

# Needle Valves

## 15NV Series

### Features

- ❖ Tubing sizes available for 1/8", 1/4", 3/8", 1/2"
- ❖ Non-rotating stem and rising stem design
- ❖ Metal-to-metal seating achieves bubble-tight shutoff, longer stem/seat service life in abrasive flow, greater durability for repeated on/off cycles
- ❖ PTFE is the standard packing material, RPTFE glass, Graphite are available
- ❖ Graphite packing working temperature up to 800°F (427°C)
- ❖ Stem sleeve and packing gland materials have been selected to achieve extended thread cycle life and reduced handle torque
- ❖ Cold-worked type 316 stainless steel body and aluminum bronze packing gland
- ❖ Vee or Regulating stem tips for options
- ❖ Packing below the thread of valve stem
- ❖ The locking device of packing gland is reliable
- ❖ Five body patterns are available



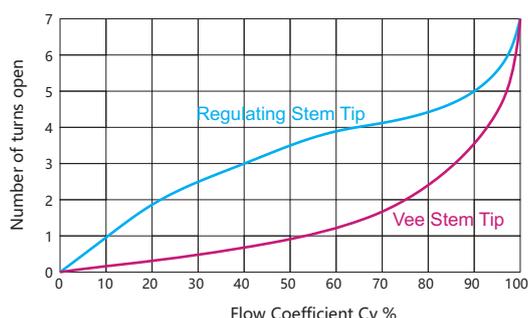
### Technical Data

Connection Size	Connection Type	Orifice in. (mm)	Cv	Working Pressure psig (bar)
1/8" OD.	LPF2	0.094 (2.39)	0.12	15,000 (1034)
1/4" OD.	LPF4	0.188 (4.77)	0.65	15,000 (1034)
3/8" OD.	LPF6	0.250 (6.35)	0.95	15,000 (1034)
1/2" OD.	LPF8	0.375 (9.53)	1.90	15,000 (1034)
1/8	NPT/BSPT	0.078 (1.98)	0.11	15,000 (1034)
1/4	NPT/BSPT	0.203 (5.16)	0.63	15,000 (1034)
3/8	NPT/BSPT	0.219 (5.56)	0.75	15,000 (1034)
1/2	NPT/BSPT	0.312 (7.92)	1.30	15,000 (1034)

#### Notes:

- ❖ Cv value shown are for 2-way straight valve pattern.  
Cv value of for 2-way angle pattern will be increase about 50% (Base on water).
- ❖ Working temperature  
PTFE packing : -100°F (-73°C) to 450°F (232°C).  
RPTFE glass packing : -100°F (-73°C) to 600°F (316°C).  
Graphite packing : -100°F (-73°C) to 800°F (427°C).

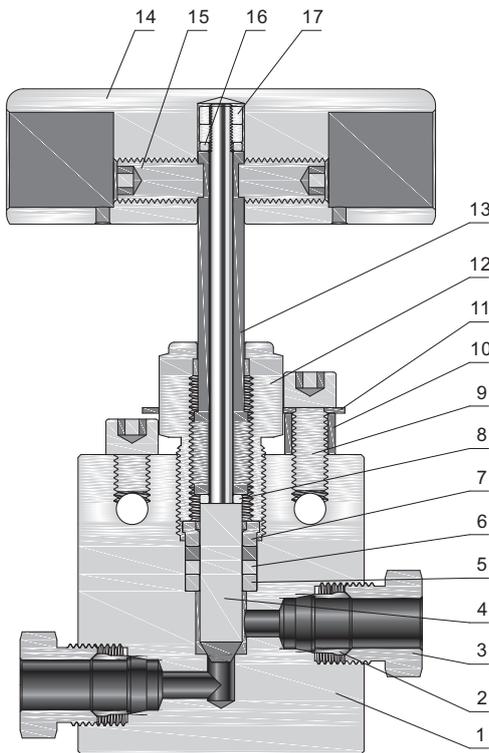
### Flow Data at 100°F (38°C)



