

Valve Product Solutions



Needle Valves

Manifold Valves

2-Valve Static Pressure
& Liquid Level

3-Valve Differential Pressure

5-Valve Natural Gas

Accessories



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

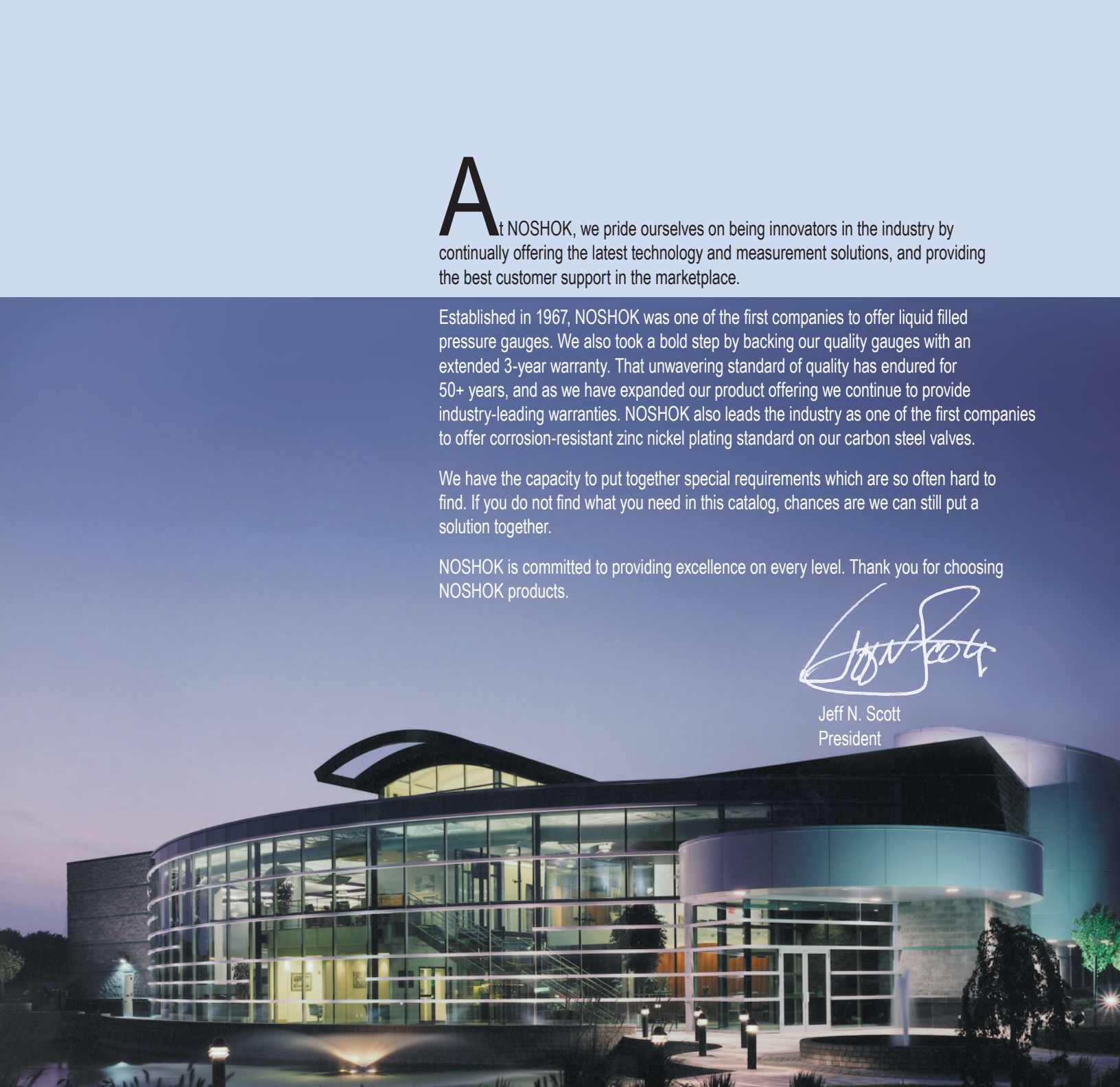
Established in 1967, NOSHOK was one of the first companies to offer liquid filled pressure gauges. We also took a bold step by backing our quality gauges with an extended 3-year warranty. That unwavering standard of quality has endured for 50+ years, and as we have expanded our product offering we continue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

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

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



Jeff N. Scott
President



NOSHOK Corporate Headquarters
Your Single Source Instrumentation Company

NOSHOK is a member and actively supports:



NOSHOK is an ISO 9001:2015 registered company.

WARRANTY INFORMATION

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

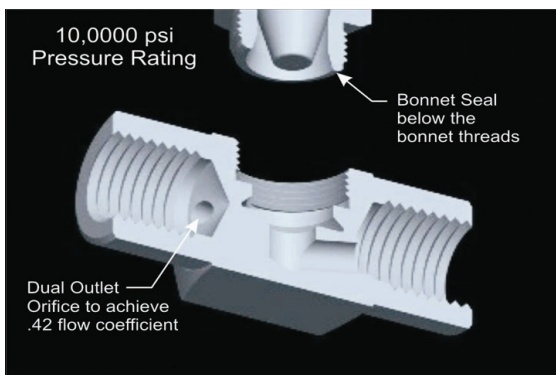
NOSHOK VALVES PATENTED FOR SUPERIOR DESIGN

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 1×10^{-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.



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.





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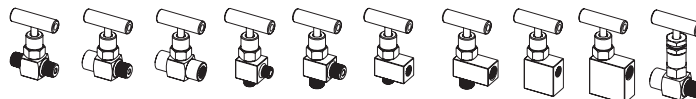
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Needle/Manifold Valve Warranties; Patented Design; ZnNi Plating 3

NEEDLE VALVES

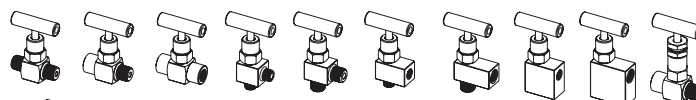
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100 SERIES 6-13



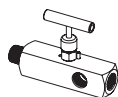
Mini, Soft Tip:

150 SERIES 14-21



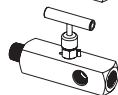
Multiport, Hard Seat:

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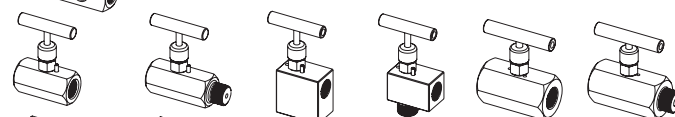
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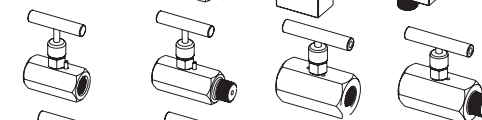
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400 SERIES 30-35



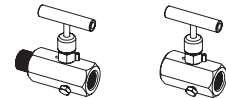
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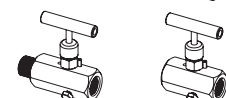
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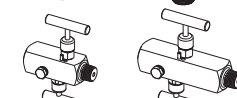
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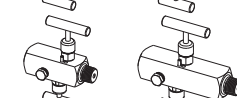
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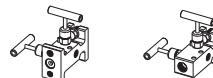
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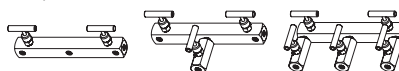
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Differential Pressure Mini, Hard Seat & Soft Tip (0.141" Orifice):

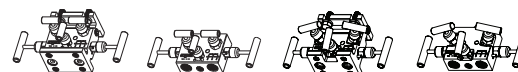
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In keeping with and for purpose of product and/or manufacturing process improvements, NOSHOK, Inc. reserves the right to make design changes without prior notice.

100 SERIES



- Compact size valve built for maximum durability and robust performance in the toughest applications
- 100% helium leak tested to 1×10^{-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

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*, 360 Brass
Connections	1/8" NPT, 1/4" NPT, 7/16"-20 UNF-2B, 9/16"-18 UNF-2B Male-male, Male-female, Female-female, in-line and angled configurations
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.

† These pressure ratings apply to all 100 series Mini Valves except the following which have pressure ratings as shown:

Stainless Steel 7/16"- 20 UNF-2B connection: 9,000 psi @ 200 °F

Steel 7/16"- 20 UNF-2B connection: 8,000 psi @ 200 °F

Brass 7/16"- 20 UNF-2B connection: 5,000 psi @ 200 °F

Stainless Steel 9/16"- 18 UNF-2B connection: 5,000 psi @ 200 °F

Steel 9/16"- 18 UNF-2B connection: 4,000 psi @ 200 °F

Brass 9/16"- 18 UNF-2B connection: 2,000 psi

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.

SERIES	1 100 Series, hard seat					
CONNECTION SIZES	01	1/8" NPT	42	7/16"- 20 UNF-2B*		
	02	1/4" NPT	43	9/16"- 18 UNF-2B*		
VALVE TYPES	MMB	Male-Male, Brass	MFC	Male-Female, Steel	MFS	Male-Female, Stainless Steel
	MFB	Male-Female, Brass	EMFC	Extended Male-Female, Steel	EMFS	Extended Male-Female, Stainless Steel
	FFB	Female-Female, Brass	FFC	Female-Female, Steel	FFS	Female-Female, Stainless Steel
	EFFB	Extended Female-Female, Brass	EFFC	Extended Female-Female, Steel	EFFS	Extended Female-Female, Stainless Steel
	MMAB	Male-Male Angle, Brass	MMAC	Male-Male Angle, Steel	MMAS	Male-Male Angle, Stainless Steel
	MFAB	Male-Female Angle, Brass	MFAC	Male-Female Angle, Steel	MFAS	Male-Female Angle, Stainless Steel
	FFAB	Female-Female Angle, Brass	FFAC	Female-Female Angle, Steel	FFAS	Female-Female Angle, Stainless Steel
	MMC	Male-Male, Steel	MMS	Male-Male, Stainless Steel		

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

102 - FFC

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			
PACKINGS*	P1 PTFE	P2 Graphite	
STEM TIPS	T1 Non-rotating (316 Stainless standard)	T6 Ball (carbide)	T8 Ball (Monel)
	T5 Ball (440C Stainless)	T7 Ball (ceramic)	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	HL2 2-1/2" "T"	HL4 1-3/8" Phenolic	
	HL3 1" Round knurled	HL5 1-3/4" Phenolic	

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

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

** Other o-ring materials available on request.

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.

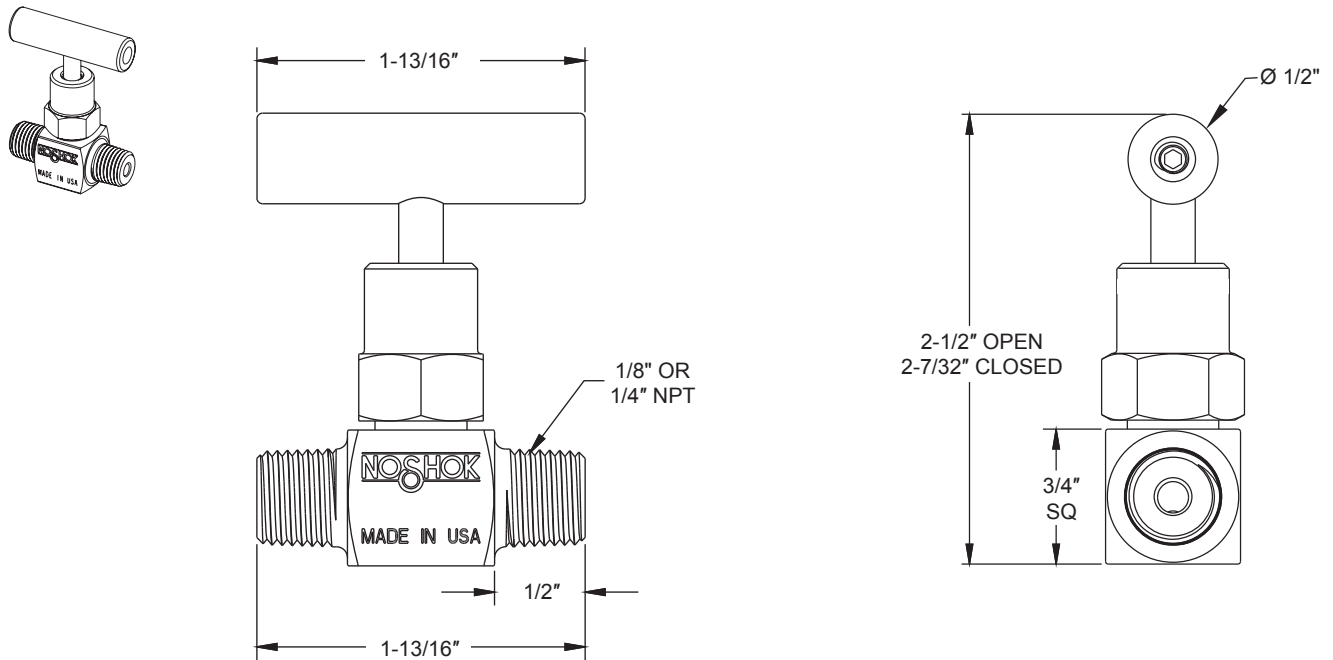
EXAMPLE with Additional Options

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

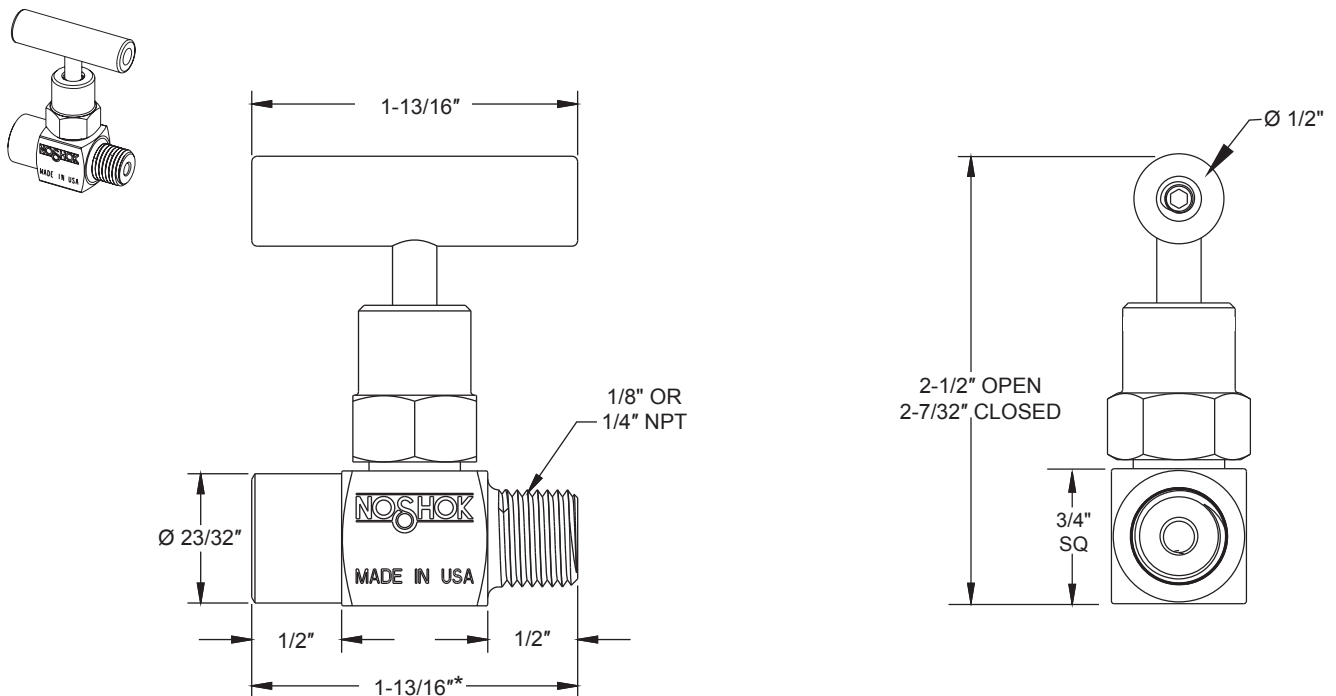
102 - FFC - P1 - T1 - PM2 - HL4

Dimensions

Male-Male

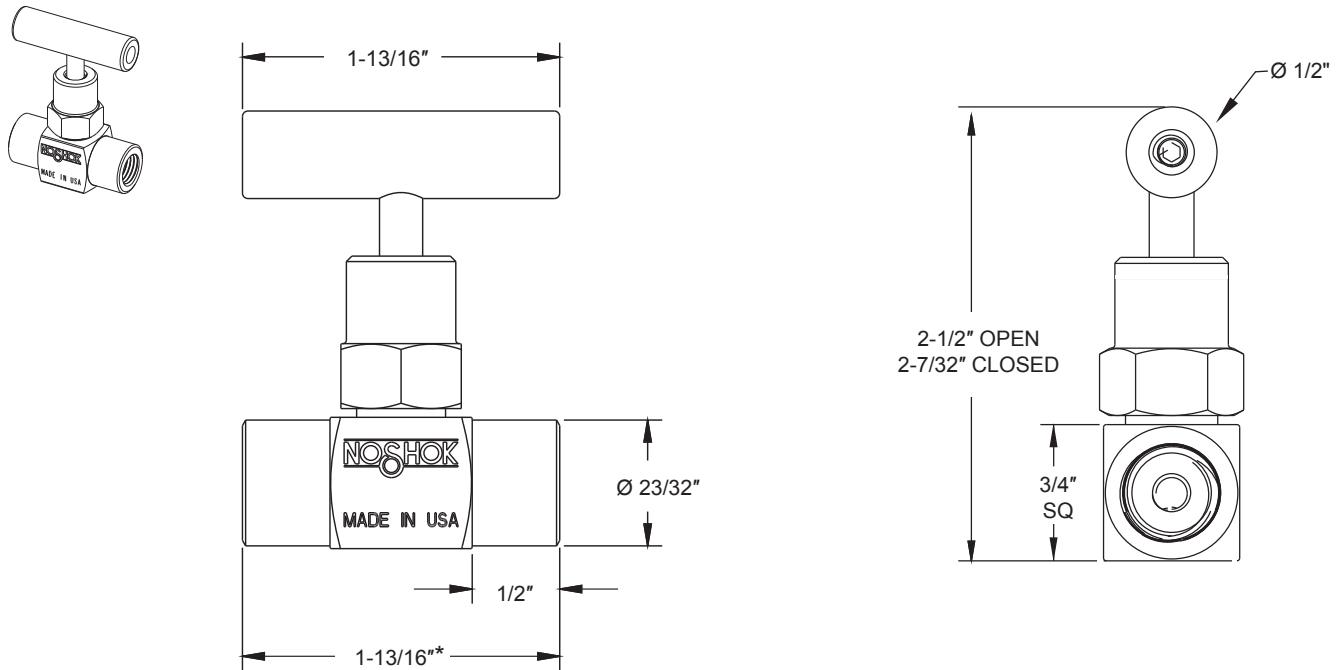


Male-Female



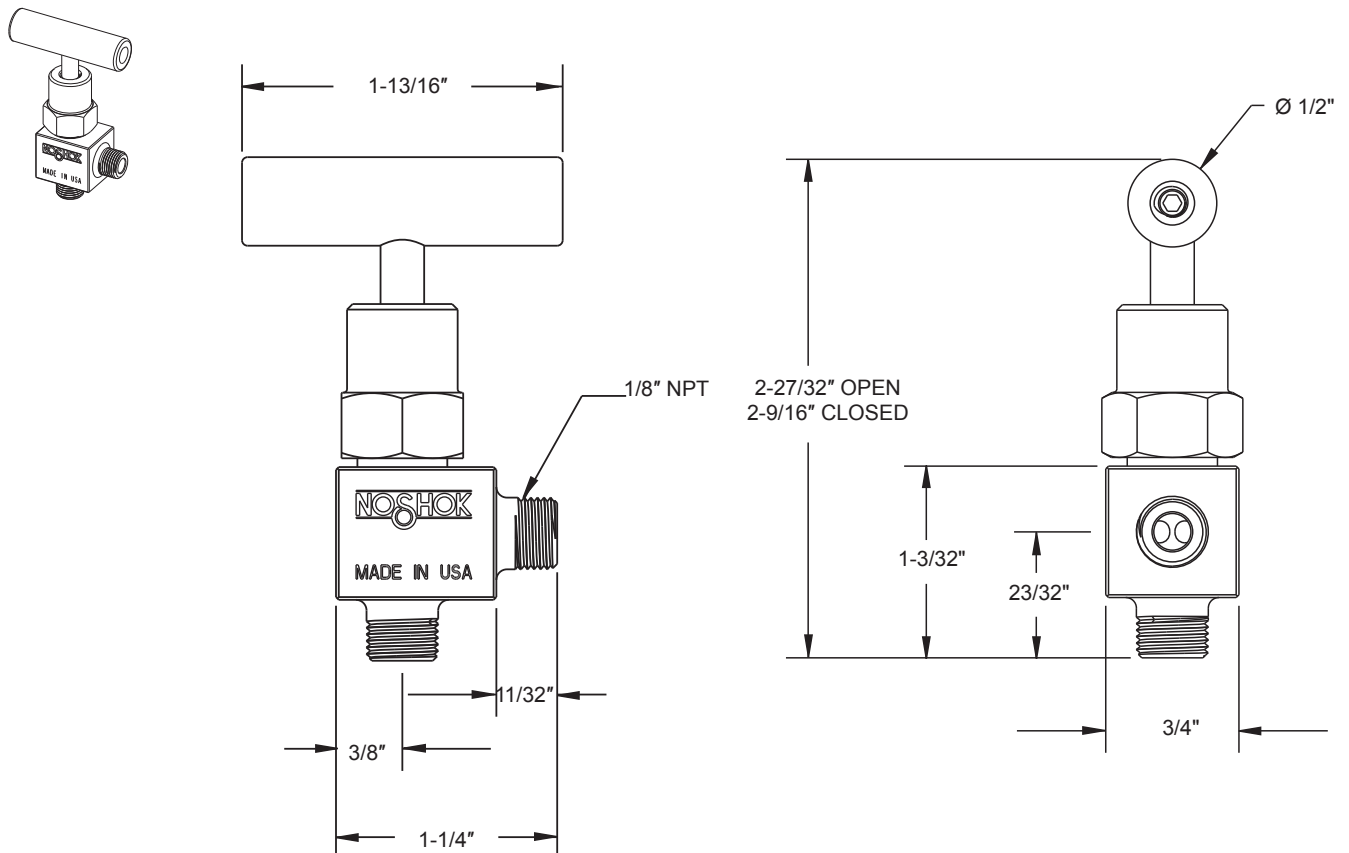
*Dimension on extended version is $2\text{--}1/4"$

Female-Female



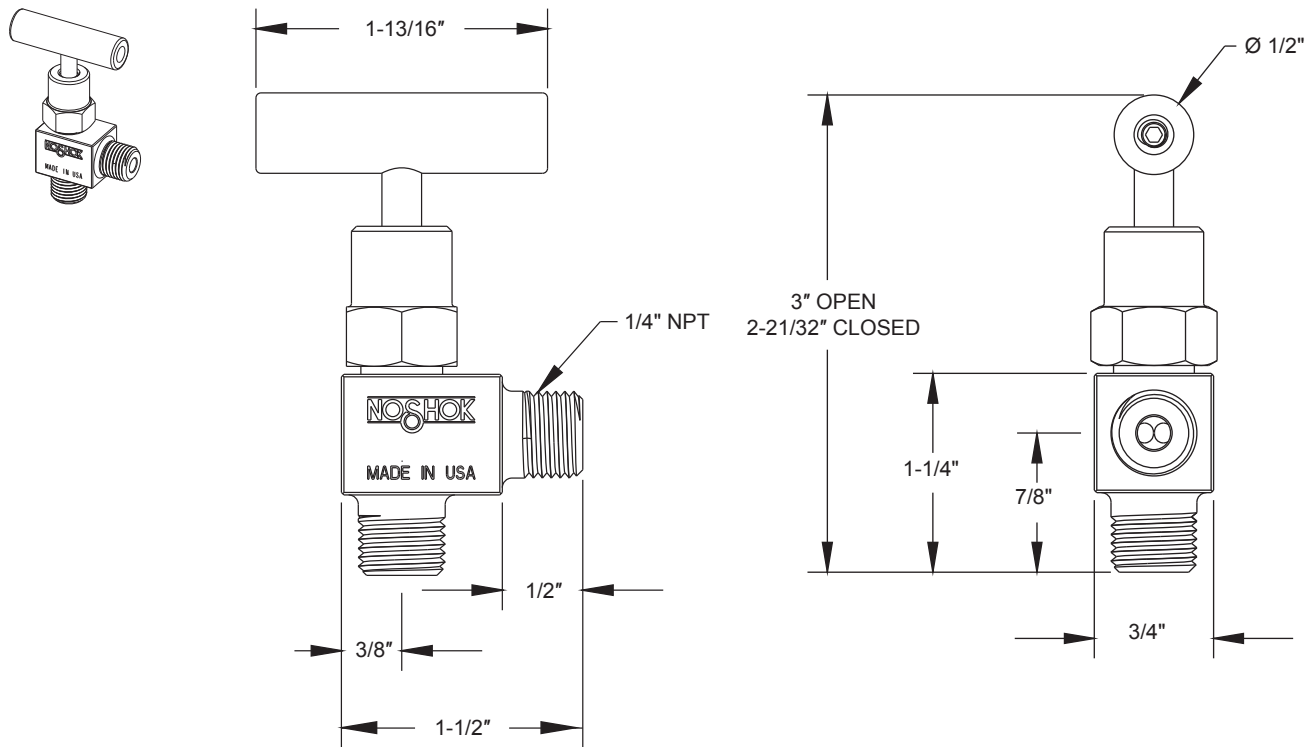
*Dimension on extended version is 2-1/4"

1/8" Male-Male Angle

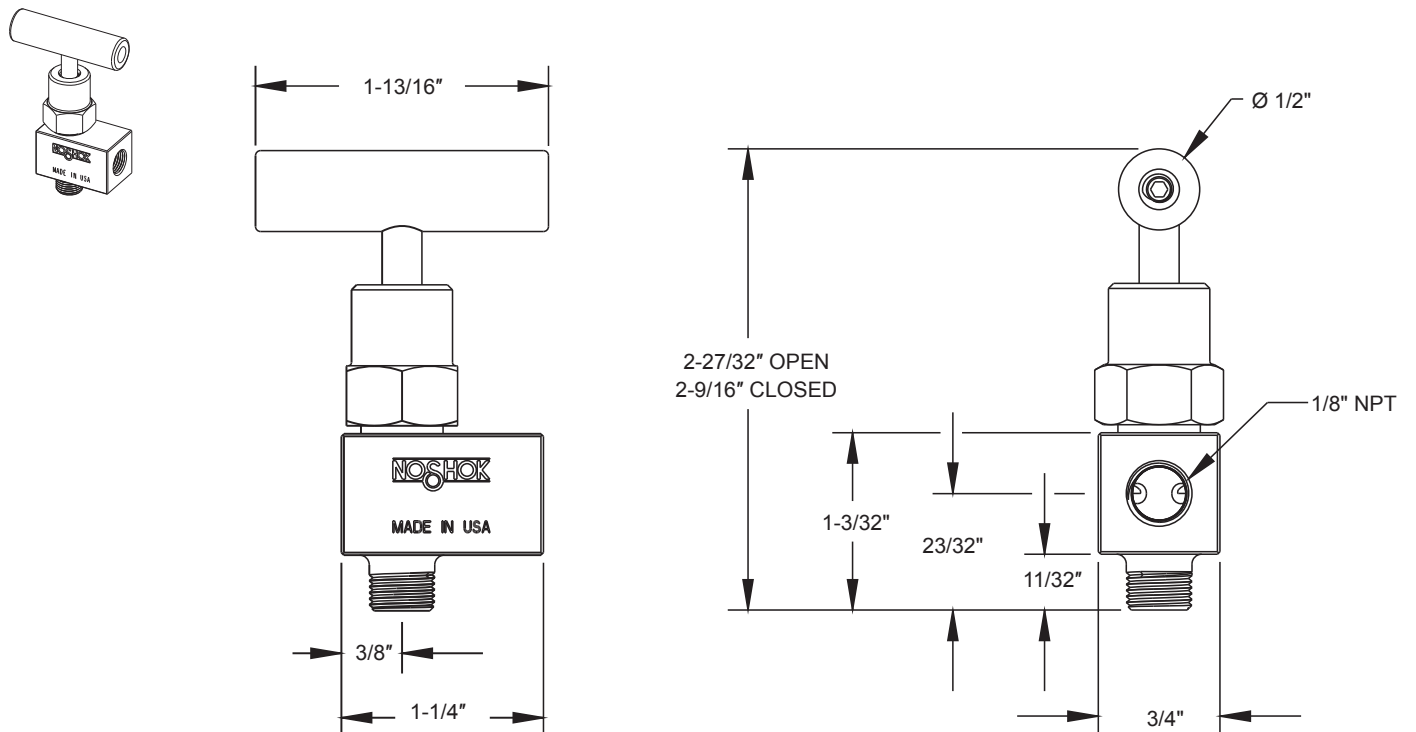


Dimensions

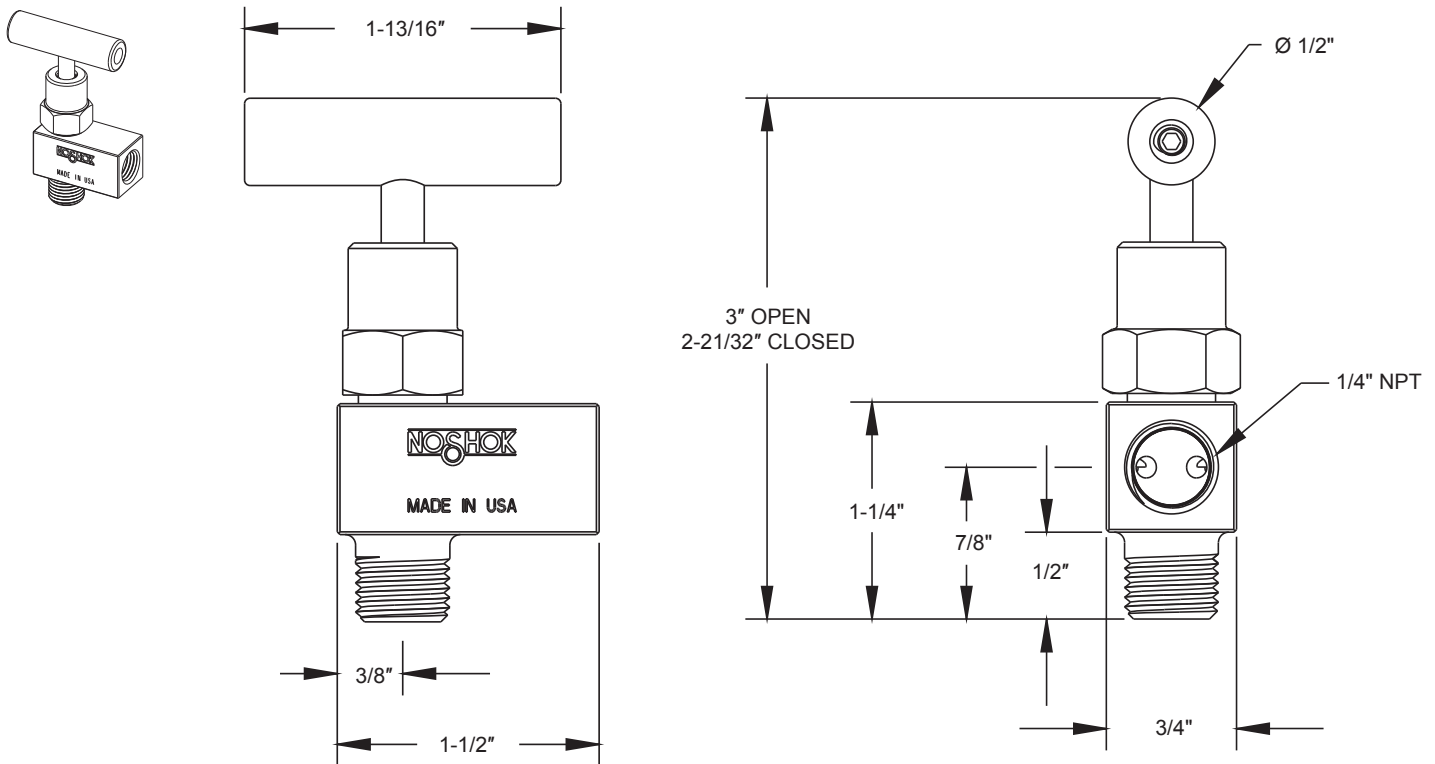
1/4" Male-Male Angle



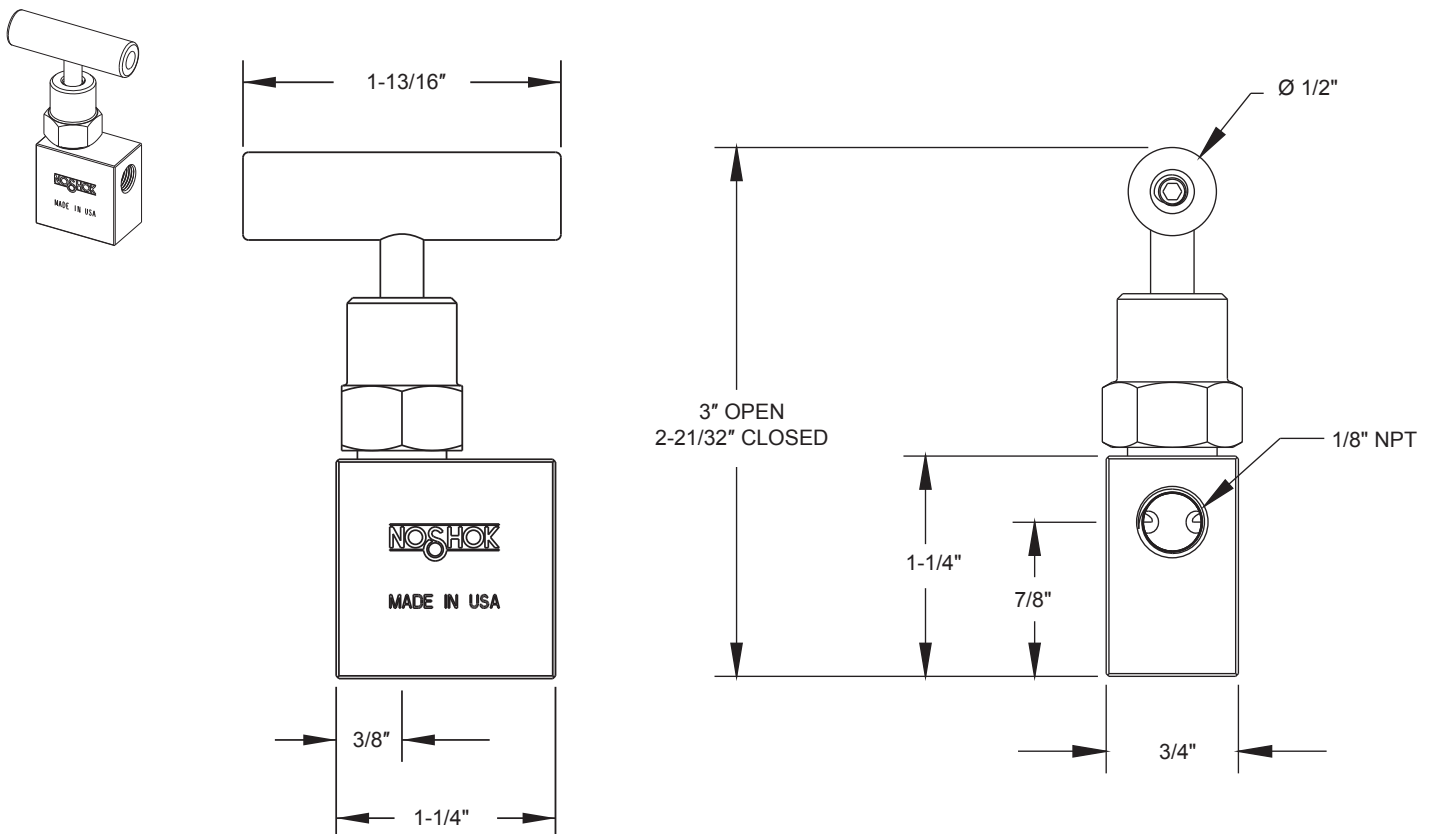
1/8" Male-Female Angle



1/4" Male-Female Angle

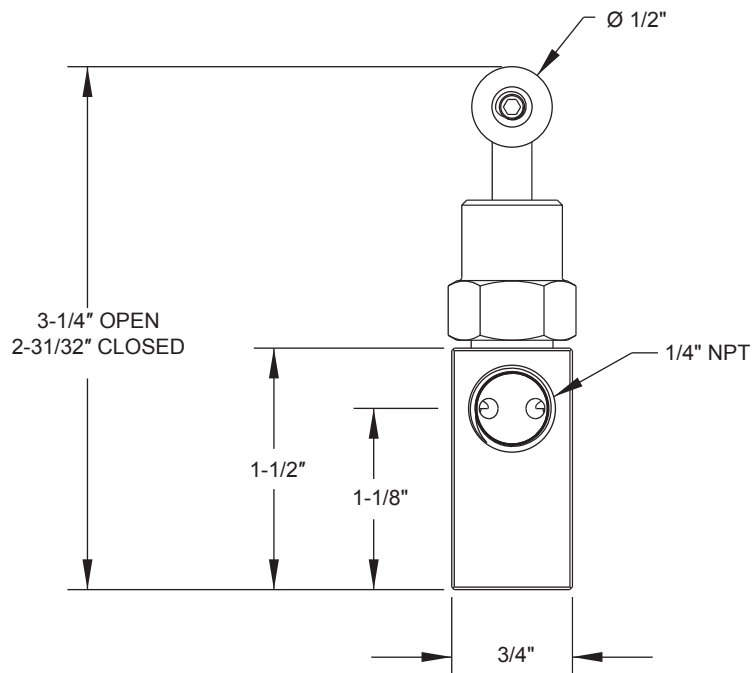
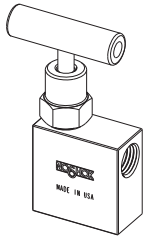


1/8" Female-Female Angle



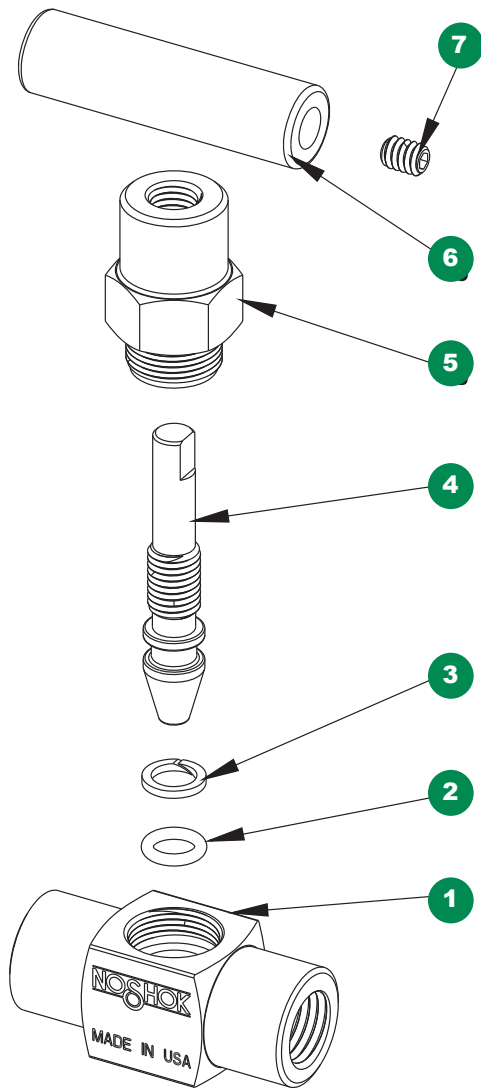
Dimensions

1/4" Female-Female Angle



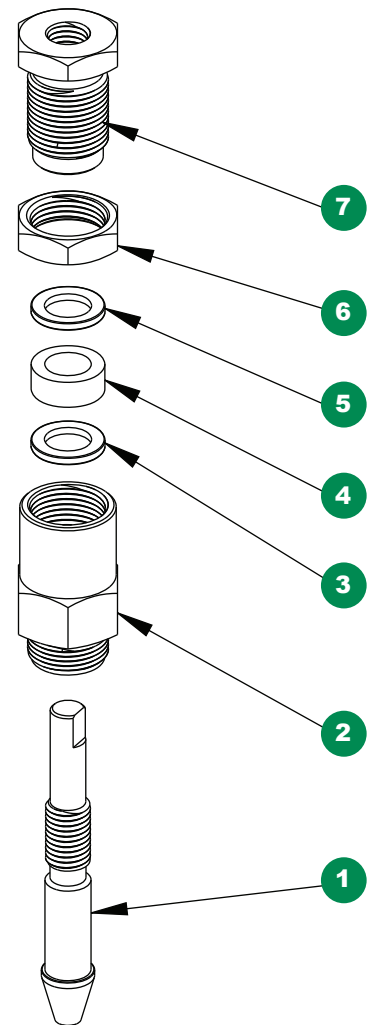
For panel mount, packing,
& stem tip dimensions,
see pgs. 64-67.

Mini, Hard Seat



- 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

Option With Packing



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

Needle Valves

Mini, Soft Tip

150 SERIES



- Compact size valve built for maximum durability and robust performance in the toughest applications
- 100% helium leak tested to 1×10^{-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**)

SPECIFICATIONS

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*, 360 Brass
Connections	1/8" NPT, 1/4" NPT, 7/16"-20 UNF-2B, 9/16"-18 UNF-2B Male-male, Male-female, Female-female, in-line and angled configurations
Pressure rating**	6,000 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 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.

** This pressure ratings applies to all 150 series Mini Valves except the following which have pressure ratings as shown:
 Brass 7/16"- 20 UNF-2B connection: 5,000 psi @ 200 °F
 Stainless Steel 9/16"- 18 UNF-2B connection: 5,000 psi @ 200 ° F
 Steel 9/16"- 18 UNF-2B connection: 4,000 psi @ 200 ° F
 Brass 9/16"- 18 UNF-2B connection: 2,000 psi @ 200 °F

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.

SERIES	1	150 Series, soft tip				
CONNECTION SIZES	51	1/8" NPT	92	7/16"- 20 UNF-2B*		
	52	1/4" NPT	93	9/16"- 18 UNF-2B*		
VALVE TYPES	MMB	Male-Male, Brass	MFC	Male-Female, Steel	MFS	Male-Female, Stainless Steel
	MFB	Male-Female, Brass	EMFC	Extended Male-Female, Steel	EMFS	Extended Male-Female, Stainless Steel
	FFB	Female-Female, Brass	FFC	Female-Female, Steel	FFS	Female-Female, Stainless Steel
	EFFB	Extended Female-Female, Brass	EFFC	Extended Female-Female, Steel	EFFS	Extended Female-Female, Stainless Steel
	MMAB	Male-Male Angle, Brass	MMAC	Male-Male Angle, Steel	MMAS	Male-Male Angle, Stainless Steel
	MFAB	Male-Female Angle, Brass	MFAC	Male-Female Angle, Steel	MFAS	Male-Female Angle, Stainless Steel
	FFAB	Female-Female Angle, Brass	FFAC	Female-Female Angle, Steel	FFAS	Female-Female Angle, Stainless Steel
	MMC	Male-Male, Steel	MMS	Male-Male, Stainless Steel		

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

152 - FFC

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.

ORDERING INFORMATION - ADDITIONAL OPTIONS				
PACKING	P1	PTFE		
STEM TIPS	T3	PCTFE	T10	Regulating Acetal
	T4	PEEK	T11	Regulating PCTFE
O-RINGS*	EM1	EPDM	KZ1	FFKM (Perfluoroelastomer)
			NB1	NBR
PANEL MOUNTINGS	PM1	Panel mount (1 nut)	PM2	Panel mount (2 nuts)
HANDLE	HL3	1" Round knurled		

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.

