

FITTING SUPPLY COMPANY LIMITED

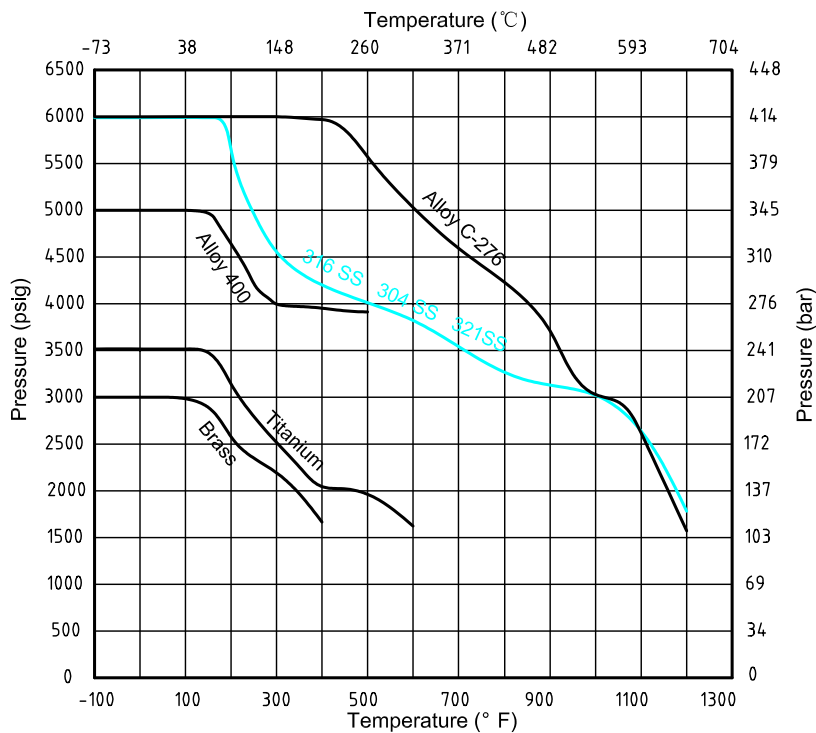
Bar Stock Needle Valves

Features

- Working Pressure:
Stainless steel: up to 6000 psig (414 bar).
Brass: up to 3000 psig (207 bar).
- Working Temperature:
PTFE: -65° F to 450° F (-54° C to 232° C).
Graphite: -65° F to 1200° F (-54° C to 649° C).
- Optional panel mounting is available.

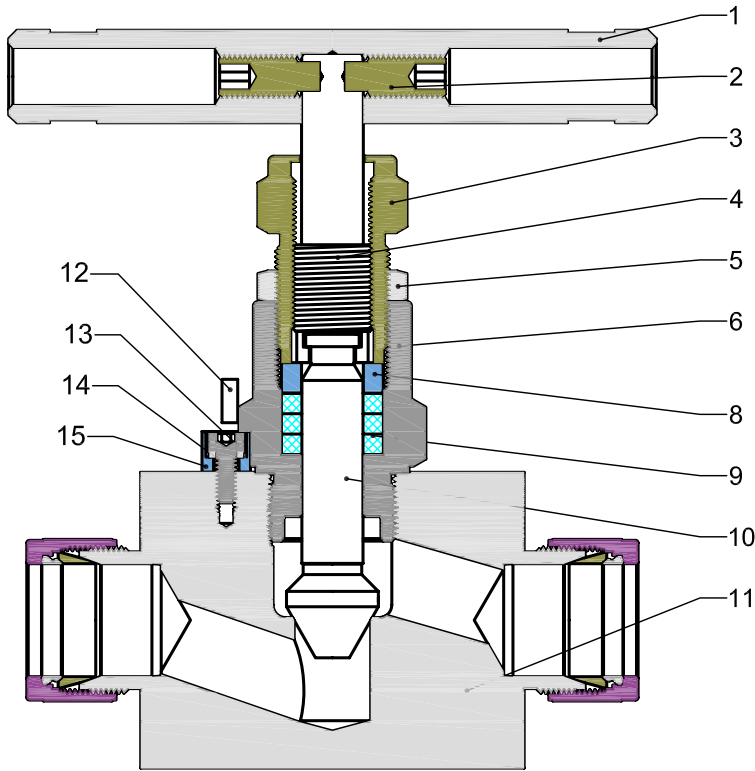
Pressure vs. Temperature

Graphs are based on graphite stem packing

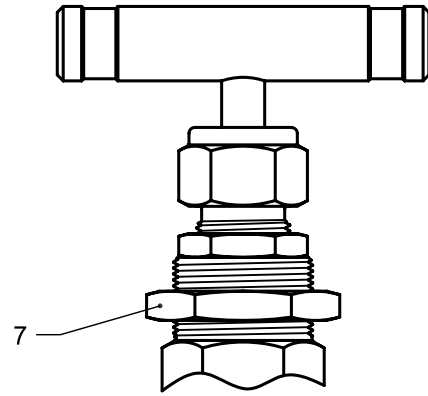


- Note: a. 450° F (232° C) max with PTFE stem packing.
b. 600° F (315° C) max with PEEK stem packing.
c. 500° F (260° C) max with alloy 400.
d. Consult the company for the curves of other materials

