

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

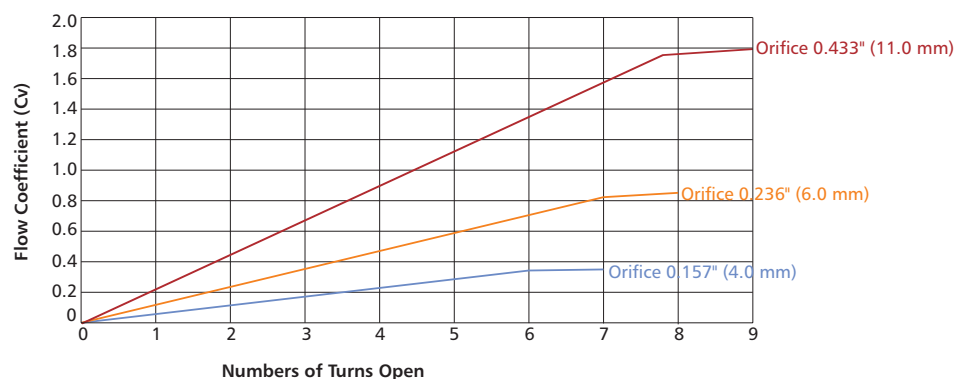
- ❖ Maximum working pressure up to 6000 psig (413 bar)
- ❖ Working temperature from -65°F to 1200°F (-53°C to 648°C)
- ❖ Union-bonnet construction for safety
- ❖ Straight and angle patterns
- ❖ Upper stem and lower stem design, Stem threads above packing protected from system media
- ❖ Panel mounting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

Pressure vs. Temperature

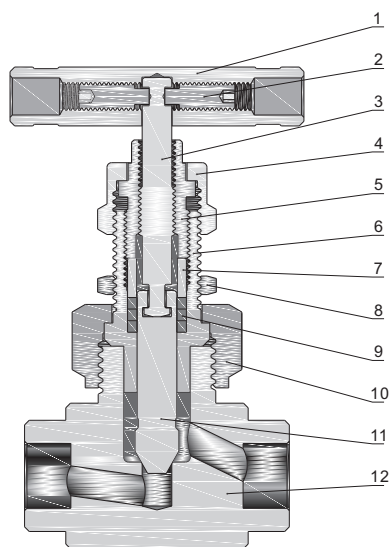
ASME Class	2500						N/A
Material Group	2. 2	2. 2	2. 8	3. 4	3. 1	3. 5	N/A
Material Name	316 S.S.	316H S.S.	F53 S.S.	Alloy 400	Alloy 20	Alloy 600	Alloy C-276
Temperature, °F (°C)	Working Pressure,psig (bar)						
-65 (-53) to 100 (37)	6000 (413)	6000 (413)	6000 (413)	5000 (344)	5000 (344)	6000 (413)	6000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