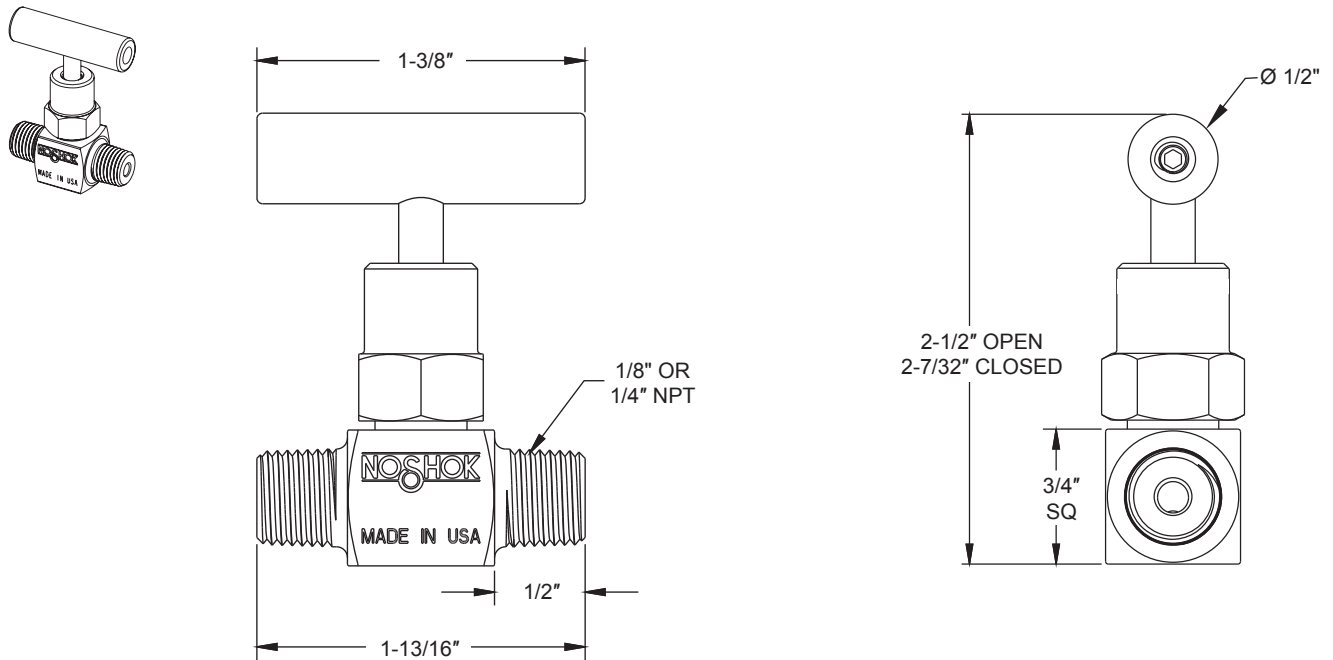
EXAMPLE with Additional Options

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

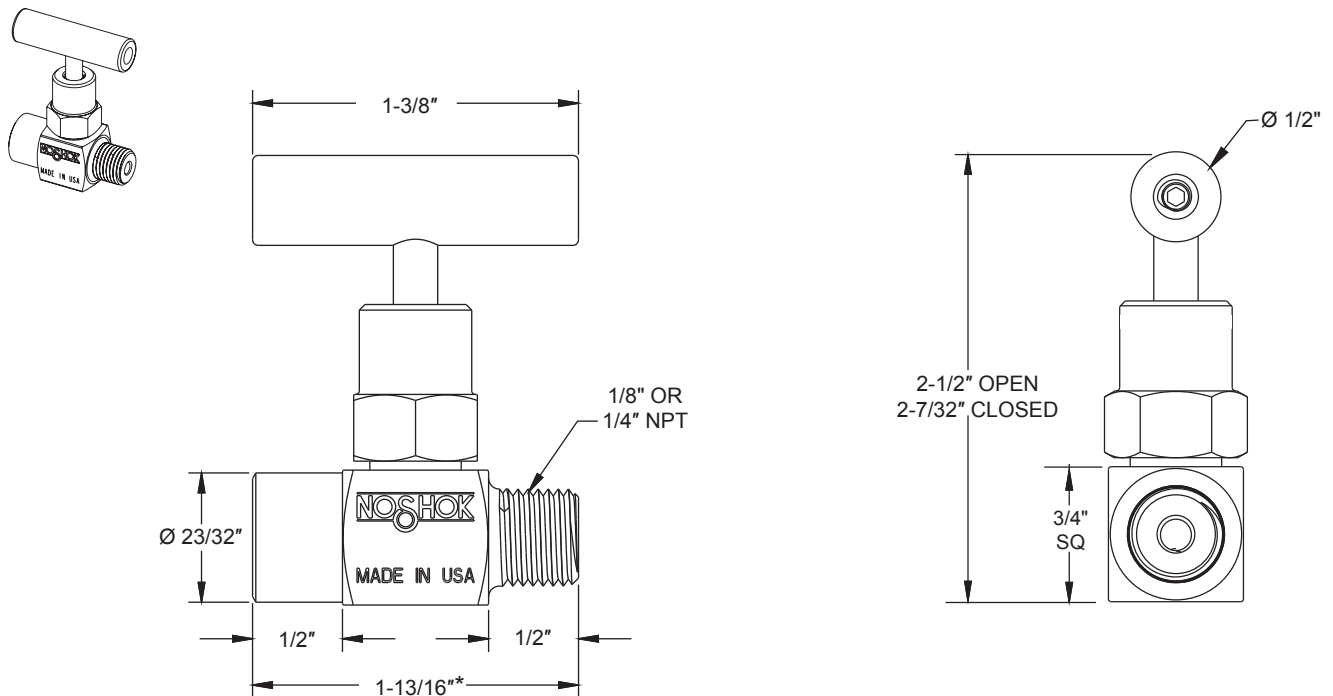
152 - FFC - P1 - T3 - PM2 - HL3

Dimensions

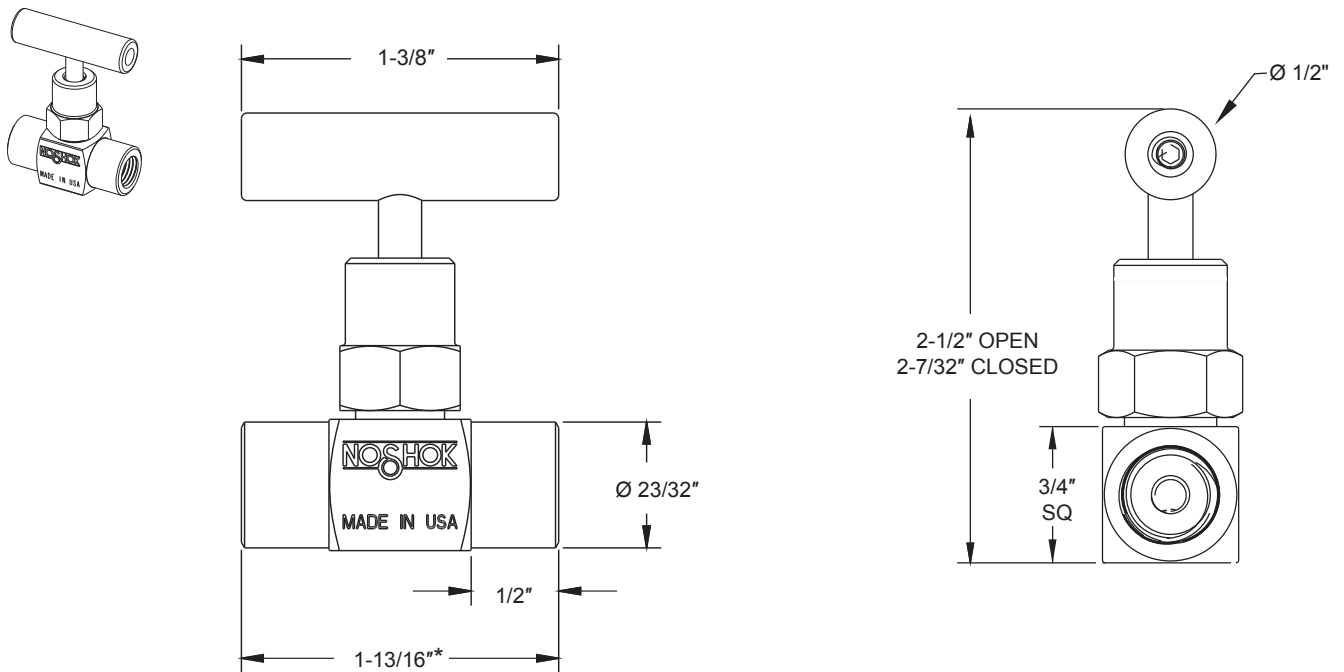
Male-Male



Male-Female

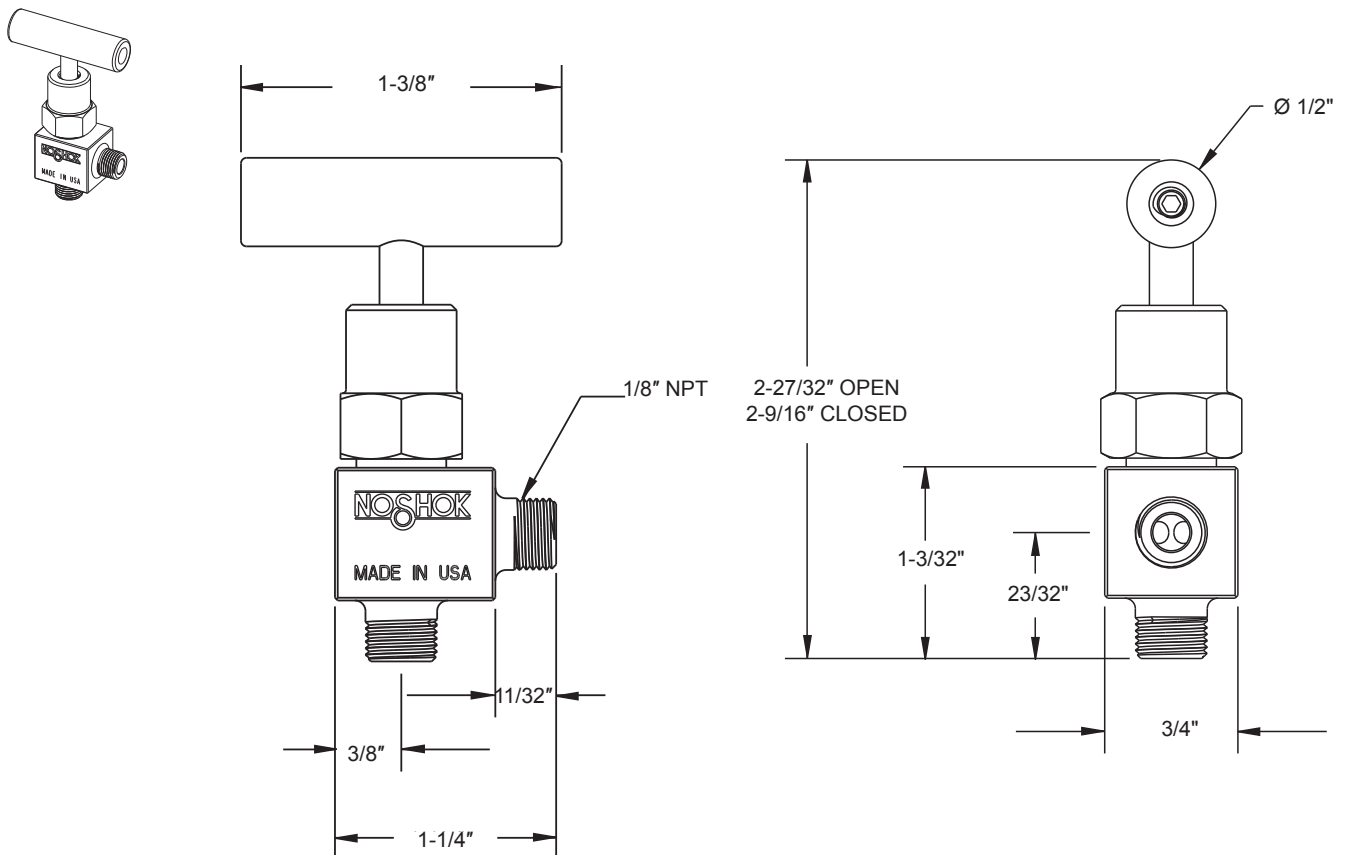


Female-Female



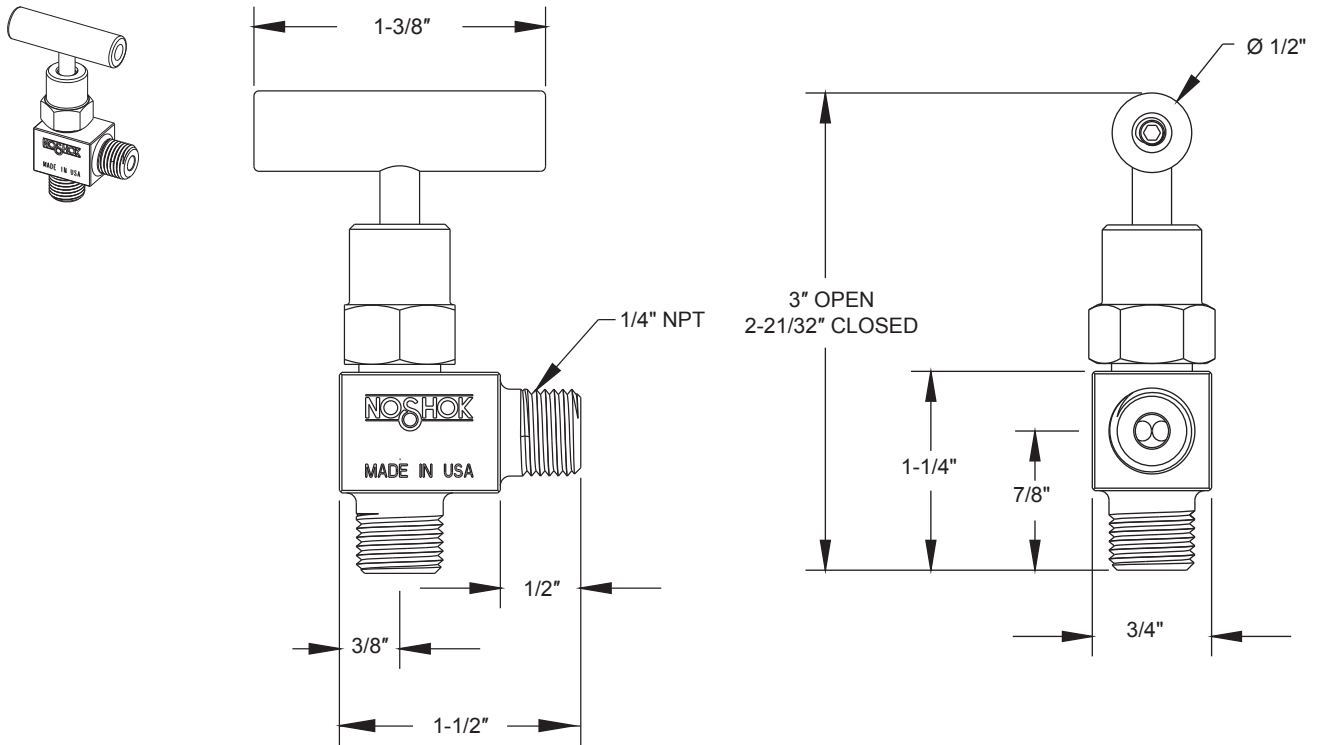
*Dimension on extended version is 2-1/4"

1/8" Male-Male Angle

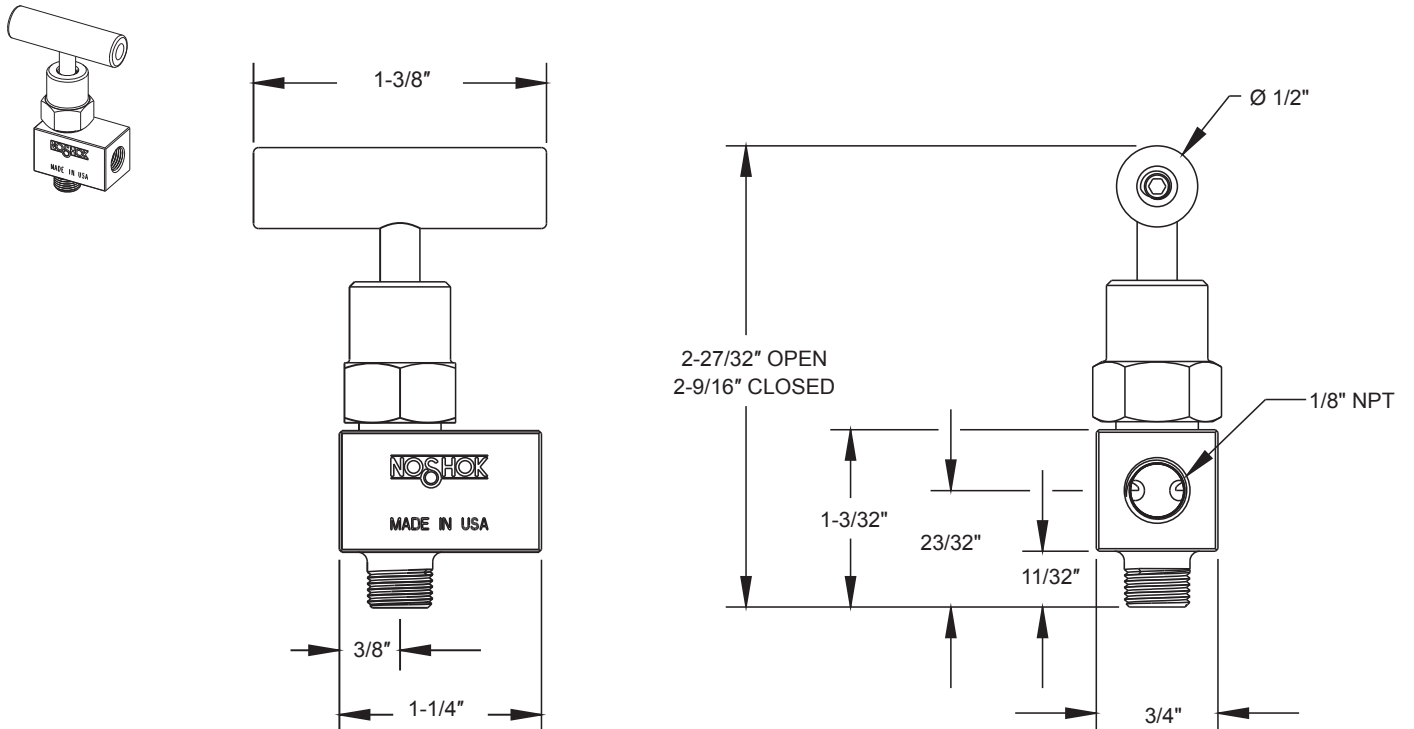


Dimensions

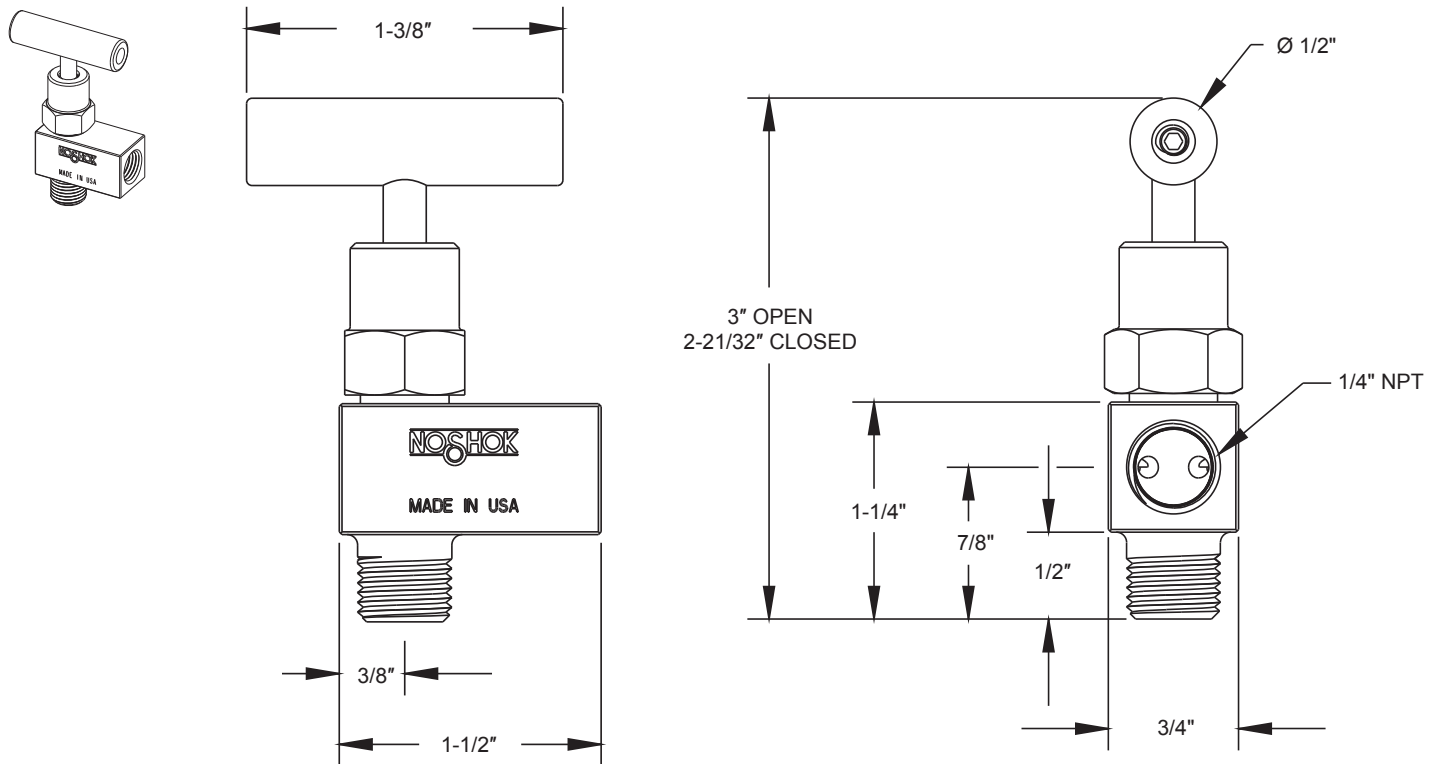
1/4" Male-Male Angle



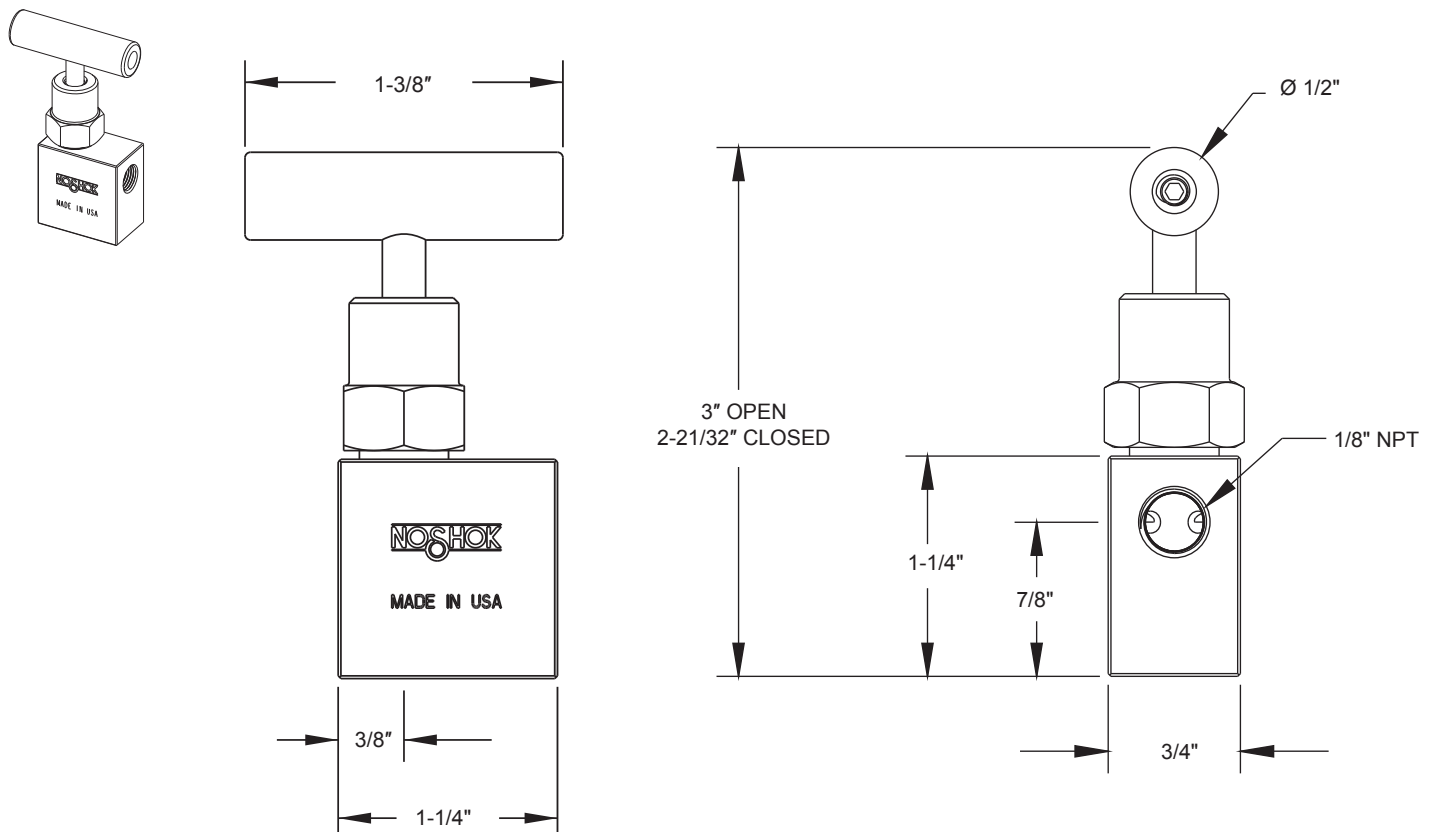
1/8" Male-Female Angle



1/4" Male-Female Angle

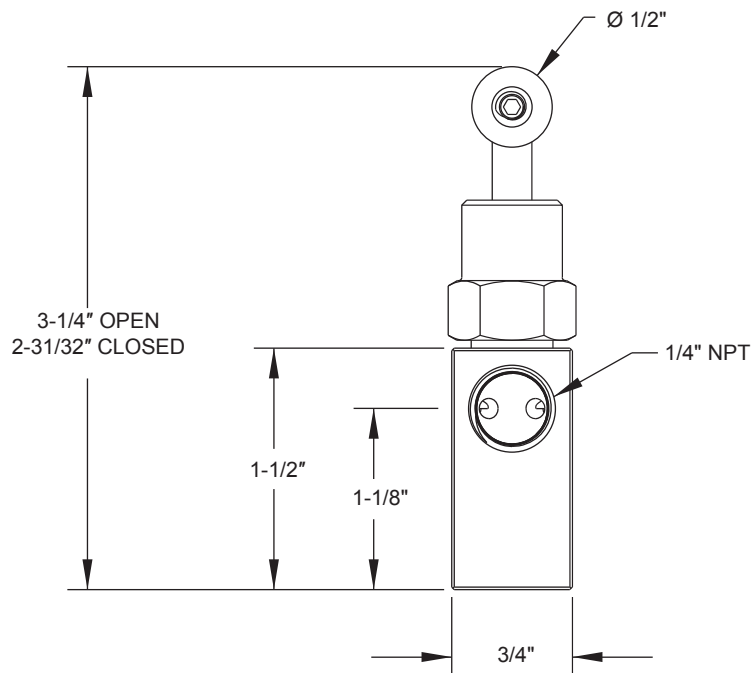
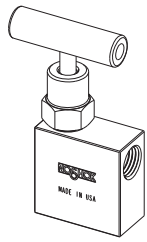


1/8" Female-Female Angle



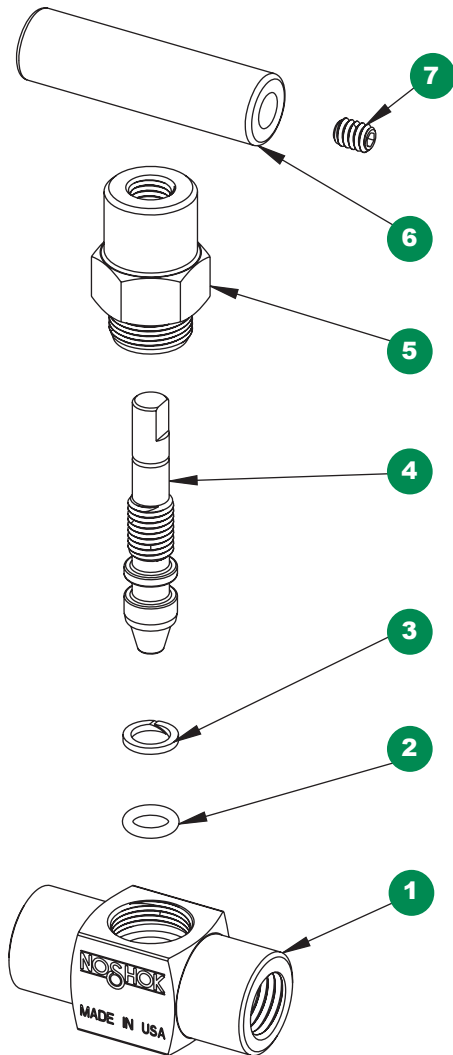
Dimensions

1/4" Female-Female Angle



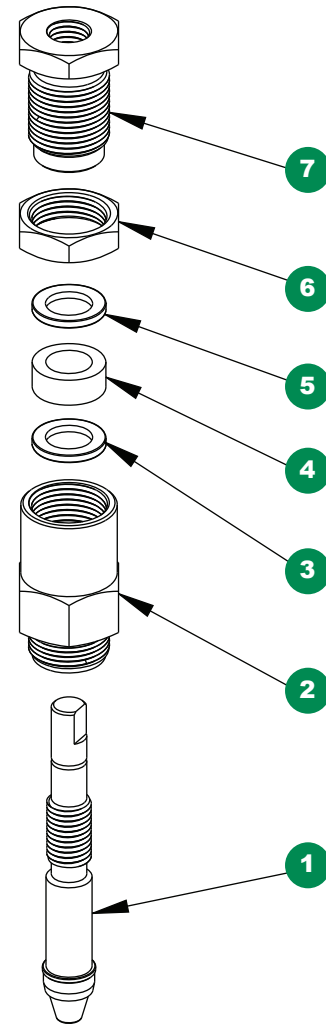
For panel mount, packing,
& stem tip dimensions,
see pgs. 64-67.

Mini, Soft Tip



- 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

Option With Packing



- 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, Hard Seat

200 SERIES



Note: Shown with optional bleed plug.

- 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 1×10^{-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)

Multiport Valve Accessories



Bleed Plug,
see pg. 65 for details.



Plug,
see pg. 65 for details.



Bleed Valve
See pg. 48 for details.

SPECIFICATIONS

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*
Connections	1/2" NPT to 3/4" NPT Male-female
Pressure rating**	10,000 psi @ 200 °F
Orifice size	0.187"
Flow coefficient	C _v 0.44
Stem seal & type	All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Graphite packing optional
Options	Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips
Weight	Approximately 2.2 lb.

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

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

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



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

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

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

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

EXAMPLE

204 - MFC

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

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

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

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

ORDERING INFORMATION - ADDITIONAL OPTIONS			
PACKINGS *	P1 PTFE	P2 Graphite	
STEM TIPS	T1 Non-rotating (316 Stainless)	T6 Ball (carbide)	T8 Ball (Monel)
	T5 Ball (440C Stainless)	T7 Ball (ceramic)	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	HL1 1-13/16" Mini "T"	HL4 1-3/8" Phenolic	HL5 1-3/4" Phenolic

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

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

** Other o-ring materials available on request.

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

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

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

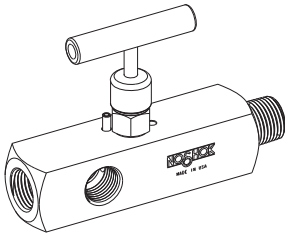
EXAMPLE with Additional Options

204 - MFC- T5 - EM1

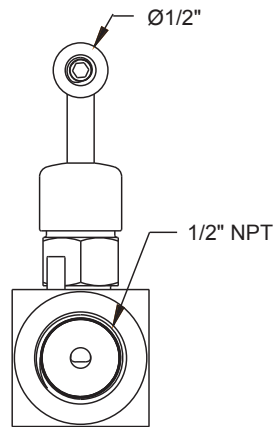
Series.....200 hard seat
 Connection size..... 1/2" NPT
 Valve type..... Male-female, Steel
 Stem tip.....Ball (440C Stainless)
 O-ring.....EPDM

Dimensions

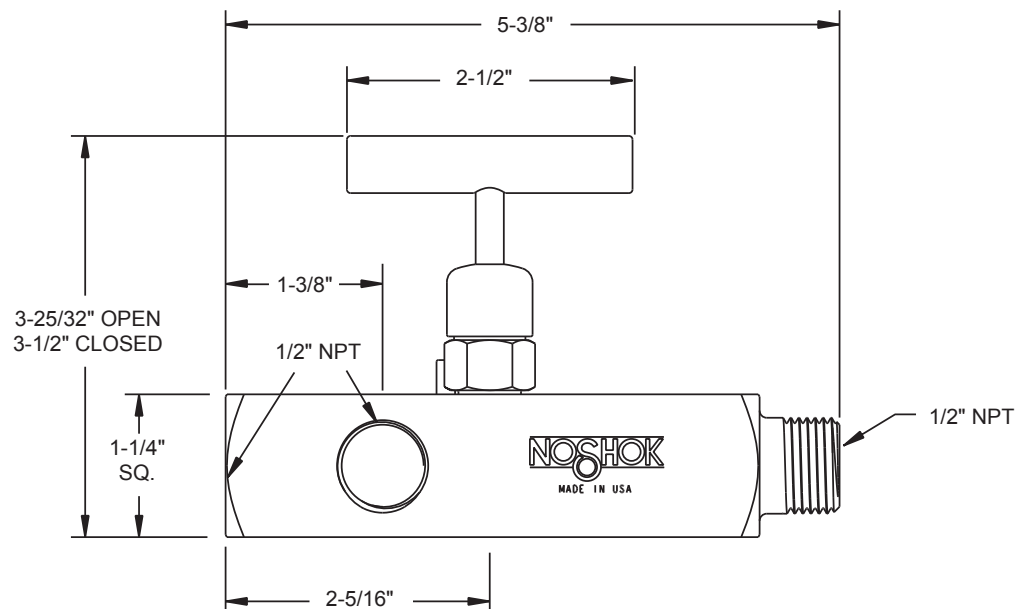
Male-Female



Front View



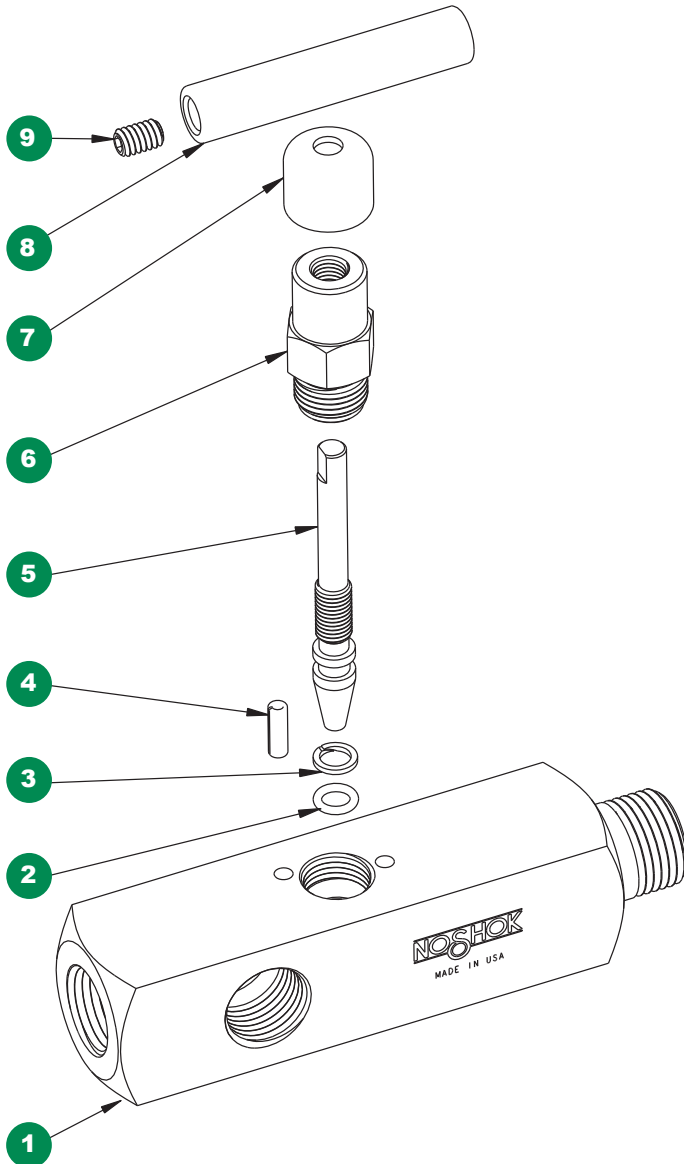
Side View



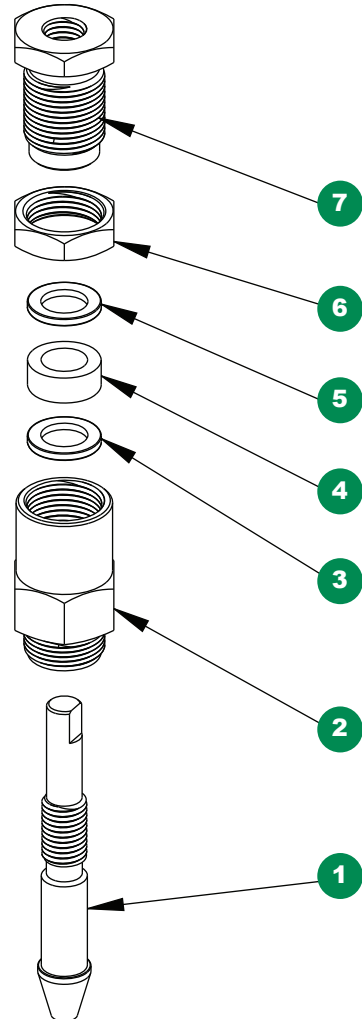
For panel mount, packing, & stem tip dimensions, see pgs. 64-67.

Multiport, Hard Seat

Option With Packing



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



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

Multiport, Soft Seat

300 SERIES



Note: Shown with optional bleed plug.

- 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 1×10^{-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)

Multiport Valve Accessories



Bleed Plug,
see pg. 65 for details.



Plug,
see pg. 65 for details.



Bleed Valve
See pg. 48 for details.

SPECIFICATIONS

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

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

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



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

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

SERIES	3	300 Series, soft seat		
CONNECTION SIZES	04	1/2" NPT	0604	3/4" NPT male - 1/2" NPT female
VALVE TYPES	MFC	Male-Female, Steel	MFS	Male-Female, Stainless Steel

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

EXAMPLE

304 - MFC

Series.....300 soft seat
 Connection size.....1/2" NPT
 Valve type..... Male-female, Steel

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

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

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

ORDERING INFORMATION - ADDITIONAL OPTIONS				
SOFT SEATS	PK1	PEEK	KF1	PCTFE
PACKING	P1	PTFE		
STEM TIP	T1	Non-rotating (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

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

* Other o-ring materials available on request.

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

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

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

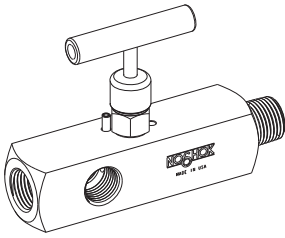
EXAMPLE with Additional Options

304 - MFC - PK1 - P1 - HL5

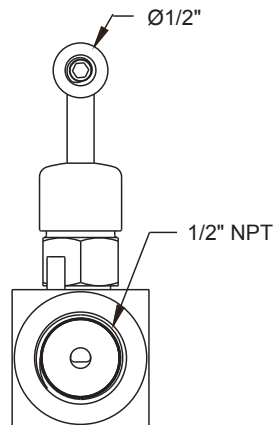
Series.....300 soft seat
 Connection size..... 1/2" NPT
 Valve type..... Male-female, Steel
 Soft seat PEEK
 Packing.....PTFE
 Handle1-3/4" Phenolic

Dimensions

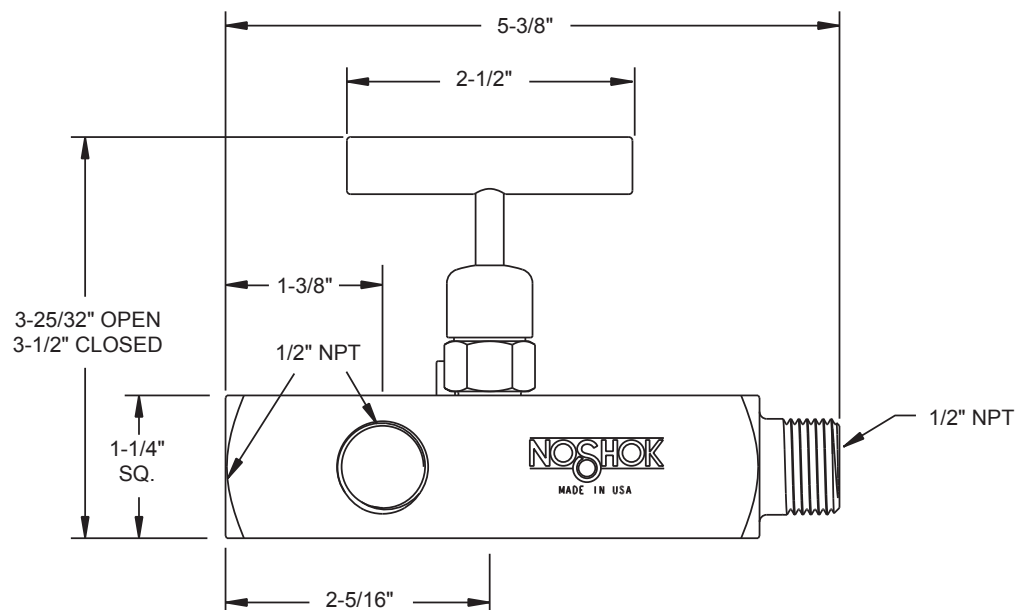
Male-Female



Front View

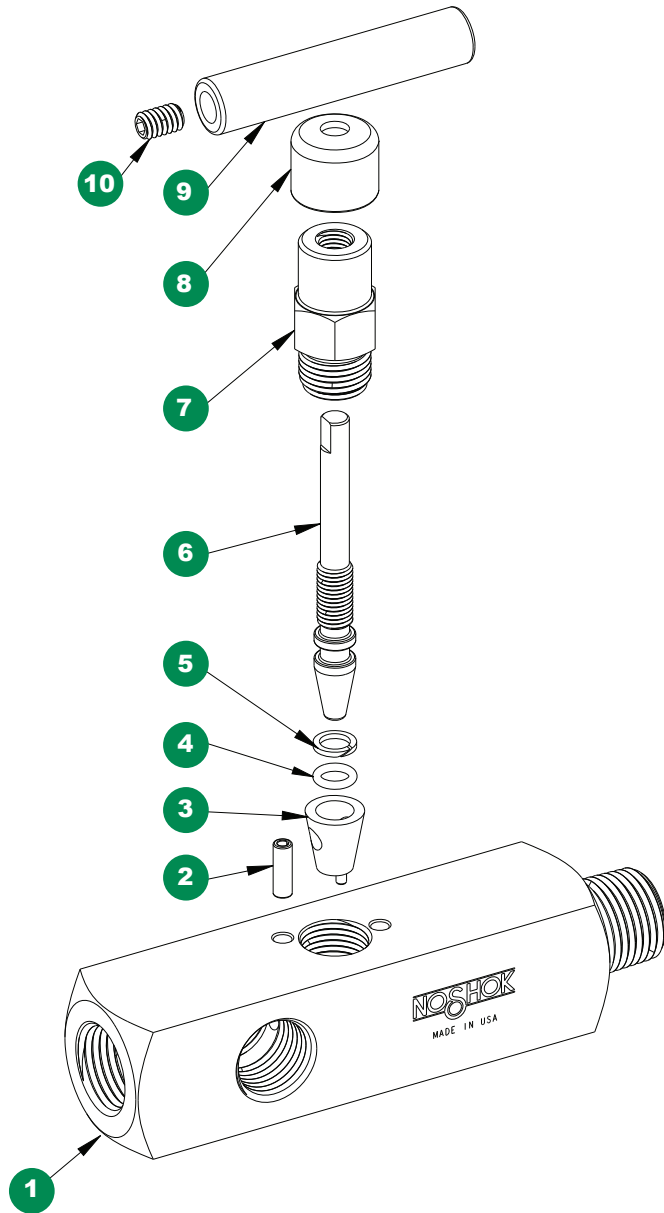


Side View



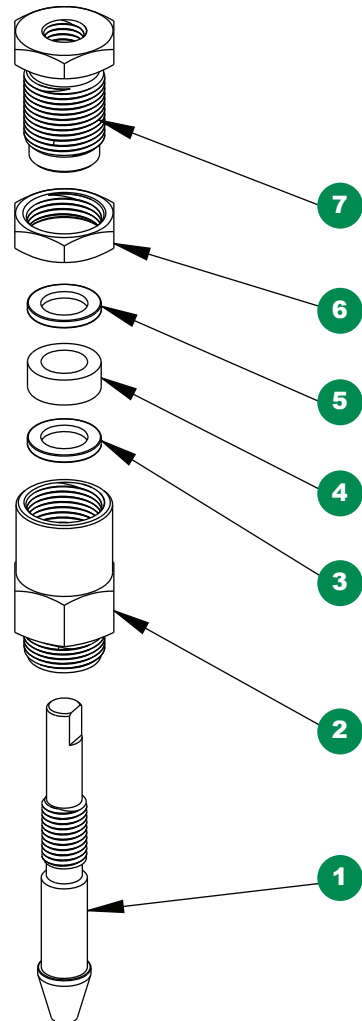
For panel mount, packing,
& stem tip dimensions,
see pgs. 64-67.

Multiport, Soft Seat



- 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

Option With Packing



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

Standard, Hard Seat

400 SERIES



- 100% helium leak tested to 1×10^{-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

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*
Connections	1/4", 3/8", 1/2", 3/4", 1", 1-1/4" & 1-1/2" NPT 7/16"-20 UNF (#4 SAE, J1926) Male-female, Female-female, in-line and angled configurations
Pressure rating**	10,000 psi @ 200 °F for 1/4" NPT to 1/2" NPT 8,000 psi @ 200 °F for 3/4" NPT to 1-1/2" NPT
Orifice sizes	1/4" - 1/2" NPT: 0.187" 3/4" - 1-1/2" NPT: 0.438"
Flow coefficient	1/4" - 1/2" NPT: C_v 0.44 3/4" - 1-1/2" NPT: C_v 2.70
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 for 1/4", 3/8" & 1/2" NPT only
Options	Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips
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.

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

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



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

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

SERIES	4 400 Series, hard seat		
CONNECTION SIZES	02	1/4" NPT	06 3/4" NPT
	03	3/8" NPT	08 1" NPT
	04	1/2" NPT	10 1-1/4" NPT
VALVE TYPES	MFC	Male-Female, Steel	MFS Male-Female, Stainless Steel
	FFC	Female-Female, Steel	FFS Female-Female, Stainless Steel
	MFAC	Male-Female Angle, Steel	MFAS Male-Female Angle, Stainless Steel
	FFAC	Female-Female Angle, Steel	FFAS Female-Female Angle, Stainless Steel

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

EXAMPLE

Series.....400 hard seat
 Connection size.....1/2" NPT
 Valve type.....Female-female, Steel

404 - FFC

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			
PACKINGS†	P1 PTFE	P2 Graphite	
STEM TIPS	T1 Non-rotating (316 Stainless)	T6 Ball (carbide)	T8 Ball (Monel)
	T5 Ball (440C Stainless)	T7 Ball (ceramic)	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	HL9 2-3/8" Phenolic**

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

† 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.