Materials of Construction



Panel Mounting

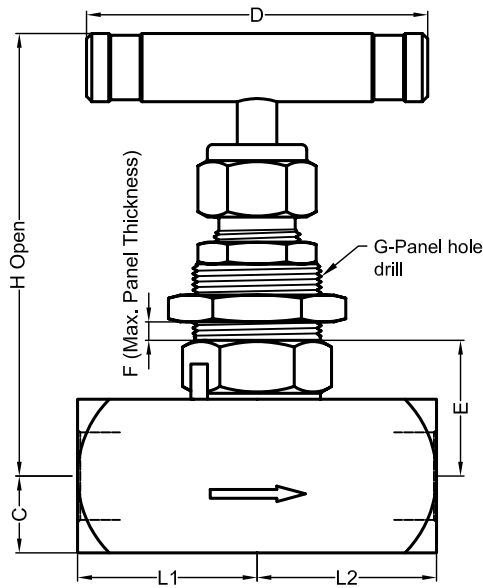


Item	Part	Valve Body Materials				
		316 SS	Alloy 400	Titanium	Alloy C-276	Brass
1	Handle	Anodized aluminum / Stainless steel / Black knob				
2	Set screw	Nickel cadmium-plated steel				
3	Gland	321 SS/A276				Brass 360/B16
4	Stem	316 SS/A276				
5	Lock nut	316 SS/B783				Brass 360/B16
6	Bonnet	316 SS/A479	Alloy R-405/B164	Titanium Gr 4/B348	Alloy C-276/B574	Brass 360/B16
7	Bulkhead nut	316 SS/B783				Brass 360/B16
8	Packing washer	316SS/A276				
9	Packing	PTFE or PEEK or Graphite				
10	Lower stem	Chrome-plated 316 SS/A276	Alloy R-405/B164	Titanium Gr 4/B348	Alloy C-276/B574	Chrome-plated 316 SS/A276
		Optional				
11	Body	316 SS/A479 316 SS/A182	Alloy 400/B164, B127,B564	Titanium Gr 4/B348 or Titanium Gr 4/B381	Alloy C-276/B564	Brass 360/B16
	Seat	Weld stellite optional				
12	Lock pin	304 SS/A276				
13	Screw	304 SS/A276				
14	Spring washer	304 SS/A276				
15	Bush	304 SS/A276				

Remarks:

Non-wetted parts include Items 1, 2, 3, 4, 5, 7, 11, 12, 13, 14 and 15, which means these parts are never in contact with the process media.

