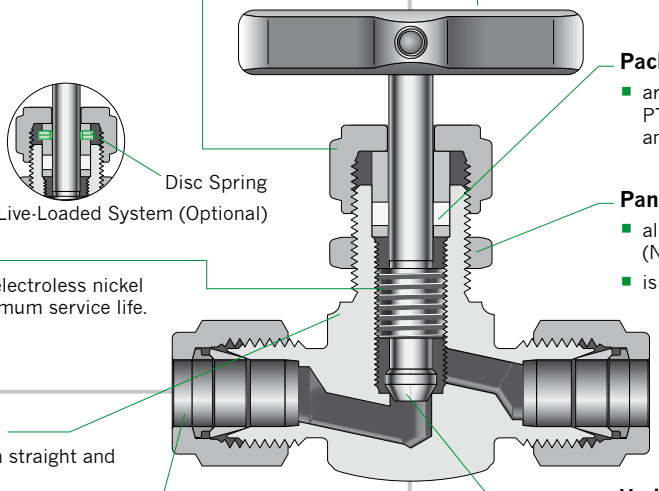
Hy-Lok NV Series

Integral Bonnet Needle Valves

Catalog No. H-100NV
Oct. 2014

Packing Nut
- allows smooth packingadjustment.

Best Suited Standard Handles
- Include sintered stainless steel, black phenolic knob, and black aluminum bar depending upon valve type.



Disc Spring
* Live-Loaded System (Optional)

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

Panel Mounting Nut
- allows easy mounting. (NV series standard)
- is optional at SV Series.

Stem Threads
- are rolled and electroless nickel plated for maximum service life.

Integral Bonnet
- is available with straight and angle pattern.

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 PCTFE

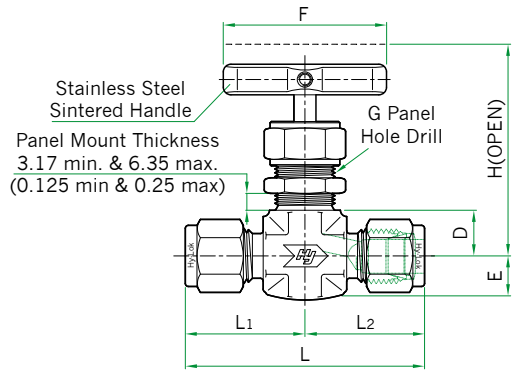
Vee Tip | Regulating Tip | Soft Seat Tip

Features

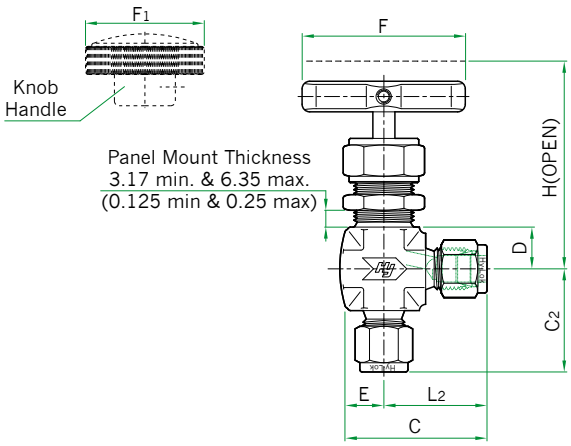
- **Pressure rating** up to 5000psig (340bar) @ 100°F(38°C)
- **Temperature rating** from -65°F to 450°F(-54°C to 232°C) with standard PTFE packing, and up to 600°F(315°C) with optional PEEK packing
- **Body materials** available in 316 stainless steel, alloy 400, and brass
- **100% factory tested.**