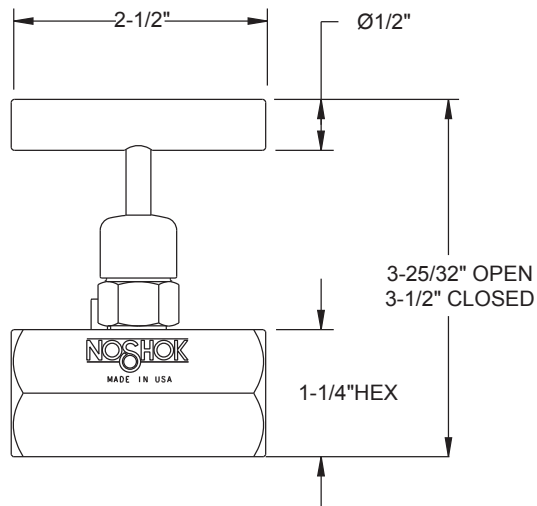
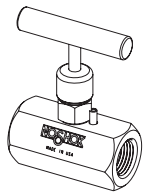
EXAMPLE with Additional Options

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

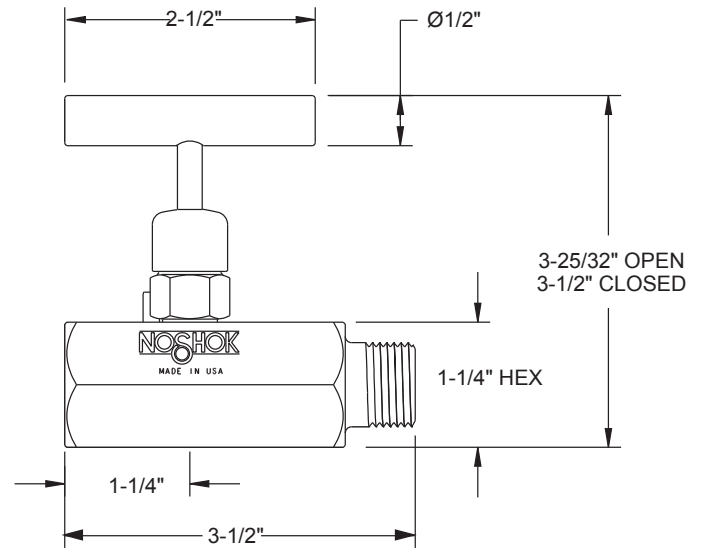
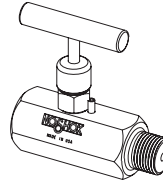
404 - FFC - P1 - T1 - PM2 - HL5

Dimensions

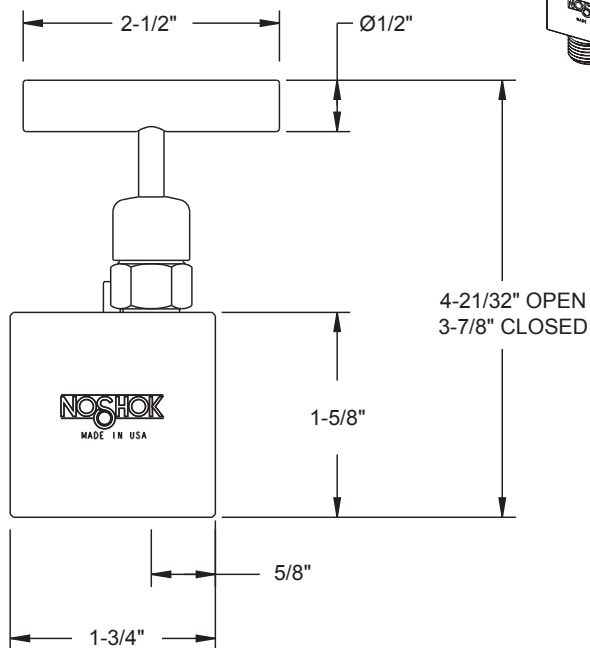
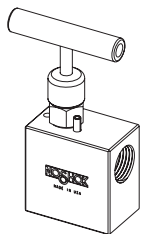
1/4" -1/2" Female-Female



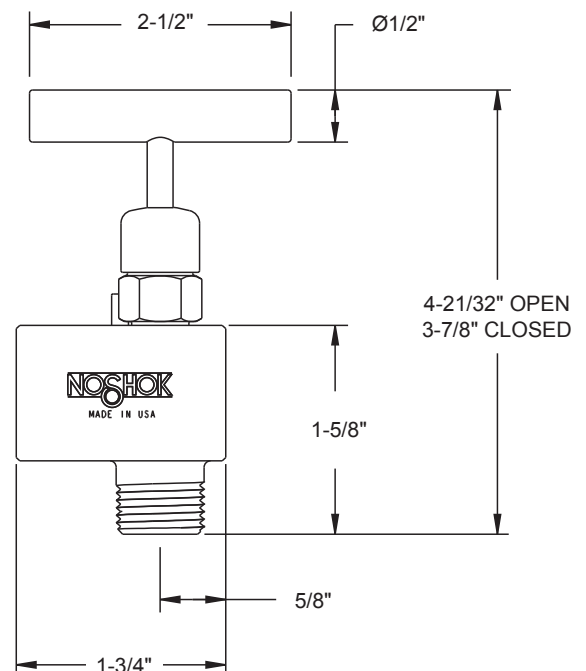
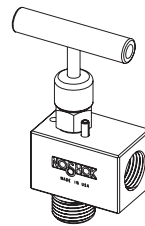
1/4" -1/2" Male-Female



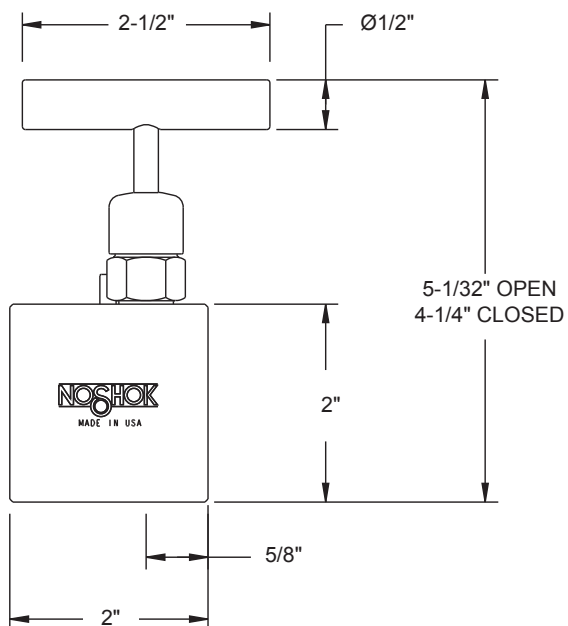
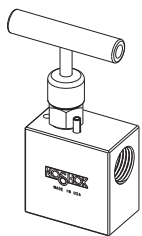
1/4" Female-Female Angle



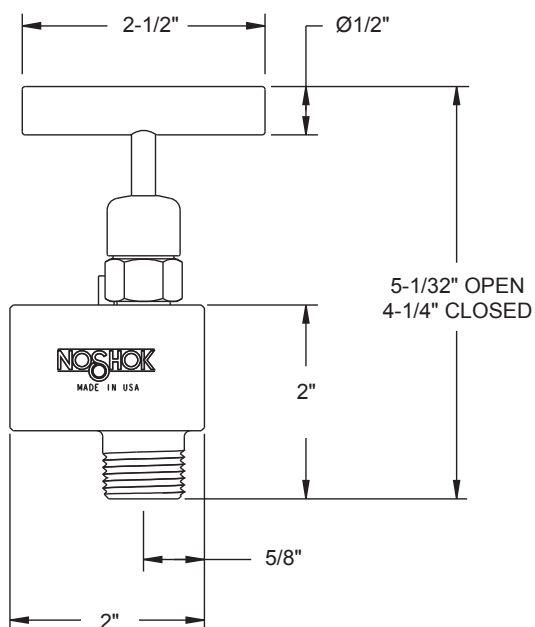
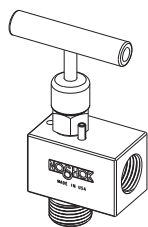
1/4" Male-Female Angle



1/2" Female-Female Angle

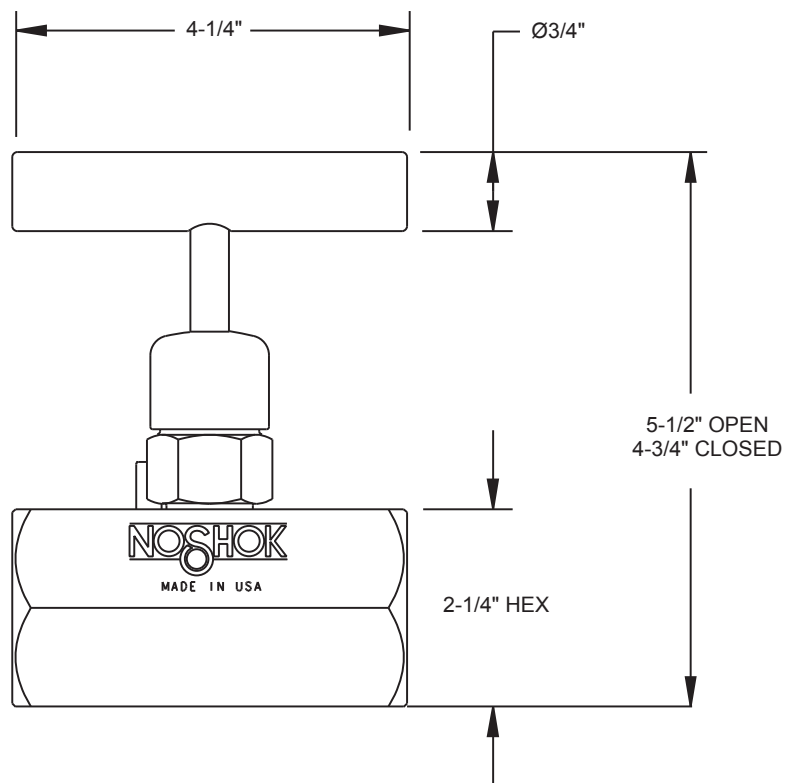
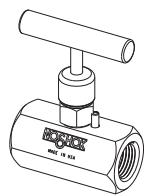


1/2" Male-Female Angle

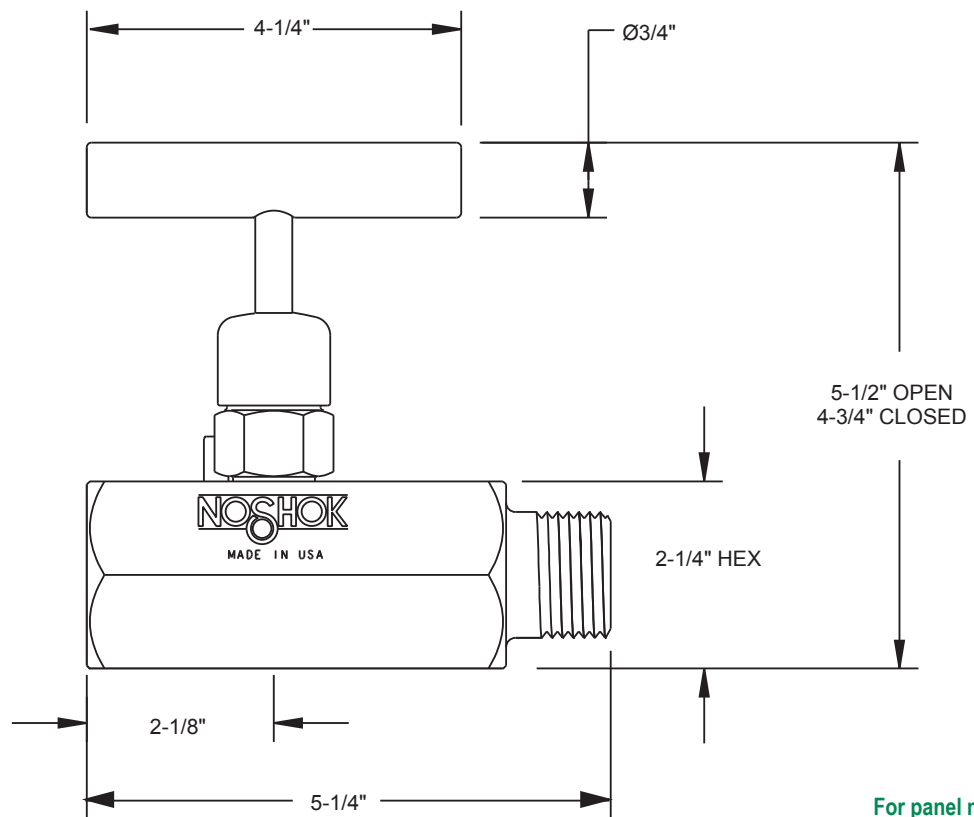
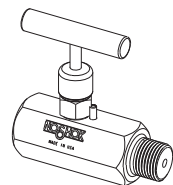


Dimensions

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

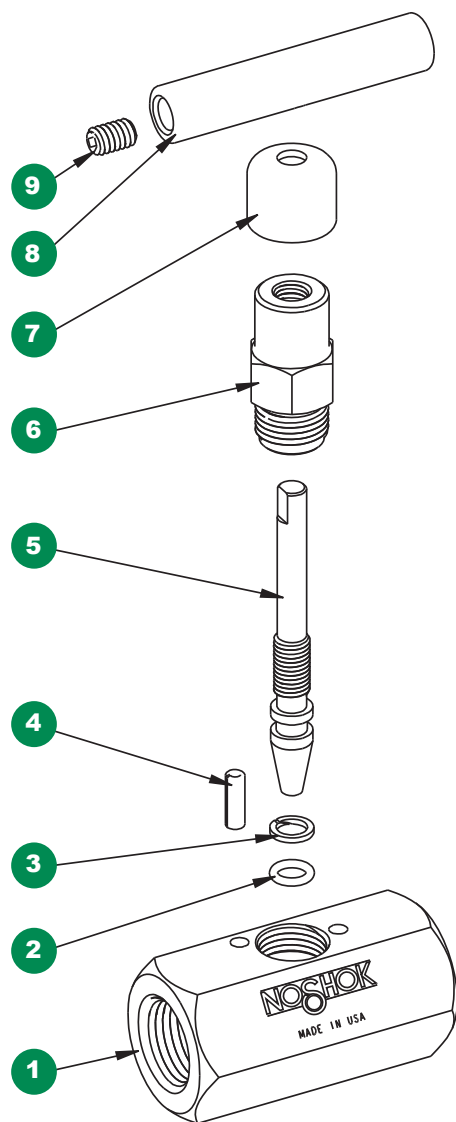


3/4" - 1-1/2" Male-Female



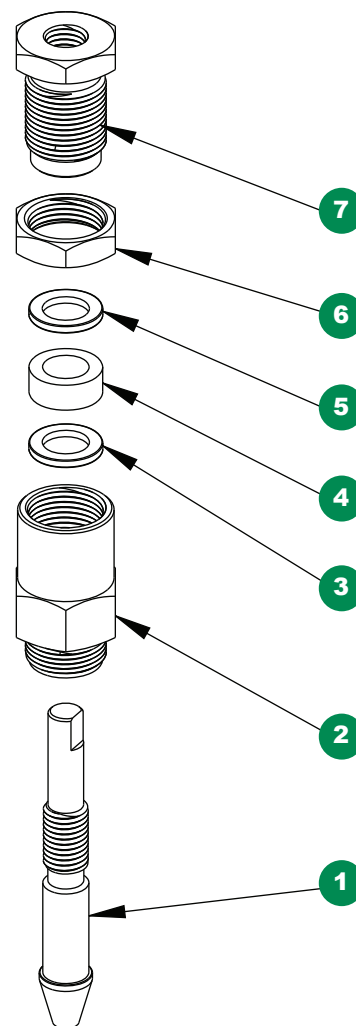
For panel mount, packing,
& stem tip dimensions,
see pgs. 64-67.

Standard, Hard Seat



- 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

Option With Packing



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

500 SERIES



- 100% helium leak tested to 1×10^{-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)

SPECIFICATIONS

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*
Connections	1/4", 3/8", 1/2", 3/4", 1", 1-1/4" & 1-1/2" NPT Male-female & Female-female configurations
Pressure rating	6,000 psi @ 200 °F
Orifice sizes	1/4" - 1/2" NPT: 0.187" 3/4" - 1-1/2" NPT: 0.438"
Flow coefficient	1/4" - 1/2" NPT: C_v 0.76 3/4" - 1-1/2" NPT: C_v 4.0
Stem seal & type	All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE packing optional for 1/4", 3/8" & 1/2" NPT only
Options	Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips
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.

SERIES	5 500 Series, soft seat			
CONNECTION SIZES	02 1/4" NPT	04 1/2" NPT	08 1" NPT	12 1-1/2" NPT
	03 3/8" NPT	06 3/4" NPT	10 1-1/4" NPT	0402 1/2" NPT male - 1/4" NPT female
VALVE TYPES	MFC Male-Female, Steel	MFS Male-Female, Stainless Steel		
	FFC Female-Female, Steel	FFS Female-Female, Stainless Steel		

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

EXAMPLE

504 - FFC

Series.....500 soft seat
 Connection size1/2" NPT
 Valve type.....Female-female, Steel

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

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

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

ORDERING INFORMATION - ADDITIONAL OPTIONS				
SOFT SEATS	PK1	PEEK	KF1	PCTFE
PACKING [†]	P1	PTFE		
STEM TIP	T1	Non-rotating (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 HL9 2-3/8" Phenolic**

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.

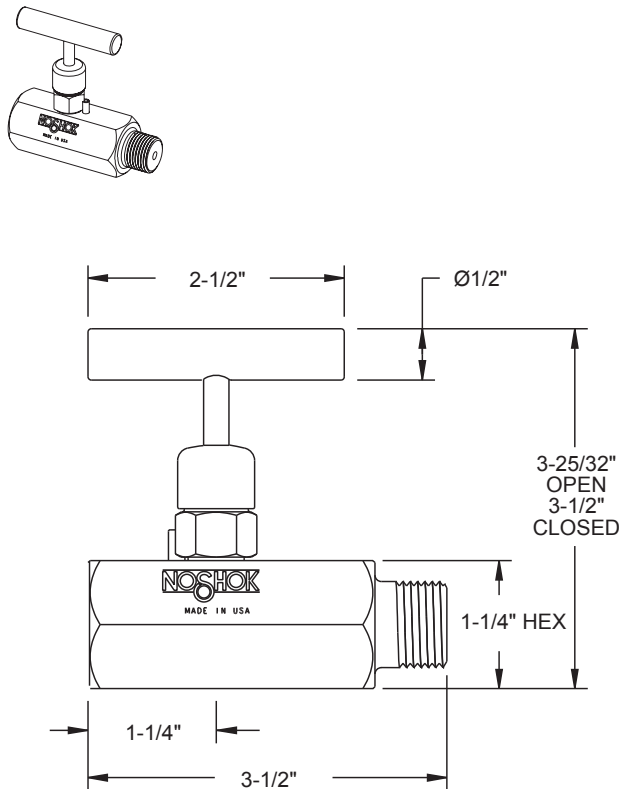
EXAMPLE with Additional Options

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

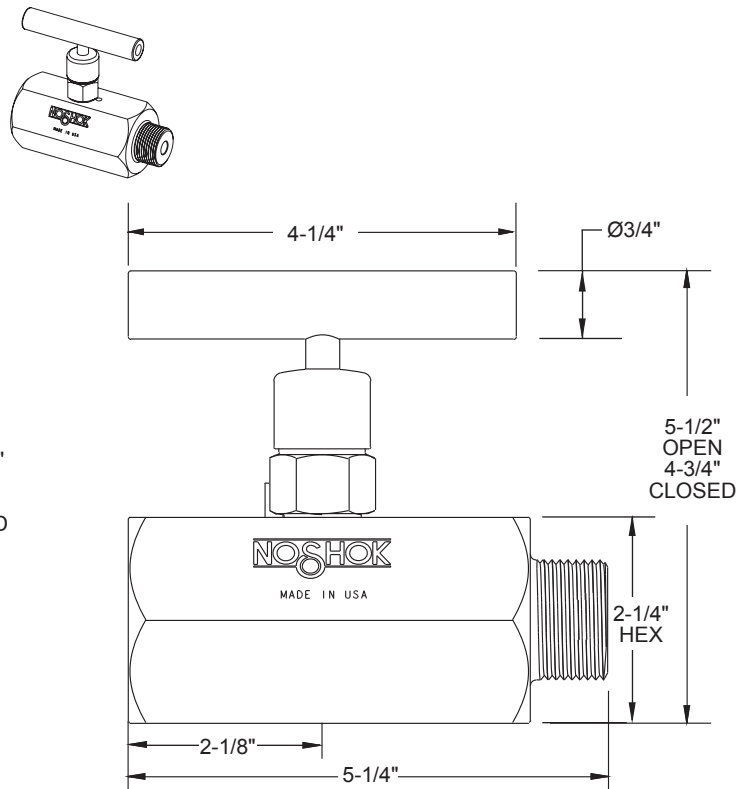
Series.....500 soft seat
 Connection size1/2" NPT
 Valve type.....Female-female, Steel
 Soft seatPEEK
 Stem tip Non-rotating
 O-ring.....FFKM (Perfluoroelastomer)
 Panel mount.....Panel mount (2 nuts)
 Handle 1-3/4" Phenolic

Dimensions

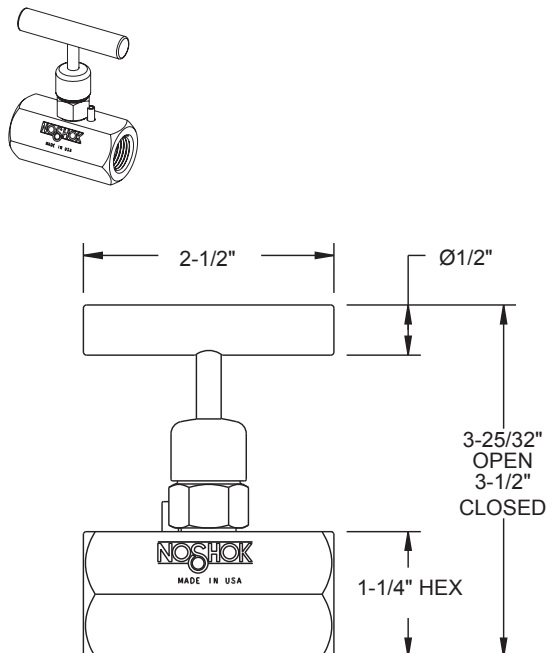
1/4" - 1/2" Male-Female



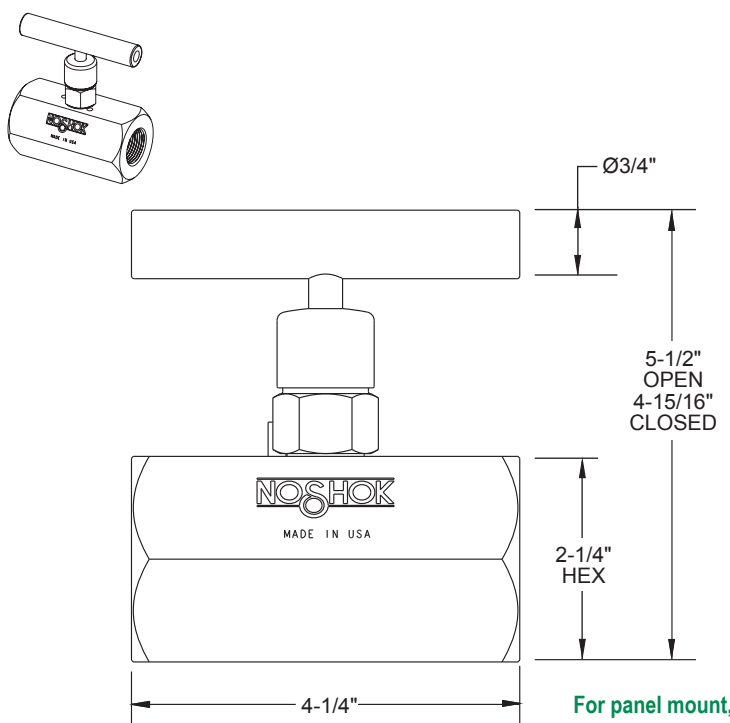
3/4" - 1-1/2" Male-Female



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

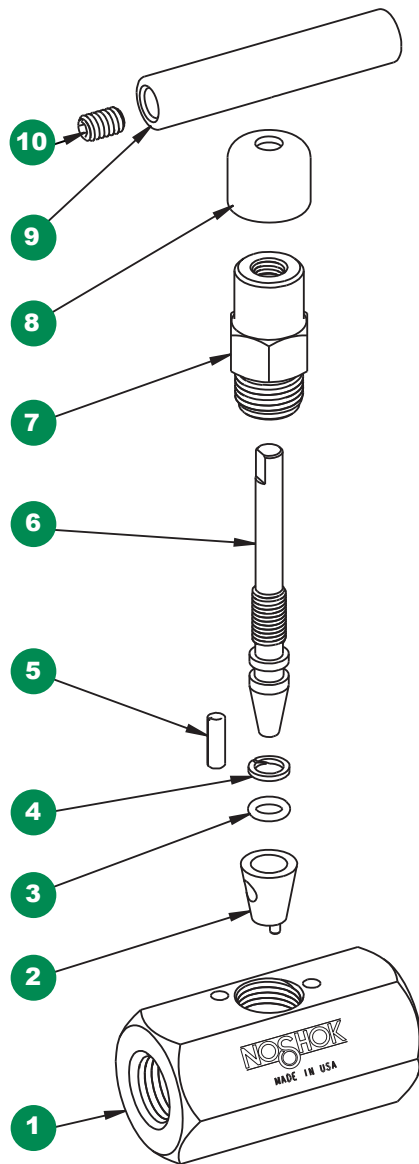


3/4" - 1-1/2" Female-Female



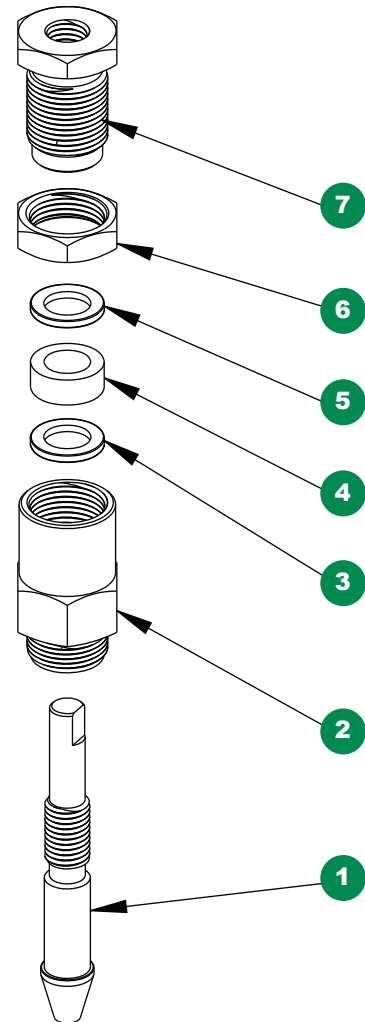
For panel mount, packing,
& stem tip dimensions,
see pgs. 64-67.

Standard, Soft Seat



- 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

Option With Packing



- 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, Hard Seat

600 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 1×10^{-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

SPECIFICATIONS

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*
Connections	1/4" & 1/2" NPT Male-female & Female-female configurations
Pressure rating**	10,000 psi @ 200 °F
Orifice size	0.187"
Flow coefficient	C_v 0.44
Stem seal & type	All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Graphite packing optional
Options	Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips
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.

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

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



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

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

SERIES	6 600 Series, hard seat	
CONNECTION SIZES	02 1/4" NPT	04 1/2" NPT
VALVE TYPES	MFC Male-Female, Steel	MFS Male-Female, Stainless Steel
	FFC Female-Female, Steel	FFS Female-Female, Stainless Steel

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

EXAMPLE

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

602 - FFC

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

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

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

ORDERING INFORMATION - ADDITIONAL OPTIONS			
PACKINGS†	P1 PTFE	P2 Graphite	
STEM TIPS	T1 Non-rotating (316 Stainless)	T6 Ball (carbide)	T8 Ball (Monel)
	T5 Ball (440C Stainless)	T7 Ball (ceramic)	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	

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

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

* Other o-ring materials available on request.

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

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

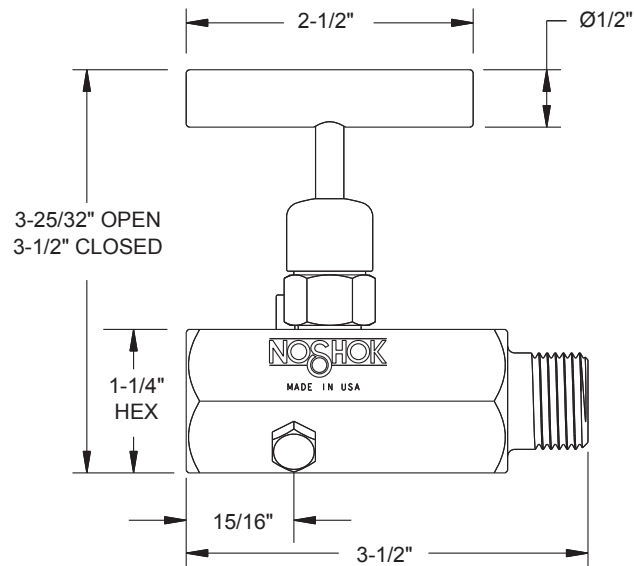
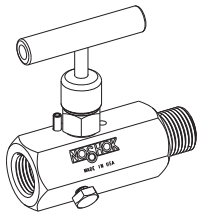
EXAMPLE with Additional Options

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

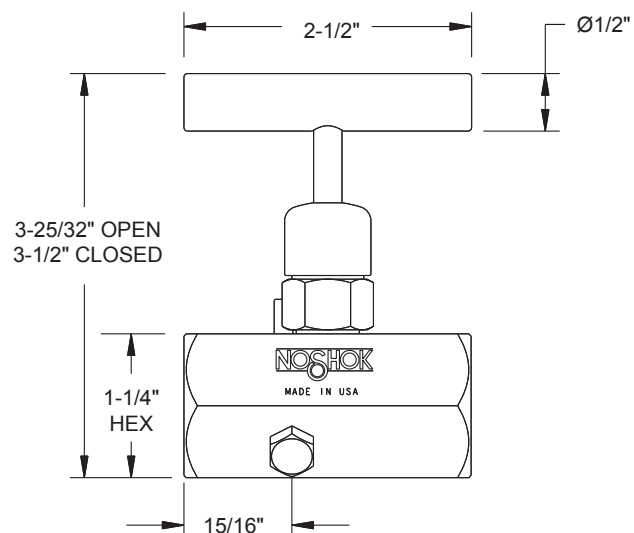
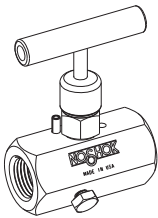
6 02 - FFC - P1 - T1 - PM2 - HL5

Dimensions

Male-Female

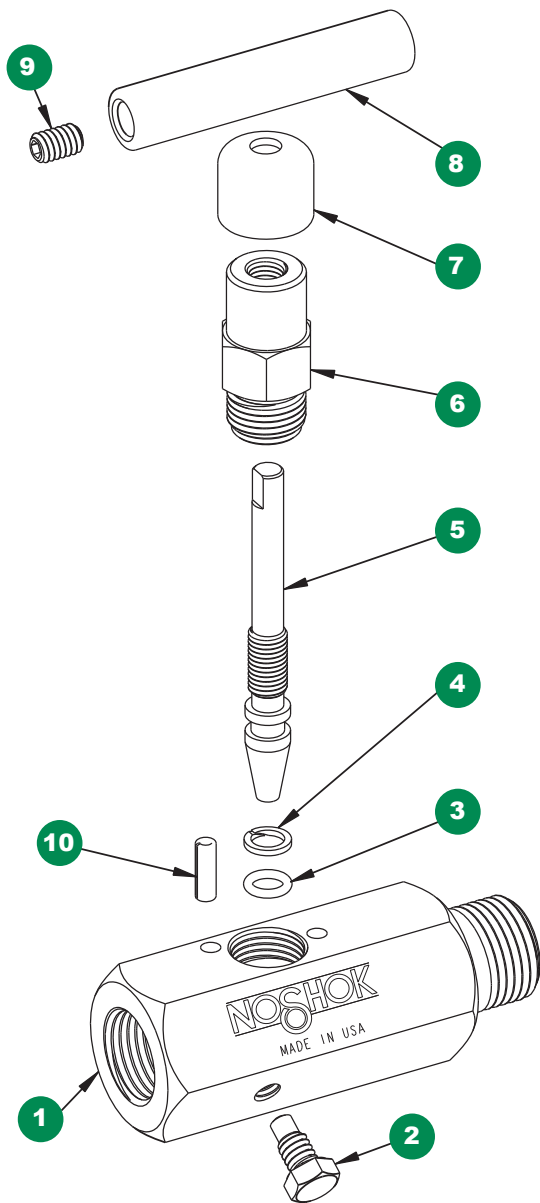


Female-Female



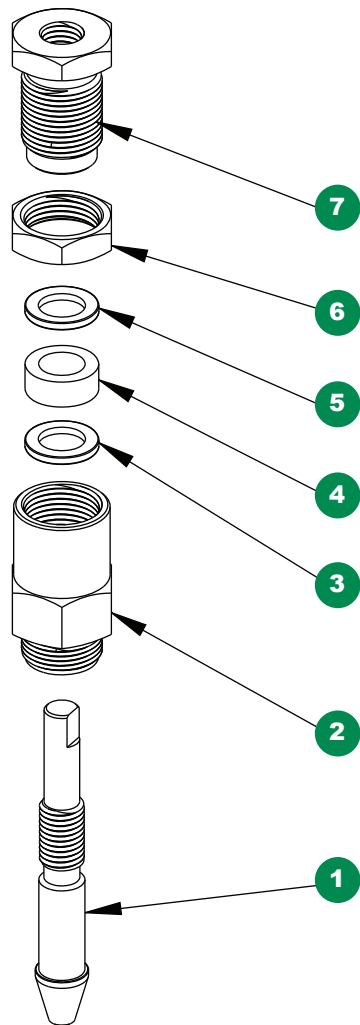
For panel mount, packing,
& stem tip dimensions,
see pgs. 64-67.

Block & Bleed, Hard Seat



- 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

Option With Packing



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

Block & Bleed, Soft Seat

700 SERIES



- Block & bleed design allows pressure to be bled off without disturbing the permanent piping installation, allowing quick and easy removal or replacement of instruments
- 100% helium leak tested to 1×10^{-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

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*
Connections	1/4" & 1/2" NPT Male-female & Female-female configurations
Pressure rating	6,000 psi @ 200 °F
Orifice size	0.187"
Flow coefficient	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 packing optional
Options	Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips
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.

SERIES	7 700 Series, soft seat	
CONNECTION SIZES	02 1/4" NPT	04 1/2" NPT
VALVE TYPES	MFC Male-Female, Steel	MFS Male-Female, Stainless Steel
	FFC Female-Female, Steel	FFS Female-Female, Stainless Steel

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

702 - FFC

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

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

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

ORDERING INFORMATION - ADDITIONAL OPTIONS			
SOFT SEATS	PK1 PEEK	KF1 PCTFE	
PACKING[†]	P1 PTFE		
STEM TIP	T1 Non-rotating (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	

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

* Other o-ring materials available on request.

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

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

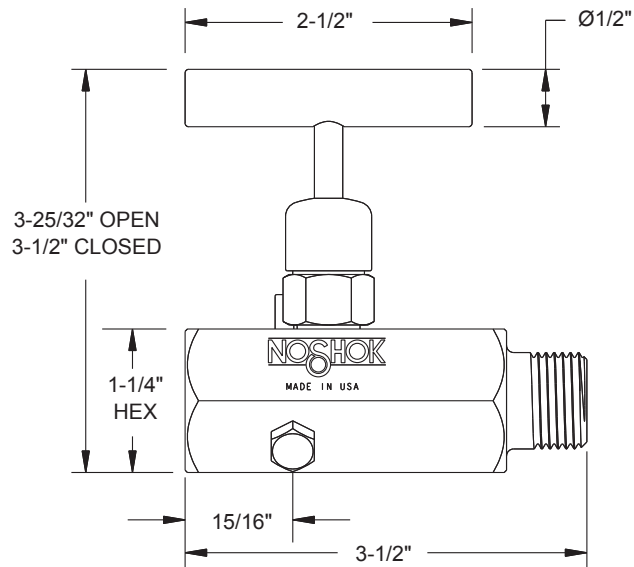
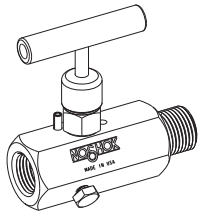
EXAMPLE with Additional Options

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

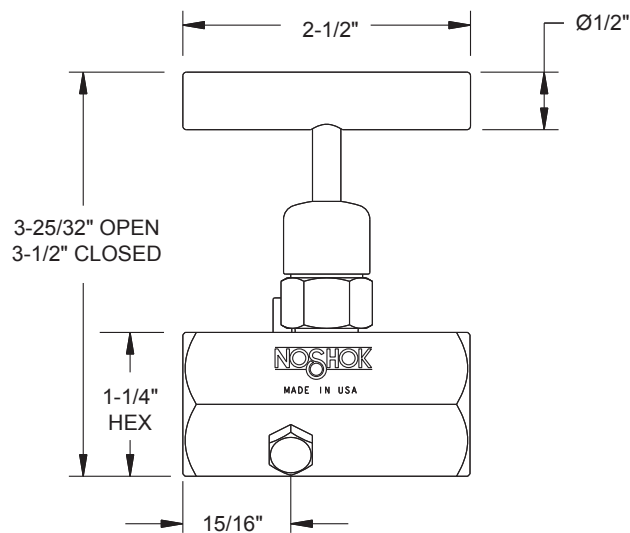
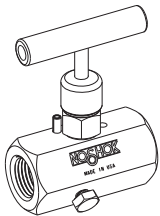
7 02 - FFC - PK1 - T1 - EM1 - PM2 - HL5

Dimensions

Male-Female

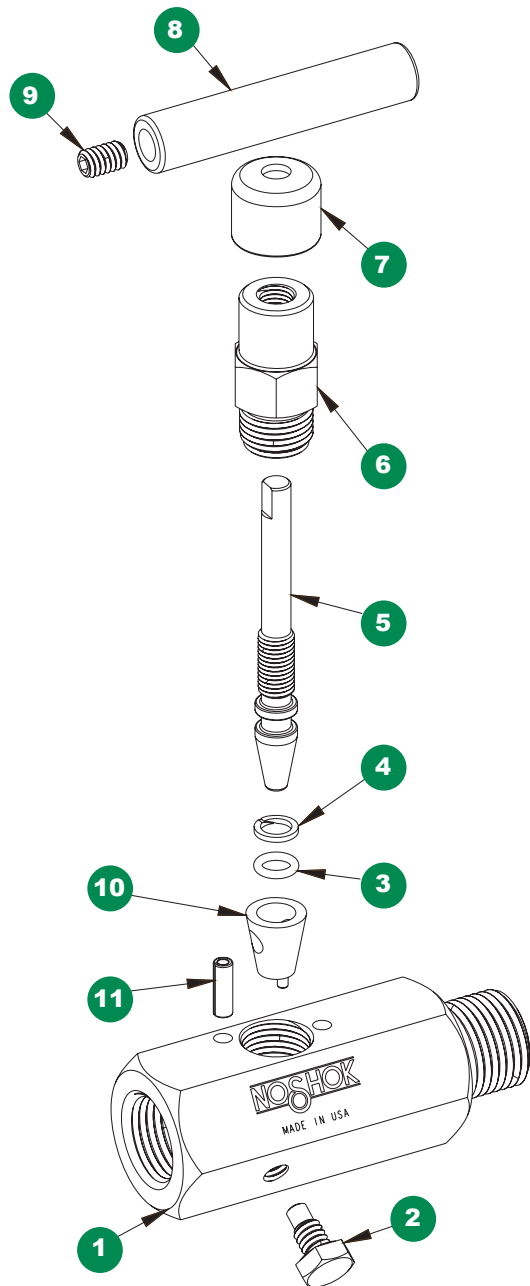


Female-Female



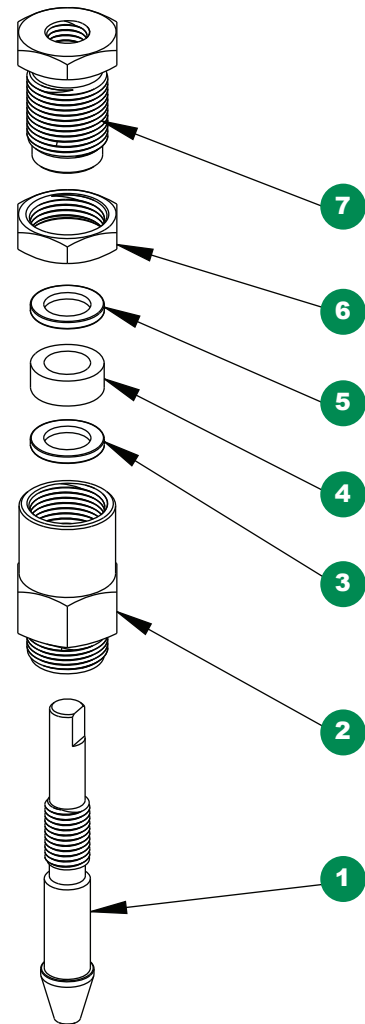
For panel mount, packing,
& stem tip dimensions,
see pgs. 64-67.

Block & Bleed, Soft Seat



- 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

Option With Packing



- 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 1×10^{-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

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*, 360 Brass
Connections	1/4" & 1/2" NPT
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 Brass & Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



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

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

ORDERING INFORMATION			
SERIES	8 800/850 Series, hard seat/soft tip		
CONNECTION SIZES	02	Hard seat 1/4" NPT	52 Acetal soft tip 1/4" NPT
	04	Hard seat 1/2" NPT	54 Acetal soft tip 1/2" NPT
VALVE TYPES	MC	Male, Steel	MS Male, Stainless Steel MB Male, Brass

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

EXAMPLE

8 02 - MC

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

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

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

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

ORDERING INFORMATION - ADDITIONAL OPTIONS			
PACKINGS†	P1 PTFE	P2 Graphite	
STEM TIPS	T1 Non-rotating (316 Stainless)	T5 Ball (440C Stainless)**	T8 Ball (Monel)**
	T3 PCTFE***	T6 Ball (carbide)**	
	T4 PEEK***	T7 Ball (ceramic)**	
O-RINGS*	EM1 EPDM	KZ1 FFKM (Perfluoroelastomer)	NB1 NBR
HANDLES	HL2 2-1/2" "T"***	HL4 1-3/8" Phenolic**	
	HL3 1" Round knurled	HL5 1-3/4" Phenolic**	

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

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

* Other o-ring materials available on request.

