

Needle Valve

NV1 Series



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

Features

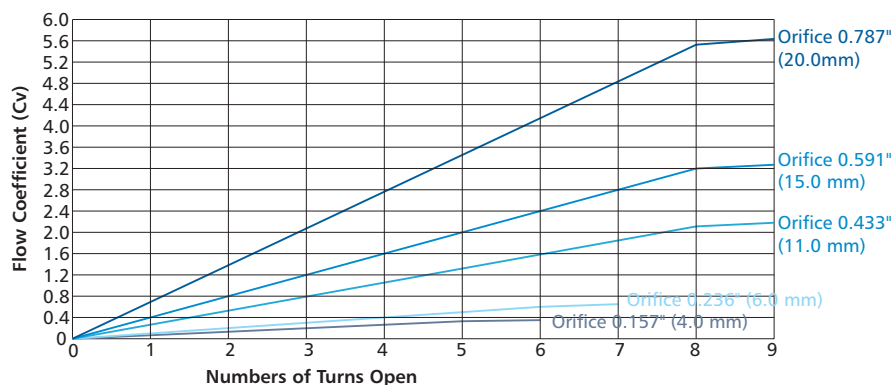
- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 1200°F (-53°C to 648°C)
- ❖ One-piece forged body
- ❖ Straight and angle patterns
- ❖ Upper stem and lower stem design, Stem threads above packing protected from system media
- ❖ Panel mounting available
- ❖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

Pressure vs. Temperature

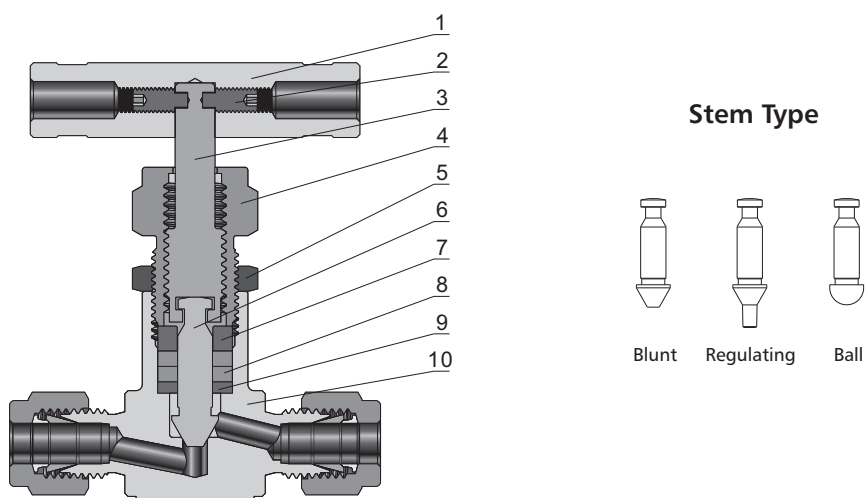
ASME Class	2500						N/A
Material Group	2. 2	2. 2	2. 8	3. 4	3. 1	3. 5	N/A
Material Name	316 S.S.	316H S.S.	F53 S.S.	Alloy 400	Alloy 20	Alloy 600	Alloy C-276
Temperature, °F (°C)	Working Pressure, psig (bar)						
-65 (-53) to 100 (37)	6000 (413)	6000 (413)	6000 (413)	5000 (344)	5000 (344)	6000 (413)	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 100°F (38°C)