## Pressure vs. Temperature

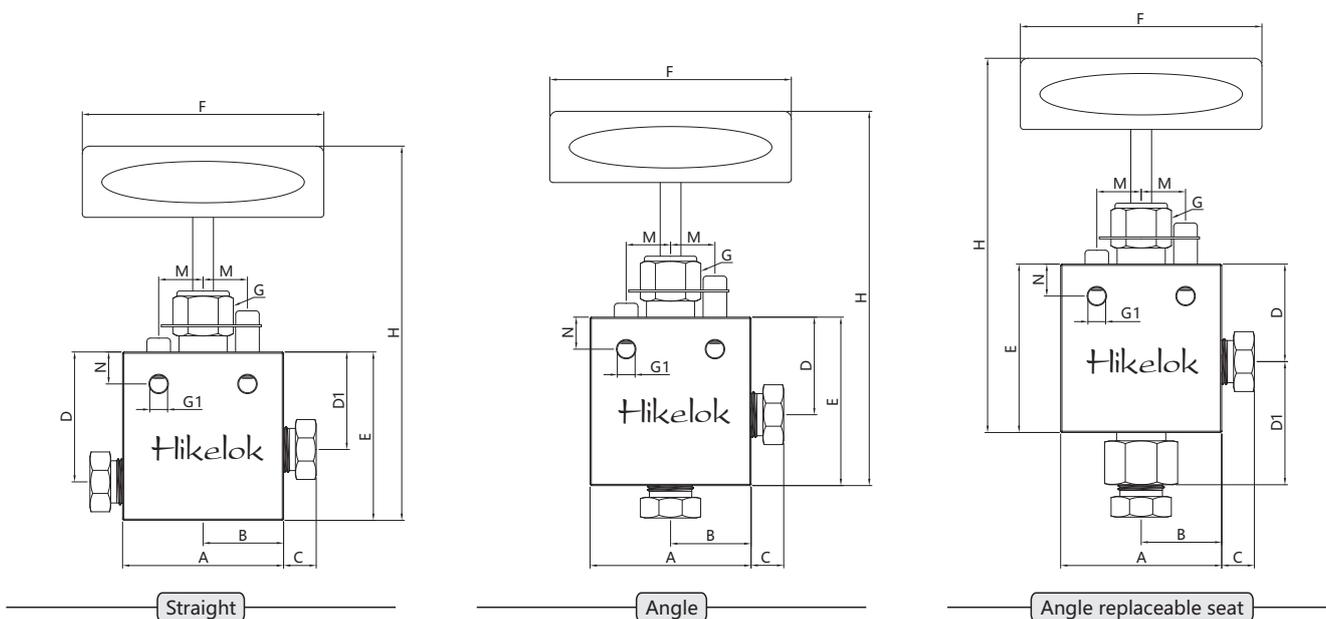
Temperature, °F (°C)	Working Pressure, psig(bar)
-100 (-73)	15000 (1034)
0 (-18)	15000 (1034)
100 (37)	15000 (1034)
200 (93)	15000 (1034)
300 (148)	14600 (1006)
400 (204)	14000 (965)
500 (260)	13500 (931)
600 (316)	13000 (896)
700 (371)	12500 (862)
800 (427)	12000 (827)

## Standard Materials of Construction



Item	Component	Material Grade / ASTM Specification
1	Body	316 S.S. / A479
2	Ferrule	316 S.S. / A479
3	Nut	316 S.S. / A479
4	Stem	630 S.S. / A564
5	Gland	316 S.S. / A479
6	Packing	PTFE / RPTFE / GRAPHITE
7	Packing ring	316 S.S. / A479
8	Gland	316 S.S. / A479
9	Screw	304 S.S.
10	Ring	316 S.S. / A276
11	Lock plate	304 S.S. / A240
12	Bonnet	C63000 / B150
13	Stem guard	316 S.S. / A479
14	Handle	303 S.S.
15	Screw	304 S.S.
16	Gland	C63000 / B150
17	Nut	304 S.S.