** For 800 Series only.

*** For 850 Series only.

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

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

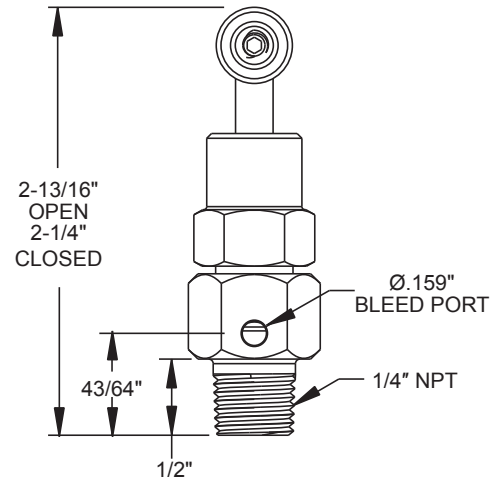
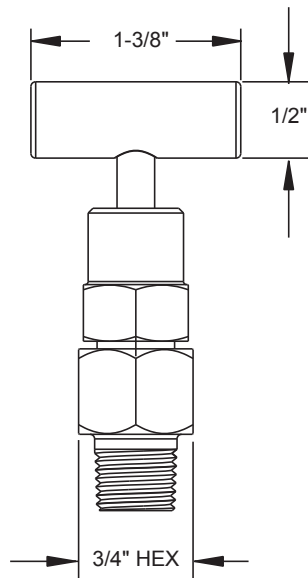
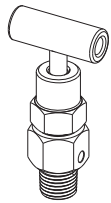
EXAMPLE with Additional Options

8 02 - MC - P1 - T1 - HL5

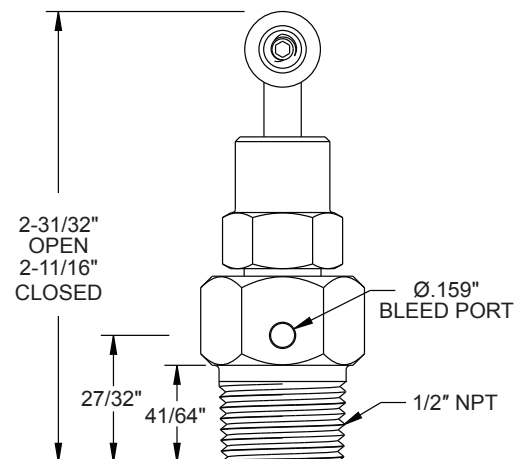
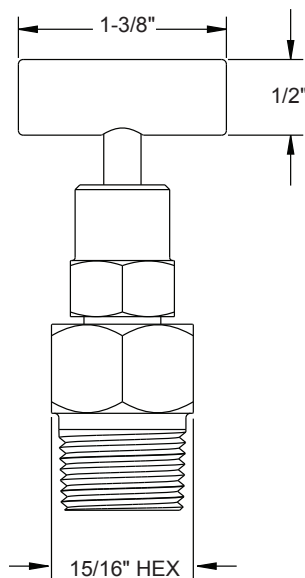
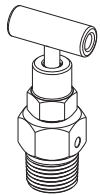
Series.....800/850 hard seat/soft tip
 Connection size.....Hard seat 1/4" NPT
 Valve type.....Male, Steel
 Packing.....PTFE
 Stem tip.....Non-rotating
 Handle.....1-3/4" Phenolic

Dimensions

1/4" Bleed Valve

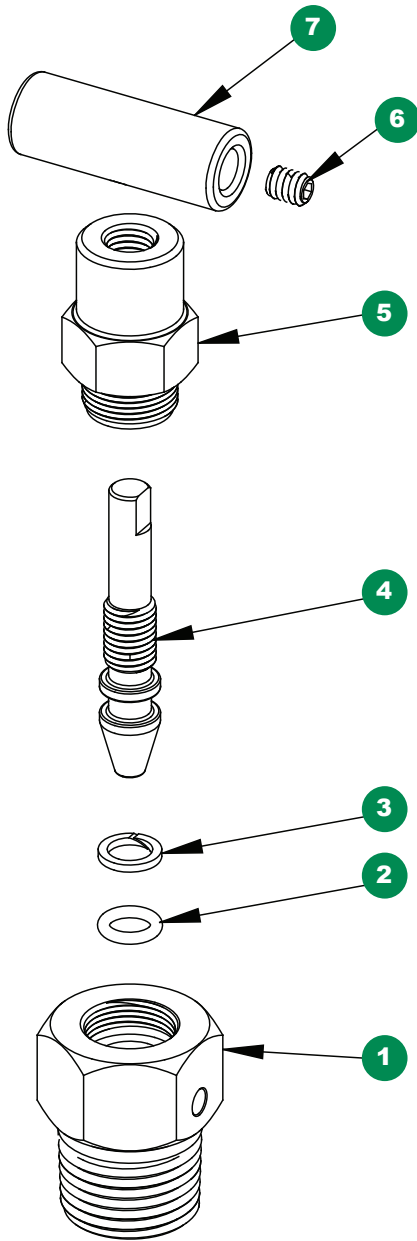


1/2" Bleed Valve



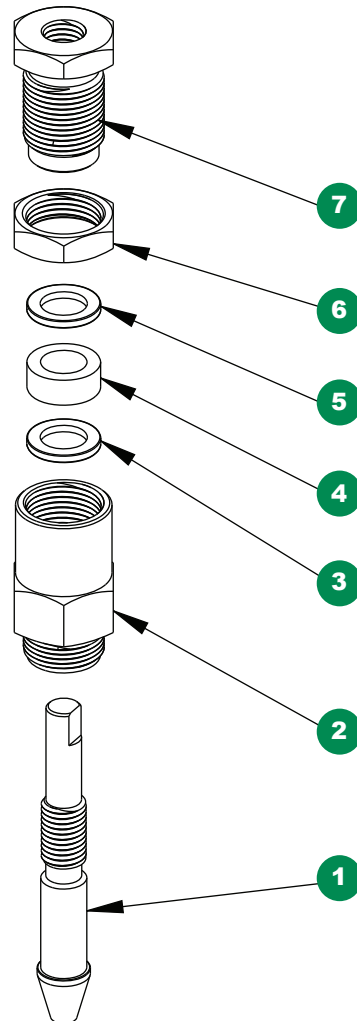
For panel mount, packing,
& stem tip dimensions,
see pgs. 64-67.

Bleed, Hard Seat



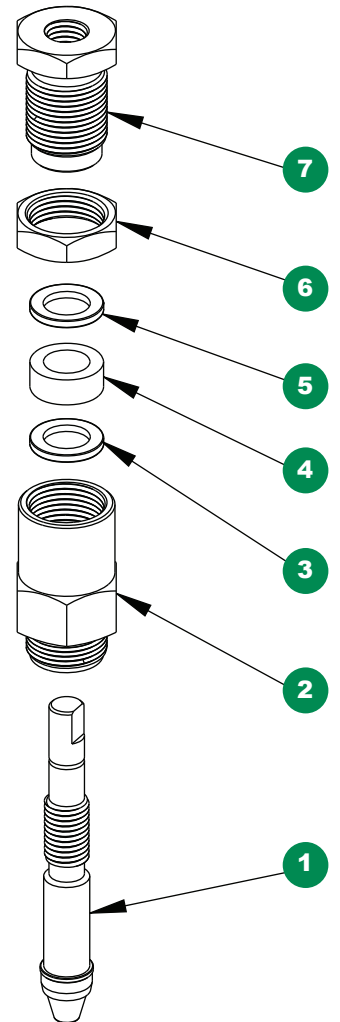
- 1 Valve body
- 2 FKM o-ring
- 3 PTFE back-up ring
- 4 Mini valve stem
- 5 Mini valve bonnet
- 6 Set screw
- 7 Mini "T" handle

Option With Packing, Hard Seat



- 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

Option With Packing, Soft Tip



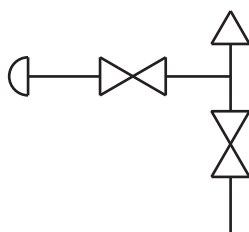
- 1 Soft tip packing stem
- 2 Mini valve packing bonnet
- 3 Packing washer
- 4 Packing
- 5 Packing washer
- 6 Jam nut
- 7 Packing adjustment screw

Block & Bleed, Hard Seat

2070 SERIES



Flow Schematic



- 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 1×10^{-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

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

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

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

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



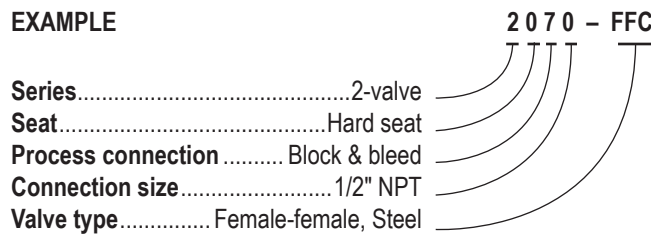
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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

ORDERING INFORMATION			
SERIES	2	2-valve	
SEAT	0	Hard seat	
PROCESS TYPE	7	Block & bleed	
CONNECTION SIZES	0	1/2" NPT	2 1/4" NPT
VALVE TYPES	MFC	Male-Female, Steel	FMC Female-Male, Steel
	MFCR	Male-Female, Steel, Right Vent	EFMC Extended Female-Male, Steel
	EMFC	Extended Male-Female, Steel	FMS Female-Male, Stainless Steel
	MFS	Male-Female, Stainless Steel	EFMS Extended Female-Male, Stainless Steel
	MFSR	Male-Female, Stainless Steel, Right Vent	FFC Female-Female, Steel
	EMFS	Extended Male-Female, Stainless Steel	FFCR Female-Female, Steel, Right Vent
			FFC Female-Female, Steel
			FFFS Female-Female, Stainless Steel
			FFSR Female-Female, Stainless Steel, Right Vent
			EFFS Extended Female-Female, Stainless Steel

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

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: 2070-FFC-HL5)

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

ORDERING INFORMATION - ADDITIONAL OPTIONS			
PACKINGS [†]	P1 PTFE	P2 Graphite	
STEM TIPS	T1 Non-rotating (316 Stainless)	T6 Ball (carbide)	T8 Ball (Monel)
	T5 Ball (440C Stainless)	T7 Ball (ceramic)	T9 Non-rotating regulating (316 Stainless)
O-RINGS*	EM1 EPDM	KZ1 FFKM (Perfluoroelastomer)	NB1 NBR
HANDLES	HL1 1-13/16" Mini "T"	HL3 1" Round knurled	HL5 1-3/4" Phenolic
	HL2 2-1/2" "T"	HL4 1-3/8" Phenolic	

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

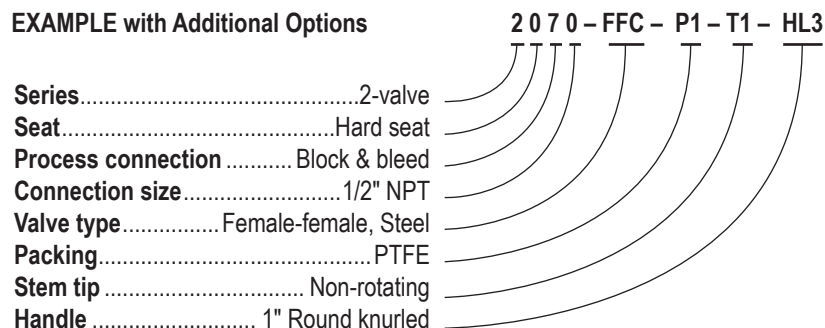
[†] If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

* Other o-ring materials available on request.

Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are block "T" handles (HL2) and bleed mini "T" handles (HL1).

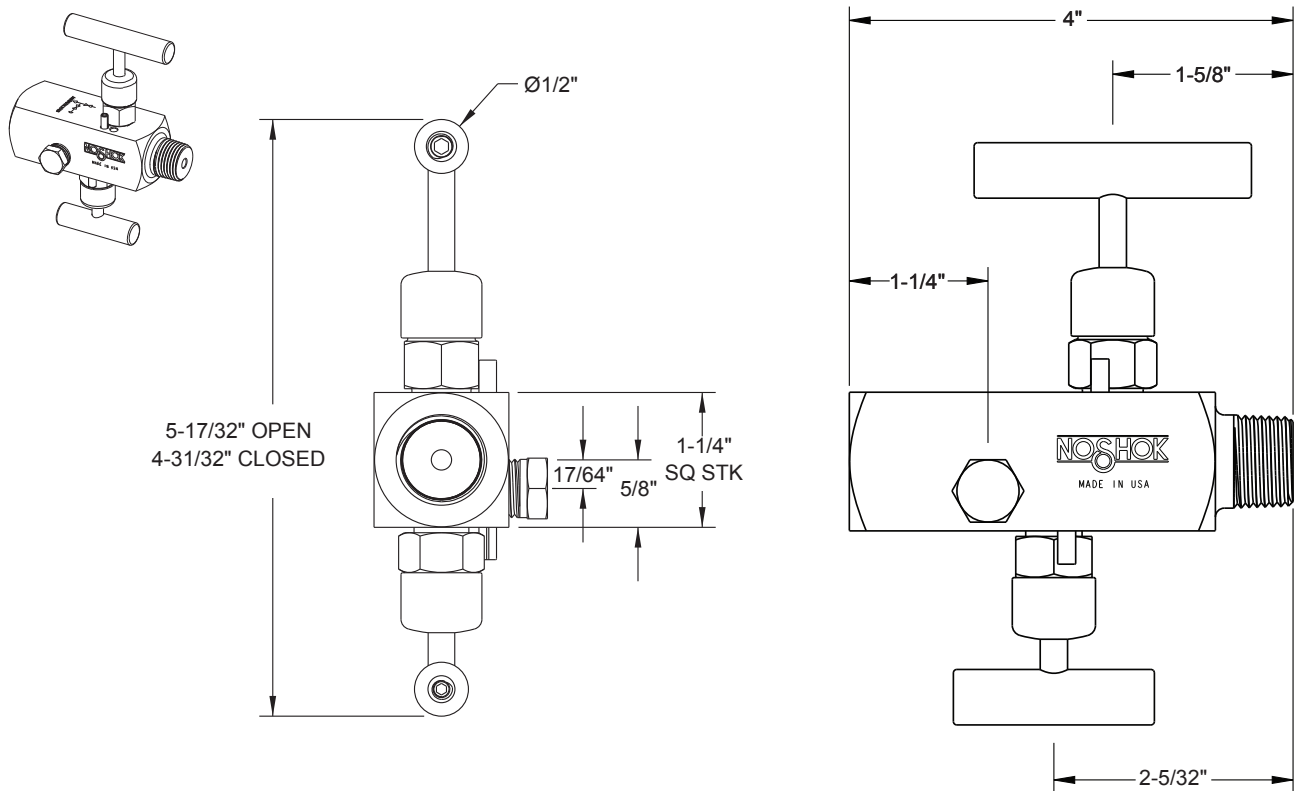
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 2070-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

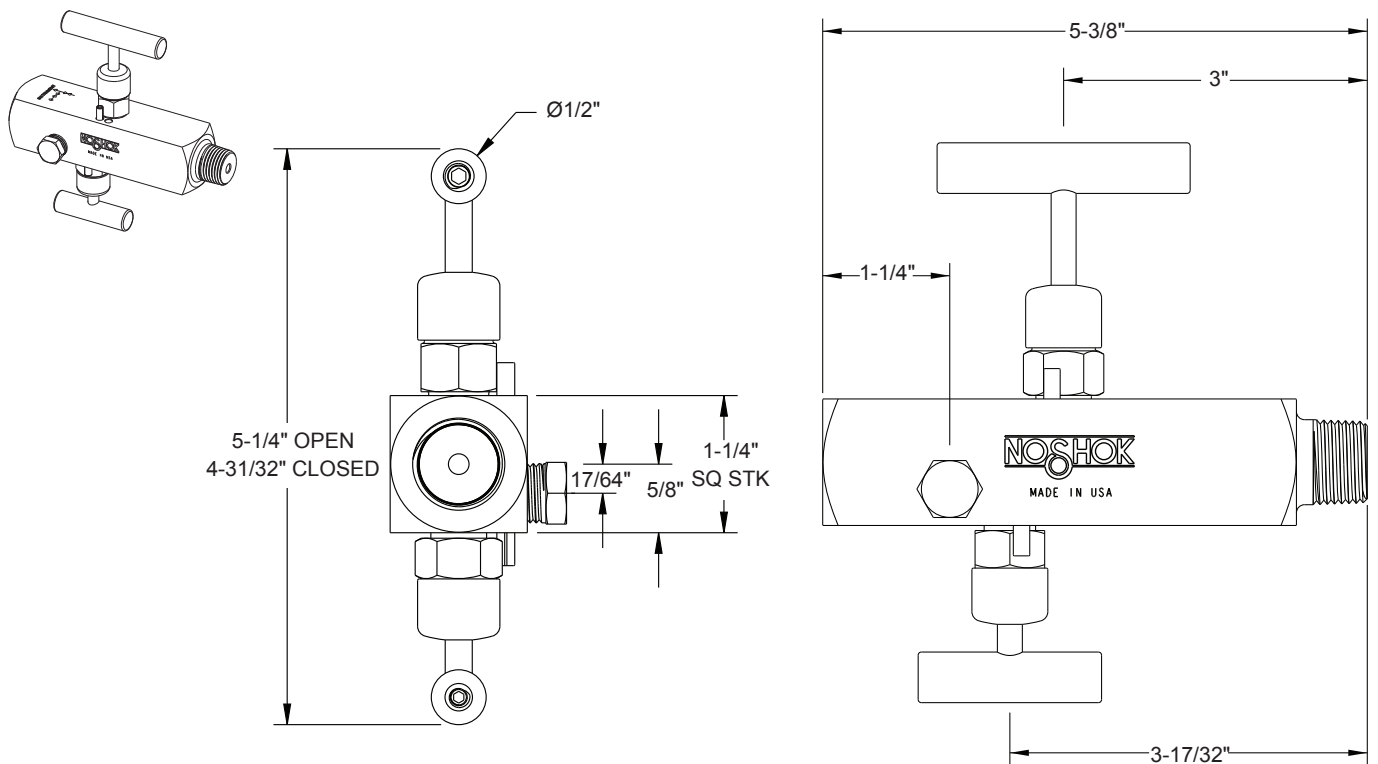


Dimensions

Male-Female



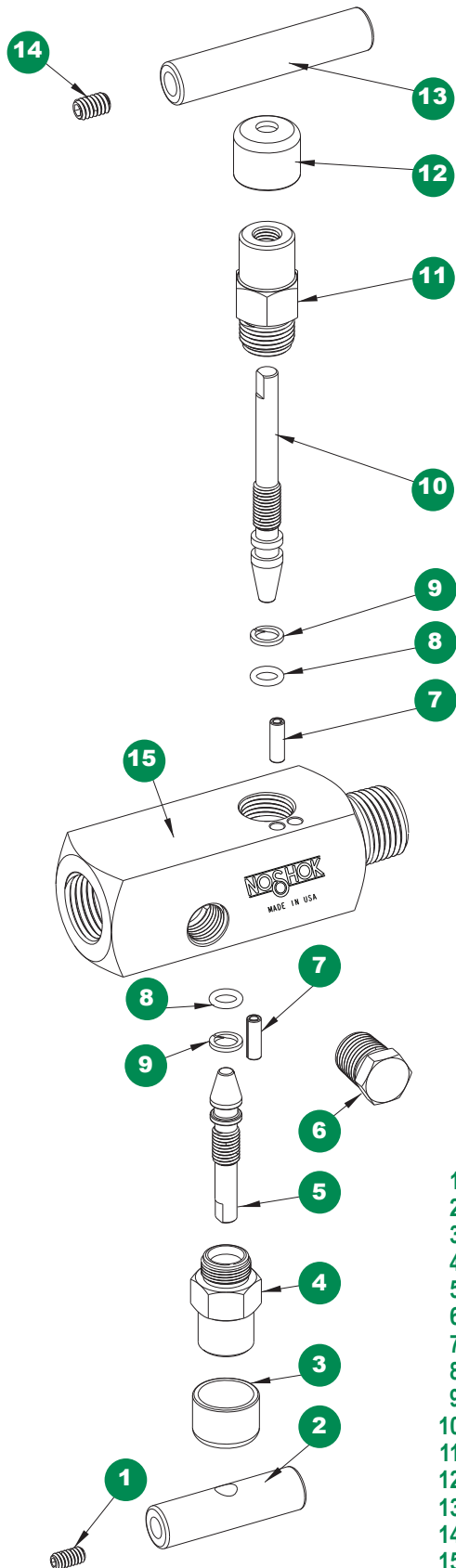
Extended Male-Female



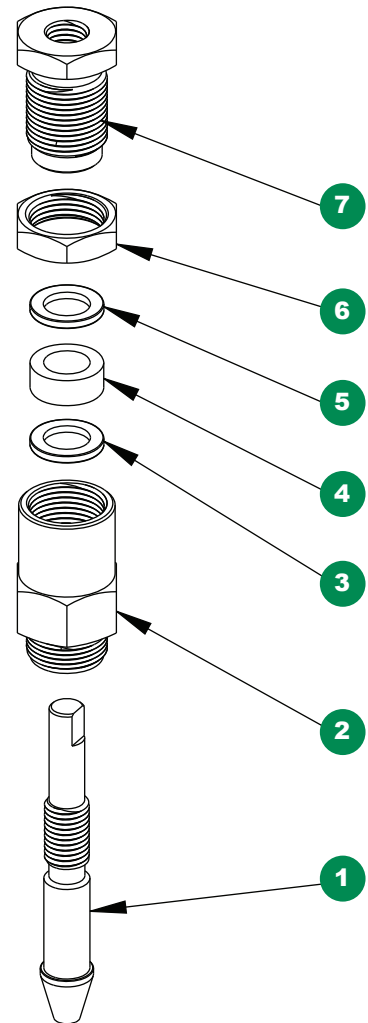
For panel mount, packing, & stem tip dimensions, see pgs. 64-67.

Block & Bleed, Hard Seat

Option With Packing



- 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

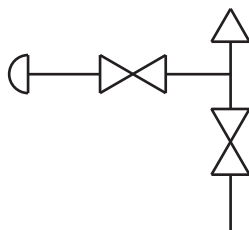


- 1 Mini valve packing stem and valve packing stem
- 2 Mini valve packing bonnet and valve packing bonnet
- 3 Packing washer
- 4 Packing
- 5 Packing washer
- 6 Jam nut
- 7 Packing adjustment screw

2170 SERIES



Flow Schematic



- 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 1×10^{-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

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*
Connection	1/2" & 1/4" NPT Male-female & Female-female configurations available, right venting optional
Pressure rating	6,000 psi @ 200 °F
Orifice size	0.187"
Flow coefficient	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 packing optional
Length	4" standard and 5-3/8" extended length available
Options	Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips
Weight	Approximately 2.0 lb., extended model 2.7 lb.

* 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.

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	MFC	Male-Female, Steel	FMC Female-Male, Steel
	MFCR	Male-Female, Steel, Right Vent	EFMC Extended Female-Male, Steel
	EMFC	Extended Male-Female, Steel	FMS Female-Male, Stainless Steel
	MFS	Male-Female, Stainless Steel	EFMS Extended Female-Male, Stainless Steel
	MFSR	Male-Female, Stainless Steel, Right Vent	FFC Female-Female, Steel
	EMFS	Extended Male-Female, Stainless Steel	FFCR Female-Female, Steel, Right Vent
			EFFC Extended Female-Female, Steel
			FFS Female-Female, Stainless Steel
			FFSR Female-Female, Stainless Steel, Right Vent
			EFFS Extended Female-Female, Stainless Steel

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

EXAMPLE

2 1 7 0 - 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	HL5 1-3/4" Phenolic
	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.

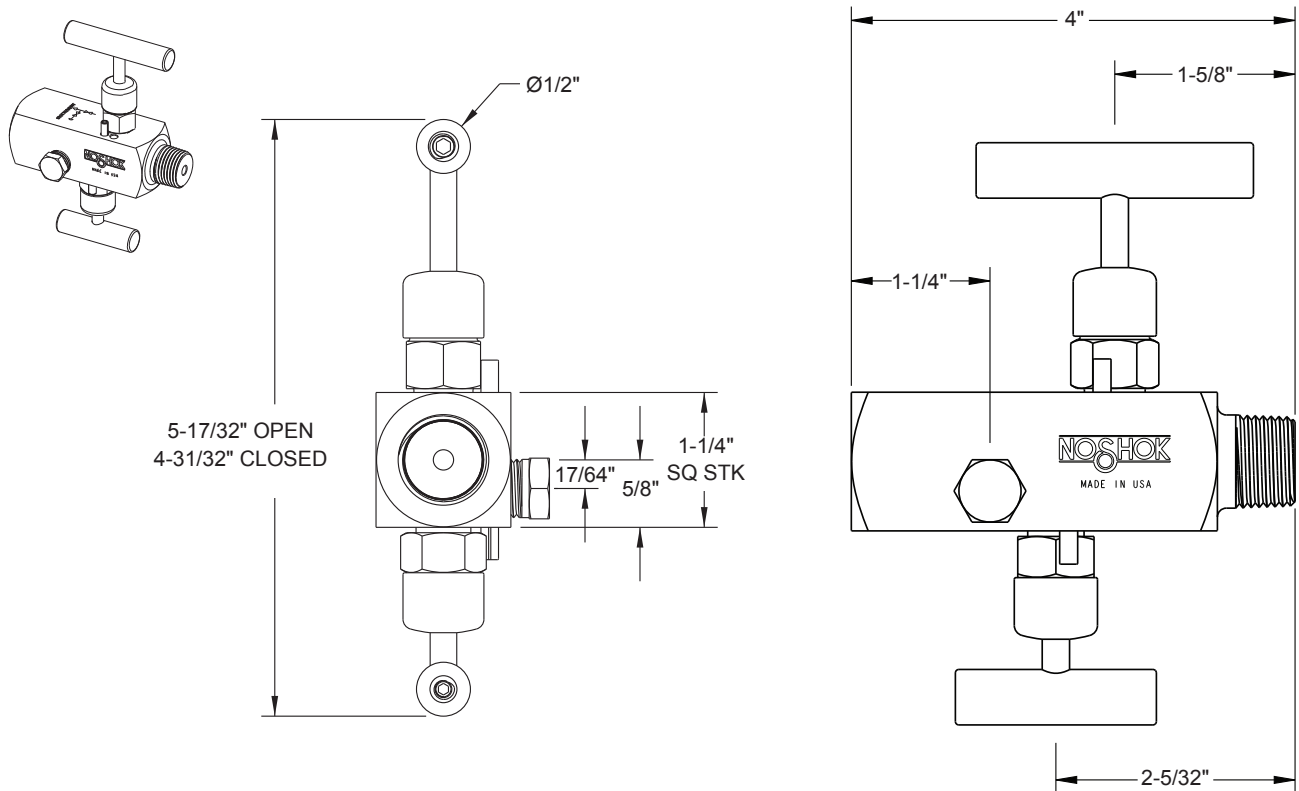
EXAMPLE with Additional Options

2 1 7 0 - FFC - PK1 - P1 - T1

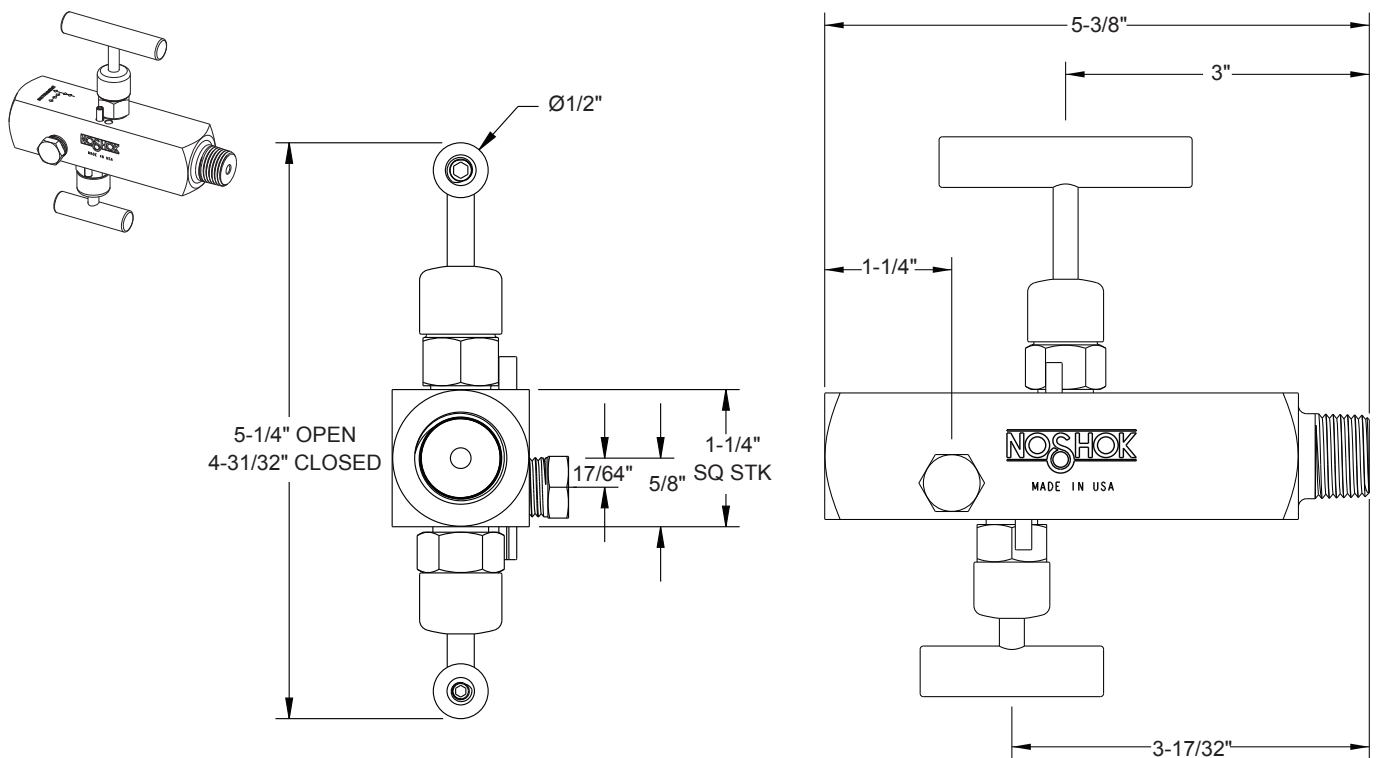
Series..... 2-valve
 Seat..... Soft seat
 Process connection Block & bleed
 Connection size..... 1/2" NPT
 Valve type..... Female-female, Steel
 Soft seat PEEK
 Packing PTFE
 Stem tip Non-rotating

Dimensions

Male-Female

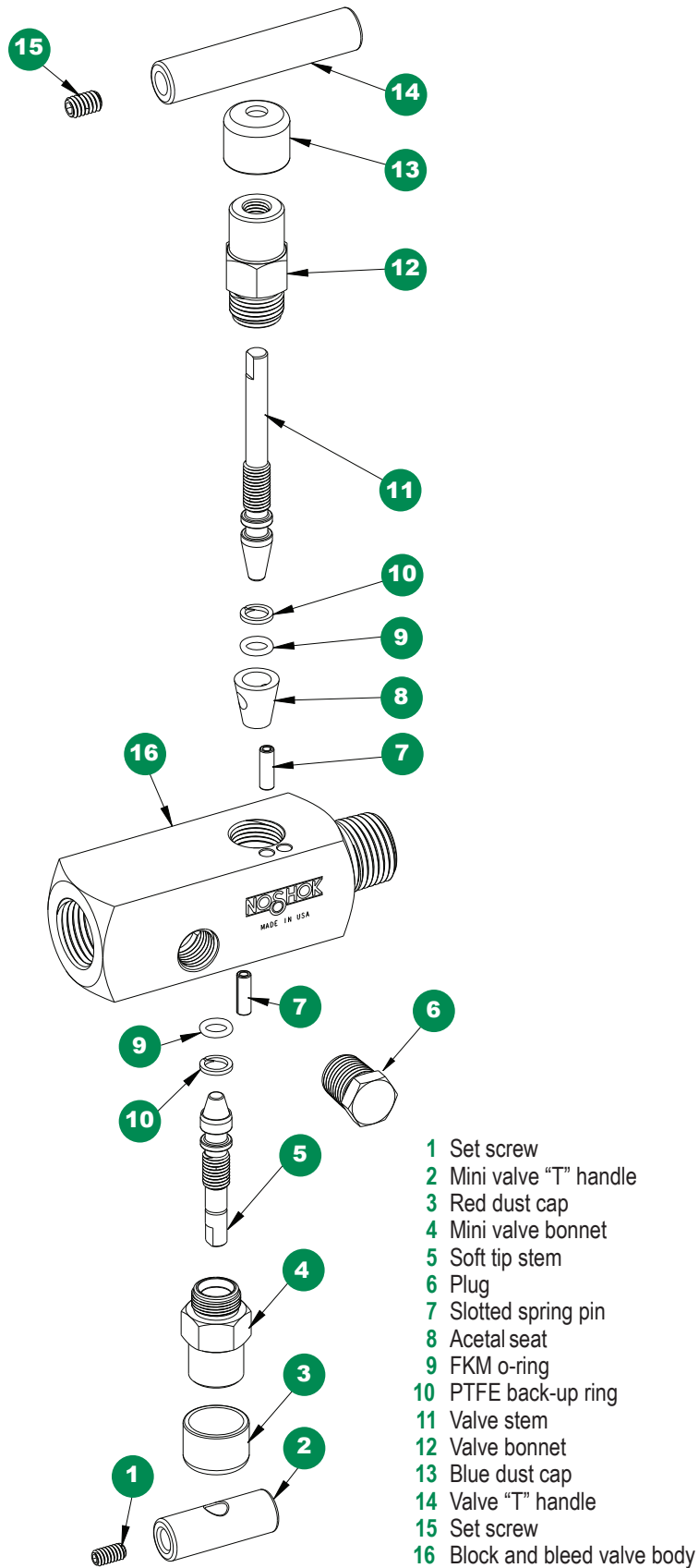


Extended Male-Female

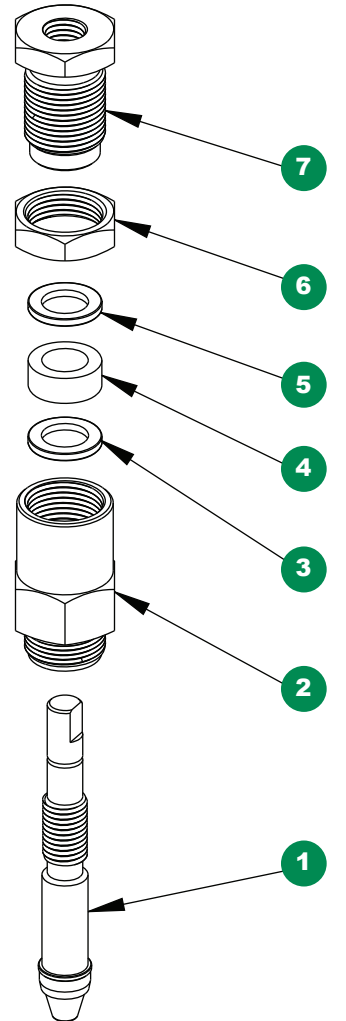


For panel mount, packing, & stem tip dimensions, see pgs. 64-67.

Block & Bleed, Soft Seat



Option With Packing

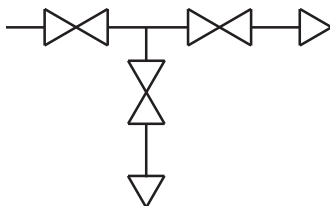


Double Block & Bleed, Hard Seat

3070 SERIES



Flow Schematic



- 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 1×10^{-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

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*
Connection	1/2" & 1/4" NPT Male-female & Female-female configurations available, right venting optional
Pressure rating**	10,000 psi @ 200 °F
Orifice size	0.187"
Flow coefficient	C_v 0.44
Stem seal & type	All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Graphite packing optional
Length	4" standard and 5-3/8" extended length available
Options	Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips
Weight	Approximately 3.2 lb.

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

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

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



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

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

ORDERING INFORMATION						
SERIES	3	3-valve				
SEAT	0	Hard seat				
PROCESS TYPE	7	Block & bleed				
CONNECTION SIZES	0	1/2" NPT		2	1/4" NPT	
VALVE TYPES	MFC	Male-Female, Steel		FMC	Female-Male, Steel	
	MFCR	Male-Female, Steel, Right Vent		EFMC	Extended Female-Male, Steel	
	EMFC	Extended Male-Female, Steel		FMS	Female-Male, Stainless Steel	
	MFS	Male-Female, Stainless Steel		EFMS	Extended Female-Male, Stainless Steel	
	MFSR	Male-Female, Stainless Steel, Right Vent		FFC	Female-Female, Steel	
	EMFS	Extended Male-Female, Stainless Steel				
				FFCR	Female-Female, Steel, Right Vent	
				EFFC	Extended Female-Female, Steel	
				FFS	Female-Female, Stainless Steel	
				FFSR	Female-Female, Stainless Steel, Right Vent	
				EFFS	Extended Female-Female, Stainless Steel	

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

EXAMPLE

Series.....3-valve
 Seat.....Hard seat
 Process connection Block & bleed
 Connection size.....1/2" NPT
 Valve type..... Female-female, Steel

3070 - FFC

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					
PACKINGS†	P1 PTFE		P2 Graphite		
STEM TIPS	T1 Non-rotating (316 Stainless)		T6 Ball (carbide)		T8 Ball (Monel)
	T5 Ball (440C Stainless)		T7 Ball (ceramic)		T9 Non-rotating regulating (316 Stainless)
O-RINGS*	EM1 EPDM		KZ1 FFKM (Perfluoroelastomer)		NB1 NBR
HANDLES	HL1 1-13/16" Mini "T"		HL3 1" Round knurled		HL5 1-3/4" Phenolic
	HL2 2-1/2" "T"		HL4 1-3/8" Phenolic		

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).

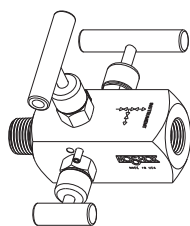
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 3070-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

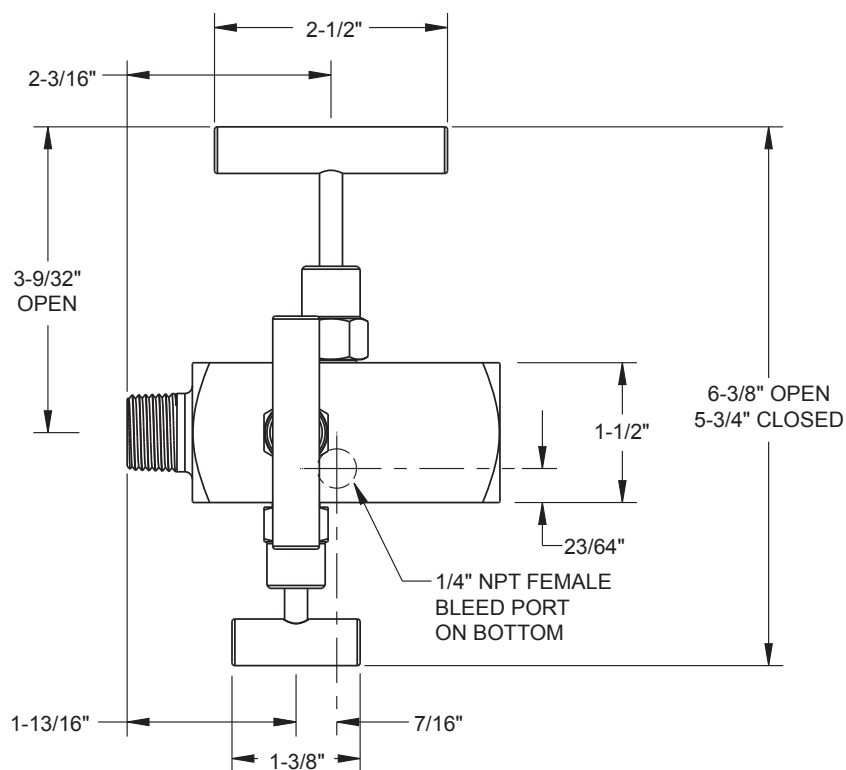
Series.....3-valve
 Seat.....Hard seat
 Process connection Block & bleed
 Connection size.....1/2" NPT
 Valve type..... Female-female, Steel
 Packing..... PTFE
 Stem tip Non-rotating
 Handle 1" Round knurled

3070 - FFC - P1 - T1 - HL3

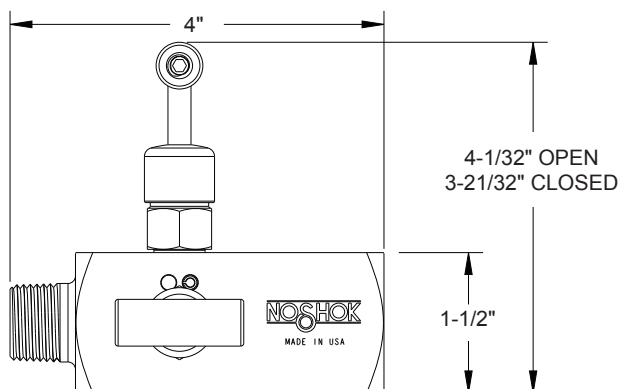
Male-Female



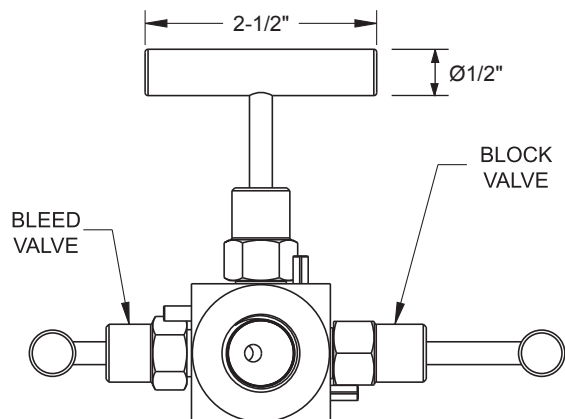
Top View



Front View



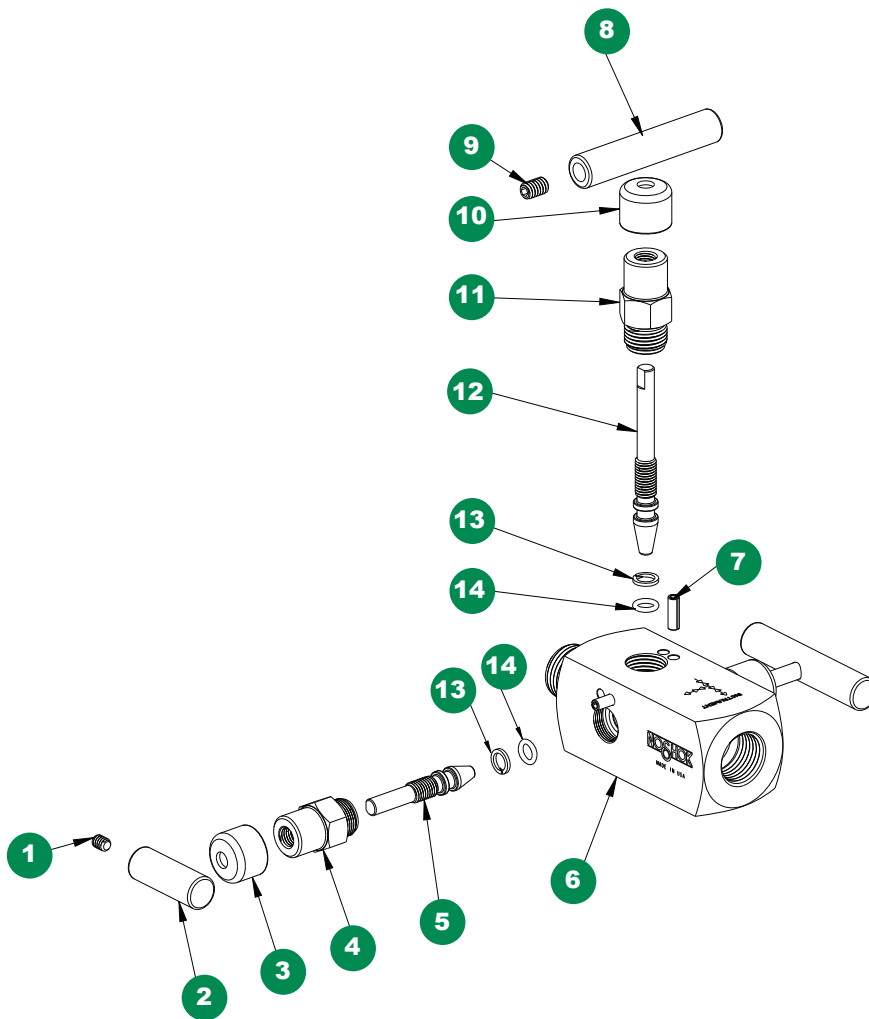
Side View



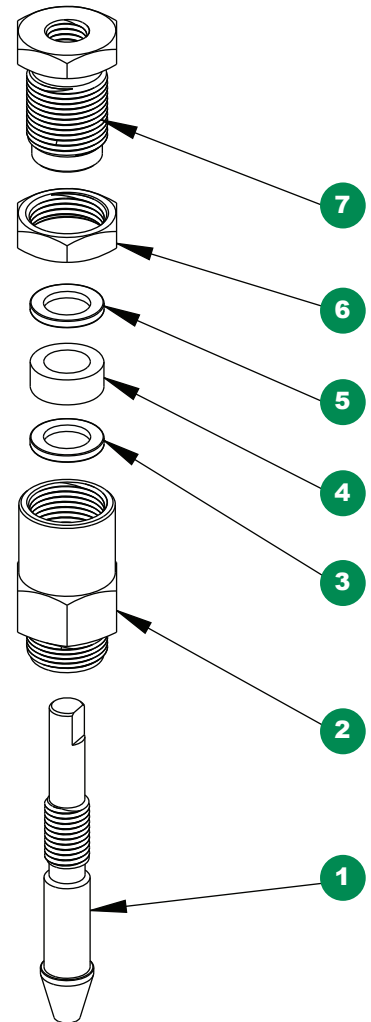
For panel mount, packing,
& stem tip dimensions,
see pgs. 64-67.

