

Needle Valves

10N Series, 10,000 psi (690 bar)

15N Series, 15,000 psi (1034 bar)

20N Series, 20,000 psi (1379 bar)

30N Series, 30,000 psi (2068 bar)

60N Series, 60,000 psi (4137 bar)



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10N Series

10,000 psi (690 bar)

Features

- ⦿ Non-rotating stem and bar stock body design.
- ⦿ Easy to assemble and replace packing.
- ⦿ 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.
- ⦿ PTFE is the standard packing material, RPTFE glass, Graphite and extended stuffing box with Graphite also available.
- ⦿ The material of packing gland and upper stem have been selected to achieve reduced handle torque and extended thread cycle life.
- ⦿ The material of valve body is 316 SS, the material of lower stem is 17-4PH SS.
- ⦿ Options for Vee or Regulating stem tips.
- ⦿ The location of packing is under the thread of valve stem.
- ⦿ The locking device of packing gland is reliable.
- ⦿ Five flow patterns are available.

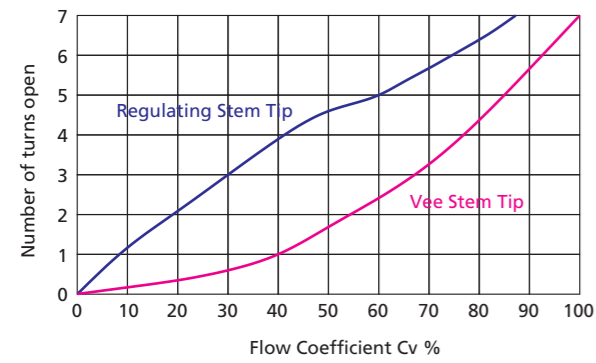
Technical Data

Connector Size	Connection Type	Orifice in. (mm)	Cv	Pressure @ Room Temperature psig (bar)	Operating Temperature
9/16" Tube	2FH9	0.359 (9.12)	1.75	10,000 (690)	-423°F~1200°F (-252°C~649°C)
3/4" Tube	2FH12	0.516 (13.10)	2.80	10,000 (690)	
1" Tube	2FH16	0.688 (17.48)	5.20	10,000 (690)	
3/4 Female NPT	FNS12	0.437 (11.10)	2.50	10,000 (690)	-325°F~400°F (-198°C~204°C)
3/4 Female BSPT	FRT12				
1 Female NPT	FNS16	0.562 (14.27)	4.40	10,000 (690)	
1 Female BSPT	FRT16				

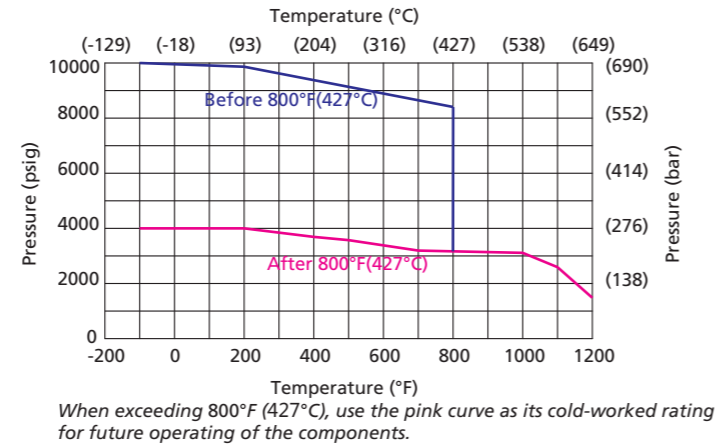
Notes:

- ⦿ The values of Cv shown are for 2-way straight valve pattern.
The values of Cv for 2-way angle pattern will be increase about 50% (Base on water).
- ⦿ Extreme Temperatures
PTFE is the standard packing material for FITOK 10N Series Needle Valves; RPTFE glass, Graphite (used by Tube connectors only) and extended stuffing box with Graphite (used by Tube connectors only) also available.
Normal Needle Valve with PTFE packing can be operated from -100°F (-73°C) to 450°F (232°C).
Normal Needle Valve with RPTFE glass packing can be operated from -100°F (-73°C) to 600°F (316°C).
Normal Needle Valve with Graphite packing can be operated from 0°F (-17.8°C) to 800°F (427°C).
Extended stuffing box Valve with Graphite packing can be operated from 100°F (-73°C) to 1200°F (649°C).

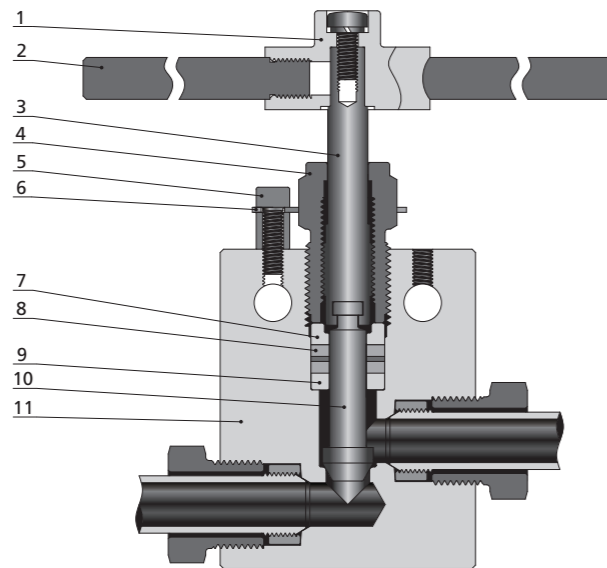
Flow Data at 100°F (38°C)



Pressure & Temperature

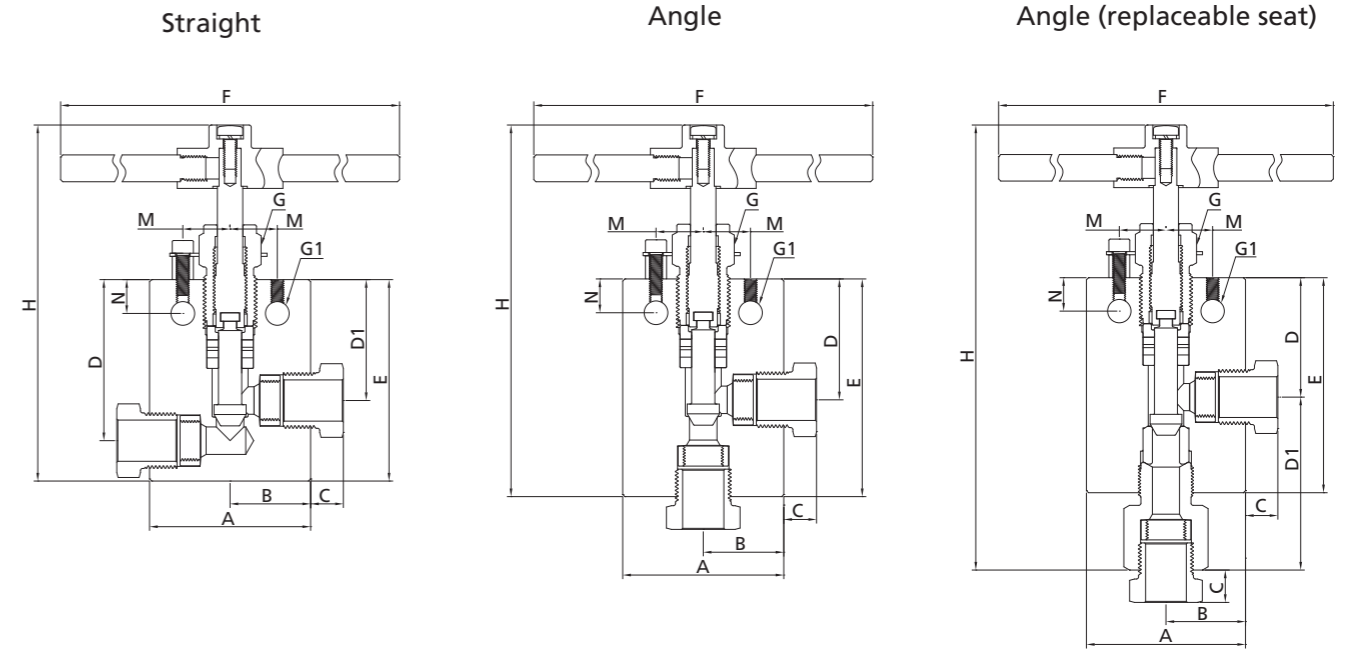


Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Handle Head	Stainless steel
2	Handle	Stainless steel
3	Upper Stem	316 SS/A479
4	Packing Gland	C63000/B150
5	Locking Screw	Stainless steel
6	Locking Plate	304 SS/A240
7	Packing Ring	C63000/B150
8	Packing	PTFE/RPTFE/Graphite/extended stuffing box valve with Graphite
9	Packing Washer	17-4PH/A564
10	Lower Stem	17-4PH/A564
11	Body	316 SS/A479
	Lubricant	Molybdenum disulfide

Dimensions (Tube Connectors)

