OD	0.25 (6.4)	1.70		3.72 (94.6)	3.13 (79.6)	0.75 (19.1)	1.00 (25.4)
-MCO-FT8	1/2 OD	0.36 (9.1)	2.30		4.41 (112)	3.68 (93.5)	0.94 (23.8)	1.38 (34.9)

Standard Materials of Construction

Female Connection

Female Connection					Item	Component	Material	
					1	Cover Gland	SS 316	
					2	Valve Body	SS 316	
					3	Ball Poppet	SS 316	
					4	Spring	300 Series Stainless Steel	
						Lubricant	Molybdenum Disulfide /Fluorinated-based	
Ordering NO.	Connection Tube	Orifice In.(mm)	Cv	Working Pressure Psig(bar)	Dimensions in.(mm)			
					A	B	F (Hex)	H (Hex)
-MCO-FN4	1/4 NPT	0.12 (3.1)	0.28	15,000 (1034)	3.30 (83.8)	2.38 (60.3)	0.94 (23.8)	0.94 (23.8)
-MCO-FN6	3/8 NPT	0.22 (5.6)	0.84		3.95 (100.3)	2.88 (73.2)	1.13 (28.6)	1.13 (28.6)
-MCO-FN8	1/2 NPT	0.36 (9.1)	2.30		5.07 (129)	3.88 (98.6)	1.38 (34.9)	1.38 (34.9)
-MCO-FN12	3/4 NPT	0.52 (13.2)	4.70	10,000 (689)	6.11 (155)	4.76 (121)	1.50 (38.1)	1.75 (44.5)
-MCO-FN16	1 NPT	0.69 (17.5)	7.40		7.33 (186)	5.75 (146)	1.75 (44.5)	1.88 (47.8)

Medium Pressure Check Valves

O-ring Check Valves (MCVO Series)

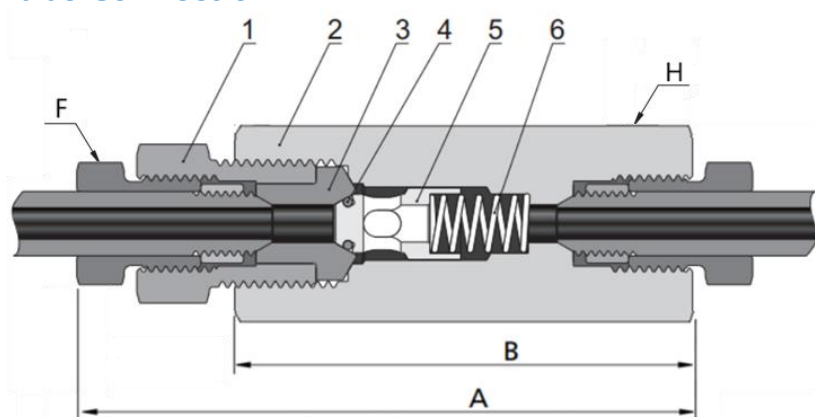
Max Working Pressure: 20,000 psig(1379 bar)

Working temperature range: 0°F to 400°F (-17.8°C to 204°C)

Features

- Cracking pressure: 14 psig~26 psig (0.97 bar~1.79 bar)
- Tubing sizes available from 1/4" to 1"
- When differential drops below cracking pressure, valve shuts off (Not for use as relief valve)
- Resilient O-ring seat design for noise-free closing and zero leakage.

Tube Connection



Standard Materials of Construction

20,000 psig (1379 bar)		
Item	Component	Material
1	Cover Gland	SS 316
2	Valve Body	SS 316
3	Cover	SS 316
4	O-ring	Fluorocarbon FKM
5	Poppet	SS 316
6	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum Disulfide /Fluorinated-based

Ordering Information and Dimensions

20,000 psig (1379 bar)							
Ordering NO.	Connection Tube	Orifice In.(mm)	Cv	Dimensions in.(mm)			
				A	B	F (Hex)	H (Hex)
-MCVO-T04	1/4 OD	0.13 (3.2)	0.28	2.94 (74.7)	2.50 (63.5)	0.50 (12.7)	0.81 (20.6)
-MCVO-T06	3/8 OD	0.22 (5.6)	0.84	3.12 (79.3)	2.62 (66.6)	0.63 (15.9)	1.00 (25.4)
-MCVO-T09	9/16 OD	0.36 (9.1)	2.30	4.18 (106)	3.50 (88.9)	0.94 (23.8)	1.38 (34.9)
-MCVO-T12	3/4 OD	0.52 (13.1)	4.70	5.51 (140)	4.76 (121)	1.19 (30.2)	1.75 (44.5)
-MCVO-T16	1 OD	0.69 (17.5)	7.40	6.93 (176)	5.75 (146)	1.38 (34.9)	2.12 (53.9)

