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:

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. Internal tests yielded 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.

NOSHOK's Three Year Warranty applies to all needle and manifold valves. NOSHOK guarantees all products to be free from defects in material and workmanship, to remain within catalogued accuracy specifications, and to operate within the catalogued performance specifications. These products must be operated within the catalogued environmental and application parameters. Determination of failure will be made by NOSHOK, Inc.'s equipment and personnel or a certified test facility specializing in this type of evaluation.

THE NOSHOK ADVANTAGE

NOSHOK has been awarded a patent for our innovative valve design, which features a unique body-to-bonnet, metal-to-metal seal that significantly increases the pressure range of the valve without compromising the flow coefficient. This design also helps maintain the integrity of the bonnet threads by segregating them from the process media. (Patent No. US 7,758,014)

The body seal incorporates a dovetail undercut below the seal that improves the metal-to-metal contact forces as pressures increase, as well as a dual outlet orifice to maximize fluid flow. These novel design features increase the pressure limits of the valve to 10,000 psi, which is significantly higher than similar sized miniature needle valves.

NOSHOK valves are built for maximum durability and performance in the toughest applications. They are also available with Zinc-Nickel plating, which provides one of the highest levels of corrosion resistance available on the market today. All NOSHOK valves are 100% helium leak tested to $1 \times 10^{-4}$ ml/s for guaranteed performance and reliability.

NOSHOK valves that incorporate this patented design include our 100 Series hard seat mini valves, 800/850 Series bleed valves, all 2-valve block and bleed valves along with 5-valve manifolds. Watch the video on this patented valve design by scanning the QR code below.

NOSHOK VALVES PATENTED FOR SUPERIOR DESIGN

WARRANTY INFORMATION

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In keeping with and for purpose of product and/or manufacturing process improvements, NOSHOK, Inc. reserves the right to make design changes without prior notice.
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 Graphite 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>
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<th><strong>Materials</strong></th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*, 360 Brass</th>
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<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 Graphite 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.

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

**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 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.

* Other o-ring materials available on request.

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

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<td>FFC</td>
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<td>MMAC</td>
<td>Male-Male Angle, Steel</td>
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<td>MFAC</td>
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<td>MFES</td>
<td>Male-Female, Stainless Steel</td>
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<td>MSS</td>
<td>Male-Male, Stainless Steel</td>
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<td>MMFS</td>
<td>Male-Male Angle, Stainless Steel</td>
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<td>MFFS</td>
<td>Male-Female Angle, Stainless Steel</td>
</tr>
<tr>
<td>MFS</td>
<td>Female-Female Angle, Stainless Steel</td>
</tr>
</tbody>
</table>

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

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

**EXAMPLE**

Series ........................................... 100 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: 102-MFC-HL3)

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

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

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<tr>
<td></td>
<td>NB1</td>
<td>NBR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PANEL MOUNTINGS</td>
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<td>Panel mount (2 nuts)</td>
</tr>
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<td>HANDLES</td>
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<td>HL4</td>
<td>1-3/8&quot; Phenolic</td>
</tr>
<tr>
<td></td>
<td>HL3</td>
<td>1 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.

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
**Needle Valves**

**Dimensions**

**Male-Male**

- 1-13/16"
- Ø 1/2"
- 1/8" OR 1/4" NPT

**Male-Female**

- 1-13/16"
- Ø 23/32"
- 1/2" 1/2"

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

### Female-Female

1-13/16"  
Ø 23/32"  
1/2"  
1-13/16"*

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

### 1/8" Male-Male Angle

1-13/16"  
11/32"  
3/8"  
1-1/4"

1/8" NPT  
2-27/32" OPEN  
2-9/16" CLOSED

**NOTE:** Dimensions and features are subject to change without notice.
**Dimensions**

### 1/4" Male-Male Angle

- **1-13/16"**
- **1-1/2"**
- **3/8"**
- **1-1/2"**
- **1/2"**
- **1/4" NPT**
- **3" OPEN**
- **2-21/32" CLOSED**

### 1/8" Male-Female Angle

- **1-13/16"**
- **1-1/4"**
- **3/8"**
- **1-1/4"**
- **1/2"**
- **1-3/32"**
- **23/32"**
- **11/32"**
- **3/4"**
- **2-27/32" OPEN**
- **2-9/16" CLOSED**

---

**Needle Valves**
1/4" Female-Female Angle

Dimensions

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
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 Acetal 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)

**150 SERIES**

**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>1/8&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>
<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.

**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.
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.

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

---

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

<table>
<thead>
<tr>
<th>PACKING</th>
<th>STEM TIPS</th>
<th>O-RINGS*</th>
<th>PANEL MOUNTINGS</th>
<th>HANDLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P1  PTFE</td>
<td>EM1 EPDM</td>
<td>PM1 Panel mount (1 nut)</td>
<td>HL3 1” Round knurled</td>
</tr>
<tr>
<td></td>
<td>T3  PCTFE</td>
<td>K21 FFKM (Perfluoroelastomer)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T4  PEEK</td>
<td>NB1  NBR</td>
<td>PM2 Panel mount (2 nuts)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>T10 Regulating Acetal</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>T12 Regulating PEEK</td>
<td></td>
<td></td>
<td></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 mini valves is FKM and the standard handles are Brass round knurled (HL3) handles, Steel mini "T" handles (HL7), and 316SS 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**

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
**Needle Valves**

**Dimensions**

**Male-Male**

- Dimensions: 1-3/8" x 1/2" x 1-13/16"
- Connection: NPT 1/8" OR 1/4"
- Valve Size: Ø 1/2" SQ
- Open: 2-1/2" x 2-7/32" CLOSER
- Closed: 3/4" SQ

**Male-Female**

- Dimensions: 1-3/8" x 1/2" x 1-13/16"
- Connection: NPT 1/8" OR 1/4"
- Valve Size: Ø 23/32" x 1/2" x 1/2" x 1/2" x 1-13/16"
- Open: 2-1/2" x 2-7/32" CLOSER
- Closed: 3/4" SQ
**150 SERIES DIMENSIONS**

**Female-Female**

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

**1/8" Male-Male Angle**

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

#### Dimensions

**1/4" Male-Male Angle**

- Ø 1/2"
- 1/4" NPT
- 3" OPEN
- 2-21/32" CLOSED
- 1-1/4"
- 7/8"
- 3/4"

**1/8" Male-Female Angle**

- Ø 1/2"
- 1/8" NPT
- 2-27/32" OPEN
- 2-9/16" CLOSED
- 1-3/32"
- 23/32"
- 11/32"
- 3/4"
1/4" Male-Female Angle

1/8" Female-Female Angle

150 SERIES DIMENSIONS
1/4" Female-Female Angle

Dimensions

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 Soft tip stem
5 Mini valve bonnet
6 Mini valve “T” handle
7 Set 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
Multiport Valve Accessories

Bleed Plug, see pg. 65 for details.

Plug, see pg. 65 for details.

Bleed Valve See pg. 48 for details.

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 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 Graphite 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.
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.

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

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**ORDERING INFORMATION - ADDITIONAL OPTIONS**

<table>
<thead>
<tr>
<th>PACKINGS *</th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM TIPS</td>
<td>T1</td>
<td>T6</td>
<td>T8</td>
</tr>
<tr>
<td></td>
<td>T5</td>
<td>T7</td>
<td>T9</td>
</tr>
<tr>
<td>O-RINGS **</td>
<td>EM1</td>
<td>KZ1</td>
<td>FFKM</td>
</tr>
<tr>
<td>PANEL MOUNTINGS</td>
<td>PM1</td>
<td>PM2</td>
<td></td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL1</td>
<td>HL4</td>
<td>HL5</td>
</tr>
</tbody>
</table>

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* 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.
Needle Valves

Dimensions

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 Valve Accessories

Bleed Plug, see pg. 65 for details.