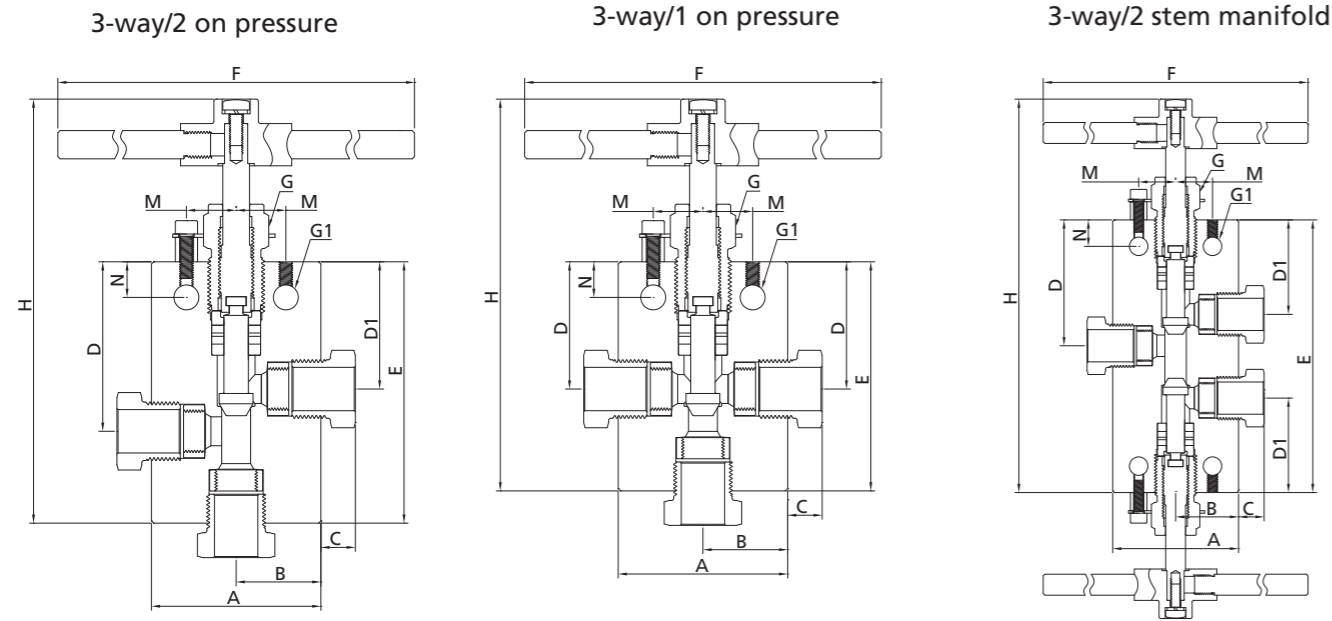


Dimensions (Straight)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
10NSS-2FH9-1	2FH9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.38 (60.5)	1.75 (44.5)	2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.20 (157.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
10NSS-2FH12-1	2FH12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	3.75 (95.3)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.24 (183.8)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
10NSS-2FH16-1	2FH16	0.688 (17.48)	4.12 (104.7)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	4.63 (117.6)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.33 (237.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Dimensions (Angle)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
10NSS-2FH9-2	2FH9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	/	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.70 (170.3)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
10NSS-2FH12-2	2FH12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	/	4.25 (107.9)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.73 (196.4)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
10NSS-2FH16-2	2FH16	0.688 (17.48)	4.12 (104.7)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	/	5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.83 (249.7)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Dimensions (Angle/replaceable seat)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
10NSS-2FH9-3	2FH9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	2.50 (63.5)	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	7.57 (192.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
10NSS-2FH12-3	2FH12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	3.19 (81.1)	4.25 (107.9)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	8.92 (226.8)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
10NSS-2FH16-3	2FH16	0.688 (17.48)	4.12 (104.7)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	4.11 (104.5)	5.25 (133.3)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	11.62 (295.4)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Dimensions (Tube Connectors)

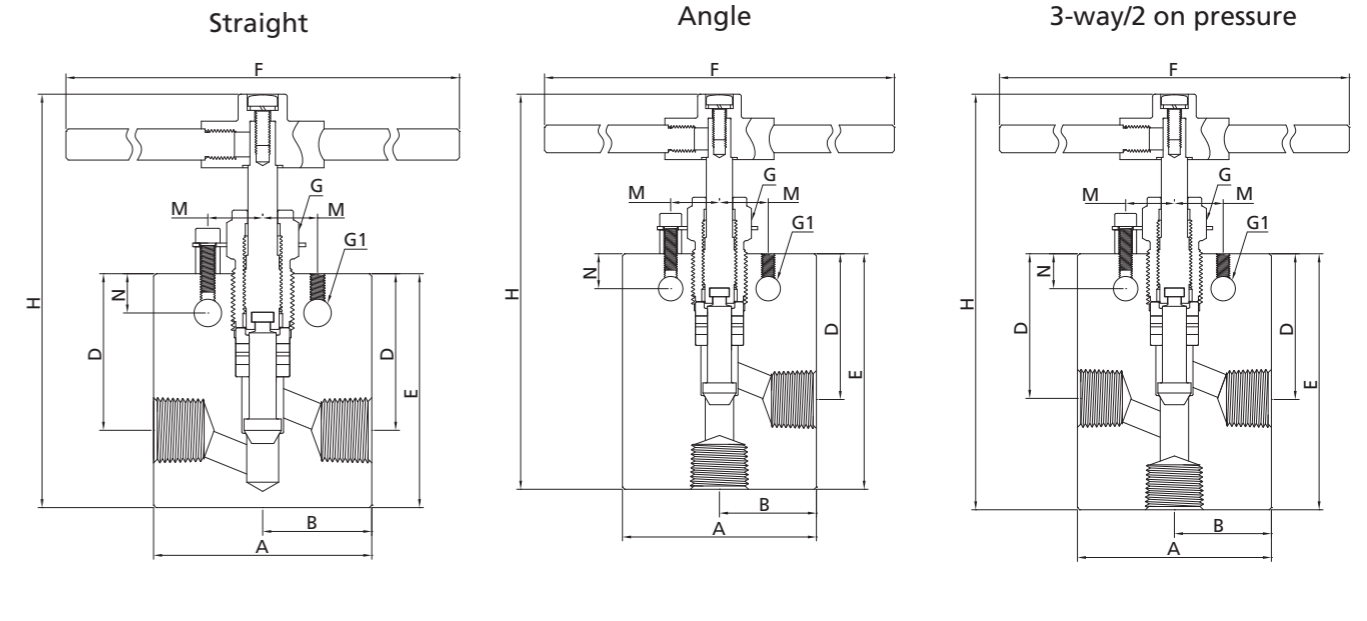


Dimensions (3-way/2 on pressure)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
10NSS-FH9-4	2FH9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.38 (60.5)	1.75 (44.5)	3.63 (92.1)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.95 (176.5)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
10NSS-FH12-4	2FH12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	4.63 (117.5)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	8.11 (206.0)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
10NSS-FH16-4	2FH16	0.688 (17.48)	4.12 (104.7)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	5.88 (149.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	10.58 (268.7)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Dimensions (3-way/1 on pressure)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
10NSS-FH9-5	2FH9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	/	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.70 (170.3)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
10NSS-FH12-5	2FH12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	/	4.25 (107.9)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.73 (196.4)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
10NSS-FH16-5	2FH16	0.688 (17.48)	4.12 (104.7)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	/	5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.83 (249.7)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Dimensions (3-way/2 stem manifold)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
10NSS-FH9-6	2FH9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.56 (65.1)	1.75 (44.5)	5.13 (130.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.45 (214.6)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
10NSS-FH12-6	2FH12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.25 (82.6)	2.25 (57.2)	6.50 (165.1)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	9.98 (253.5)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
10NSS-FH16-6	2FH16	0.688 (17.48)	4.12 (104.7)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	7.50 (190.5)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	12.20 (310.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Dimensions (Pipe Connectors)



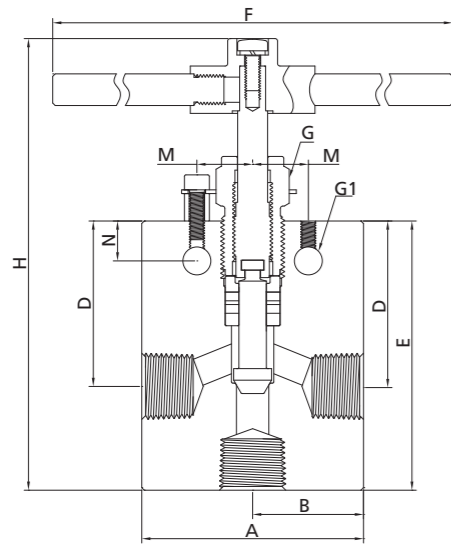
Dimensions (Straight)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
10NSS-FNS12-1	FNS12	0.437 (11.10)	3.50 (88.9)	1.75 (44.5)	/	2.63 (66.8)	/	3.75 (95.3)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.42 (188.6)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)
10NSS-FRT12-1	FRT12														
10NSS-FNS16-1	FNS16	0.562 (14.27)	4.12 (104.7)	2.06 (52.3)	/	3.31 (84.1)	/	4.62 (117.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.45 (240.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)
10NSS-FRT16-1	FRT16														

Dimensions (Angle)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
10NSS-FNS12-2	FNS12	0.437 (11.10)	3.50 (88.9)	1.75 (44.5)	/	2.63 (66.8)	/	4.25 (107.9)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.92 (201.3)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)
10NSS-FRT12-2	FRT12														
10NSS-FNS16-2	FNS16	0.562 (14.27)	4.12 (104.7)	2.06 (52.3)	/	3.31 (84.1)	/	5.12 (130.1)	10.25 (260.4)	1.64 (41.2)	0.56 (14.2)	9.94 (252.5)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)
10NSS-FRT16-2	FRT16														

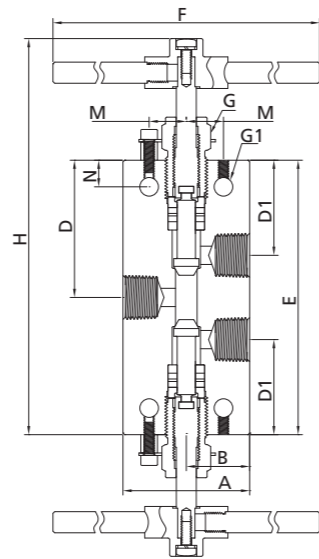
Dimensions (3-way/2 on pressure)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
10NSS-FNS12-4	FNS12	0.437 (11.10)	3.50 (88.9)	1.75 (44.5)	/	2.65 (67.3)	/	4.62 (117.4)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	8.40 (213.4)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)
10NSS-FRT12-4	FRT12														
10NSS-FNS16-4	FNS16	0.562 (14.27)	4.12 (104.7)	2.06 (52.3)	/	3.31 (84.1)	/	5.88 (149.4)	10.25 (260.4)	1.64 (41.2)	0.56 (14.2)	10.70 (271.7)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)
10NSS-FRT16-4	FRT16														

Dimensions (Pipe Connectors)

3-way/1 on pressure



3-way/2 stem manifold



Dimensions (3-way/1 on pressure)																	
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness		
			in. (mm)														
10NSS-FNS12-5	FNS12	0.437 (11.10)	3.50 (88.9)	1.75 (44.5)	/	2.65 (67.3)	/	4.25 (107.9)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.92 (201.3)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)		
10NSS-FRT12-5	FRT12		10NSS-FNS16-5	FNS16	0.562 (14.27)	4.12 (104.7)	2.06 (52.3)	/	3.31 (84.1)	/	5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.94 (252.5)	1.25 (31.8)	1.13 (28.7)
10NSS-FRT16-5	FRT16	10NSS-FNS12-6	FNS12	0.437 (11.10)		3.50 (88.9)	1.75 (44.5)	/	3.25 (82.6)	2.25 (57.2)	6.50 (165.1)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	10.28 (261.2)	0.88 (22.4)	0.63 (16.0)
10NSS-FRT12-6	FRT12	10NSS-FNS16-6	FNS16		0.562 (14.27)	4.12 (104.7)	2.06 (52.3)	/	3.75 (95.3)	2.81 (71.42)	7.50 (190.5)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	12.32 (313.0)	1.25 (31.8)	1.13 (28.7)
10NSS-FRT16-6	FRT16																

Dimensions (3-way/2 stem manifold)																	
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness		
			in. (mm)														
10NSS-FNS12-6	FNS12	0.437 (11.10)	3.50 (88.9)	1.75 (44.5)	/	3.25 (82.6)	2.25 (57.2)	6.50 (165.1)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	10.28 (261.2)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)		
10NSS-FRT12-6	FRT12		10NSS-FNS16-6	FNS16	0.562 (14.27)	4.12 (104.7)	2.06 (52.3)	/	3.75 (95.3)	2.81 (71.42)	7.50 (190.5)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	12.32 (313.0)	1.25 (31.8)	1.13 (28.7)
10NSS-FRT16-6	FRT16																

- Notes:**
- G is the drill dimension of packing gland mounting hole.
 - G1 is the dimension of bracket mounting hole.
 - panel mounting drill size: 0.25" all valves.
 - H is the dimension of stem in closed position.
 - All dimensions for reference only and subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.

