Valve Product Solutions

Needle Valves

Manifold Valves
2-Valve Static Pressure & Liquid Level
3-Valve Differential Pressure
5-Valve Natural Gas

Accessories
At NOSHOK, we pride ourselves on being innovators in the industry by continually offering the latest technology and measurement solutions, and providing the best customer support in the marketplace.

Established in 1967, NOSHOK was one of the first companies to offer liquid filled pressure gauges. We also took a bold step by backing our quality gauges with an extended 3-year warranty. That unwavering standard of quality has endured for 50+ years, and as we have expanded our product offering we continue to provide industry-leading warranties. NOSHOK also leads the industry as one of the first companies to offer corrosion-resistant zinc nickel plating standard on our carbon steel valves.

We have the capacity to put together special requirements which are so often hard to find. If you do not find what you need in this catalog, chances are we can still put a solution together.

NOSHOK is committed to providing excellence on every level. Thank you for choosing NOSHOK products.

Jeff N. Scott
President

NOSHOK Corporate Headquarters
Your Single Source Instrumentation Company

NOSHOK is a member and actively supports:

- Fluid Control Institute, Inc.
- FPDA Motion & Control Network
- ASME
- Association for High Technology Distribution

NOSHOK is an ISO 9001:2015 registered company.
SUPERIOR CORROSION-RESISTANT ZINC-NICKEL PLATING ON ALL CARBON STEEL NOSHOK VALVES

A significant number of high profile international aerospace and automotive companies have made the switch to Zinc-Nickel plating for their components over the last decade, so we decided to put this plating to the test for ourselves.

In a certified test by an independent lab, two samples were subjected to 1,000+ hours of exposure to a 5% salt spray (fog) environment in a test chamber operated and maintained in accordance with ASTM B-117-07a. The Zinc-Nickel plated sample showed no visible corrosion on the part after 1,000+ hours of exposure.

The same results after being submerged for 3,500 hours in a 10% salt solution. The Zinc-Nickel plated valves far outperformed the electroless Nickel and cobalt plated valves in terms of corrosion resistance. Because of these impressive results, all Carbon Steel NOSHOK needle and manifold valves now utilize this material as standard plating to withstand and endure in the harshest environments.

Improvements in corrosion protection have become increasingly important for outdoor applications, where traditional platings have limited performance capabilities. In addition to its excellent corrosion resistance (higher than any other sacrificial alloy), Zinc-Nickel plating provides increased deposit hardness which results in extended wear resistance and longer service life – an ideal quality for most industrial applications. It is also WEEE and RoHS compliant.

Note: Colors may vary due to normal process variation and will not affect the performance of the valve.
<table>
<thead>
<tr>
<th>Model</th>
<th>Series</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mini, Hard Seat</td>
<td>100</td>
<td>6-13</td>
</tr>
<tr>
<td>Mini, Soft Tip</td>
<td>150</td>
<td>14-21</td>
</tr>
<tr>
<td>Multiport, Hard Seat</td>
<td>200</td>
<td>22-25</td>
</tr>
<tr>
<td>Multiport, Soft Seat</td>
<td>300</td>
<td>26-29</td>
</tr>
<tr>
<td>Standard, Hard Seat</td>
<td>400</td>
<td>30-35</td>
</tr>
<tr>
<td>Standard, Soft Seat</td>
<td>500</td>
<td>36-39</td>
</tr>
<tr>
<td>Block &amp; Bleed, Hard Seat</td>
<td>600</td>
<td>40-43</td>
</tr>
<tr>
<td>Block &amp; Bleed, Soft Seat</td>
<td>700</td>
<td>44-47</td>
</tr>
<tr>
<td>Bleed, Hard Seat &amp; Soft Tip</td>
<td>800/850</td>
<td>48-51</td>
</tr>
<tr>
<td>2-Valve Block &amp; Bleed, Hard Seat</td>
<td>2070</td>
<td>52-55</td>
</tr>
<tr>
<td>2-Valve Block &amp; Bleed, Soft Seat/Tip</td>
<td>2170</td>
<td>56-59</td>
</tr>
<tr>
<td>3-Valve Double Block &amp; Bleed, Hard Seat</td>
<td>3070</td>
<td>60-63</td>
</tr>
</tbody>
</table>

**NEEDLE VALVE OPTIONS**

Handles, Panel Mounts, Plug, Bleed Plug, Bleed Screw, Packing, Stem Tips

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Grafoil® is a registered trademark of Graftech, Inc.™
## TABLE OF CONTENTS

### MANIFOLD VALVES, 2-VALVE

<table>
<thead>
<tr>
<th>Component</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Static Pressure Block &amp; Bleed, Hard &amp; Soft Seat:</td>
<td>68-73</td>
</tr>
<tr>
<td>2000/2100 SERIES</td>
<td></td>
</tr>
<tr>
<td>Liquid Level, Hard &amp; Soft Seat:</td>
<td>74-77</td>
</tr>
<tr>
<td>2020/2120 SERIES</td>
<td></td>
</tr>
<tr>
<td>Static Pressure Narrow Block &amp; Bleed, Hard &amp; Soft Seat:</td>
<td>78-81</td>
</tr>
<tr>
<td>200002/210002 SERIES &amp; 200402/210402 SERIES</td>
<td></td>
</tr>
<tr>
<td>Natural Gas Large Bore 90° Angle (0.375&quot; Orifice):</td>
<td>82-85</td>
</tr>
<tr>
<td>2530 SERIES</td>
<td></td>
</tr>
<tr>
<td>Static Pressure Mini Block &amp; Bleed, Hard Seat &amp; Soft Tip (0.141&quot; Orifice):</td>
<td>86-89</td>
</tr>
<tr>
<td>2602/2702 SERIES</td>
<td></td>
</tr>
<tr>
<td>Static Pressure Block &amp; Bleed, Hard Seat &amp; Soft Tip (0.156&quot; Orifice):</td>
<td>90-93</td>
</tr>
<tr>
<td>2603/2703 SERIES &amp; 2604/2704 SERIES</td>
<td></td>
</tr>
<tr>
<td>Meter Manifold, Soft Seat:</td>
<td>94-97</td>
</tr>
<tr>
<td>2180 SERIES</td>
<td></td>
</tr>
</tbody>
</table>

### MANIFOLD VALVES, 3-VALVE

<table>
<thead>
<tr>
<th>Component</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differential Pressure, Hard &amp; Soft Seat:</td>
<td>98-103</td>
</tr>
<tr>
<td>3010/3110 SERIES</td>
<td></td>
</tr>
<tr>
<td>Differential Pressure, Soft Seat (0.375&quot; Orifice):</td>
<td>104-109</td>
</tr>
<tr>
<td>3510 SERIES</td>
<td></td>
</tr>
<tr>
<td>Differential Pressure Mini, Hard Seat &amp; Soft Tip (0.141&quot; Orifice):</td>
<td>110-113</td>
</tr>
<tr>
<td>3610/3710 SERIES</td>
<td></td>
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</table>

### MANIFOLD VALVES, 5-VALVE

<table>
<thead>
<tr>
<th>Component</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas, Hard &amp; Soft Seat/Tip:</td>
<td>114-123</td>
</tr>
<tr>
<td>5030/5130 SERIES</td>
<td></td>
</tr>
<tr>
<td>Natural Gas, Soft Seat/Tip (0.375&quot; Orifice):</td>
<td>124-135</td>
</tr>
<tr>
<td>5530 SERIES</td>
<td></td>
</tr>
</tbody>
</table>

### CONNECTORS

<table>
<thead>
<tr>
<th>Component</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stabilized &amp; Non-Stabilized Connectors</td>
<td>136-137</td>
</tr>
<tr>
<td>Stabilized Connectors with Integral Valve</td>
<td>138-141</td>
</tr>
</tbody>
</table>

### MANIFOLD VALVE ACCESSORIES

<table>
<thead>
<tr>
<th>Component</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Futbols, Static Adaptors, Dielectric Kits, Manifold Mounting Kits, Δ Pressure to Static Adaptor, Δ to Δ Pressure Adaptor, Vertical to Horizontal Adaptor</td>
<td>142-147</td>
</tr>
</tbody>
</table>

### MOUNTING DIAGRAMS FOR MANIFOLD VALVES

<table>
<thead>
<tr>
<th>Component</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000, 3000, &amp; 5000 SERIES</td>
<td>148-149</td>
</tr>
<tr>
<td>Needle &amp; Manifold Valve Reference Information</td>
<td>150-155</td>
</tr>
<tr>
<td>Canadian Registration Numbers</td>
<td>156</td>
</tr>
</tbody>
</table>
Mini, Hard Seat

100 SERIES

- Compact size valve built for maximum durability and robust performance in the toughest applications
- 100% helium leak tested to $1 \times 10^{-4}$ ml/s for performance and reliability
- Available in Zinc-Nickel plated Steel, electropolished Stainless Steel, and Brass
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® packing optional
- All stem threads are rolled for strength and ease of operation
- Patented body-to-bonnet, metal-to-metal seal is designed to significantly increase the pressure range of the valve (U.S. Patent 7,758,014)

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Materials</strong></td>
<td>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*, 360 Brass</td>
</tr>
<tr>
<td><strong>Connections</strong></td>
<td>1/8&quot; NPT, 1/4&quot; NPT, 7/16&quot;-20 UNF-2B, 9/16&quot;-18 UNF-2B Male-male, Male-female, Female-female, in-line and angled configurations</td>
</tr>
</tbody>
</table>
| **Pressure ratings**           | Brass: 6,000 psi @ 200 °F  
                                  | Steel: 10,000 psi @ 200 °F  
                                  | Stainless Steel: 10,000 psi @ 200 °F |
| **Orifice size**               | 0.172”                                       |
| **Flow coefficient**           | $C_v = 0.42$                                 |
| **Stem seal & type**           | All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional |
| **Options**                    | Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips |
| **Weight**                     | Approximately 0.5 lb.                       |

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.  
  ** If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

---

**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
Additional options are available for these needle valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

NOTE 1: The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 102-MFC-HL3)

NOTE 2: When a packing option is selected, an o-ring option is NOT available.

ORDERING INFORMATION - ADDITIONAL OPTIONS

<table>
<thead>
<tr>
<th>PACKINGS†</th>
<th>P1</th>
<th>P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM TIPS</td>
<td>T1</td>
<td>T6</td>
</tr>
<tr>
<td>T5</td>
<td>Ball (carbide)</td>
<td>T7</td>
</tr>
<tr>
<td>T8</td>
<td>Ball (Monel)</td>
<td></td>
</tr>
<tr>
<td>O-RINGS*</td>
<td>K2</td>
<td>K9</td>
</tr>
<tr>
<td>E1</td>
<td>EPDM</td>
<td>F2</td>
</tr>
<tr>
<td>NBR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PANEL MOUNTINGS</td>
<td>PM1</td>
<td>Panel mount (1 nut)</td>
</tr>
<tr>
<td>PM2</td>
<td>Panel mount (2 nuts)</td>
<td></td>
</tr>
<tr>
<td>HANDLES</td>
<td>H1</td>
<td>H3</td>
</tr>
<tr>
<td>H4</td>
<td>1-3/8&quot; Phenolic</td>
<td></td>
</tr>
<tr>
<td>H5</td>
<td>1-3/4&quot; Phenolic</td>
<td></td>
</tr>
</tbody>
</table>

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

* Available only on EFB, EFC and EFS valve types.

† If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

* Other o-ring materials available on request.

Please note that the standard o-ring in all the NOSHOK mini valves is FKM and the standard handles are Brass round knurled (HL3) handles, Steel mini "T" handles (HL1), and 316SS mini "T" handles (HL1).

The handle material will always match the material of the valve, unless otherwise specified. For example, the round knurled (HL3) on a 102-FFB will be Brass. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

Series ................................................. 100 hard seat
Connection size ................................. 1/4" NPT
Valve type ........................................ Female-female, Steel
Packing ............................................ PTFE
Stem tip ............................................. Non-rotating
Panel mount ...................................... Panel mount (2 nuts)
Handle ............................................. 1-3/8" Phenolic

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.
**Male-Male**

- 1/8" OR 1/4" NPT
- 2-1/2" OPEN
- 2-7/32" CLOSED

**Male-Female**

- 1/8" OR 1/4" NPT
- 2-1/2" OPEN
- 2-7/32" CLOSED

*Dimension on extended version is 2-1/4"*
100 SERIES
DIMENSIONS

Female-Female

1/8" Male-Male Angle

*Dimension on extended version is 2-1/4"
**Needle Valves**

**Dimensions**

### 1/4" Male-Male Angle

- **Dimensions:**
  - 1/4" NPT
  - 3" OPEN
  - 2-21/32" CLOSED

### 1/8" Male-Female Angle

- **Dimensions:**
  - 1/8" NPT
  - 2-27/32" OPEN
  - 2-9/16" CLOSED
1/4" Male-Female Angle

1/8" Female-Female Angle
Needle Valves
Dimensions

1/4" Female-Female Angle

For panel mount, packing, & stem tip dimensions, see pgs. 64-67.
1 Mini valve body
2 FKM o-ring
3 PTFE back-up ring
4 Mini valve stem
5 Mini valve bonnet
6 Mini valve "T" handle
7 Set screw

1 Mini valve packing stem
2 Mini valve packing bonnet
3 Packing washer
4 Packing
5 Packing washer
6 Jam nut
7 Packing adjustment screw
Mini, Soft Tip

150 SERIES

- Compact size valve built for maximum durability and robust performance in the toughest applications
- 100% helium leak tested to $1 \times 10^{-4}$ ml/s for performance and reliability
- Soft tip valves feature a patented Delrin® non-rotating soft tip stem, and a back-up metal-to-metal seal (U.S. Patent 6,820,857)
- Available in Zinc-Nickel plated Steel, electropolished Stainless Steel, and Brass
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE packing optional
- All stem threads are rolled for strength and ease of operation
- Patented body-to-bonnet, metal-to-metal seal is designed to significantly increase the pressure range of the valve (U.S. Patent 7,758,014)

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**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*, 360 Brass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections</td>
<td>$\frac{1}{8}&quot;$ NPT, $\frac{1}{4}&quot;$ NPT, $\frac{7}{16}&quot;$-20 UNF-2B, $\frac{9}{16}&quot;$-18 UNF-2B Male-male, Male-female, Female-female, in-line and angled configurations</td>
</tr>
<tr>
<td>Pressure rating</td>
<td>6,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>0.172&quot;</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>$C_v = 0.42$</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE packing optional</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 0.5 lb.</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

---

For NOSHOK Mini Valves with Brass & Steel valve types:

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Mini Valves with Stainless Steel valve types:

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

* Available only on EFFB, EFFC and EFFS valve types.

**EXAMPLE**

```
152   –   FFC
```

Series .............................................. 150 soft tip
Connection size ................................. 1/4" NPT
Valve type ........................................ Female-female, Steel

To meet all of your specific application requirements, the following additional options are available for these needle valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

**NOTE 1:** The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (**EXAMPLE: 152-MFC-HL3**)

**NOTE 2:** When a packing option is selected, an o-ring option is NOT available.

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

* Other o-ring materials available on request.

Please note that the standard o-ring in all the NOSHOK mini valves is FKM and the standard handles are Brass round knurled handles (HL3), Steel 1-3/8" mini "T" handles (HL7), and 316SS 1-3/8" mini "T" handles (HL7).

