

Needle Valve

NV3 Series



- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 1200°F (-53°C to 648°C)
- ❖ Union-bonnet construction for safety
- ❖ Straight and angle patterns
- ❖ Upper stem and lower stem design

Features

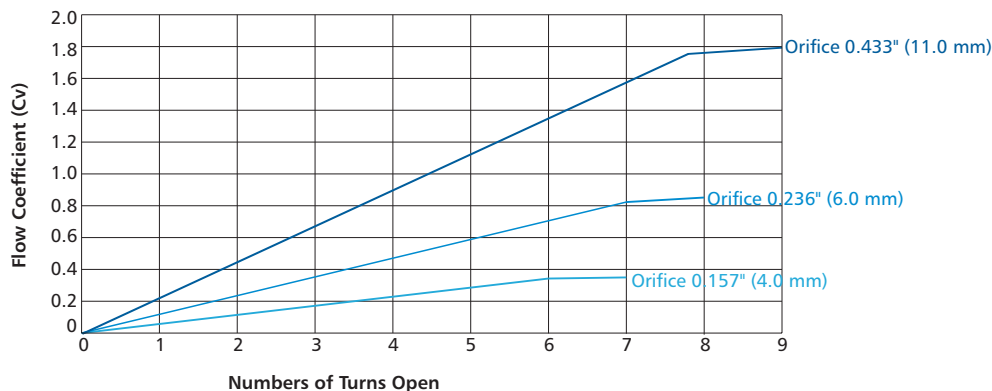
- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 1200°F (-53°C to 648°C)
- ❖ Union-bonnet construction for safety
- ❖ Straight and angle patterns
- ❖ Upper stem and lower stem design, Stem threads above packing protected from system media
- ❖ Panel mounting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

Pressure vs. Temperature

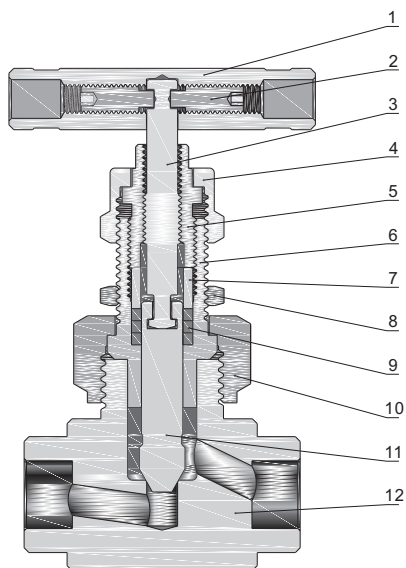
ASME Class	2500						N/A
Material Group	2. 2	2. 2	2. 8	3. 4	3. 1	3. 5	N/A
Material Name	316 S.S.	316H S.S.	F53 S.S.	Alloy 400	Alloy 20	Alloy 600	Alloy C-276
Temperature, °F (°C)	Working Pressure, psig (bar)						
-65 (-53) to 100 (37)	6000 (413)	6000 (413)	6000 (413)	5000 (344)	5000 (344)	6000 (413)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