Plug, see pg. 65 for details.

Bleed Valve See pg. 48 for details.

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 Acetal 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>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&quot;</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>$C_v$ 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.
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

| SOFT SEATS | PK1 | PEEK | KF1 | PCTFE |
| PACKING    | P1  | PTFE |     |       |
| STEM TIP   | T1  | Non-rotating (316 Stainless) |     |       |
| O-RINGS*   | EM1 | EPDM | KZ1 | FFKM (Perfluoroelastomer) |
| PANEL MOUNTINGS | PM1 | Panel mount (1 nut) | PM2 | Panel mount (2 nuts) |
| HANDLES    | HL4 | 1-3/8" Phenolic | HL5 | 1-3/4" Phenolic |

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.
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 Acetal seat
4 FKM oring
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
400 SERIES

- 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 Graphite 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><strong>Materials</strong></th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pressure rating</strong></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><strong>Orifice sizes</strong></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><strong>Flow coefficient</strong></td>
<td>1/4&quot; - 1/2&quot; NPT: $C_v$ 0.44 3/4&quot; - 1-1/2&quot; NPT: $C_v$ 2.70</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 Graphite packing optional for 1/4&quot;, 3/8&quot; &amp; 1/2&quot; NPT only</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 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.

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 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: 404-FFC-PM2)

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

**NOTE 3:** Packing options are NOT available on 3/4” NPT through 1-1/2” NPT valves.

---

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

<table>
<thead>
<tr>
<th>PACKINGS†</th>
<th>P1</th>
<th>P2</th>
<th>P3</th>
<th>P4</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM TIPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1</td>
<td>Non-rotating (316 Stainless)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T5</td>
<td>Ball (440C Stainless)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T6</td>
<td>Ball (carbon)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T7</td>
<td>Ball (ceramic)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T8</td>
<td>Ball (Monel)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T9</td>
<td>Non-rotating regulating (316 Stainless)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>O-RINGS*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EM1</td>
<td>EPDM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KZ1</td>
<td>FFKM (Perfluoroelastomer)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NB1</td>
<td>NBR</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PANEL MOUNTINGS</td>
<td>PM1</td>
<td>Panel mount (1 nut)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM2</td>
<td>Panel mount (2 nuts)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL4</td>
<td>1-3/8” Phenolic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HL5</td>
<td>1-3/4” Phenolic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HL9</td>
<td>2-3/8” Phenolic**</td>
<td></td>
<td></td>
<td></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.

---

**EXAMPLE with Additional Options**

Series.................................400 hard seat  
Connection size ....................1/2” NPT  
Valve type..........................Female-female, Steel  
Packing...................................PTFE  
Stem tip ............................Non-rotating  
Panel mount ...................Panel mount (2 nuts)  
Handle ...............................1-3/4” Phenolic

---

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.
1/2" Female-Female Angle

1/2" Male-Female Angle
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**
- **2-1/8"**
- **5-1/4"**

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
SERIES

• 100% helium leak tested to 1 x 10^-4 ml/s for performance and reliability
• Replaceable Acetal 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)

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Materials</strong></td>
</tr>
<tr>
<td><strong>Connections</strong></td>
</tr>
<tr>
<td><strong>Pressure rating</strong></td>
</tr>
<tr>
<td><strong>Orifice sizes</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Flow coefficient</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Stem seal &amp; type</strong></td>
</tr>
<tr>
<td><strong>Options</strong></td>
</tr>
<tr>
<td><strong>Weight</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

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

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

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**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 (Perfluoroelastomer)</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>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

† 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 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 (Perfluoroelastomer)
Panel mount.........................Panel mount (2 nuts)
Handle.................................1-3/4" Phenolic
### Needle Valves

#### Dimensions

**1/4” - 1/2” Male-Female**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-1/2”</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Ø1/2”</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>3-25/32”</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>3-1/2”</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>OPEN</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>CLOSED</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>1-1/4” HEX</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**3/4” - 1-1/2” Male-Female**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-1/4”</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Ø3/4”</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>5-1/2”</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>4-3/4”</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>OPEN</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>CLOSED</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>2-1/4” HEX</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**1/4” - 1/2” Female-Female**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-1/2”</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>Ø1/2”</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>3-25/32”</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>3-1/2”</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>OPEN</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>CLOSED</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>1-1/4” HEX</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

**3/4” - 1-1/2” Female-Female**

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Diagram</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø3/4”</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>5-1/2”</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>4-15/16”</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>OPEN</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>CLOSED</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
<tr>
<td>2-1/4” HEX</td>
<td><img src="image" alt="Diagram" /></td>
</tr>
</tbody>
</table>

For panel mount, packing, & stem tip dimensions, see pgs. 64-67.
1 Valve body
2 Acetal 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 $1 \times 10^{-4}$ 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 Graphite 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

**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	............................ 600 hard seat
Connection size ...................1/4” NPT
Valve type ............... Female-female, Steel

6 02   –   FFC   EXAMPLE

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

PACKINGS†
P1 PTFE
P2 Graphite

STEM TIPS
T1 Non-rotating (316 Stainless)
T5 Ball (440C Stainless)
T6 Ball (carbide)
T7 Ball (ceramic)
T8 Ball (Monel)
T9 Non-rotating regulating (316 Stainless)

O-RINGS*
EM1 EPDM
KZ1 FFKM (Perfluoroelastomer)
NB1 NBR

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

HANDLES
HL4 1-3/8” Phenolic
HL5 1-3/4” Phenolic

EXAMPLE with Additional Options

6 02 – FFC – P1 – T1 – PM2 – HL5

† 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 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 “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.
**Needle Valves**

**Dimensions**

**Male-Female**

![Diagram of Male-Female Needle Valve]

2-1/2"  
Ø1/2"  
3-25/32" OPEN  
3-1/2" CLOSED  
1-1/4" HEX  
15/16"  
3-1/2"  
1-1/4" HEX  
15/16"  
2-1/2" Ø1/2"

**Female-Female**

![Diagram of Female-Female Needle Valve]

2-1/2"  
Ø1/2"  
3-25/32" OPEN  
3-1/2" CLOSED  
1-1/4" HEX  
15/16"  
3-1/2"  
1-1/4" HEX  
15/16"  
2-1/2" Ø1/2"

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
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 Acetal 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><strong>Materials</strong></th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Connections</strong></td>
<td>1/4&quot; &amp; 1/2&quot; NPT Male-female &amp; Female-female configurations</td>
</tr>
<tr>
<td><strong>Pressure rating</strong></td>
<td>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>$C_v 0.76$</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 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>
</tbody>
</table>
| **Weight** | Approximately 1.3 lb. up to 1/2"  
Approximately 4.5 lb. Large Hex, Female-Female  
Approximately 6 lb. Large Hex, Male-Female |

* 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**

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.