15N Series 15,000 psi (1034 bar)

Features

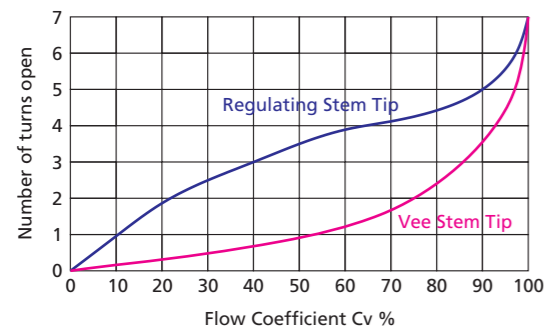
- Non-rotating stem and bar stock body design.
- Easy to assemble and replace packing.
- Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles.
- PTFE is the standard packing material, RPTFE glass and Graphite also available.
- The material of packing gland and upper stem have been selected to achieve reduced handle torque and extended thread cycle life.
- The material of valve body is 316 SS, the material of lower stem is 17-4PH SS.
- Options for Vee or Regulating stem tips.
- The location of packing is under the thread of valve stem.
- The locking device of packing gland is reliable.
- Five flow patterns are available.

Technical Data

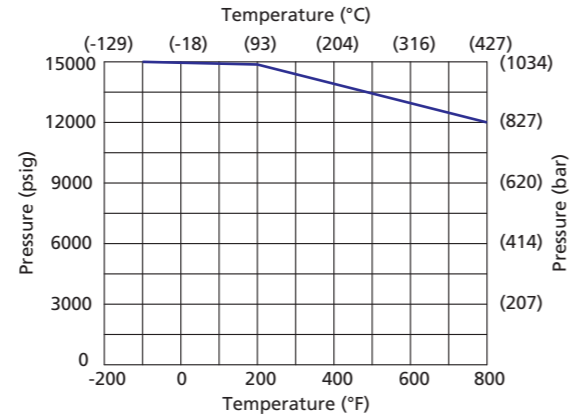
Connector Size	Connection Type	Orifice in. (mm)	Cv	Pressure @ Room Temperature psig (bar)	Operating Temperature
1/8" Tube	FH2	0.094 (2.39)	0.12	15,000 (1034)	-325°F~800°F (-198°C~427°C)
1/4" Tube	FH4	0.188 (4.77)	0.65	15,000 (1034)	
3/8" Tube	FH6	0.250 (6.35)	0.95	15,000 (1034)	
1/2" Tube	FH8	0.375 (9.53)	1.90	15,000 (1034)	
1/8 Female NPT	FNS2	0.078 (1.98)	0.11	15,000 (1034)	-325°F~400°F (-198°C~204°C)
1/8 Female BSPT	FRT2				
1/4 Female NPT	FNS4	0.203 (5.16)	0.63	15,000 (1034)	
1/4 Female BSPT	FRT4				
3/8 Female NPT	FNS6	0.219 (5.56)	0.75	15,000 (1034)	
3/8 Female BSPT	FRT6				
1/2 Female NPT	FNS8	0.312 (7.92)	1.30	15,000 (1034)	
1/2 Female BSPT	FRT8				

- Notes:**
- The values of Cv shown are for 2-way straight valve pattern. The values of Cv for 2-way angle pattern will be increase about 50% (Base on water).
 - Extreme Temperatures
PTFE is the standard packing material for FITOK 15N Series Needle Valves; RPTFE glass and Graphite (used by Tube connectors only) also available.
Normal Needle Valve with PTFE packing can be operated from -100°F (-73°C) to 450°F (232°C).
Normal Needle Valve with RPTFE glass packing can be operated from -100°F (-73°C) to 600°F (316°C).
Normal Needle Valve with Graphite packing can be operated from 0°F (-17.8°C) to 800°F (427°C).

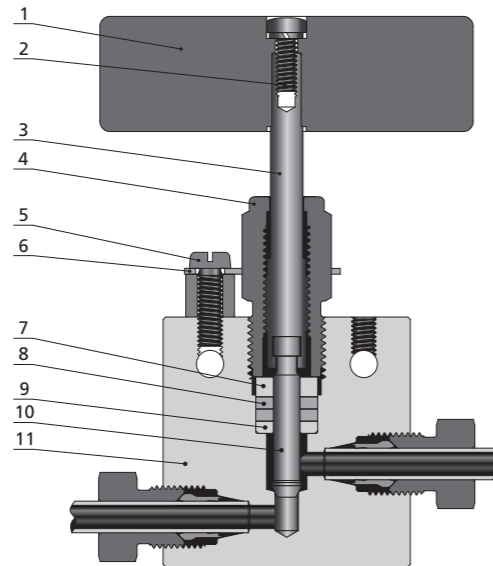
Flow Data at 100°F (38°C)



Pressure & Temperature

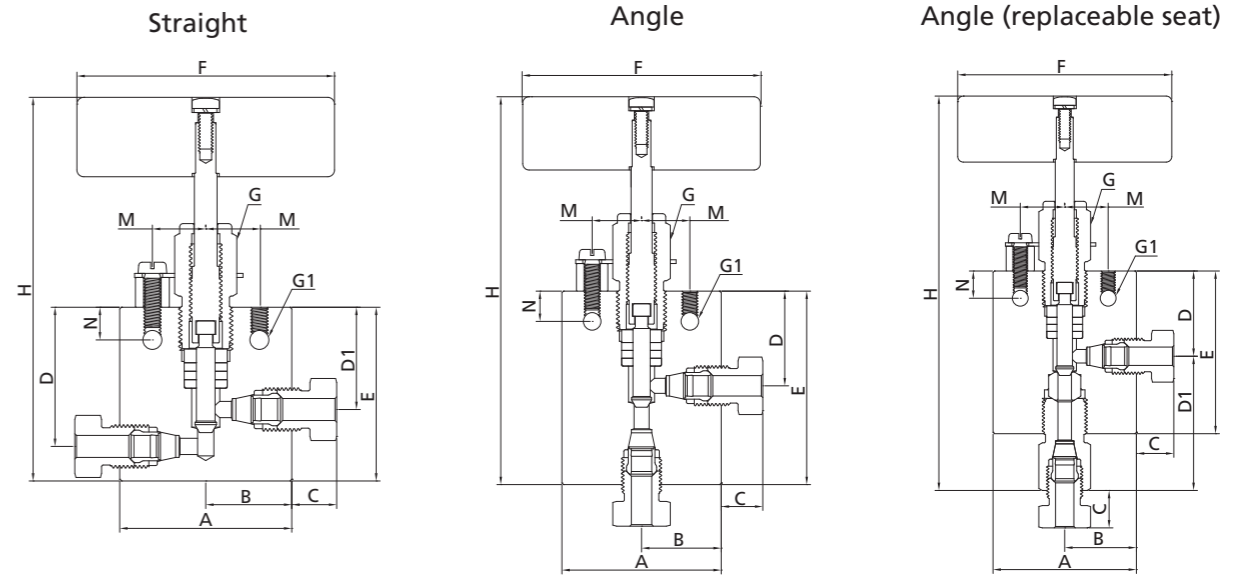


Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless steel
2	Handle Screw	Stainless steel
3	Upper Stem	316 SS/A479
4	Packing Gland	C63000/B150
5	Locking Screw	Stainless steel
6	Locking Plate	304 SS/A240
7	Packing Ring	C63000/B150
8	Packing	PTFE/RPTFE/Graphite
9	Packing Washer	17-4PH/A564
10	Lower Stem	17-4PH/A564
11	Body	316 SS/A479
	Lubricant	Molybdenum disulfide

Dimensions (Tube Connectors)

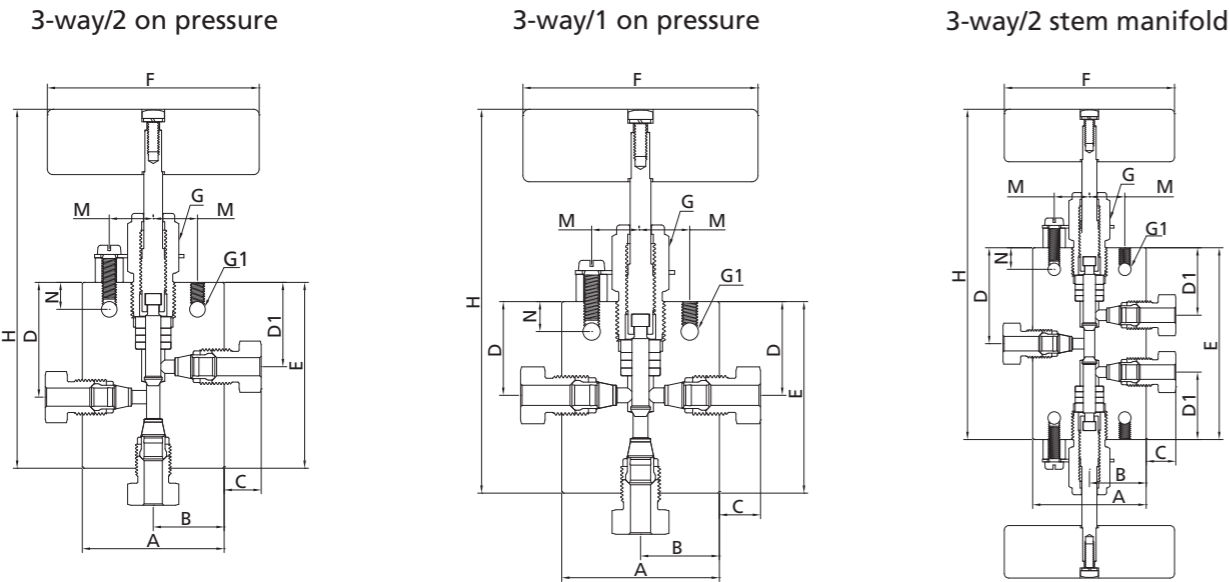


Dimensions (Straight)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
15NSS-FH2-1	FH2	0.094 (2.39)	1.50 (38.1)	0.75 (19.1)	0.44 (11.2)	1.06 (26.9)	0.81 (20.6)	1.38 (35.1)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.13 (79.6)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)
15NSS-FH4-1	FH4	0.188 (4.77)	2.00 (50.8)	1.00 (25.4)	0.52 (13.3)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.90 (124.5)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FH6-1	FH6	0.250 (6.35)	2.00 (50.8)	1.00 (25.4)	0.54 (13.6)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.97 (126.3)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FH8-1	FH8	0.375 (9.53)	2.50 (63.5)	1.25 (31.8)	0.60 (15.3)	2.38 (60.5)	1.75 (44.5)	2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.21 (157.7)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)