## Dimensions



### Dimensions (Straight)

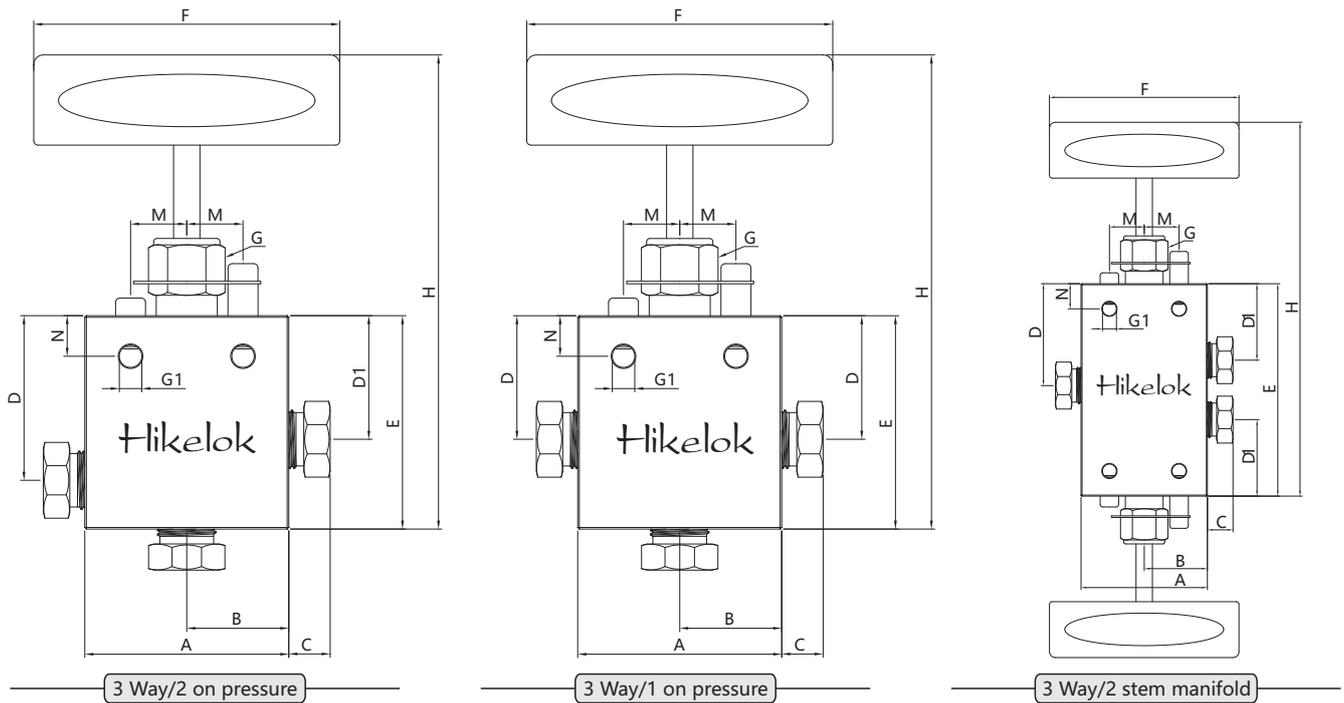
Ordering Number	Connection Type	Orifice in. (mm)	in. (mm)													Thickness
			A	B	C	D	D1	E	F	G	G1	H	M	N		
15NV-LPF2-	LPF2	0.094 (2.39)	1.50 (38.1)	0.75 (19.1)	0.31 (7.90)	1.06 (26.9)	0.81 (206)	1.38 (35.1)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.75 (95.3)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)	
15NV-LPF4-	LPF4	0.188 (4.77)	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)	4.50 (114.3)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
15NV-LPF6-	LPF6	0.250 (6.35)	2.00 (50.8)	1.00 (25.4)	0.53 (13.5)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.50 (114.3)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
15NV-LPF8-	LPF8	0.375 (9.53)	2.50 (63.5)	1.25 (31.8)	0.53 (13.5)	2.38 (60.5)	1.75 (44.5)	2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	5.95 (151.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	