* 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

**Male-Female**

- 1-1/4” HEX
- 3-25/32” OPEN
- 3-1/2” CLOSED
- 15/16”
- 2-1/2” Ø1/2”

**Female-Female**

- 1-1/4” HEX
- 3-25/32” OPEN
- 3-1/2” CLOSED
- 15/16”
- 2-1/2” Ø1/2”

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

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

1/4" 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 $1 \times 10^{-4}$ 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 Graphite 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>Material</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>$C_v 0.44$</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 Graphite 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 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.
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-HL5)

**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.

### EXAMPLE

Series.................................2-valve
Seat........................................Hard seat
Process connection ............. Block & bleed
Connection size.......................1/2" NPT
Valve type............................Female-female, Steel

### ORDERING INFORMATION - ADDITIONAL OPTIONS

<table>
<thead>
<tr>
<th>PACKINGS†</th>
<th>P1</th>
<th>Graphite</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM TIPS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>T1</td>
<td>Non-rotating (316 Stainless)</td>
<td>T6 Ball (carbide)</td>
</tr>
<tr>
<td>T5</td>
<td>Ball (440C Stainless)</td>
<td>T7 Ball (ceramic)</td>
</tr>
<tr>
<td>O-RINGS*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EM1</td>
<td>EPDM</td>
<td>KZ1 FFKM (Perfluoroelastomer)</td>
</tr>
<tr>
<td>HANDLE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HL1</td>
<td>1-13/16&quot; Mini &quot;T&quot;</td>
<td>HL3 1&quot; Round knurled</td>
</tr>
<tr>
<td>HL2</td>
<td>2-1/2&quot; &quot;T&quot;</td>
<td>HL4 1-3/8&quot; 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.

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

**EXAMPLE with Additional Options**

Series.................................2-valve
Seat........................................Hard seat
Process connection ............. Block & bleed
Connection size.......................1/2" NPT
Valve type............................Female-female, Steel
Valve type Pack....................................PTFE
Stem tip.................................Non-rotating
Handle........................................1" Round knurled
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 $1 \times 10^{-4}$ ml/s for performance and reliability
• Replaceable Acetal seat, and straight through porting for bidirectional, high capacity flow and easy rodtable 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>Specifications</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>1/2” &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>$C_v \ 0.76$</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>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.

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.
2170 SERIES

ORDERING INFORMATION

| SERIES | 2 | 2-valve |
| SEAT | 1 | Soft seat |
| PROCESS TYPE | 7 | Block & bleed |
| CONNECTION SIZES | 0 | 1/2" NPT |
| | 2 | 1/4" NPT |

| VALVE TYPES | FMC | Female-Male, Steel |
| | FMC | Female-Male, Steel |
| | FFCR | Female-Female, Steel, Right Vent |
| | MFCR | Male-Female, Steel, Right Vent |
| | EMFC | Extended Female-Male, Steel |
| | MFSR | Male-Female, Stainless Steel, Right Vent |
| | EMFS | Extended Male-Female, Stainless Steel |

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

EXAMPLE

2170 – FFC

Series: 2-valve
Seat: Soft seat
Process connection: Block & bleed
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: 2170-FFC-PK1)

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

ORDERING INFORMATION - ADDITIONAL OPTIONS

| SOFT SEATS | PK1 | PEEK | KF1 | PCTFE |
| PACKING | P1 | PTFE |
| STEM TIP | T1 | Non-rotating (316 Stainless, Isolation Valve Only) |
| O-RINGS* | EM1 | EPDM | KZ1 | FFKM (Perfluoroelastomer) |
| | | | | NB1 | NBR |
| HANDLES | HL1 | 1-13/16" Mini "T" |
| | HL3 | 1" Round knurled |
| | HL2 | 2-1/2" "T" |
| | HL4 | 1-3/8" Phenolic |

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 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

2170 – FFC – PK1 – P1 – T1

Series: 2-valve
Seat: Soft seat
Process connection: Block & bleed
Connection size: 1/2" NPT
Valve type: Female-female, Steel
Soft seat: PEEK
Packaging: PTFE
Stem Tip: Non-rotating
Needle Valves, 2-Valve

Dimensions

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 Soft tip stem
6 Plug
7 Slotted spring pin
8 Acetal 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

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
3070 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 on the bottom
- 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 $1 \times 10^{-4}$ 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 Graphite 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>Material</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>1/2&quot; &amp; 1/4&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>$C_v$ 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 Graphite 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, handles, 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 Stainless Steel valve types:

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 | 3-valve |
| SEAT | Hard seat |
| PROCESS CONNECTION | Block & bleed |
| CONNECTION SIZE | 1/2" NPT | 1/4" NPT |

<table>
<thead>
<tr>
<th>VALVE TYPES</th>
<th>PROCESS SETTES</th>
<th>VALVE TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFC</td>
<td>Male-Female, Steel</td>
<td>FMC</td>
</tr>
<tr>
<td>MFCR</td>
<td>Male-Female, Steel, Right Vent</td>
<td>EFC</td>
</tr>
<tr>
<td>EMFC</td>
<td>Extended Male-Female, Steel</td>
<td>FFS</td>
</tr>
<tr>
<td>MF5</td>
<td>Male-Female, Stainless Steel</td>
<td>FFMS</td>
</tr>
<tr>
<td>MF5R</td>
<td>Male-Female, Stainless Steel, Right Vent</td>
<td>FFC</td>
</tr>
<tr>
<td>EFMS</td>
<td>Extended Female-Male, Stainless Steel</td>
<td>EFFS</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>SERIES</th>
<th>3070 – FFC</th>
</tr>
</thead>
<tbody>
<tr>
<td>3070</td>
<td>3-valve</td>
</tr>
<tr>
<td>FFC</td>
<td>Female-Female, Steel</td>
</tr>
</tbody>
</table>

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: 3070-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>PACKINGS†</th>
<th>P1</th>
<th>ptfe</th>
<th>P2</th>
<th>Graphite</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 (Perfluoroelastomer)</td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL1</td>
<td>1-13/16&quot; Mini &quot;T&quot;</td>
<td>HL3</td>
<td>1&quot; Round knurled</td>
</tr>
<tr>
<td></td>
<td>HL2</td>
<td>2-1/2&quot; &quot;T&quot;</td>
<td>HL4</td>
<td>1-3/8&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 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.

---

**EXAMPLE with Additional Options**

3070 – FFC – P1 – T1 – HL3

3-valve
Hard seat
Block & bleed
1/2" NPT
Female-Female, Steel
PTFE
Non-rotating
1" Round knurled
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 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
Needle Valve Options

### Knurled Handle HL3
- Diameter: 1"
- Knurl: Diamond Knurl

### Phenolic Handle HL4
- Dimensions:
  - 1-3/8"
  - 27/32"
  - 10-24 THD

### Phenolic Handle HL5
- Dimensions:
  - 1-3/4"
  - 1-1/16"
  - 1/4"

### Phenolic Handle HL9
- Dimensions:
  - 2-3/8"
  - 1-11/32"
  - 1/4" - 20 THD

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>HL3-CS1-ZN1</td>
<td>Steel</td>
</tr>
<tr>
<td>HL3-SS1-EP</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>HL3-BR1</td>
<td>Brass</td>
</tr>
<tr>
<td>HL4-PH1</td>
<td>Phenolic</td>
</tr>
<tr>
<td>HL5-PH1</td>
<td>Phenolic</td>
</tr>
<tr>
<td>HL9-PH1</td>
<td>Phenolic</td>
</tr>
</tbody>
</table>
**Plug**

![Image of a plug with dimensions and markings]

**Bleed Plug**

![Image of a bleed plug with dimensions and markings]

**Bleed Screw**

![Image of a bleed screw with dimensions and markings]

<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

Panel Mount Detail, Needle Valves

Packing, Mini Valves

Packing, Needle Valves
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 Acetal seat, and straight through porting for bidirectional, high capacity flow and easy rodable 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 Graphite 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 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_f 0.44 Soft seat: C_f 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 Graphite 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

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: 2100-MFC-P1)

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

**NOTE 3:** T1 Hard non-rotating (316 SS standard) stem tip is the only option available on the 2100 Series soft seat version.

