NS Series Introduction

The Parker NS Series of metering valves are designed to provide accurate and stable control of flow rates in analytical, instrumentation, and research applications. A variety of connection sizes, body patterns and materials of construction provide considerable application versatility. For higher flow rates, refer to the NM and NL Series of metering valves.

Features

- Precision tapered valve stem accurately controls flow
- Brass or 316 SS forged body construction
- Panel or in-line mounting
- Positive handle stop prevents overtightening
- Angle or in-line patterns
- Valve stem threads not in contact with process fluid
- 100% function tested
- Optional stem seals and handles

Specifications

Pressure Rating at all temperatures:
.....2000 psig (138 bar) CWP

Flow Data:
Orifice:.....0.03" (0.76mm)
In-line pattern: ..... $C_v = 0.039$; $X_T = 0.64$
Angle pattern:..... $C_v = 0.042$; $X_T = 0.53$

Stem Taper: ..... 1°

Turns to open: ..... 13 +/- 1

Valve / Seal Temperature Ratings

Nitrile Rubber:
..... -10°F to 250°F (-23°C to 121°C)

Ethylene Propylene Rubber:
..... -40°F to 250°F (-40°C to 121°C)

Neoprene Rubber:
..... -40°F to 250°F (-40°C to 121°C)

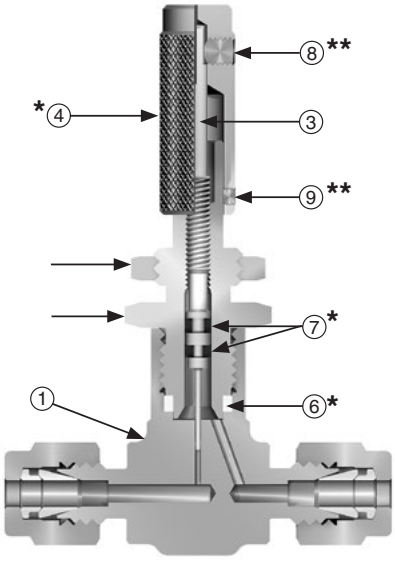
Fluorocarbon Rubber:
..... -10°F to 400°F (-23°C to 204°C)

Highly Fluorinated Fluorocarbon Rubber:
..... -25°F to 200°F (-32°C to 93°C)

Note: These products are not intended for use as shut-off valves. For metering valves with shut-off capabilities, please refer to page 8 of this catalog.

Item #	Description	Stainless Steel	Brass
1	Body	ASTM A 182 Type F316	ASTM B 283 Alloy C37700 (Nickel Plated)
2	Bonnet	ASTM A 479 Type 316	ASTM B 16 Alloy C36000 (Nickel Plated)
3	Stem	ASTM A 276 Type 316	ASTM A 276 Type 316
4	Handle*	ASTM A 582 Type 303	ASTM A 582 Type 303
5	Panel Nut	ASTM B 16 (Nickel Plated)	ASTM B 16 (Nickel Plated)
6	Sealing Ring*	Fluorocarbon Rubber	Fluorocarbon Rubber
7	Stem Seals*	Fluorocarbon Rubber	Fluorocarbon Rubber
8	Handle Set Screw**	Stainless Steel	Stainless Steel
9	Handle Lock Screw**	Stainless Steel	Stainless Steel

* Optional Handles, Sealing Ring and Stem Seal materials are available. See How to Order.
** K, KS, and F Handles use 18-8 stainless steel screws. V Handles use alloy steel screws. Lock Screws are not used on F and V Handles.
Lubrication: Perfluorinated polyether.



Model Shown: 2A-NSL-NE-SS-K

Flow tested in accordance with ISA S75.02. Gas flow will be choked when $P_1 - P_2 / P_1 = X_T$.