Double Block & Bleed, Hard Seat

Option With Packing



- 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



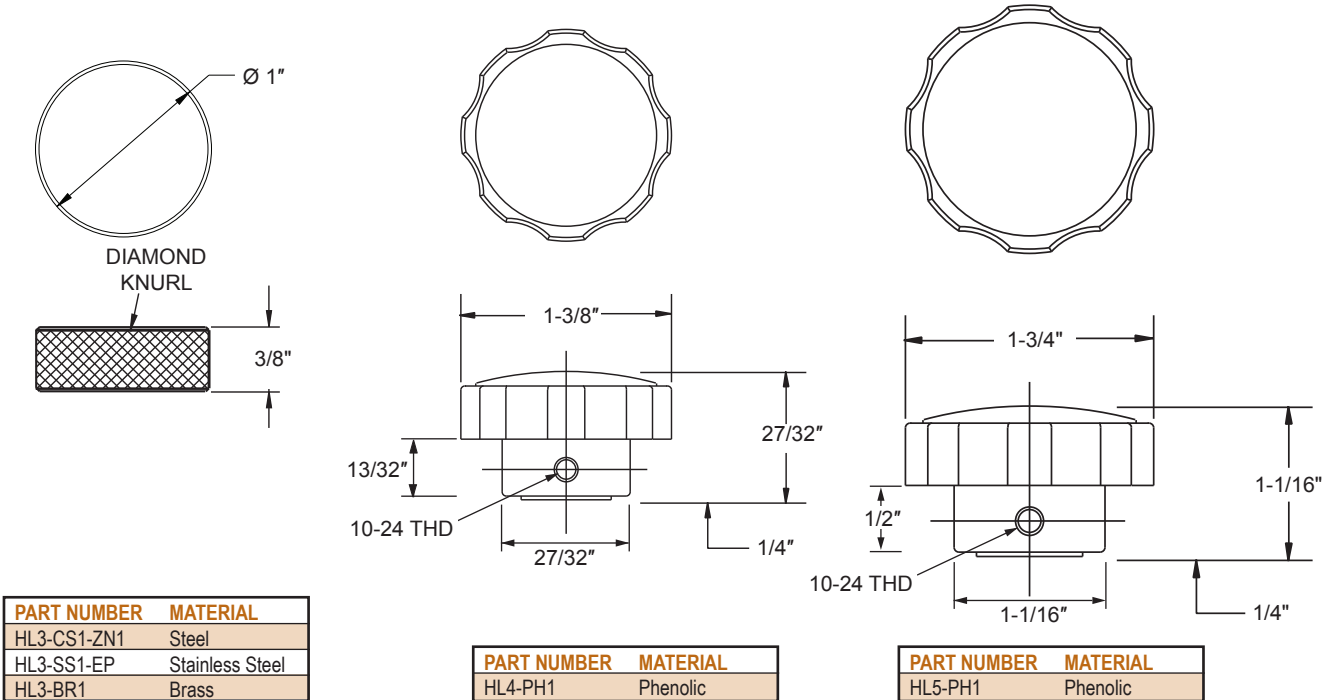
- 1 Mini valve packing stem and valve packing stem
- 2 Mini valve packing bonnet and valve packing bonnet
- 3 Packing washer
- 4 Packing
- 5 Packing washer
- 6 Jam nut
- 7 Packing adjustment screw

Needle Valve Options

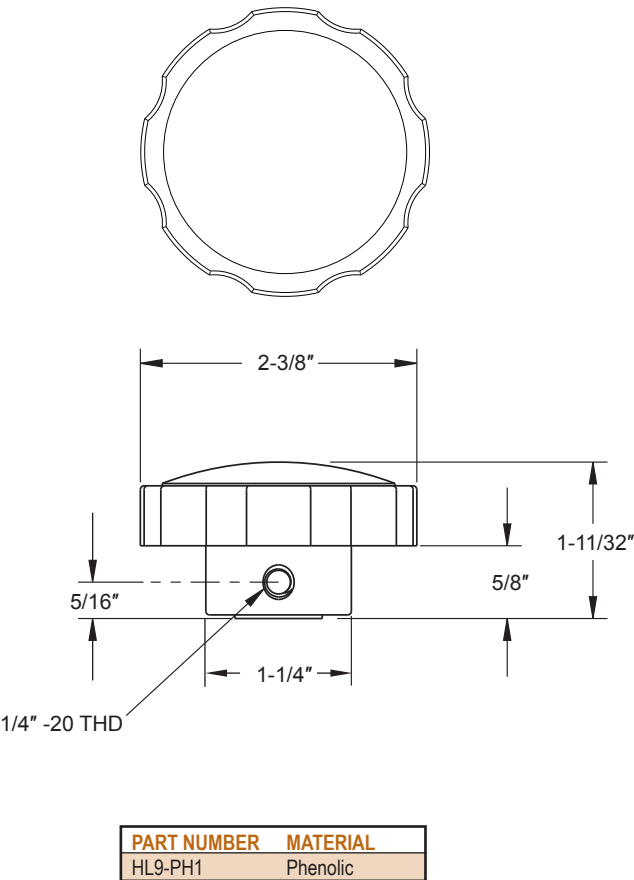
Knurled Handle HL3

Phenolic Handle HL4

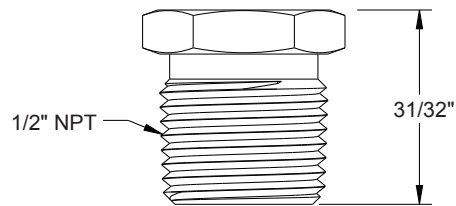
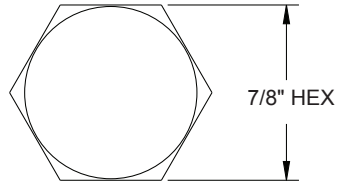
Phenolic Handle HL5



Phenolic Handle HL9

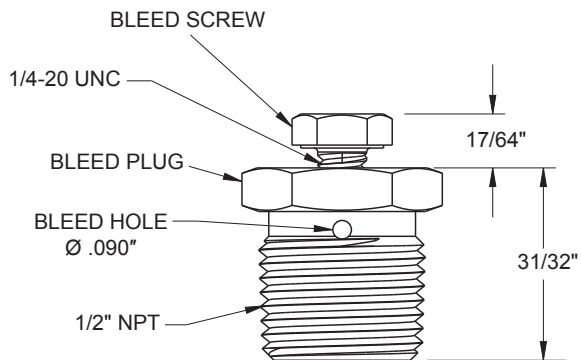
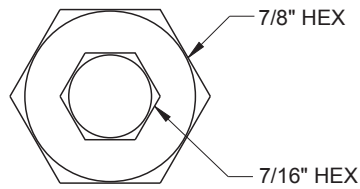


Plug



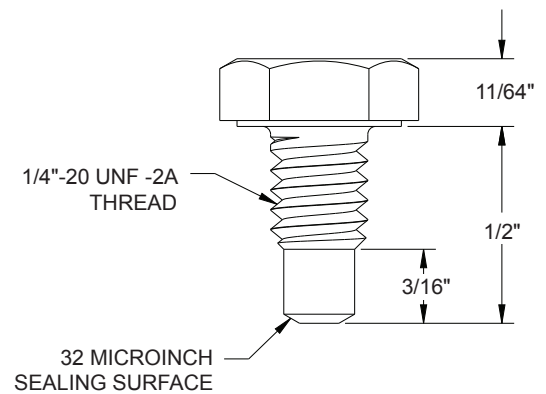
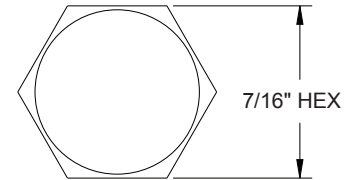
PART NUMBER	MATERIAL
PG1-CS1-ZN1	Steel
PG1-SS1-EP	Stainless Steel

Bleed Plug



PART NUMBER	MATERIAL
BP1-C	Steel
BP1-S	Stainless Steel

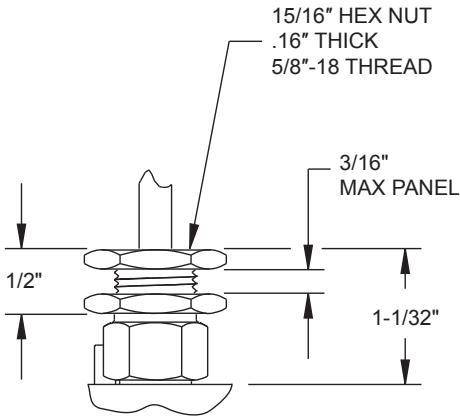
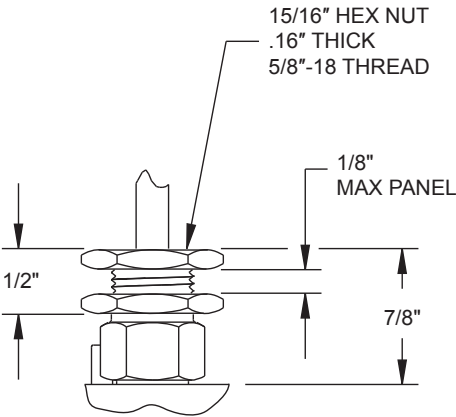
Bleed Screw



Needle Valve Options

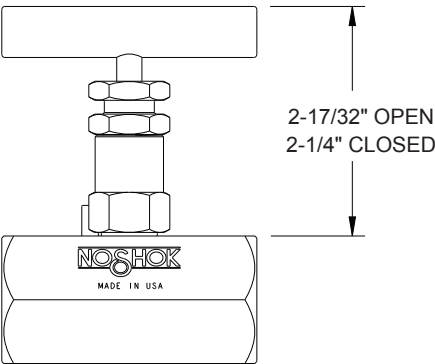
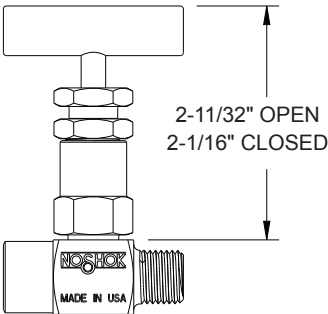
Panel Mount Detail, Mini Valves

Panel Mount Detail, Needle Valves



Packing, Mini Valves

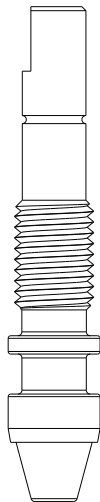
Packing, Needle Valves



Stem Tip Options



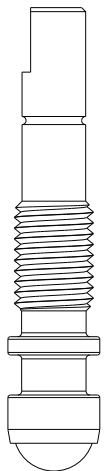
STANDARD
CONE TIP



NON-ROTATING
CONE TIP



NON-ROTATING
REGULATING TIP



NON-ROTATING
BALL TIP

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.

Block & Bleed, Hard Seat & Soft Seat

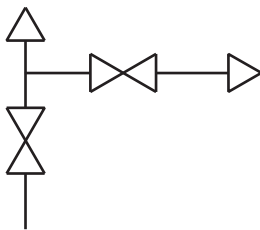
2000/2100 SERIES



Note: Packing option shown.

- 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 1×10^{-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 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
- 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

Flow Schematic



SPECIFICATIONS

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*
Connection	1/2" NPT, 1/4" NPT, NPT-flange, Flange-flange, NPT-NPT configurations available
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 2.2 lb.

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

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

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



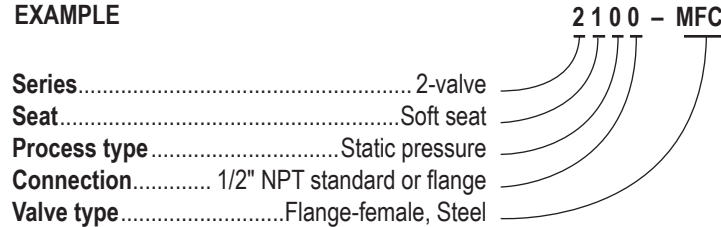
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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

SERIES	2 2-valve		
SEATS	0 Hard seat	1 Soft seat	
PROCESS TYPE	0 Static pressure		
CONNECTIONS	0 1/2" NPT standard or flange	2 1/4" NPT	
VALVE TYPES	MFC Flange-Female, Steel	MFS Flange-Female, Stainless Steel	MMC Flange-Flange, Steel
	FFC Female-Female, Steel	FFS Female-Female, Stainless Steel	MMS Flange-Flange, Stainless Steel

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

EXAMPLE



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.

ORDERING INFORMATION - ADDITIONAL OPTIONS			
SOFT SEATS	PK1 PEEK	KF1 PCTFE	
PACKINGS†	P1 PTFE	P2 Graphite**	
STEM TIPS	T1 Non-rotating (316 Stainless)	T6 Ball (carbide)**	T8 Ball (Monel)**
	T5 Ball (440C Stainless)**	T7 Ball (ceramic)**	T9 Non-rotating regulating (316 Stainless)**
O-RINGS*	EM1 EPDM	KZ1 FFKM (Perfluoroelastomer)	NB1 NBR
HANDLES	HL1 1-13/16" Mini "T"	HL4 1-3/8" Phenolic	
	HL3 1" Round knurled	HL5 1-3/4" Phenolic	

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

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

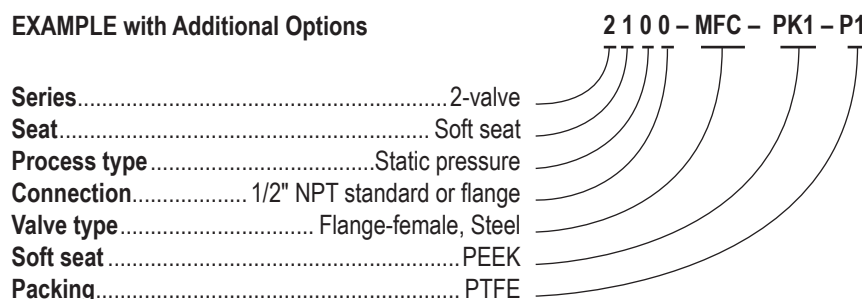
* Other o-ring materials available on request.

** For 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).

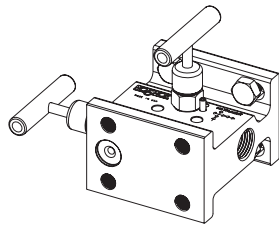
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 2100-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

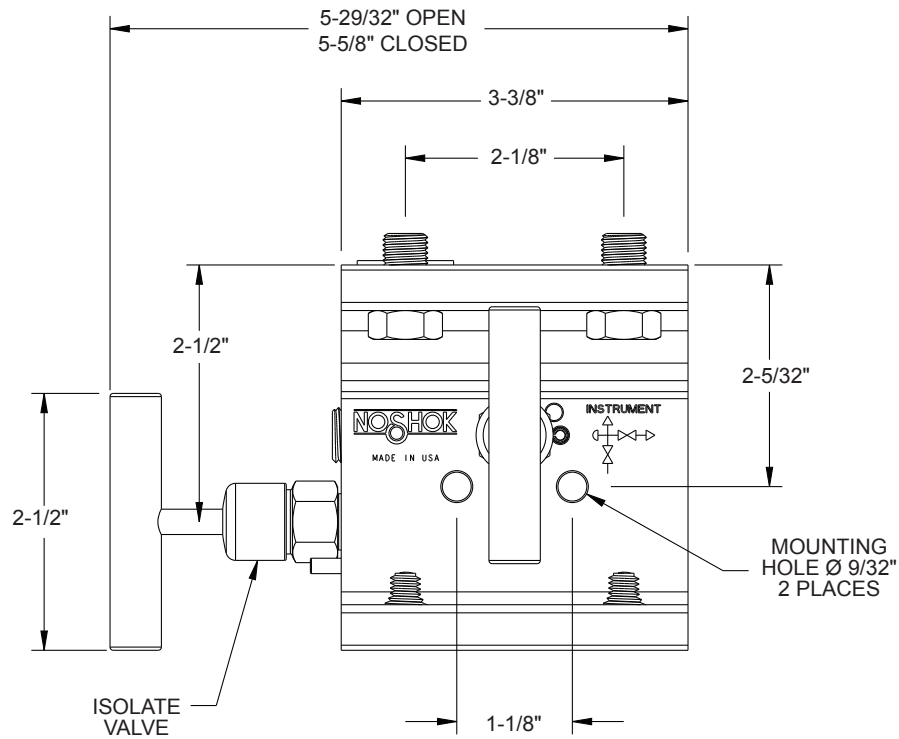


Dimensions

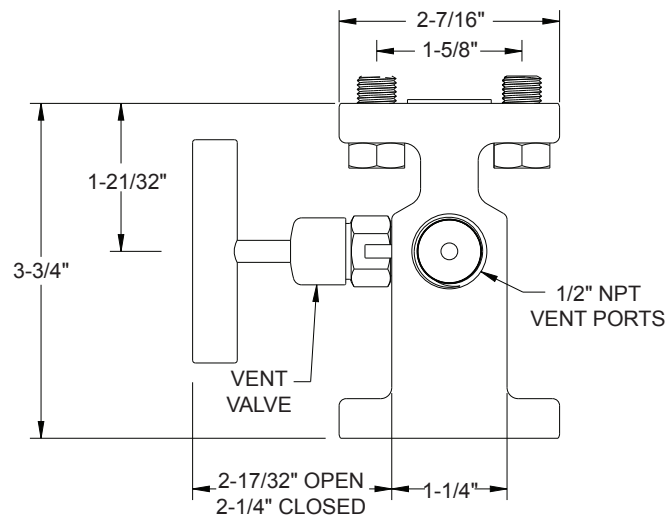
Flange-Flange



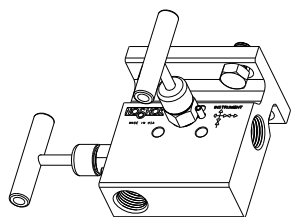
Top View



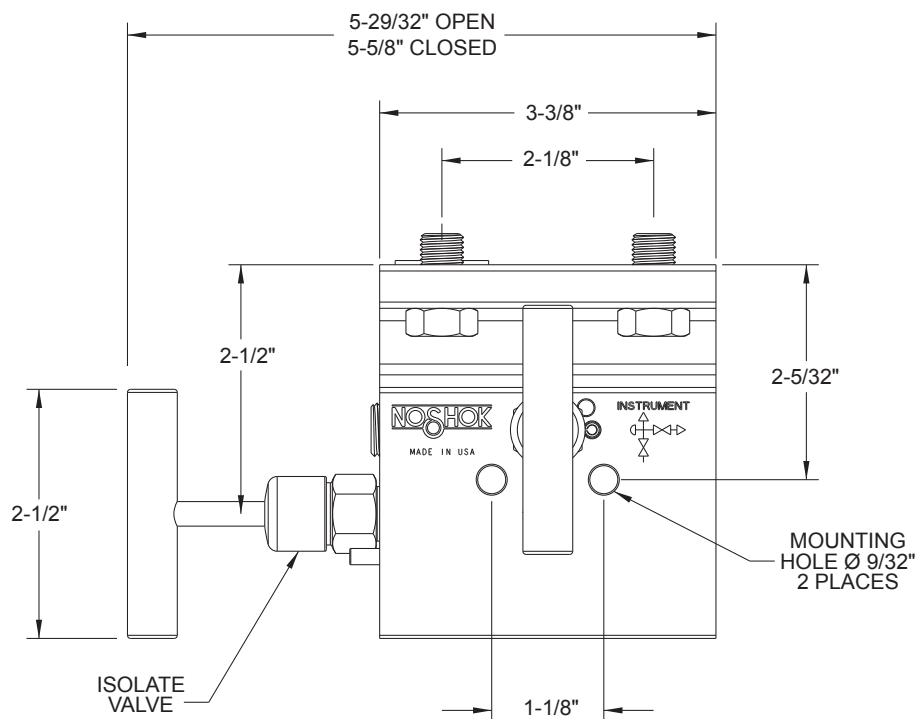
Side View



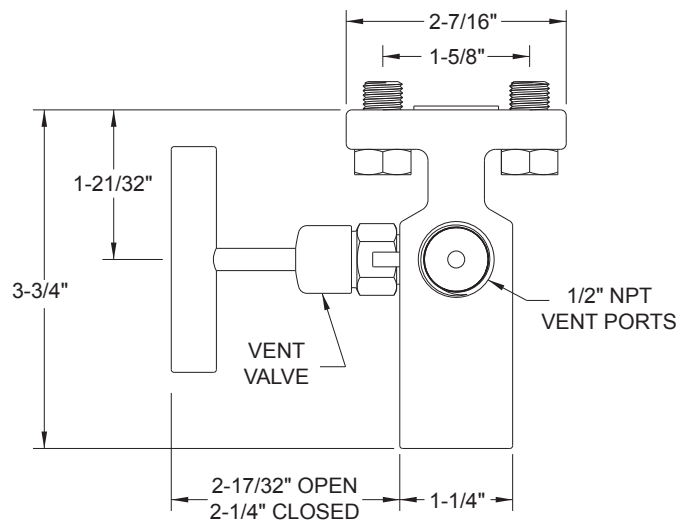
Flange-Female



Top View

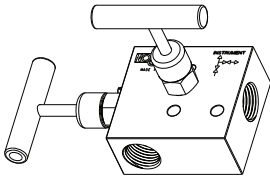


Side View

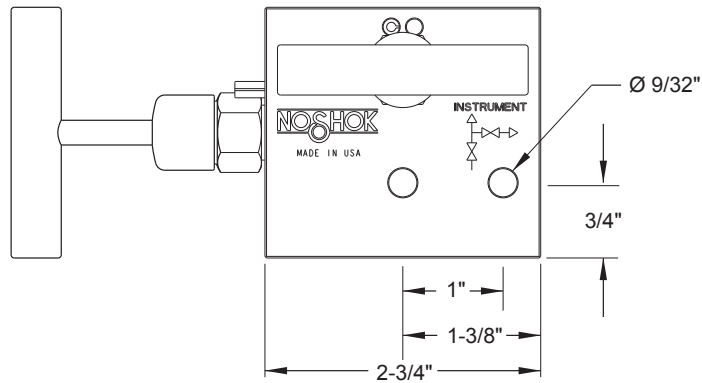


Dimensions

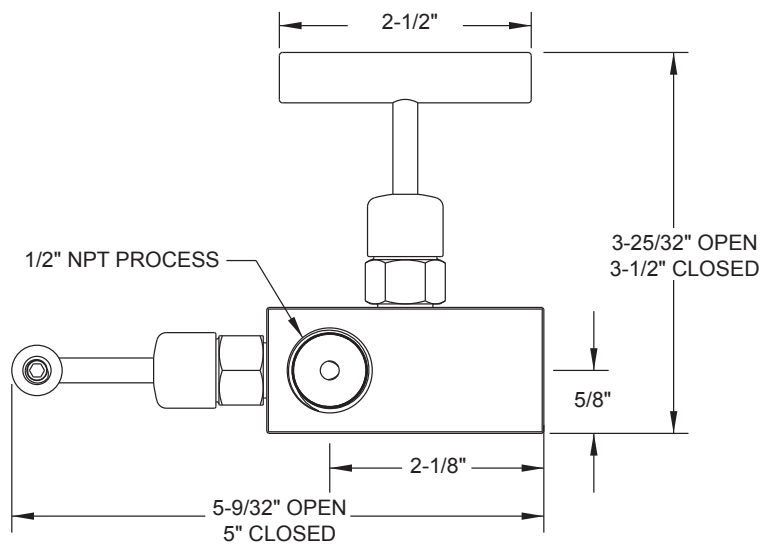
Female-Female



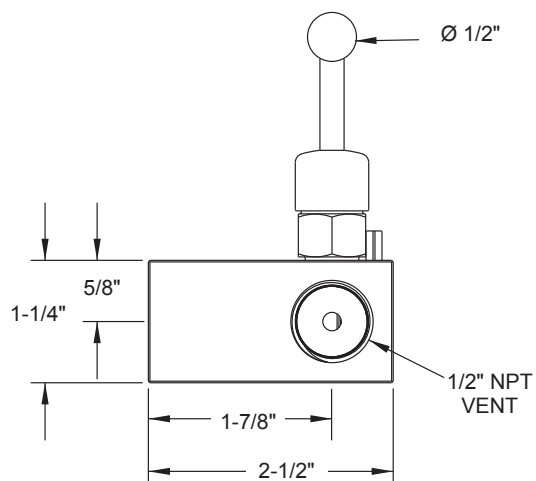
Top View



Front View



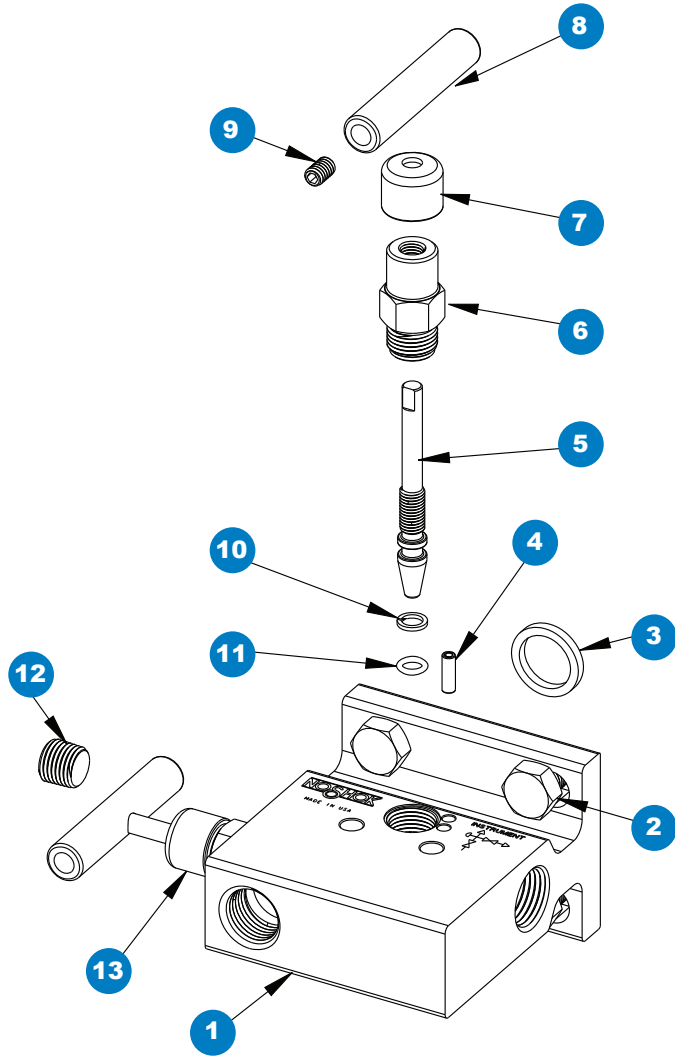
Side View



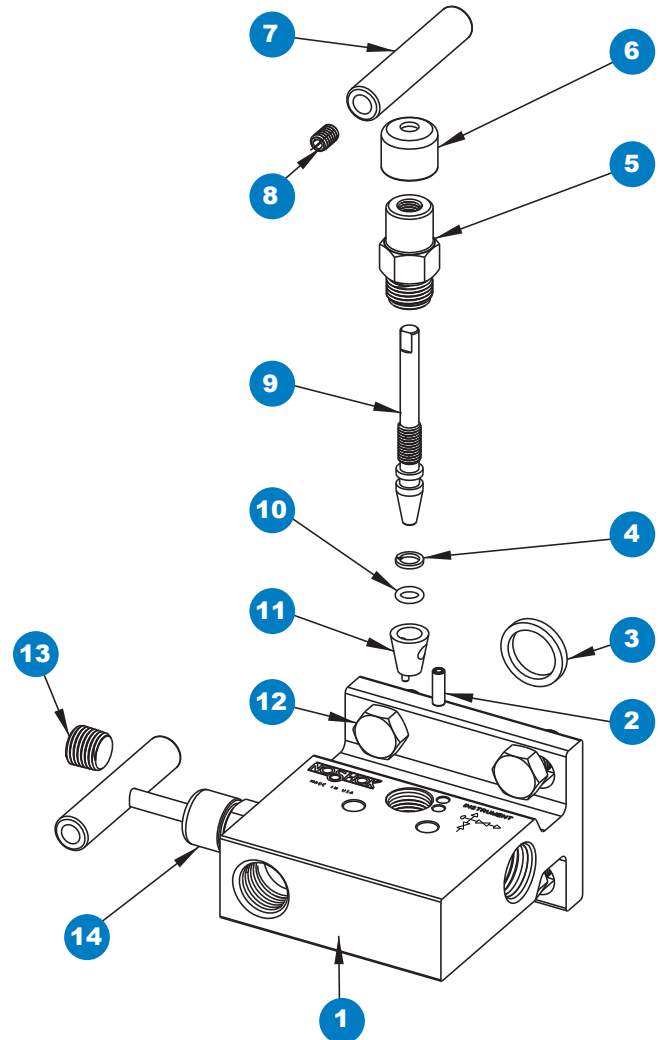
For panel mount or packing dimensions, see pg. 66.

Hard Seat

Soft Seat



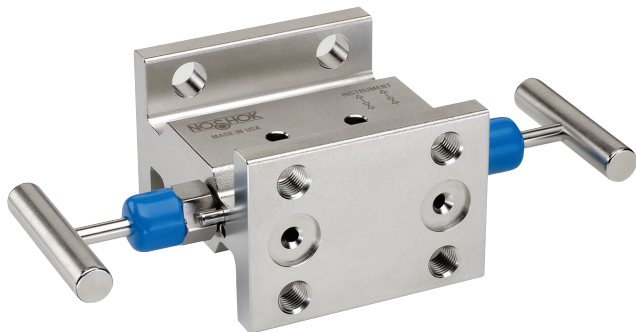
- 1 Valve body
- 2 Head bolt
- 3 Gasket ring
- 4 Slotted spring pin
- 5 Valve stem
- 6 Valve bonnet
- 7 Red dust cap
- 8 Valve "T" handle
- 9 Set screw
- 10 PTFE back-up ring
- 11 FKM o-ring
- 12 Plug
- 13 Blue dust cap



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

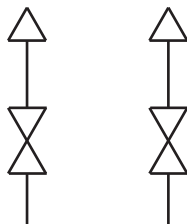
Hard & Soft Seat

2020/2120 SERIES



- Designed for use with differential pressure transmitters in liquid level applications
- Available in either single flange or double flange connection for direct installation
- 100% helium leak tested to 1×10^{-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)

Flow Schematic



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.

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



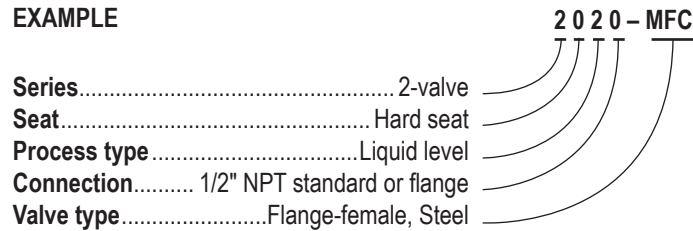
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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

SERIES	2 2-valve		
SEATS	0 Hard seat	1 Soft seat	
PROCESS TYPE	2 Liquid level		
CONNECTIONS	0 1/2" NPT standard or flange		
VALVE TYPES	MFC	Flange-Female, Steel	MFS Flange-Female, Stainless Steel
	MMC	Flange-Flange, Steel	MMS Flange-Flange, Stainless Steel

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

EXAMPLE



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						
SOFT SEATS	PK1	PEEK***	KF1	PCTFE***		
PACKINGS†	P1	PTFE	P2	Graphite**		
STEM TIPS	T1	Non-rotating (316 Stainless)	T6	Ball (carbide)**	T8	Ball (Monel)**
	T5	Ball (440C Stainless)**	T7	Ball (ceramic)**	T9	Non-rotating regulating (316 Stainless)**
O-RINGS*	EM1	EPDM	KZ1	FFKM (Perfluoroelastomer)	NB1	NBR
HANDLES	HL1	1-13/16" Mini "T"	HL4	1-3/8" Phenolic		
	HL3	1" Round knurled	HL5	1-3/4" Phenolic		

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

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

* Other o-ring materials available on request.

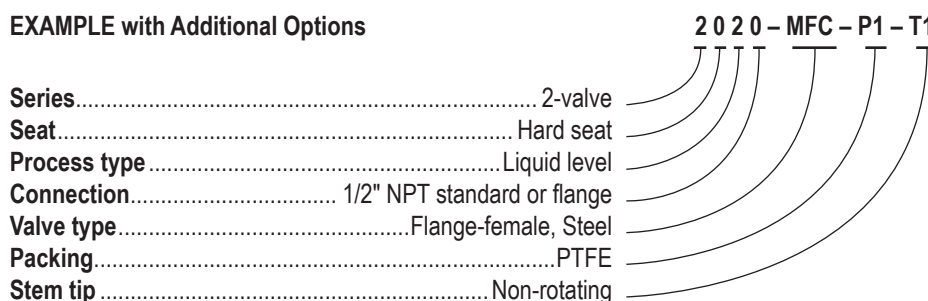
** For 2020 Series only.

*** 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).

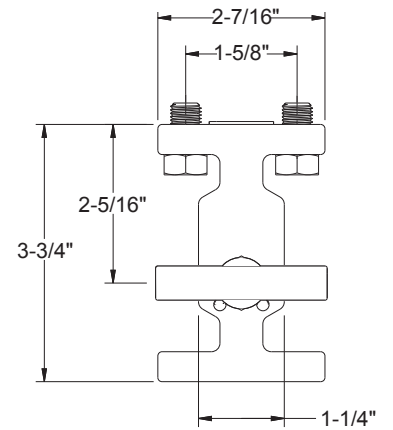
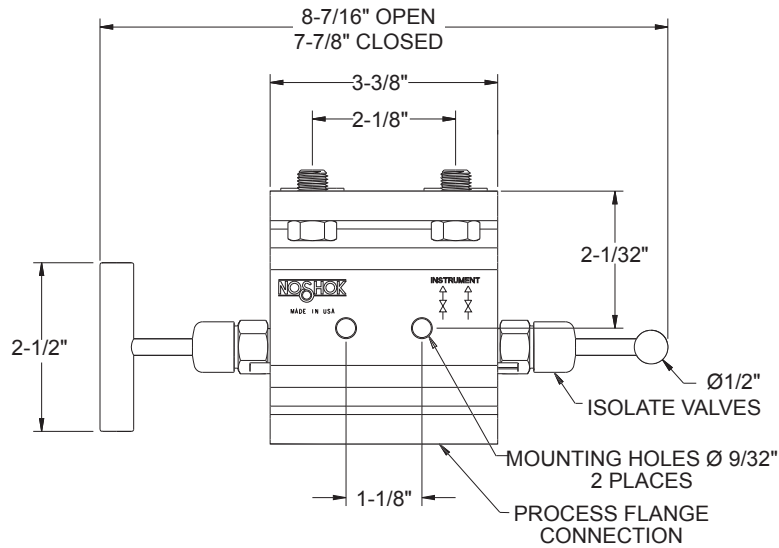
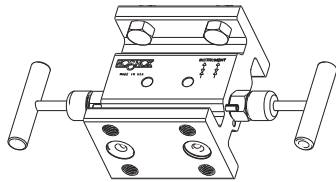
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 2020-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

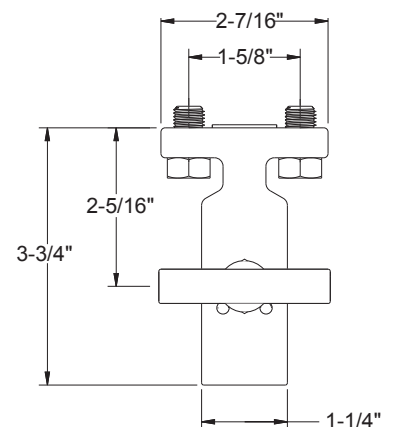
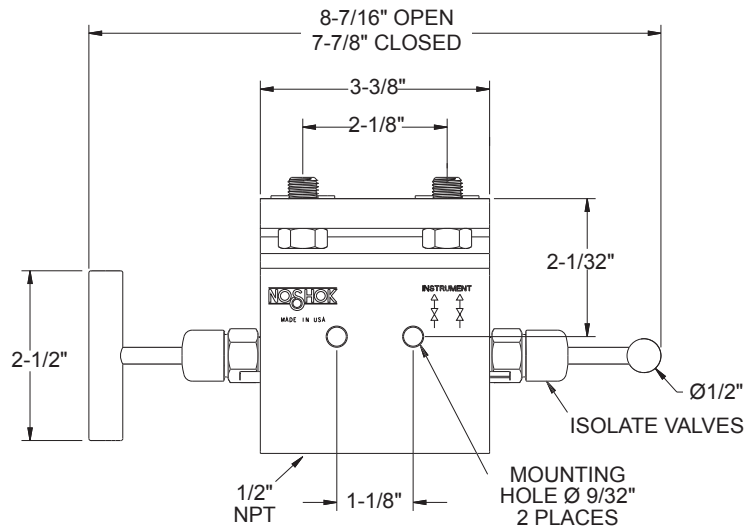
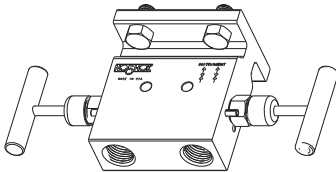


Dimensions

Flange-Flange

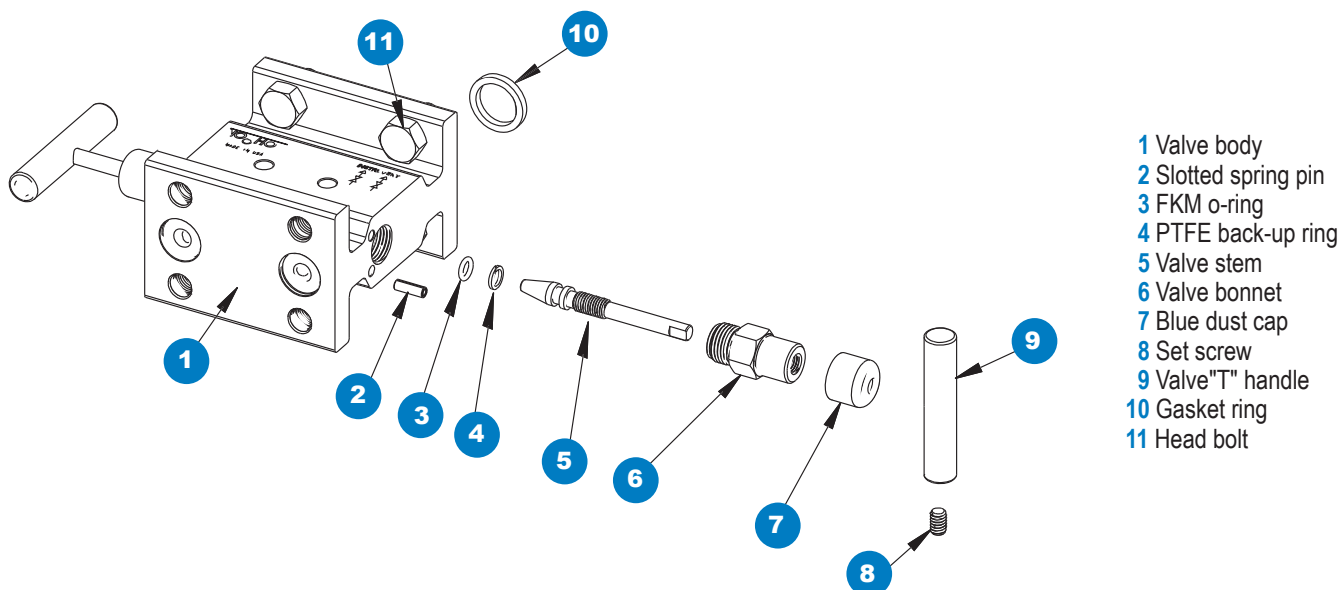


Flange-Female

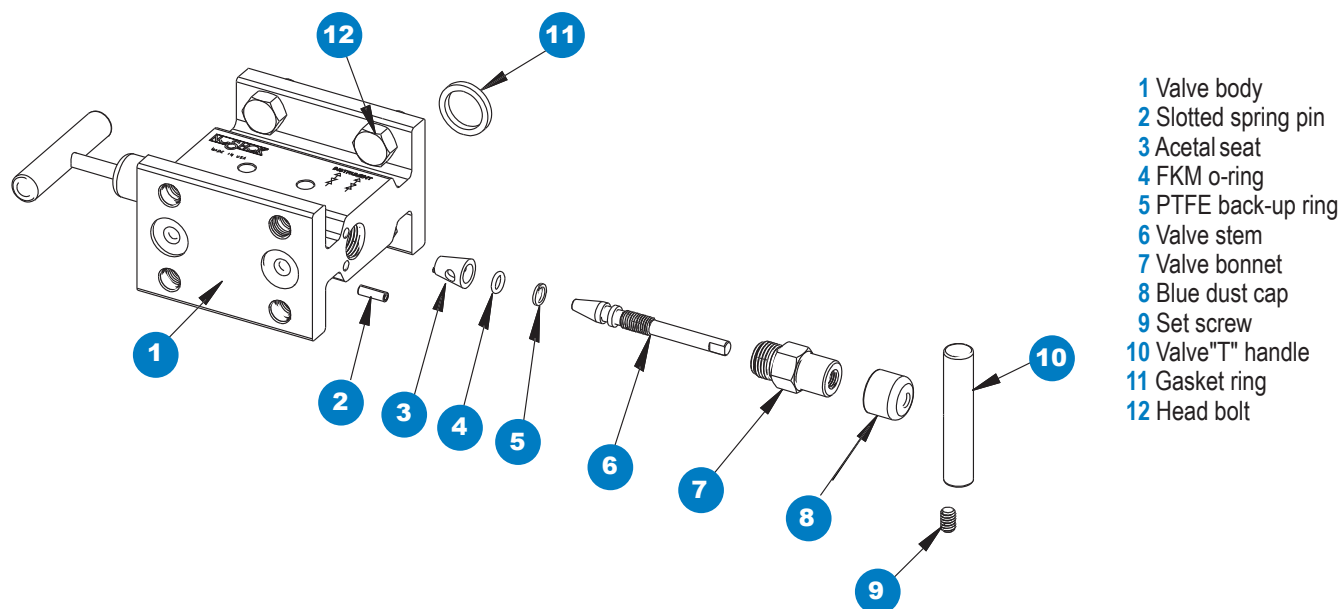


For panel mount or
packing dimensions,
see pg. 66.

Hard Seat



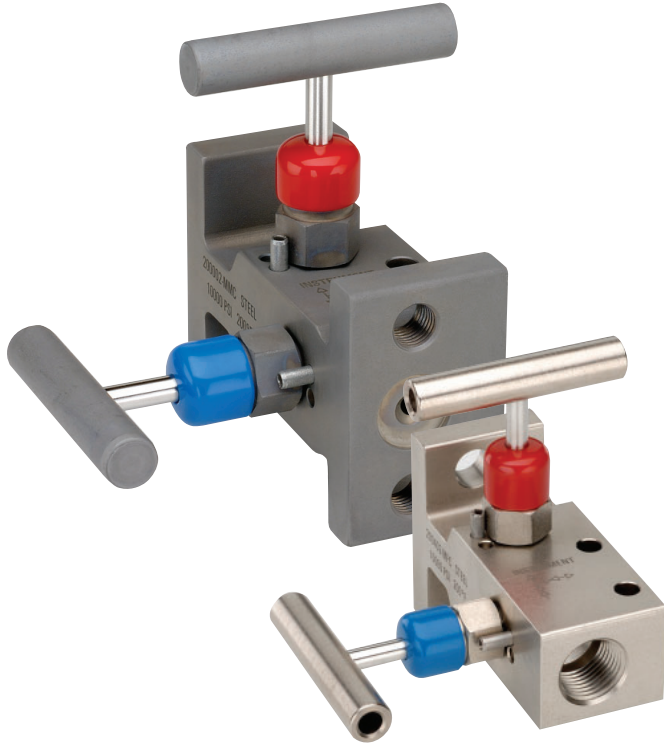
Soft Seat



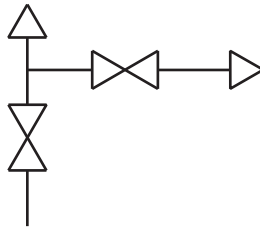
Narrow Block & Bleed, Hard Seat & Soft Seat

200002/210002 SERIES

200402/210402 SERIES



Flow Schematic



- 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 1×10^{-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

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*
Connection	200002/210002 Series: Flange-flange, 1/4" NPT vent 200402/210402 Series: 1/2" NPT-flange, 1/4" NPT vent 200202/210202 Series: 1/4" NPT-flange, 1/4" NPT vent Left venting optional
Pressure ratings**	Hard seat: 10,000 psi @ 200 °F Soft seat: 6,000 psi @ 200 °F
Orifice size	0.187"
Flow coefficient	Hard seat: C_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 2.5 lb.

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

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

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



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

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

SERIES	2 2-valve		
SEATS	0 Hard seat	1 Soft seat	
PROCESS TYPE	0 Static pressure		
CONNECTIONS	0 Flange-flange	2 1/4" NPT-flange	4 1/2" NPT-flange (standard)
VENT	02 1/4" NPT		
VALVE TYPES	MFC Flange-Female, Steel	MMS Flange-Flange, Stainless Steel	MMCL Flange-Flange, Steel, Left Vent
	MFS Flange-Female, Stainless Steel	MFCL Flange-Female, Steel, Left Vent	MMSL Flange-Flange, Stainless Steel, Left Vent
	MMC Flange-Flange, Steel	MFSL Flange - Female, Stainless Steel, Left Vent	

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

EXAMPLE

		2 0 0 4 02 – MFC
Series.....	2-valve	2
Seat.....	Hard seat	0
Process type.....	Static pressure	0
Connection.....	1/2" NPT-Flange	2
Vent.....	1/4" NPT	02
Valve type.....	Flange-female, Steel	MFC

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.

ORDERING INFORMATION - ADDITIONAL OPTIONS			
PACKINGS†	P1 PTFE	P2 Graphite**	
STEM TIPS	T1 Non-rotating (316 Stainless)	T6 Ball (carbide)**	T8 Ball (Monel)**
	T5 Ball (440C Stainless)**	T7 Ball (ceramic)**	T9 Non-rotating regulating (316 Stainless)**
O-RINGS*	EM1 EPDM	KZ1 FFKM (Perfluoroelastomer)	NB1 NBR
HANDLES	HL1 1-13/16" Mini "T"	HL4 1-3/8" Phenolic	
	HL3 1" Round knurled	HL5 1-3/4" Phenolic	

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

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

* Other o-ring materials available on request.