The handle material will always match the material of the valve, unless otherwise specified. For example, the round knurled (HL3) on a 152-FFB will be Brass. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

**EXAMPLE with Additional Options**

```
152   –   FFC – P1 – T3 – PM2 – HL3
```

Series .............................................. 150 soft tip
Connection size ................................. 1/4" NPT
Valve type ........................................ Female-female, Steel
Packing ............................................. PTFE
Stem tip ............................................ PCTFE
Panel mount ....................................... Panel mount (2 nuts)
Handle .............................................. 1" Round knurled
Male-Male

- Diameter 1/2"
- Length 1-3/8"

1/8" OR 1/4" NPT

Male-Female

- Diameter 1/2"
- Length 1-3/8"

1/8" OR 1/4" NPT

*Dimension on extended version is 2-1/4"
150 SERIES
DIMENSIONS

Female-Female

1-3/8"
1/2"
1-13/16"

Ø 23/32"

2-1/2" OPEN
2-7/32" CLOSED

Ø 1/2"

3/4" SQ

*Dimension on extended version is 2-1/4"

1/8" Male-Male Angle

1-3/8"

1/32"

3/8"

1-1/4"

1/8" NPT

2-27/32" OPEN
2-9/16" CLOSED

Ø 1/2"

23/32"

3/4"
Needle Valves

Dimensions

1/4" Male-Male Angle

1/4" NPT

1/4" NPT

3/4" OPEN
2-21/32" CLOSED

1/8" Male-Female Angle

1/2"

1/1/2" 7/8"

3/4" 1-1/4"

1-3/8"

1/8" NPT

2-27/32" OPEN
2-9/16" CLOSED

1/8" NPT

1-3/32" 23/32"

11/32" 3/4"
1/4" Male-Female Angle

1/8" Female-Female Angle
Needle Valves

Dimensions

1/4" Female-Female Angle

For panel mount, packing, & stem tip dimensions, see pgs. 64-67.
Multiport, Hard Seat

200 SERIES

• Multiport design reduces the number of gauge and other instrument connections to permanent piping installations, decreasing possible leak paths
• Optional bleed plugs further allow pressure to be bled off without disturbing the permanent piping installation
• 100% helium leak tested to $1 \times 10^{-4}$ ml/s for performance and reliability
• Blow-out proof stem provides a secondary stem seal in the full open position
• FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® packing optional
• All stem threads are rolled for strength and ease of operation
• One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
• Slotted spring pin to prevent accidental loosening
• Vinyl dust cap for bonnet and stem (non-packing)

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections</td>
<td>$1/2''$ NPT to $3/4''$ NPT Male-female</td>
</tr>
<tr>
<td>Pressure rating**</td>
<td>$10,000$ psi @ $200$ °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>$0.187''$</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>$C_v 0.44$</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately $2.2$ lb.</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.
** If a packing option is chosen, maximum pressure rating is $6,000$ psi.
Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

For NOSHOK Valves with Stainless Steel valve types:

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Steel valve types:

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
ORDERING INFORMATION

SERIES 200 Series, hard seat
CONNECTION SIZES 04 1/2" NPT 0604 3/4" NPT male - 1/2" NPT male or female
VALVE TYPES MFC Male-Female, Steel MFS Male-Female, Stainless Steel

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

EXEMPLARY

Series.......................... 200 hard seat
Connection size.............. 1/2" NPT
Valve type....................... Male-female, Steel

To meet all of your specific application requirements, the following additional options are available for these needle valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

NOTE 1: The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 204-MFC-P1)

NOTE 2: When a packing option is selected, an o-ring option is NOT available.

ORDERING INFORMATION - ADDITIONAL OPTIONS

PACKINGS† P1 PTFE P2 Grafoil®
STEM TIPS T1 Non-rotating (316 Stainless) T6 Ball (carbide) T8 Ball (Monel)
T5 Ball (440C Stainless) T7 Ball (ceramic) T9 Regulating hard

O-RINGS* EM1 EPDM KZ1 FFKM (Kalrez® 3018 or equivalent) NB1 NBR

PANEL MOUNTINGS PM1 Panel mount (1 nut) PM2 Panel mount (2 nuts)

HANDLES HL1 1-13/16" Mini "T" HL4 1-3/8" Phenolic HL5 1-3/4" Phenolic

† If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

* Other o-ring materials available on request.

NOTE: Plugs and bleed plugs are available and can be ordered separately, see page 65.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are "T" handles (HL2).

The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 204-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

Series.......................... 200 hard seat
Connection size.............. 1/2" NPT
Valve type....................... Male-female, Steel
Stem tip......................... Ball (440C Stainless)
O-ring.............................. EPDM
Needle Valves

Dimensions

Male-Female

Front View

Side View

For panel mount, packing, & stem tip dimensions, see pgs. 64-67.
1 Valve body
2 FKM o-ring
3 PTFE back-up ring
4 Slotted spring pin
5 Valve stem
6 Valve bonnet
7 Dust cap
8 Valve “T” handle
9 Set screw

1 Valve packing stem
2 Valve packing bonnet
3 Packing washer
4 Packing
5 Packing washer
6 Jam nut
7 Packing adjustment screw
Multiport, Soft Seat

300 SERIES

- Multiport design reduces the number of gauge and other instrument connections to permanent piping installations, decreasing possible leak paths
- Optional bleed plugs further allow pressure to be bled off without disturbing the permanent piping installation
- 100% helium leak tested to $1 \times 10^{-4}$ ml/s for performance and reliability
- Replaceable Delrin® seat and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
- PCTFE or PEEK soft seat optional
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE packing optional
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Vinyl dust cap for bonnet and stem (non-packing)

**Note:** Shown with optional bleed plug.

---

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections</td>
<td>1/2&quot; NPT to 3/4&quot; NPT Male-female Straight through porting for bidirectional, high capacity flow</td>
</tr>
<tr>
<td>Pressure rating</td>
<td>6,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>0.187”</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>C, 0.64</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE packing optional</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 2.2 lb.</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

---

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

---

**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
ORDERING INFORMATION

### SERIES 300 SERIES

#### ORDERING INFORMATION

<table>
<thead>
<tr>
<th>SERIES</th>
<th>CONNECTION SIZES</th>
<th>VALVE TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td>300</td>
<td>04 1/2” NPT</td>
<td>MFC Male-Female, Steel</td>
</tr>
</tbody>
</table>

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

#### EXAMPLE

- **Series**: 300 soft seat
- **Connection size**: 1/2” NPT
- **Valve type**: Male-female, Steel

To meet all of your specific application requirements, the following additional options are available for these needle valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

**NOTE 1:** The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 304-MFC-HL5)

**NOTE 2:** When a packing option is selected, an o-ring option is NOT available.

#### ORDERING INFORMATION - ADDITIONAL OPTIONS

<table>
<thead>
<tr>
<th>SOFT SEATS</th>
<th>PACKING</th>
<th>STEM TIP</th>
<th>O-RINGS*</th>
<th>PANEL MOUNTINGS</th>
<th>HANDLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>PK1 PEEK</td>
<td>P1 PTFE</td>
<td>T1 Non-rotating (316 Stainless)</td>
<td>EM1 EPDM</td>
<td>PM1 Panel mount (1 nut)</td>
<td>HL4 1-3/8” Phenolic</td>
</tr>
<tr>
<td>KF1 PCTFE</td>
<td></td>
<td></td>
<td>KZ1 FFKM (Kalrez® 3018 or equivalent)</td>
<td>PM2 Panel mount (2 nuts)</td>
<td>HL5 1-3/4” Phenolic</td>
</tr>
</tbody>
</table>

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

* Other o-ring materials available on request.

**NOTE:** Plugs and bleed plugs are available and can be ordered separately, see page 65.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are “T” handles (HL2).

The handle material will always match the material of the valve, unless otherwise specified. For example, the “T” handle (HL2) on the 304-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

#### EXAMPLE with Additional Options

- **Series**: 300 soft seat
- **Connection size**: 1/2” NPT
- **Valve type**: Male-female, Steel
- **Soft seat**: PEEK
- **Packing**: PTFE
- **Handle**: 1-3/4” Phenolic

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.
Needle Valves

Dimensions

Male-Female

Front View

Side View

For panel mount, packing, & stem tip dimensions, see pgs. 64-67.
1 Valve body
2 Slotted spring pin
3 Delrin® seat
4 FKM o-ring
5 PTFE back-up ring
6 Valve stem
7 Valve bonnet
8 Dust cap
9 Valve "T" handle
10 Set screw

1 Valve packing stem
2 Valve packing bonnet
3 Packing washer
4 Packing
5 Packing washer
6 Jam nut
7 Packing adjustment screw
Needle Valves  
Standard, Hard Seat

400 SERIES

- 100% helium leak tested to 1 x 10^-4 ml/s for performance and reliability
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® packing optional (certain NPT sizes only)
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Vinyl dust cap for bonnet and stem (non-packing)

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure rating**</td>
<td>10,000 psi @ 200 °F for 1/4&quot; NPT to 1/2&quot; NPT 8,000 psi @ 200 °F for 3/4&quot; NPT to 1-1/2&quot; NPT</td>
</tr>
<tr>
<td>Orifice sizes</td>
<td>1/4&quot; - 1/2&quot; NPT: 0.187&quot; 3/4&quot; - 1-1/2&quot; NPT: 0.438&quot;</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>1/4&quot; - 1/2&quot; NPT: Cv 0.44 3/4&quot; - 1-1/2&quot; NPT: Cv 2.70</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional for 1/4&quot;, 3/8&quot; &amp; 1/2&quot; NPT only</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 1.3 lb. up to 1/2&quot; Approximately 4.5 lb. Large Hex, Female-Female Approximately 6 lb. Large Hex, Male-Female</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3. 
** If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

NOTE: All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

<table>
<thead>
<tr>
<th>PACKINGS†</th>
<th>P1</th>
<th>P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM TIPS</td>
<td>T1</td>
<td>T6</td>
</tr>
<tr>
<td></td>
<td>Non-rotating (316 Stainless)</td>
<td>Ball (carbide)</td>
</tr>
<tr>
<td></td>
<td>T5</td>
<td>T7</td>
</tr>
<tr>
<td></td>
<td>Ball (440C Stainless)</td>
<td>Ball (ceramic)</td>
</tr>
<tr>
<td>O-RINGS*</td>
<td>EM1</td>
<td>KZ1</td>
</tr>
<tr>
<td></td>
<td>EPDM</td>
<td>FFKM (Kalrez® 3018 or equivalent)</td>
</tr>
<tr>
<td>PANEL MOUNTINGS</td>
<td>PM1</td>
<td>PM2</td>
</tr>
<tr>
<td></td>
<td>Panel mount (1 nut)</td>
<td>Panel mount (2 nuts)</td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL4</td>
<td>HL5</td>
</tr>
</tbody>
</table>

† For 1/4", 3/8" and 1/2" NPT only. If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

* Other o-ring materials available on request.

** For 3/4" NPT to 1-1/2" NPT only.

The standard o-ring in all the NOSHOK valves is FKM and the standard handles are “T” handles (HL2).

The handle material will always match the material of the valve, unless otherwise specified. For example, the “T” handle (HL2) on the 404-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.
Needle Valves

Dimensions

1/4" - 1/2" Female-Female

1/4" - 1/2" Male-Female

1/4" Female-Female Angle

1/4" Male-Female Angle
### 1/2" Female-Female Angle

- 2-1/2"
- Ø1/2"
- 5-1/32" OPEN
- 4-1/4" CLOSED

### 1/2" Male-Female Angle

- 2-1/2"
- Ø1/2"
- 5-1/32" OPEN
- 4-1/4" CLOSED
Needle Valves

Dimensions

### 3/4" - 1-1/2" Female-Female

- 4-1/4"
- Ø3/4"
- 5-1/2" OPEN
- 4-3/4" CLOSED
- 2-1/4" HEX

### 3/4" - 1-1/2" Male-Female

- 4-1/4"
- Ø3/4"
- 5-1/2" OPEN
- 4-3/4" CLOSED
- 2-1/4" HEX

For panel mount, packing, & stem tip dimensions, see pgs. 64-67.
1 Valve body
2 FKM o-ring
3 PTFE back-up ring
4 Slotted spring pin
5 Valve stem
6 Valve bonnet
7 Dust cap
8 Valve “T” handle
9 Set screw

1 Valve packing stem
2 Valve packing bonnet
3 Packing washer
4 Packing
5 Packing washer
6 Jam nut
7 Packing adjustment screw
500 SERIES

- 100% helium leak tested to $1 \times 10^{-4}$ ml/s for performance and reliability
- Replaceable Delrin® seat and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE packing optional (certain NPT sizes only)
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Vinyl dust cap for bonnet and stem (non-packing)

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure rating</td>
<td>6,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice sizes</td>
<td>1/4&quot; - 1/2&quot; NPT: 0.187”</td>
</tr>
<tr>
<td></td>
<td>3/4&quot; - 1-1/2&quot; NPT: 0.438”</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>1/4&quot; - 1/2&quot; NPT: $C_v$ 0.76</td>
</tr>
<tr>
<td></td>
<td>3/4&quot; - 1-1/2&quot; NPT: $C_v$ 4.0</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE packing optional for 1/4&quot;, 3/8&quot; &amp; 1/2&quot; NPT only</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 1.3 lb. up to 1/2”</td>
</tr>
<tr>
<td></td>
<td>Approximately 4.5 lb. Large Hex, Female-Female</td>
</tr>
<tr>
<td></td>
<td>Approximately 6 lb. Large Hex, Male-Female</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

For NOSHOK Valves with Steel valve types:

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Stainless Steel valve types:

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

EXAMPLE

504 - FFC

Series.........................500 soft seat
Connection size ..............1/2" NPT
Valve type...........Female-female, Steel

To meet all of your specific application requirements, the following additional options are available for these needle valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

NOTE 1: The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 504-FFC-HL5)

NOTE 2: When a packing option is selected, an o-ring option is NOT available.

ORDERING INFORMATION - ADDITIONAL OPTIONS

<table>
<thead>
<tr>
<th>SOFT SEATS</th>
<th>PK1</th>
<th>PEEK</th>
<th>KF1</th>
<th>PCTFE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PACKING†</td>
<td>P1</td>
<td>PTFE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STEM TIP</td>
<td>T1</td>
<td>Non-rotating (316 Stainless)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O-RINGS*</td>
<td>EM1</td>
<td>EPDM</td>
<td>KZ1</td>
<td>FFKM (Kalrez® 3018 or equivalent)</td>
</tr>
<tr>
<td>PANEL MOUNTINGS</td>
<td>PM1</td>
<td>Panel mount (1 nut)</td>
<td>PM2</td>
<td>Panel mount (2 nuts)</td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL4</td>
<td>1-3/8” Phenolic</td>
<td>HL5</td>
<td>1-3/4” Phenolic</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>HL9</td>
</tr>
</tbody>
</table>

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

† For 1/4”, 3/8” and 1/2” NPT only.
* Other o-ring materials available on request.
** For 3/4” NPT to 1-1/2” NPT only.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are “T” handles (HL2).