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

---

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

<table>
<thead>
<tr>
<th>SOFT SEATS</th>
<th>PK1</th>
<th>PEEK</th>
</tr>
</thead>
<tbody>
<tr>
<td>PACKINGS†</td>
<td>P1</td>
<td>PTFE</td>
</tr>
<tr>
<td>STEM TIPS</td>
<td>T1</td>
<td>Non-rotating (316 Stainless)</td>
</tr>
<tr>
<td></td>
<td>T5</td>
<td>Ball (440C Stainless)**</td>
</tr>
<tr>
<td></td>
<td>T6</td>
<td>Ball (carbide)**</td>
</tr>
<tr>
<td></td>
<td>T7</td>
<td>Ball (ceramic)**</td>
</tr>
<tr>
<td>O-RINGS*</td>
<td>EM1</td>
<td>EPDM</td>
</tr>
<tr>
<td></td>
<td>KZ1</td>
<td>FFKM (Perfluoroelastomer)</td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL1</td>
<td>1-13/16&quot; Mini &quot;T&quot;</td>
</tr>
<tr>
<td></td>
<td>HL3</td>
<td>1&quot; Round knurled</td>
</tr>
<tr>
<td></td>
<td>HL4</td>
<td>1-3/8&quot; Phenolic</td>
</tr>
<tr>
<td></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 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
Manifold Valves, 2-Valve Static Pressure

Dimensions

Flange-Flange

Top View

Side View

ISOLATE VALVE

MOUNTING HOLE Ø 9/32" 2 PLACES

VENT VALVE

1/2" NPT VENT PORTS

2-17/32" OPEN 2-1/4" CLOSED

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

2-1/16" 2-1/8" 3-3/8" 5-29/32" OPEN 5-5/8" CLOSED

3-3/8" 2-1/8" 2-5/32" 1-1/8"

1-21/32" 3-3/4"
Manifold Valves, 2-Valve Static Pressure

Dimensions

Female-Female

Top View

Front View

Side View

For panel mount or packing dimensions, see pg. 66.
<table>
<thead>
<tr>
<th></th>
<th>Hard Seat</th>
<th>Soft Seat</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Valve body</td>
<td>Valve body</td>
</tr>
<tr>
<td>2</td>
<td>Head bolt</td>
<td>Slotted spring pin</td>
</tr>
<tr>
<td>3</td>
<td>Gasket ring</td>
<td>Gasket ring</td>
</tr>
<tr>
<td>4</td>
<td>Slotted spring pin</td>
<td>PTFE back-up ring</td>
</tr>
<tr>
<td>5</td>
<td>Valve stem</td>
<td>Valve bonnet</td>
</tr>
<tr>
<td>6</td>
<td>Valve bonnet</td>
<td>Red dust cap</td>
</tr>
<tr>
<td>7</td>
<td>Red dust cap</td>
<td>Valve &quot;T&quot; handle</td>
</tr>
<tr>
<td>8</td>
<td>Valve &quot;T&quot; handle</td>
<td>Set screw</td>
</tr>
<tr>
<td>9</td>
<td>Set screw</td>
<td>Valve stem</td>
</tr>
<tr>
<td>10</td>
<td>PTFE back-up ring</td>
<td>FKM o-ring</td>
</tr>
<tr>
<td>11</td>
<td>FKM o-ring</td>
<td>Acetal seat</td>
</tr>
<tr>
<td>12</td>
<td>Plug</td>
<td>Head bolt</td>
</tr>
<tr>
<td>13</td>
<td>Blue dust cap</td>
<td>Plug</td>
</tr>
<tr>
<td>14</td>
<td>Blue dust cap</td>
<td>14 Blue dust cap</td>
</tr>
</tbody>
</table>

**SERIES**

- **Hard Seat**
- **Soft Seat**
• 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 Acetal 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 Graphite 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

| **Materials** | Zinc-Nickel plated Steel, electropolished 316 Stainless Steel* |
| **Connections** | Flange-flange, 1/2" NPT-flange |
| **Pressure ratings** | Hard seat: 10,000 psi @ 200 °F  
Soft seat: 6,000 psi @ 200 °F |
| **Orifice size** | 0.187" |
| **Flow coefficient** | Hard seat: $C_v 0.44$  
Soft seat: $C_v 0.76$ |
| **Stem seal & type** | All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Graphite packing optional |
| **Options** | Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips |
| **Weight** | Approximately 5.5 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.

**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.
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.

---

### 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>PACKINGS†</td>
<td>P1</td>
<td>PTFE</td>
<td>P2</td>
<td>Graphite**</td>
</tr>
<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 (Perfluoroelastomer)</td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL1</td>
<td>1-13/16&quot; Mini “T”</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 2020 Series only.

*** For 2120 Series 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 2020-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**

<table>
<thead>
<tr>
<th>Series</th>
<th>2-valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seat</td>
<td>Hard seat</td>
</tr>
<tr>
<td>Process type</td>
<td>Liquid level</td>
</tr>
<tr>
<td>Connection</td>
<td>1/2&quot; NPT standard or flange</td>
</tr>
<tr>
<td>Valve type</td>
<td>Flange-female, Steel</td>
</tr>
<tr>
<td>Packing</td>
<td>PTFE</td>
</tr>
<tr>
<td>Stem tip</td>
<td>Non-rotating</td>
</tr>
</tbody>
</table>
Flange-Flange

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

2-1/8"
3-3/8"
2-1/32"
1-1/8"

MOUNTING HOLES Ø 9/32"
2 PLACES

PROCESS FLANGE
CONNECTION

Flange-Female

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

2-1/2"
3-3/8"
2-1/32"
1-1/8"

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 Acetal seat
4 FKM o-ring
5 PTFE back-up 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 Acetal seat
4 FKM o-ring
5 PTFE back-up ring
6 Valve stem
7 Valve bonnet
8 Blue dust cap
9 Set screw
10 Valve "T" handle
11 Gasket ring
12 Head bolt
Narrow Block & Bleed, Hard Seat & Soft Seat

200002/210002 SERIES

200402/210402 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 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 Acetal 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 Graphite 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>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>200002/210002 Series: Flange-flange, 1/4&quot; NPT vent</td>
</tr>
<tr>
<td></td>
<td>200402/210402 Series: 1/2&quot; NPT-flange, 1/4&quot; NPT vent</td>
</tr>
<tr>
<td></td>
<td>200202/210202 Series: 1/4&quot; NPT-flange, 1/4&quot; NPT vent Left venting optional</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*</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</td>
</tr>
<tr>
<td></td>
<td>PTFE back-up ring below the threads, PTFE or Graphite 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 2.5 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.

Flow Schematic

**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: 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.

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

** ORDERING INFORMATION - ADDITIONAL OPTIONS **

- **PACKINGS**
  - P1: PTFE
  - P2: Graphite**

- **STEM TIPS**
  - T1: Non-rotating (316 Stainless)
  - T5: Ball (440C Stainless)**

- **O-RINGS**
  - EM1: EPDM
  - KZ1: FFKM (Perfluoroelastomer)

- **HANDLES**
  - HL1: 1-13/16" Mini "T"
  - HL3: 1" Round knurled

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 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

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
**Flange-Flange**

- Dimensions:
  - Flange-Flange: 2-1/2" OPEN, 4-3/32" CLOSED
  - Mounting Holes Ø 9/32"

**Flange-Female**

- Dimensions:
  - Flange-Female: 2-1/2" OPEN, 3-3/4" CLOSED
  - Mounting Holes Ø 9/32"

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 Set screw
8 Valve "T" handle
9 Red dust cap
10 PTFE back-up ring
11 FKM o-ring
12 Blue dust cap

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 Acetal 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
Manifold Valves, 2-Valve Natural Gas
Large Bore, Angle (0.375” Orifice)

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 Acetal 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

Flow Schematic

<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
</tr>
<tr>
<td>Connections</td>
</tr>
<tr>
<td>Pressure ratings</td>
</tr>
<tr>
<td>Orifice size</td>
</tr>
<tr>
<td>Flow coefficient</td>
</tr>
<tr>
<td>Stem seal &amp; type</td>
</tr>
<tr>
<td>Additional features</td>
</tr>
<tr>
<td>Weight</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.
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.