** For 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).

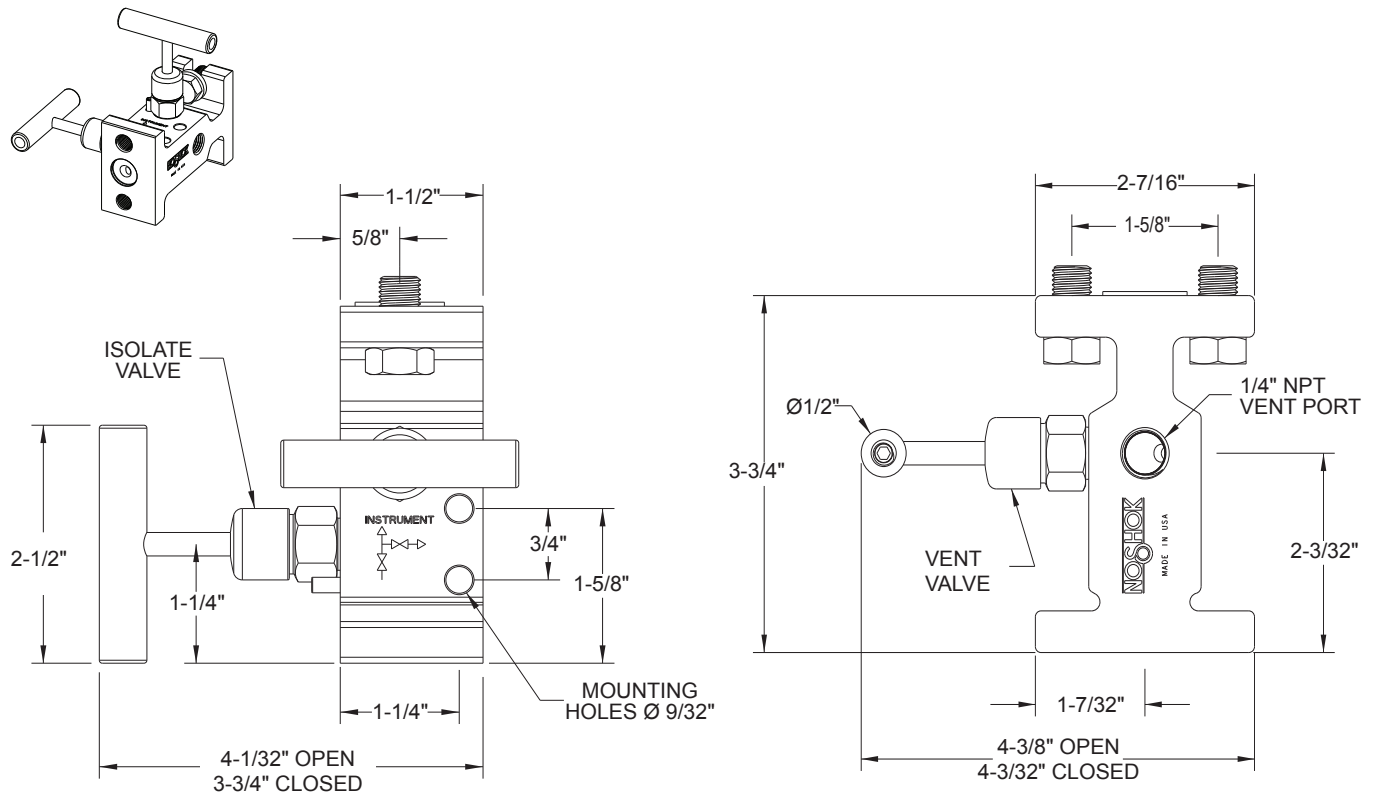
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 200402-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application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

EXAMPLE with Additional Options

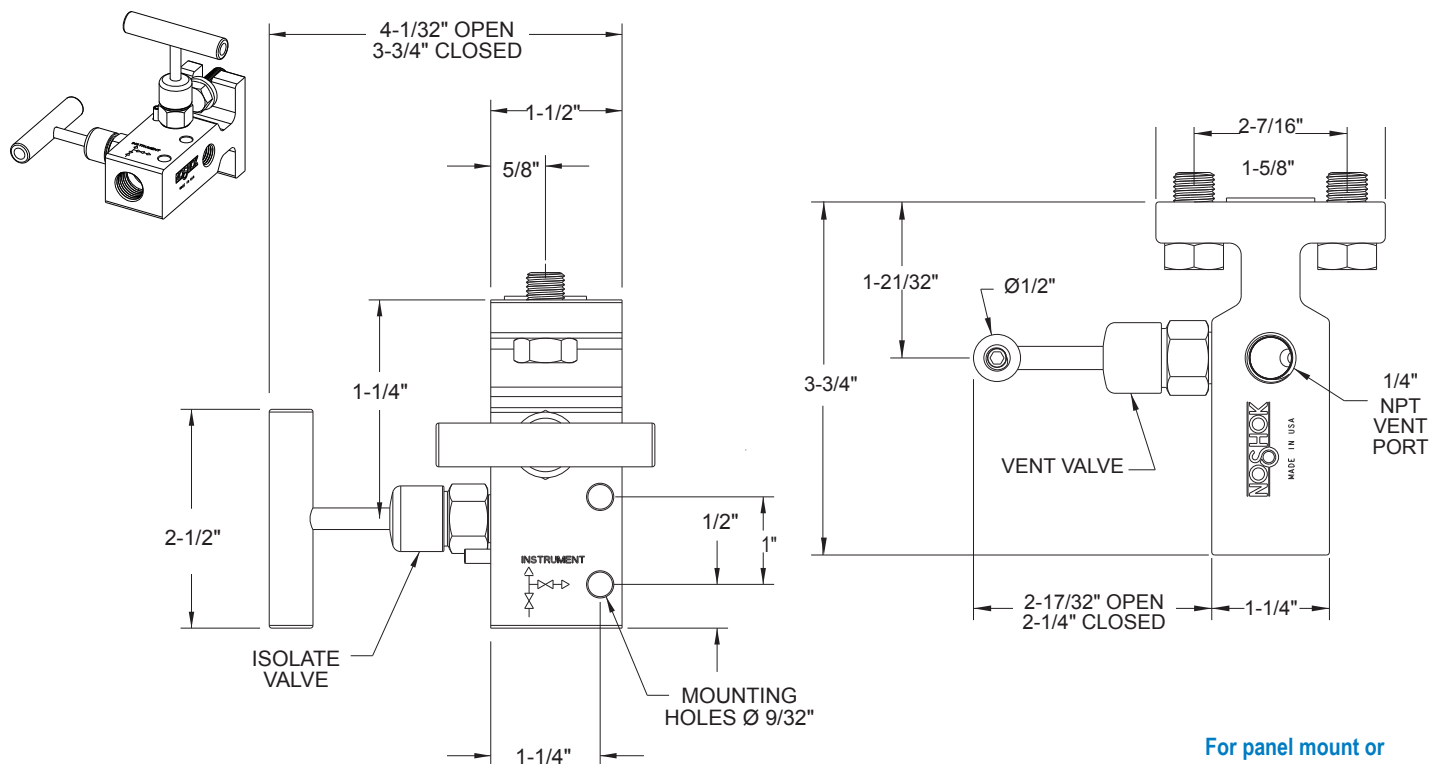
		2 0 0 4 02 – MFC – P1 – T1
Series.....	2-valve	2
Seat.....	Hard seat	0
Process type.....	Static pressure	0
Connection.....	1/2" NPT-Flange	2
Vent.....	1/4" NPT	02
Valve type.....	Flange-female, Steel	MFC
Packing.....	PTFE	P1
Stem tip.....	Non-rotating	T1

Dimensions

Flange-Flange

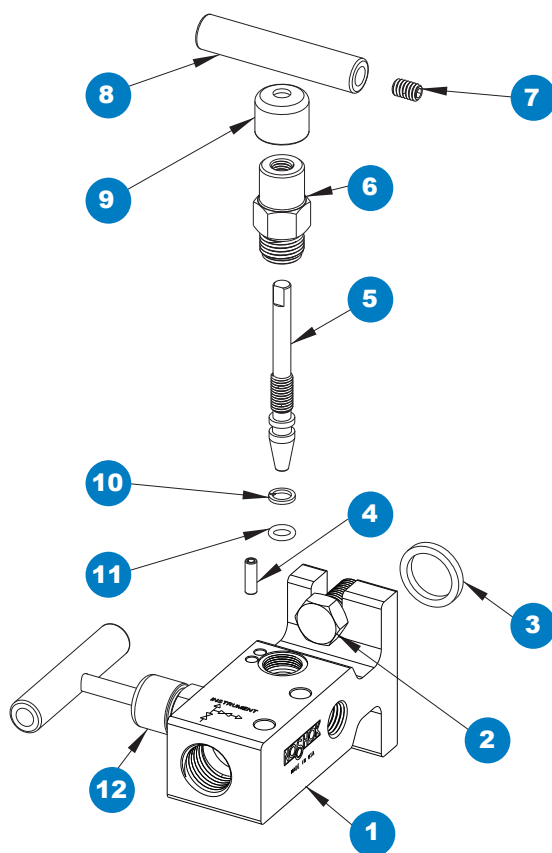


Flange-Female



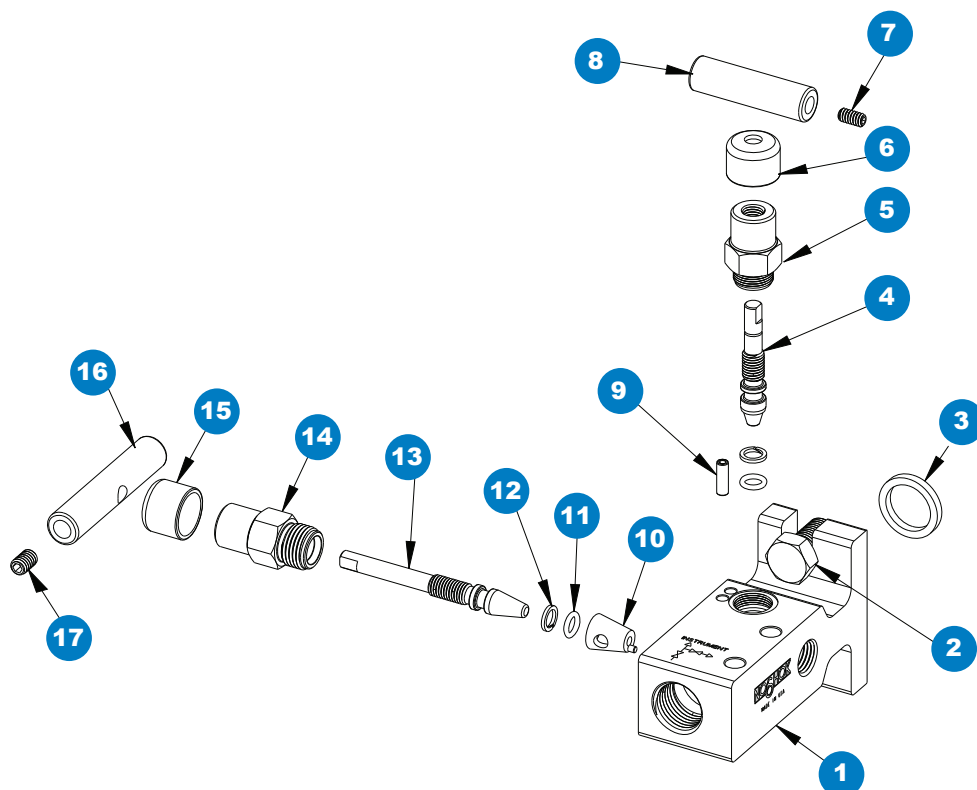
For panel mount or packing dimensions, see pg. 66.

Hard Seat



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

Soft Seat



- 1 Valve body
- 2 Head bolt
- 3 Gasket ring
- 4 Soft tip valve stem
- 5 Valve bonnet
- 6 Red dust cap
- 7 Set screw
- 8 Valve "T" handle
- 9 Slotted spring pin
- 10 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

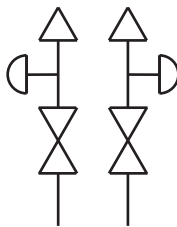
Large Bore, Angle (0.375" Orifice)

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 1×10^{-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



SPECIFICATIONS

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

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

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



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

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

SERIES	2	2-valve
SEATS	5	Soft seat (0.375" orifice)
PROCESS TYPE	3	Natural gas flow
CONNECTIONS	0	1/2" NPT standard or flange
VALVE TYPES	MMAC	Flange-Flange 90° Angle, Steel
	MMAS	Flange-Flange 90° Angle, Stainless Steel

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

EXAMPLE

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

2 5 3 0 - MMAS

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.

ORDERING INFORMATION - ADDITIONAL OPTIONS				
SOFT SEATS	PK1	PEEK	KF1	PCTFE
O-RINGS*	EM1	EPDM	KZ1	FFKM (Perfluoroelastomer)
				NB1 NBR

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-MMAS will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

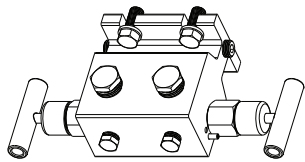
EXAMPLE with Additional Options

Series..... 2-valve
 Seat..... Soft seat
 Process type..... Natural gas flow
 Connection..... 1/2" NPT
 Valve type..... Flange-flange, Stainless Steel
 Soft seat..... PEEK

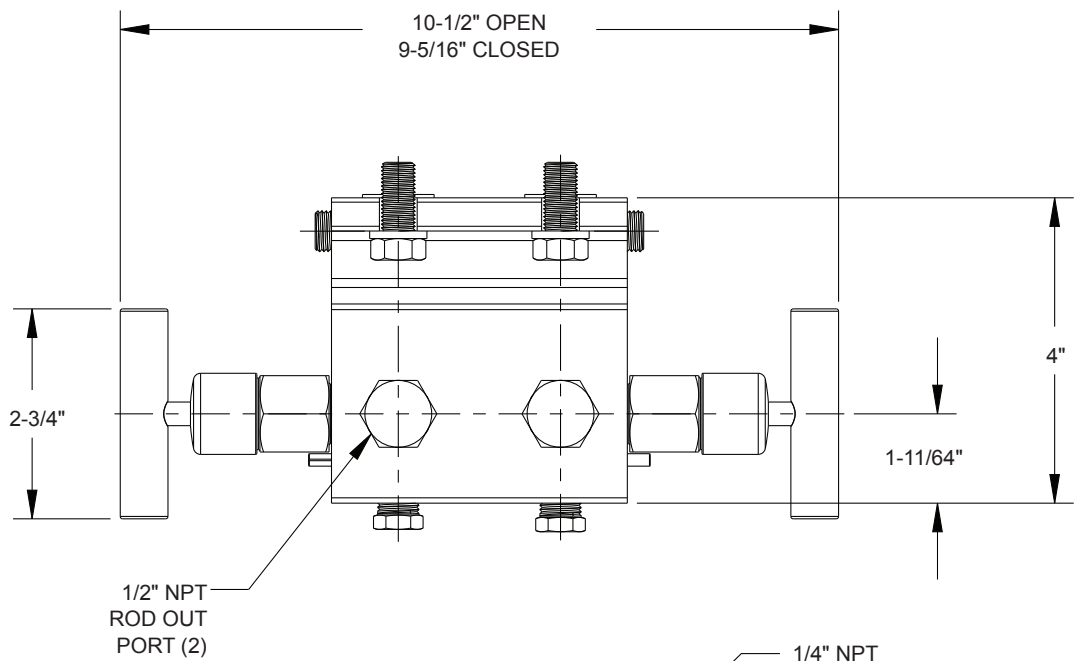
2 5 3 0 - MMAS - PK1

Dimensions

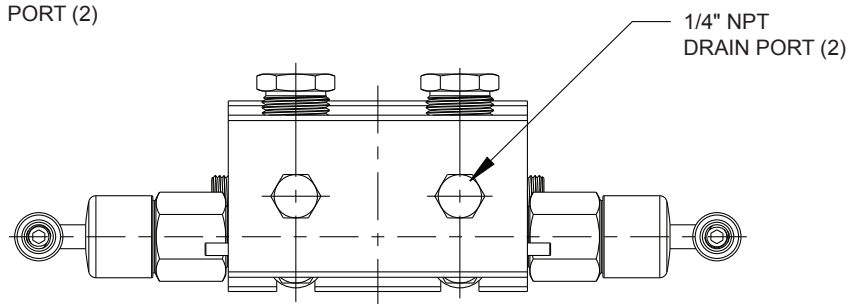
Flange-Flange



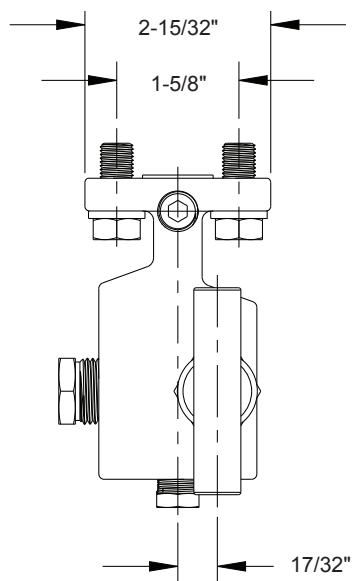
Top View

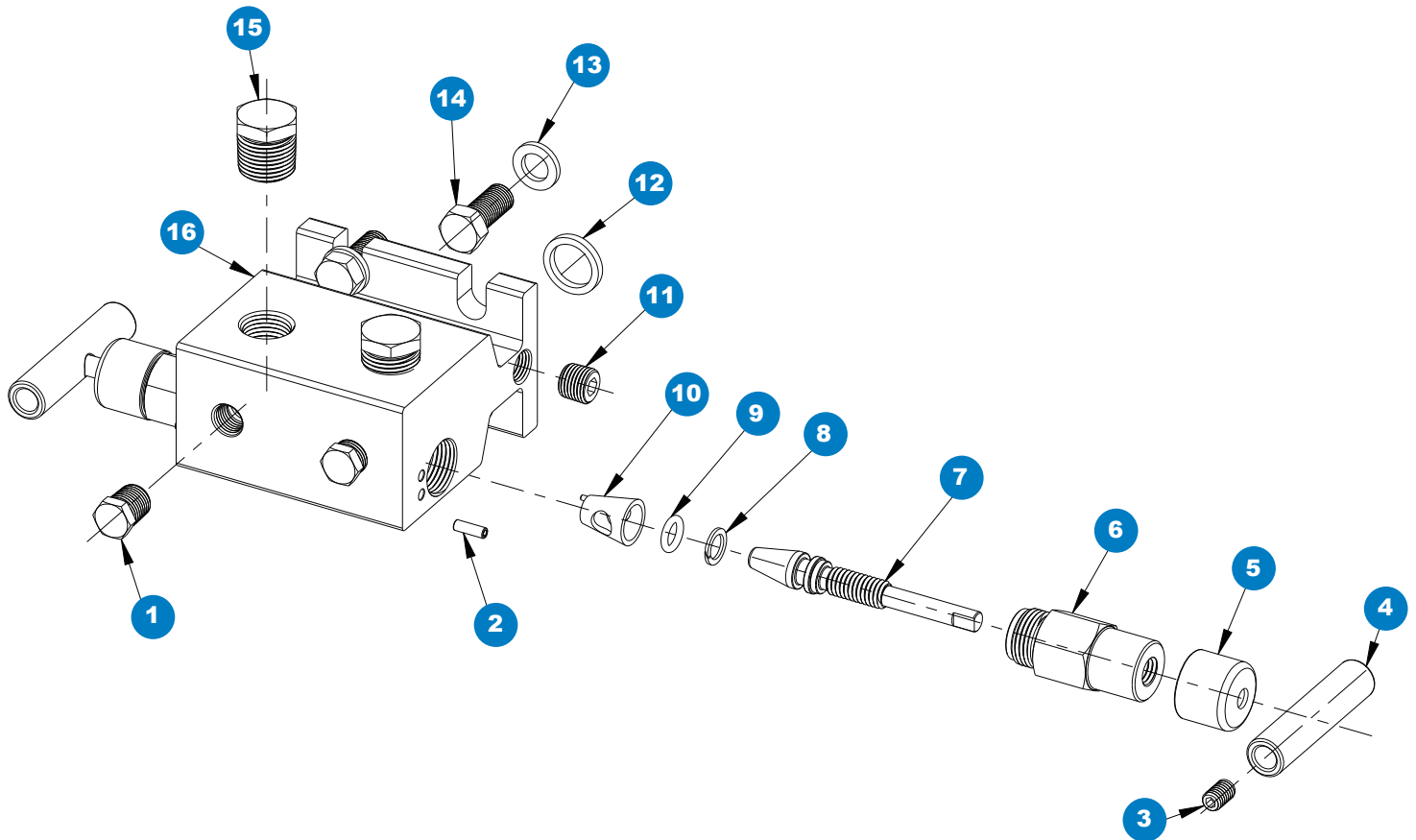


Front View



Side View





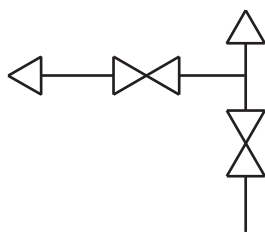
- | | |
|----------------------|----------------|
| 1 Plug | 11 Plug |
| 2 Slotted spring pin | 12 Gasket ring |
| 3 Set screw | 13 Flat washer |
| 4 Valve "T" handle | 14 Head bolt |
| 5 Blue dust cap | 15 Plug |
| 6 Valve bonnet | 16 Valve body |
| 7 Non-rotating stem | |
| 8 PTFE back-up ring | |
| 9 FKM o-ring | |
| 10 Acetal seat | |

Mini Block & Bleed, Hard Seat & Soft Tip (0.141" Orifice)

2602/2702 SERIES



Flow Schematic



- 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 1×10^{-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

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*
Connections	1/4" NPT, 1/8" NPT, right venting optional
Pressure ratings**	Hard seat: 10,000 psi @ 200 °F Soft tip: 6,000 psi @ 200 °F
Orifice size	0.141"
Flow coefficient	Hard seat: C_v 0.38 Soft tip: C_v 0.38
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 1.4 lb.

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

** If a packing option is chosen, maximum pressure rating is 6,000 psi.

Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



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

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

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

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

EXAMPLE

2602-FFC

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

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

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

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

ORDERING INFORMATION - ADDITIONAL OPTIONS				
PACKINGS†	P1 PTFE	P2 Graphite**		
STEM TIPS	T1 Non-rotating (316 Stainless)	T4 PEEK***	T7 Ball (ceramic)**	T10 Regulating Acetal ***
	T2 Acetal (Acetal)***	T5 Ball (440C Stainless)**	T8 Ball (Monel)**	T11 Regulating PCTFE***
	T3 PCTFE***	T6 Ball (carbide)**	T9 Non-rotating regulating (316 Stainless)**	T12 Regulating PEEK***
O-RINGS*	EM1 EPDM	KZ1 FFKM (Perfluoroelastomer)	NB1 NBR	
HANDLES	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.

** Hard seat only.

*** Soft tip only.

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

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

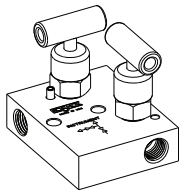
EXAMPLE with Additional Options

2602-FFC-P1

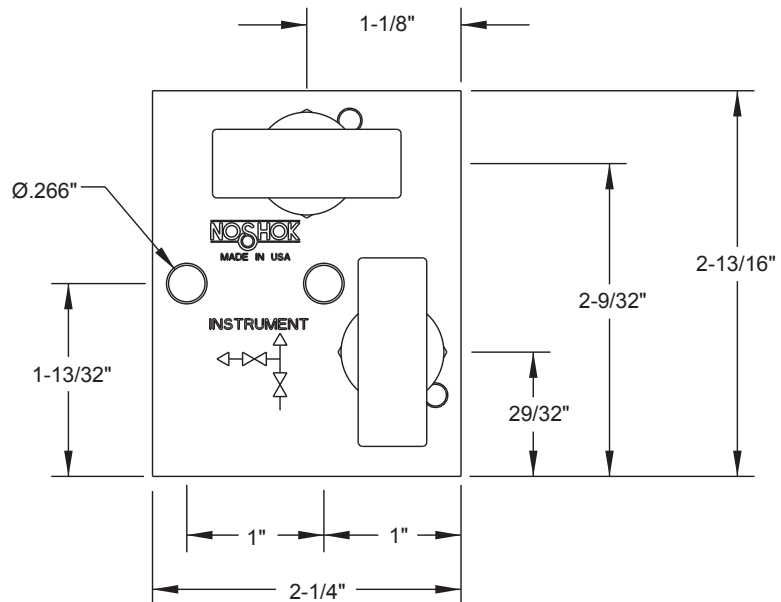
Series.....2-valve
 Seat.....Hard seat
 Process type.....Static pressure
 Connection.....1/4" NPT
 Valve type.....Female-female, Steel
 Packing.....PTFE

Dimensions

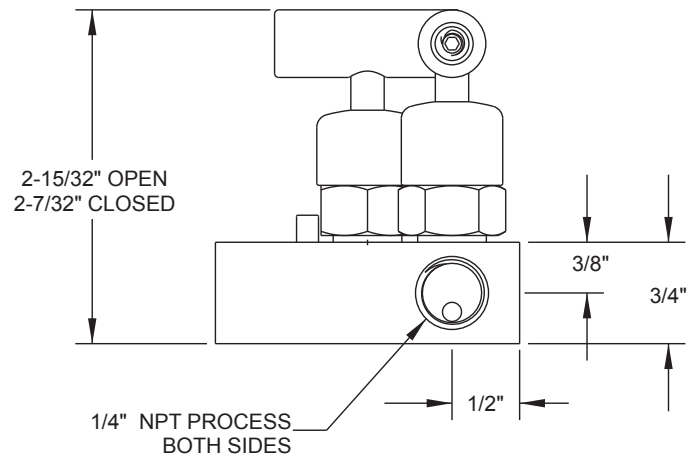
Female-Female



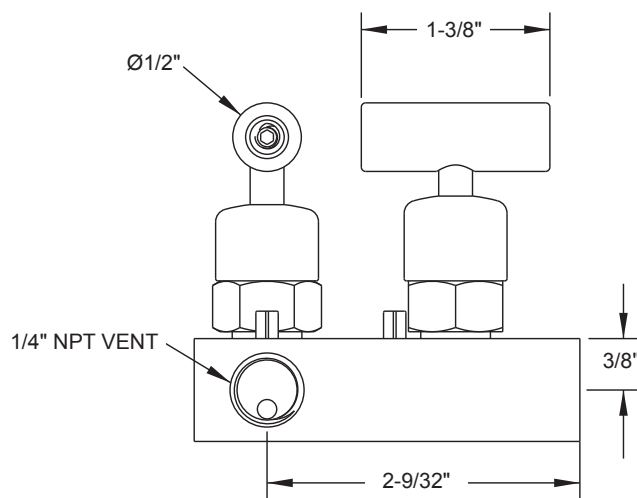
Top View



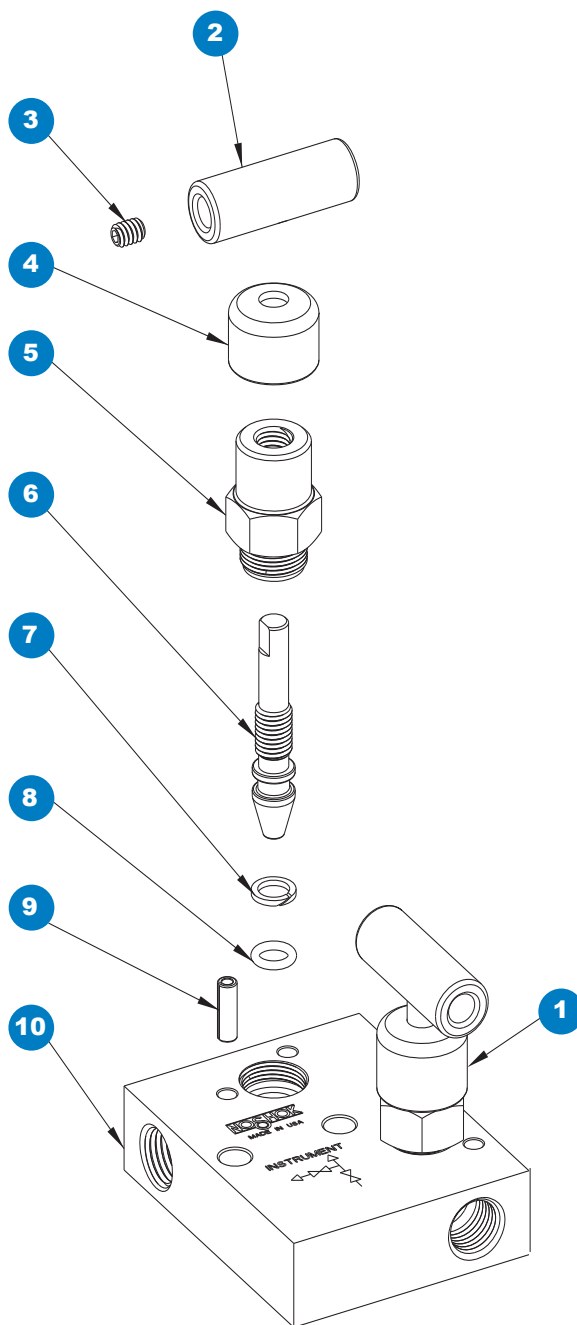
Front View



Side View



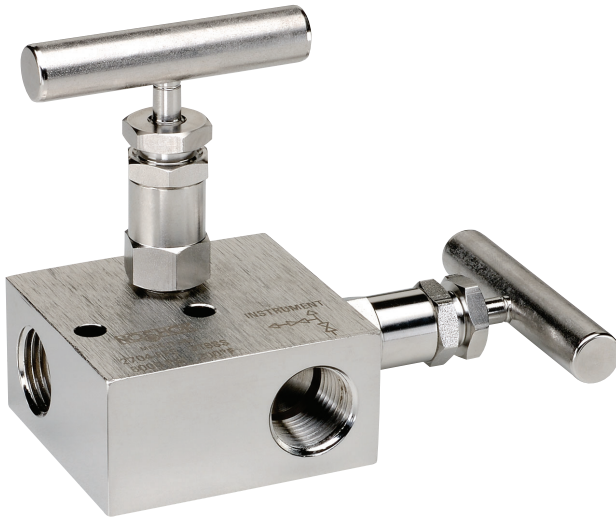
For panel mount or packing dimensions, see pg. 66.



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

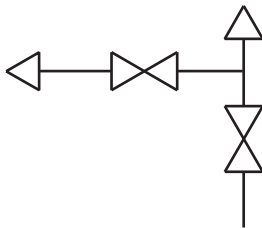
Block & Bleed, Hard & Soft Tip (0.156" Orifice)

2603/2703 SERIES 2604/2704 SERIES



Note: Packing option shown.
HL2 handles shown,
HL1 is standard.

Flow Schematic



- 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 1×10^{-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

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

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

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

For NOSHOK Valves with Steel valve types:



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

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.

2603/2703 & 2604/2704 SERIES ORDERING INFORMATION

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

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

EXAMPLE

		2 7 0 4 - FFC
Series	2-valve	↑
Seat	Soft tip	↑
Process type	Static pressure	↑
Connection	1/2" NPT	↑
Valve type	Female-female, Steel	↑

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

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

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

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

ORDERING INFORMATION - ADDITIONAL OPTIONS				
PACKINGS†	P1 PTFE	P2 Graphite**		
STEM TIPS	T1 Non-rotating (316 Stainless)**	T4 PEEK***	T7 Ball (ceramic)**	T10 Regulating Acetal ***
	T2 Acetal (Acetal)***	T5 Ball (440C Stainless)**	T8 Ball (Monel)**	T11 Regulating PCTFE***
	T3 PCTFE***	T6 Ball (carbide)**	T9 Non-rotating regulating (316 Stainless)**	T12 Regulating PEEK***
O-RINGS*	EM1 EPDM	KZ1 FFKM (Perfluoroelastomer)	NB1 NBR	
HANDLES	HL2 2-1/2" "T"	HL4 1-3/8" Phenolic		
	HL3 1" Round knurled	HL5 1-3/4" Phenolic		

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

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

* Other o-ring materials available on request.

** Hard seat only.

*** Soft tip only.

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

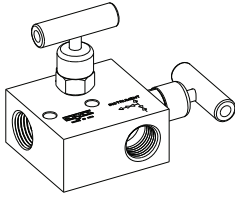
The handle material will always match the material of the valve, unless otherwise specified. For example, the mini "T" handle (HL1) on the 2704-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

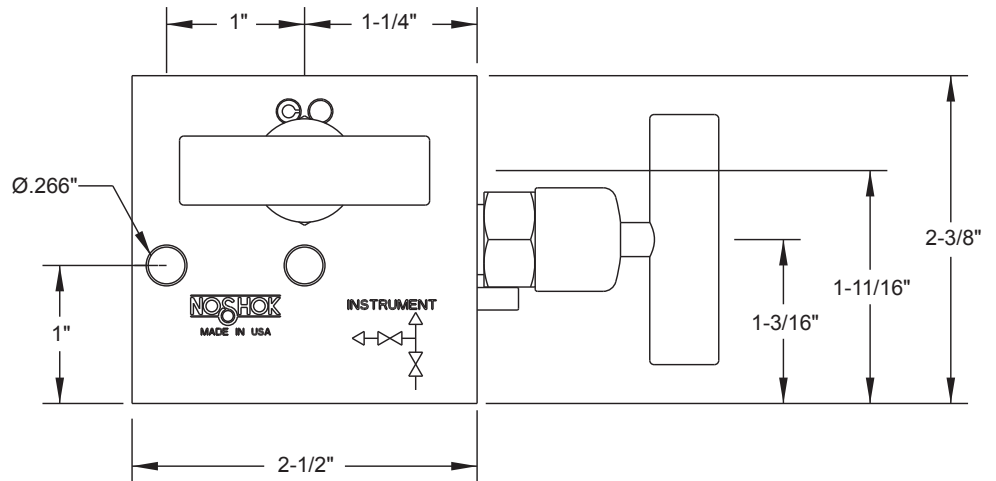
		2 7 0 4 - FFC - P1
Series	2-valve	↑
Seat	Soft tip	↑
Process type	Static pressure	↑
Connection	1/2" NPT	↑
Valve type	Female-female, Steel	↑
Packing	PTFE	↑

Dimensions

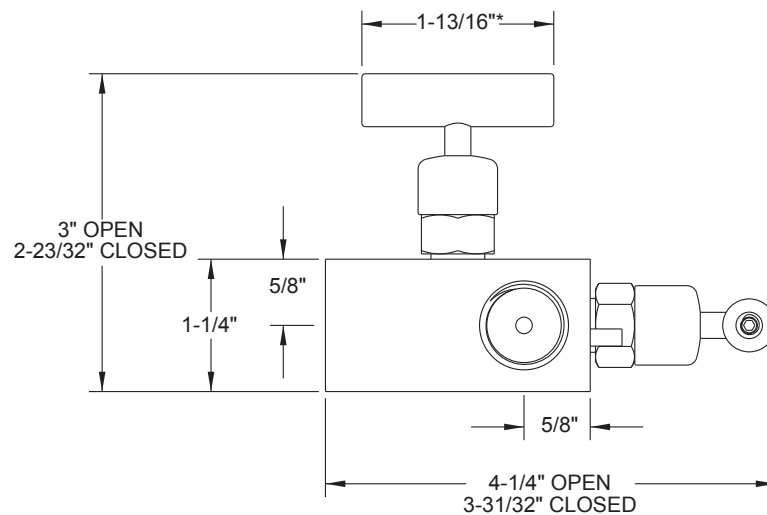
Female-Female



Top View

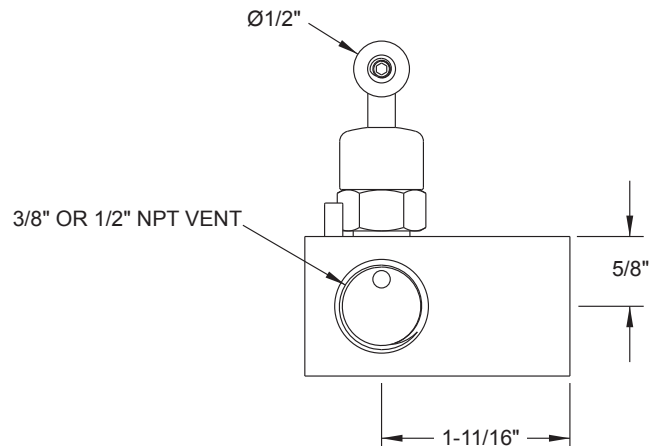


Front View



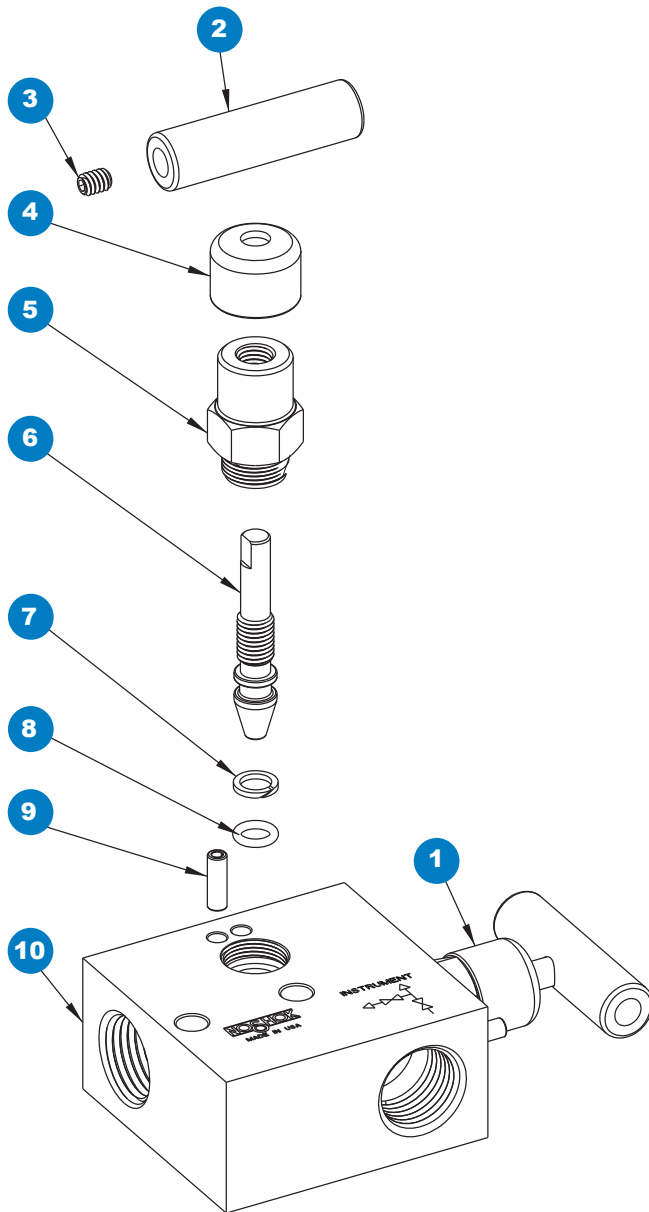
* 1-3/8" for soft tip versions

Side View



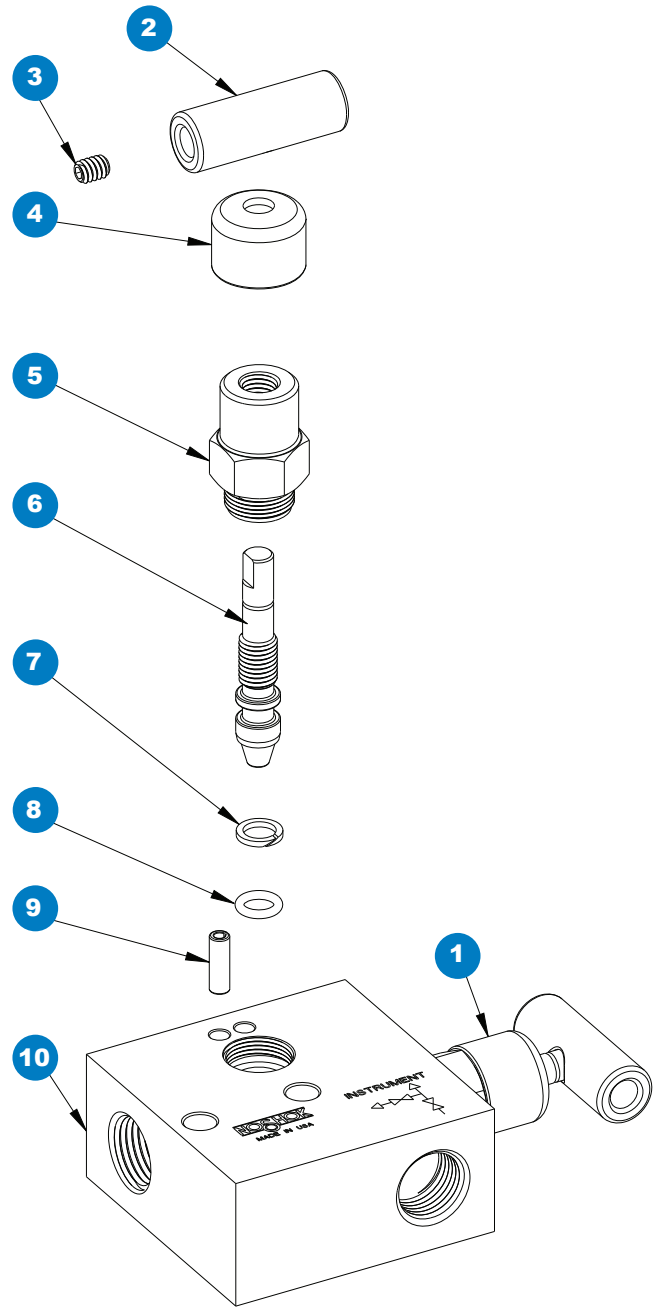
For panel mount or packing dimensions, see pg. 66.

Hard Seat



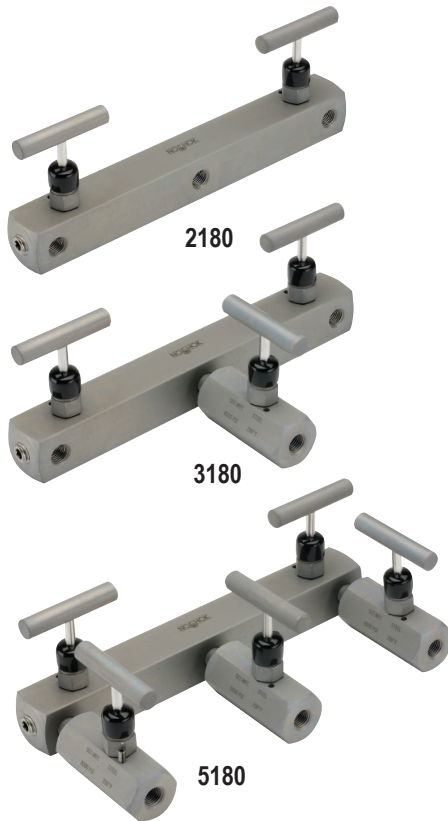
- 1 Blue dust cap
- 2 Mini valve "T" handle
- 3 Set screw
- 4 Red dust cap
- 5 Mini valve bonnet
- 6 Mini valve stem
- 7 PTFE back-up ring
- 8 FKM o-ring
- 9 Slotted spring pin
- 10 Valve body

Soft Tip



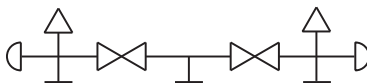
- 1 Blue dust cap
- 2 Mini valve "T" handle
- 3 Set screw
- 4 Red dust cap
- 5 Mini valve bonnet
- 6 Soft tip stem
- 7 PTFE back-up ring
- 8 FKM o-ring
- 9 Slotted spring pin
- 10 Valve body

Chart Recorder Manifold, Soft Seat

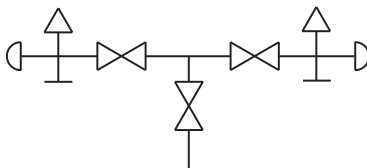


Flow Schematics

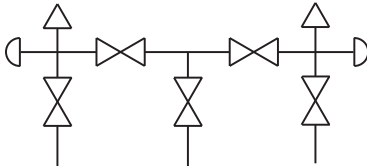
2-Valve



3-Valve



5-Valve



2180 SERIES

- Designed for use with chart recorders
- 100% helium leak tested to 1×10^{-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

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*
Connection	1/4" NPT
Pressure rating	6,000 psi @ 200 °F
Orifice size	0.187"
Flow coefficient	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 packing optional
Options	Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips
Weight	Approximately 4.8 lb. (2-valve model)

* 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.

ORDERING INFORMATION			
SERIES	2 2-valve	3 3-valve	5 5-valve
SEAT	1 Soft seat		
PROCESS TYPE	8 Meter manifold		
CONNECTION	0 1/4" NPT		
VALVE TYPES	FFC Female-Female, Steel	FFS Female-Female, Stainless Steel	

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

EXAMPLE

		2	1	8	0	-	FFC
Series.....	2-valve						
Seat.....	Soft seat						
Process type.....	Meter manifold						
Connection.....	1/4" NPT						
Valve type.....	Female-female, Steel						

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

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

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

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

ORDERING INFORMATION - ADDITIONAL OPTIONS			
PACKINGS	P1 PTFE		
STEM TIP	T1 Non-rotating (316 Stainless)		
O-RINGS*	EM1 EPDM	KZ1 FFKM (Perfluoroelastomer)	NB1 NBR
HANDLES	HL3 1" Round knurled	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.

