

Needle Valve

NV1 Series



- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65F to 1200F (-53C to 648C)
- ❖ One-piece forged body
- ❖ Straight and angle patterns
- ❖ Upper stem and lower stem design

Features

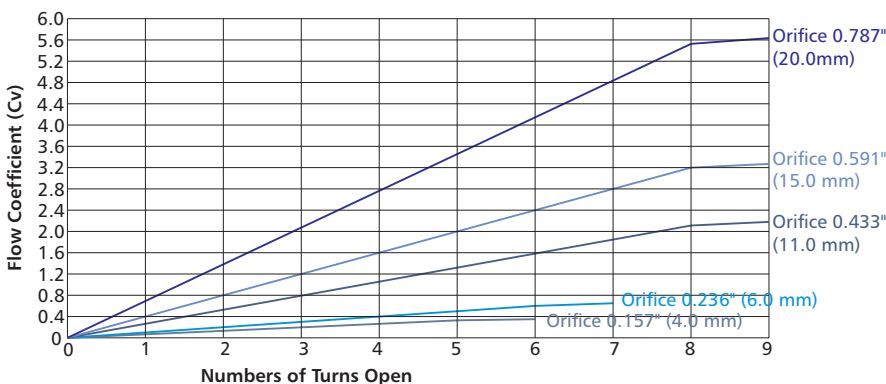
- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65F to 1200F (-53C to 648C)
- ❖ One-piece forged body
- ❖ Straight and angle patterns
- ❖ Upper stem and lower stem design, Stem threads above packing protected from system media
- ❖ Panel mounting available
- ❖ optional handle colors available

Pressure vs. Temperature

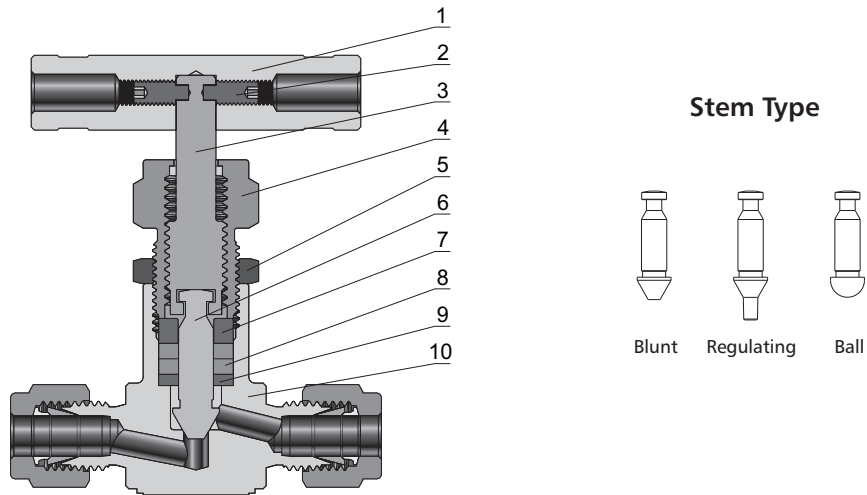
ASME Class	2500						N/A
Material Group	2. 2	2. 2	2. 8	3. 4	3. 1	3. 5	N/A
Material Name	316 S.S.	316H S.S.	F53 S.S.	Alloy 400	Alloy 20	Alloy 600	Alloy C-276
Temperature, F (C) °	Working Pressure, psig (bar)						
-65 (-53) to 100 (37)	6000 (413)	6000 (413)	6000 (413)	5000 (344)	5000 (344)	6000 (413)	6000 (413)
200 (93)	5160 (355)	5160 (355)	5160 (355)	4400 (303)	4640 (319)	5600 (385)	6000 (413)
250 (121)	4910 (338)	4910 (338)	5350 (368)	4260 (293)	4500 (310)	5460 (376)	6000 (413)
300 (148)	4660 (321)	4660 (321)	5540 (382)	4120 (283)	4360 (300)	5320 (366)	6000 (413)
350 (176)	4470 (307)	4470 (307)	5330 (367)	4050 (279)	4185 (288)	5220 (359)	5975 (411)
400 (204)	4280 (294)	4280 (294)	5120 (353)	3980 (274)	4010 (276)	5120 (352)	5880 (405)
450 (232)	4130 (284)	4130 (284)	4960 (342)	3970 (273)	3955 (272)	5030 (346)	5710 (393)
500 (260)	3980 (274)	3980 (274)	4800 (331)	3960 (272)	3900 (268)	4940 (340)	5540 (381)
600 (315)	3760 (259)	3760 (259)	4640 (320)	—	3790 (261)	4780 (329)	5040 (347)
650 (343)	3700 (254)	3700 (254)	4580 (315)	—	3750 (258)	4700 (323)	4905 (337)
700 (371)	3600 (248)	3600 (248)	4520 (311)	—	3710 (255)	4640 (319)	4730 (325)
750 (398)	3520 (242)	3520 (242)	4430 (305)	—	3665 (252)	4430 (305)	4430 (305)
800 (426)	3460 (238)	3460 (238)	—	—	3600 (248)	4230 (291)	4230 (291)
850 (454)	3380 (232)	3380 (232)	—	—	—	4060 (279)	4060 (279)
900 (482)	3280 (225)	3280 (225)	—	—	—	3745 (258)	3745 (258)
950 (510)	3220 (221)	3220 (221)	—	—	—	2725 (187)	3220 (221)
1000 (537)	3030 (208)	3030 (208)	—	—	—	1800 (124)	3030 (208)
1050 (565)	3000 (206)	3000 (206)	—	—	—	1155 (79.5)	3000 (206)
1100 (593)	2685 (184)	2685 (184)	—	—	—	770 (53.0)	2685 (184)
1150 (621)	2285 (157)	2285 (157)	—	—	—	565 (38.9)	2285 (157)
1200 (648)	1715 (118)	1715 (118)	—	—	—	515 (35.4)	1545 (106)