The handle material will always match the material of the valve, unless otherwise specified. For example, the “T” handle (HL2) on the 504-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

504 - FFC - PK1 - T1 - KZ1 - PM2 - HL5

Series.................................500 soft seat
Connection size ......................1/2" NPT
Valve type............................Female-female, Steel
Soft seat............................PEEK
Stem tip............................Non-rotating
O-ring.................................FFKM (Kalrez® 3018 or equivalent)
Panel mount .........................Panel mount (2 nuts)
Handle ............................1-3/4” Phenolic
Needle Valves

Dimensions

1/4" - 1/2" Male-Female

2-1/2" Ø1/2"

3-25/32" OPEN
3-1/2" CLOSED

1-1/4" HEX

3-1/2" 1-1/4"

3/4" - 1-1/2" Male-Female

4-1/4" Ø3/4"

5-1/2" OPEN
4-3/4" CLOSED

2-1/2" HEX

1/4" - 1/2" Female-Female

2-1/2" Ø1/2"

3-25/32" OPEN
3-1/2" CLOSED

1-1/4" HEX

3-1/2" 1-1/4"

3/4" - 1-1/2" Female-Female

4-1/4" Ø3/4"

5-1/2" OPEN
4-15/16" CLOSED

2-1/2" HEX

For panel mount, packing, & stem tip dimensions, see pgs. 64-67.
1 Valve body
2 Delrin® seat
3 FKM o-ring
4 PTFE back-up ring
5 Slotted spring pin
6 Valve stem
7 Valve bonnet
8 Dust cap
9 Valve “T” handle
10 Set screw

1 Valve packing stem
2 Valve packing bonnet
3 Packing washer
4 Packing
5 Packing washer
6 Jam nut
7 Packing adjustment screw
Block & bleed design allows pressure to be bled off without disturbing the permanent piping installation, allowing quick and easy removal or replacement of instruments.

- 100% helium leak tested to 1 x 10^-4 ml/s for performance and reliability.
- Blow-out proof stem provides a secondary stem seal in the full open position.
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® packing optional.
- All stem threads are rolled for strength and ease of operation.
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads.
- Slotted spring pin to prevent accidental loosening.
- Vinyl dust cap for bonnet and stem (non-packing).
- 0.090" bleed hole located on the bottom is controlled by a 1/4"-20 UNF-2A bleed screw.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections</td>
<td>1/4&quot; &amp; 1/2&quot; NPT Male-female &amp; Female-female configurations</td>
</tr>
<tr>
<td>Pressure rating**</td>
<td>10,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>0.187&quot;</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>Cᵥ 0.44</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads; PTFE or Grafoil® packing optional</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 1.3 lb. up to 1/2&quot;</td>
</tr>
<tr>
<td></td>
<td>Approximately 4.5 lb. Large Hex, Female-Female</td>
</tr>
<tr>
<td></td>
<td>Approximately 6 lb. Large Hex, Male-Female</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

** If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

For NOSHOK Valves with Steel valve types:

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Stainless Steel valve types:

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

**EXAMPLE**

Series: 600 hard seat
Connection size: 1/4" NPT
Valve type: Female-female, Steel

To meet all of your specific application requirements, the following additional options are available for these needle valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

**NOTE 1:** The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 602-FFC-P2)

**NOTE 2:** When a packing option is selected, an o-ring option is NOT available.

---

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

<table>
<thead>
<tr>
<th>PACKINGS†</th>
<th>P1</th>
<th>PTFE</th>
<th>P2</th>
<th>Grafoil®</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM TIPS</td>
<td>T1</td>
<td>Non-rotating (316 Stainless)</td>
<td>T6</td>
<td>Ball (carbide)</td>
</tr>
<tr>
<td></td>
<td>T5</td>
<td>Ball (440C Stainless)</td>
<td>T7</td>
<td>Ball (ceramic)</td>
</tr>
<tr>
<td>O-RINGS*</td>
<td>EM1</td>
<td>EPDM</td>
<td>KZ1</td>
<td>FFKM (Kalrez® 3018 or equivalent)</td>
</tr>
<tr>
<td>PANEL MOUNTINGS</td>
<td>PM1</td>
<td>Panel mount (1 nut)</td>
<td>PM2</td>
<td>Panel mount (2 nuts)</td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL4</td>
<td>1-3/8&quot; Phenolic</td>
<td>HL5</td>
<td>1-3/4&quot; Phenolic</td>
</tr>
</tbody>
</table>

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

† If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

* Other o-ring materials available on request.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are “T” handles (HL2).

The handle material will always match the material of the valve, unless otherwise specified. For example, the “T” handle (HL2) on the 602-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

**EXAMPLE with Additional Options**

Series: 600 hard seat
Connection size: 1/4" NPT
Valve type: Female-female, Steel
Packing: PTFE
Stem tip: Non-rotating
Panel mount: Panel mount (2 nuts)
Handle: 1-3/4" Phenolic
Needle Valves

Dimensions

Male-Female

For panel mount, packing, & stem tip dimensions, see pgs. 64-67.
1 Valve body
2 Bleed screw
3 FKM o-ring
4 PTFE back-up ring
5 Valve stem
6 Valve bonnet
7 Dust cap
8 Valve “T” handle
9 Set screw
10 Slotted spring pin

1 Valve packing stem
2 Valve packing bonnet
3 Packing washer
4 Packing
5 Packing washer
6 Jam nut
7 Packing adjustment screw
**Block & Bleed, Soft Seat**

**700 SERIES**

- Block & bleed design allows pressure to be bled off without disturbing the permanent piping installation, allowing quick and easy removal or replacement of instruments
- 100% helium leak tested to $1 \times 10^{-4}$ ml/s for performance and reliability
- Replaceable Delrin® seat and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
- PCTFE or PEEK soft seat optional
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE packing optional
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Vinyl dust cap for bonnet and stem (non-packing)
- 0.090” bleed hole located on the bottom is controlled by a 1/4”-20 UNF-2A bleed screw

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections</td>
<td>1/4” &amp; 1/2” NPT Male-female &amp; Female-female configurations</td>
</tr>
<tr>
<td>Pressure rating</td>
<td>6,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>0.187”</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>$C_v$ 0.76</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE packing optional</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 1.3 lb. up to 1/2”</td>
</tr>
<tr>
<td></td>
<td>Approximately 4.5 lb. Large Hex, Female-Female</td>
</tr>
<tr>
<td></td>
<td>Approximately 6 lb. Large Hex, Male-Female</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

For NOSHOK Valves with Steel valve types:

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Stainless Steel valve types:

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
700 SERIES

ORDERING INFORMATION

SERIES 7 700 Series, soft seat

<table>
<thead>
<tr>
<th>CONNECTION SIZES</th>
<th>02 1/4&quot; NPT</th>
<th>04 1/2&quot; NPT</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>VALVE TYPES</th>
<th>MFC Male-Female, Steel</th>
<th>MFS Male-Female, Stainless Steel</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFC Female-Female, Steel</td>
<td>FFS Female-Female, Stainless Steel</td>
<td></td>
</tr>
</tbody>
</table>

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

EXAMPLE

Series ............................... 700 soft seat
Connection size .................. 1/4" NPT
Valve type ................. Female-female, Steel

To meet all of your specific application requirements, the following additional options are available for these needle valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

NOTE 1: The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 702-FFC-HL5)

NOTE 2: When a packing option is selected, an o-ring option is NOT available.

ORDERING INFORMATION - ADDITIONAL OPTIONS

<table>
<thead>
<tr>
<th>SOFT SEATS</th>
<th>PK1 PEEK</th>
<th>KF1 PCTFE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PACKING†</td>
<td>P1 PTFE</td>
<td></td>
</tr>
<tr>
<td>STEM TIP</td>
<td>T1 Non-rotating (316 Stainless)</td>
<td></td>
</tr>
<tr>
<td>O-RINGS*</td>
<td>EM1 EPDM</td>
<td>KZ1 FFKM (Kalrez® 5018 or equivalent)</td>
</tr>
<tr>
<td>PANEL MOUNTINGS</td>
<td>PM1 Panel mount (1 nut)</td>
<td>PM2 Panel mount (2 nuts)</td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL4 1-3/8&quot; Phenolic</td>
<td>HL5 1-3/4&quot; Phenolic</td>
</tr>
</tbody>
</table>

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

* Other o-ring materials available on request.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are "T" handles (HL2).

The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 702-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

Series ............................... 700 soft seat
Connection size .................. 1/4" NPT
Valve type ................. Female-female, Steel
Soft seat ............................. PEEK
Stem tip ............................. Non-rotating
O-ring ................................. EPDM
Panel mount ......................... Panel mount (2 nuts)
Handle .............................. 1-3/4" Phenolic

7 02 – FFC – PK1 – T1 – EM1 – PM2 – HL5
Needle Valves

Dimensions

Male-Female

![Diagram of Male-Female Needle Valve Dimensions]

Female-Female

![Diagram of Female-Female Needle Valve Dimensions]

For panel mount, packing, & stem tip dimensions, see pgs. 64-67.
1 Valve body
2 Bleed screw
3 FKM o-ring
4 PTFE back-up ring
5 Valve stem
6 Valve bonnet
7 Dust cap
8 Valve “T” handle
9 Set screw
10 Delrin® seat
11 Slotted spring pin

1 Valve packing stem
2 Valve packing bonnet
3 Packing washer
4 Packing
5 Packing washer
6 Jam nut
7 Packing adjustment screw
Bleed, Hard Seat & Soft Tip

800/850 SERIES

- Bleed valves provide a convenient means to relieve process pressures trapped between a shut off valve and the instrument
- Uses the same bonnet assemblies of the 100/150 Series mini valves with an integrated single threaded body for insertion in vent port
- Soft tip valves feature a patented Delrin® non-rotating soft tip stem, and a back-up metal-to-metal seal (U.S. Patent 6,820,857)
- 100% helium leak tested to $1 \times 10^{-4}$ ml/s for performance and reliability
- Available in Zinc-Nickel plated Steel, electropolished Stainless Steel, and Brass
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® (800 Series only) packing optional
- All stem threads are rolled for strength and ease of operation
- 0.159” bleed port
- Patented body-to-bonnet, metal-to-metal seal is designed to significantly increase the pressure range of the valve (U.S. Patent 7,758,014)

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel®, 360 Brass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections</td>
<td>1/4” &amp; 1/2” NPT</td>
</tr>
<tr>
<td>Hard seat pressure ratings**</td>
<td>Brass: 6,000 psi @ 200 °F&lt;br&gt;Steel: 10,000 psi @ 200 °F&lt;br&gt;Stainless Steel: 10,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Soft tip pressure ratings</td>
<td>Brass: 6,000 psi @ 200 °F&lt;br&gt;Steel: 6,000 psi @ 200 °F&lt;br&gt;Stainless Steel: 6,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Bleed port</td>
<td>0.159”</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® (800 Series only) packing optional</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 0.4 lb.</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.
** If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the “Pressure vs. Temperature: Packing Style with Compatible Fluid” chart at the back of this catalog.

For NOSHOK Valves with Brass & Steel valve types:

WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Stainless Steel valve types:

WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

NOTE: All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
**SERIES**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>8</th>
<th>800/850 Series, hard seat/soft tip</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONNECTION SIZES</td>
<td>02</td>
<td>Hard seat 1/4&quot; NPT</td>
</tr>
<tr>
<td></td>
<td>04</td>
<td>Hard seat 1/2&quot; NPT</td>
</tr>
<tr>
<td>VALVE TYPES</td>
<td>MC</td>
<td>Male, Steel</td>
</tr>
<tr>
<td></td>
<td>MS</td>
<td>Male, Stainless Steel</td>
</tr>
<tr>
<td></td>
<td>MB</td>
<td>Male, Brass</td>
</tr>
</tbody>
</table>

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

---

**EXAMPLE**

8 02 – MC

Series .......... 800/850 hard seat/soft tip
Connection size..... Hard seat 1/4" NPT
Valve type ................. Male, Steel

---

To meet all of your specific application requirements, the following additional options are available for these needle valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

**NOTE 1:** The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 802-MC-EM1)

**NOTE 2:** When a packing option is selected, an o-ring option is NOT available.

---

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

<table>
<thead>
<tr>
<th>PACKINGS†</th>
<th>P1</th>
<th>PTFE</th>
<th>P2</th>
<th>Grafoil®</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM TIPS</td>
<td>T1</td>
<td>Non-rotating (316 Stainless)</td>
<td>T4</td>
<td>PEEK***</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>Delrin® (Acetal)***</td>
<td>T5</td>
<td>Ball (440C Stainless)***</td>
</tr>
<tr>
<td></td>
<td>T3</td>
<td>PCTFE***</td>
<td>T6</td>
<td>Ball [carbide]**</td>
</tr>
<tr>
<td>O-RINGS*</td>
<td>EM1</td>
<td>EPDM</td>
<td>KZ1</td>
<td>FFKM (Kalrez® 3018 or equivalent)</td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL2</td>
<td>2-1/2&quot; &quot;T&quot;**</td>
<td>HL4</td>
<td>1-3/8&quot; Phenolic**</td>
</tr>
<tr>
<td></td>
<td>HL3</td>
<td>1&quot; Round knurled</td>
<td>HL5</td>
<td>1-3/4&quot; Phenolic**</td>
</tr>
</tbody>
</table>

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

† If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

* Other o-ring materials available on request.

** For 800 Series only.

*** For 850 Series only.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are 1" round knurled handles (HL3) on Brass, and 1-3/8" mini "T" handles (HL7) on Stainless Steel and Steel.

The handle material will always match the material of the valve, unless otherwise specified. For example, the mini "T" handle (HL7) on the 802-MC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

---

**EXAMPLE with Additional Options**

8 02 – MC – P1 – T1 – HL5

Series .......... 800/850 hard seat/soft tip
Connection size..... Hard seat 1/4" NPT
Valve type ................. Male, Steel
Packing ......................... PTFE
Stem tip ................. Non-rotating
Handle ......................... 1-3/4" Phenolic
Needle Valves

Dimensions

1/4" Bleed Valve

1/2" Bleed Valve

For panel mount, packing, & stem tip dimensions, see pgs. 64-67.
1 Valve body
2 FKM o-ring
3 PTFE back-up ring
4 Mini valve stem
5 Mini valve bonnet
6 Set screw
7 Mini "T" handle

1 Mini valve packing stem
2 Mini valve packing bonnet
3 Packing washer
4 Packing
5 Packing washer
6 Jam nut
7 Packing adjustment screw

1 Soft tip packing stem
2 Mini valve packing bonnet
3 Packing washer
4 Packing
5 Packing washer
6 Jam nut
7 Packing adjustment screw
2070 SERIES

- Combines isolating and venting in a single valve, eliminating the need for tubing and fittings
- Block valve isolates the downstream process fluids, and the bleed valve exhausts upstream fluids enabling instruments to be removed without disturbing the permanent piping installation
- The 1/4” NPT vent plug is located 90° to the left and may be removed and replaced with exhaust piping to direct the fluids to a safe location
- 100% helium leak tested to 1 x 10⁻⁴ ml/s for performance and reliability
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® packing optional
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Vinyl dust cap for bonnet and stem (non-packing)

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>1/2” &amp; 1/4” NPT Male-female &amp; Female-female configurations available, right venting optional</td>
</tr>
<tr>
<td>Pressure rating**</td>
<td>10,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>0.187”</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>Cᵥ 0.44</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional</td>
</tr>
<tr>
<td>Length</td>
<td>4” standard and 5-3/8” extended length available</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 2.0 lb., extended model 2.7 lb.</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.
** If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the “Pressure vs. Temperature: Packing Style with Compatible Fluid” chart at the back of this catalog.

For NOSHOK Valves with Steel valve types:

WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Stainless Steel valve types:

WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

NOTE: All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

To meet all of your specific application requirements, the following additional options are available for these needle valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

NOTE 1: The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 2070-FFC-HL3)

NOTE 2: When a packing option is selected, an o-ring option is NOT available.

