

# Hy-Lok NV Series

## Integral Bonnet Needle Valves

Catalog No. H-100NV

Sep. 2006

**Packing Nut**  
• allows smooth packing adjustment.

**Best Suited Standard Handles**  
• include stainless steel bar, black phenolic knob, and black aluminum bar depending upon valve type.

**Stem Threads**  
• are rolled and hard chrome-plated for maximum service life

**Packing Materials**  
• are available in PTFE (standard) and PEEK. (option)

**Integral Bonnet** with one piece body  
• is available with straight and angle pattern.

**Panel Mounting Nut**  
• allows easy mounting. (standard)

**Variety of End Connections**  
• include Hy-Lok tube fittings, male / female NPT threads, male / female ISO threads.

**Variety of Stem Tips**  
• include vee, regulating, and soft seat with Kel-F.

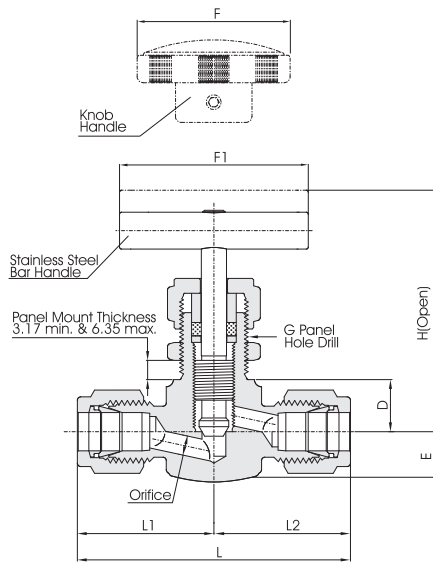
### Features

- **Pressure rating** up to 5000psig (340bar) @ 100°F(38°C)
- **Temperature rating** from -65°F to 450°F(-54°C to 232°C) with standard PTFE packing, and up to 600°F(315°C) with optional PEEK packing
- **Body materials** available in 316 stainless steel, alloy 400, and brass
- **100% factory tested.**

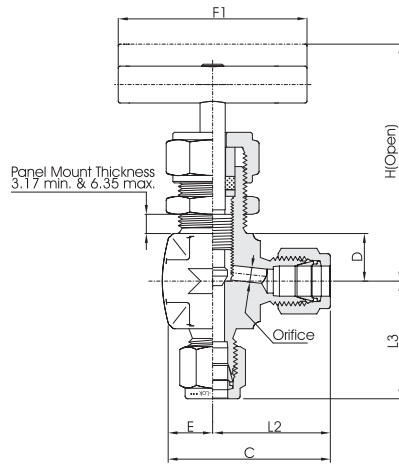


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Straight Pattern



Angle Pattern

## Table of Dimensions

Basic Part No.	Orifice	Cv	End Connections				Dimensions									
			Inlet		Outlet		L	L1	L2	L3	C	D	E	F	F <sub>1</sub>	G
NV1	F -2N-	2.0	0.09	1/8" Female NPT	1/8" Female NPT	42.0	21.0	21.0	21.0	30.5	11.0	9.5	38.0	45.0	13.5	51.2
	M -2N-			1/8" Male NPT	1/8" Male NPT	42.0	21.0	20.0	21.0	29.5						
	MH -2N2T-			1/8" Male NPT	1/8" Hy-Lok	47.0		26.0		35.5						
	H -2T-			1/8" Hy-Lok	1/8" Hy-Lok	52.0	26.0	26.0	26.0	35.5						
	H -3M-			3mm Hy-Lok	3mm Hy-Lok											
NV2	F -2N-	4.3	0.37	1/8" Female NPT	1/8" Female NPT	42.0	21.0	21.0	21.0	30.5	11.0	9.5	38.0	45.0	13.5	51.2
	M -2N-			1/8" Male NPT	1/8" Male NPT	50.0	25.0	25.0	25.0	34.5						
	M -4N-			1/4" Male NPT	1/4" Male NPT			53.8		28.8						
	MH -4N4T-			1/4" Male NPT	1/4" Hy-Lok	57.6	28.8	28.8	28.8	38.3						
	H -6M-			6mm Hy-Lok	6mm Hy-Lok											
	H -4T-			1/4" Hy-Lok	1/4" Hy-Lok	59.2	29.6	29.6	29.6	39.1						
H -8M-	8mm Hy-Lok	8mm Hy-Lok														
NV3	F -4N-	6.3	0.73	1/4" Female NPT	1/4" Female NPT	56.0	28.0	28.0	28.0	41.0	13.5	13.0	50.0	64.0	20.0	63.6
	F -4R-			1/4" Female ISO	1/4" Female ISO											
	MF -4N-			1/4" Male NPT	1/4" Female NPT											
	MH -4N6T-			1/4" Male NPT	3/8" Hy-Lok	61.2	29.0	33.2	29.0	46.2						
	M -6N-			3/8" Male NPT	3/8" Male NPT	58.0		29.0		42.0						
	MH -6N6T-			3/8" Male NPT	3/8" Hy-Lok	62.2	33.2	46.2								
	MH -6N8T-			3/8" Male NPT	1/2" Hy-Lok	65.0	36.0	49.0								
	H -10M-			10mm Hy-Lok	10mm Hy-Lok	66.4	33.2	33.2	33.2	46.2						
	H -6T-			3/8" Hy-Lok	3/8" Hy-Lok											
H -12M-	12mm Hy-Lok	12mm Hy-Lok														
H -8T-	1/2" Hy-Lok	1/2" Hy-Lok	72.0	36.0	36.0	36.0	49.0									
NV4	F -6N-	9.5	1.8	3/8" Female NPT	3/8" Female NPT	76.0	38.0	38.0	38.0	57.0	19.0	19.0	63.5	76.0	22.5	91.7
	F -6R-			3/8" Female ISO	3/8" Female ISO											
	F -8N-			1/2" Female NPT	1/2" Female NPT											
	F -8R-			1/2" Female ISO	1/2" Female ISO											
	M -8N-			1/2" Male NPT	1/2" Male NPT	97.0	48.5	48.5	48.5	67.5						
	MF -8N-			1/2" Male NPT	1/2" Female NPT											
	H -8T-			1/2" Hy-Lok	1/2" Hy-Lok											
	H -12T-			3/4" Hy-Lok	3/4" Hy-Lok											