Medium Pressure Check Valves

Ball Check Valves (MCVB Series)

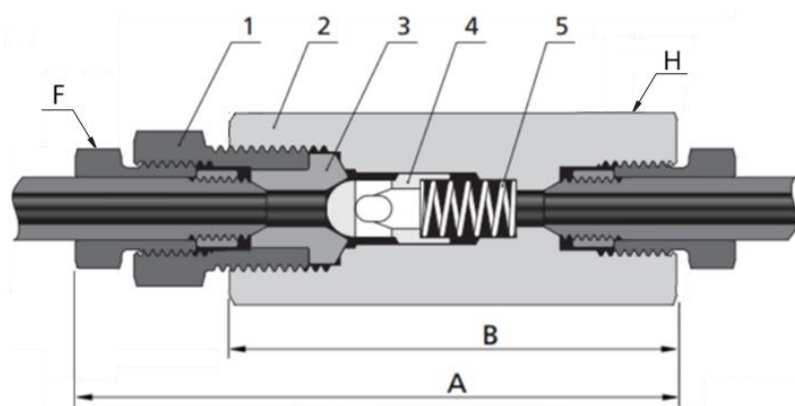
Max Working Pressure: 20,000 psig(1379 bar)

Working temperature range: -110°F to 800°F (-79°C to 427°C)

Features

- Cracking pressure: 14 psig~26 psig (0.97 bar~1.79 bar)
- Tubing sizes available from 1/4" to 1"
- Prevent reverse flow where leak-tight shut-off is not mandatory (Not for use as relief valve)
- Poppet designed essentially for axial flow with minimum pressure drop Optional materials of cover and ball poppet for longer life

Tube Connection



Standard Materials of Construction

20,000 psig (1379 bar)

Item	Component	Material
1	Cover Gland	SS 316
2	Valve Body	SS 316
3	Cover	SS 316
4	Ball Poppet	SS 316
5	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum Disulfide /Fluorinated-based

Ordering Information and Dimensions

20,000 psig (1379 bar)

Ordering NO.	Connection Tube	Orifice In.(mm)	Cv	Dimensions in.(mm)			
				A	B	F (Hex)	H (Hex)
-MCVB-T04	1/4 OD	0.13 (3.2)	0.28	2.94 (74.7)	2.50 (63.5)	0.50 (12.7)	0.81 (20.6)
-MCVB-T06	3/8 OD	0.22 (5.6)	0.84	3.12 (79.3)	2.62 (66.6)	0.63 (15.9)	1.00 (25.4)
-MCVB-T09	9/16 OD	0.36 (9.1)	2.30	4.18 (106)	3.50 (88.9)	0.94 (23.8)	1.38 (34.9)
-MCVB-T12	3/4 OD	0.52 (13.1)	4.70	5.51 (140)	4.76 (121)	1.19 (30.2)	1.75 (44.5)
-MCVB-T16	1 OD	0.69 (17.5)	7.40	6.93 (176)	5.75 (146)	1.38 (34.9)	2.12 (53.9)

High Pressure Check Valves

O-ring Check Valves (HCVO Series)

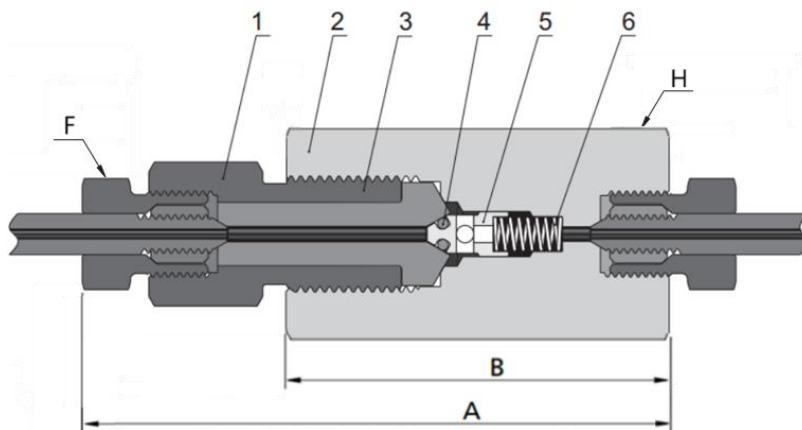
Max Working Pressure: 20,000 psig(1379 bar)

Working temperature range: 0°F to 400°F (-17.8°C to 204°C)

Features

- Cracking pressure: 14 psig~26 psig (0.97 bar~1.79 bar)
- Tubing sizes available from 1/4" to 9/16"
- When differential drops below cracking pressure, valve shuts off (Not for use as relief valve)
- Resilient O-ring seat design for noise-free closing and zero leakage.