Dimensions (Angle)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
15NSS-FH2-2	FH2	0.094 (2.39)	1.50 (38.1)	0.75 (19.1)	0.44 (11.2)	0.81 (20.6)		1.56 (39.6)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.32 (84.3)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)
15NSS-FH4-2	FH4	0.188 (4.77)	2.00 (50.8)	1.00 (25.4)	0.52 (13.3)	1.19 (30.2)		2.43 (61.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FH6-2	FH6	0.250 (6.35)	2.00 (50.8)	1.00 (25.4)	0.54 (13.6)	1.19 (30.2)		2.43 (61.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.40 (137.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FH8-2	FH8	0.375 (9.53)	2.50 (63.5)	1.25 (31.8)	0.60 (15.3)	1.75 (44.5)		3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.71 (170.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)

Dimensions (Angle/replaceable seat)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
15NSS-FH2-3	FH2	0.094 (2.39)	1.50 (38.1)	0.75 (19.1)	0.44 (11.2)	0.81 (20.6)	1.28 (32.5)	1.56 (39.6)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.84 (97.6)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)
15NSS-FH4-3	FH4	0.188 (4.77)	2.00 (50.8)	1.00 (25.4)	0.52 (13.3)	1.19 (30.2)	1.88 (47.8)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.97 (151.6)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FH6-3	FH6	0.250 (6.35)	2.00 (50.8)	1.00 (25.4)	0.54 (13.6)	1.19 (30.2)	2.19 (55.6)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.35 (161.3)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FH8-3	FH8	0.375 (9.53)	2.50 (63.5)	1.25 (31.8)	0.60 (15.3)	1.75 (44.5)	2.50 (63.5)	3.25 (82.6)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	7.54 (191.5)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)

Dimensions (Tube Connectors)

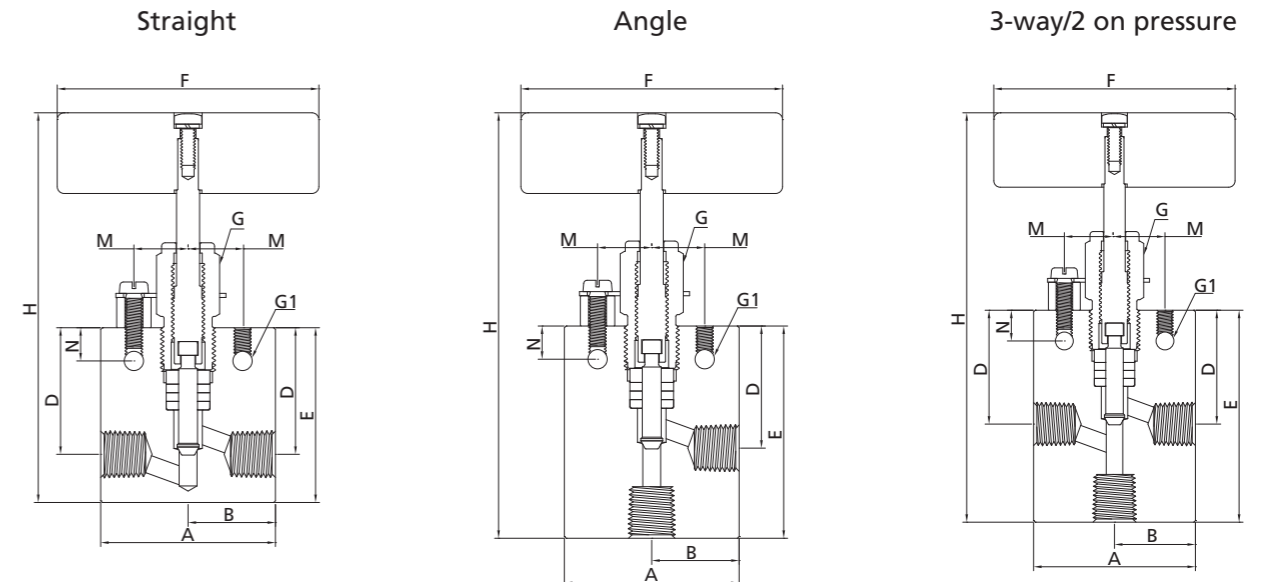


Dimensions (3-way/2 on pressure)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
15NSS-FH2-4	FH2	0.094 (2.39)	1.50 (38.1)	0.75 (19.1)	0.44 (11.2)	1.06 (26.9)	0.81 (20.6)	1.69 (42.9)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.45 (87.5)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)
15NSS-FH4-4	FH4	0.188 (4.77)	2.00 (50.8)	1.00 (25.4)	0.52 (13.3)	1.62 (41.2)	1.19 (30.2)	2.62 (66.6)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.52 (140.3)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FH6-4	FH6	0.250 (6.35)	2.00 (50.8)	1.00 (25.4)	0.54 (13.6)	1.62 (41.2)	1.19 (30.2)	2.62 (66.6)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.59 (142.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FH8-4	FH8	0.375 (9.53)	2.50 (63.5)	1.25 (31.8)	0.60 (15.3)	2.38 (60.5)	1.75 (44.5)	3.62 (92.0)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.96 (176.7)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)

Dimensions (3-way/1 on pressure)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
15NSS-FH2-5	FH2	0.094 (2.39)	1.50 (38.1)	0.75 (19.1)	0.44 (11.2)	0.81 (20.6)	/	1.56 (39.6)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.32 (84.3)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)
15NSS-FH4-5	FH4	0.188 (4.77)	2.00 (50.8)	1.00 (25.4)	0.52 (13.3)	1.19 (30.2)	/	2.43 (61.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FH6-5	FH6	0.250 (6.35)	2.00 (50.8)	1.00 (25.4)	0.54 (13.6)	1.19 (30.2)	/	2.43 (61.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.40 (137.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FH8-5	FH8	0.375 (9.53)	2.50 (63.5)	1.25 (31.8)	0.60 (15.3)	1.75 (44.5)	/	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.71 (170.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)

Dimensions (3-way/2 stem manifold)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
15NSS-FH2-6	FH2	0.094 (2.39)	1.50 (38.1)	0.75 (19.1)	0.44 (11.2)	1.12 (28.5)	0.81 (20.6)	2.25 (57.2)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	4.00 (101.8)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)
15NSS-FH4-6	FH4	0.188 (4.77)	2.00 (50.8)	1.00 (25.4)	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 (159.6)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FH6-6	FH6	0.250 (6.35)	2.00 (50.8)	1.00 (25.4)	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)	6.35 (161.3)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FH8-6	FH8	0.375 (9.53)	2.50 (63.5)	1.25 (31.8)	0.60 (15.3)	2.56 (65.0)	1.75 (44.5)	5.12 (130.1)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.45 (214.7)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)

Dimensions (Pipe Connectors)



Dimensions (Straight)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
15NSS-FNS2-1	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)	/	0.82 (20.6)	/	1.25 (31.8)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.00 (76.4)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
15NSS-FRT2-1	FRT2	/	/	/	/	/	/	/	/	/	/	/	/	/	/
15NSS-FNS4-1	FNS4	0.203 (5.2)	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 (124.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FRT4-1	FRT4	/	/	/	/	/	/	/	/	/	/	/	/	/	/
15NSS-FNS6-1	FNS6	0.219 (5.56)	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)	4.85 (123.1)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NSS-FRT6-1	FRT6	/	/	/	/	/	/	/	/	/	/	/	/	/	/
15NSS-FNS8-1	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)	/	2.06 (52.3)	/	2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.18 (157.2)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NSS-FRT8-1	FRT8	/	/	/	/	/	/	/	/	/	/	/	/	/	/

Dimensions (Angle)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
15NSS-FNS2-2	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)	/	0.81 (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)
15NSS-FRT2-2	FRT2	/	/	/	/	/	/	/	/	/	/	/	/	/	/
15NSS-FNS4-2	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)	/	1.41 (35.8)	/	2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NSS-FRT4-2	FRT4	/	/	/	/	/	/	/	/	/	/	/	/	/	/
15NSS-FNS6-2	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)	/	1.41 (35.8)	/	2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.34 (135.7)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NSS-FRT6-2	FRT6	/	/	/	/	/	/	/	/	/	/	/	/	/	/
15NSS-FNS8-2	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)	/	2.06 (52.3)	/	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (169.9)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NSS-FRT8-2	FRT8	/	/	/	/	/	/	/	/	/	/	/	/	/	/

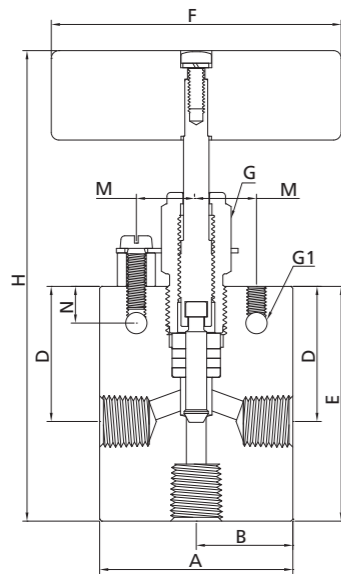
Dimensions (3-way/2 on pressure)																	
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness		
			in. (mm)														
15NSS-FNS2-4	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)	/	0.82 (20.6)	/	1.57 (40.0)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.33 (84.6)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)		
15NSS-FRT2-4	FRT2		15NSS-FNS4-4	FNS4	0.203 (5.2)	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)	0.62 (15.8)	0.38 (9.7)
15NSS-FRT4-4	FRT4	15NSS-FNS6-4	FNS6	0.219 (5.56)		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)	5.47 (138.9)	0.62 (15.8)	0.38 (9.7)
15NSS-FRT6-4	FRT6	15NSS-FNS8-4	FNS8		0.312 (7.92)	3.00 (76.2)	1.50 (38.1)	/	2.06 (52.3)	/	3.62 (92.0)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.94 (176.26)	0.69 (17.5)	0.50 (12.7)
15NSS-FRT8-4	FRT8																

Dimensions (3-way/2 stem manifold)																	
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness		
			in. (mm)														
15NSS-FNS2-6	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)	/	1.00 (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)		
15NSS-FRT2-6	FRT2		15NSS-FNS4-6	FNS4	0.203 (5.2)	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)	6.27 (159.2)	0.62 (15.8)	0.38 (9.7)
15NSS-FRT4-6	FRT4	15NSS-FNS6-6	FNS6	0.219 (5.56)		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 (158.1)	0.62 (15.8)	0.38 (9.7)
15NSS-FRT6-6	FRT6	15NSS-FNS8-6	FNS8		0.312 (7.92)	3.00 (76.2)	1.50 (38.1)	/	2.56 (65.1)	1.75 (44.5)	5.12 (130.1)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.43 (214.2)	0.69 (17.5)	0.50 (12.7)
15NSS-FRT8-6	FRT8																

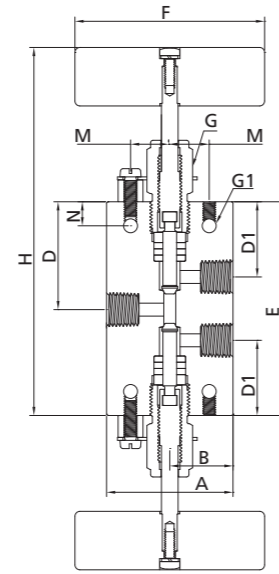
- Notes:**
- G is the drill dimension of packing gland mounting hole.
 - G1 is the dimension of bracket mounting hole.
 - panel mounting drill size: 0.25" all valves.
 - H is the dimension of stem in closed position.
 - All dimensions for reference only and subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.