All dimensions in millimeters. Dimensions shown with Hy-Lok nuts in finger-tight position, Where applicable.

## Technical Data

### Materials of Construction

Description		Grade/ASTM Specification		
		Valve Body Materials		
		SS 316	Brass	Alloy 400
Handle	Bar	Stainless Steel	-	Stainless Steel
	Knob	-	Black Phenolic	-
Packing Nut		SS 316 / A479	Brass 360 / B16	Alloy R-405 / B164
Packing*		PTFE(TFE)		
Packing Ring		SS 316 / A479	Brass 360 / B16	Alloy R-405 / B164
Stem*	Vee	SS 316 / A479	Brass 360 / B16	Alloy R-405 / B164
	Regulating			
	Soft Seat			
Soft Tip*		Kel - F(CTFE)		
Panel Nut		SS 316 / A479	Brass 360 / B16	SS 316 / A276
Body*		SS 316 / A182	Brass 377 / B283	Alloy R-400 / B564

**Note** : "\*"-marked are wetted parts.  
Nickel anti-seize lubricant on non-wetted parts.

### Temperature vs Working Pressure

Temperature	Pressure (psig) @ Temperature Rating			
	ANSI Group	2,2	N / A	3,4
	Materials	316 SS	Brass	Alloy 400
-65°F(-54°C) to 100°F (38°C) 200°F (93°C) 300°F (148°C) 350°F (176°C) 400°F (204°C) 450°F (232°C)		5000	3000	3000
		4290	2600	2640
		3870	2210	2470
		3710	1470	2430
		3560	740	2390
		3430	-	2380

- To determine KPa, multiply psig by 6.89 and bar by 0.0689
- When valves with Hy-Lok Fitting end connections are connected to tubing, the working pressure of tubing must be considered in the calculation of total system working pressure.

### Sour Gas Service

- is provided to meet NACE Standard MR-01-75.

### Testing

- Each valve is tested with nitrogen @ 1000psig(69bar) to max leak rate of 0.1SCCM.
- Hydrostatic shell test is performed at 1.5 times the working pressure
- Optional tests are available upon request.

### Temperature and Pressure Rating

Body Material	Stem	Temperature Rating	Pressure Rating @ -65°F ~ 100°F (-54°C ~ 38°C)
316 Stainless Steel	Vee & Regulating	-65°F ~ 450°F (-54°C ~ 232°C)	5000 psig
	Soft Seat (Kel-F)	-65°F ~ 200°F (-54°C ~ 93°C)	
Brass	Vee & Regulating	-65°F ~ 400°F (-54°C ~ 204°C)	3000 psig
	Soft Seat (Kel-F)	-65°F ~ 200°F (-54°C ~ 93°C)	
Alloy 400 (Monel)	Vee & Regulating	-65°F ~ 450°F (-54°C ~ 232°C)	3000 psig
	Soft Seat (Kel-F)	-65°F ~ 200°F (-54°C ~ 93°C)	

- The above ratings are for a standard valve with PTFE packing. For optional packing materials, refer to the table shown below.
- Extreme temperature fluctuations may require packing adjustment.

