

Needle Valves

Catalog 4110-NV

June 2019

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



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Introduction

Parker NP6 Needle Valves are designed with packing below the stem threads and a two-piece stem. The packing below the threads protects the flow stream from thread lubricant contamination or washout and also protects the stem threads from potential damaging effects of the media. The two-piece stem produces a non-rotating lower stem for superior, repeatable sealing and reduced packing wear.

Features

- ▶ Packing below power threads protects thread lubricants from media and isolates the media from the lubricant for severe service applications
- ▶ O-ring dust seal in bonnet protects stem threads from external contamination
- ▶ Choice of two non-rotating stem types:
 - R-Stem – All metal, blunt stem tip
 - K-Stem – PCTFE stem tip
- ▶ Non rotating lower stem extends packing and valve life
- ▶ 316 stainless steel construction
- ▶ Inline and angle patterns
- ▶ Wide variety of US Customary and SI ports
- ▶ Panel mountable
- ▶ 100% factory tested
- ▶ Optional color coded handles

Specifications

Pressure Rating:

6000 psig (414 bar) CWP

Temperature Rating:

PTFE Packing:

-65°F to 450°F (-54°C to 232°C)

PCTFE:

-65°F to 350°F (-54°C to 177°C)

Nitrile Rubber:

-30°F to 250°F (-34°C to 121°C)

Ethylene Propylene Rubber:

-70°F to 275°F (-57°C to 135°C)

Fluorocarbon Rubber:

-15°F to 400°F (-26°C to 204°C)

Grafoil®:

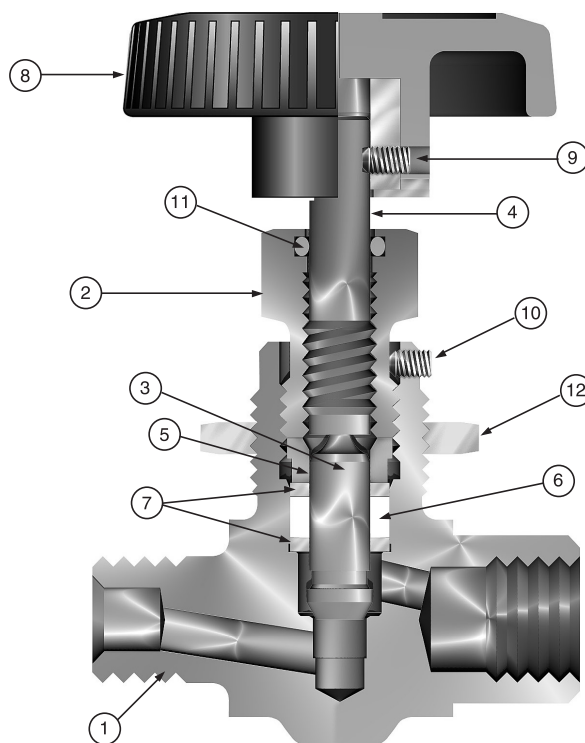
-70°F to 700°F (-57°C to 371°C)

Materials of Construction

| Item # | Description | Material |
|--------|------------------------|------------------------------------|
| 1 | Body | ASTM A 182 Type F316 |
| 2 | Packing Nut | ASTM A 479 Type 316 |
| 3 | Lower Stem (R-Stem) | ASTM A 276 Type 316 |
| 3 | Lower Stem (K-Stem) | ASTM A 276 Type 316, with PCTFE |
| 4 | Upper Stem | ASTM A 276 Type 316 |
| 5 | Packing Gland | ASTM A 276 Type 316 |
| 6 | Packing* | PTFE |
| 7 | Packing Washer | Stainless Steel |
| 8 | Handle** | Nylon 6/6, with SS Insert |
| 9 | Handle Screw | Stainless Steel |
| 10 | Packing Nut Screw | Stainless Steel |
| 11 | Dust Seal | Fluorocarbon Rubber |
| 12 | Panel Nut | 316 Stainless Steel |