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

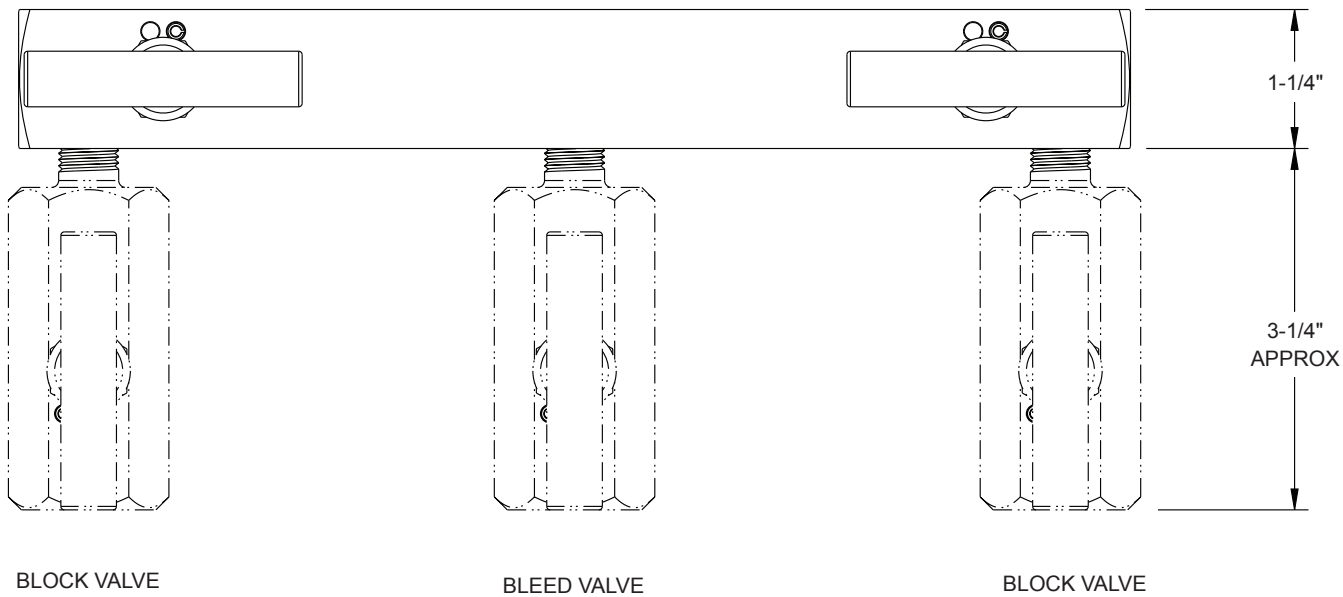
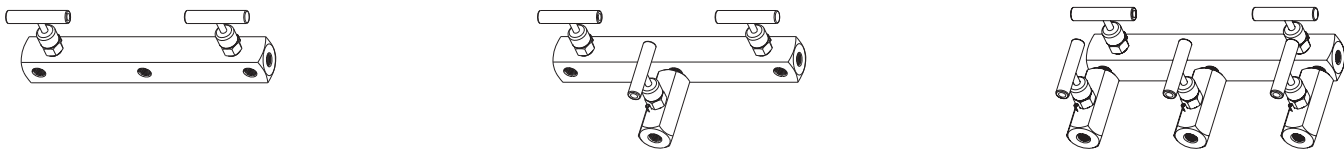
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 2180-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

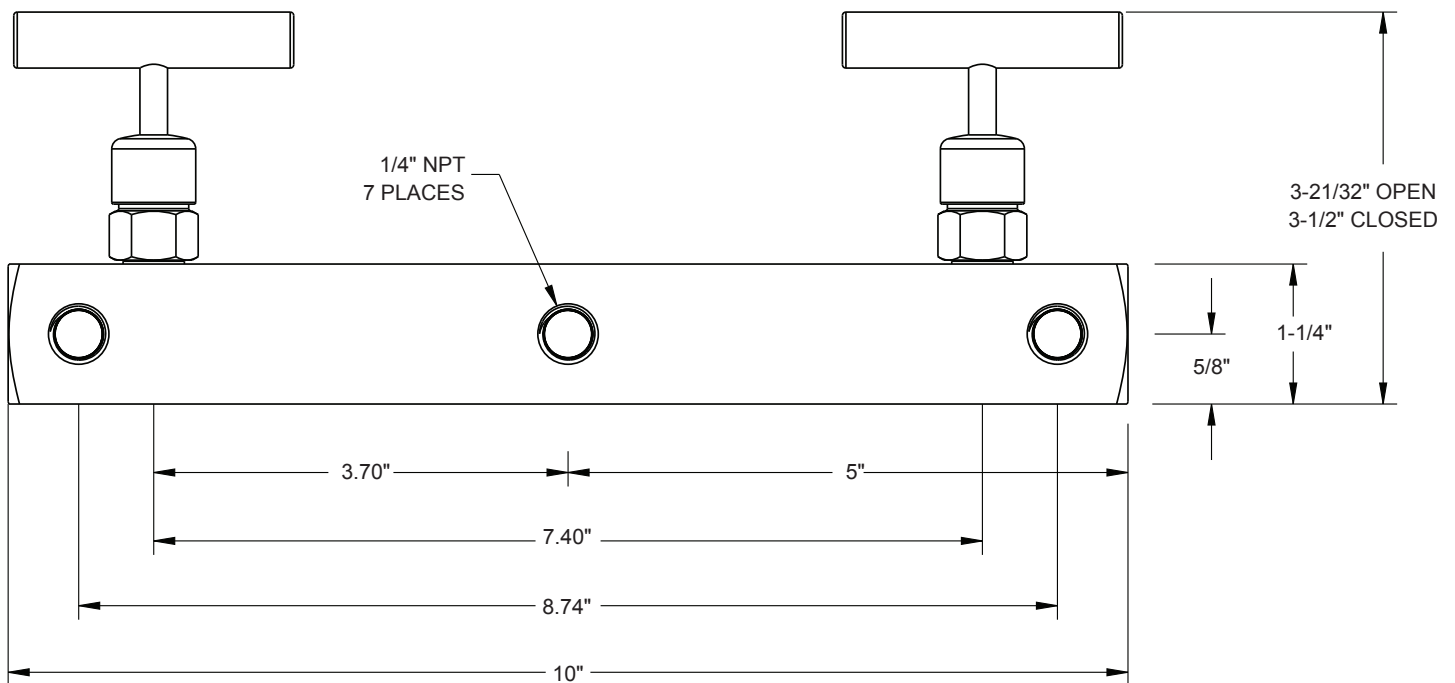
EXAMPLE with Additional Options

		2	1	8	0	-	FFC	-	P1
Series.....	2-valve								
Seat.....	Soft seat								
Process type.....	Meter manifold								
Connection.....	1/4" NPT								
Valve type.....	Female-female, Steel								
Packing.....	PTFE								

Dimensions

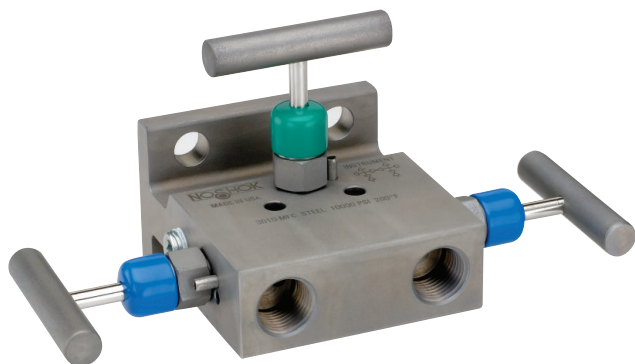
Female-Female





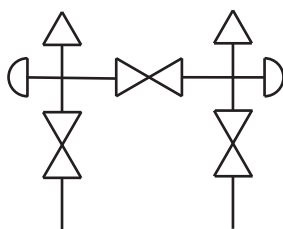
Hard Seat & Soft Seat

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)

Flow Schematic



SPECIFICATIONS

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*
Connection	Flange-flange, 1/2" NPT-flange, 1/2" NPT-1/2" NPT
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 4.0 lb. without flange, Approximately 5.0 lb. with flange

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

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

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



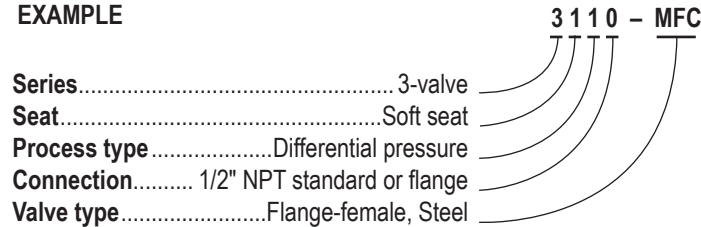
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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

SERIES	3	3-valve	
SEATS	0	Hard seat	1 Soft seat
PROCESS TYPE	1	Differential pressure	
CONNECTION	0	1/2" NPT standard or flange	
VALVE TYPES	MFC	Flange-Female, Steel	MFS Flange-Female, Stainless Steel
	FFC	Female-Female, Steel	FFS Female-Female, Stainless Steel
			MMC Flange-Flange, Steel
			MMS Flange-Flange, Stainless Steel

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

EXAMPLE



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.

ORDERING INFORMATION - ADDITIONAL OPTIONS			
SOFT SEATS***	PK1 PEEK	KF1 PCTFE	
PACKINGS†	P1 PTFE	P2 Graphite**	
STEM TIPS	T1 Non-rotating (316 Stainless)	T6 Ball (carbide)**	T8 Ball (Monel)**
	T5 Ball (440C Stainless)**	T7 Ball (ceramic)**	T9 Non-rotating regulating (316 Stainless)**
O-RINGS*	EM1 EPDM	KZ1 FFKM (Perfluoroelastomer)	NB1 NBR
HANDLES	HL1 1-13/16" Mini "T"	HL4 1-3/8" Phenolic	
	HL3 1" Round knurled	HL5 1-3/4" Phenolic	

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

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

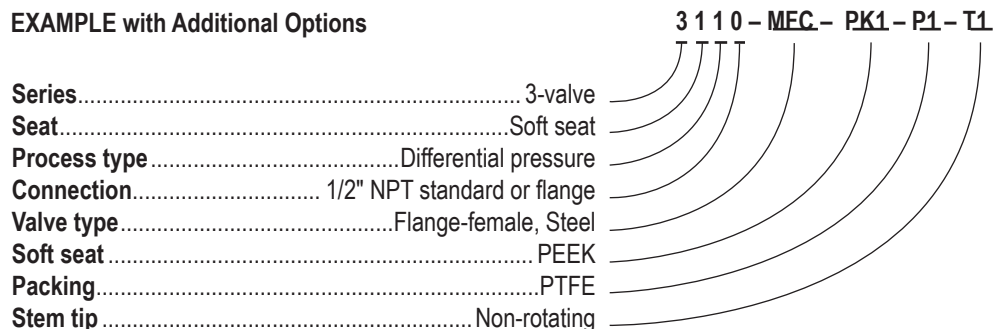
* Other o-ring materials available on request.

** For 3010 only.

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

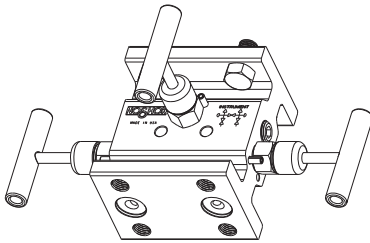
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 3110-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

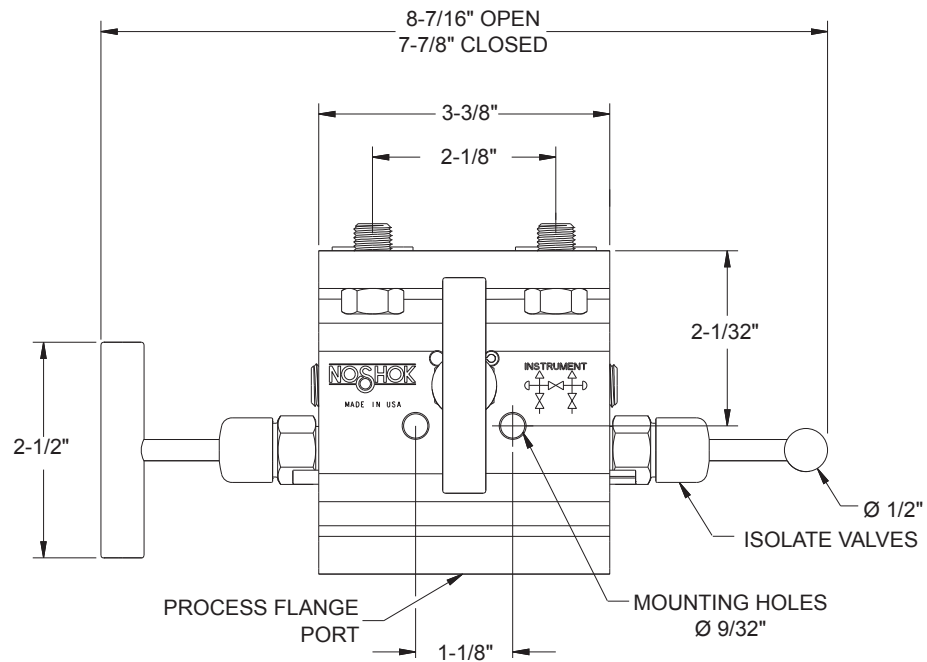


Dimensions

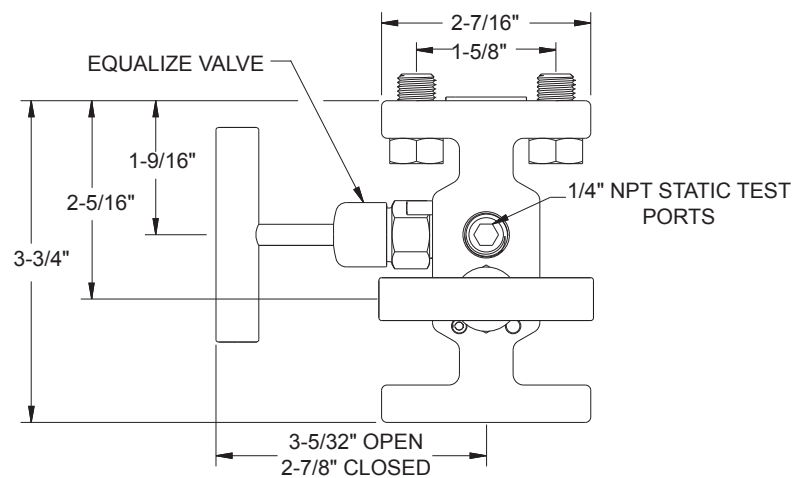
Flange-Flange



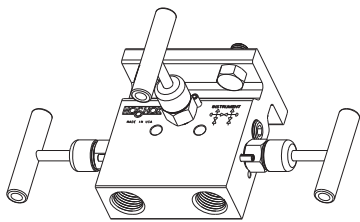
Top View



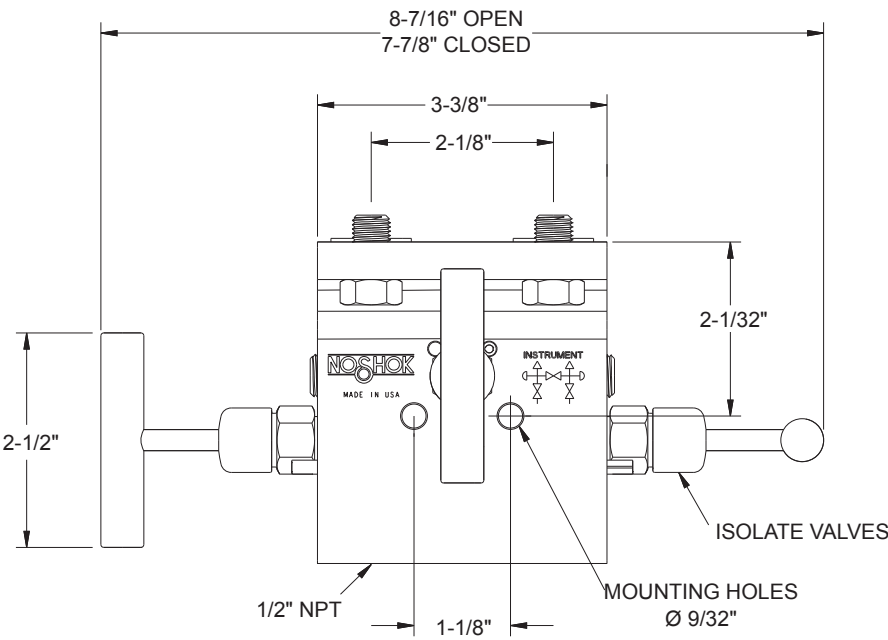
Side View



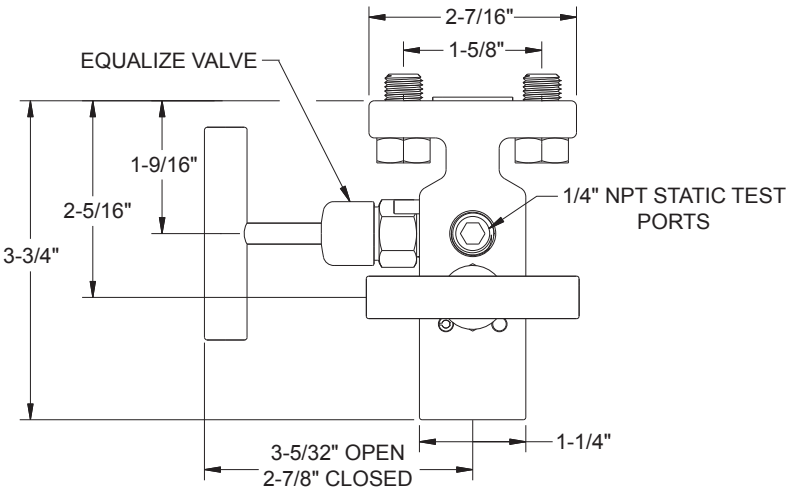
Flange-Female



Top View

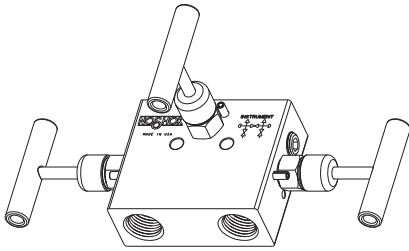


Side View

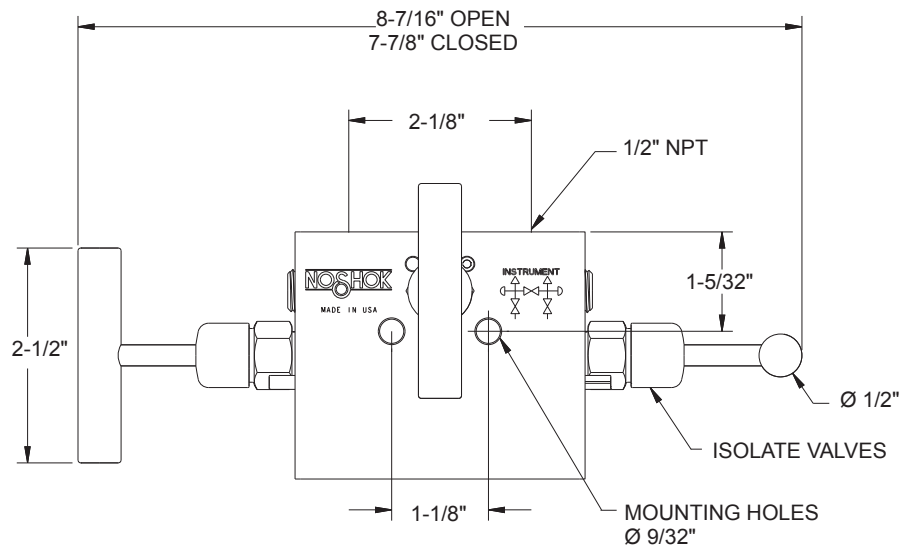


Dimensions

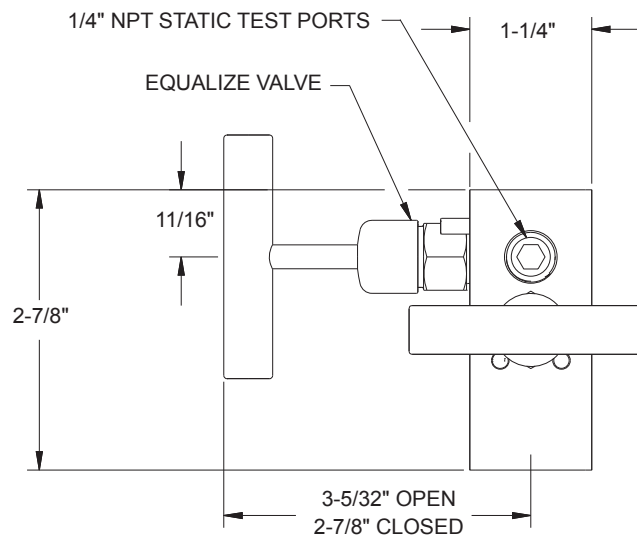
Female-Female



Top View



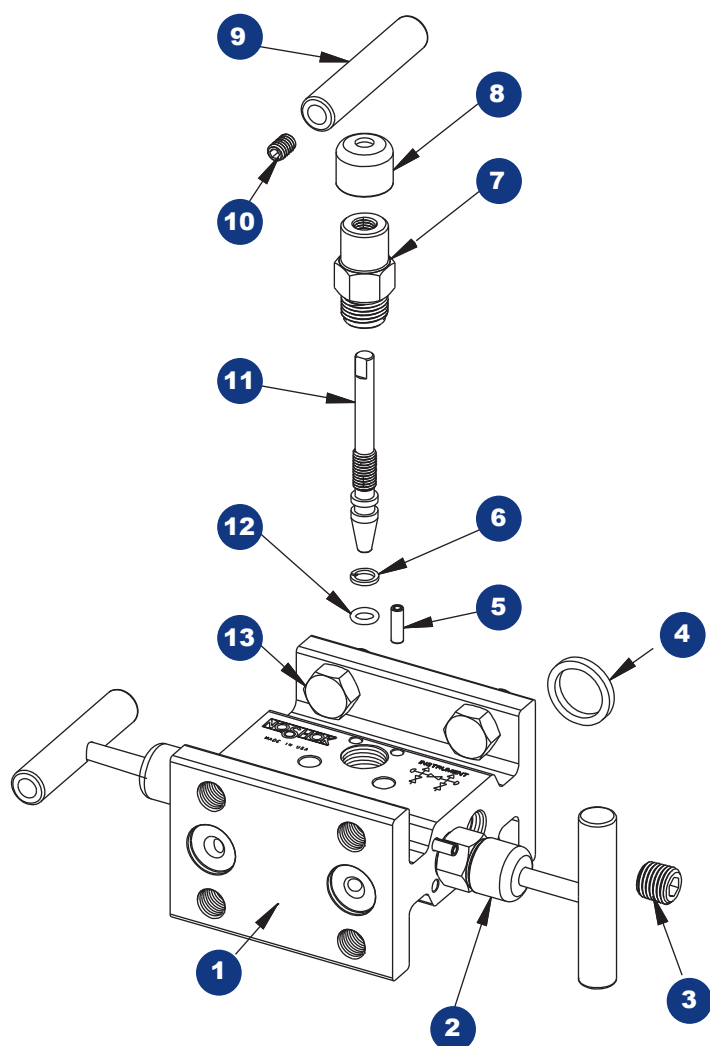
Side View



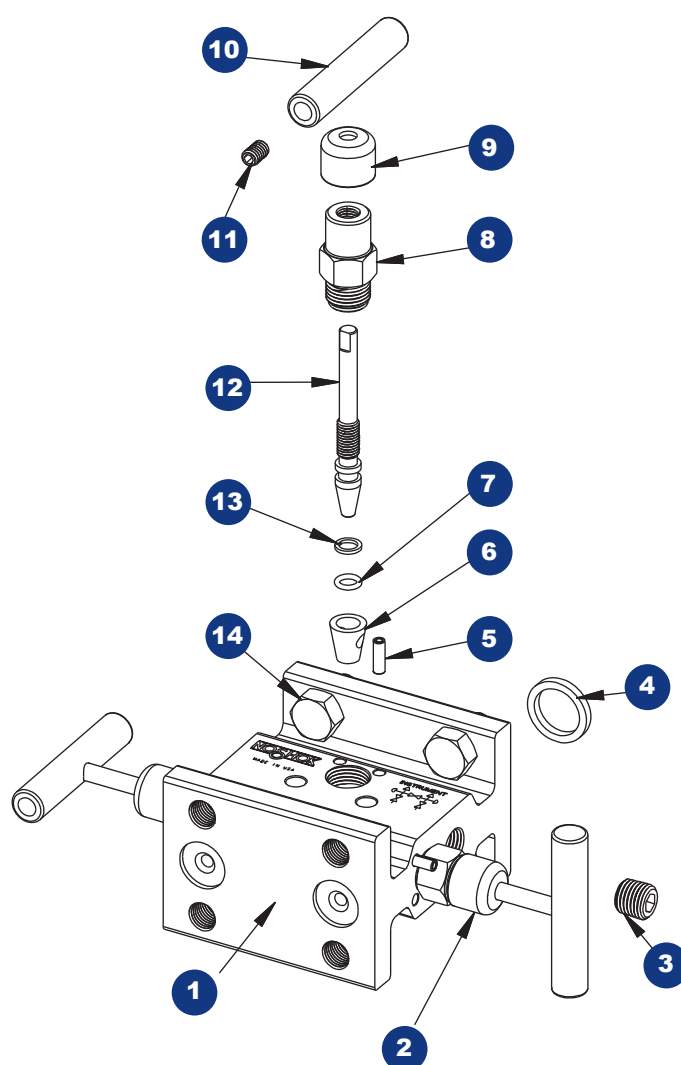
For panel mount or packing dimensions, see pg. 66.

Hard Seat

Soft Seat



- 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

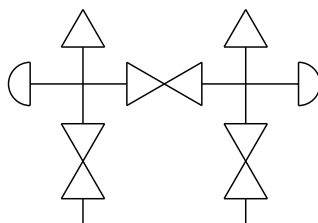
Compact Style Hard Seat

3040 SERIES



- 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 1×10^{-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

Flow Schematic



SPECIFICATIONS

Materials	Electropolished 316 Stainless Steel*
Connection	1/2" NPT-flange
Pressure ratings	6,000 psi @ 200 °F
Orifice size	0.125"
Flow coefficient	C _v 0.30
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	Packings, regulating stem and stem tips o-ring materials and handles
Additional features	Bleed plugs installed in static test ports
Weight	Approximately 4.4 lb.

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

For NOSHOK Valves with Stainless Steel valve types:



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

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	3-valve	
SEATS	0	Hard seat	
PROCESS TYPE	4	Compact style, differential pressure	
CONNECTION	0	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	3
Seat.....	Hard seat	0
Process type.....	Compact style, differential pressure	4
Connection.....	1/2" NPT standard	0
Valve type.....	Flange-female, Stainless Steel, Coplanar™ spacing	MFS-CP

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			
PACKINGS	P1 PTFE	P2 Graphite	
STEM TIPS	T1 Non-rotating (316 Stainless)	T6 Ball (carbide)	T8 Ball (Monel)
	T5 Ball (440C Stainless)	T7 Ball (ceramic)	T9 Non-rotating regulating (316 Stainless)
O-RINGS*	EM1 EPDM	KZ1 FFKM (Perfluoroelastomer)	NB1 NBR

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

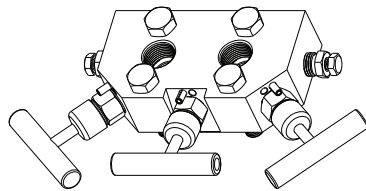
* Other o-ring materials available on request.

EXAMPLE with Additional Options

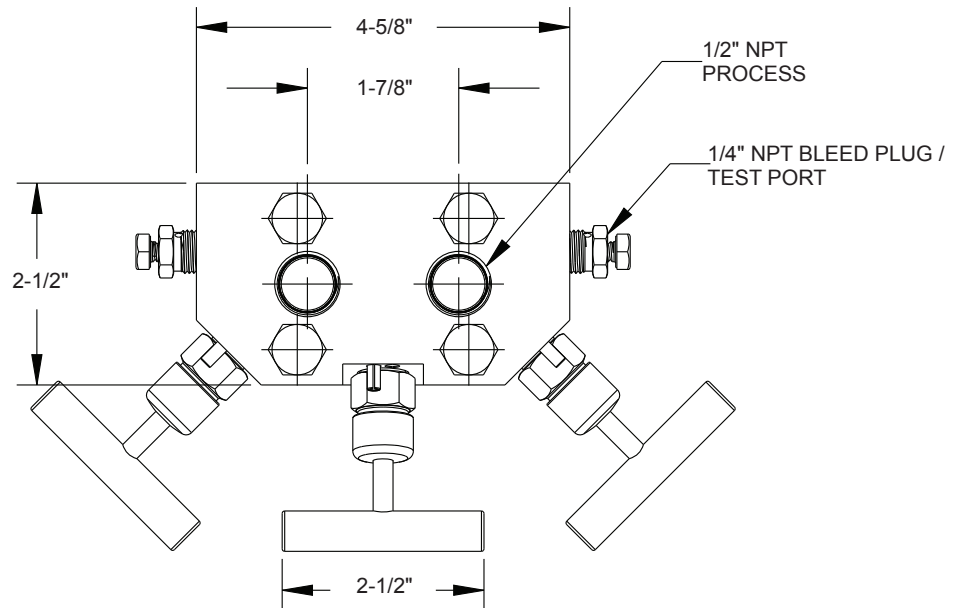
Series.....	3-valve	3
Seat.....	Hard seat	0
Process type.....	Compact style, differential pressure	4
Connection.....	1/2" NPT standard	0
Valve type.....	Flange-female, Stainless Steel	MFS
Packing.....	PTFE	P1
Stem tip.....	Non-rotating	T1

Dimensions

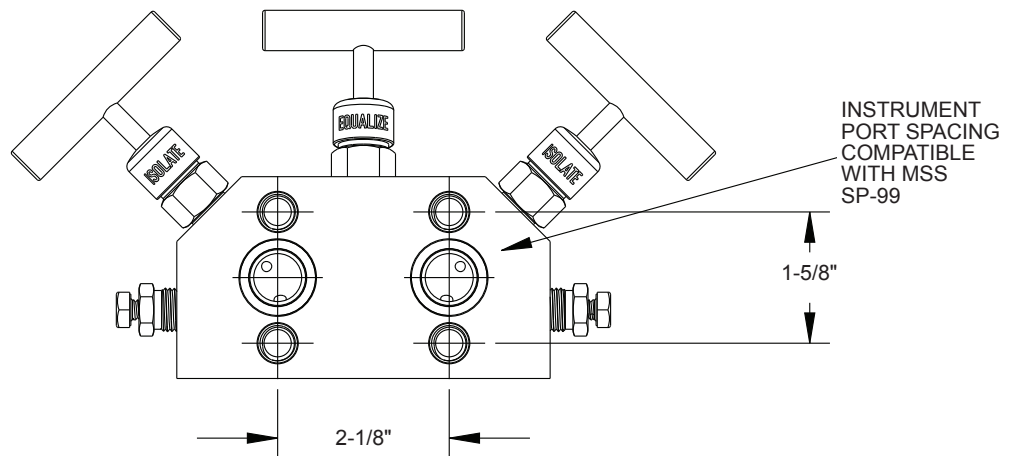
Flange-Female MSS SP-99 Spacing



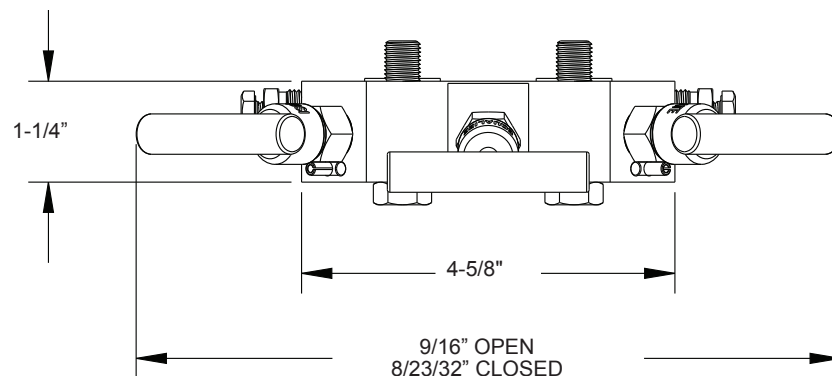
Bottom View



Top View



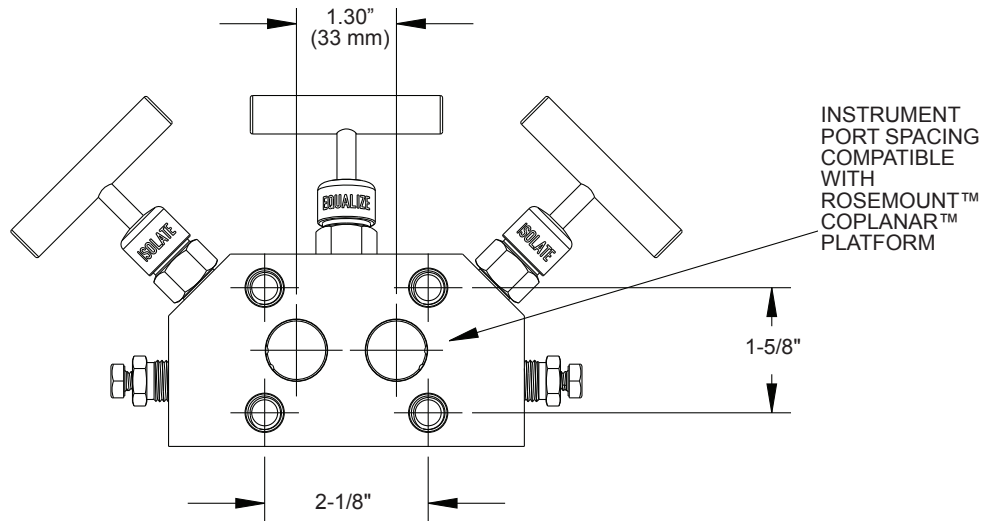
Front View



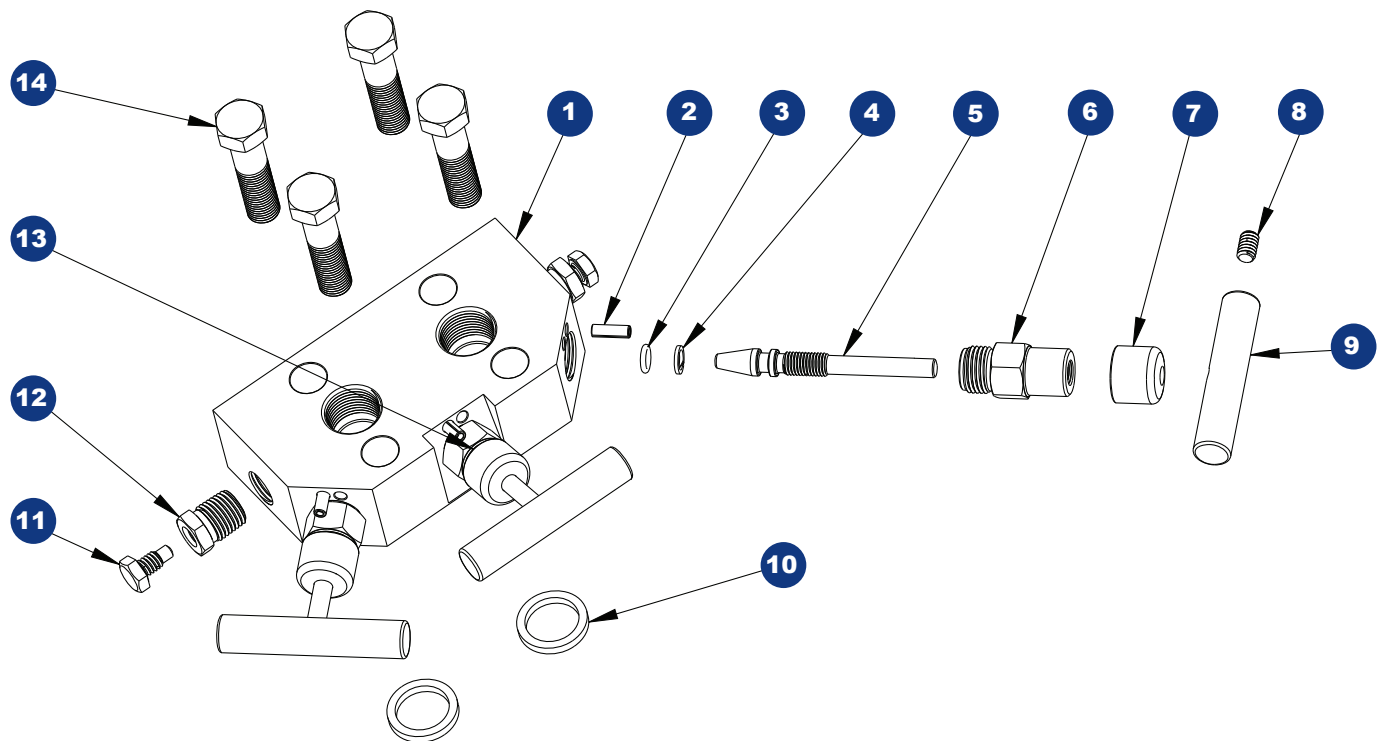
Flange-Female Coplanar™ Spacing

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 | 8 Set screw |
| 2 Slotted spring pin | 9 Valve "T" handle |
| 3 FKM o-ring | 10 Gasket ring |
| 4 PTFE back-up ring | 11 Bleed screw |
| 5 Valve stem | 12 Bleed plug |
| 6 Valve bonnet | 13 Green dust cap |
| 7 Blue dust cap | 14 Head bolt |

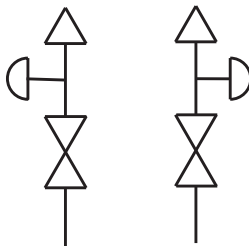
Soft Seat (0.375" Orifice)

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 1×10^{-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

Flow Schematic



SPECIFICATIONS

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

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

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



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

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

SERIES	3	3-valve				
SEAT	5	Soft seat, 0.375" orifice				
PROCESS TYPE	1	Differential pressure				
CONNECTION	0	1/2" NPT standard or flange				
VALVE TYPES	MFC	Flange-Female, Steel	MFS	Flange-Female, Stainless Steel	MMC	Flange-Flange, Steel
	FFC	Female-Female, Steel	FFS	Female-Female, Stainless Steel	MMS	Flange-Flange, Stainless Steel

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

EXAMPLE

3 5 1 0 - MFC

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

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

ORDERING INFORMATION - ADDITIONAL OPTIONS					
SOFT SEATS	PK1	PEEK	KF1	PCTFE	
O-RINGS*	EM1	EPDM	KZ1	FFKM (Perfluoroelastomer)	NB1 NBR
HANDLES	HL3	1" Round knurled	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.

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.

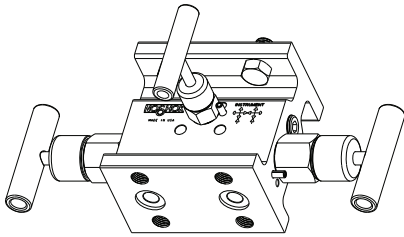
EXAMPLE with Additional Options

3 5 1 0 - MFC - PK1 - KZ1

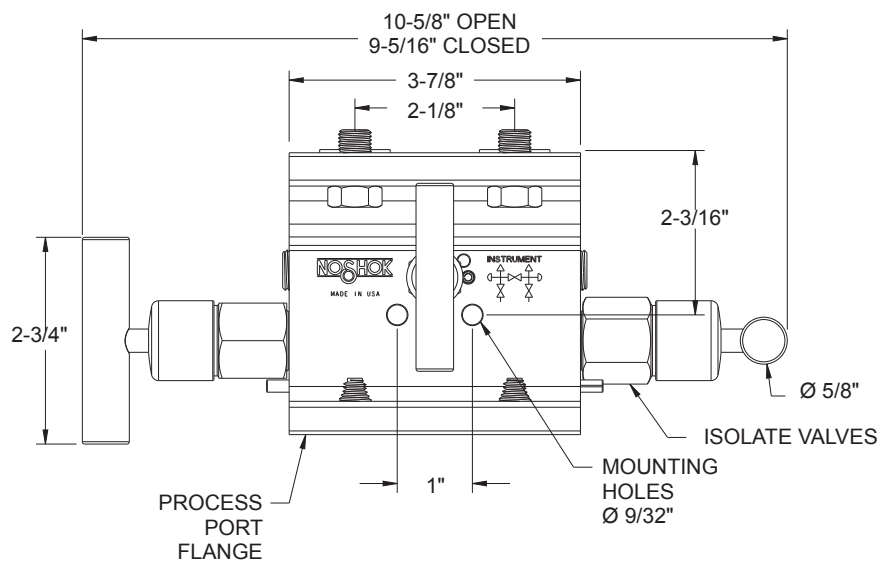
Series..... 3-valve
 Seat..... Soft seat
 Process type..... Differential pressure
 Connection..... 1/2" NPT standard or flange
 Valve type..... Flange-female, Steel
 Soft seat..... PEEK
 O-ring..... FFKM

Dimensions

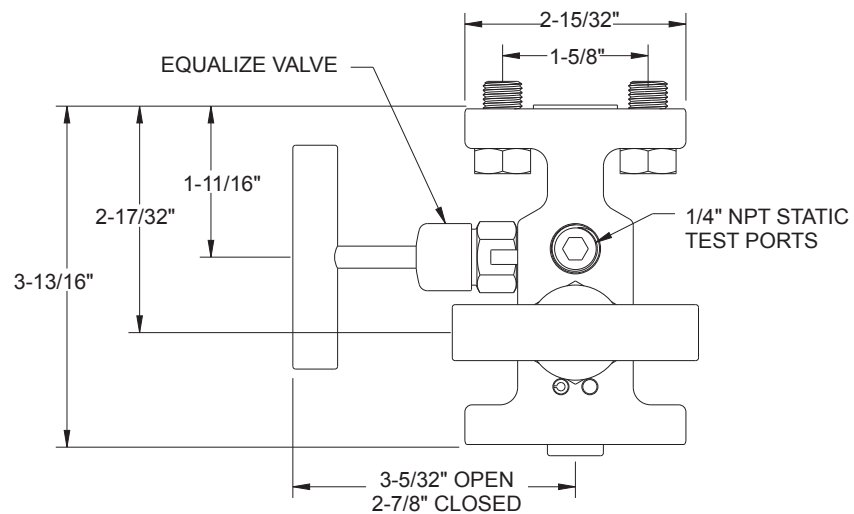
Flange-Flange



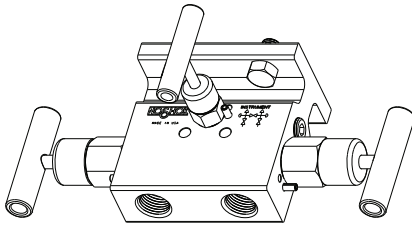
Top View



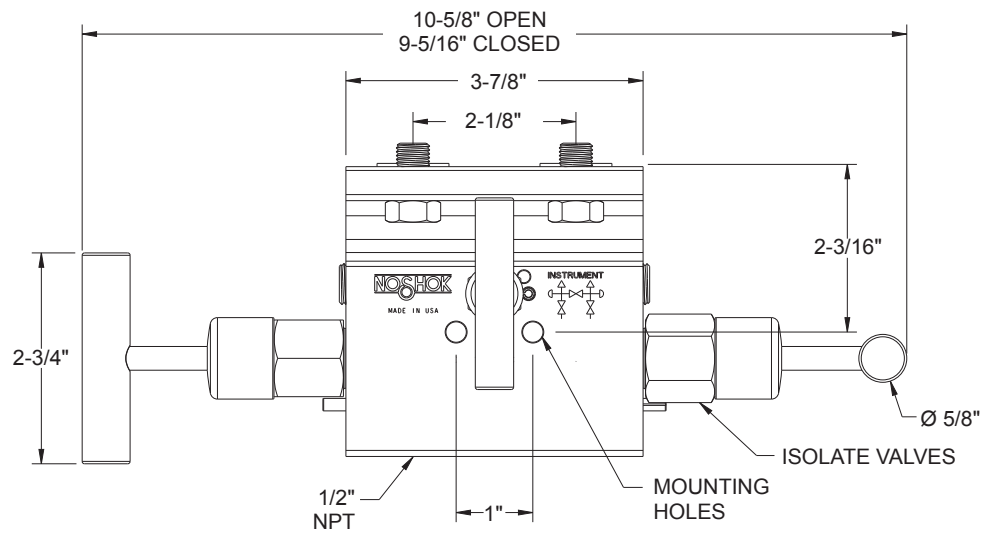
Side View



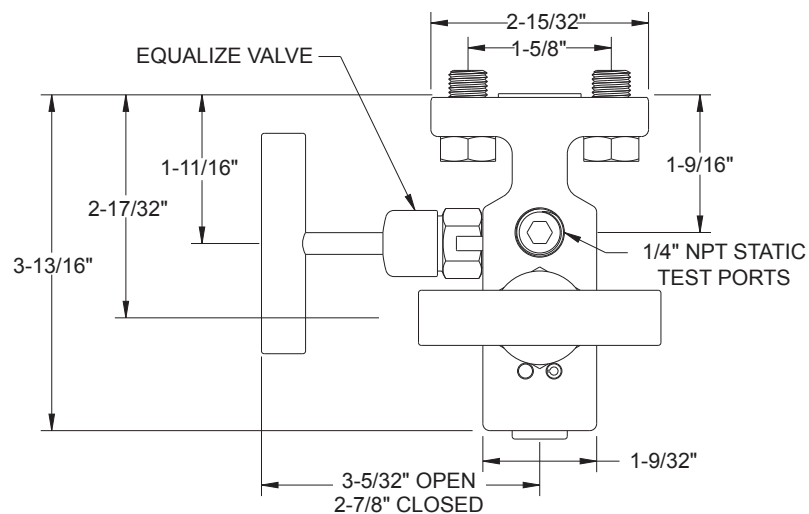
Flange-Female



Top View

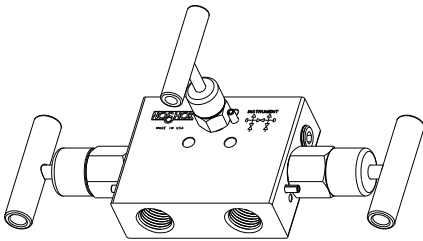


Side View

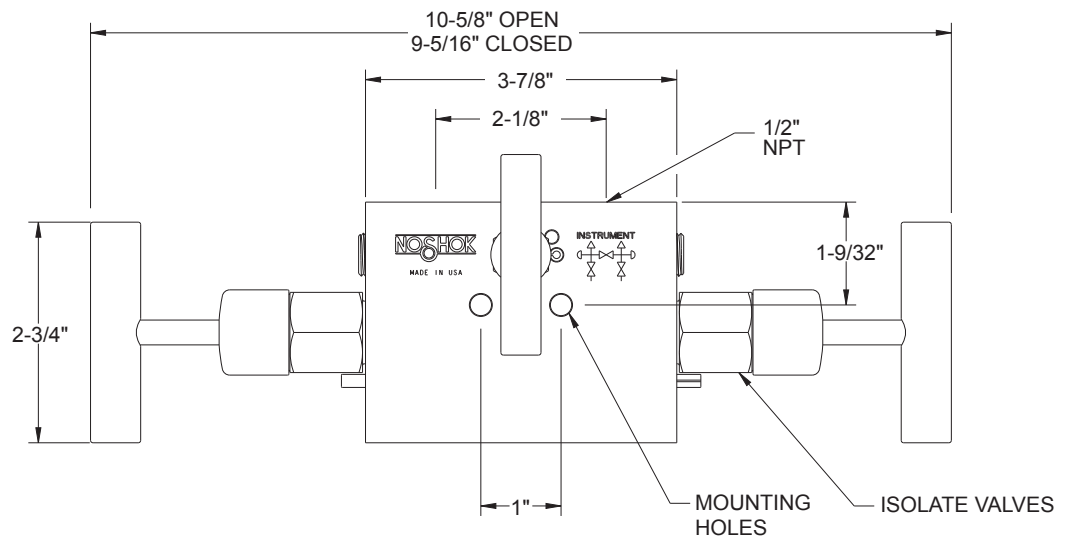


Dimensions

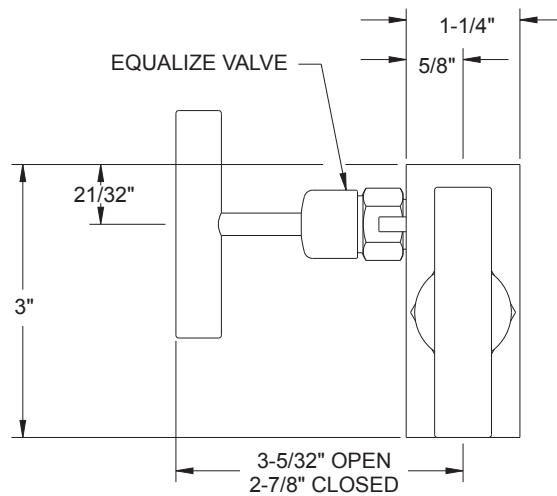
Female-Female



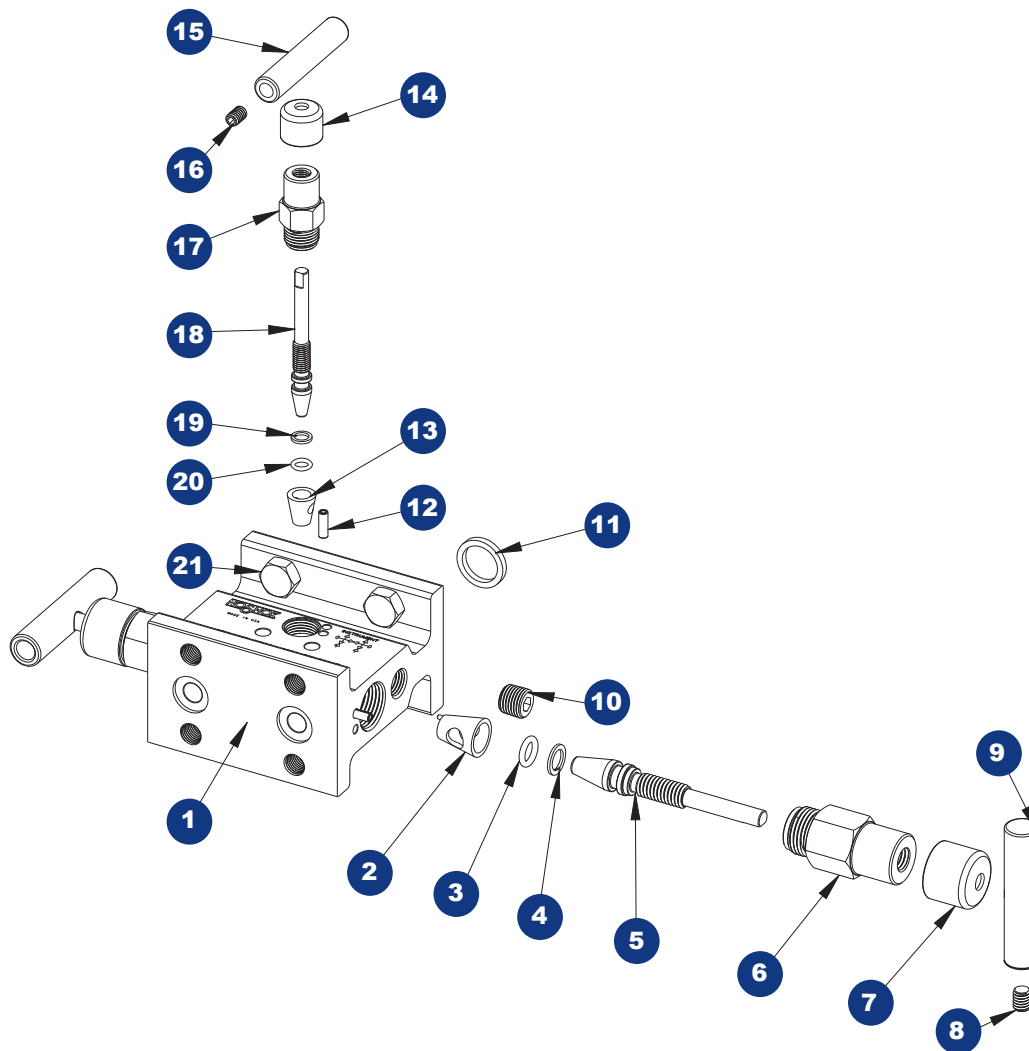
Top View



Side View



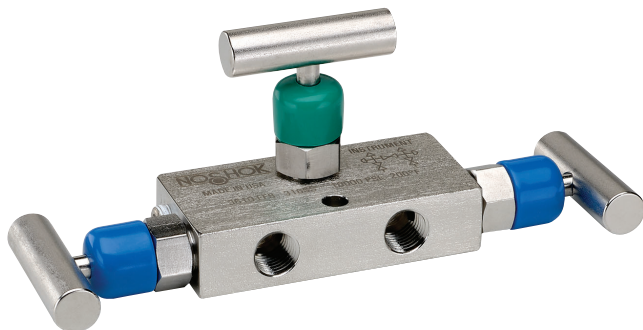
For panel mount or
packing dimensions,
see pg. 66.