Straight pattern



Angle pattern

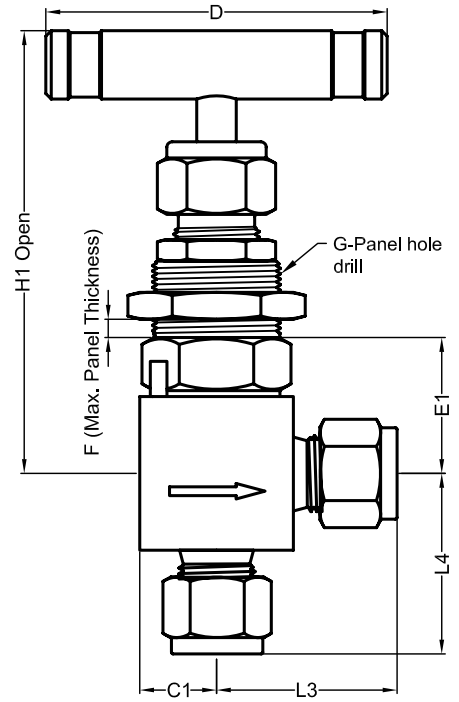


Table of Dimensions

Basic Ordering Number	Connection Size		Orifice in. (mm)	Cv	L1	L2	L3	L4	C	C1	D	E	E1	F	G	H	H1
	Inlet Size	Outlet Size			in. (mm)												
NBFN4-4-□□	1/8" Female NPT	1/8" Female NPT	0.157 (4.0)	0.35	1.00 (25.4)	1.00 (25.4)	1.00 (25.4)	0.563 (14.3)	0.5 (12.7)	0.5 (12.7)	2.17 (55)	0.84 (21.4)	0.9 (23.0)	0.25 (6.4)	0.77 (19.6)	2.85 (72.4)	2.91 (74.0)
NBFN4-4-□□	1/4" Female NPT	1/4" Female NPT			1.06 (26.9)	1.06 (26.9)	1.06 (26.9)	1.06 (26.9)									
NBNS4-4-□□	1/4" Male NPT	1/4" Male NPT			1.03 (26.2)	1.03 (26.2)	1.06 (26.9)	1.06 (26.9)									
NBNS6-4-□□	3/8" Male NPT	3/8" Male NPT			1.19 (30.2)	1.19 (30.2)	1.06 (26.9)	1.06 (26.9)									
NBOD4-4-□□	1/4" OD	1/4" OD															
NB6MM-4-□□	6 mm OD	6 mm OD			1.20 (30.5)	1.20 (30.5)	1.20 (30.5)	1.20 (30.5)									
NB8MM-4-□□	8 mm OD	8 mm OD															
NBFN4-6-□□	1/4" Female NPT	1/4" Female NPT			0.236 (6.0)	0.85	1.12 (28.6)	1.12 (28.6)									
NBFN6-6-□□	3/8" Female NPT	3/8" Female NPT	1.12 (28.6)	1.12 (28.6)			1.12 (28.6)	1.12 (28.6)									
NBNS6-6-□□	3/8" Male NPT	3/8" Male NPT	1.41 (35.8)	1.41 (35.8)			1.32 (33.6)	1.32 (33.6)									
NBOD6-6-□□	3/8" OD	3/8" OD	1.52 (38.6)	1.52 (38.6)			1.42 (36.1)	1.42 (36.1)									
NBOD8-6-□□	1/2" OD	1/2" OD	1.42 (36.1)	1.42 (36.1)			1.33 (33.8)	1.33 (33.8)									
NB10MM-6-□□	10 mm OD	10 mm OD	1.52 (38.6)	1.52 (38.6)			1.42 (36.1)	1.42 (36.1)									
NB12MM-6-□□	12 mm OD	12 mm OD	1.56 (39.7)	1.56 (39.7)			1.42 (36.1)	1.42 (36.1)									
NB14MM-6-□□	14 mm OD	14 mm OD															
NBTSW6-6-□□	3/8" Tube SW	3/8" Tube SW															
NBTSW8-6-□□	1/2" Tube Sw	1/2" Tube SW	1.13 (28.6)	1.13 (28.6)			1.13 (28.6)	1.13 (28.6)									
NBMTS12-6-□□	12 mm Metric Tube SW	12 mm Metric Tube SW															
NBMTS14-6-□□	14 mm Metric Tube SW	14 mm Metric Tube SW															
NBMTS16-6-□□	16 mm Metric Tube SW	16 mm Metric Tube SW															
NBMTB14-6-□□	14 mm Metric Tube BW	14 mm Metric Tube BW	1.50 (38.1)	1.50 (38.1)			1.50 (38.1)	1.50 (38.1)									
NBMTB16-6-□□	16 mm Metric Tube BW	16 mm Metric Tube BW															
NBUMW14-6-□□	14 mm Union Metric BW	14 mm Union Metric BW	2.92 (74.1)	2.92 (74.1)													
NBUMW16-6-□□	16 mm Union Metric BW	16 mm Union Metric BW															
NBMS20-6-□□	M20 x1.5 Male ISO	M20 x1.5 Male ISO	1.50 (38.1)	1.50 (38.1)													
NBMS22-6-□□	M22 x1.5 Male ISO	M22 x1.5 Male ISO															