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 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.

---

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

<table>
<thead>
<tr>
<th>SOFT SEATS</th>
<th>EM1</th>
<th>EPDM</th>
<th>KF1</th>
<th>PCTFE</th>
<th>KZ1</th>
<th>FFKM (Perfluoroelastomer)</th>
<th>NB1</th>
<th>NBR</th>
</tr>
</thead>
</table>

**EXAMPLE with Additional Options**

Series... 2-valve
Seat... Soft seat
Process type... Natural gas flow
Connection... 1/2" NPT standard
Valve type...... Flange-flange 90° Angle, Stainless Steel
Soft seat...... PEEK
Manifold Valves, 2-Valve Natural Gas

Dimensions

Flange-Flange

Top View

Front View

Side View

1/2" NPT
ROD OUT
PORT (2)

1/4" NPT
DRAIN PORT (2)

10-1/2" OPEN
9-5/16" CLOSED

2-3/4"

1-11/64"

4"

2-15/32"

1-5/8"

17/32"
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 Acetal 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 $1 \times 10^{-4}$ ml/s for performance and reliability
Soft tip valves feature a patented Acetal 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 Graphite 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)

**2602/2702 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 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 $1 \times 10^{-4}$ ml/s for performance and reliability
- Soft tip valves feature a patented Acetal 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 Graphite 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 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: $C_v 0.38$ Soft tip: $C_v 0.38$</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 Graphite 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.

**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.
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.

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.
Manifold Valves, 2-Valve Static Pressure

Dimensions

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 Acetal 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 Graphite 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**

<table>
<thead>
<tr>
<th>Materials</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections</td>
<td>2603/2703 Series: 3/8” NPT</td>
</tr>
<tr>
<td></td>
<td>2604/2704 Series: 1/2” 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>0.156”</td>
</tr>
<tr>
<td>Flow coefficient CV</td>
<td>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 Graphite packing optional</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 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.
2603/2703 & 2604/2704 SERIES

ORDERING INFORMATION

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: 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.

* 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.

† 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.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are block “T” handle (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 mini “T” handle (HL1) on the 2704-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, 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 Mini valve stem
7 PTFE back-up ring
8 FKM o-ring
9 Slotted spring pin
10 Valve body

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
• Designed for use with orifice meters
• 100% helium leak tested to $1 \times 10^{-4}$ ml/s for performance and reliability
• Replaceable Acetal 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
• 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>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Materials</strong></td>
<td>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</td>
</tr>
<tr>
<td><strong>Connection</strong></td>
<td>1/4&quot; NPT</td>
</tr>
<tr>
<td><strong>Pressure rating</strong></td>
<td>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>$C_v \approx 0.76$</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 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 4.8 lb. (2-valve model)</td>
</tr>
</tbody>
</table>

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

**Flow Schematics**

2-Valve

3-Valve

5-Valve

Optional 3 and 5 valve configurations also shown. Additional needle valves sold separately.

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: 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.

* 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 designations are necessary. Please consult the factory for special application requests.
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 Acetal 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 Graphite 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</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 Graphite 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.

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
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: 3110-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 on the 3110 Series soft seat version.

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.
Manifold Valves, 3-Valve Differential Pressure

Dimensions

Flange-Flange

Top View

Side View
**3010/3110 SERIES**

**DIMENSIONS**

**Flange-Female**

**Top View**

- 8-7/16" OPEN
- 7-7/8" CLOSED
- 3-3/8"
- 2-1/8"
- 2-1/32"
- ISOLATE VALVES 1-1/8"
- 1/2" NPT
- MOUNTING HOLES Ø 9/32"

**Side View**

- EQualize Valve 2-7/16" 1-5/8"
- 2-5/16"
- 3-3/4"
- 3-5/32" OPEN 2-7/8" CLOSED
- 1/4" NPT STATIC TEST PORTS
- 1-9/16" 2-5/16"
Manifold Valves, 3-Valve Differential Pressure

Dimensions

**Female-Female**

**Top View**

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

**Side View**

- 3-5/32" OPEN
- 2-7/8" CLOSED
- 1-1/4"
- 11/16"
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 Acetal 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
Compact style manifold is 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 x 10^{-4} ml/s for guaranteed 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 Graphite 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.
- Labeled and color coded vinyl dust caps for bonnets and stems.

**3040 SERIES**

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Materials</th>
<th>Electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>1/2&quot; NPT-flange</td>
</tr>
<tr>
<td>Pressure ratings</td>
<td>6,000 psi @ 200 °F</td>
</tr>
<tr>
<td>Orifice size</td>
<td>0.125&quot;</td>
</tr>
<tr>
<td>Flow coefficient</td>
<td>Cv 0.30</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 Graphite packing optional</td>
</tr>
<tr>
<td>Options</td>
<td>Packings, regulating stem and stem tips o-ring materials and handles</td>
</tr>
<tr>
<td>Additional features</td>
<td>Bleed plugs installed in static test ports</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 4.4 lb.</td>
</tr>
</tbody>
</table>

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

**Flow Schematic**

**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.
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: 3040-MFS-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>PACKINGS</td>
<td>P1</td>
<td>P2</td>
</tr>
<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>STEM TIPS</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 (Perfluoroelastomer)</td>
</tr>
</tbody>
</table>

* Other o-ring materials available on request.

---

### ORDERING INFORMATION

| SERIES | 3-valve          |
| SEATS  | Hard seat       |
| PROCESS TYPE | Compact style, differential pressure |
| CONNECTION | 1/2" NPT standard |
| VALVE TYPES | MFS Flange-Female, Stainless Steel (MSS SP-99 spacing) MFS-CP Flange-Female, Stainless Steel (Coplanar™ spacing) |

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

---

**EXAMPLE**

Series: 3-valve
Seat: Hard seat
Process type: Compact style, differential pressure
Connection: 1/2" NPT standard
Valve type: Flange-female, Stainless Steel, Coplanar™ spacing

---

**EXAMPLE with Additional Options**

Series: 3-valve
Seat: Hard seat
Process type: Compact style, differential pressure
Connection: 1/2" NPT standard
Valve type: Flange-female, Stainless Steel
Packaging: PTFE
Stem tip: Non-rotating
Manifold Valves, 3-Valve Differential Pressure

Flange-Female MSS SP-99 Spacing

**Bottom View**

- 4-5/8" 1/2" NPT PROCESS
- 1-7/8" 1/4" NPT BLEED PLUG / TEST PORT
- 2-1/2" INSTRUMENT PORT SPACING COMPATIBLE WITH MSS SP-99

**Top View**

- 1-5/8" INSTRUMENT PORT SPACING COMPATIBLE WITH MSS SP-99
- 2-1/8" 1-1/4"

**Front View**

- 4-5/8" 9/16" OPEN
- 8/23/32" CLOSED
Flange-Female Coplanar™ Spacing

Note: All dimensions are the same as the SP-99 spacing except for the top view shown below.