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

† If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

* Other o-ring materials available on request.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are block “T” handles (HL2) and bleed mini “T” handles (HL1). The handle material will always match the material of the valve, unless otherwise specified. For example, the “T” handle (HL2) on the 2070-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.
Needle Valves

Dimensions

Male-Female

Extended Male-Female

For panel mount, packing, & stem tip dimensions, see pgs. 64-67.
1 Set screw
2 Mini valve "T" handle
3 Red dust cap
4 Mini valve bonnet
5 Mini valve stem
6 Plug
7 Slotted spring pin
8 FKM o-ring
9 PTFE back-up ring
10 Valve stem
11 Valve bonnet
12 Blue dust cap
13 Valve "T" handle
14 Set screw
15 Block and bleed valve body

1 Mini valve packing stem and valve packing stem
2 Mini valve packing bonnet and valve packing bonnet
3 Packing washer
4 Packing
5 Packing washer
6 Jam nut
7 Packing adjustment screw
**2170 SERIES**

- Combines isolating and venting in a single valve, eliminating the need for tubing and fittings
- Block valve isolates the downstream process fluids and the bleed valve exhausts upstream fluids enabling instruments to be removed without disturbing the permanent piping installation
- The 1/4” NPT vent plug is located 90° to the left and may be removed and replaced with exhaust piping to direct the fluids to a safe location
- 100% helium leak tested to 1 x 10^-4 ml/s for performance and reliability
- Replaceable Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
- PCTFE or PEEK soft seat optional
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE packing optional
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Vinyl dust cap for bonnet and stem (non-packing)

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>1/2” &amp; 1/4” NPT Male-female &amp; Female-female configurations available, right venting optional</td>
</tr>
<tr>
<td>Pressure rating</td>
<td>6,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>0.187”</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>C\textsubscript{o} 0.76</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE packing optional</td>
</tr>
<tr>
<td>Length</td>
<td>4” standard and 5-3/8” extended length available</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, O-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 2.0 lb., extended model 2.7 lb.</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

For NOSHOK Valves with Steel valve types:

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Stainless Steel valve types:

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
### SERIES 2

#### SEAT
- **1** Soft seat

#### PROCESS TYPE
- **7** Block & bleed

#### CONNECTION SIZES
- 0 - 1/2” NPT
- 2 - 1/4” NPT

#### VALVE TYPES
- **2170 – FFC**
  - Series: 2
  - Seat: 1
  - Process connection: 7
  - Connection size: 0
  - Valve type: 2

---

**Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.**

---

**EXAMPLE**

Series
Seat
Process connection
Connection size
Valve type

---

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

| SOFT SEATS | PK1 PEEK | KF1 PCTFE |
| PACKING | P1 PTFE |
| STEM TIP | T1 Non-rotating (316 Stainless) |
| O-RINGS* | EM1 EPDM | KZ1 FFKM (Kalrez® 3018 or equivalent) | NB1 NBR |
| HANDLES | HL1 1-13/16” Mini “T” | HL3 1” Round knurled | HL5 1-3/4” Phenolic |
| **| HL2 2-1/2” “T” | HL4 1-3/8” Phenolic |

* Other o-ring materials available on request. Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.**

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are block “T” handles (HL2) and bleed 1-3/8” mini “T” handle (HL7). The handle material will always match the material of the valve, unless otherwise specified. For example, the “T” handle (HL2) on the 2170-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

---

**EXAMPLE with Additional Options**

Series
Seat
Process connection
Connection size
Valve type
Soft seat
Packing
Stem tip

---

**NOTE 1:** The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 2170-FFC-PK1)

**NOTE 2:** When a packing option is selected, an o-ring option is NOT available.
**Male-Female**

- Ø1/2"
- 5-17/32" OPEN
- 4-31/32" CLOSED
- 1-1/4" / 17/64" sq. stk.
- 5/8" sq. stk.
- 4"
- 1-5/8"
- 2-5/32"

**Extended Male-Female**

- Ø1/2"
- 5-1/4" OPEN
- 4-31/32" CLOSED
- 1-1/4" / 17/64" sq. stk.
- 5/8" sq. stk.
- 1-1/4"
- 5-3/8"
- 3"
- 1-1/4"
- 3-17/32"

For panel mount, packing, & stem tip dimensions, see pgs. 64-67.
## Block & Bleed, Soft Seat

1. Set screw
2. Mini valve “T” handle
3. Red dust cap
4. Mini valve bonnet
5. Soft tip stem
6. Plug
7. Slotted spring pin
8. Delrin® seat
9. FKM o-ring
10. PTFE back-up ring
11. Valve stem
12. Valve bonnet
13. Blue dust cap
14. Valve “T” handle
15. Set screw
16. Block and bleed valve body

## Option With Packing

1. Soft tip packing stem and valve packing stem
2. Mini valve packing bonnet and valve packing bonnet
3. Packing washer
4. Packing
5. Packing washer
6. Jam nut
7. Packing adjustment screw
Combines isolating and venting in a single valve, eliminating the need for tubing and fittings
- Block valve isolates the downstream process fluids, and the bleed valve exhausts upstream fluids enabling instruments to be removed without disturbing the permanent piping installation on the bottom
- The ¼" NPT vent plug is located 90° to the left and may be removed and replaced with exhaust piping to direct the fluids to a safe location
- 100% helium leak tested to 1 x 10⁻⁴ ml/s for performance and reliability
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® packing optional
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Vinyl dust cap for bonnet and stem (non-packing)

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>⅛&quot; &amp; ¼&quot; NPT Male-female &amp; Female-female configurations available, right venting optional</td>
</tr>
<tr>
<td>Pressure rating**</td>
<td>10,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>0.187&quot;</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>Cᵥ 0.44</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional</td>
</tr>
<tr>
<td>Length</td>
<td>4&quot; standard and 5-3/8&quot; extended length available</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 3.2 lb.</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.
* If a packing option is chosen, maximum pressure rating is 6,000 psi.
Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

For NOSHOK Valves with Steel valve types:

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Stainless Steel valve types:

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
ORDERING INFORMATION

| SERIES | 3-valve |
| SEAT | Hard seat |
| PROCESS TYPE | Block & bleed |
| CONNECTION SIZES | 1/2" NPT |

<table>
<thead>
<tr>
<th>VALVE TYPES</th>
<th>SERIES</th>
<th>SEAT</th>
<th>PROCESS CONNECTION</th>
<th>CONNECTION SIZES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFC</td>
<td>Male-Female, Steel</td>
<td>FMC</td>
<td>Female-Male, Steel</td>
<td>1/2&quot; NPT</td>
</tr>
<tr>
<td>MFCR</td>
<td>Male-Female, Steel, Right Vent</td>
<td>EFMC</td>
<td>Extended Female-Male, Steel</td>
<td>1/2&quot; NPT</td>
</tr>
<tr>
<td>EMFC</td>
<td>Extended Male-Female, Steel</td>
<td>FMS</td>
<td>Female-Male, Stainless Steel</td>
<td>1/2&quot; NPT</td>
</tr>
<tr>
<td>MFS</td>
<td>Male-Female, Stainless Steel</td>
<td>EFMS</td>
<td>Extended Female-Male, Stainless Steel</td>
<td>1/2&quot; NPT</td>
</tr>
<tr>
<td>MFSR</td>
<td>Male-Female, Stainless Steel, Right Vent</td>
<td>FFC</td>
<td>Female-Female, Steel</td>
<td>1/2&quot; NPT</td>
</tr>
<tr>
<td>EMFS</td>
<td>Extended Male-Female, Stainless Steel</td>
<td>EFFS</td>
<td>Extended Female-Female, Stainless Steel</td>
<td>1/2&quot; NPT</td>
</tr>
</tbody>
</table>

**NOTE 1:** The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 3070-FFC-HL3)

**NOTE 2:** When a packing option is selected, an o-ring option is NOT available.

ORDERING INFORMATION - ADDITIONAL OPTIONS

<table>
<thead>
<tr>
<th>PACKINGS†</th>
<th>P1</th>
<th>P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM TIPS</td>
<td>T1</td>
<td>T6</td>
</tr>
<tr>
<td></td>
<td>T5</td>
<td>T7</td>
</tr>
<tr>
<td>O-RINGS*</td>
<td>EM1</td>
<td>KZ1</td>
</tr>
<tr>
<td></td>
<td>EPDM</td>
<td>FFKM (Kalrez® 3018 or equivalent)</td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL1</td>
<td>HL3</td>
</tr>
<tr>
<td></td>
<td>2-1/2&quot; &quot;T&quot;</td>
<td>1&quot; Round knurled</td>
</tr>
</tbody>
</table>

**EXAMPLE with Additional Options**

Series: 3-valve
Seat: Hard seat
Process connection: Block & bleed
Connection size: 1/2" NPT
Valve type: Female-female, Steel
Packing: PTFE
Stem tip: Non-rotating
Handle: 1" Round knurled

† If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.
* Other o-ring materials available on request.

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are block “T” handles (HL2) and bleed 1-3/8” mini “T” handle (HL7). The handle material will always match the material of the valve, unless otherwise specified. For example, the “T” handle (HL2) on the 3070-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.
Needle Valves, 2-Valve

Dimensions

Male-Female

Top View

Front View

Side View

For panel mount, packing, & stem tip dimensions, see pgs. 64-67.
1 Set screw
2 Mini valve “T” handle
3 Red dust cap
4 Mini valve bonnet
5 Mini valve stem
6 Valve body
7 Slotted spring pin
8 Valve “T” handle
9 Set screw
10 Blue dust cap
11 Valve bonnet
12 Valve stem
13 PTFE back-up ring
14 FKM o-ring

1 Mini valve packing stem
2 Mini valve packing bonnet
3 Packing washer
4 Packing
5 Packing washer
6 Jam nut
7 Packing adjustment screw
**Needle Valve Options**

**Knurled Handle HL3**

- **PART NUMBER**: HL3-CS1-ZN1
- **MATERIAL**: Steel

**Phenolic Handle HL4**

- **PART NUMBER**: HL4-PH1
- **MATERIAL**: Phenolic

**Phenolic Handle HL5**

- **PART NUMBER**: HL5-PH1
- **MATERIAL**: Phenolic

**Phenolic Handle HL9**

- **PART NUMBER**: HL9-PH1
- **MATERIAL**: Phenolic
Plug

Bleed Plug

Bleed Screw

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>PG1-CS1-ZN1</td>
<td>Steel</td>
</tr>
<tr>
<td>PG1-SS1-EP</td>
<td>Stainless Steel</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP1-C</td>
<td>Steel</td>
</tr>
<tr>
<td>BP1-S</td>
<td>Stainless Steel</td>
</tr>
</tbody>
</table>
**Needle Valve Options**

**Panel Mount Detail, Mini Valves**

- 1/8" - 3/16" THICK
- 1-1/32" - 5/8"-18 THREAD
- 1/8" MAX PANEL

**Panel Mount Detail, Needle Valves**

- 15/16" HEX NUT
- .16" THICK
- 5/8"-18 THREAD
- 1-1/32" MAX PANEL

**Packing, Mini Valves**

- 2-11/32" OPEN
- 2-1/16" CLOSED

**Packing, Needle Valves**

- 2-17/32" OPEN
- 2-1/4" CLOSED
NOTE: A non-rotating tip (ball) can rotate independently of the stem. The term non-rotating describes the motion of the tip (ball) in relation to a rotating stem. As the stem rotates to close a valve, the tip (ball) stops rotating when it makes contact with the sealing orifice of the body.
• Combines isolating and venting in a single valve, eliminating the need for tubing and fittings
• Block valve isolates the downstream process fluids and the bleed valve exhausts upstream fluids enabling static pressure transmitters, switches or gauges to be removed without disturbing the permanent piping installation
• Block valve is located on the left side and the bleed valve is located on top in a 90° orientation, venting is to the right
• 100% helium leak tested to 1 x 10⁻⁴ ml/s for performance and reliability
• 2100 Series valve also features a replaceable Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy rotatable cleaning
• Blow-out proof stem provides a secondary stem seal in the full open position
• FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® packing optional
• Stem and bonnet threads are rolled for strength and ease of operation
• One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
• Slotted spring pin to prevent accidental loosening
• Color coded vinyl dust caps for bonnets and stems (non-packing)
• Zinc-Nickel plated high tensile strength 4140 Steel mounting bolts included for flanged connections

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>1/2&quot; NPT, 1/4&quot; NPT, NPT-flange, Flange-flange, NPT-NPT configurations available</td>
</tr>
<tr>
<td>Pressure ratings**</td>
<td>Hard seat: 10,000 psi @ 200 °F</td>
</tr>
<tr>
<td></td>
<td>Soft seat: 6,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>0.187&quot;</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>Hard seat: C_v 0.44</td>
</tr>
<tr>
<td></td>
<td>Soft seat: C_v 0.76</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 2.2 lb.</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.
** If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Stainless Steel valve types:
**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
**2000/2100 SERIES**

**ORDERING INFORMATION**

| SERIES | 2-valve |
| SEATS | Hard seat | Soft seat |
| PROCESS TYPE | Static pressure |
| CONNECTIONS | 1/2" NPT standard or flange | 1/4" NPT |
| VALVE TYPES | MFC | Flange-Female, Steel | MFS | Flange-Female, Stainless Steel | MMC | Flange-Flange, Steel |
| | FFC | Female-Female, Steel | FFS | Female-Female, Stainless Steel | MMS | Flange-Flange, Stainless Steel |

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

---

**EXAMPLE**

```
Series....................................................... 2-valve
Seat.......................................................... Soft seat
Process type.............................................. Static pressure
Connection.............................................. 1/2" NPT standard or flange
Valve type.................................................. Flange-female, Steel
```

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

| SOFT SEATS | PK1 | PEEK |
| PACKING† | P1 | PTFE |
| STEM TIPS | T1 | Non-rotating (316 Stainless) |
| | T5 | Ball (440C Stainless)** |
| | T6 | Ball (carbide)** |
| | T7 | Ball (ceramic)** |
| | T8 | Ball (Monel)** |
| | T9 | Regulating hard** |
| PACKING | P2 | Grafoil** |
| O-RINGS* | EM1 | EPDM |
| | KZ1 | FFKM (Kalrez® 3018 or equivalent) |
| | NB1 | NBR |
| HANDLES | HL1 | 1-13/16" Mini "T" |
| | HL2 | 1-3/8" Phenolic |
| | HL3 | 1-3/4" Phenolic |

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

† If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.
* Other o-ring materials available on request.
** For 2000 Series only.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are block "T" handles (HL2) and bleed 1-3/8" mini "T" handle (HL7). The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 2100-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

---

**EXAMPLE with Additional Options**

```
Series....................................................... 2-valve
Seat.......................................................... Soft seat
Process type.............................................. Static pressure
Connection.............................................. 1/2" NPT standard or flange
Valve type.................................................. Flange-female, Steel
Soft seat.................................................... PEEK
Packing..................................................... PTFE
```
Flange-Female

Top View

Side View

MOUNTING HOLE Ø 9/32" 2 PLACES

1/2" NPT VENT PORTS

VENT VALVE

ISOLATE VALVE

5-29/32" OPEN
5-5/8" CLOSED

3-3/8"
2-1/8"
1-1/8"

2-5/32"

2-1/2"

2-7/16"
1-5/8"

1-21/32"

3-3/4"

1-1/4"

2-17/32" OPEN
2-1/4" CLOSED
Manifold Valves, 2-Valve Static Pressure

Dimensions

Female-Female

Top View

Front View

Side View

For panel mount or packing dimensions, see pg. 66.
1 Valve body
2 Head bolt
3 Gasket ring
4 Slotted spring pin
5 Valve stem
6 Valve bonnet
7 Red dust cap
8 Valve "T" handle
9 Set screw
10 PTFE back-up ring
11 FKM o-ring
12 Plug
13 Blue dust cap

1 Valve body
2 Slotted spring pin
3 Gasket ring
4 PTFE back-up ring
5 Valve bonnet
6 Red dust cap
7 Valve "T" handle
8 Set screw
9 Valve stem
10 FKM o-ring
11 Delrin® seat
12 Head bolt
13 Plug
14 Blue dust cap
2020/2120 SERIES

- Designed for use with differential pressure transmitters in liquid level applications
- Available in either single flange or double flange connection for direct installation
- 100% helium leak tested to $1 \times 10^{-4}$ ml/s for performance and reliability
- 2120 Series valves also feature a replaceable Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® packing optional
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Color coded vinyl dust caps for bonnets and stems (non-packing)

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Materials</strong></td>
<td>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</td>
</tr>
<tr>
<td><strong>Connections</strong></td>
<td>Flange-flange, 1/2&quot; NPT-flange</td>
</tr>
<tr>
<td><strong>Pressure ratings</strong></td>
<td>Hard seat: 10,000 psi @ 200 °F, Soft seat: 6,000 psi @ 200 °F</td>
</tr>
<tr>
<td><strong>Orifice size</strong></td>
<td>0.187&quot;</td>
</tr>
<tr>
<td><strong>Flow coefficient</strong></td>
<td>Hard seat: $C_v 0.44$, Soft seat: $C_v 0.76$</td>
</tr>
<tr>
<td><strong>Stem seal &amp; type</strong></td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional</td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>Approximately 5.5 lb.</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.
** If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the “Pressure vs. Temperature: Packing Style with Compatible Fluid” chart at the back of this catalog.