Flow Data at 100F (38C)

Regulating Stem



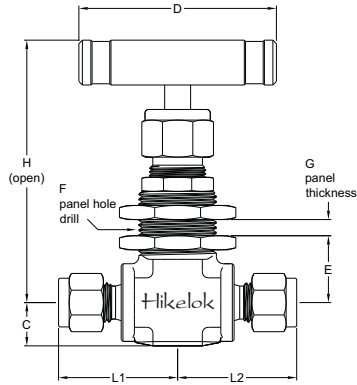
Standard Materials of Construction



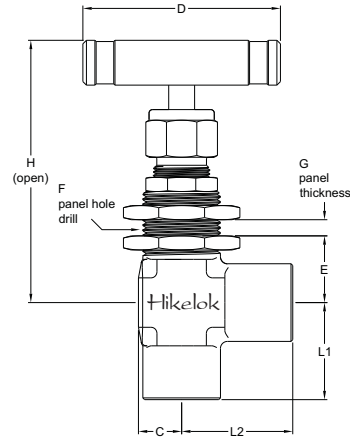
Component	Material Grade/ASTM Specification				
	316 S.S.	F91	F92	Brass	
1	Handle	Anodized aluminum or stainless steel			
2	Screw	304 S.S.			
3	Upper Stem	316 S.S. /A276	F91/A182	F91/A182	Brass 360/B16
4	Packing Bolt	316 S.S. /A479			
5	Nut	316 S.S./B783			
6	Lower Stem	Chrome-plated 316 S.S. /A276	Chrome-plated F91/A182	Chrome-plated F91/A182	Chrome-plated 316 S.S. /A276
7	Gland	316 S.S. /A276	F91/A182	F91/A182	Brass 360/B16
8	Packing	PTFE or PEEK or graphite			
9	Packing Washer	316 S.S. /A276	F91/A182	F91/A182	Brass 360/B16
10	Body	316 S.S. /A182	F91/A182	F91/A182	Brass 377/B283