Regulating Stem



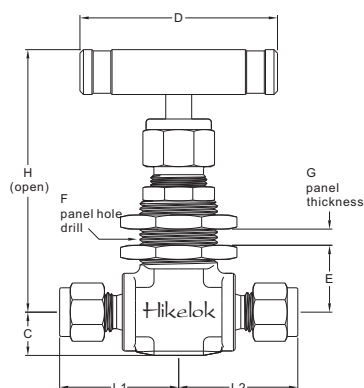
Standard Materials of Construction



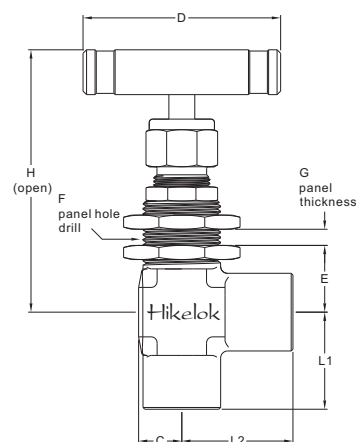
Component		Material Grade/ASTM Specification			
		316 S.S.	F91	F92	Brass
1	Handle	Anodized aluminum or stainless steel			
2	Screw	304 S.S.			
3	Upper Stem	316 S.S. / A276	F91/A182	F91/A182	Brass 360/B16
4	Packing Bolt	316 S.S. / A479			
5	Nut	316 S.S./B783			
6	Lower Stem	Chrome-plated 316 S.S. / A276	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)	2.17 (55)	0.53 (13.5)	0.71 (18.0)	0.25 (6.4)	0.77 (19.6)
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			1.19 (30.2)	1.19 (30.2)						
NV1-NPT6-04-	3/8 Male NPT										
NV1-FNPT4-06-	1/4 Female NPT	0.236 (6.0)	0.85	1.13 (28.6)	1.13 (28.6)	3.38 (85.8)	2.50 (63.5)	0.62 (15.8)	0.87 (22.0)	0.38 (9.7)	0.96 (24.4)
NV1-FNPT6-06-	3/8 Female NPT										
NV1-NPT6-06-	3/8 Male NPT										
NV1-F6-06-	3/8" Hikelok			1.44 (36.5)	1.44 (36.5)						
NV1-M10-06-	10 mm Hikelok			1.53 (38.9)	1.53 (38.9)						
NV1-M12-06-	12 mm Hikelok			1.56 (39.7)	1.56 (39.7)						
NV1-M14-06-	14 mm Hikelok			1.26 (32.0)	1.26 (32.0)						
NV1-FNPT8-06-	1/2 Female NPT			1.50 (38.1)	1.50 (38.1)						
NV1-NPT8-06-	1/2 Male NPT			1.53 (38.9)	1.53 (38.9)						
NV1-F8-06-	1/2" Hikelok										
NV1-FSW6-06-	3/8" FSW										
NV1-FSW8-06-	1/2" FSW										
NV1-MSW12-06-	12 mm MSW			1.13 (28.6)	1.13 (28.6)						
NV1-MSW14-06-	14 mm MSW										
NV1-MSW16-06-	16 mm MSW										
NV1-MBW14-06-	14 mm MBW			1.50 (38.1)	1.50 (38.1)						
NV1-MBW16-06-	16 mm MBW										
NV1-UGM14-06-	14 mm UGM			2.92 (74.1)	2.92 (74.1)						
NV1-UGM16-06-	16 mm UGM										
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	1.56 (39.7)	1.56 (39.7)	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			1.97 (50.0)	1.97 (50.0)						
NV1-M14-11-	14 mm Hikelok										
NV1-M16-11-	16 mm Hikelok										
NV1-M18-11-	18 mm Hikelok										
NV1-M20-11-	20 mm Hikelok			1.56 (39.7)	1.56 (39.7)						
NV1-M25-11-	25 mm Hikelok										
NV1-MSW14-11-	14 mm MSW										
NV1-MSW16-11-	16 mm MSW										
NV1-MSW18-11-	18 mm MSW			2.98 (75.7)	2.98 (75.7)						
NV1-FSW12-11-	3/4" FSW										
NV1-FSW8-11-	1/2" FSW										
NV1-MBW14-11-	14 mm MBW										
NV1-MBW16-11-	16 mm MBW			1.56 (39.7)	1.56 (39.7)						
NV1-UGM14-11-	14 mm UGM										
NV1-UGM16-11-	16 mm UGM										
NV1-MS27-11-	M27 x 2 Male ISO										
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 (36.8)
NV1-FSW16-15-	1" FSW										
NV1-MSW25-15-	25 mm MSW										
NV1-MSW28-15-	28 mm MSW										
NV1-F12-15-	3/4" Hikelok			2.35 (59.7)	2.35 (59.7)						
NV1-F16-15-	1" Hikelok										
NV1-M20-15-	20 mm Hikelok										
NV1-M22-15-	22 mm Hikelok										
NV1-M25-15-	25 mm Hikelok	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-FNPT16-20-	1 Female NPT										
NV1-FSW16-20-	1" FSW										
NV1-MSW25-20-	25 mm MSW										
NV1-MSW28-20-	28 mm MSW										

NV1— **MBW8** — **M12** — **S06S** — **GY** — **A** — **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	2	1/8 in.	Same as inlet type and inlet size If outlet and inlet are the same, eliminate the outlet designator	Same as Body	Same as Body	Blunt	PTEE	No	Black Aluminum Bar	Straight	316 316 S.S.	
	NPT	Male NPT	4	1/4 in.		S Stellite	04 0.157 in. (4.0 mm)	S Stellite	R Regulating	G Graphite	Y Yes	R Red Aluminum Bar	A Angle	316L 316L S.S
	FBT	Female BSPT	6	3/8 in. or 6 mm			06 0.236 in. (6.0 mm)		A Ball					304 304 S.S.
	MBT	Male BSPT	8	1/2 in. or 8 mm			11 0.433 in. (11 mm)					G Green Aluminum Bar		304L 304L S.S.
	FMS	Female ISO 261	10	10 mm			15 0.591 in. (15 mm)					L Blue Aluminum Bar		321 321 S.S.
	MS	Male ISO 261	12	3/4 in. or 12 mm			20 0.787 in. (20 mm)					S 304 Stainless Steel Bar		F91 F91
	FBP	Female BSPP	14	14 mm or M14 x 1.5										F91 F92
	MBP	Male BSPP	16	1 in. or 16 mm										A400 Alloy 400
	F	Fractional Tube Fitting	18	18 mm										A20 Alloy 20
	M	Metric Tube Fitting	20	1 1/4 in. or 20 mm or M20 x 1.5										A600 Alloy 600
	UGF	Nut + Gasket + Fractional Bulge Nipple	22	22 mm or M22 x 1.5										A825 Alloy 825
	UGM	Nut + Gasket + Metric Bulge Nipple	24	M24 x 1.5										A276 Alloy C276
	FSW	Fractional Tube Socket Weld	25	25 mm										DU7 Duplex 2507
	MSW	Metric Tube Socket Weld	27	M27 x 2										BR Brass
	FBW	Fractional Tube Butt Weld	28	28 mm										
	MBW	Metric Tube Butt Weld												
	PSW	Pipe Socket Weld												
	PBW	Pipe Butt Weld												