### Dimensions (Angle)

Ordering Number	Connection Type	Orifice in. (mm)	in. (mm)													Thickness
			A	B	C	D	D1	E	F	G	G1	H	M	N		
15NV-LPF2-A-	LPF2	0.094 (2.39)	1.50 (38.1)	0.75 (19.1)	0.31 (7.9)	0.81 (20.6)	—	1.56 (39.6)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.94 (100.1)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)	
15NV-LPF4-A-	LPF4	0.188 (4.77)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)	—	2.43 (61.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.00 (127.0)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
15NV-LPF6-A-	LPF6	0.250 (6.35)	2.00 (50.8)	1.00 (25.4)	0.53 (13.5)	1.19 (30.2)	—	2.43 (61.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.00 (127.0)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
15NV-LPF8-A-	LPF8	0.375 (9.53)	2.50 (63.5)	1.25 (31.8)	0.53 (13.5)	1.75 (44.5)	—	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.45 (163.8)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	

### 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		
15NV-LPF2-AR-	LPF2	0.094 (2.39)	1.50 (38.1)	0.75 (19.1)	0.31 (7.9)	0.81 (20.6)	1.28 (32.5)	1.56 (39.6)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	4.50 (114.3)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)	
15NV-LPF4-AR-	LPF4	0.188 (4.77)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)	1.88 (47.8)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.75 (146.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
15NV-LPF6-AR-	LPF6	0.250 (6.35)	2.00 (50.8)	1.00 (25.4)	0.53 (13.5)	1.19 (30.2)	2.19 (55.6)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.75 (146.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
15NV-LPF8-AR-	LPF8	0.375 (9.53)	2.50 (63.5)	1.25 (31.8)	0.53 (13.5)	1.75 (44.5)	2.50 (63.5)	3.25 (82.6)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	7.51 (190.8)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	