### Packing and Body Materials vs Temperature and Pressure Rating

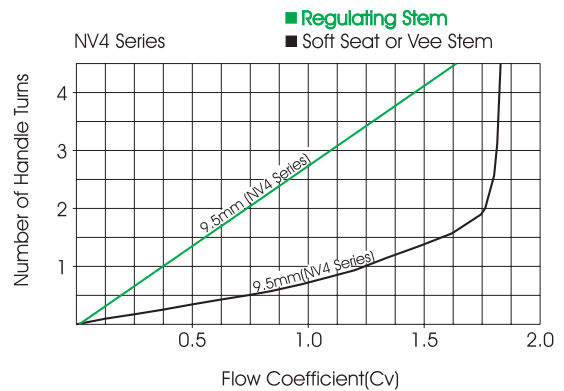
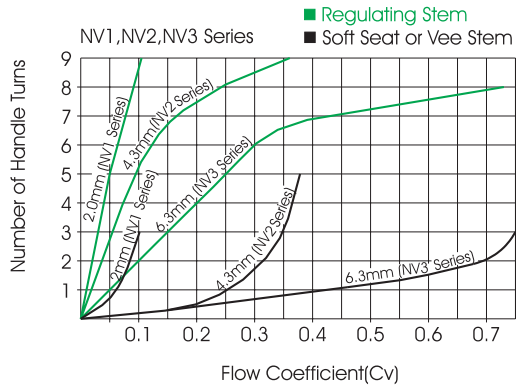
Packing Material	Body Material	Temperature	Pressure @ Temp Rating
PTFE (Standard)	316 Stainless Steel	450°F (232°C)	3430 psig
PEEK* (Optional)	316 Stainless Steel	-65°F ~ 600°F (-54°C ~ 315°C)	3130 psig
	Alloy 400	-65°F ~ 500°F (-54°C ~ 260°C)	2370 psig

- \* PEEK is not recommended for service with aromatic heat transfer fluids or concentrated sulfuric and nitric acids. Other limitations may apply.

### Handle

- Stainless steel bar is standard on all SS316 and alloy 400 body valves.
- Black phenolic knob is standard for brass body and soft seat stem valves.
- Black aluminum bar handles are available as an option.

## Flow Coefficient (Cv) vs Number of Handle Turns



## Ordering Information

**NV3**

**Series Designator by Orifice Size**

- NV1 : 2.0mm Orifice
- NV2 : 4.3mm Orifice
- NV3 : 6.3mm Orifice
- NV4 : 9.5mm Orifice

**MH**

**End Connection Designator**

- H : Hy-Lok Tube Fitting
- M : Male Pipe Thread
- F : Female Pipe Thread
- MH : Male Pipe Thread & Hy-Lok Tube Fittings
- MF : Male Pipe Thread & Female Pipe Thread

**A**

**Body Pattern Designator\***

- Nil : Straight Pattern (Standard)
- A : Angle Pattern

**6N8T**

**Size Designator**

- NPT (ISO/BSP)

**PK**

**Packing Material Designator\***

- Nil : PTFE(Standard)
- PK : PEEK

**R**

**Stem Tip Designator\***

- Nil : Vee(Standard)
- R : Regulating
- S : Soft Seat with Kel-F

**AB**

**Handle Designator\***

- Nil : Without(Standard)
- K : Black Phenolic Knob  
Available only with soft seat stem
- AB : Black Aluminum Bar

**SOG**

**Sour Gas Designator\***

- Nil : Without(Standard)
- SOG : NACE MR-01-75

**S316**

**Material Designator**

- S316 : 316 Stainless Steel
- BRAS : Brass
- MONE : Alloy 400 (Monel)

Thread (in.)	1/8	1/4	3/8	1/2
Designator	2N(R)	4N(R)	6N(R)	8N(R)

Fractional Tube	O.D(in.)	1/8	1/4	3/8	1/2	3/4
Designator		2T	4T	6T	8T	12T
Metric Tube	O.D(mm)	3	6	8	10	12
Designator		3M	6M	8M	10M	12M

**Note \*** : No designator is required for standard, e.g. NV3MH-6N8T-S316.

### QUALITY SYSTEM CERTIFICATES



ISO 9001  
CERTIFICATE NO.GQC 212

ASME SECT. III (MO)  
CERTIFICATE NO. QSC 584

### TYPE APPROVALS (for Hy-Lok Tube Fittings)



American Bureau of Shipping  
CERTIFICATE NO.00-BK50288-X



Lloyd's Register  
CERTIFICATE NO.01/10075



GERMANISCHER LLOYD  
CERTIFICATE NO.57798-91 HH



DET NORSKE VERITAS  
CERTIFICATE NO.P-9100

## SAFETY in VALVE SELECTION

Proper installation, materials compatibility, operation and maintenance of these valves are the responsibility of the user. The total system design must be taken into consideration to ensure optimal performance and safety.



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