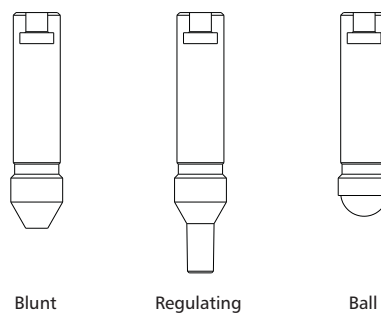
Regulating Stem



Standard Materials of Construction



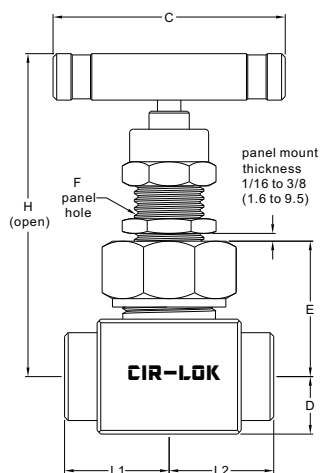
Stem Type



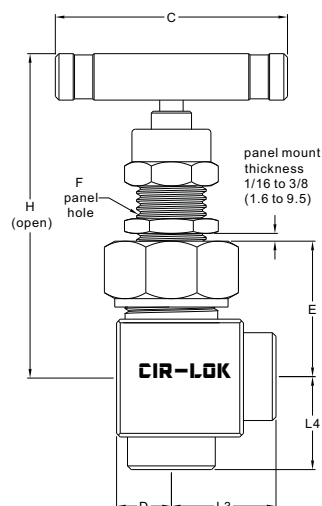
Component		Material Grade/ASTM Specification			
		316 S.S.	Alloy 400	Titanium	Alloy C-276
1	Handle	Anodized aluminum or stainless steel			
2	Set Screw	Nickel cadmium-plated steel			
3	Upper Stem	316 S.S./A276			
4	Nut	316 S.S./A276			
5	Packing Bolt	316 S.S./A276			
6	Bonnet	316 S.S./A479	Alloy R-405/B164	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)												
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)												
NV3-NPT4-F4-04-	1/4 Male NPT			1.03 (26.2)	1.22 (30.9)													
NV3-FNPT4-F4-04-	1/4 Female NPT			1.22 (30.9)	1.22 (30.9)	1.48 (37.6)												
NV3-F4-04-	1/4" CIR-LOK			0.91 (23.1)	0.91 (23.1)	0.88 (22.4)	1.19 (30.2)											
NV3-M6-04-	6 mm CIR-LOK																	
NV3-M8-04-	8 mm CIR-LOK																	
NV3-FSW4-04-	1/4" FSW																	
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					1.06 (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" CIR-LOK			1.52 (38.6)	1.52 (38.6)	1.40 (35.6)	1.65 (41.9)											
NV3-F8-06-	1/2" CIR-LOK			1.42 (36.1)	1.42 (36.1)	1.30 (33.0)	1.55 (39.4)											
NV3-M10-06-	10 mm CIR-LOK																	

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 CIR-LOK	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 CIR-LOK											
NV3-M16-06-	16 mm CIR-LOK											
NV3-FSW6-06-	3/8" FSW											
NV3-FSW8-06-	1/2" FSW			1.13 (28.6)	1.13 (28.6)	1.00 (25.4)	1.13 (28.6)					
NV3-MSW12-06-	12 mm MSW											
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)	3.50 (88.9)	0.78 (19.8)	1.91 (48.5)	11/32 (26.2)	4.85 (123)
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" CIR-LOK											
NV3-F12-11-	3/4" CIR-LOK											
NV3-M14-11-	14 mm CIR-LOK			1.97 (50.0)	1.97 (50.0)	1.68 (42.7)	2.08 (52.8)					
NV3-M16-11-	16 mm CIR-LOK											
NV3-M18-11-	18 mm CIR-LOK											
NV3-M20-11-	20 mm CIR-LOK											
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		S06S		GY		LA		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			
NV3	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	0.157 in. (4.0 mm)	Same as Body	Blunt	PTFE	No	Black Aluminum Bar	Straight	316 316 S.S.			
	NPT Male NPT	4 1/4 in.			S Stellite	04	S Stellite	R Regulating	G Graphite	Y Yes	Red Aluminum Bar		A Angle	316L 316L S.S.		
	FBT Female BSPT	6 3/8 in. or 6 mm													304 304 S.S.	
	MBT Male BSPT	8 1/2 in. or 8 mm													304L 304L S.S.	
	FMS Female ISO	10 10 mm													321 321 S.S.	
	MS Male ISO	12 12 mm													F91 F91	
	FBP Female BSPP	14 3/4 in. or 12 mm													F91 F92	
	MBP Male BSPP	14 14 mm or M14 x 1.5													A400 Alloy 400	
	F Fractional Tube Fitting	16 1 in. or 16 mm													A20 Alloy 20	
	M Metric Tube Fitting	18 18 mm													A600 Alloy 600	
	UGF Nut + Gasket + Fractional Bulge Nipple	20 1 1/4 in. or 20 mm or M20 x 1.5													A825 Alloy 825	
	UGM Nut + Gasket + Metric Bulge Nipple	22 22 mm or M22 x 1.5													A276 Alloy C276	
	FSW Fractional Tube Socket Weld	24 M24 x 1.5													DU7 Duplex 2507	
	MSW Metric Tube Socket Weld	25 25mm													BR Brass	
	FBW Fractional Tube Butt Weld	27 M27 x 2														
	MBW Metric Tube Butt Weld	28 28mm														
	PSW Pipe Socket Weld															
	PBW Pipe Butt Weld															