**Dimensions (3-way/2 on pressure)**

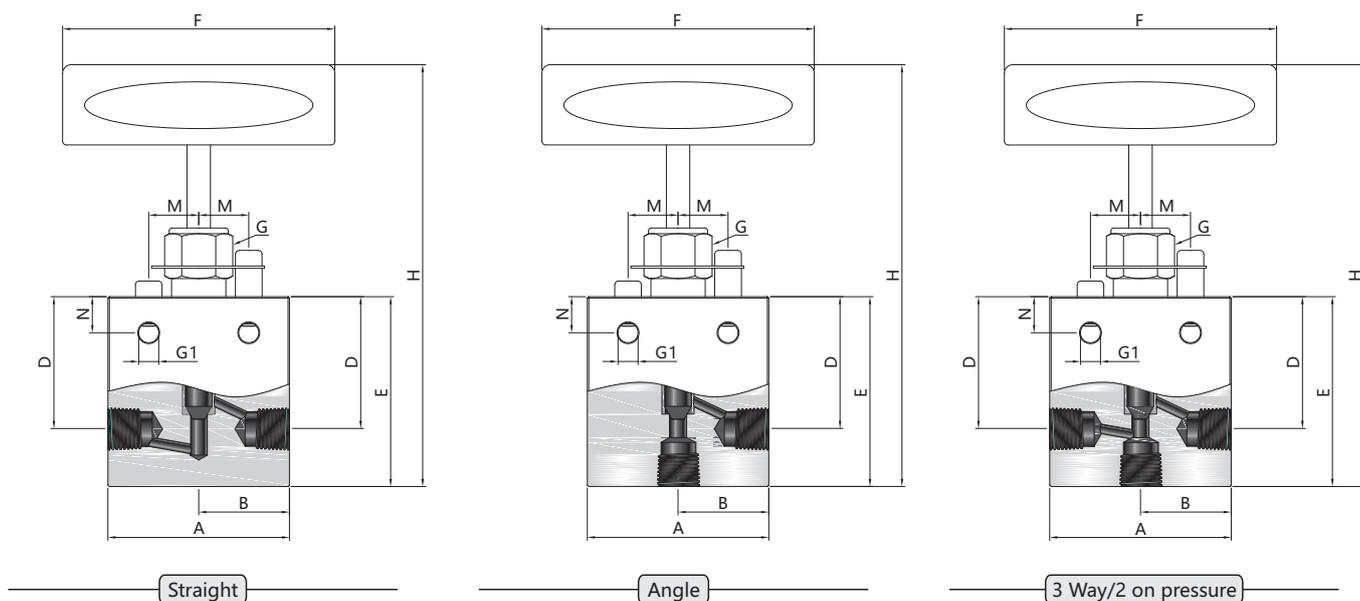
Ordering Number	Connection Type	Orifice in. (mm)	A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
			in. (mm)												
15NV-LPF2-3A-	LPF2	0.094 (2.39)	1.50 (38.1)	0.75 (19.1)	0.31 (7.9)	1.06 (26.9)	0.81 (20.6)	1.69 (42.9)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	4.06 (103.1)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)
15NV-LPF4-3A-	LPF4	0.188 (4.77)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.62 (41.2)	1.19 (30.2)	2.62 (66.6)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.18 (131.6)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NV-LPF6-3A-	LPF6	0.250 (6.35)	2.00 (50.8)	1.00 (25.4)	0.53 (13.5)	1.62 (41.2)	1.19 (30.2)	2.62 (66.6)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.18 (131.6)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NV-LPF8-3A-	LPF8	0.375 (9.53)	2.50 (63.5)	1.25 (31.8)	0.53 (13.5)	2.38 (60.5)	1.75 (44.5)	3.62 (92.0)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.70 (170.2)	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)												
15NV-LPF2-3B-	LPF2	0.094 (2.39)	1.50 (38.1)	0.75 (19.1)	0.31 (7.9)	0.81 (20.6)	—	1.56 (39.6)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.94 (100.1)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)
15NV-LPF4-3B-	LPF4	0.188 (4.77)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)	—	2.43 (61.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.00 (127.0)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NV-LPF6-3B-	LPF6	0.250 (6.35)	2.00 (50.8)	1.00 (25.4)	0.53 (13.5)	1.19 (30.2)	—	2.43 (61.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.00 (127.0)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NV-LPF8-3B-	LPF8	0.375 (9.53)	2.50 (63.5)	1.25 (31.8)	0.53 (13.5)	1.75 (44.5)	—	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.45 (163.8)	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)												
15NV-LPF2-3C-	LPF2	0.094 (2.39)	1.50 (38.1)	0.75 (19.1)	0.31 (7.9)	1.12 (28.5)	0.81 (20.6)	2.25 (57.2)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	4.63 (117.6)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)
15NV-LPF4-3C-	LPF4	0.188 (4.77)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.69 (42.9)	1.19 (30.2)	3.38 (85.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.94 (150.9)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NV-LPF6-3C-	LPF6	0.250 (6.35)	2.00 (50.8)	1.00 (25.4)	0.53 (13.5)	1.69 (42.9)	1.19 (30.2)	3.38 (85.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.94 (150.9)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NV-LPF8-3C-	LPF8	0.375 (9.53)	2.50 (63.5)	1.25 (31.8)	0.53 (13.5)	2.56 (65.0)	1.75 (44.5)	5.12 (130.1)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.20 (208.3)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)