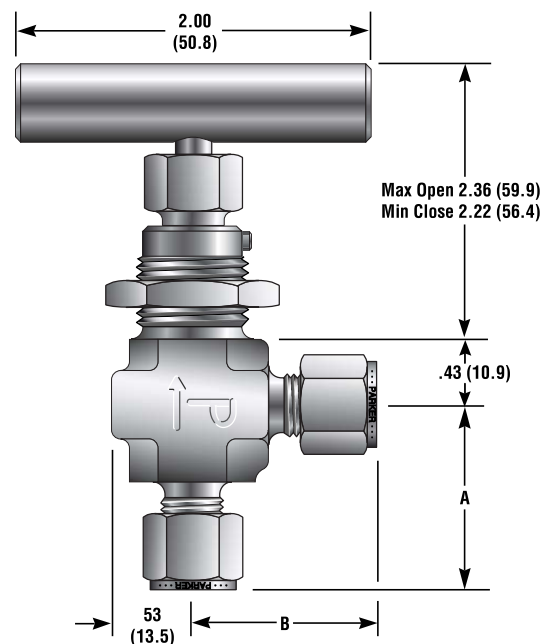
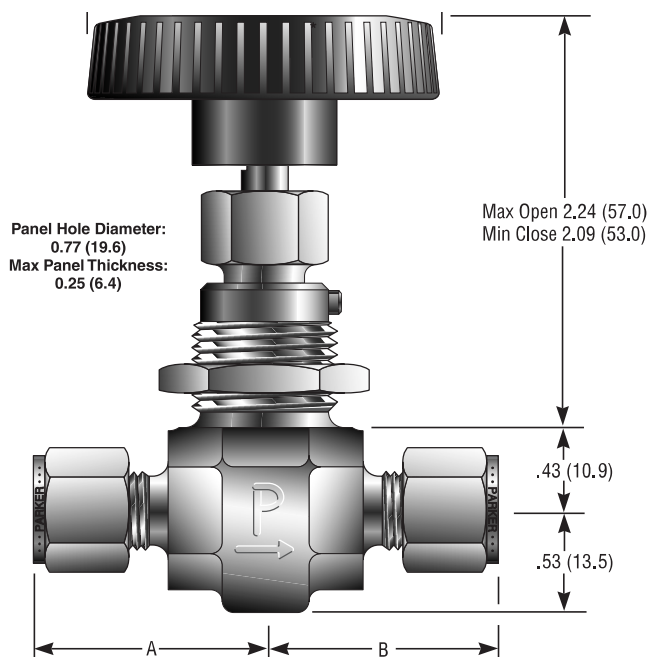
* Optional elastomeric stem seals and Grafoil® packing are available - See How to Order.

** Handles for Grafoil® packed valves are aluminum T-bars.
Lubrication: Perfluorinated polyether



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Dimensions / Flow Data



Model Shown: 4Z-NP6LK-SSP

* Note: Handle diameter for R Stem NP6 Series Valves is 1.81 (46.0)