Dimensions (Pipe Connectors)

3-way/1 on pressure



3-way/2 stem manifold



Dimensions (3-way/1 on pressure)																	
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness		
			in. (mm)														
15NSS-FNS2-5	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)	/	0.82 (20.6)	/	1.38 (35.0)	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)		
15NSS-FRT2-5	FRT2		15NSS-FNS4-5	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)	/	1.41 (35.8)	/	2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)
15NSS-FRT4-5	FRT4	15NSS-FNS6-5	FNS6	0.219 (5.56)		2.50 (63.5)	1.25 (31.8)	/	1.41 (35.8)	/	2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.34 (135.7)	0.62 (15.8)	0.38 (9.7)
15NSS-FRT6-5	FRT6	15NSS-FNS8-5	FNS8		0.312 (7.92)	3.00 (76.2)	1.50 (38.1)	/	2.06 (52.3)	/	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (169.9)	0.69 (17.5)	0.50 (12.7)
15NSS-FRT8-5	FRT8																

20N Series

20,000 psi (1379 bar)

Features

- Tubing sizes available for 1/4", 3/8", 9/16", 3/4", 1".
- Non-rotating stem and bar stock body design.
- Easy to assemble and replace packing.
- 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.
- PTFE is the standard packing material, RPTFE glass, Graphite and extended stuffing box with Graphite also available.
- Extended stuffing box with Graphite can be operated to 1200°F (649°C).
- The material of packing gland and upper stem have been selected to achieve reduced handle torque and extended thread cycle life.
- The material of valve body is 316 SS, the material of lower stem is 17-4PH SS.
- Options for Vee or Regulating stem tips.
- The location of packing is under the thread of valve stem.
- The locking device of packing gland is reliable.
- Five flow patterns are available.

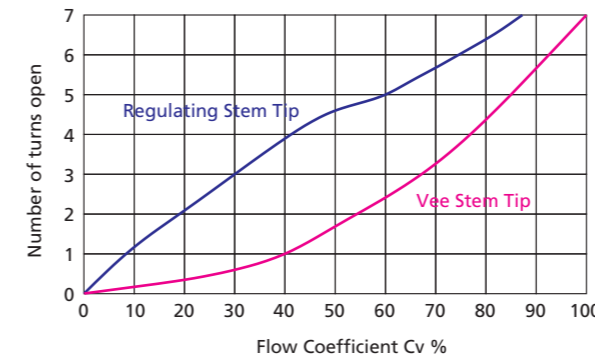
Technical Data

Tube OD in.	Connection Type	Orifice in. (mm)	Cv	Pressure @ room Temperature psig (bar)	Operating Temperature
1/4	2FH4	0.125 (3.18)	0.31	20,000 (1379)	-325°F~-1200°F (-198°C~649°C)
3/8	2FH6	0.204 (5.18)	0.68	20,000 (1379)	
9/16	2FH9	0.312 (7.92)	1.30	20,000 (1379)	
3/4	2FH12	0.438 (11.13)	2.50	20,000 (1379)	
1	2FH16	0.562 (14.27)	4.40	20,000 (1379)	

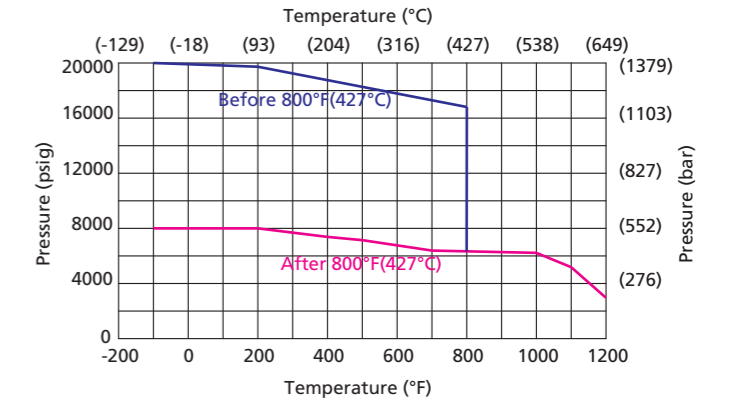
Notes:

- The values of Cv shown are for 2-way straight valve pattern. The values of Cv for 2-way angle pattern will be increase about 50% (Base on water).
- Extreme Temperatures
PTFE is the standard packing material for FITOK 20N Series Needle Valve; RPTFE glass, Graphite and extended stuffing box with graphite also available.
Normal Needle Valve with PTFE packing can be operated from -100°F (-73°C) to 450°F (232°C).
Normal Needle Valve with RPTFE glass packing can be operated from -100°F (-73°C) to 600°F (316°C).
Normal Needle Valve with Graphite packing can be operated from 0°F (-17.8°C) to 800°F (427°C).
Extended stuffing box Valve with Graphite packing can be operated from 100°F (-73°C) to 1200°F (649°C).

Flow Data at 100°F (38°C)

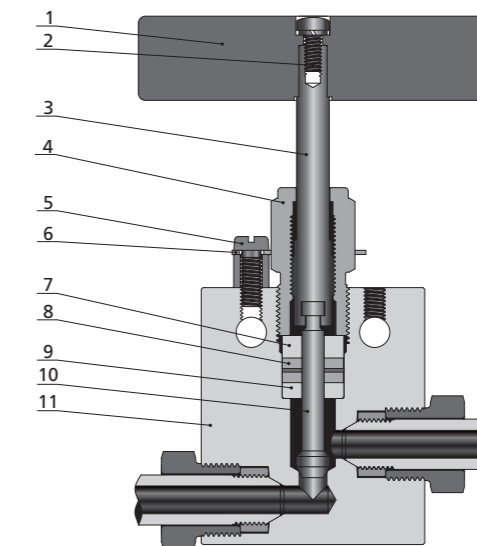


Pressure & Temperature



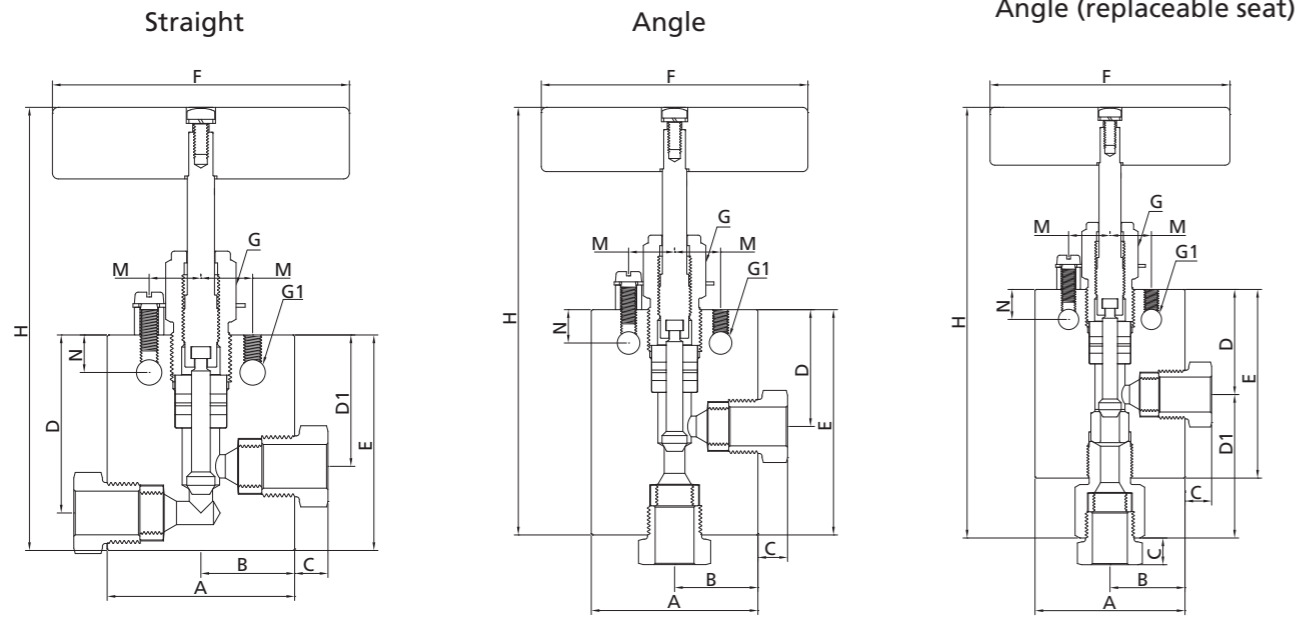
When exceeding 800°F (427°C), use the pink curve as its cold-worked rating for future operating of the components.

Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless steel
2	Handle Screw	Stainless steel
3	Upper Stem	316 SS/A479
4	Packing Gland	C63000/B150
5	Locking Screw	Stainless steel
6	Locking Plate	304 SS/A240
7	Packing Ring	C63000/B150
8	Packing	PTFE/RPTFE/Graphite/extended stuffing box with Graphite
9	Packing Washer	17-4PH/A564
10	Lower Stem	17-4PH/A564
11	Body	316 SS/A479
	Lubricant	Molybdenum disulfide