**Dimensions (Straight)**

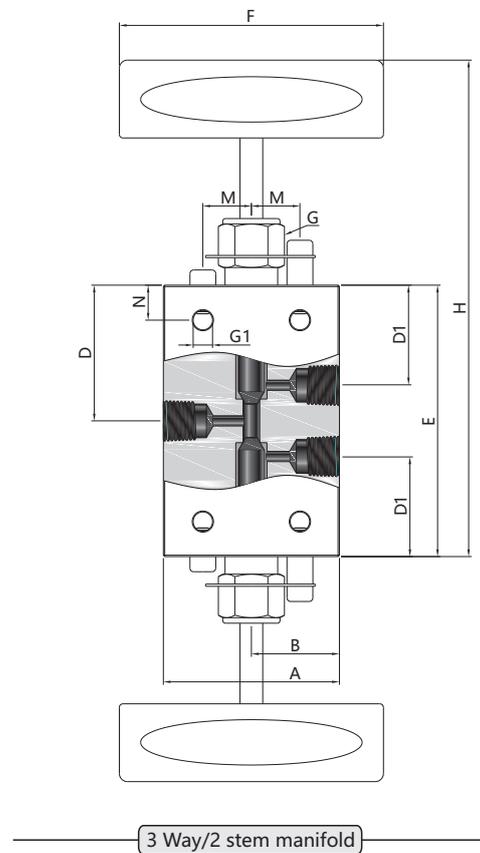
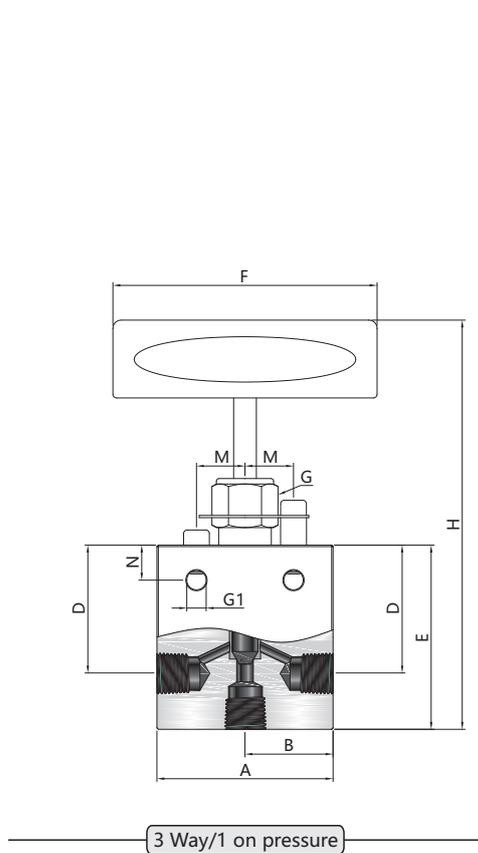
Ordering Number	Connection Type	Orifice in. (mm)	in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NV-FNPT2-	FNPT2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)	—	0.82 (20.6)	—	1.25 (31.8)	1.75 (44.5)	0.56 (14.2)	0.17 (4.3)	2.53 (64.3)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
15NV-FBT2-	FBT2														
15NV-FNPT4-	FNPT4	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)	4.63 (117.6)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NV-FBT4-	FBT4														
15NV-FNPT6-	FNPT6	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)	4.63 (117.6)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NV-FBT6-	FBT6														
15NV-FNPT8-	FNPT8	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)	5.93 (150.6)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NV-FBT8-	FBT8														

**Dimensions (Angle)**

Ordering Number	Connection Type	Orifice in. (mm)	in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NV-FNPT2-A-	FNPT2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)	—	0.56 (14.2)	—	1.38 (34.9)	1.75 (44.5)	0.56 (14.2)	0.17 (4.3)	2.66 (67.6)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
15NV-FBT2-A-	FBT2														
15NV-FNPT4-A-	FNPT4	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)	4.81 (122.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NV-FBT4-A-	FBT4														
15NV-FNPT6-A-	FNPT6	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)	4.81 (122.2)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NV-FBT6-A-	FBT6														
15NV-FNPT8-A-	FNPT8	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)	6.43 (163.3)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NV-FBT8-A-	FBT8														