Model Shown: 4Z-NP6AR-G-SSP

() Denotes dimensions in millimeters

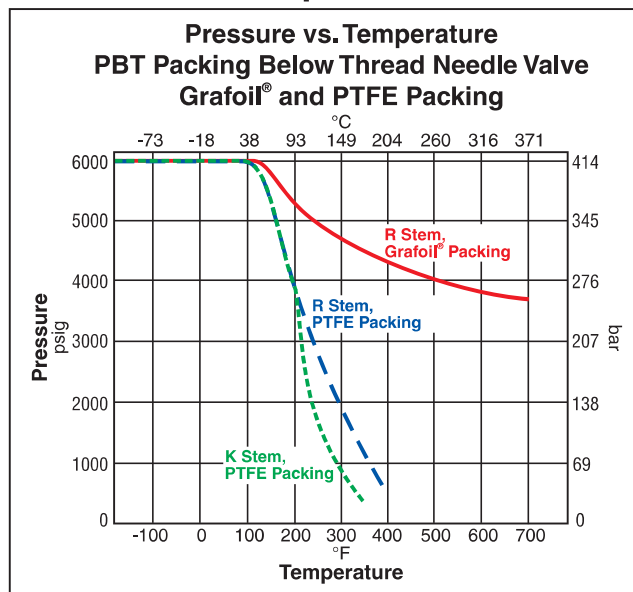
| Basic Part Number | | End Connections | | Stem Type | Flow Data | | | | | | Dimensions |
|-------------------|---------------|-------------------------|--------------------|-----------|-----------|-----|----------------|----------------------|----------------|----------------------|------------|
| Inline | Angle | Inlet (Port 1) | Outlet (Port 2) | | Orifice | | Inline | | Angle | | A† and B† |
| | | | | | Inch | mm | C _V | X _T * | C _V | X _T * | Inch mm |
| 4A-NP6LR-SSP | 4A-NP6AR-SSP | 1/4" Compression A-LOK® | | Blunt | 0.177 | 4.5 | 0.60 | 0.50 | 0.67 | 0.39 | 1.20 |
| 4A-NP6LK-SSP | 4A-NP6AK-SSP | | | PCTFE | | | 0.51 | 0.55 | 0.65 | 0.52 | (30.5) |
| 4F-NP6LR-SSP | 4F-NP6AR-SSP | 1/4" Female NPT | | Blunt | 0.177 | 4.5 | 0.60 | 0.50 | 0.67 | 0.39 | 1.00 |
| 4F-NP6LK-SSP | 4F-NP6AK-SSP | | | PCTFE | | | 0.51 | 0.55 | 0.65 | 0.52 | (25.4) |
| 4M-NP6LR-SSP | 4M-NP6AR-SSP | 1/4" Male NPT | | Blunt | 0.177 | 4.5 | 0.60 | 0.50 | 0.67 | 0.39 | 1.03 |
| 4M-NP6LK-SSP | 4M-NP6AK-SSP | | | PCTFE | | | 0.51 | 0.55 | 0.65 | 0.52 | (26.2) |
| 4Z-NP6LR-SSP | 4Z-NP6AR-SSP | 1/4" Compression CPI™ | | Blunt | 0.177 | 4.5 | 0.60 | 0.50 | 0.67 | 0.39 | 1.20 |
| 4Z-NP6LK-SSP | 4Z-NP6AK-SSP | | | PCTFE | | | 0.51 | 0.55 | 0.65 | 0.52 | (30.5) |
| 6A-NP6LR-SSP | 6A-NP6AR-SSP | 3/8" Compression A-LOK® | | Blunt | 0.177 | 4.5 | 0.60 | 0.50 | 0.67 | 0.39 | 1.23 |
| 6A-NP6LK-SSP | 6A-NP6AK-SSP | | | PCTFE | | | 0.51 | 0.55 | 0.65 | 0.52 | (31.2) |
| 6Z-NP6LR-SSP | 6Z-NP6AR-SSP | 3/8" Compression CPI™ | | Blunt | 0.177 | 4.5 | 0.60 | 0.50 | 0.67 | 0.39 | 1.23 |
| 6Z-NP6LK-SSP | 6Z-NP6AK-SSP | | | PCTFE | | | 0.51 | 0.55 | 0.65 | 0.52 | (31.2) |
| M6A-NP6LR-SSP | M6A-NP6AR-SSP | 6mm Compression A-LOK® | | Blunt | 0.177 | 4.5 | 0.60 | 0.50 | 0.67 | 0.39 | 1.16 |
| M6A-NP6LK-SSP | M6A-NP6AK-SSP | | | PCTFE | | | 0.51 | 0.55 | 0.65 | 0.52 | (29.5) |
| M6Z-NP6LR-SSP | M6Z-NP6AR-SSP | 6mm Compression CPI™ | | Blunt | 0.177 | 4.5 | 0.60 | 0.50 | 0.67 | 0.39 | 1.16 |
| M6Z-NP6LK-SSP | M6Z-NP6AK-SSP | | | PCTFE | | | 0.51 | 0.55 | 0.65 | 0.52 | (29.5) |
| M8A-NP6LR-SSP | M8A-NP6AR-SSP | 8mm Compression A-LOK® | | Blunt | 0.177 | 4.5 | 0.60 | 0.50 | 0.67 | 0.39 | 1.24 |
| M8A-NP6LK-SSP | M8A-NP6AK-SSP | | | PCTFE | | | 0.51 | 0.55 | 0.65 | 0.52 | (31.5) |
| M8Z-NP6LR-SSP | M8Z-NP6AR-SSP | 8mm Compression CPI™ | | Blunt | 0.177 | 4.5 | 0.60 | 0.50 | 0.67 | 0.39 | 1.24 |
| M8Z-NP6LK-SSP | M8Z-NP6AK-SSP | | | PCTFE | | | 0.51 | 0.55 | 0.65 | 0.52 | (31.5) |