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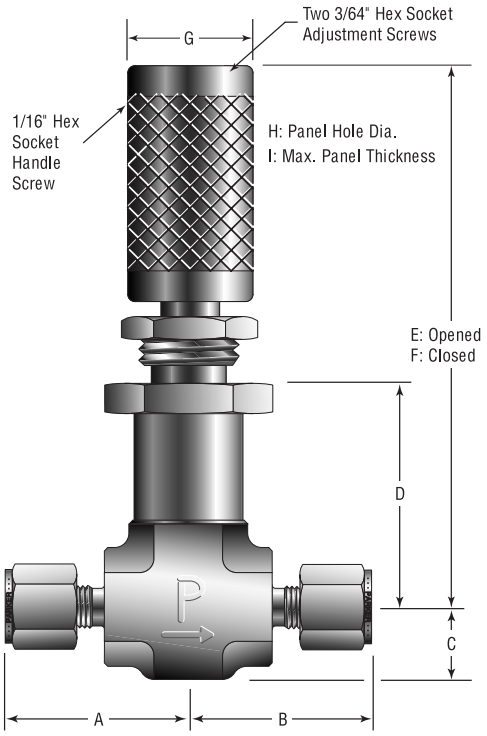
NS Series Dimensions

Basic Part Number	End Connections (Inlet) Port 1	End Connections (Outlet) Port 2	Dimensions A* inch	A* mm	B* inch	B* mm	C inch	C mm	D inch	D mm
1A-NSL	1/16" Compression A-LOK®		0.78	19.8	0.78	19.8	0.31	7.9	0.94	23.9
1A-NSA			0.82	20.8	0.82	20.8	0.31	7.9	0.94	23.9
1Z-NSL	1/16" Compression CPI™		0.78	19.8	0.78	19.8	0.31	7.9	0.94	23.9
1Z-NSA			0.82	20.8	0.82	20.8	0.31	7.9	0.94	23.9
2A-NSL	1/8" Compression A-LOK®		0.95	24.1	0.95	24.1	0.31	7.9	0.94	23.9
2A-NSA			1.01	25.7	1.01	25.7	0.31	7.9	0.94	23.9
2M-NSL	1/8" Male NPT		0.88	22.4	0.88	22.4	0.31	7.9	0.94	23.9
2M-NSA			0.88	22.4	0.88	22.4	0.31	7.9	0.94	23.9
2Z-NSL	1/8" Compression CPI™		0.95	24.1	0.95	24.1	0.31	7.9	0.94	23.9
2Z-NSA			1.01	25.7	1.01	25.7	0.31	7.9	0.94	23.9
4A-NSL	1/4" Compression A-LOK®		1.02	25.9	1.02	25.9	0.31	7.9	0.94	23.9
4A-NSA			1.02	25.9	1.02	25.9	0.31	7.9	0.94	23.9
4V-NSL	1/4" VacuSeal		1.03	26.2	1.03	26.2	0.53	13.5	0.94	23.9
4Z-NSL	1/4" Compression CPI™		1.02	25.9	1.02	25.9	0.31	7.9	0.94	23.9
4Z-NSA			1.02	25.9	1.02	25.9	0.31	7.9	0.94	23.9
M3A-NSL	3mm Compression A-LOK®		0.94	23.9	0.94	23.9	0.31	7.9	0.94	23.9
M3A-NSA			1.00	25.4	1.00	25.4	0.31	7.9	0.94	23.9
M3Z-NSL	3mm Compression CPI™		0.94	23.9	0.94	23.9	0.31	7.9	0.94	23.9
M3Z-NSA			1.00	25.4	1.00	25.4	0.31	7.9	0.94	23.9
M6A-NSL	6mm Compression A-LOK®		1.02	25.9	1.02	25.9	0.31	7.9	0.94	23.9
M6A-NSA			1.02	25.9	1.02	25.9	0.31	7.9	0.94	23.9
M6Z-NSL	6mm Compression CPI™		1.02	25.9	1.02	25.9	0.31	7.9	0.94	23.9
M6Z-NSA			1.02	25.9	1.02	25.9	0.31	7.9	0.94	23.9

* For CPI™ and A-LOK®, dimensions are measured with nuts in the finger tight position.

Dimensions in inches/millimeters are for reference only, subject to change.