HY-LOK CORPORATION

Needle Valves



Straight pattern



Angle pattern

Table of Dimensions

Basic Part No.			Orifice	Cv	End Connections		Dimensions										
					Inlet	Outlet	L	L1	L2	L3	C	D	E	F1	F	G	H
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	45.0	38.0	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	45.0	38.0	13.5	51.2
	M	-2N-			1/8" Male NPT	1/8" Male NPT											
	M	-4N-			1/4" Male NPT	1/4" Male NPT	50.0	25.0	25.0	25.0	34.5						
	MH	-4N4T-			1/4" Male NPT	1/4" Hy-Lok	53.8		28.8		38.3						
	H	-6M-			6mm Hy-Lok	6mm Hy-Lok	57.6	28.8	28.8	28.8	38.3						
	H	-41-			1/4" Hy-Lok	1/4" Hy-Lok											
	H	-8M-			8mm Hy-Lok	8mm Hy-Lok	59.2	29.6	29.6	29.6	39.1						
NV3	F	-4N-	6.3	0.73	1/4" Female NPT	1/4" Female NPT	53.8	26.9	26.9	28.0	41.0	13.5	13.0	64.0	50.0	20.0	63.6
	F	-4R-			1/4" Female ISO	1/4" Female ISO											
	MF	-4N-			1/4" Male NPT	1/4" Female NPT	60.0	30.0	30.0								
	MH	-4N6T-			1/4" Male NPT	3/8" Hy-Lok	61.2	29.0	33.2		46.2						
	M	-6N-			3/8" Male NPT	3/8" Male NPT	58.0		29.0	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	72.0	36.0	36.0	36.0	49.0						
	H	-8T-			1/2" Hy-Lok	1/2" Hy-Lok											
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	76.0	63.5	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											
	MF	-8N-			1/2" Male NPT	1/2" Female NPT											
	H	-8T-			1/2" Hy-Lok	1/2" Hy-Lok	97.0	48.5	48.5	48.5	67.5						
	H	-12T-			3/4" Hy-Lok	3/4" Hy-Lok											

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

Bonnet Features

Materials of Construction

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

Note : „*“ marked are wetted parts.
Nickel antl-selze 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)	5000	3000	3000
	200 °F (93 °C)	4290	2600	2640
	300 °F (148 °C)	3870	2210	2470
	350 °F (176 °C)	3710	1470	2430
	400 °F (204 °C)	3560	740	2390
	450 °F (232 °C)	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 the 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

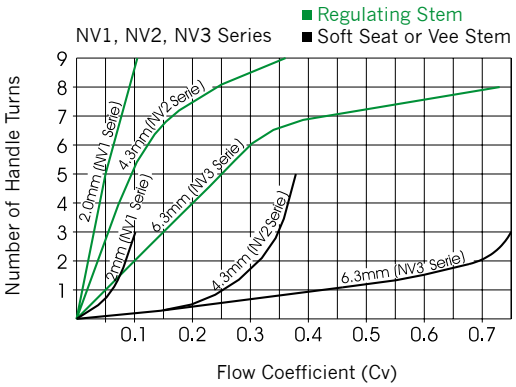
Packing Material	Body Material	Temperature	Pressure @ Temp Rating
PTFE (Standard)	316 Stainless Steel	450°F (232°C)	3430 psig
PEEK* (Optional)	316 Stainless Steel	-65°F ~ 600°F (-54°C ~ 315°C)	3130 psig
	Alloy 400	-65°F ~ 500°F (-54°C ~ 260°C)	2370 psig

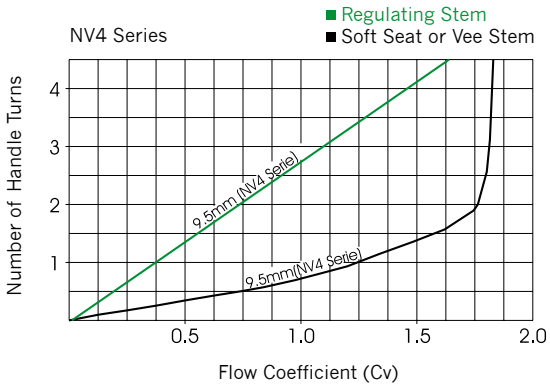
* PEEK is not recommened for service with aromatic heat transfer fluids or concentrated sulfuric and nitric acids. Other limitations may apply.

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 | MH | A | 6N8T | PK | R | AB | SOG | S316

Series Designator by Orifice Size
- NV1 : 2.0mm Orifice
- NV2 : 4.3mm Orifice
- NV3 : 6.3mm Orifice
- NV4 : 9.5mm Orifice

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

Body Pattern Designator*
- Nil : Straight Pattern (Standard)
- A : Angle Pattern

Size Designator

Packaging Material Designator*
- Nil : PTFE (Standard)
- PK : PEEK

Stem Tip Designator*
- Nil : Vee (Standard)
- R : Regulating
- S : Soft Seat with Kel

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

Sour Gas Designator*
- Nil : Without (Standard)
- SOG : NACE MR-01-75

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

- NPT (ISO / BSP)

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

- Tube

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.

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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