**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)												
15NV-FNPT2-3A-	FNPT2	0.078 (1.98)	1.50	0.75	—	0.82	—	1.57	1.75	0.56	0.17	2.86	0.56	0.31	0.63
15NV-FBT2-3A-	FBT2		(38.1)	(19.1)	(20.6)	(40.0)	(44.5)	(14.2)	(4.3)	(72.6)	(14.2)	(7.9)	(15.9)		
15NV-FNPT4-3A-	FNPT4	0.203 (5.2)	2.00	1.00	—	1.41	—	2.62	3.00	0.75	0.22	5.00	0.62	0.38	0.75
15NV-FBT4-3A-	FBT4		(50.8)	(25.4)	(35.8)	(66.6)	(76.2)	(19.1)	(5.6)	(127.0)	(15.8)	(9.7)	(19.1)		
15NV-FNPT6-3A-	FNPT6	0.219 (5.56)	2.50	1.25	—	1.41	—	2.62	3.00	0.75	0.22	5.00	0.62	0.38	1.00
15NV-FBT6-3A-	FBT6		(63.5)	(31.8)	(35.8)	(66.6)	(76.2)	(19.1)	(5.6)	(127.0)	(15.8)	(9.7)	(25.4)		
15NV-FNPT8-3A-	FNPT8	0.312 (7.92)	3.00	1.50	—	2.06	—	3.62	4.00	1.00	0.34	6.52	0.69	0.50	1.38
15NV-FBT8-3A-	FBT8		(76.2)	(38.1)	(52.3)	(92.0)	(101.6)	(25.4)	(8.6)	(165.6)	(17.5)	(12.7)	(35.1)		



**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)												
15NV-FNPT2-3B-	FNPT2	0.078 (1.98)	1.50	0.75	—	0.82	—	1.38	1.75	0.56	0.17	2.86	0.56	0.31	0.63
15NV-FBT2-3B-	FBT2		(38.1)	(19.1)	(20.6)	(35.0)	(44.5)	(14.2)	(4.3)	(72.6)	(14.2)	(7.9)	(15.9)		
15NV-FNPT4-3B-	FNPT4	0.203 (5.2)	2.00	1.00	—	1.41	—	2.44	3.00	0.75	0.22	4.81	0.62	0.38	0.75
15NV-FBT4-3B-	FBT4		(50.8)	(25.4)	(35.8)	(62.0)	(76.2)	(19.1)	(5.6)	(122.2)	(15.8)	(9.7)	(19.1)		
15NV-FNPT6-3B-	FNPT6	0.219 (5.56)	2.50	1.25	—	1.41	—	2.44	3.00	0.75	0.22	4.81	0.62	0.38	1.00
15NV-FBT6-3B-	FBT6		(63.5)	(31.8)	(35.8)	(62.0)	(76.2)	(19.1)	(5.6)	(122.2)	(15.8)	(9.7)	(25.4)		
15NV-FNPT8-3B-	FNPT8	0.312 (7.92)	3.00	1.50	—	2.06	—	3.38	4.00	1.00	0.34	6.31	0.69	0.50	1.38
15NV-FBT8-3B-	FBT8		(76.2)	(38.1)	(52.3)	(85.9)	(101.6)	(25.4)	(8.6)	(160.3)	(17.5)	(12.7)	(35.1)		

### 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)												
15NV-FNPT2-3C-	FNPT2	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)	0.56 (14.2)	0.17 (4.3)	3.30 (83.8)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)
15NV-FBT2-3C-	FBT2														
15NV-FNPT4-3C-	FNPT4	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)	5.75 (146.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
15NV-FBT4-3C-	FBT4														
15NV-FNPT6-3C-	FNPT6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)	—	1.69 (65.1)	1.19 (30.2)	3.38 (85.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.75 (146.1)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NV-FBT6-3C-	FBT6														
15NV-FNPT8-3C-	FNPT8	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)	8.05 (204.5)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NV-FBT8-3C-	FBT8														

**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. The dimension of stem in closed position.

### How to Order

**15NV— LPF4 — R — RG — A — 316**

Series	Connector Sizes	Stem Tips	Packing	Flow Patterns	Body Material
15NV	LPF2 1/8"	Vee	PTFE	Straight	316 316 S.S. A825 Alloy 825
	LPF4 1/4"				
	LPF6 3/8"	G Graphite	AR Angle, replaceable seat		
	LPF8 1/2"			3A 3-way, 2 on pressure	
	FNPT2 1/8" Female NPT	3B 3-way, 1 on pressure			
	FNPT4 1/4" Female NPT		3C 3-way, 2 stem manifold		
	FNPT6 3/8" Female NPT				
	FNPT8 1/2" Female NPT				
	FBT2 1/8" Female BSPT				
	FBT4 1/4" Female BSPT				
	FBT6 3/8" Female BSPT				
FBT8 1/2" Female BSPT					