Tube Connection



Standard Materials of Construction

60,000 psig (4137 bar)

Item	Component	Material
1	Cover Gland	SS 316
2	Valve Body	SS 316
3	Cover	SS 316
4	O-ring	Fluorocarbon FKM
5	Poppet	SS 316
6	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum Disulfide /Fluorinated-based

Ordering Information and Dimensions

60,000 psig (4137 bar)

Ordering NO.	Connection Tube	Orifice In.(mm)	Cv	Dimensions in.(mm)			
				A	B	F (Hex)	H (Hex)
-HCVO-T04	1/4 OD	0.094 (2.4)	0.15	3.38 (85.9)	2.50 (63.5)	0.63 (15.9)	1.19 (30.2)
-HCVO-T06	3/8 OD	0.125 (3.2)	0.28	3.86 (98.1)	2.80 (71.1)	0.81 (20.6)	1.19 (30.2)
-HCVO-T09	9/16 OD	0.187 (4.8)	0.63	4.62 (117.4)	3.38 (85.9)	1.19 (30.2)	150 (38.1)

High Pressure Check Valves

Ball Check Valves (HCVB Series)

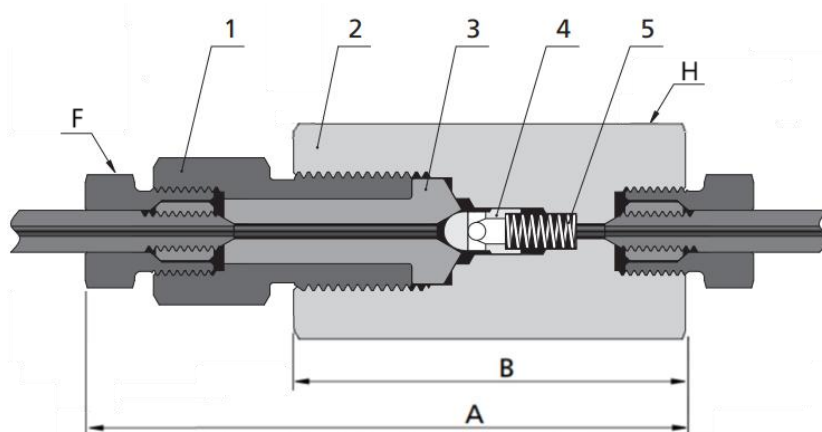
Max Working Pressure: 20,000 psig(1379 bar)

Working temperature range: 0°F to 400°F (-17.8°C to 204°C)

Features

- Cracking pressure: 14 psig~26 psig (0.97 bar~1.79 bar)
- Working temperature range: -110°F to 1200°F (-79°C to 649°C)
- Tubing sizes available from 1/4" to 9/16"
- Prevent reverse flow where leak-tight shut-off is not mandatory (Not for use as relief valve)
- Poppet designed essentially for axial flow with minimum pressure drop Optional materials of cover and ball poppet for longer life

Tube Connection



Standard Materials of Construction

60,000 psig (4137 bar)

Item	Component	Material
1	Cover Gland	SS 316
2	Valve Body	SS 316
3	Cover	SS 316
4	Ball Poppet	SS 316
5	Spring	300 Series Stainless Steel
	Lubricant	Molybdenum Disulfide /Fluorinated-based

Ordering Information and Dimensions

60,000 psig (4137 bar)

Ordering NO.	Connection Tube	Orifice In.(mm)	Cv	Dimensions in.(mm)			
				A	B	F (Hex)	H (Hex)
-HCVB-T04	1/4 OD	0.094 (2.4)	0.15	3.38 (85.9)	2.50 (63.5)	0.63 (15.9)	1.19 (30.2)
-HCVB-T06	3/8 OD	0.125 (3.2)	0.28	3.86 (98.1)	2.80 (71.1)	0.81 (20.6)	1.19 (30.2)
-HCVB-T09	9/16 OD	0.187 (4.8)	0.63	4.62 (117.4)	3.38 (85.9)	1.19 (30.2)	150 (38.1)

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Valves ,Fittings and Tubing

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