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

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

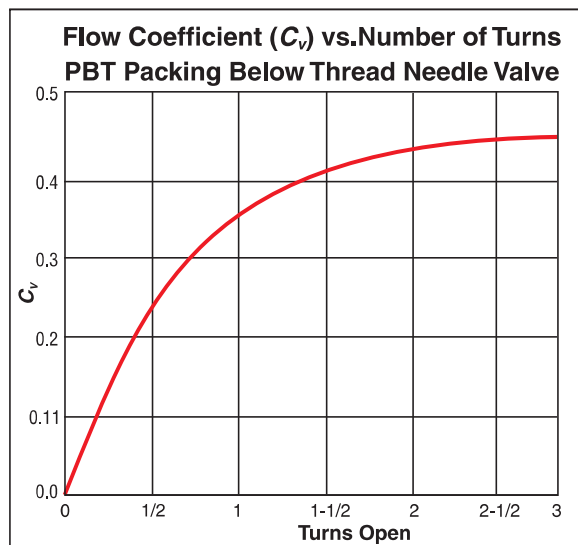
Dimensions in inches/millimeters are for reference only, subject to change.

Pressure vs. Temperature



Note: To determine MPa, multiply bar by 0.1

Flow Characteristics

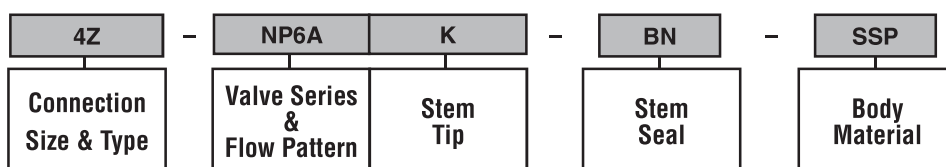


Note: When combining seat and seal materials, the most restrictive temperature rating becomes the limiting factor on temperature range.

How to Order

The part number sequence identifies product characteristics as shown in the example below

Example: 4Z-NP6AK-BN-SSP describes an angle pattern NP6 Series needle valve equipped with 1/4" CPI™ compression inlet and outlet ports, a PCTFE tipped stem, Nitrile seals, and stainless steel construction with panel mounting nut.



How to Order Options

Optional Stem Seals - Standard is PTFE (No Designator) Options include **-BN** (Nitrile Rubber), **-EPR** (Ethylene Propylene Rubber), **-V** (Fluorocarbon Rubber) or **-G** (Grafoil®). **Example:** 4M-NP6LR-G-SSP

Oxygen Cleaning – Add the suffix **-C3** to the end of the part number to receive valves cleaned in accordance with ASTM G93 level C, class 500. This ASTM details cleaning methods and cleanliness levels for materials and equipment used in oxygen-enriched environments. **Example:** M6A-NP6AK-EPR-SS-C3

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