Top View

Flange-Female

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 Bleed screw
12 Bleed plug
13 Green dust cap
14 Head bolt

INSTRUMENT PORT SPACING COMPATIBLE WITH ROSEMOUNT™ COPLANAR™ PLATFORM

1.30” (33 mm)
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 Acetal 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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</td>
</tr>
<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>CV 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 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 follows:

**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>O-RINGS*</td>
<td>EM1</td>
<td>EPDM</td>
<td>KZ1</td>
<td>FFKM</td>
</tr>
<tr>
<td>HANDLES</td>
<td>HL3</td>
<td>1&quot; Round knurled</td>
<td>HL4</td>
<td>1-3/8&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 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-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"

 Mounting Holes

- 1/2" NPT

 Isolate Valves

- 2-3/4"  1-11/16"  1-9/16"  1-9/32"  3-5/32" OPEN  2-7/8" CLOSED

- 3-13/16"  2-17/32"  3-17/32"  1-5/8"  1-9/16"  1-11/16"  1-5/8"  2-15/32"

 Equalize Valve

- 1/4" NPT Static Test Ports

- 2-3/4"
**Dimensions**

**Female-Female**

**Top View**

**Side View**

For panel mount or packing dimensions, see pg. 66.
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 Acetal 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 Graphite 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>Material</th>
<th>Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>1/4&quot; NPT</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>$C_v$ 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 Graphite 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.
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.

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>
<th>P3</th>
<th>P4</th>
<th>P5</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM TIPS</td>
<td>T1</td>
<td>T2</td>
<td>T3</td>
<td>T4</td>
<td>T5</td>
</tr>
<tr>
<td>T1 Non-rotating (316 Stainless)**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T2 Acetal (Acetal)***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T3 PCTFE***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T4 PEEK***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T5 Ball (440C Stainless)***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T6 Ball (carbide)***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P1 Graphite**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P2 Graphite**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T7 Ball (ceramic)***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T8 Ball (Monel)***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T9 Non-rotating regulating (316 Stainless)***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T10 Regulating Acetal ***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T11 Regulating PCTFE***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T12 Regulating PEEK***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>O-RINGS*</th>
<th>EM1</th>
<th>EPDM</th>
<th>KZ1</th>
<th>FFKM (Perfluoroelastomer)</th>
<th>NB1</th>
<th>NBR</th>
</tr>
</thead>
<tbody>
<tr>
<td>HANDLE1</td>
<td>HL2</td>
<td>2-1/2&quot; &quot;T&quot;</td>
<td>HL3</td>
<td>1&quot; Round knurled</td>
<td>HL4</td>
<td>1-3/8&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.
** For 3610 only.
*** For 3710 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.

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.

---

**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 |
Manifold Valves, 3-Valve Differential Pressure

Dimensions

Female-Female

Top View

Front View

Side View

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 Acetal 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 Acetal seat, and straight through porting for bidirectional, high capacity flow and 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; PTFE or Graphite 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>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials</td>
<td>Zinc-Nickel plated Carbon Steel, electropolished 316 Stainless Steel*</td>
</tr>
<tr>
<td>Connection</td>
<td>Flange-flange, 1/2” NPT-flange, 1/2” NPT-1/2” NPT</td>
</tr>
<tr>
<td>Pressure ratings**</td>
<td>Hard seat: 10,000 psi @ 200° F 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: Cᵥ 0.44 Soft seat/tip: 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.</td>
</tr>
<tr>
<td>Additional features</td>
<td>Two static (test) ports, color coded vinyl bonnet and stem dust cap, 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 and stem tips</td>
</tr>
<tr>
<td>Weight</td>
<td>Approximately 4.2 lb. without flange 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.

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: 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.

---

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

<table>
<thead>
<tr>
<th>BODY CONFIGURATION</th>
<th>FP</th>
<th>SOFT SEATS</th>
<th>PK1</th>
<th>PEEK</th>
<th>KF1</th>
<th>PCTFE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PACKINGS†</td>
<td>P1</td>
<td>PTFE</td>
<td>P2</td>
<td>Graphite**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STEM TIPS</td>
<td>T1</td>
<td>Non-rotating (316 Stainless)</td>
<td>T4</td>
<td>PEEK***</td>
<td>T7</td>
<td>Ball (ceramic)**</td>
</tr>
<tr>
<td></td>
<td>T2</td>
<td>Acetal (Acetal)***</td>
<td>T5</td>
<td>Ball (440C Stainless)***</td>
<td>T8</td>
<td>Ball (Monel)***</td>
</tr>
<tr>
<td></td>
<td>T3</td>
<td>PCTFE***</td>
<td>T6</td>
<td>Ball (carbide)***</td>
<td>T9</td>
<td>Non-rotating regulating (316 Stainless)**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>O-RINGS*</th>
<th>EM1</th>
<th>EPDM</th>
<th>KZ1</th>
<th>FFKM (Perfluoroelastomer)</th>
<th>NB1</th>
<th>NBR</th>
</tr>
</thead>
<tbody>
<tr>
<td>HANDLES</td>
<td>HL1</td>
<td>1-13/16&quot; Mini &quot;T&quot;</td>
<td>HL3</td>
<td>1&quot; Round knurled</td>
<td>HL4</td>
<td>1-3/8&quot; Phenolic</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Other o-ring materials available on request. † 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.

**Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.**
Manifold Valves, 5-Valve Natural Gas

Dimensions

Flange-Flange

Top View

Front View

Side View

1/4" NPT VENT PORT

1-5/8"
Dimensions

**Female-Female**

Top View

- 8-7/16" OPEN
- 7-7/8" CLOSED
- 1"
- 1-11/16"
- 1-1/4" 1-1/32" 1-25/32"
- 2-1/2"

Front View

- 2-15/16" OPEN
- 2-11/16" CLOSED
- 1-3/8"
- 1-1/4" 5/8" 15/32" 1/4" NPT STATIC TEST PORTS 1/4" NPT VENT PORT 1/2" NPT INSTRUMENT & PROCESS PORTS

Side View

- 2-7/8"

For panel mount or packing dimensions, see pg. 66.
Manifold Valves, 5-Valve Natural Gas

Dimensions

Flare Pattern™ Flange-Flange

Top View

Front View

Side View

MOUNTING HOLES Ø 9/32"
Flare Pattern™ Female-Female

Dimensions

Manifold Valves, 5-Valve Natural Gas

For panel mount or packing dimensions, see pg. 66.
### 5040/5090 SERIES

- Compact style, power pattern is designed for use with differential pressure transmitters incorporating two isolation valves, one equalizing valve and two vent valves in power pattern applications.
- Compact style, natural gas flow is designed for use with differential pressure transmitters incorporating two isolation valves, two equalizing valves and a vent valve in natural gas applications.
- 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.
- Labeled and color coded vinyl dust caps for bonnets and stems.

### SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Materials</strong></td>
<td>Electropolished 316 Stainless Steel*</td>
</tr>
<tr>
<td><strong>Connection</strong></td>
<td>1/2&quot; NPT-flange</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>0.125&quot;</td>
</tr>
<tr>
<td><strong>Flow coefficient</strong></td>
<td>Cv 0.30</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 stem threads, PTFE or Graphite packing optional</td>
</tr>
<tr>
<td><strong>Options</strong></td>
<td>Packings, regulating stem and stem tips o-ring materials and handles</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>Approximately 4.4 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.
**ORDERING INFORMATION**

<table>
<thead>
<tr>
<th>SERIES</th>
<th>5-valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEAT</td>
<td>Hard seat</td>
</tr>
<tr>
<td>PROCESS TYPE</td>
<td>Compact style, power pattern</td>
</tr>
<tr>
<td>CONNECTION</td>
<td>1/2&quot; NPT standard</td>
</tr>
<tr>
<td>VALVE TYPES</td>
<td>MFS Flange-Female, Stainless Steel (MSS SP-99 spacing)</td>
</tr>
</tbody>
</table>

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

**EXAMPLE**

```
Series.........................................................5-valve
Seat.............................................................Hard seat
Process type.................................................Compact style, power pattern
Connection......................................................1/2" NPT standard
Valve type.......................................................Flange-female, 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 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: 5040-MFS-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 PTFE</th>
<th>P2 Graphite</th>
</tr>
</thead>
<tbody>
<tr>
<td>STEM TIPS</td>
<td>T1 Non-rotating (316 Stainless)</td>
<td>T6 Ball (carbide)</td>
</tr>
<tr>
<td>T5 Ball (440C Stainless)</td>
<td>T7 Ball (ceramic)</td>
<td>T9 Non-rotating regulating (316 Stainless)</td>
</tr>
<tr>
<td>O-RINGS*</td>
<td>EM1 EPDM</td>
<td>KZ1 FFKM (Perfluoroelastomer)</td>
</tr>
</tbody>
</table>

* Other o-ring materials available on request.

**EXAMPLE with Additional Options**