Dimensions

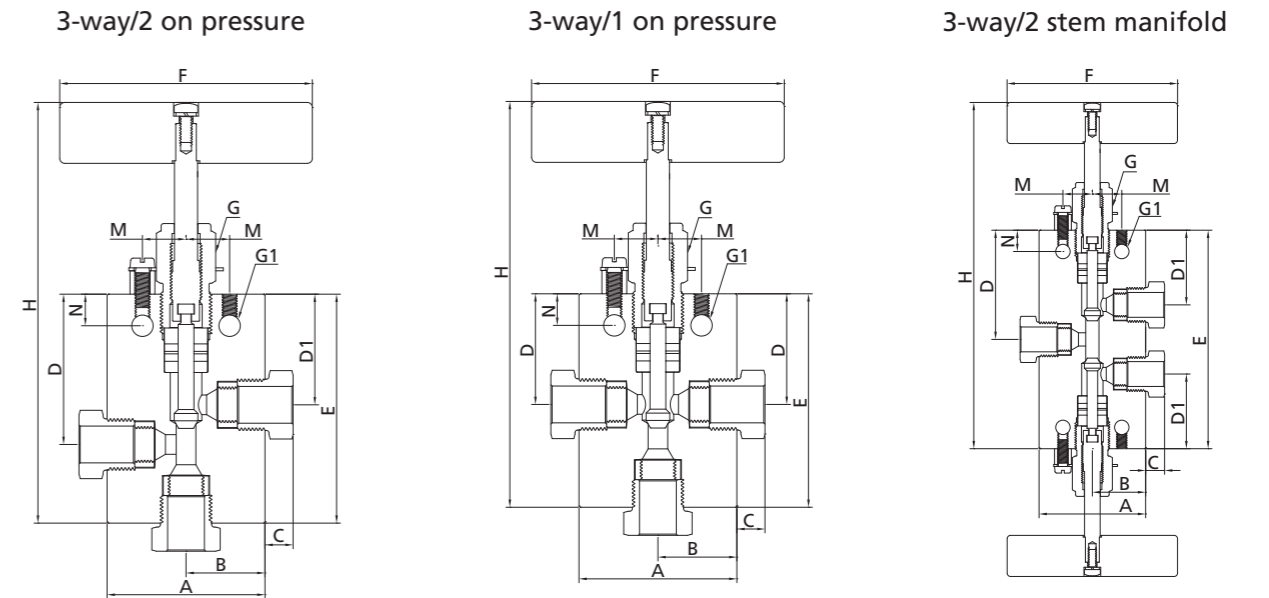


Dimensions (Straight)																
Ordering Number	Connection Type	Orifice in. (mm)	in. (mm)													Thickness
			A	B	C	D	D1	E	F	G	G1	H	M	N		
20NSS-2FH4-1	2FH4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.85 (123.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
20NSS-2FH6-1	2FH6	0.204 (5.18)	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)	0.75 (19.1)	0.22 (5.6)	4.89 (124.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
20NSS-2FH9-1	2FH9	0.312 (7.92)	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 (101.6)	1.00 (25.4)	0.34 (8.6)	6.18 (157.2)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	
20NSS-2FH12-1	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	3.75 (95.3)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.37 (187.2)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	
20NSS-2FH16-1	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	4.63 (117.6)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.45 (240.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	

Dimensions (Angle)																
Ordering Number	Connection Type	Orifice in. (mm)	in. (mm)													Thickness
			A	B	C	D	D1	E	F	G	G1	H	M	N		
20NSS-2FH4-2	2FH4	0.125 (3.18)	2.00 (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 (134.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
20NSS-2FH6-2	2FH6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)	/	2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
20NSS-2FH9-2	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	/	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (170.0)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	
20NSS-2FH12-2	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	/	4.25 (108.0)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.87 (199.9)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	
20NSS-2FH16-2	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	/	5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.94 (252.6)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	

Dimensions (Angle/replaceable seat)																
Ordering Number	Connection Type	Orifice in. (mm)	in. (mm)													Thickness
			A	B	C	D	D1	E	F	G	G1	H	M	N		
20NSS-2FH4-3	2FH4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	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 (154.9)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
20NSS-2FH6-3	2FH6	0.204 (5.18)	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)	0.75 (19.1)	0.22 (5.6)	6.16 (156.5)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
20NSS-2FH9-3	2FH9	0.312 (7.92)	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 (101.6)	1.00 (25.4)	0.34 (8.6)	7.58 (192.1)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	
20NSS-2FH12-3	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	3.44 (87.4)	4.25 (108.0)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	9.30 (236.3)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	
20NSS-2FH16-3	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	4.22 (107.4)	5.25 (133.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	11.86 (301.3)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	

Dimensions



Dimensions (3-way/2 on pressure)																
Ordering Number	Connection Type	Orifice in. (mm)	in. (mm)													Thickness
			A	B	C	D	D1	E	F	G	G1	H	M	N		
20NSS-2FH4-4	2FH4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.63 (41.3)	1.19 (30.2)	2.63 (66.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.47 (139.0)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
20NSS-2FH6-4	2FH6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.63 (41.3)	1.19 (30.2)	2.63 (66.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.52 (140.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
20NSS-2FH9-4	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.37 (60.3)	1.75 (44.5)	3.63 (92.1)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.94 (176.3)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	
20NSS-2FH12-4	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	4.63 (117.5)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	8.24 (209.4)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	
20NSS-2FH16-4	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	5.88 (149.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	10.70 (271.9)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	

Dimensions (3-way/1 on pressure)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
20NSS-2FH4-5	2FH4	0.125 (3.18)	2.00 (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 (134.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH6-5	2FH6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)		2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH9-5	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)		3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (170.0)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-2FH12-5	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)		4.25 (108.0)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.87 (199.9)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-2FH16-5	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)		5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.94 (252.6)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Dimensions (3-way/2 stem manifold)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
20NSS-2FH4-6	2FH4	0.125 (3.18)	2.00 (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 (158.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH6-6	2FH6	0.204 (5.18)	2.00 (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)	0.75 (19.1)	0.22 (5.6)	6.24 (158.6)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-2FH9-6	2FH9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.56 (65.1)	1.75 (44.5)	5.13 (130.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.44 (214.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-2FH12-6	2FH12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	6.50 (165.1)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	10.11 (257.0)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-2FH16-6	2FH16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	7.50 (190.5)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	12.32 (313.0)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Notes:

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. For dimensions not shown above, please contact the authorized representative or FITOK Group.

30N Series

30,000 psi (2068 bar)

Features

- Tubing sizes available for 1/4", 3/8", 9/16".
- Non-rotating stem and bar stock body design.
- Easy to assemble and replace packing.
- 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.
- PTFE is the standard packing material, RPTFE glass, Graphite and extended stuffing box with Graphite also available.
- Extended stuffing box with Graphite can be operated to 1200°F (649°C).
- The material of packing gland and upper stem have been selected to achieve reduced handle torque and extended thread cycle life.
- The material of valve body is 316 SS, the material of lower stem is 17-4PH SS.
- Options for Vee or Regulating stem tips.
- The location of packing is under the thread of valve stem.
- The locking device of packing gland is reliable.
- Five flow patterns are available.

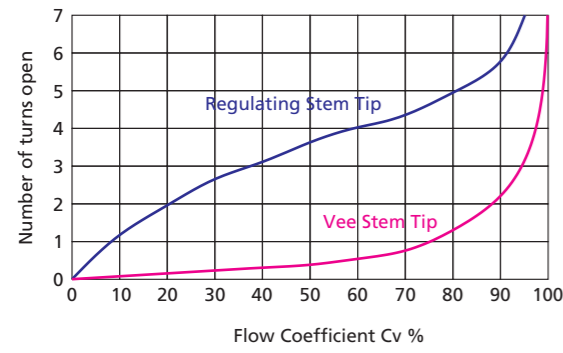
Technical Data

Tube OD in.	Connection Type	Orifice in. (mm)	Cv	Pressure @ Room Temperature psig (bar)	Operating Temperature
1/4	6FH4	0.094 (2.39)	0.12	30,000 (2068)	-325°F~1200°F (-198°C~649°C)
3/8	6FH6	0.125 (3.18)	0.23	30,000 (2068)	
9/16	6FH9	0.125 (3.18)	0.33	30,000 (2068)	

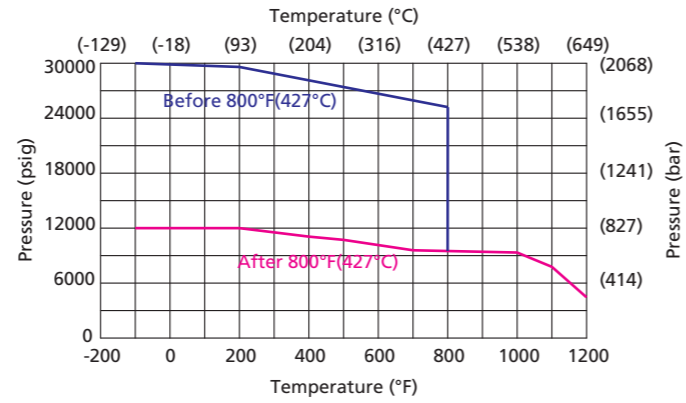
Notes:

- The values of Cv shown are for 2-way straight valve pattern.
The values of Cv for 2-way angle pattern will be increase about 50% (Base on water).
- Extreme Temperatures
PTFE is the standard packing material for FITOK 30N Series Needle valves; RPTFE glass, Graphite and extended stuffing box with Graphite also available.
Normal Needle Valve with PTFE packing can be operated from -100°F (-73°C) to 450°F (232°C).
Normal Needle Valve with RPTFE glass packing can be operated from -100°F (-73°C) to 600°F (316°C).
Normal Needle Valve with Graphite packing can be operated from 0°F (-17.8°C) to 800°F (427°C).
Extended stuffing box Valve with Graphite packing can be operated from 100°F (-73°C) to 1200°F (649°C).

Flow Data at 100°F (38°C)

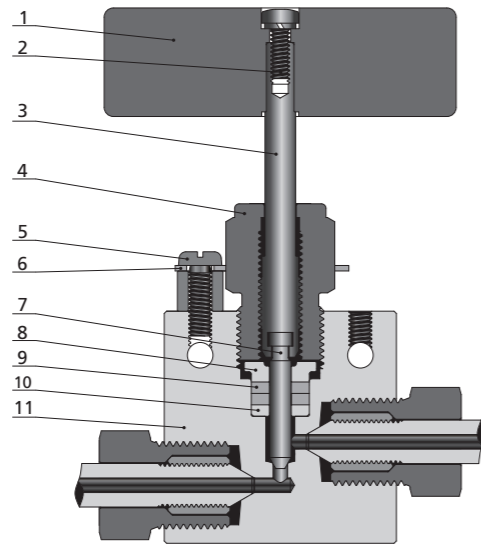


Pressure & Temperature



When exceeding 800°F (427°C), use the pink curve as its cold-worked rating for future operating of the components.