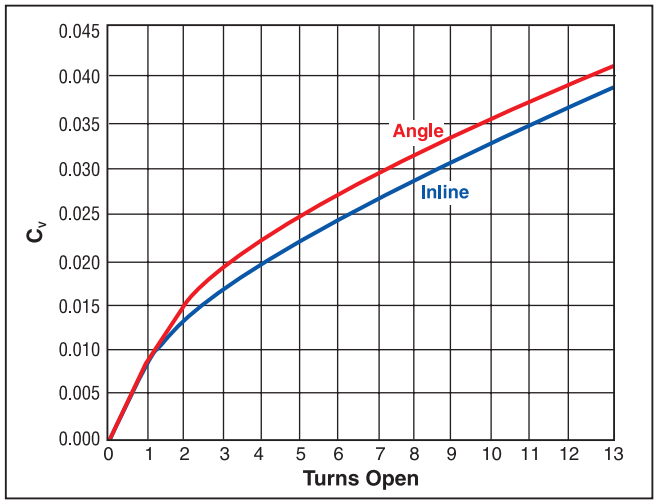
Model Shown: 2A-NSL-BN-SS-F

Handle Dimensions

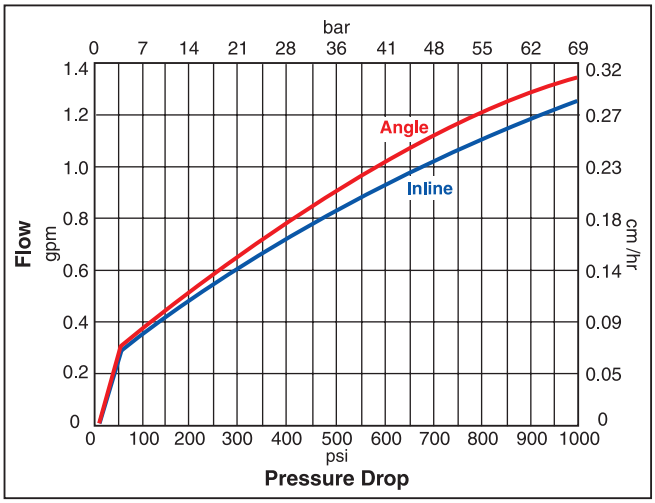
	K & KS inch	K & KS mm	V inch	V mm	F inch	F mm
E	2.50	63.5	2.97	75.4	2.97	75.4
F	2.27	57.7	2.74	69.6	2.74	69.6
G	0.37	9.4	0.84	21.3	0.37	9.4
H	0.46	11.7	0.46	11.7	0.46	11.7
I	0.16	4.1	0.16	4.1	0.16	4.1

Dimensions in inches/millimeters are for reference only, subject to change.

NS Series – C_v vs. Turns Open



NS Series – Water Flow Data



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How to Order

Dimensions in inches/millimeters are for reference only, subject to change.

The correct part number is easily derived from the following example and ordering chart. The six product characteristics required are coded as shown in the chart.

The example below describes a stainless steel in-line NLL series valve with 1/4" CPI compression ends, fluorocarbon seals and vernier handles.

Example: 4Z-NLL-V-SS-V

4Z		–	NLL	–	V	–	SS	–	V
Inlet Port*	Outlet Port*		Valve Series		Seal Material		Body Material		Handle Type

Inlet Port	Outlet Port	Valve Series	Seal Material	Body Material	Handle Type
1A, 1Z, 2A, 2M, 2Z,4A, 4V, 4Z, M3A, M3Z, M6A, M6Z		NSA NSL	**BN** Nitrile **EPR** Ethylene Propylene Rubber **NE** Neoprene Rubber **V** Fluorocarbon Rubber **KZ** Highly Fluorinated Fluorocarbon Rubber	**B** Brass **SS** Stainless Steel	**K** Knurled **KS** Knurled with Slot **V** Vernier **F**** Precision Adjustment
2A, 2F, 2Z, 4A, 4M, 4V, 4Z, M3A, M3Z, M6A, M6Z		NMA NML			
2F, 4A, 4M, 4V, 4Z, 6A, 6Z, M6A, M6Z		NLA NLL			

* If the inlet and outlet ports are the same, eliminate the outlet port designator.

** F handle available only on NS Series.

Optional Handles

Knurled (K) and Knurled with Slot (KS)

- Knurled K handle for ease of actuation
- Knurled with Slot (KS) adds a screw-driver slot across the top for locations where handle access is difficult

Vernier (V)

- Precision graduated aluminum alloy permits repeatable flow settings
- Resolution to 1/25th turn

Precision Adjustment (F)

- Adjustable torque handle for precise positioning
- Knurled metal with two top mounted adjustment screws
- NS Series only

How to Order Options

Oxygen Cleaning — Add the suffix **-C3** to the end of the part number to receive valves cleaned and assembled for oxygen service in accordance with Parker Specification ES8003. Example: 4A-NMA-EPR-SS-V**-C3**.

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