For NOSHOK Valves with Steel valve types:

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Stainless Steel valve types:

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
To meet all of your specific application requirements, the following additional options are available for these manifold valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

NOTE 1: The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 2020-MFC-P1)

NOTE 2: When a packing option is selected, an o-ring option is NOT available.

NOTE 3: The standard o-ring in all the NOSHOK manifold valves is FKM and T1 hard non-rotating (316SS) stem tip is the only option available on the 2120 Series soft seat version.

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.
Flange-Flange

8-7/16" OPEN
7-7/8" CLOSED

MOUNTING HOLES Ø 9/32"
2 PLACES

PROCESS FLANGE CONNECTION

Flange-Female

8-7/16" OPEN
7-7/8" CLOSED

1/2" NPT

MOUNTING HOLE Ø 9/32"
2 PLACES

For panel mount or packing dimensions, see pg. 66.
Hard Seat

1 Valve body
2 Slotted spring pin
3 Delrin® seat
4 FKM o-ring
5 PTFE o-ring
6 Valve stem
7 Valve bonnet
8 Blue dust cap
9 Set screw
10 Valve “T” handle
11 Gasket ring
12 Head bolt

Soft Seat

1 Valve body
2 Slotted spring pin
3 FKM o-ring
4 PTFE back-up ring
5 Valve stem
6 Valve bonnet
7 Blue dust cap
8 Set screw
9 Valve “T” handle
10 Gasket ring
11 Head bolt
12 Hard Seat
• Combines isolating and venting in a single valve, eliminating the need for tubing and fittings
• Block valve isolates the downstream process fluids and the bleed valve exhausts upstream fluids enabling static pressure transmitters, switches or gauges to be removed without disturbing the permanent piping installation
• Block valve is located on the left side and the bleed valve is located on top in a 90° orientation, venting is to the right
• 100% helium leak tested to $1 \times 10^{-4}$ ml/s for performance and reliability
• 210002/210402 Series valves also feature a replaceable Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
• PCTFE or PEEK soft seat optional
• Blow-out proof stem provides a secondary stem seal in the full open position
• FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® packing optional
• Stem and bonnet threads are rolled for strength and ease of operation
• One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
• Slotted spring pin to prevent accidental loosening
• Color coded vinyl dust caps for bonnets and stems (non-packing)

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Materials</strong></td>
<td>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</td>
</tr>
</tbody>
</table>
| **Connection**       | 200002/210002 Series: Flange-flange, 1/4” NPT vent  
                       | 200402/210402 Series: 1/2” NPT-flange, 1/4” NPT vent  
                       | 200202/210202 Series: 1/4” NPT-flange, 1/4” NPT vent  
                       | Left venting optional |
| **Pressure ratings** | Hard seat: 10,000 psi @ 200 °F  
                       | Soft seat: 6,000 psi @ 200 °F |
| **Orifice size**     | 0.187”                          |
| **Flow coefficient** | Hard seat: $C_f \approx 0.44$  
                       | Soft seat: $C_f \approx 0.76$ |
| **Stem seal & type** | All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional |
| **Options**          | Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips |
| **Weight**           | Approximately 2.5 lb.           |

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.  
  ** If a packing option is chosen, maximum pressure rating is 6,000 psi.  
  Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

For NOSHOK Valves with Steel valve types:

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Stainless Steel valve types:

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

**NOTE 1:** The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 200402-MFC-P1)

**NOTE 2:** When a packing option is selected, an o-ring option is NOT available.

**NOTE 3:** T1 Hard non-rotating (316 Stainless standard) stem tip is the only option available on the 210002/210402 Series soft seat version.

---

**PACKINGS**

<table>
<thead>
<tr>
<th>PACKINGS</th>
<th>P1</th>
<th>P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM TIPS</td>
<td>T1</td>
<td>T6</td>
</tr>
<tr>
<td></td>
<td>Non-rotating (316 Stainless)</td>
<td>Ball (carbide)**</td>
</tr>
<tr>
<td>T5</td>
<td>Ball (440C Stainless)**</td>
<td>Ball (Monel)**</td>
</tr>
<tr>
<td>O-RINGS*</td>
<td>EM1</td>
<td>KZ1</td>
</tr>
<tr>
<td></td>
<td>EPDM</td>
<td>FFKM (Kalrez® 3018 or equivalent)</td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL1</td>
<td>HL4</td>
</tr>
<tr>
<td></td>
<td>1-13/16” Mini “T”</td>
<td>1-3/8” Phenolic</td>
</tr>
<tr>
<td></td>
<td>HL3</td>
<td>HL5</td>
</tr>
<tr>
<td></td>
<td>1” Round knurled</td>
<td>1-3/4” Phenolic</td>
</tr>
</tbody>
</table>

---

† If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

* Other o-ring materials available on request.

** For hard seat only.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are block "T" handles (HL2) and bleed 1-3/8” mini “T” handle (HL7).

The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 200402-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

---

**EXAMPLE with Additional Options**

200402 – MFC – P1 – T1

Series………………………………………. 2-valve
Seat………………………………………. Hard seat
Process type……………………………. Static pressure
Connection……………………………. 1/2" NPT-Flange
Vent…………………………………….. 1/4" NPT
Valve type……………………………. Flange-female, Steel
Packing…………………………………. PTFE
Stem tip……………………………….. Non-rotating
Dimensions

Flange-Flange

Flange-Female

For panel mount or packing dimensions, see pg. 66.
Hard Seat

1 Valve body
2 Head bolt
3 Gasket ring
4 Slotted spring pin
5 Valve stem
6 Valve bonnet
7 Set screw
8 Valve “T” handle
9 Red dust cap
10 PTFE back-up ring
11 FKM o-ring
12 Blue dust cap

Soft Seat

1 Valve body
2 Head bolt
3 Gasket ring
4 Soft tip valve stem
5 Valve bonnet
6 Red dust cap
7 Set screw
8 Valve “T” handle
9 Slotted spring pin
10 Delrin® seat
11 FKM o-ring
12 PTFE back-up ring
13 Valve stem
14 Valve bonnet
15 Blue dust cap
16 Valve “T” handle
17 Set screw
2530 SERIES

- Designed for use with differential pressure transmitters incorporating two isolation valves in natural gas applications
- Non-rotating stem tip standard on large bore isolation valves
- 100% helium leak tested to $1 \times 10^{-4}$ ml/s for performance and reliability
- Features a replaceable Delrin® seat, and straight through porting for easy roddable cleaning of the block valves
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Color coded vinyl dust caps for bonnets and stems
- Rod Out Ports and Drain Ports are standard on the 90° Angle design

---

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections</td>
<td>Flange-flange 90° angle</td>
</tr>
<tr>
<td>Pressure ratings</td>
<td>6,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>0.375&quot;</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>$C_v 3.0$</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads</td>
</tr>
<tr>
<td>Additional features</td>
<td>Two static (test) ports, color coded vinyl bonnet and stem dust cap, patented soft tip stem design on equalizing and vent valves</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 9.4 lb.</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

---

**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

---

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
To meet all of your specific application requirements, the following additional options are available for these manifold valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

**NOTE 1:** The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 2530-MMAS-PK1)

**NOTE 2:** When a packing option is selected, an o-ring option is NOT available.

*Other o-ring materials available on request.*

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are isolation “T” handles (HL8) and equalizing/vent 1-3/8” mini “T” handles (HL7). The handle material will always match the material of the valve, unless otherwise specified. For example, the “T” handle on the 2530-MMAC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.
1 Plug
2 Slotted spring pin
3 Set screw
4 Valve "T" handle
5 Blue dust cap
6 Valve bonnet
7 Non-rotating stem
8 PTFE back-up ring
9 FKM o-ring
10 Delrin® seat
11 Plug
12 Gasket ring
13 Flat washer
14 Head bolt
15 Plug
16 Valve body
• Combines isolating and venting in a single valve, eliminating the need for tubing and fittings
• Block valve isolates the downstream process fluids and the bleed valve exhausts upstream fluids enabling static pressure transmitters, switches or gauges to be removed without disturbing the permanent piping installation
• Valves are located on the top to fit into compact spaces and two holes are provided for mounting, venting is to the left
• 100% helium leak tested to 1 x 10⁻⁴ ml/s for performance and reliability
• Soft tip valves feature a patented Delrin® non-rotating soft tip stem, and a back-up metal-to-metal seal (U.S. Patent 6,820,857)
• Blow-out proof stem provides a secondary stem seal in the full open position
• FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® packing optional
• Stem and bonnet threads are rolled for strength and ease of operation
• One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
• Slotted spring pin to prevent accidental loosening
• Color coded vinyl dust caps for bonnets and stems (non-packing)
• Patented body-to-bonnet, metal-to-metal seal is designed to significantly increase the pressure range of the valve (U.S. Patent 7,758,014)

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections</td>
<td>1/4&quot; NPT, 1/8&quot; NPT, right venting optional</td>
</tr>
<tr>
<td>Pressure ratings**</td>
<td>Hard seat: 10,000 psi @ 200 °F</td>
</tr>
<tr>
<td></td>
<td>Soft tip: 6,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>0.141&quot;</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>Hard seat: Cᵥ 0.38</td>
</tr>
<tr>
<td></td>
<td>Soft tip: Cᵥ 0.38</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 1.4 lb.</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.
** If a packing option is chosen, maximum pressure rating is 6,000 psi.
Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

NOTE: All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
Series..........................................2-valve
Seat...........................................Hard seat
Process type..............................Static pressure
Connection..............................1/4" NPT
Valve type.................................Female-female, Steel

**   Hard seat only.
*** Soft tip only.

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

To meet all of your specific application requirements, the following additional options are available for these manifold valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

NOTE 1: The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 2602-FFC-P1)

NOTE 2: When a packing option is selected, an o-ring option is NOT available.

ORDERING INFORMATION - ADDITIONAL OPTIONS

<table>
<thead>
<tr>
<th>PACKINGS†</th>
<th>P1</th>
<th>P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM TIPS</td>
<td>T1</td>
<td>T4</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>T5</td>
</tr>
<tr>
<td></td>
<td>T3</td>
<td>T6</td>
</tr>
<tr>
<td>O-RINGS*</td>
<td>EM</td>
<td>EPDM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL3</td>
<td>1&quot; Round knurled</td>
</tr>
</tbody>
</table>

† If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.
* Other o-ring materials available on request.
** Hard seat only.
*** Soft tip only.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are isolation 1-3/8" mini "T" handles (HL7) and equalizing 1-3/8" mini "T" handles (HL7).

The handle material will always match the material of the valve, unless otherwise specified. For example, the 1-3/8" mini "T" handle (HL7) on the 2602-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

Series..........................................2-valve
Seat...........................................Hard seat
Process type..............................Static pressure
Connection..............................1/4" NPT
Valve type.................................Female-female, Steel
Packing.....................................PTFE
Manifold Valves, 2-Valve Static Pressure

Dimensions

Female-Female

Top View

Front View

Side View

For panel mount or packing dimensions, see pg. 66.
1 Blue dust cap
2 Mini valve "T" handle
3 Set screw
4 Red dust cap
5 Mini valve bonnet
6 Soft tip stem or mini valve stem
7 PTFE back-up ring
8 FKM o-ring
9 Slotted spring pin
10 Valve body
• Combines isolating and venting in a single valve, eliminating the need for tubing and fittings
• Block valve isolates the downstream process fluids and the bleed valve exhausts upstream fluids enabling static pressure transmitters, switches or gauges to be removed without disturbing the permanent piping installation
• Block valve is located on the right and the bleed valve is located on top in a 90° orientation, venting is to the left
• 100% helium leak tested to $1 \times 10^{-4}$ ml/s for performance and reliability
• Soft tip valves feature a patented Delrin® non-rotating soft tip stem, and a back-up metal-to-metal seal (U.S. Patent 6,820,857)
• Blow-out proof stem provides a secondary stem seal in the full open position
• FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® packing optional
• All stem threads are rolled for strength and ease of operation
• One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
• Slotted spring pin to prevent accidental loosening
• Color coded vinyl dust caps for bonnets and stems (non-packing)
• Patented body-to-bonnet, metal-to-metal seal is designed to significantly increase the pressure range of the valve (U.S. Patent 7,758,014)

**SPECIFICATIONS**

| **Materials** | Zinc-Nickel plated Steel, electropolished 316 Stainless Steel* |
| **Connections** | 2603/2703 Series: 3/8” NPT  
2604/2704 Series: 1/2” NPT, right venting optional |
| **Pressure ratings** | Hard seat: 10,000 psi @ 200 °F  
Soft tip: 6,000 psi @ 200 °F |
| **Orifice size** | 0.156” |
| **Flow coefficient** | $C_v$ 0.44 |
| **Stem seal & type** | All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional |
| **Options** | Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips |
| **Weight** | Approximately 2.2 lb. |

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.  
** If a packing option is chosen, maximum pressure rating is 6,000 psi.  
Refer to the “Pressure vs. Temperature: Packing Style with Compatible Fluid” chart at the back of this catalog.

For NOSHOK Valves with Steel valve types:

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

For NOSHOK Valves with Stainless Steel valve types:

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

**EXAMPLE**

Series.............................................2-valve
Seat................................................Soft tip
Process type.................................Static pressure
Connection.................................1/2" NPT
Valve type...............................Female-female, Steel

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

| SERIES | 2 2-valve |
| SEATS | 6 Hard seat | 7 Soft tip |
| PROCESS TYPE | 0 Static pressure |
| CONNECTIONS | 3 3/8" NPT | 4 1/2" NPT |
| VALVE TYPES | FFC Female-Female, Steel | FFCR Female-Female, Steel, Right Vent |
| | FFS Female-Female, Stainless Steel | FFSR Female-Female, Stainless Steel, Right Vent |

To meet all of your specific application requirements, the following additional options are available for these manifold valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

**NOTE 1:** The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 2704-FFC-P1)

**NOTE 2:** When a packing option is selected, an o-ring option is NOT available.

**NOTE 3:** The standard o-ring in all the NOSHOK manifold valves is FKM.

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

| PACKINGS† | P1 | PTFE | P2 | Grafoil*** |
| STEM TIPS | T1 | Non-rotating (316 Stainless)** | T4 | PEEK*** |
| | T2 | Delrin® (Acetal)*** | T5 | Ball (440C Stainless)** |
| | T3 | PTFCE*** | T6 | Ball (carbide)** |
| | | | T7 | Ball (ceramic)** |
| | | | T10 | Regulating Delrin**** |
| O-RINGS* | EMI | EPDM | KZ1 | FFKM (Kalrez® 3018 or equivalent) |
| HANDLES | HL2 | 2-1/2" "T" | HL4 | 1-3/8" Phenolic |
| | | | HL5 | 1-3/4" Phenolic |

† If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.
* Other o-ring materials available on request.
** Hard seat only.
*** Soft tip only.