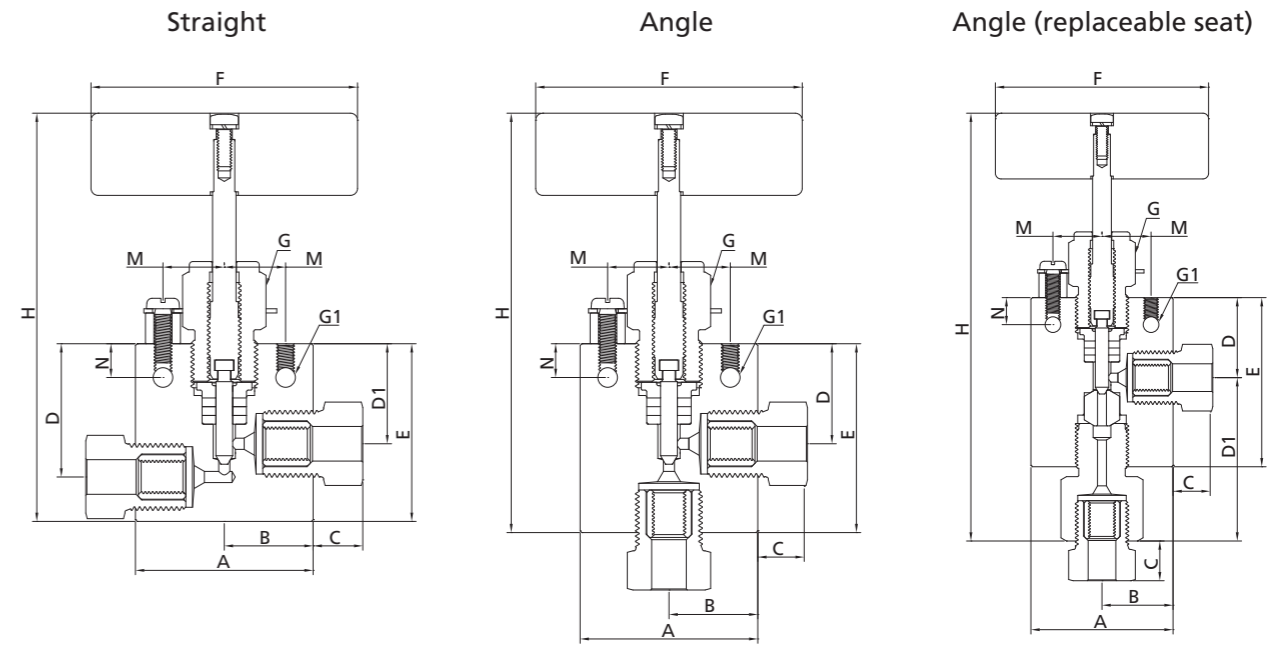
Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless steel
2	Handle Screw	Stainless steel
3	Upper Stem	316 SS/A479
4	Packing Gland	C63000/B150
5	Locking Screw	Stainless steel
6	Locking Plate	304 SS/A240
7	Lower Stem	17-4PH/A564
8	Packing Ring	C63000/B150
9	Packing	PTFE / RPTFE / Graphite / extended stuffing box with Graphite
10	Packing Washer	17-4PH/A564
11	Body	316 SS/A479

Lubricant Molybdenum disulfide

Dimensions

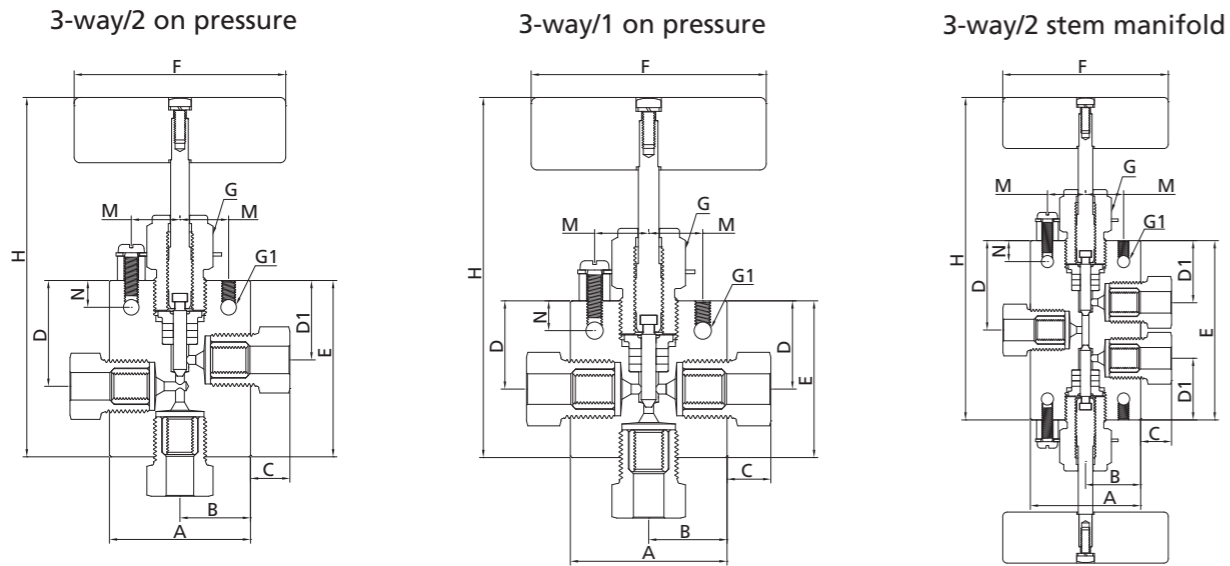


Dimensions (Straight)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
30NSS-6FH4-1	6FH4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.50 (38.1)	1.12 (28.5)	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-1	6FH6	0.125 (3.18)	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 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-1	6FH9	0.125 (3.18)	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 (130.3)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Dimensions (Angle)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
30NSS-6FH4-2	6FH4	0.094 (2.39)	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 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-2	6FH6	0.125 (3.18)	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)	4.95 (125.7)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-2	6FH9	0.125 (3.18)	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 (130.3)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Dimensions (Angle/replaceable seat)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
30NSS-6FH4-3	6FH4	0.094 (2.39)	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 (149.2)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-3	6FH6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)	2.31 (58.67)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.12 (155.4)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-3	6FH9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.6)	2.55 (65.0)	2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.39 (162.4)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Dimensions



Dimensions (3-way/2 on pressure)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
30NSS-6FH4-4	6FH4	0.094 (2.39)	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 (122.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-4	6FH6	0.125 (3.18)	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 (131.9)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-4	6FH9	0.125 (3.18)	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 (141.5)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Dimensions (3-way/1 on pressure)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
30NSS-6FH4-5	6FH4	0.094 (2.39)	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 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-5	6FH6	0.125 (3.18)	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)	4.95 (125.7)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-5	6FH9	0.125 (3.18)	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 (130.3)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Dimensions (3-way/2 stem manifold)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
30NSS-6FH4-6	6FH4	0.094 (2.39)	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)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH6-6	6FH6	0.125 (3.18)	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 (150.9)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-6FH9-6	6FH9	0.125 (3.18)	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 (163.6)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

- Notes:**
- G is the drill dimension of packing gland mounting hole.
 - G1 is the dimension of bracket mounting hole.
 - Panel mounting drill size: 0.25" all valves.
 - H is the dimension of stem in closed position.
 - All dimensions for reference only and subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.

60N Series 60,000 psi (4137 bar)

Features

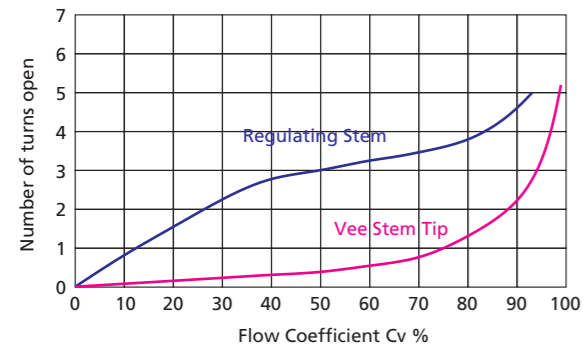
- ⦿ Tubing sizes available for 1/4", 3/8", 9/16".
- ⦿ Non-rotating stem and bar stock body design.
- ⦿ Easy to assemble and replace packing.
- ⦿ Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles.
- ⦿ Nylon is the standard packing material, RPTFE glass, Graphite and extended stuffing box with Graphite also available.
- ⦿ Extended stuffing box with Graphite can be operated to 1200°F (649°C).
- ⦿ The material of packing gland and upper stem have been selected to achieve reduced handle torque and extended thread cycle life.
- ⦿ The material of valve body is 316 SS, the material of lower stem is 17-4PH SS.
- ⦿ Options for Vee or Regulating stem tips.
- ⦿ The location of packing is under the thread of valve stem.
- ⦿ The locking device of packing gland is reliable.
- ⦿ Five flow patterns are available.

Technical Data

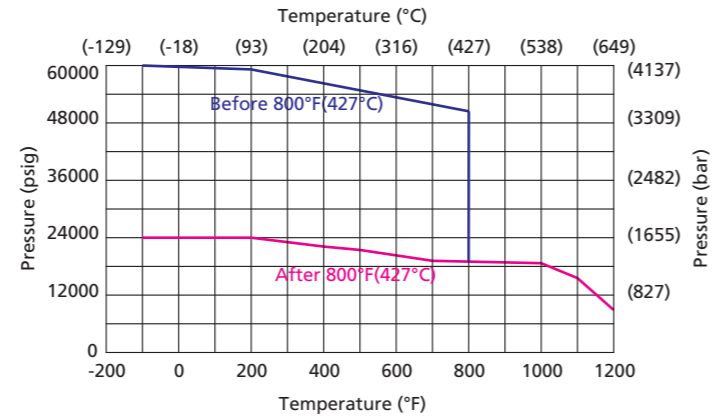
Tube OD in.	Connection Type	Orifice in. (mm)	Cv	Pressure @ Room Temperature psig (bar)	Operating Temperature
1/4	6FH4	0.063 (1.59)	0.08	60,000 (4137)	-325°F~1200°F (-198°C~649°C)
3/8	6FH6	0.063 (1.59)	0.09	60,000 (4137)	
9/16	6FH9	0.078 (1.98)	0.14	60,000 (4137)	

- Notes:**
- ⦿ The values of Cv shown are for 2-way straight valve pattern. The values of Cv for 2-way angle pattern will be increase about 50% (Base on water).
 - ⦿ Extreme Temperatures
Nylon is the standard packing material for FITOK 60N Series Needle Valves; RPTFE glass, Graphite and extended stuffing box with Graphite also available.
Normal Needle valve with Nylon packing can be operated from 40°F (4.4°C) to 230°F (110°C).
Normal Needle Valve with RPTFE glass packing can be operated from -100°F (-73°C) to 600°F (316°C).
Normal Needle Valve with Graphite packing can be operated from 0°F (-17.8°C) to 800°F (427°C).
Extended stuffing box with Graphite packing can be operated from 100°F (-73°C) to 1200°F (649°C).