Basic Ordering Number	Connection Size		Orifice in. (mm)	Cv	L1	L2	L3	L4	C	C1	D	E	E1	F	G	H	H1
	Inlet Size	Outlet Size			in. (mm)												
NBFN8-11-□□	1/2" Female NPT	1/2" Female NPT	0.433 (11.0)	2.18	1.56 (39.6)	1.56 (39.6)	1.56 (39.6)	1.51 (38.3)	0.875 (22.2)	0.75 (19.05)	3.5 (88.9)	1.38 (34.9)	1.25 (31.75)	0.38 (9.7)	1.08 (27.5)	4.12 (104.8)	4.0 (101.6)
NBFN12-11-□□	3/4" Female NPT	3/4" Female NPT			1.63 (41.3)	1.63 (41.3)	1.63 (41.3)	1.50 (38.1)									
NBNS12-11-□□	3/4" Male NPT	3/4" Male NPT			1.97 (50.0)	1.97 (50.0)	1.61 (41.0)	1.61 (41.0)									
NBOD12-11-□□	3/4" OD	3/4" OD			1.75 (44.5)	1.75 (44.5)											
NB14MM-11-□□	14 mm OD	14 mm OD			2.98 (75.7)	2.98 (75.7)											
NB16MM-11-□□	16 mm OD	16 mm OD			1.56 (39.7)	1.56 (39.7)											
NB18MM-11-□□	18 mm OD	18 mm OD															
NBMTS14-11-□□	14 mm Metric Tube SW	14 mm Metric Tube SW					1.75 (44.5)	1.14 (29.0)									
NBMTS16-11-□□	16 mm Metric Tube SW	16 mm Metric Tube SW															
NBTSW12-11-□□	3/4" Tube SW	3/4" Tube SW															
NBMTB14-11-□□	14 mm Metric Tube BW	14 mm Metric Tube BW															
NBMTB16-11-□□	16 mm Metric Tube BW	16 mm Metric Tube BW															
NBUMW14-11-□□	14 mm Union Metric BW	14 mm Union Metric BW															
NBMS27-11-□□	M27 x 2 Male ISO	M27 x 2 Male ISO															
NBFN12-15-□□	3/4" Female NPT	3/4" Female NPT			0.591 (15.0)	3.27	1.75 (44.5)	1.75 (44.5)									
NBTSW16-15-□□	1" Tube SW	1" Tube SW	2.35 (59.7)	2.35 (59.7)			2.35 (59.7)	2.0 (51.0)									
NBMTS25-15-□□	25 mm Metric Tube SW	25 mm Metric Tube SW															
NBMTS28-15-□□	28 mm Metric Tube SW	28 mm Metric Tube SW															
NBPSW12-15-□□	3/4" Pipe SW	3/4" Pipe SW															
NB20MM-15-□□	20 mm OD	20 mm OD															
NB22MM-15-□□	22 mm OD	22 mm OD															
NBFN16-20-□□	1" Female NPT	1" Female NPT	0.787 (20.0)	5.65	1.97 (50.0)	1.97 (50.0)			1.25 (31.75)		5.5 (140)					5.2 (132)	
NBMTS25-20-□□	25 mm Metric Tube SW	25 mm Metric Tube SW															
NBTSW16-20-□□	1" Tube SW	1" Tube SW															
NBMTS28-20-□□	28 mm Metric Tube SW	28 mm Metric Tube SW															
NBPSW12-20-□□	3/4" Pipe SW	3/4" Pipe SW															
NBPSW16-20-□□	1" Pipe SW	1" Pipe SW															

Remarks:

1. OD means double ferrule tube fittings
 2. The above sizes and types in the chart are standard. Other sizes and types are available upon request.
 3. Dimensions shown above are in finger-tight-nut status. All dimensions are for reference only, and will be subject to change.
- For dimensions not shown above, please check with the company.

NB ODD8-12MM-S6MR-GYAI-A-SS

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seat Material	Orifice Size	Tip Material	Tip Type	Packing Material	Panel Mounting	Handle	Flow Pattern	
NB	FN	Female NPT	2	1/8"	Same as Inlet	4	0.157" (4.0 mm)	Same as Body		No	Globe Type Handle	SS	
	NS	Male NPT	4	1/4"	Specify in the same way as Inlet Type and Inlet Size	6	0.236" (6.0 mm)	S	Stellite	PTFE	Y Yes	Needle Type Handle	6L
	FRT	Female BSPT	6	3/8" or 6 mm		DP	Duplex 2205	R	Regulating	P	PEEK		S4
	RT	Male BSPT	8	1/2" or 8 mm		TI	Titanium	T	Soit Tip-PTFE	G	Graphite		4L
	FMS	Female ISO (for MRP)	10	10 mm		20	Alloy 20						S1
	MMS	Male ISO (for MRG)	12	3/4" or 12 mm		M	Alloy 400						91
	FRP	Female BSPP (for RP)	14	14 mm or M14 x 1.5		15	0.591" (15 mm)	INC	Alloy 600				92
	BP	Male BSPP (for RG)	16	1" or 16 mm		20	0.787" (20 mm)	HC	Alloy C-276				F92
	TSW	Fractional Tube Socket Weld	18	18 mm									DP
	MTS	Metric Tube Socket Weld	20	1/4" or 20 mm or M20 x 1.5									TI
	TBW	Fractional Tube Butt Weld	22	22 mm or M22 x 1.5									20
	MTB	Metric Tube Butt Weld	24	M24 x 1.5									M
	PSW	Pipe Socket Weld	25	25 mm									INC
PBW	Pipe Butt Weld	27	M27 x 2									HC	
OD	Fractional Tube Fitting	28	28 mm								B		
MM	Metric Tube Fitting										S		
UFW	Nut+Gasket+ Fractional Bulge Nipple												
UMW	Nut+Gasket+Metric Bulge Nipple												

Remark:
 *Standard thread pitch for metric threads are as follows:
 M10 and below: 1 mm,
 M12 ~ M24: 1.5 mm,
 M27 and above: 2 mm,
 Standard thread pitch should be ignored in the ordering number, others should be specified.