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

![EXAMPLE with Additional Options](image-url)

Series.............................................2-valve
Seat................................................Soft tip
Process type.................................Static pressure
Connection.................................1/2" NPT
Valve type...............................Female-female, Steel
Packing.........................................PTFE

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

![EXAMPLE with Additional Options](image-url)
Manifold Valves, 2-Valve Static Pressure

Dimensions

Female-Female

Top View

Front View

Side View

For panel mount or packing dimensions, see pg. 66.
2603/2703 & 2604/2704 SERIES

DIMENSIONS

Hard Seat

1 Blue dust cap
2 Mini valve "T" handle
3 Set screw
4 Red dust cap
5 Mini valve bonnet
6 Mini valve stem
7 PTFE back-up ring
8 FKM o-ring
9 Slotted spring pin
10 Valve body

Soft Tip

1 Blue dust cap
2 Mini valve "T" handle
3 Set screw
4 Red dust cap
5 Mini valve bonnet
6 Soft tip stem
7 PTFE back-up ring
8 FKM o-ring
9 Slotted spring pin
10 Valve body
2180 SERIES

- Designed for use with orifice meters
- 100% helium leak tested to $1 \times 10^{-4}$ ml/s for performance and reliability
- Replaceable Delrin® seat and straight through porting for bidirectional, high capacity flow and easy rotatable cleaning
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE packing optional
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Vinyl dust caps for bonnets and stems (non-packing)

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</td>
</tr>
<tr>
<td>Connection</td>
<td>1/4&quot; NPT</td>
</tr>
<tr>
<td>Pressure rating</td>
<td>6,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>0.187&quot;</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>$C_v, 0.76$</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE packing optional</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 4.8 lb. (2-valve model)</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
<table>
<thead>
<tr>
<th>SERIES</th>
<th>2-valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEAT</td>
<td>Soft seat</td>
</tr>
<tr>
<td>PROCESS TYPE</td>
<td>Meter manifold</td>
</tr>
<tr>
<td>CONNECTION</td>
<td>1/4” NPT</td>
</tr>
<tr>
<td>VALVE TYPES</td>
<td>FFC Female-Female, Steel</td>
</tr>
</tbody>
</table>

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

### EXAMPLE

- **Series**: 2-valve
- **Seat**: Soft seat
- **Process type**: Meter manifold
- **Connection**: 1/4” NPT
- **Valve type**: Female-female, Steel

To meet all of your specific application requirements, the following **additional options** are available for these manifold valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

**NOTE 1**: The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 2180-FFC-P1)

**NOTE 2**: When a packing option is selected, an o-ring option is NOT available.

**NOTE 3**: The standard o-ring in all the NOSHOK manifold valves is FKM.

### ORDERING INFORMATION - ADDITIONAL OPTIONS

<table>
<thead>
<tr>
<th>PACKINGS</th>
<th>P1</th>
<th>PTFE</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM TIP</td>
<td>T1</td>
<td>Non-rotating (316 Stainless)</td>
</tr>
<tr>
<td>O-RINGS*</td>
<td>EM1</td>
<td>EPDM</td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL3</td>
<td>1” Round knurled</td>
</tr>
</tbody>
</table>

* Other o-ring materials available on request.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are “T” handles (HL2). The handle material will always match the material of the valve, unless otherwise specified. For example, the “T” handle (HL2) on the 2180-FFC will be Steel. When only the standard configuration is needed, no additional designs are necessary. Please consult the factory for special application requests.

### EXAMPLE with Additional Options

- **Series**: 2-valve
- **Seat**: Soft seat
- **Process type**: Meter manifold
- **Connection**: 1/4” NPT
- **Valve type**: Female-female, Steel
- **Packing**: PTFE
Manifold Valves, 2-Valve

Dimensions

Female-Female

Optional 3 and 5 valve configurations also shown. Additional needle valves sold separately.
For panel mount or packing dimensions, see pg. 66.
3010/3110 SERIES

- Available in block, single flange, or double flange connection for remote or direct installation
- Designed for use with differential pressure transmitters incorporating two isolation valves and an equalizing valve in differential pressure measurement
- 3110 Series soft seat valves also feature a replaceable Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® packing optional
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Color coded vinyl dust caps for bonnets and stems (non-packing)

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>Flange-flange, 1/2&quot; NPT-flange, 1/2&quot; NPT-1/2&quot; NPT</td>
</tr>
<tr>
<td>Pressure ratings**</td>
<td>Hard seat: 10,000 psi @ 200 °F Soft seat: 6,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>0.187&quot;</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>Hard seat: Cᵥ 0.44 Soft seat: Cᵥ 0.76</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 4.0 lb. without flange, Approximately 5.0 lb. with flange</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.
** If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the *Pressure vs. Temperature: Packing Style with Compatible Fluid* chart at the back of this catalog.

For NOSHOK Valves with Steel valve types:

WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Stainless Steel valve types:

WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Note: All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
**Series** | **3-valve**  
---|---  
**Seats** | **Soft seat**  
**Process Type** | **Differential pressure**  
**Connection** | **1/2" NPT standard or flange**  
**Valve Type** | **Flange-female, Steel**  

**EXAMPLE**

```
Series.................................3-valve
Seat...................................Soft seat
Process type.....................Differential pressure
Connection........1/2" NPT standard or flange
Valve type ......................Flange-female, Steel
```

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

| SOFT SEATS*** | PK1 | PEEK | KF1 | PCTFE  
|---------------|-----|------|-----|------  
| PACKINGS†     | P1  | PTFE | P2  | Grafoil***  
| STEM TIPS     | T1  | Non-rotating (316 Stainless) | T6  | Ball (carbide)** | T8  | Ball (Monel)**  
|               | T5  | Ball (440C Stainless)** | T7  | Ball (ceramic)**  
| O-RINGS*      | EM1 | EPDM | KZ1 | FFKM (Kalrez® 3018 or equivalent) | NB1 | NBR  
| HANDLES       | HL1 | 1-13/16" Mini "T" | HL4 | 1-3/8" Phenolic | HL3 | 1" Round knurled | HL5 | 1-3/4" Phenolic  

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

† If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.
* Other o-ring materials available on request.
** For 3101 only.

Please note that the standard o-ring in all the NOSHOK manifold valves is FKM and T1 hard non-rotating (316SS standard) stem tip is the only option available on the 3110 Series soft seat version.

**EXAMPLE with Additional Options**

```
Series..................................................3-valve
Seat....................................................Soft seat
Process type...............................Differential pressure
Connection..........................1/2" NPT standard or flange
Valve type.................................Flange-female, Steel
Soft seat..............................................PEEK
Packing............................................PTFE
Stem tip...........................................Non-rotating
```

The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 3110-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.
Manifold Valves, 3-Valve Differential Pressure

Dimensions

Flange-Flange

Top View

Side View
Flange-Female

Top View

Side View
For panel mount or packing dimensions, see pg. 66.
1 Valve body
2 Blue dust cap
3 Plug
4 Gasket ring
5 Slotted spring pin
6 PTFE back-up ring
7 Valve bonnet
8 Green dust cap
9 Valve "T" handle
10 Set screw
11 Valve stem
12 FKM o-ring
13 Head bolt

1 Valve body
2 Blue dust cap
3 Plug
4 Gasket ring
5 Slotted spring pin
6 Delrin® seat
7 FKM o-ring
8 Valve bonnet
9 Green dust cap
10 Valve "T" handle
11 Set screw
12 Valve stem
13 PTFE back-up ring
14 Head bolt
3510 SERIES

- Designed for use with differential pressure transmitters incorporating two isolation valves and an equalizing valve in differential pressure measurement
- Available in block, single flange, or double flange connection for remote or direct installation
- 100% helium leak tested to $1 \times 10^{-4}$ ml/s for performance and reliability
- Features a replaceable Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Color coded vinyl dust caps for bonnets and stems
- Non-rotating stem tip standard on isolation valves

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>Flange-flange, 1/2&quot; NPT-flange, 1/2&quot; NPT-1/2&quot; NPT</td>
</tr>
<tr>
<td>Pressure ratings</td>
<td>6,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>0.375&quot;</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>$C_v$ 3.0</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 6.5 lb.</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

For NOSHOK Valves with Stainless Steel valve types:

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Steel valve types:

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

NOTE: All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

**EXAMPLE**

Series.................................................. 3-valve
Seat...................................................... Soft seat
Process type................................. Differential pressure
Connection..................... 1/2" NPT standard or flange
Valve type............................. Flange-female, Steel

To meet all of your specific application requirements, the following additional options are available for these manifold valves. To order all or any of these options, simply add them to the part number as follows:

<table>
<thead>
<tr>
<th>SOFT SEATS</th>
<th>PK1</th>
<th>PEEK</th>
<th>KF1</th>
<th>PCTFE</th>
</tr>
</thead>
<tbody>
<tr>
<td>O-RINGS*</td>
<td>EM1</td>
<td>EPDM</td>
<td>KZ1</td>
<td>FFKM (Kalrez® 3018 or equivalent)</td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL3</td>
<td>1” Round knurled</td>
<td>HL4</td>
<td>1-3/8” Phenolic</td>
</tr>
</tbody>
</table>

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

* Other o-ring materials available on request.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are isolation “T” handles (HL8) and equalizing “T” handles (HL2).

The handle material will always match the material of the valve, unless otherwise specified. For example, the “T” handle on the 3510-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

**EXAMPLE with Additional Options**

Series.................................................. 3-valve
Seat...................................................... Soft seat
Process type................................. Differential pressure
Connection..................... 1/2" NPT standard or flange
Valve type............................. Flange-female, Steel
Soft seat............................................. PEEK
O-ring................................................ FFKM
Flange-Flange

Top View

Side View

10-5/8" OPEN
9-5/16" CLOSED

3-7/8"
2-1/8"

2-3/16"

Ø 5/8"

MOUNTING HOLES
Ø 9/32"

PROCESS PORT
FLANGE

1"

ISOLATE VALVES

EQUALIZE VALVE

1/4" NPT STATIC TEST PORTS

3-13/16"

3-5/32" OPEN
2-7/8" CLOSED

2-17/32"

1-11/16"

2-15/32"

1-5/8"
Flange-Female

Top View

Side View

Dimensions:
- 10-5/8" OPEN
- 9-5/16" CLOSED
- 3-7/8"
- 2-1/8"
- 2-3/16"
- Ø 5/8"
- 1/2" NPT
- MOUNTING HOLES
- ISOLATE VALVES
- EQUALIZE VALVE
- 1/4" NPT STATIC TEST PORTS
- 3-5/32" OPEN
- 2-7/8" CLOSED

Dimensions:
- 3-13/32"
- 2-17/32"
- 1-11/16"
- 1-9/16"
- 1-9/32"
Manifold Valves, 3-Valve Differential Pressure

Dimensions

Female-Female

For panel mount or packing dimensions, see pg. 66.
1 Valve body
2 Delrin® seat
3 FKM o-ring
4 PTFE back-up ring
5 Non-rotating stem assembly
6 Valve bonnet
7 Blue dust cap
8 Set screw
9 Valve "T" handle
10 Plug
11 Gasket ring
12 Slotted spring pin
13 Delrin® seat
14 Green dust cap
15 Valve "T" handle
16 Set screw
17 Valve bonnet
18 Valve stem
19 PTFE back-up ring
20 FKM o-ring
21 Head bolt
3610/3710 SERIES

- Compact design is ideal for installations with limited space, such as behind panels or in cabinets
- Designed for use with differential pressure transmitters incorporating two isolation valves and an equalizing valve in differential pressure measurement
- 100% helium leak tested to $1 \times 10^{-4}$ ml/s for performance and reliability
- Soft tip valves feature a patented Delrin® non-rotating soft tip stem, and a back-up metal-to-metal seal (U.S. Patent 6,820,857)
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® packing optional
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Color coded vinyl dust caps for bonnets and stems (non-packing)
- Patented body-to-bonnet, metal-to-metal seal is designed to significantly increase the pressure range of the valve (U.S. Patent 7,758,014)

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</td>
</tr>
<tr>
<td>Connection</td>
<td>1/4&quot; NPT</td>
</tr>
</tbody>
</table>
| Pressure ratings**     | Hard seat: 10,000 psi @ 200 °F  
                        | Soft tip: 6,000 psi @ 200 °F |
| Orifice size           | 0.141" |
| Flow coefficient       | $C_v 0.44$ |
| Stem seal & type       | All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Grafoil® packing optional |
| Options                | Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips |
| Weight                 | Approximately 1.4 lb. |

- All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.
- ** If a packing option is chosen, maximum pressure rating is 6,000 psi.
- Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

For NOSHOK Valves with Steel valve types:

WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Stainless Steel valve types:

WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

NOTE: All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
| SERIES | 3-valve |
| SEATS | Hard seat |
| PROCESS TYPE | Differential pressure |
| CONNECTION | 1/4" NPT |
| VALVE TYPES | FFC Female-Female, Steel | FFS Female-Female, Stainless Steel |

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

**EXAMPLE with Additional Options**

```
Series........................................... 3-valve
Seat............................................. Hard seat
Process type.............................. Differential pressure
Connection................................. 1/4" NPT
Valve type................................. Female-female, Steel
Packing........................................ PTFE
Stem tip........................................ Non-rotating
```

To meet all of your specific application requirements, the following additional options are available for these manifold valves. To order all or any of these options, simply add them to the part number as shown in the diagram below.

**NOTE 1:** The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. **(EXAMPLE: 3610-FFC-P1)**

**NOTE 2:** When a packing option is selected, an o-ring option is NOT available.

**NOTE 3:** The standard o-ring in all the NOSHOK manifold valves is FKM.

---

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

<table>
<thead>
<tr>
<th>PACKINGS *</th>
<th>P1</th>
<th>P2</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM TIPS</td>
<td>T1</td>
<td>T2</td>
</tr>
<tr>
<td>PTFE</td>
<td>Non-rotating (316 Stainless)**</td>
<td>Delrin® (Acetal)**</td>
</tr>
<tr>
<td>PEEK***</td>
<td>T4</td>
<td>T5</td>
</tr>
<tr>
<td>Ball (ceramic)**</td>
<td>Ball (440C Stainless)**</td>
<td>Ball (carbide)**</td>
</tr>
<tr>
<td>T7</td>
<td>T8</td>
<td>T9</td>
</tr>
<tr>
<td>Ball (Monel)**</td>
<td>Ball (ceramic)**</td>
<td>Regulating PEEK***</td>
</tr>
<tr>
<td>T10</td>
<td>T11</td>
<td>T12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>O-RINGS*</th>
<th>EMI EPDM</th>
<th>KZ1</th>
<th>NB1</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPDM</td>
<td>T2</td>
<td>FFKM (Kalrez® 3018 or equivalent)</td>
<td>NBR</td>
</tr>
<tr>
<td>KZ1</td>
<td>T3</td>
<td>FFKM (Kalrez® 3018 or equivalent)</td>
<td></td>
</tr>
</tbody>
</table>

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

<table>
<thead>
<tr>
<th>HANDLES</th>
<th>HL2</th>
<th>HL3</th>
<th>HL4</th>
<th>HL5</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-1/2&quot; &quot;T&quot;</td>
<td>1&quot; Round knurled</td>
<td>1-3/8&quot; Phenolic</td>
<td>1-3/4&quot; Phenolic</td>
<td></td>
</tr>
</tbody>
</table>

---

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

---

† If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

* Other o-ring materials available on request.