Flow Data at 100°F (38°C)

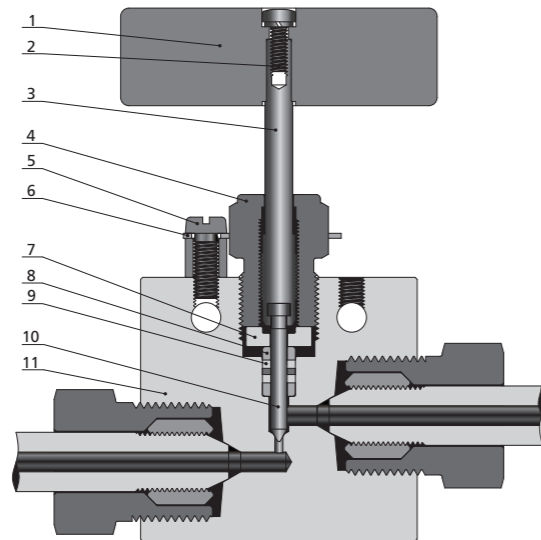


Pressure & Temperature



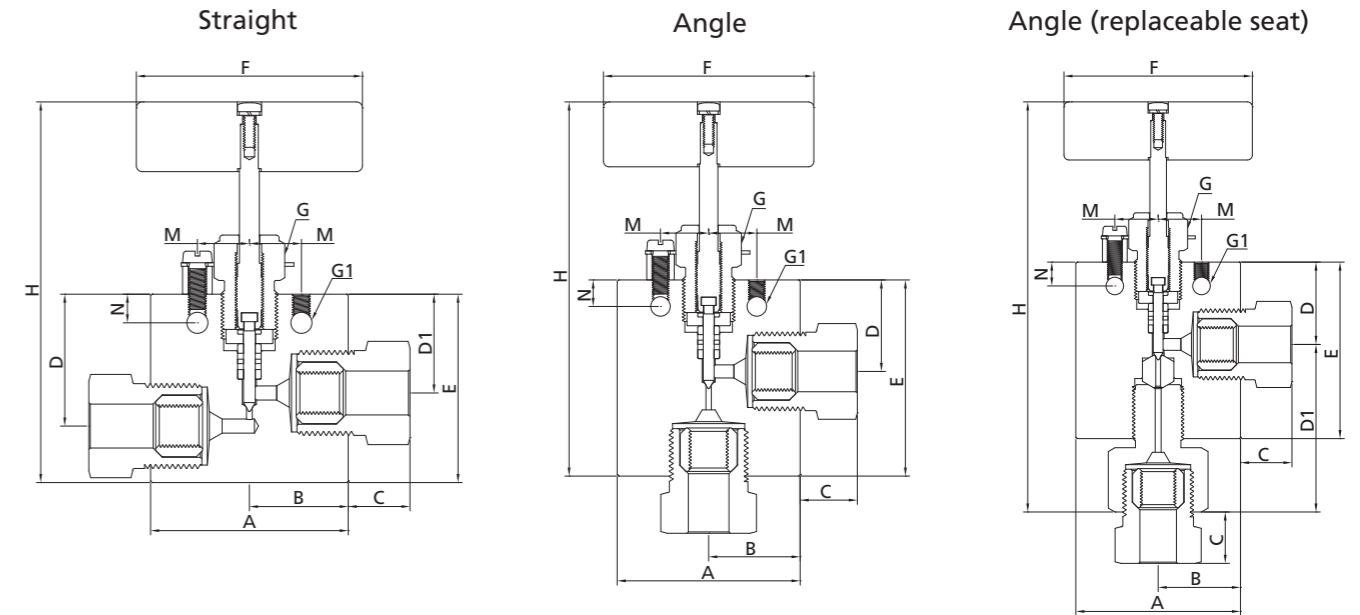
When exceeding 800°F (427°C), use the pink curve as its cold-worked rating for future operating of the components.

Standard Materials of Construction



Item	Component	Material Grade/ASTM Specification
1	Handle	Stainless steel
2	Handle Screw	Stainless steel
3	Upper Stem	316 SS/A479
4	Packing Gland	C63000/B150
5	Locking Screw	Stainless steel
6	Locking Plate	304 SS/A240
7	Packing Ring	C63000/B150
8	Packing	Nylon/RPTFE/Graphite/extended stuffing box with Graphite
9	Packing Washer	17-4PH/A564
10	Lower Stem	17-4PH/A564
11	Body	316 SS/A479
	Lubricant	Molybdenum disulfide

Dimensions

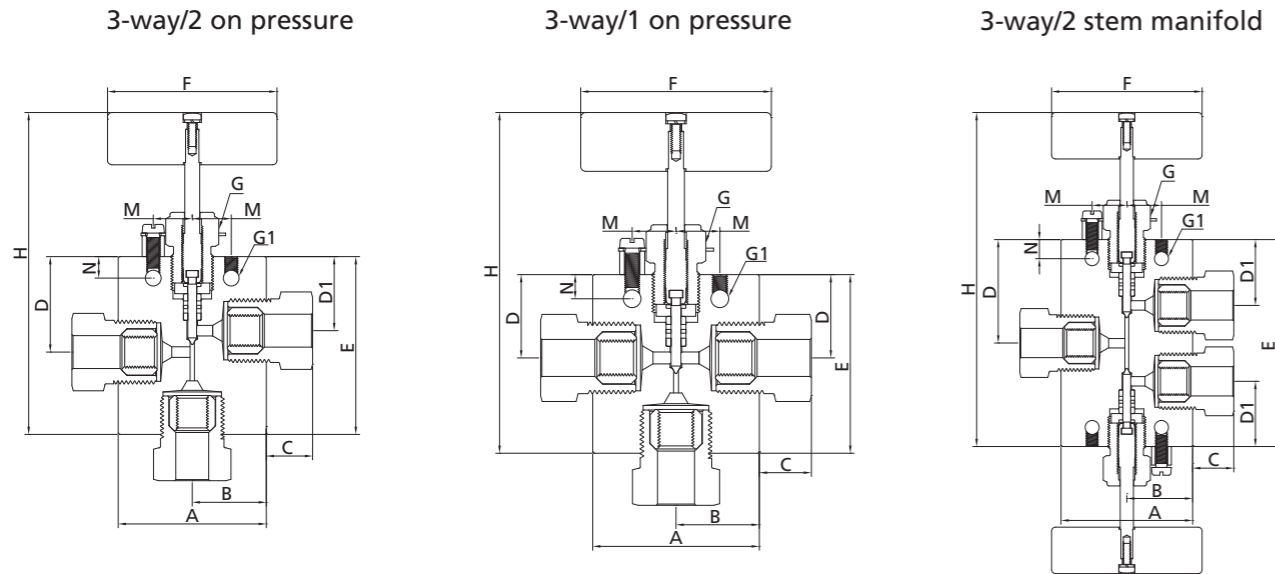


Dimensions (Straight)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
60NSS-6FH4-1	6FH4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.69 (42.9)	1.31 (33.3)	2.13 (54.0)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.77 (121.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-1	6FH6	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 (124.3)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-1	6FH9	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 (130.6)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Dimensions (Angle)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
60NSS-6FH4-2	6FH4	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 (127.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-2	6FH6	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 (133.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-2	6FH9	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 (138.5)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Dimensions (Angle/replaceable seat)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
60NSS-6FH4-3	6FH4	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 (154.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-3	6FH6	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 (160.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-3	6FH9	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 (168.9)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Dimensions



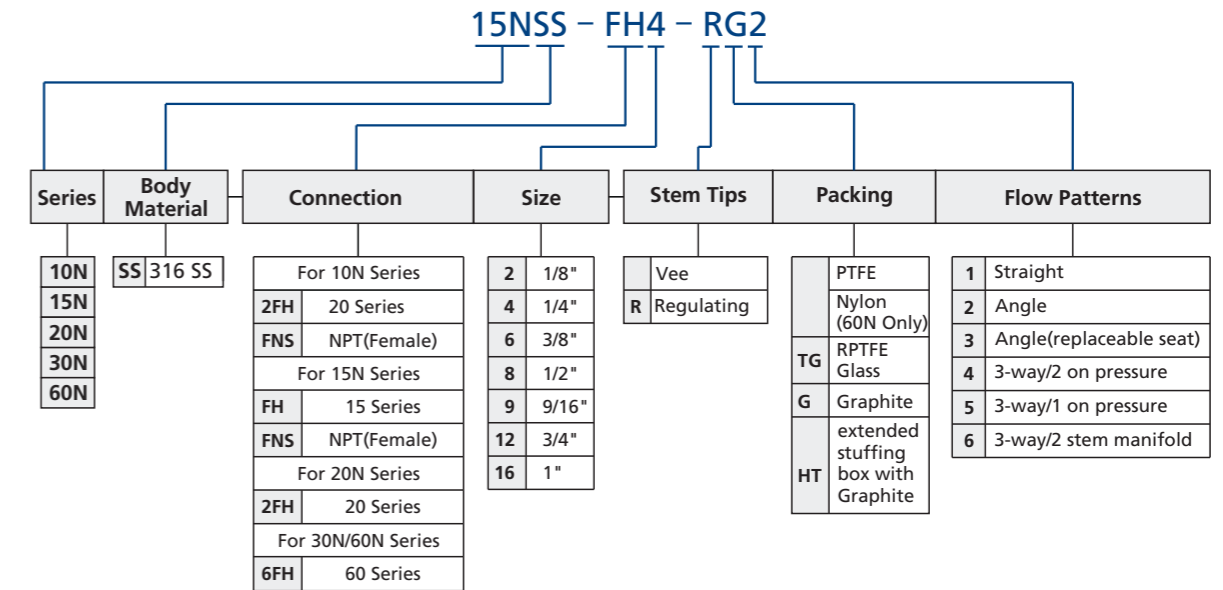
Dimensions (3-way/2 on pressure)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
60NSS-6FH4-4	6FH4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.69 (42.9)	1.31 (33.3)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (133.6)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-4	6FH6	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 (135.8)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-4	6FH9	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 (143.9)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Dimensions (3-way/1 on pressure)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
60NSS-6FH4-5	6FH4	0.094 (2.39)	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 (127.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-5	6FH6	0.125 (3.18)	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 (133.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-5	6FH9	0.125 (3.18)	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 (138.5)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Dimensions (3-way/2 stem manifold)															
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
60NSS-6FH4-6	6FH4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.72 (43.69)	1.31 (33.3)	3.44 (87.4)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.08 (154.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH6-6	6FH6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.88 (47.8)	1.31 (33.3)	3.75 (95.3)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.39 (162.3)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-6FH9-6	6FH9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	2.06 (52.3)	1.31 (33.3)	4.12 (104.7)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.76 (171.8)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

- Notes:**
- G is the drill dimension of packing gland mounting hole.
 - G1 is the dimension of bracket mounting hole.
 - Panel mounting drill size: 0.25" all valves.
 - H is the dimension of stem in closed position.
 - All dimensions for reference only and subject to change. For dimensions not shown above, please contact the authorized representative or FITOK Group.

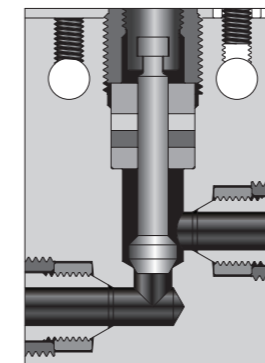
Part Number Description



Note: "Part Number Description" is used for composition rules of FITOK product model, not suitable for specific product part number selection, not random combinations. If in doubt, please contact FITOK Group or authorized agent.

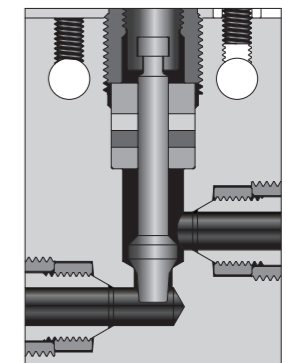
Stem Types

Two types of stems are offered by FITOK Engineers: Vee and Regulating. Both Vee and Regulating stems are interchangeable on most valves and provide bubble-tight shut-off against liquids and gases.



VEE Stem

The Vee stem is used for direct on-off, metal-to-metal shut-off with quick-opening flow characteristics.



Regulating Stem

In some applications, more precise flow control is required than is possible with a Vee stem. For these cases, FITOK offers a non-rotating, two-piece regulating stem which can be used for both control and shut-off.