```
Series.........................................................5-valve
Seat.............................................................Hard seat
Process type.................................................Compact style, natural gas flow
Connection......................................................1/2" NPT standard
Valve type.......................................................Flange-female, Stainless Steel
O-ring..............................................................FFKM
```

Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.
Manifold Valves, 5-Valve Power Pattern & Natural Gas

Dimensions

Flange-Female Power Pattern MSS SP-99 Spacing

1/4" NPT VENT

2X

4-5/8"

1-7/8"

2-1/2"

Top View

2-1/8"

INSTRUMENT PORT SPACING COMPATIBLE WITH MSS SP-99

1-5/8"

2-1/2"

1-1/4"

Front View

Ø1/2"

4-5/8"

9-1/8" CLOSED

9-23/32" OPEN
Flange-Female Power Pattern Coplanar™ Spacing

Note: All dimensions are the same as the SP-99 spacing except for the top view shown below.

Top View

Flange-Female Power Pattern

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

1.30” (33 mm)
1-5/8”
2-1/8”
Dimensions

Flange-Female Natural Gas Flow MSS SP-99 Spacing

Bottom View

Top View

Front View

1/2" NPT VENT

1/2" NPT PROCESS

1/4" NPT VENT

2-1/2"

4-5/8"

2-1/8"

1-5/8"

2-1/8"

1-5/8"

1-1/4"

Ø1/2"

9-23/32" OPEN
9-1/8" CLOSED

INSTRUMENT PORT SPACING COMPATIBLE WITH MSS SP-99
**Flange-Female Natural Gas Flow Coplanar™ Spacing**

*Note: All dimensions are the same as the SP-99 spacing except for the top view shown below.*

**Flange-Female Natural Gas**

1. Valve body
2. Slotted spring pin
3. FKM o-ring
4. PTFE back-up ring
5. Valve stem
6. Valve bonnet
7. Green dust cap
8. Valve “T” handle
9. Set screw
10. Gasket ring
11. Blue dust cap
12. Red dust cap
13. Head bolt
Series 5530

- 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 Acetal 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 Acetal 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>Material</th>
<th>Zinc-Nickel plated carbon Steel, electropolished 316 Stainless Steel*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections</td>
<td>Flange-flange 1/2&quot; NPT-flange 1/2&quot; NPT/1/2&quot; NPT 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>Cₗ 3.0</td>
</tr>
<tr>
<td>Stem seal 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 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.

**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: 5-valve
Seat: Soft seat/tip 0.375" orifice
Process type: Natural gas
Connection: 1/2" NPT standard
Valve type: Flange-female, Stainless Steel

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

* Only available in Flare Pattern™ configuration.

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:

**EXAMPLE**

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

**ORDERING INFORMATION - ADDITIONAL OPTIONS**

<table>
<thead>
<tr>
<th>BODY CONFIGURATION</th>
<th>FP</th>
<th>SOFT SEATS</th>
<th>O-RINGS*</th>
<th>HANDLES</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FP</td>
<td>PK1</td>
<td>PEKK EME</td>
<td>HL3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>FFK1</td>
<td>KF1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EM1</td>
<td>EPDM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>KZ1</td>
<td>FFKM (Perfluoroelastomer)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>NB1</td>
<td>NBR</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 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**

Series: 5-valve
Seat: Soft seat
Process type: Natural gas
Connection: 1/2" NPT standard or flange
Valve type: Flange-female, Steel
Body configuration: Flare Pattern™
Soft seat: PEEK
O-ring: FFKM
Manifold Valves, 5-Valve Natural Gas

Dimensions

Top View

Front View

Side View

For panel mount or packing dimensions, see pg. 66.
1 Valve body
2 Plug
3 Acetal 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
Manifold Valves, 5-Valve Natural Gas

Dimensions

Flange-Flange 90° Angle

Top View

Front View

Side View

10-1/2" OPEN
9-5/16" CLOSED

2-3/4"

2-49/64" REF
CLOSED

20°

1/4" NPT VENT

2-15/32"

1-5/8"

1-27/32"

1-1/8"

10°

1-3/8"
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 Acetal 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
Manifold Valves, 5-Valve Natural Gas

Dimensions

Flare Pattern™ Flange-Flange

Top View

Front View

Side View

1-1/4”

2-3/4”

3-7/8”

10-1/2” OPEN
9-5/16” CLOSED

1-1/4”

1-19/32”

7/16”

3-3/4”

MOUNTING HOLES
Ø 9/32”

Ø 3/8” ORIFICE

2-15/32”

1-13/16”

20º

20º

Ø 3/8” ORIFICE

2-1/8”

1-16/16”

1-11/16”

10º

1-1/16”

1-5/8”

2-15/32”

1/4” NPT VENT PORT

* 1-3/8” for 5530

1-1/16”
Flare Pattern™ Flange-Female

Top View

Front View

Side View

5530 SERIES DIMENSIONS
Dimensions

Flare Pattern™ Female-Female

Top View

Front View

Side View

Manifold Valves, 5-Valve Natural Gas

1-11/32" MOUNTING HOLES Ø 9/32"

1-11/16"

2-3/4"

3-7/8"

10-1/2" OPEN
9-5/16" CLOSED

1/2" NPT INSTRUMENT & PROCESS PORTS

1/4" NPT VENT PORT

Ø 3/8" ORIFICE

2-1/8"

2-7/16"

5/32"

20° 20° 20° 1-13/16"

* 1-3/8" for 5530

1-11/16"

1-19/64"

1/2"
1 Flare Pattern™ valve body
2 Red dust cap
3 Plug
4 Acetal 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
**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>Materials</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&quot; 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&quot;</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
### ORDERING INFORMATION

<table>
<thead>
<tr>
<th>SERIES</th>
<th>SZ</th>
<th>Connector</th>
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</thead>
<tbody>
<tr>
<td>MATERIALS</td>
<td>C</td>
<td>Steel</td>
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<tr>
<td>CONNECTOR TYPES</td>
<td>1</td>
<td>Short stabilized pair*</td>
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<tr>
<td>OPTIONS†</td>
<td>DK1</td>
<td>One Piece Dielectric Gasket, Pair</td>
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<tr>
<td></td>
<td>DK1-SS</td>
<td>One Piece Dielectric Gasket, 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
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

• 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 Acetal 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>
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<tbody>
<tr>
<td>Materials</td>
<td>Zinc-Nickel plated Carbon Steel, 316 Stainless Steel*</td>
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<tr>
<td>Bolts</td>
<td>Carbon Steel</td>
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<tr>
<td>Connection</td>
<td>1/2&quot; NPT-flange</td>
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<tr>
<td>Pressure rating</td>
<td>6,000 psi at 200 °F</td>
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<tr>
<td>Orifice</td>
<td>0.375&quot;</td>
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<tr>
<td>Flow coefficient</td>
<td>C&lt;sub&gt;0&lt;/sub&gt; 3.0</td>
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<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>
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</tbody>
</table>

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

Note: Shown with flange adaptor for round installations.

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

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

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 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**

- 1-1/2"
- 2-5/8"

**Side View**

- 1-1/2" HEX
- 1-1/4" HEX
- 3/8"
- 1/2" NPT

TORQUE BOLTS USING CRISS CROSS PATTERN TO 35 FT-LBS
Stabilized Connector with Integral Block Valve

1 Flange plug
2 Stabilized connector valve body
3 Hex nut
4 Optional flange adaptor for round installations
5 Acetal 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 Acetal dielectric gasket
17 Optional Acetal bushing
18 Washer
19 Bolt (Stabilizer)
Optional Assembly With Soft Seat Installed on Opposite Side Of Valve

6 Acetal soft seat, black
Accessories
Futbols

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

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
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<tbody>
<tr>
<td>Materials</td>
<td>Zinc-Nickel plated Carbon Steel, 316 Stainless Steel*</td>
</tr>
<tr>
<td>Connection</td>
<td>1/2&quot; NPT</td>
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<tr>
<td>Weight</td>
<td>Approximately 2.1 lb.</td>
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* All 316SS products meet the requirements of NACE MR0175/ISO 15156-3.

For NOSHOK Steel Futbols:

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 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>
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<th>Material</th>
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<td>Futbol</td>
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<td>Steel</td>
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<tr>
<td>SS</td>
<td>316 Stainless Steel</td>
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</tr>
</tbody>
</table>

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

EXAMPLE

Series: 50FA1 Futbol
Material: CS Steel

Futbols

Front View

1/16" NPT OFFSET FROM CENTER

1-1/4"

2-1/2"

1/2" NPT

0.813"

1.625"

5/8"

1-1/4"

Side View

1-1/4"
**Materials**

- Zinc-Nickel plated Steel,
- 316 Stainless Steel*

**Connections**

- 1/2" NPT Male-flange, 1/2" NPT Female-flange

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

---

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

---

**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
ORDERING INFORMATION

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

Top View

Front View

Side View

Static Adaptor, Male NPT

Top View

Front View

Side View
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 Acetal sealing gasket and Acetal 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 or o-ring 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: Acetal 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-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 back-up 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.

DP1-DP1-CS / DP1-DP1-SS*
3/8" bore, 23" length

DP2-DP2-CS / DP2-DP2-SS*
3/8" bore, 9" length

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

For products shown above that are composed of Stainless 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

For products shown above that are composed of Brass and/or Carbon 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
Mounting Diagrams for 2000, 3000 & 5000 Series Manifold Valves

MK1-CS1 Steel / MK1-SS2 Stainless Steel Mounting Kit
Flange-Flange (2000 & 3000 Series Except 3510)

MK2-CS1 Steel / MK2-SS2 Stainless Steel Mounting Kit
Flange-NPT (2000 & 3000 Series Except 3510), NPT-NPT (3000 Series Except 3510)
MK3-CS1 Steel / MK3-SS2 Stainless Steel Mounting Kit
Flange-Flange (3510 & 5000 Series)

MK4-CS1 Steel / MK4-SS2 Stainless Steel Mounting Kit
Flange-NPT (3510 & 5000 Series), NPT-NPT (2000, 3510 & 5000 Series)

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
<table>
<thead>
<tr>
<th></th>
<th>Mini</th>
<th>Multiport</th>
<th>Standard</th>
<th>Block &amp; Bleed</th>
<th>Bleed</th>
<th>2-Valve Block &amp; Bleed</th>
<th>3-Valve Double Block &amp; Bleed</th>
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<tbody>
<tr>
<td><strong>SERIES</strong></td>
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<td>200</td>
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<td>316 Stainless Steel</td>
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<td>Male-Male</td>
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## NOSHOK Manifold Valves Reference Chart

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161
| Materials | Zinc-Nickel plated Steel | 360 Brass |
| Connections | 1/8" NPT | 1/4" NPT |
| | 3/8" NPT | 7/16"-20 UNF 2B |
| | 1/2" NPT | 3/4" NPT male |
| | 1/2" NPT male - 1/4" NPT female | 9/16"-18 UNF 2B |
| | 3/4" NPT male - 1/2" NPT female | 1" NPT |
| | 1-1/4" NPT | 1-1/2" NPT |
| Valve Type | Male-Male | Male-Female |
| | Female-Female | Male-Male Angle |
| | Male-Female Angle | Female-Female Angle |
| | Male | Male-Male Extended |
| | Male-Female Extended | Female-Female Extended |
| Pressure Ratings | 5,000 psi | 6,000 psi |
| | 10,000 psi | 10,000 psi |
| Orifice Size | 0.144" | 0.156" |
| | 0.172" | 0.187" |
| | 0.315" | 0.438" |
| Flow Coefficient (Cv) | 0.38 | 0.42 |
| | 0.64 | 0.76 |
| | 2.70 | 3.00 |
| | 4.00 | 4.00 |
| Stem Seal | FKM | PTFE |
| | EPDM | FFKM |
| | NBR | EPDM |
| Packings | PTFE | Graphite |
| Soft Seats | Acetal | PEEK |
| | PEEK | PEEK |
| Stem Tips | Rotating (316 Stainless) | Acetal |
| | Non-rotating (316 Stainless) | Acetal |
| | Ball (440C Stainless) | Ball (440C Stainless) |
| | Ball (carbide) | Ball (ceramic) |
| | Ball (Monel) | Ball (Monel) |
| | Regulating hard | Regulating hard |
| | Regulating hard | Regulating PTFE |
| | Regulating Acetal | Regulating Acetal |
| | Regulating PEEK | Regulating PEEK |
| Handles | 1-13/16" Mini "T" - HL1 | 1-1/2" Round Knurled - HL3 |
| | 2-1/2" "T" - HL2 | 1-3/8" Phenolic - HL4 |
| | 1" Round Knurled - HL3 | 1-3/4" Phenolic - HL5 |
| | 1-3/8" Phenolic - HL4 | 1-3/8" Mini "T" - HL7 |
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. Acetal 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

100, 200, 402-404 600, 800, 2070, 3070 Series, hard seat, Steel and Stainless Steel
150, 300, 500, 700, 850, 2170 Series, soft seat or tip, Steel, Stainless Steel and Brass
406-412 Series, hard seat, Steel and Stainless Steel
100 Series, hard seat, Brass
Needle Valves Pressure vs. Temperature: Packing Style with Compatible Fluid

Steel needle valve with Graphite (P2) packing
Steel or Stainless Steel needle valve with PTFE (P1) packing
Stainless Steel needle valve with Graphite (P2) packing
Brass needle valve with PTFE (P1) or Graphite (P2) packing
Steel or Stainless Steel needle valve, with packing and Acetal soft seat or Acetal soft tip
### Canadian Registration Numbers

*CRN documents are available on our website at [www.noshok.com](http://www.noshok.com).*

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Quality Policy

NOSHOK is committed to providing a high degree of value and continually improving processes to enhance customer satisfaction by focusing on customer requirements for the design, manufacture and distribution of pressure, level, temperature, and force measurement instrumentation, needle, manifold valves, custom manifold systems for industrial applications and compressed air filters.
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.