** For 3610 only.

*** For 3710 only.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are 1-3/8" mini "T" handles (HL7).

The handle material will always match the material of the valve, unless otherwise specified. For example, the 1-3/8" mini "T" handle (HL7) on the 3710-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.
Manifold Valves, 3-Valve Differential Pressure

Dimensions

Female-Female

For panel mount or packing dimensions, see pg. 66.
1 Valve body
2 Plug
3 Blue dust cap
4 FKM o-ring
5 PTFE back-up ring
6 Soft tip stem
7 Mini valve bonnet
8 Green dust cap
9 Set screw
10 Mini valve “T” handle
5030/5130 SERIES

- Designed for use with differential pressure transmitters incorporating two isolation valves, two equalizing valves and a vent valve required in natural gas applications
- Flare Pattern™ valve configuration provides maximum clearance for fingers during operation
- Soft tip valves feature a patented Delrin® non-rotating soft tip stem, and a back-up metal-to-metal seal (U.S. Patent 6,820,857)
- Available in block, single flange, or double flange connection for remote or direct installation
- 100% helium leak tested to 1 x 10^-4 ml/s for performance and reliability
- 5130 Series valves also feature a replaceable Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy raddable cleaning of the block valves
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or Grafoil® packing optional
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Patented body-to-bonnet, metal-to-metal seal is designed to significantly increase the pressure range of the valve (U.S. Patent 7,758,014)

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Material</th>
<th>Zinc-Nickel plated Carbon Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>Flange-flange, 1/2&quot; NPT-flange, 1/2&quot; NPT</td>
</tr>
<tr>
<td>Pressure ratings**</td>
<td>Hard seat: 10,000 psi @ 200° F</td>
</tr>
<tr>
<td></td>
<td>Soft seat/tip: 6,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>0.187&quot;</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>Hard seat: C_v 0.44</td>
</tr>
<tr>
<td></td>
<td>Soft seat/tip: C_v 0.76</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring</td>
</tr>
<tr>
<td></td>
<td>below the threads</td>
</tr>
<tr>
<td>Additional features</td>
<td>Two static (test) ports, color coded vinyl bonnet and stem dust cap,</td>
</tr>
<tr>
<td></td>
<td>patented soft seat/tip stem design on equalizing and vent valves</td>
</tr>
<tr>
<td>Options</td>
<td>Panel mountings, o-ring materials, handles, packings, regulating stem</td>
</tr>
<tr>
<td></td>
<td>and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 4.2 lb. without flange</td>
</tr>
<tr>
<td></td>
<td>Approximately 6.0 lb. with flange</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.
** If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the “Pressure vs.Temperature: Packing Style with Compatible Fluid” chart at the back of this catalog.

WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Steel valve types:

WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

** NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

### SERIES 5030/5130

<table>
<thead>
<tr>
<th>SERIES</th>
<th>SEATS</th>
<th>PROCEDURE TYPE</th>
<th>CONNECTION</th>
<th>VALVE TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-valve</td>
<td>Hard seat 0</td>
<td>Natural gas flow 3</td>
<td>1/2&quot; NPT or flange 0</td>
<td>MFC-Flange-Female, Steel</td>
</tr>
<tr>
<td>Flange-Female, Stainless Steel MFS</td>
<td>Female-Female, Steel FFC</td>
<td>Female-Female, Stainless Steel FFS</td>
<td>Flange-Flange, Stainless Steel MMS</td>
<td></td>
</tr>
</tbody>
</table>

**Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.**

### ORDERING INFORMATION - ADDITIONAL OPTIONS

<table>
<thead>
<tr>
<th>BODY CONFIGURATION</th>
<th>SOFT SEATS</th>
<th>PACKINGS</th>
<th>STEM TIPS</th>
<th>O-RINGS</th>
<th>HANDLES</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP</td>
<td>PK1</td>
<td>P1</td>
<td>T1</td>
<td>EM1</td>
<td>HL1</td>
</tr>
<tr>
<td>Flare Pattern™</td>
<td>PEEK</td>
<td>PTFE</td>
<td>Non-rotating (316 Stainless)</td>
<td>EPDM</td>
<td>1-13/16&quot; Mini &quot;T&quot;</td>
</tr>
<tr>
<td>SOFT SEATS</td>
<td>KF1</td>
<td>P2</td>
<td>T4</td>
<td>KZ1</td>
<td>HL3</td>
</tr>
<tr>
<td>PEEK</td>
<td>PCTFE</td>
<td>Ball (ceramic)**</td>
<td>FFKM (Kalrez® 3018 or equivalent)</td>
<td>1&quot; Round knurled</td>
<td>1-3/8&quot; Phenolic</td>
</tr>
<tr>
<td>STEM TIPS</td>
<td>T6</td>
<td>T5</td>
<td>Ball (carbide)**</td>
<td>NB1</td>
<td>HL4</td>
</tr>
<tr>
<td>T10</td>
<td>T8</td>
<td>Ball (Monel)**</td>
<td>Regulating hard**</td>
<td>NBR</td>
<td>HL5</td>
</tr>
<tr>
<td>Regulating Derin™***</td>
<td>Regulating PCTFE***</td>
<td>Regulating PEEK***</td>
<td>1-3/4&quot; Phenolic</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Other o-ring materials available on request.
** For 5030 only.
*** For 5130 only.

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

**NOTE 1:** The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 5130-MFC-P1)

**NOTE 2:** When a packing option is selected, an o-ring option is NOT available.

**NOTE 3:** The standard o-ring in all the NOSHOK manifold valves is FKM and T1 hard non-rotating (316SS standard) stem tip is the only option available for the Isolation valves on the 5130 Series. All other stem tip options are available for the equalize and vent valves.

### EXAMPLE with Additional Options

Series..............................................5-valve
Seat............................................Soft seat/tip
Process type.........................Natural gas flow
Connection...............................1/2" NPT standard
Valve type...............................Flange-female, Steel
Body configuration....................Flare Pattern™
Soft seat....................................PEEK
Packing......................................PTFE
Stem tip.....................................Non-rotating

**NOTE:** The example shown includes ALL possible additional options. Please include ONLY the options required for your application when building your part number. (EXAMPLE: 5130-MFC-P1)

**NOTE:** When a packing option is selected, an o-ring option is NOT available.

**NOTE:** The standard o-ring in all the NOSHOK manifold valves is FKM and T1 hard non-rotating (316SS standard) stem tip is the only option available for the Isolation valves on the 5130 Series. All other stem tip options are available for the equalize and vent valves.

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.
Dimensions

Flange-Flange

Top View

Front View

Side View
Manifold Valves, 5-Valve Natural Gas

Dimensions

Female-Female

Top View

Front View

Side View

For panel mount or packing dimensions, see pg. 66.
<table>
<thead>
<tr>
<th>Part</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Valve body</td>
</tr>
<tr>
<td>2</td>
<td>Slotted spring pin</td>
</tr>
<tr>
<td>3</td>
<td>Delrin® seat</td>
</tr>
<tr>
<td>4</td>
<td>FKM o-ring</td>
</tr>
<tr>
<td>5</td>
<td>PTFE back-up ring</td>
</tr>
<tr>
<td>6</td>
<td>Valve stem</td>
</tr>
<tr>
<td>7</td>
<td>Valve bonnet</td>
</tr>
<tr>
<td>8</td>
<td>Blue dust cap</td>
</tr>
<tr>
<td>9</td>
<td>Set screw</td>
</tr>
<tr>
<td>10</td>
<td>Valve “T” handle</td>
</tr>
<tr>
<td>11</td>
<td>Plug</td>
</tr>
<tr>
<td>12</td>
<td>Gasket ring</td>
</tr>
<tr>
<td>13</td>
<td>Head bolt</td>
</tr>
<tr>
<td>14</td>
<td>Washer</td>
</tr>
<tr>
<td>15</td>
<td>Mini valve stem</td>
</tr>
<tr>
<td>16</td>
<td>Mini valve bonnet</td>
</tr>
<tr>
<td>17</td>
<td>Mini valve “T” handle</td>
</tr>
<tr>
<td>18</td>
<td>Green dust cap</td>
</tr>
<tr>
<td>19</td>
<td>Red dust cap</td>
</tr>
</tbody>
</table>

**Hard Seat**

**Soft Seat**
Flare Pattern™ Flange-Flange

Top View

Front View

Side View

Manifold Valves, 5-Valve Natural Gas

Dimensions
Flare Pattern™ Female-Female

Top View

- 2-1/2”
- 1-1/4”
- 1-1/2”
- 3-3/8”
- 8-7/16” OPEN
- 7-7/8” CLOSED
- MOUNTING HOLES Ø 9/32”

Front View

- 2-7/16”
- 1-13/16”*
- 1-3/8” for 5130
- 3/32”
- Ø 3/16” ORIFICE
- 2-1/8”
- 1/2” NPT INSTRUMENT & PROCESS PORTS
- 1/4” NPT VENT PORT

Side View

- 1-17/64”
- 1-19/64”
- 1/2”

For panel mount or packing dimensions, see pg. 66.
1 Flare Pattern™ valve body
2 Red dust cap
3 Plug
4 Slotted spring pin
5 Set screw
6 Valve “T” handle
7 Blue dust cap
8 Valve bonnet
9 Valve stem
10 Gasket ring
11 Washer
12 Set screw
13 Mini valve “T” handle
14 Green dust cap
15 PTFE back-up ring
16 Valve stem
17 PTFE back-up ring
18 FKM o-ring
19 Head bolt

1 Flare Pattern™ valve body
2 Red dust cap
3 Plug
4 Slotted spring pin
5 Set screw
6 Valve “T” handle
7 Blue dust cap
8 Valve bonnet
9 Valve stem
10 Soft seat
11 Set screw
12 Mini valve “T” handle
13 Green dust cap
14 Valve bonnet
15 Soft tip stem
16 PTFE back-up ring
17 FKM o-ring
**5530 SERIES**

- Designed for use with differential pressure transmitters incorporating two isolation valves, two equalizing valves and a vent valve in natural gas applications.
- Flare Pattern™ valve configuration provides maximum clearance for fingers during operation.
- Soft tip valves feature a patented Delrin® non-rotating soft tip stem, and a back-up metal-to-metal seal (U.S. Patent 6,820,857).
- Non-rotating stem tip standard on large bore isolation valves.
- Available in block, single flange, or double flange connection for remote or direct installation.
- 100% helium leak tested to 1 x 10^-4 ml/s for performance and reliability.
- Features a replaceable Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy roddable cleaning on the block valves.
- Blow-out proof stem provides a secondary stem seal in the full open position.
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling.
- All stem threads are rolled for strength and ease of operation.
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads.
- Slotted spring pin to prevent accidental loosening.
- Color coded vinyl dust caps for bonnets and stems.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th><strong>Materials</strong></th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Connections</strong></td>
<td>Flange-flange, 1/2” NPT-flange, 1/2” NPT-1/2” NPT, Flange-flange 90° angle</td>
</tr>
<tr>
<td><strong>Pressure ratings</strong></td>
<td>6,000 psi @ 200 °F</td>
</tr>
<tr>
<td><strong>Orifice size</strong></td>
<td>0.375”</td>
</tr>
<tr>
<td><strong>Flow coefficient</strong></td>
<td>C_0 3.0</td>
</tr>
<tr>
<td><strong>Stem seal &amp; type</strong></td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads</td>
</tr>
<tr>
<td><strong>Additional features</strong></td>
<td>Two static (test) ports, color coded vinyl bonnet and stem dust cap, patented soft tip stem design on equalizing and vent valves</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>Approximately 5.8 lb. without flange, Approximately 7.5 lb. with flange, 90° Angle version approximately 9.4 lb.</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**NOTE:** All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

For NOSHOK Valves with Stainless Steel valve types:

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Valves with Stainless Steel valve types:

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

90° Angle option

Flare Pattern™ option

Flow Schematic

Manifold Valves, 5-Valve Natural Gas

Soft Seat/Tip (0.375" Orifice)
SERIES | 5-valve
---|---
SEAT | Soft seat/tip 0.375” orifice
PROCESS TYPE | Natural gas flow
CONNECTION | 1/2” NPT standard or flange

<table>
<thead>
<tr>
<th>VALVE TYPES</th>
<th>BODY CONFIGURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFC</td>
<td>FP</td>
</tr>
<tr>
<td>FFC</td>
<td>SOFT SEATS</td>
</tr>
<tr>
<td>MFS</td>
<td>O-RINGS*</td>
</tr>
<tr>
<td>MMS</td>
<td>HANDLES</td>
</tr>
</tbody>
</table>

**Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.**

* Only available in Flare Pattern™ configuration.

### EXAMPLE

5 5 3 0 – MMAS

Series.......................................................... 5-valve
Seat.......................................................... Soft seat/tip
Process type........................................... Natural gas flow
Connection................................. 1/2” NPT standard
Valve type........... Flange-flange 90° Angle, Stainless Steel

To meet all of your specific application requirements, the following additional options are available for these manifold valves. To order all or any of these options, simply add them to the part number as follows:

**Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.**

* Other o-ring materials available on request.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are isolation “T” handles (HL8) and equalizing/vent 1-3/8” mini “T” handles (HL7).