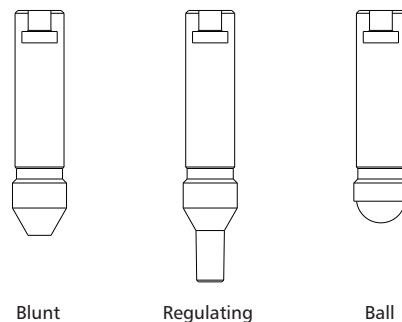
Regulating Stem



Standard Materials of Construction



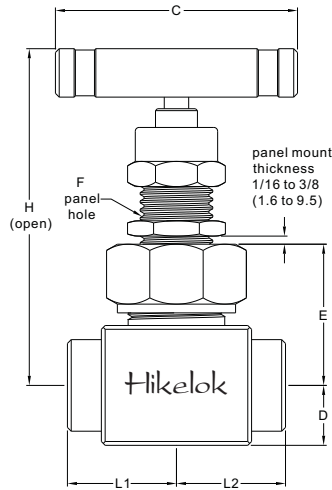
Stem Type



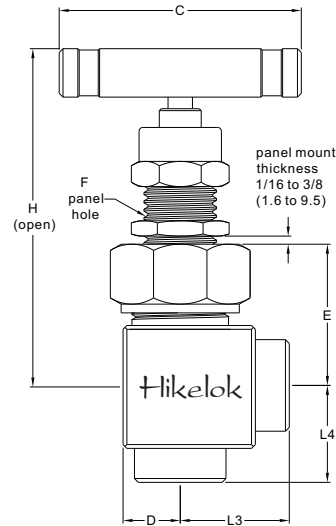
Component		Material Grade/ASTM Specification			
		316 S.S.	Alloy 400	Titanium	Alloy C-276
1	Handle	Anodized aluminum or stainless steel			
2	Set Screw	Nickel cadmium-plated steel			
3	Upper Stem	316 S.S./A276			
4	Nut	316 S.S./A276			
5	Packing Bolt	316 S.S./A276			
6	Bonnet	316 S.S./A479	Alloy R-405/B164	Titanium Gr 4/B348	Alloy C-276/B574
7	Gland	316 S.S./A276	Alloy R-405/B164	Titanium Gr 4/B348	Alloy C-276/B574
8	Nut	316 S.S./B783			
9	Packing	PTFE or graphite			
10	Nut	316 S.S./A276			
11	Lower Stem	Chrome-plated 316 S.S./A276	Alloy R-405/B164	Titanium Gr 4/B348	Alloy C-276/B574
12	Body	316 S.S./A182	Alloy 400/B164, B127, B564	Titanium Gr 4/B348 or titanium Gr 4/B381	Alloy C-276/B564

Dimensions

Straight Pattern



Angle Pattern



Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)										
				L1	L2	L3	L4	C	D	E	F	H		
NV3-FNPT2-04-	1/8 Female NPT	0.157 (4.0)	0.35	1.00 (25.4)	1.00 (25.4)	0.89 (22.6)	1.00 (25.4)	1.75 (44.5)	0.39 (9.9)	1.09 (27.7)	19/32 (15.1)	3.04 (77.2)		
NV3-FNPT4-04-	1/4 Female NPT			1.03 (26.2)	1.03 (26.2)									
NV3-NPT4-FNPT4-04-	1/4 Male NPT			1.00 (25.4)	1.03 (26.2)									
NV3-NPT4-04-	1/4 Male NPT			1.00 (25.4)	1.00 (25.4)	1.00 (25.4)							1.16 (29.5)	1.48 (37.6)
NV3-NPT6-04-	3/8 Male NPT			1.03 (26.2)	1.03 (26.2)	0.89 (22.6)								
NV3-FBP4-04-	1/4 Female BSPP			1.00 (25.4)	1.22 (30.9)	1.16 (29.5)							1.48 (37.6)	
NV3-NPT4-F4-04-	1/4 Male NPT			1.03 (26.2)	1.22 (30.9)									
NV3-FNPT4-F4-04-	1/4 Female NPT			1.03 (26.2)	1.22 (30.9)	1.16 (29.5)							1.48 (37.6)	
NV3-F4-04-	1/4" Hikelok			1.22 (30.9)	1.22 (30.9)									
NV3-M6-04-	6 mm Hikelok			0.91 (23.1)	0.91 (23.1)	0.88 (22.4)							1.19 (30.2)	
NV3-M8-04-	8 mm Hikelok			0.91 (23.1)	0.91 (23.1)	0.88 (22.4)							1.19 (30.2)	
NV3-FSW4-04-	1/4" FSW			0.91 (23.1)	0.91 (23.1)	0.88 (22.4)							1.19 (30.2)	
NV3-FNPT4-06-	1/4 Female NPT	0.236 (6.0)	0.8	1.13 (28.6)	1.13 (28.6)	1.0 (25.4)	1.13 (28.6)	2.50 (63.5)	0.50 (12.7)	1.34 (34.0)	25/32 (19.8)	3.70 (94)		
NV3-FNPT6-06-	3/8 Female NPT			1.13 (28.6)	1.13 (28.6)	1.06 (26.9)								
NV3-NPT6-06-	3/8 Male NPT			1.50 (38.1)	1.50 (38.1)	1.25 (31.8)	1.50 (38.1)							
NV3-NPT8-06-	1/2 Male NPT			1.41 (35.9)	1.41 (35.9)	1.29 (32.8)	1.66 (42.2)							
NV3-F6-06-	3/8" Hikelok			1.52 (38.6)	1.52 (38.6)	1.40 (35.6)	1.65 (41.9)							
NV3-F8-06-	1/2" Hikelok			1.42 (36.1)	1.42 (36.1)	1.30 (33.0)	1.55 (39.4)							
NV3-M10-06-	10 mm Hikelok			1.42 (36.1)	1.42 (36.1)	1.30 (33.0)	1.55 (39.4)							