Dimensions

Straight Pattern



Angle Pattern



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)							
				L1	L2	H	D	C	E	F	G
NV1-FNPT2-04-	1/8 Female NPT	0.157 (4.0)	0.35	1.00 (25.4)	1.00 (25.4)	2.85 (72.5)	2.08 (53.0)	0.53 (13.5)	0.71 (18.0)	0.25 (6.4)	0.91 (23.0)
NV1-FNPT4-04-	1/4 Female NPT			1.03 (26.2)	1.03 (26.2)						
NV1-F4-04-	1/4" Hikelok			1.22 (30.9)	1.22 (30.9)						
NV1-M6-04-	6 mm Hikelok			1.25 (31.75)	1.25 (31.75)						
NV1-M8-04-	8 mm Hikelok										
NV1-NPT6-04-	3/8 Male NPT			0.236 (6.0)	0.85						
NV1-FNPT4-06-	1/4 Female NPT	1.44 (36.5)	1.44 (36.5)								
NV1-FNPT6-06-	3/8 Female NPT					1.53 (38.9)	1.53 (38.9)				
NV1-NPT6-06-	3/8 Male NPT	1.56 (39.7)	1.56 (39.7)								
NV1-F6-06-	3/8" Hikelok	1.26 (32.0)	1.26 (32.0)								
NV1-M10-06-	10 mm Hikelok	1.50 (38.1)	1.50 (38.1)								
NV1-M12-06-	12 mm Hikelok	1.53 (38.9)	1.53 (38.9)								
NV1-M14-06-	14 mm Hikelok					1.50 (38.1)	1.50 (38.1)				
NV1-FNPT8-06-	1/2 Female NPT	1.53 (38.9)	1.53 (38.9)								
NV1-NPT8-06-	1/2 Male NPT	1.13 (28.6)	1.13 (28.6)								
NV1-F8-06-	1/2" Hikelok					1.50 (38.1)	1.50 (38.1)				
NV1-FSW6-06-	3/8" FSW	1.50 (38.1)	1.50 (38.1)								
NV1-FSW8-06-	1/2" FSW					2.92 (74.1)	2.92 (74.1)				
NV1-MSW12-06-	12 mm MSW	1.50 (38.1)	1.50 (38.1)								
NV1-MSW14-06-	14 mm MSW			1.50 (38.1)	1.50 (38.1)						
NV1-MSW16-06-	16 mm MSW	1.50 (38.1)	1.50 (38.1)								
NV1-MBW14-06-	14 mm MBW			2.92 (74.1)	2.92 (74.1)						
NV1-MBW16-06-	16 mm MBW	1.50 (38.1)	1.50 (38.1)								
NV1-UGM14-06-	14 mm UGM			1.50 (38.1)	1.50 (38.1)						
NV1-UGM16-06-	16 mm UGM	1.50 (38.1)	1.50 (38.1)								
NV1-MS20-06-	M20 x 1.5 Male ISO			1.50 (38.1)	1.50 (38.1)						
NV1-MS22-06-	M22 x 1.5 Male ISO										

Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)							
				L1	L2	H	D	C	E	F	G
NV1-FNPT8-11-	1/2 Female NPT	0.433 (11.0)	2.18	1.47 (37.5)	1.47 (37.5)	3.86 (98.0)	3.5 (88.9)	0.8 (20.2)	1.1 (28.3)	0.38 (9.7)	1.08 (27.5)
NV1-FNPT12-11-	3/4 Female NPT										
NV1-NPT8-11-	1/2 Male NPT										
NV1-NPT12-11-	3/4 Male NPT										
NV1-F12-11-	3/4" Hikelok										
NV1-M14-11-	14 mm Hikelok										
NV1-M16-11-	16 mm Hikelok			1.97 (50.0)	1.97 (50.0)						
NV1-M18-11-	18 mm Hikelok										
NV1-M20-11-	20 mm Hikelok										
NV1-M25-11-	25 mm Hikelok										
NV1-MSW14-11-	14 mm MSW										
NV1MSW 16-11-	16 mm MSW										
NV1MSW 18-11-	18 mm MSW										
NV1-FSW12-11-	3/4" FSW			1.47 (37.5)	1.47 (37.5)						
NV1FSW 8-11-	1/2" FSW										
NV1-MBW14-11-	14 mm MBW										
NV1MBW 16-11-	16 mm MBW										
NV1-UGM14-11-	14 mm UGM			2.98 (75.7)	2.98 (75.7)						
NV1UGM 16-11-	16 mm UGM										
NV1-MS27-11-	M27 x 2 Male ISO			1.47 (37.5)	1.47 (37.5)						
NV1-FNPT12-15-	3/4 Female NPT	0.591 (15.0)	3.27	1.97 (50.0)	1.97 (50.0)	6.5 (165)	5.0 (127)	1.3 (33.0)	1.61 (41.0)	0.38 (9.7)	1.45 (39.1)
NV1-FSW16-15-	1" FSW										
NV1-MSW25-15-	25 mm MSW										
NV1MSW 28-15-	28 mm MSW										
NV1-F12-15-	3/4" Hikelok										
NV1-F16-15-	1" Hikelok										
NV1-M20-15-	20 mm Hikelok			2.35 (59.7)	2.35 (59.7)						
NV1-M22-15-	22 mm Hikelok										
NV1-M25-15-	25 mm Hikelok										
NV1-FSW16-20-	1" FSW										
NV1-MSW25-20-	25 mm MSW	0.787 (20.0)	5.65	1.97 (50.0)	1.97 (50.0)	6.5 (165)	5.5 (165)	1.3 (33.0)	1.61 (41.0)	0.38 (9.7)	1.45 (36.8)
NV1-MSW28-20-	28 mm MSW										

How to Order

NV1— MBW8 — M12 — S06S — GY — A1 — 316

Series	Inlet Type	Inlet Size	Outlet Type	Outlet Size	Seat Material	Orifice Size	Tip Material	Tip Type	Packing Material	Panel Mounting	Handle	Flow pattern	Body Material
NV1	FNPT	Female NPT	Same as inlet type and inlet size If outlet and inlet are the same, eliminate the outlet designator	Same as inlet type and inlet size	Same as Body S Stellite	04 0.157 in. (4.0 mm) 06 0.236 in. (6.0 mm) 11 0.433 in. (11 mm) 15 0.591 in. (15 mm) 20 0.787 in. (20 mm)	Same as Body S Stellite	Blunt R Regulating A Ball	PTFE G Graphite	No Y Yes	Black Aluminum Bar R1 Red Aluminum Bar G1 Green Aluminum Bar L1 Blue Aluminum Bar S1 Stainless Steel Bar HW Round	Straight A1 Angle	316 316 S.S. 316L 316L S.S. 304 304 S.S. 304L 304L S.S. 321 321 S.S. F91 F91 F92 F92 A400 Alloy 400 A20 Alloy 20 A600 Alloy 600 A825 Alloy 825 A276 Alloy C276 DU7 Duplex 2507 BR Brass
	2	1/8 in.											
	4	1/4 in.											
	6	3/8 in. or 6 mm											
	8	1/2 in. or 8 mm											
	10	10 mm											
	12	3/4 in. or 12 mm											
	14	14 mm or M14 x 1.5											
	16	1 in. or 16 mm											
	18	18 mm											
	20	1 1/4 in. or 20 mm or M20 x 1.5											
	22	22 mm or M22 x 1.5											
	24	M24 x 1.5											
	25	25mm											
	27	M27 x 2											
	28	28mm											
FNPT	Female NPT												
NPT	Male NPT												
FBT	Female BSPT												
MBT	Male BSPT												
FMS	Female ISO 261												
MS	Male ISO 261												
FBP	Female BSPP												
MBP	Male BSPP												
F	Fractional Tube Fitting												
M	Metric Tube Fitting												
UGF	Nut + Gasket + Fractional Bulge Nipple												
UGM	Nut + Gasket + Metric Bulge Nipple												
FSW	Fractional Tube Socket Weld												
MSW	Metric Tube Socket Weld												
FBW	Fractional Tube Butt Weld												
MBW	Metric Tube Butt Weld												
PSW	Pipe Socket Weld												
PBW	Pipe Butt Weld												