The handle material will always match the material of the valve, unless otherwise specified. For example, the “T” handle on the 5530-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

### EXAMPLE with Additional Options

5 5 3 0 – MFC – FP – PK1 – KZ1

Series.......................................................... 5-valve
Seat.......................................................... Soft seat
Process type........................................... Natural gas flow
Connection................................. 1/2” NPT standard or flange
Valve type........... Flange-flange, Stainless Steel
Body configuration............... Flare Pattern™
Soft seat............................................. PEEK
O-ring................................................... FFKM
Flange-Flange

Dimensions

Top View

Front View

Side View

Manifold Valves, 5-Valve Natural Gas
For panel mount or packing dimensions, see pg. 66.
1 Valve body
2 Plug
3 Delrin® seat
4 FKM o-ring
5 PTFE back-up ring
6 Non-rotating stem
7 Set screw
8 Valve “T” handle
9 Blue dust cap
10 Valve bonnet
11 Gasket ring
12 Head bolt
13 Washer
14 Soft tip stem
15 Green dust cap
16 Set screw
17 Mini valve “T” handle
18 Mini valve bonnet
19 PTFE back-up ring
20 FKM o-ring
21 Slotted spring pin
22 Red dust cap
Dimensions

Flange-Flange 90° Angle

Top View

Front View

Side View

Manifold Valves, 5-Valve Natural Gas
1 Red dust cap
2 Plug
3 Slotted spring pin
4 Plug
5 Set screw
6 Valve “T” handle
7 Blue dust cap
8 Valve bonnet
9 Non-rotating stem
10 PTFE back-up ring
11 FKM o-ring
12 Delrin® seat
13 Gasket ring
14 Set screw
15 Mini valve “T” handle
16 Green dust cap
17 Mini valve bonnet
18 Soft tip stem
19 PTFE back-up ring
20 FKM o-ring
21 Washer
22 Head bolt
Flare Pattern™ Flange-Female

Top View

Front View

Side View
Manifold Valves, 5-Valve Natural Gas

Dimensions

Flare Pattern™ Female-Female

Top View

Front View

Side View
1 Flare Pattern™ valve body
2 Red dust cap
3 Plug
4 Delrin® seat
5 Set screw
6 Valve “T” handle
7 Blue dust cap
8 Valve bonnet
9 Non-rotating stem
10 PTFE back-up ring
11 FKM o-ring
12 Gasket ring
13 Washer
14 Set screw
15 Mini valve “T” handle
16 Green dust cap
17 Mini valve bonnet
18 Soft tip stem
19 PTFE back-up ring
20 FKM o-ring
21 Slotted spring pin
22 Head bolt
**Connectors**

**Stabilized & Non-Stabilized**

---

**SZ SERIES**

- Slotted bolt holes allow for 2-1/8” and 2-1/4” bolt spacings
- Designed to reinforce the entire installation by shifting radial-stress load away from the NPT connections
- Available in 3-3/8” and 5” lengths
- Optional dielectric barrier creates a non-conductive shield between the instrument and the orifice fitting

---

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Material</th>
<th>Zinc-Nickel plated Carbon Steel, 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bolts</td>
<td>Carbon Steel</td>
</tr>
<tr>
<td>Connection</td>
<td>1/2” NPT-flange</td>
</tr>
<tr>
<td>Pressure rating</td>
<td>10,000 psi at 200 °F</td>
</tr>
<tr>
<td>Orifice</td>
<td>0.375”</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 3.3 lb. (Short stabilized)</td>
</tr>
<tr>
<td></td>
<td>Approximately 4.5 lb. (Long stabilized)</td>
</tr>
<tr>
<td></td>
<td>Approximately 2.9 lb. (Non-stabilized)</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

---

**For NOSHOK Steel Connectors:**

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

**For NOSHOK Stainless Steel Connectors:**

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

---

**Stabilized Connectors**

*Note: Shown with flange adaptor for round installations.*

**Non-stabilized Connector**

---

**Top View**

**Front View**

**Side View**
<table>
<thead>
<tr>
<th>SERIES</th>
<th>SZ</th>
<th>Connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATERIALS</td>
<td>C</td>
<td>Steel</td>
</tr>
<tr>
<td>S</td>
<td>Stainless Steel</td>
<td></td>
</tr>
<tr>
<td>CONNECTOR TYPES</td>
<td>1</td>
<td>Short stabilized pair*</td>
</tr>
<tr>
<td>2</td>
<td>Short stabilized pair, with flange adaptor**</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Long stabilized pair*</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Long stabilized pair with flange adaptor**</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Non-stabilized pair</td>
<td></td>
</tr>
</tbody>
</table>

| OPTIONS† | DK1 | One Piece Dielectric Gasket, Pair |
| DK1-SS | One Piece Dielectric Gasket, Pair w/SS Bolts |
| DK2 | PTFE Gasket with Dielectric Shim, Pair |
| DK2-SS | PTFE Gasket with Dielectric Shim, Pair w/SS Bolts |

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

† For more information on Dielectric Kits, see page 140
* For flat installations (orifice fitting)
** For round installations (orifice flange)

**EXAMPLE**

Series.................................................................Connector
Material..............................................................Steel
Connector type......................................................Short stabilized pair
Option.................................................................One piece Dielectric gasket, pair

---

### Short Stabilized Connector

**Top View**

**Front View**

**Side View**

---

### Non-Stabilized Connector

**Top View**

**Front View**

**Side View**
Stabilized With Integral Block Valve

SV SERIES

- Block valve can be installed on either side of stabilized body, allowing 1/2 turn installation
- Slotted bolt holes allow for 2-1/8” and 2-1/4” bolt spacings
- Designed to reinforce the entire installation by shifting radial-stress load away from the NPT connections
- 0.375” bore for unrestricted passage of process gas
- Non-rotating stem tip standard on block valves
- Blow-out proof stem provides a secondary stem seal in the full open position
- Features a replaceable Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy roddable cleaning of the block valves
- Metal body-to-bonnet and body-to-flange plug with secondary o-ring seals
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling
- Includes PTFE gaskets and Carbon Steel bolts for manifold installation
- Optional dielectric barrier creates a non-conductive shield between the instrument and the orifice fitting

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Zinc-Nickel plated Carbon Steel, 316 Stainless Steel*</td>
</tr>
<tr>
<td>Bolts</td>
<td>Carbon Steel</td>
</tr>
<tr>
<td>Connection</td>
<td>1/2” NPT-flange</td>
</tr>
<tr>
<td>Pressure rating</td>
<td>6,000 psi at 200 °F</td>
</tr>
<tr>
<td>Orifice</td>
<td>0.375”</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>Cₚ 3.0</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
<td>All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 10.6 lb. (pair)</td>
</tr>
</tbody>
</table>

Note: Shown with flange adaptor for round installations.

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

For NOSHOK Steel Connectors:

WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Stainless Steel Connectors:

WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Stabilized Connector with Integral Block Valve

Top View

Bottom View

For NOSHOK Stainless Steel Connectors:

WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
ORDERING INFORMATION

<table>
<thead>
<tr>
<th>SERIES</th>
<th>SV</th>
<th>Stabilized connector with integral block valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATERIALS</td>
<td>C</td>
<td>Steel</td>
</tr>
<tr>
<td></td>
<td>S</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>CONNECTOR TYPES</td>
<td>1</td>
<td>Stabilized connector pair with integral valve*</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Stabilized connector pair with integral valve, flange adaptor**</td>
</tr>
<tr>
<td>OPTIONS†</td>
<td>DK1</td>
<td>One Piece Dielectric Gasket, Pair</td>
</tr>
<tr>
<td></td>
<td>DK1-SS</td>
<td>One Piece Dielectric Gasket, Pair w/SS Bolts</td>
</tr>
<tr>
<td></td>
<td>DK2</td>
<td>PTFE Gasket with Dielectric Shim, Pair</td>
</tr>
<tr>
<td></td>
<td>DK2-SS</td>
<td>PTFE Gasket with Dielectric Shim, Pair w/SS Bolts</td>
</tr>
</tbody>
</table>

† For more information on Dielectric Kits, see page 140
* For flat installations (orifice fitting)
** For round installations (orifice flange)

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

EXAMPLE

Series..........................Connector with integral block valve
Material......................................................Steel
Connector type.......Stabilized connector pair with integral valve
Option.............................One piece Dielectric gasket, pair

Stabilized Connector with Integral Block Valve

Front View

Side View

TORQUE BOLTS USING CRISS CROSS PATTERN TO 35 FT-LBS
1 Flange plug
2 Stabilized connector valve body
3 Hex nut
4 Optional flange adaptor for round installations
5 Delrin® soft seat, white
7 FKM o-ring
8 PTFE back-up ring
9 Valve stem
10 FKM o-ring
11 Valve bonnet
12 Bonnet flange
13 Bolt (Bonnet)
14 Valve “T” handle
15 Set screw
16 Optional Delrin® dielectric gasket
17 Optional Delrin® bushing
18 Washer
19 Bolt (Stabilizer)
Optional Assembly With Soft Seat Installed on Opposite Side Of Valve

6 Delrin® soft seat, black
50FA1 SERIES

- Bolt to the process side of a flange-flange manifold to allow connection of process flange taps or process root valves
- Allow flanges to be connected to threaded process piping while maintaining the ease of removal or repair of the manifold if maintenance is required
- Provide a 1/16” offset connection from the bolt holes to give connection centers of 2”, 2-1/8” or 2-1/4”
- Kit Includes: (2) Futbols, (4) hex bolts 7/16”-20, (2) PTFE face seals

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Materials</strong></td>
</tr>
<tr>
<td><strong>Connection</strong></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

For NOSHOK Stainless Steel Futbols:

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
ORDERING INFORMATION

<table>
<thead>
<tr>
<th>SERIES</th>
<th>50FA1</th>
<th>Futbol</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATERIALS</td>
<td>CS Steel</td>
<td>SS 316 Stainless Steel</td>
</tr>
</tbody>
</table>

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

EXAMPLE

Series........................................... Futbol
Material.......................................... Steel

50FA1 CS

Futbols

Front View

1/16" NPT OFFSET FROM CENTER

2-1/2"

1-1/4"

5/8"

1-1/4"

1/2" NPT

1/16" NPT OFFSET FROM CENTER

Side View

1-1/4"
SA SERIES

- Joins threaded ports to a flange style connection
- Often used to join the NPT port of a static transmitter with a flange mounted connection on a differential pressure to static adapter plate
- Available in Zinc-Nickel plated Steel and electropolished 316 Stainless Steel

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections</td>
<td>1/2&quot; NPT Male-flange, 1/2&quot; NPT Female-flange</td>
</tr>
</tbody>
</table>

* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

For NOSHOK Steel Static Adaptors:

**WARNING:** This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For NOSHOK Stainless Steel Static Adaptors:

**WARNING:** This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
ORDERING INFORMATION

<table>
<thead>
<tr>
<th>SERIES</th>
<th>SA</th>
<th>Static adaptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATERIALS</td>
<td>C</td>
<td>Steel</td>
</tr>
<tr>
<td>S</td>
<td>316 Stainless Steel</td>
<td></td>
</tr>
<tr>
<td>CONNECTIONS</td>
<td>1</td>
<td>1/2&quot; NPT Female - Flange</td>
</tr>
<tr>
<td>2</td>
<td>1/2&quot; NPT Male - Flange</td>
<td></td>
</tr>
</tbody>
</table>

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

EXAMPLE

Series: Static Adaptor
Material: Steel
Connection: 1/2" NPT Female - Flange

Static Adaptor, Female NPT

Static Adaptor, Male NPT
DIELECTRIC KITS
The dielectric kit is designed to maintain the integrity and reliability of the pipeline and piping system through safety and corrosion protection. Dielectric kits provide a non-conductive barrier between the process piping and the instrument and isolate components from the effects of electrical current. By eliminating metal-to-metal contact, current is halted to prevent corrosion and aid in the cathodic protection of the system.

DK1
• Single piece design combining a Delrin® sealing gasket and Delrin® dielectric shim
• Bolts, washers and dielectric bushings are included with the kits
• Seal rings or o-rings not required

DK2
• Used as an alternative to a one piece design when a separate sealing gasket is required
• Two piece design consisting of a PTFE sealing gasket and PVC dielectric shim
• Bolts, washers and dielectric bushings are included with the kits

Specifications
• Material: Delrin®, PVC
• Max operating temp 150 °F
• Dielectric strength exceeds 1/32 air arc gap approximately 2,500 Vdc

MANIFOLD MOUNTING KIT
The manifold mounting kit is designed for direct or remote mounting to a two inch pipe stand. It can be used with any NOSHOK 2, 3 or 5-valve manifold by mounting a Steel or Stainless Steel bracket directly to the manifold body. See page 142 for mounting diagrams.

PRESSURE TO STATIC ADAPTOR
Used on gas pipelines, the differential pressure to static adaptor plate is used to mount a differential pressure transmitter and a static pressure transmitter to a five valve flange manifold. They are available in Zinc-Nickel plated Steel, electropolished Stainless Steel. An integral mini style bleed valve is incorporated in the plate and a 1/4” NPT vent plug is provided. The mini style bleed valve is equipped with a FKM o-ring and PTFE backup ring below the stem threads to protect against corrosion and galling. Stem threads are rolled for greater strength and ease of operation and all NOSHOK valves are 100% helium leak tested for guaranteed reliability. Maximum pressure rating of 10,000 psi for Steel & Stainless models.
Δ PRESSURE TO Δ PRESSURE ADAPTORS
NOSHOK differential pressure to differential pressure adaptors allow two differential pressure transmitters to be mounted on a single set of orifice taps. This configuration is ideal for applications such as bi-directional flow, and custody transfer where only a single set of orifice taps is available. Multiple adaptors are available for various application configurations and space restrictions.

VERTICAL TO HORIZONTAL ADAPTOR KIT
The Vertical to Horizontal Adaptor Kit converts vertically mounted Stabilized Connectors to a horizontal position for mounting additional valves and instrumentation.

For products shown above that are composed of Stainless Steel:

WARNING: This product can expose you to chemicals including Lead, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

For products shown above that are composed of Brass and/or Carbon Steel:

WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov
Mounting Diagrams for 2000, 3000 & 5000 Series Manifold Valves

1 Lock washer
2 Nut
3 Spacer
4 Bolt

5 Bracket
6 Lock washer
7 Nut
8 U-bolt

1 Lock washer
2 Nut
3 Bolt
4 Bracket

5 Lock washer
6 Nut
7 U-bolt
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## NOSHOK Manifold Valves Reference Chart

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NOSHOK’s wide range of needle and manifold valves cover a vast majority of industrial applications, but knowing which needle or manifold valve to select may be a daunting task. As all NOSHOK valves are not created equal, the following are general tips one should consider when deciding which NOSHOK valve is best suited for their application.

1. System Parameters
Knowing the system parameters for which you want to install a NOSHOK valve is critical. What media, gas or liquid, will flow through the system? Is the media corrosive? What is the viscosity? At what temperatures and pressures will the NOSHOK valves be exposed? What is the flow rate at peak efficiency?

2. Function
Does the valve need to meter in-line flow and/or direct media throughout multiple outlets? Will the system need to be bled without disrupting permanent piping installations? Will any other instrumentation be installed to measure system pressure or temperature? Is physical space a concern?

3. Media Compatibility
For those corrosive medias, knowing how they affect certain materials will begin narrowing down the valve options. NOSHOK valve bodies come standard in 360 Brass, Zinc-Nickel plated Steel, and electropolished 316 Stainless Steel. Standard stem o-rings are FKM and PTFE. Delrin® soft tips and seats are also standard on certain models. Other body and sealing materials are available to accommodate any media.

4. Flow
Every NOSHOK valve is rated with a flow coefficient, C_v, which identifies the relationship between rate of flow and the pressure drop across the valve’s orifice. Understanding the flow coefficient of your system will aid in deciding the proper size NOSHOK valve required.

5. Installation Configuration
NOSHOK valves come in a variety of shapes and sizes that are guaranteed to fit in almost every system application. Whether a male-male, male-female, female-female, in-line or angled configuration is needed, there is a NOSHOK valve suited for the application.

Answering the aforementioned questions will help you select which NOSHOK needle or manifold valve is best for your application. NOSHOK’s Customer Support Team is also available at 440.243.0888 should you need further assistance.
Needle Valves Pressure vs. Temperature: FKM O-Ring with Compatible Fluid

1. **100, 200, 402-406, 600, 800, 2070, 3070 Series**, hard seat, Steel and Stainless Steel
2. **150, 300, 500, 700, 850, 2170 Series**, soft seat or tip, Steel, Stainless Steel and Brass
3. **406-412 Series**, hard seat, Steel and Stainless Steel
4. **100 Series**, hard seat, Brass
Needle Valves Pressure vs. Temperature: Packing Style with Compatible Fluid

- **Steel needle valve with Grafoil® packing**
- **Steel or Stainless Steel needle valve with PTFE packing**
- **Stainless Steel needle valve with Grafoil® packing**
- **Brass needle valve with PTFE or Grafoil® packing**
- **Steel or Stainless Steel needle valve, with packing and soft seat or soft tip**
CRN documents are available on our website at www.noshok.com.

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Quality Policy

NOSHOK

is committed to providing
a high degree of value and continually
improving processes to improve customer
satisfaction by focusing on customer
requirements for the design, manufacture and
distribution of pressure, temperature, and
force measurement instruments along with
needle and manifold valves including
custom manifold systems for
industrial applications.
All from world class technology.

Combined with real-world stamina.

The highest value with the industry's best warranty.

And all from a company with a 50+ year record of customer satisfaction.

All from your Single Source Instrumentation Company.