Basic Ordering Number	Connection Type and Size	Orifice in. (mm)	Cv	Dimension, in. (mm)										
				L1	L2	L3	L4	C	D	E	F	H		
NV3-M12-06-	12 mm Hikelok	0.236 (6.0)	0.8	1.52 (38.6)	1.52 (38.6)	1.40 (35.6)	1.65 (41.9)	2.50 (63.5)	0.50 (12.7)	1.34 (34.0)	25/32 (19.8)	3.70 (94)		
NV3-M14-06-	14 mm Hikelok													
NV3-M16-06-	16 mm Hikelok													
NV3-FSW6-06-	3/8" FSW													
NV3-FSW8-06-	1/2" FSW													
NV3-MSW12-06-	12 mm MSW			1.13 (28.6)	1.13 (28.6)	1.00 (25.4)	1.13 (28.6)							
NV3-MSW14-06-	14 mm MSW													
NV3-MSW16-06-	16 mm MSW													
NV3-MBW14-06-	14 mm MBW													
NV3-MBW16-06-	16 mm MBW			1.50 (38.1)	1.50 (38.1)	1.25 (31.8)	1.50 (38.1)							
NV3-UGM14-06-	14 mm UGM			2.92 (74.1)	2.92 (74.1)	2.55 (64.7)	2.92 (74.1)							
NV3-MS20-06-	M20 x 1.5 Male ISO			1.50 (38.1)	1.50 (38.1)	1.13 (28.6)	1.50 (38.1)							
NV3-MS22-06-	M22 x 1.5 Male ISO													
NV3-FNPT8-11-	1/2 Female NPT			0.433 (11.0)	1.8	1.56 (39.6)	1.56 (39.6)						1.31 (33.3)	1.56 (39.6)
NV3-FNPT12-11-	3/4 Female NPT	1.63 (41.3)	1.63 (41.3)											
NV3-FNPT16-11-	1 Female NPT	1.81 (46.0)	1.81 (46.0)											
NV3-NPT12-11-	3/4 Male NPT	1.63 (41.3)	1.63 (41.3)											
NV3-F8-11-	1/2" Hikelok													
NV3-F12-11-	3/4" Hikelok													
NV3-M14-11-	14 mm Hikelok	1.97 (50.0)	1.97 (50.0)			1.68 (42.7)	2.08 (52.8)							
NV3-M16-11-	16 mm Hikelok													
NV3-M18-11-	18 mm Hikelok													
NV3-M20-11-	20 mm Hikelok													
NV3-MSW14-11-	14 mm MSW													
NV3-MSW16-11-	16 mm MSW													
NV3-FSW8-11-	1/2" FSW	1.56 (39.7)	1.56 (39.7)			1.31 (33.3)	1.69 (42.9)							
NV3-FSW12-11-	3/4" FSW													
NV3-MBW14-11-	14 mm MBW													
NV3-MBW16-11-	16 mm MBW													
NV3-UGM14-11-	14 mm UGM	2.98 (75.7)	2.98 (75.7)											
NV3-MS27-11-	M27 x 2 Male ISO	1.56 (39.7)	1.56 (39.7)											

❖ If working pressure up to 10,000 psi, please refer to NV31 series.

How to Order

NV3— FNPT8 — F8 — GY — LA — 316

S06S

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			
NV3	FNPT	Female NPT	Same as inlet type and inlet size If outlet and inlet are the same, eliminate the outlet designator	Same as Body S Stellite	Same as Body S Stellite	04 (4.0 mm)	Same as Body S Stellite	Blunt	PTFE G Graphite	No Y Yes	Black Aluminum Bar R Red Aluminum Bar G Green Aluminum Bar L Blue Aluminum Bar S 304 Stainless Steel Bar	Straight A Angle	316 316 S.S. 316L 316L S.S. 304 304 S.S. 304L 304L S.S. 321 321 S.S. F91 F91 F91 F92 A400 Alloy 400 A20 Alloy 20 A600 Alloy 600 A825 Alloy 825 A276 Alloy C276 DU7 Duplex 2507 BR Brass			
	NPT	Male NPT												2 1/8 in.	4 1/4 in.	
	FBT	Female BSPT												3/8 in. or 6 mm	6	06 (6.0 mm)
	MBT	Male BSPT												1/2 in. or 8 mm	8	11 (11 mm)
	FMS	Female ISO												10 10 mm	10	15 (15 mm)
	MS	Male ISO												3/4 in. or 12 mm	12	20 (20 mm)
	FBP	Female BSPP												14 mm or M14 x 1.5	14	
	MBP	Male BSPP												1 in. or 16 mm	16	
	F	Fractional Tube Fitting												1 in. or 16 mm	16	
	M	Metric Tube Fitting												18 18 mm	18	
	UGF	Nut + Gasket + Fractional Bulge Nipple												1 1/4 in. or 20 mm or M20 x 1.5	20	
	UGM	Nut + Gasket + Metric Bulge Nipple												22 mm or M22 x 1.5	22	
	FSW	Fractional Tube Socket Weld												24 M24 x 1.5	24	
	MSW	Metric Tube Socket Weld												25 25mm	25	
	FBW	Fractional Tube Butt Weld												27 M27 x 2	27	
	MBW	Metric Tube Butt Weld												28 28mm	28	
PSW	Pipe Socket Weld															
PBW	Pipe Butt Weld															