- | | |
|------------------------------|-----------------------|
| 1 Valve body | 12 Slotted spring pin |
| 2 Acetal seat | 13 Acetal seat |
| 3 FKM o-ring | 14 Green dust cap |
| 4 PTFE back-up ring | 15 Valve "T" handle |
| 5 Non-rotating stem assembly | 16 Set screw |
| 6 Valve bonnet | 17 Valve bonnet |
| 7 Blue dust cap | 18 Valve stem |
| 8 Set screw | 19 PTFE back-up ring |
| 9 Valve "T" handle | 20 FKM o-ring |
| 10 Plug | 21 Head bolt |
| 11 Gasket ring | |

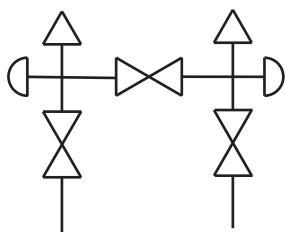
Mini, Hard Seat & Soft Tip (0.141" Orifice)

3610/3710 SERIES



- Compact design is ideal for installations with limited space, such as behind panels or in cabinets
- Designed for use with differential pressure transmitters incorporating two isolation valves and an equalizing valve in differential pressure measurement
- 100% helium leak tested to 1×10^{-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**)

Flow Schematic



SPECIFICATIONS

Materials	Zinc-Nickel plated Steel, electropolished 316 Stainless Steel*
Connection	1/4" NPT
Pressure ratings**	Hard seat: 10,000 psi @ 200 °F Soft tip: 6,000 psi @ 200 °F
Orifice size	0.141"
Flow coefficient	C _v 0.44
Stem seal & type	All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads, PTFE or Graphite packing optional
Options	Panel mountings, o-ring materials, handles, packings, regulating stem and stem tips
Weight	Approximately 1.4 lb.

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

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

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



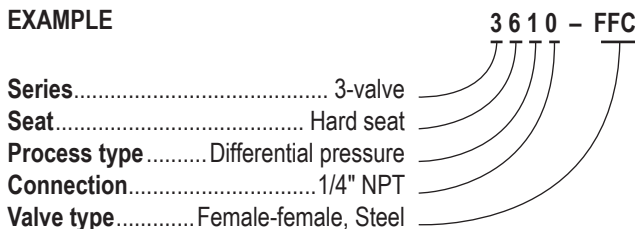
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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

SERIES	3	3-valve		
SEATS	6	Hard seat	7	Soft tip
PROCESS TYPE	1	Differential pressure		
CONNECTION	0	1/4" NPT		
VALVE TYPES	FFC	Female-Female, Steel	FFS	Female-Female, Stainless Steel

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

EXAMPLE



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

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

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

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

ORDERING INFORMATION - ADDITIONAL OPTIONS				
PACKINGS [†]	P1 PTFE	P2 Graphite**		
STEM TIPS	T1 Non-rotating (316 Stainless)**	T4 PEEK***	T7 Ball (ceramic)**	T10 Regulating Acetal ***
	T2 Acetal (Acetal)***	T5 Ball (440C Stainless)**	T8 Ball (Monel)**	T11 Regulating PCTFE***
	T3 PCTFE***	T6 Ball (carbide)**	T9 Non-rotating regulating (316 Stainless)**	T12 Regulating PEEK***
O-RINGS*	EM1 EPDM	KZ1 FFKM (Perfluoroelastomer)	NB1 NBR	
HANDLES	HL2 2-1/2" "T"	HL3 1" Round knurled	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.

** For 3610 only.

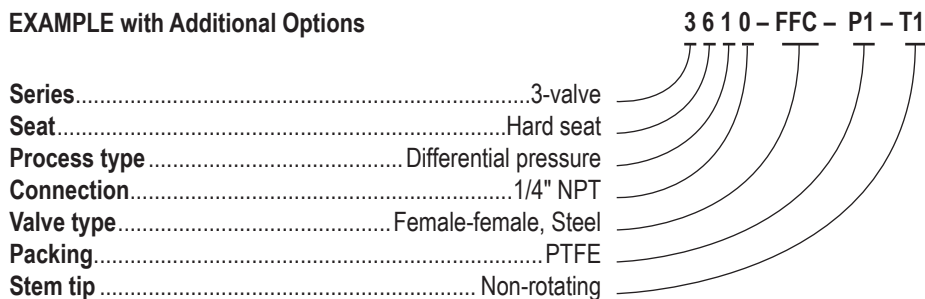
*** For 3710 only.

[†] 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).

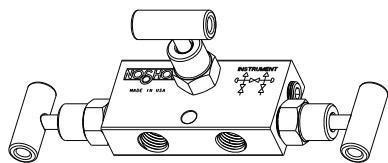
The handle material will always match the material of the valve, unless otherwise specified. For example, the 1-3/8" mini "T" handle (HL7) on the 3710-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application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

EXAMPLE with Additional Options

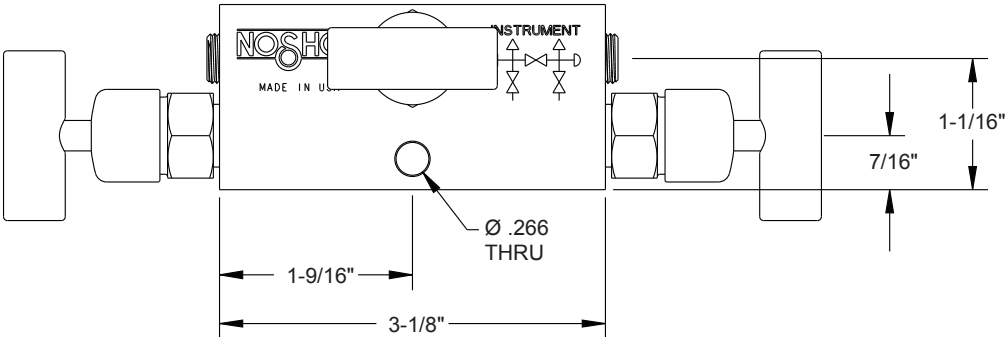


Dimensions

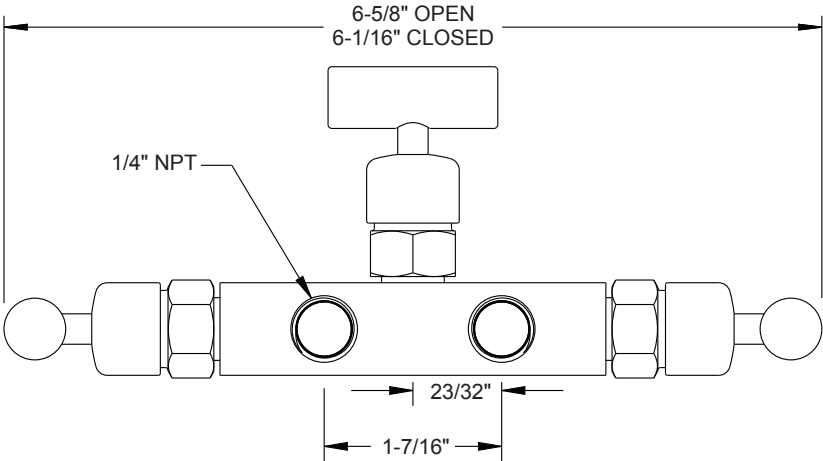
Female-Female



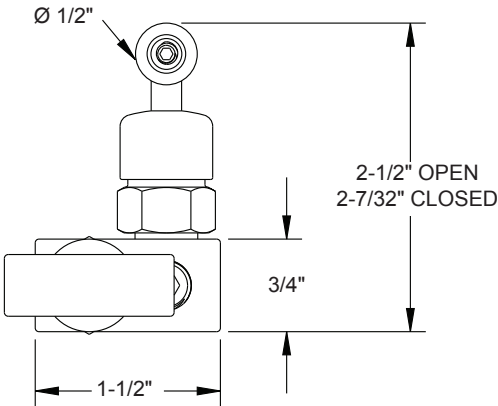
Top View



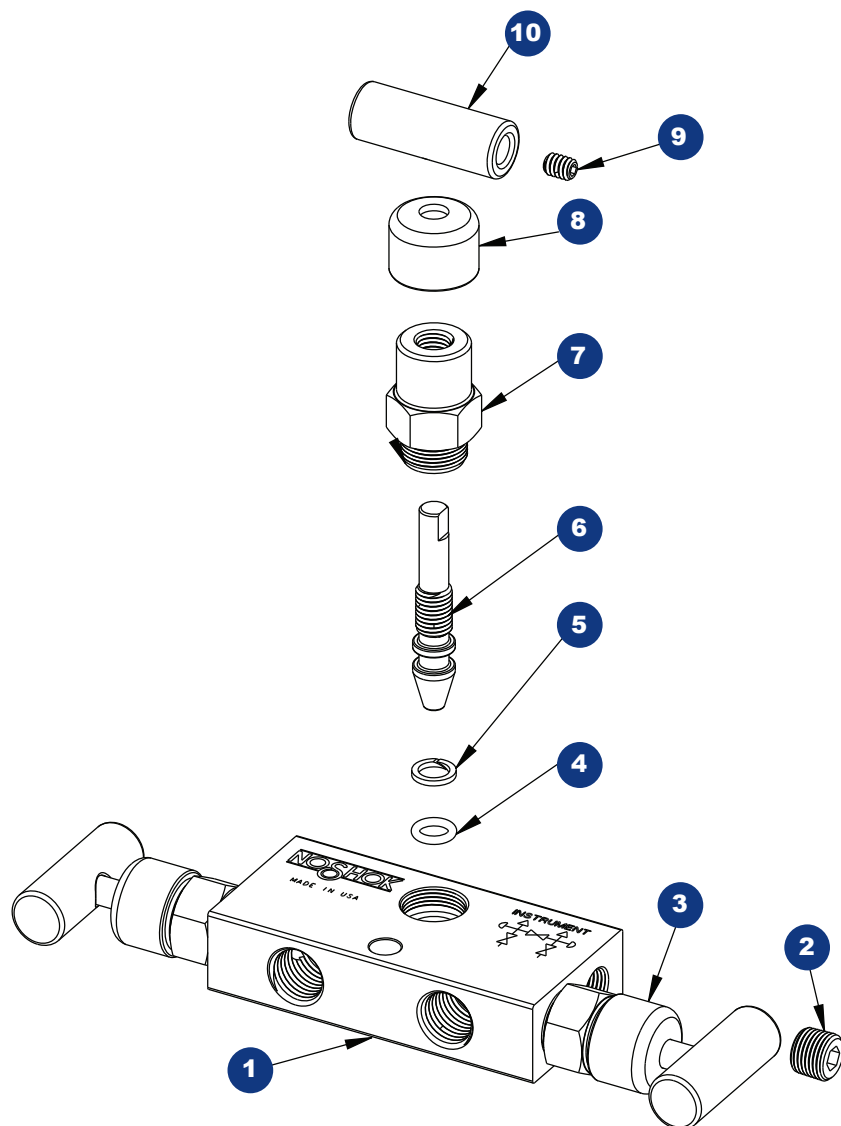
Front View



Side View



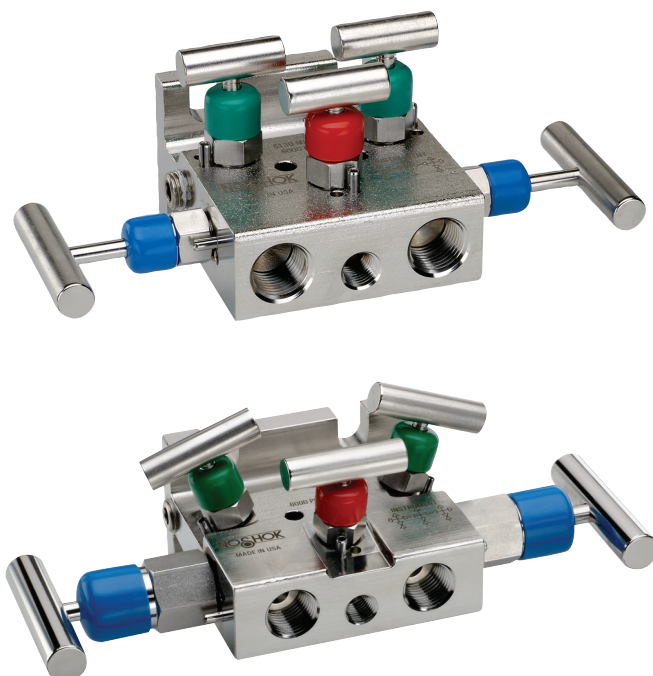
For panel mount or
packing dimensions,
see pg. 66.



- 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

Hard Seat & Soft Seat/Tip

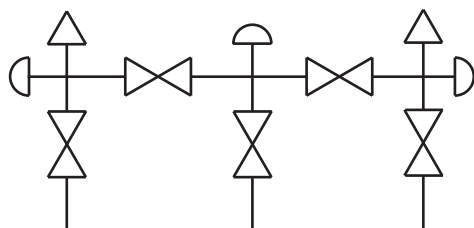
5030/5130 SERIES



Flare Pattern™ option



Flow Schematic



- 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 1×10^{-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

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

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

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

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



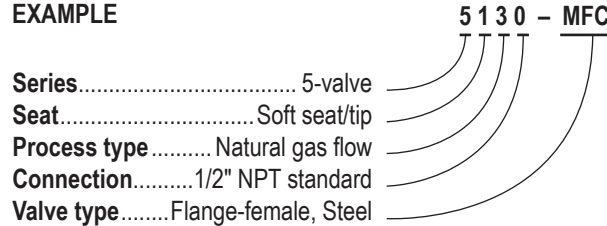
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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

SERIES	5	5-valve				
SEATS	0	Hard seat	1	Soft seat/tip		
PROCESS TYPE	3	Natural gas flow				
CONNECTION	0	1/2" NPT or flange				
VALVE TYPES	MFC	Flange-Female, Steel	MFS	Flange-Female, Stainless Steel	MMC	Flange-Flange, Steel
	FFC	Female-Female, Steel	FFS	Female-Female, Stainless Steel	MMS	Flange-Flange, Stainless Steel

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

EXAMPLE



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											
BODY CONFIGURATION	FP	Flare Pattern™									
SOFT SEATS	PK1	PEEK		KF1	PCTFE						
PACKINGS†	P1	PTFE		P2	Graphite**						
STEM TIPS	T1	Non-rotating (316 Stainless)		T4	PEEK***		T7	Ball (ceramic)**	T10	Regulating Acetal***	
	T2	Acetal (Acetal)***		T5	Ball (440C Stainless)**		T8	Ball (Monel)**	T11	Regulating PCTFE***	
	T3	PCTFE***		T6	Ball (carbide)**		T9	Non-rotating regulating (316 Stainless)**		T12	Regulating PEEK***
O-RINGS*	EM1	EPDM		KZ1	FFKM (Perfluoroelastomer)				NB1	NBR	
HANDLES	HL1	1-13/16" Mini "T"		HL3	1" Round knurled		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.

** For 5030 only.

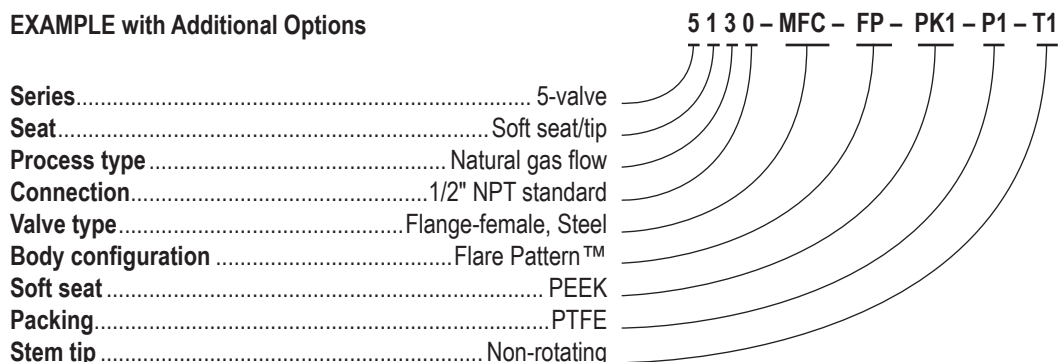
*** For 5130 only.

† 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 isolation "T" handles (HL2) and equalizing & vent 1-3/8" mini "T" handles (HL7).

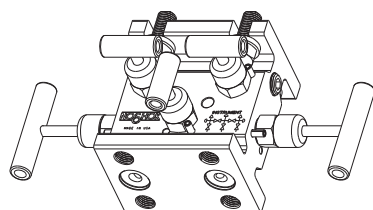
The handle material will always match the material of the valve, unless otherwise specified. For example, handles on the 5130-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

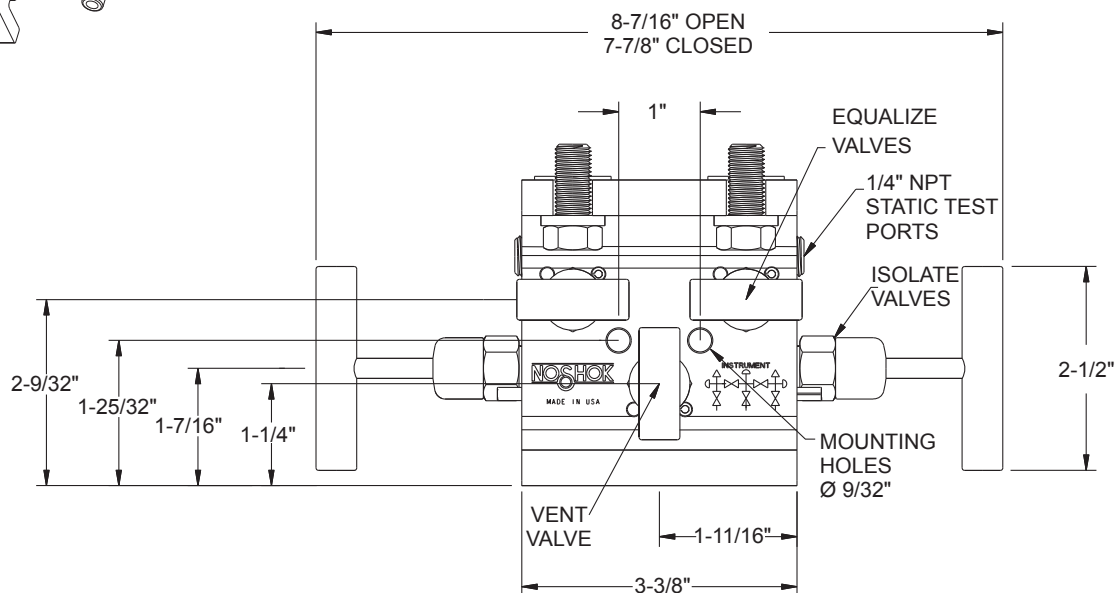


Dimensions

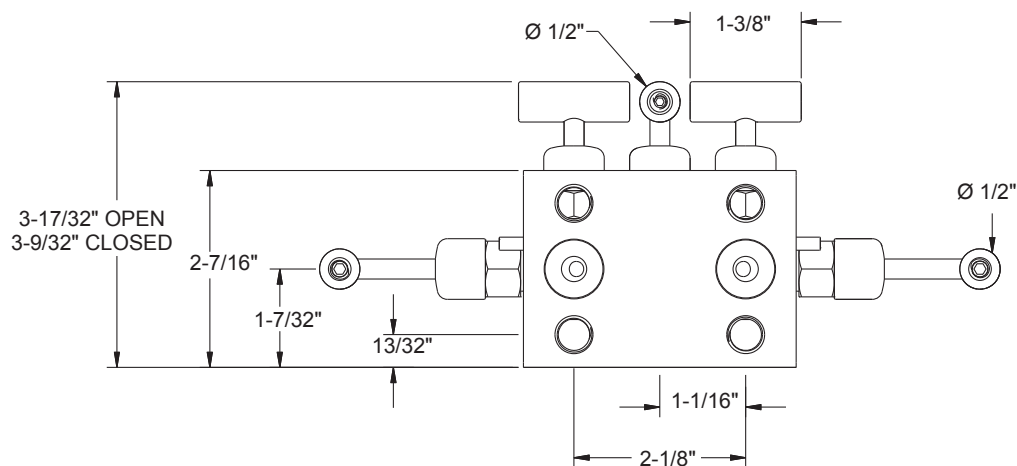
Flange-Flange



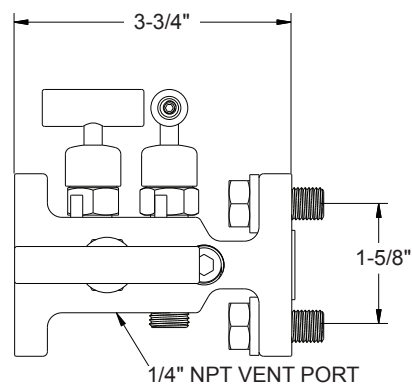
Top View



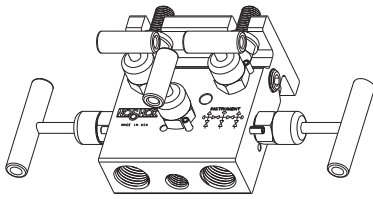
Front View



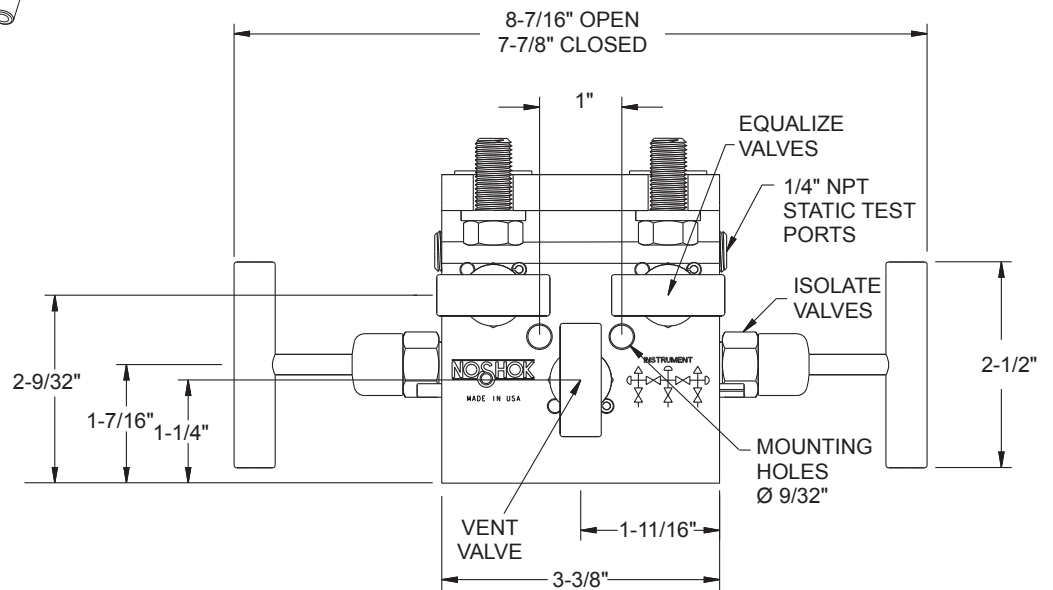
Side View



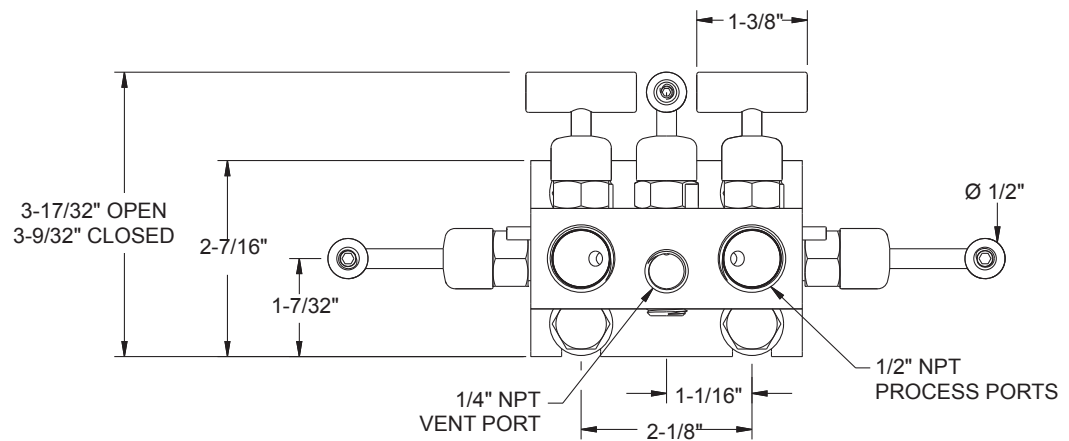
Flange-Female



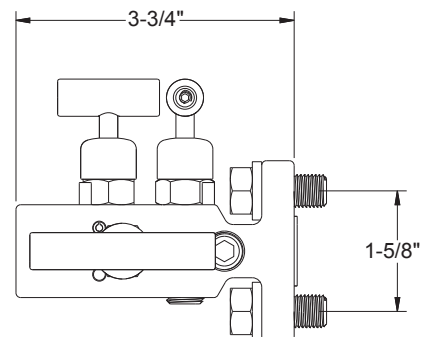
Top View



Front View



Side View



Technical drawing of the NOSHOK Model 1000 pressure transmitter, showing dimensions and labels.

Dimensions:

- Overall width: 8-7/16" OPEN, 7-7/8" CLOSED
- Mounting holes: Ø 9/32"
- Top mounting hole offset: 1"
- Bottom mounting hole offset: 1-11/16"
- Overall height: 2-1/2"
- Front flange height: 1-25/32"
- Front flange thickness: 1-1/4"
- Front flange to body distance: 1-1/32"
- Body height: 1/2"

Labels:

- EQUALIZE VALVES
- ISOLATE VALVES
- MOUNTING HOLES Ø 9/32"
- VENT VALVE
- INSTRUMENT
- MADE IN USA

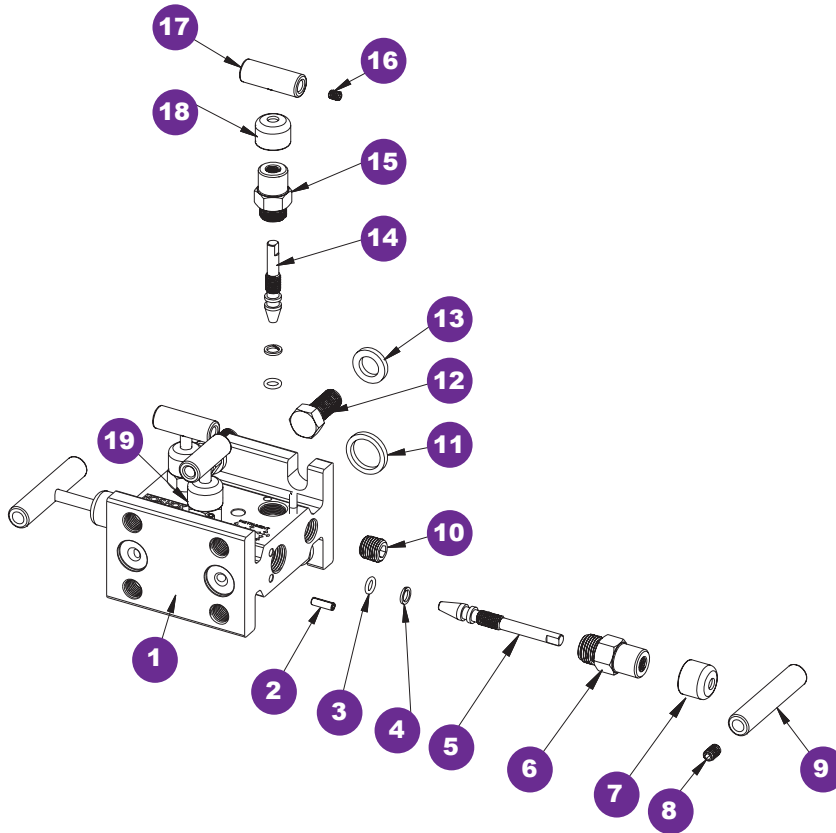
Technical drawing of the 100 Series 3-Port Pressure Transmitter showing dimensions and port specifications:

- Overall height: 2-15/16" OPEN, 2-11/16" CLOSED
- Top port spacing: 1-3/8"
- Left side port dimensions: 1-1/4" (center-to-center), 5/8" (thread length), 15/32" (thread length)
- Ports:
 - 1/4" NPT STATIC TEST PORTS (two)
 - 1/4" NPT VENT PORT (one)
 - 1/2" NPT INSTRUMENT & PROCESS PORTS (two)
- Bottom port spacing: 1-1/16" (center-to-center), 2-1/8" (overall width)
- Right side port: Ø 1/2"

Side view of the 1000 Series Benchtop Scale. The scale has a base with a platform and a display unit. The platform is labeled with a dimension of 2-7/8".

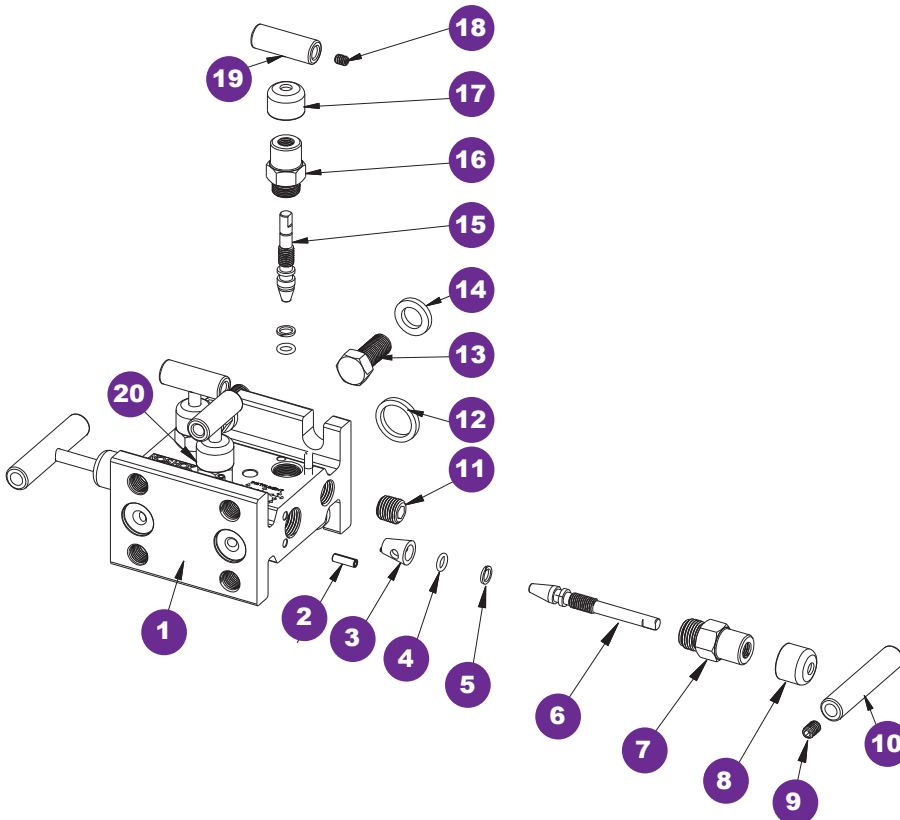
122

Hard Seat



- 1 Valve body
- 2 Slotted spring pin
- 3 FKM o-ring
- 4 PTFE back-up ring
- 5 Valve stem
- 6 Valve bonnet
- 7 Blue dust cap
- 8 Set screw
- 9 Valve "T" handle
- 10 Plug
- 11 Gasket ring
- 12 Head bolt
- 13 Washer
- 14 Mini valve stem
- 15 Mini valve bonnet
- 16 Set screw
- 17 Mini valve "T" handle
- 18 Green dust cap
- 19 Red dust cap

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 Plug
- 12 Gasket ring
- 13 Head bolt
- 14 Washer
- 15 Soft tip stem
- 16 Mini valve bonnet
- 17 Green dust cap
- 18 Set screw
- 19 Mini valve "T" handle
- 20 Red dust cap

Technical drawing of the NOSHOK 1000 Series Valve, showing dimensions and mounting details. The valve is a horizontal, two-handled ball valve with a central body and two side handles. The drawing includes the following dimensions and features:

- Overall Width:** 8-7/16" OPEN, 7-7/8" CLOSED.
- Overall Height:** 3-3/4".
- Top Mounting Hole Spacing:** 7/16" (center-to-center).
- Side Mounting Hole Spacing:** 1-1/4" (center-to-center).
- Side Mounting Hole Diameter:** Ø 9/32".
- Valve Body Dimensions:**
 - Top flange thickness: 2-1/2".
 - Top flange diameter: 1".
 - Top flange to body distance: 3-3/8".
- Valve Body Label:** NOSHOK, MADE IN USA.
- Valve Body Detail:** A detail view of the valve body shows the internal ball and seat assembly, with a label "VALVE ELEMENT" pointing to the ball.

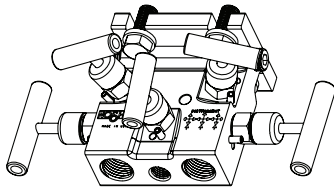
Technical drawing of the 5130 valve assembly. The drawing shows a top-down view of the valve with various dimensions and features labeled. Key dimensions include:

- Overall width: $2\text{--}1/8"$
- Overall height: $2\text{--}3/8"$
- Top flange thickness: $1\text{--}13/16"$
- Top flange diameter: $\varnothing 9/32"$
- Top flange angle: 20°
- Top flange offset: $1/32"$
- Top flange hole diameter: $\varnothing 3/16"$ ORIFICE
- Top flange hole offset: $2\text{--}1/8"$
- Top flange hole diameter: $\varnothing 3/16"$ ORIFICE
- Top flange hole offset: $2\text{--}1/8"$
- Top flange hole diameter: $\varnothing 3/16"$ ORIFICE
- Top flange hole offset: $2\text{--}1/8"$

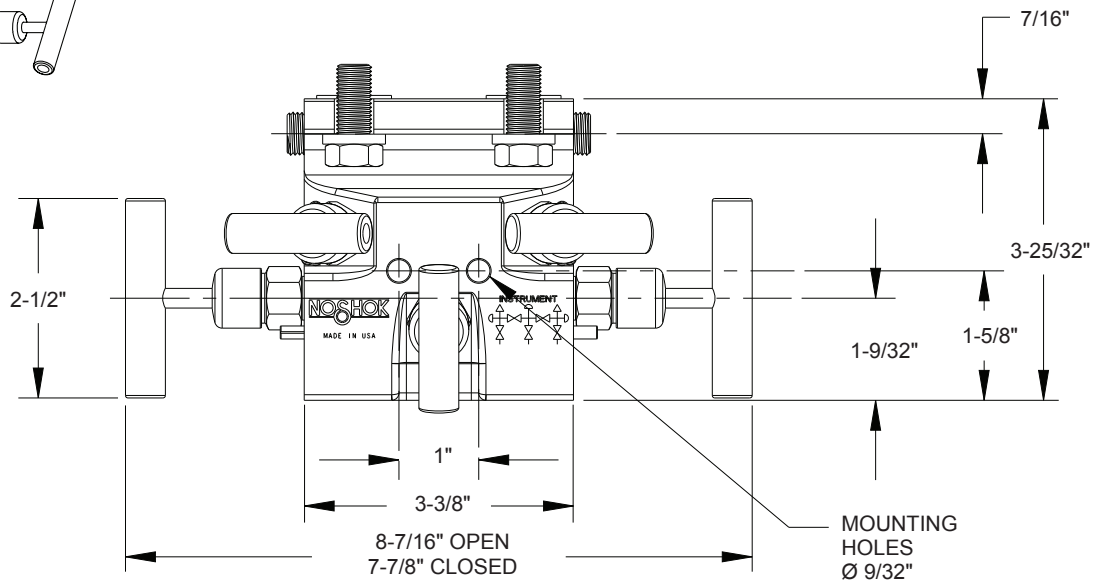
Technical drawing of the 1000 Series Vent Port Assembly. The drawing shows a side view of the assembly with the following dimensions and features:

- Overall width: 1-11/16"
- Distance from left edge to center of vent port: 1-1/16"
- Angle of the vent port: 10°
- Overall height: 2-15/32"
- Distance from bottom edge to center of vent port: 1-5/8"
- Distance from top edge to center of vent port: 1-19/64"
- Label: 1/4" NPT VENT PORT

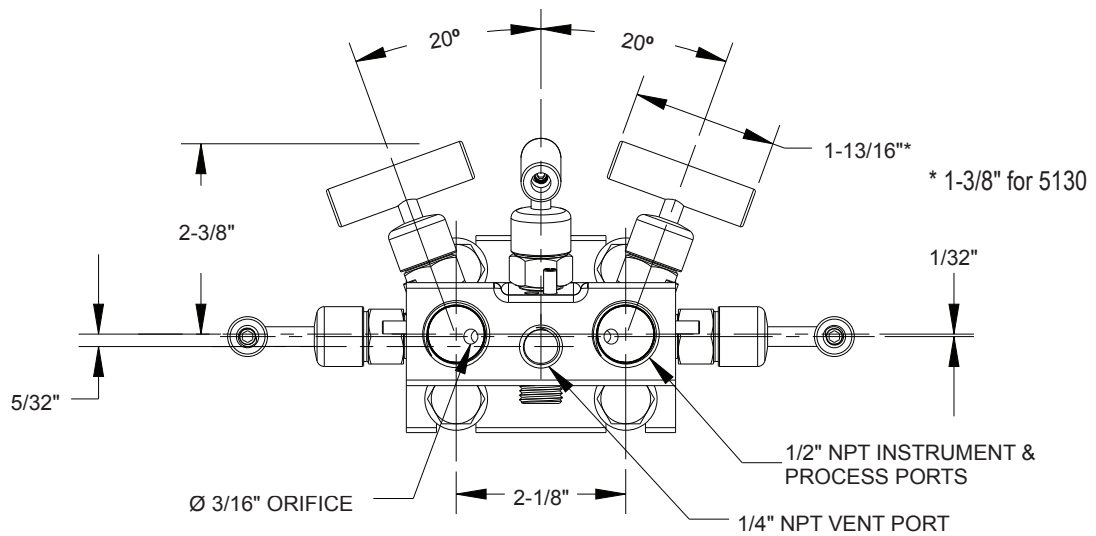
Flare Pattern™ Flange-Female



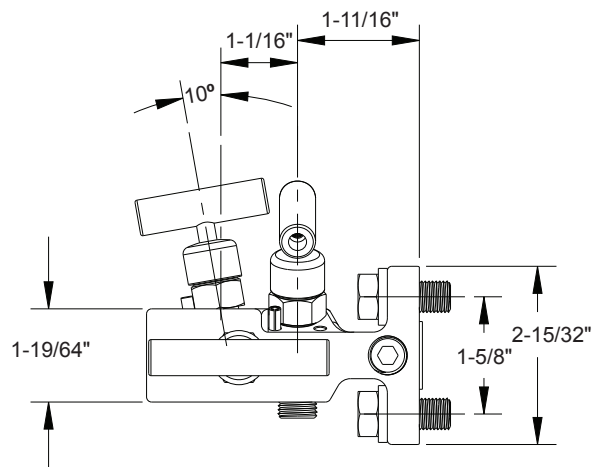
Top View



Front View



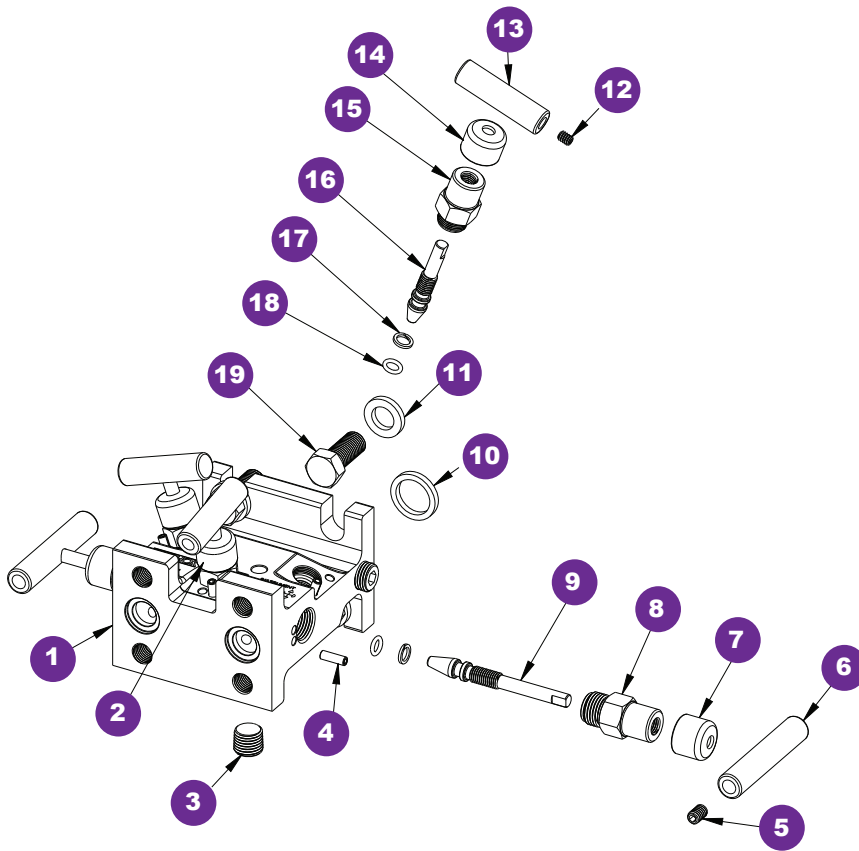
Side View





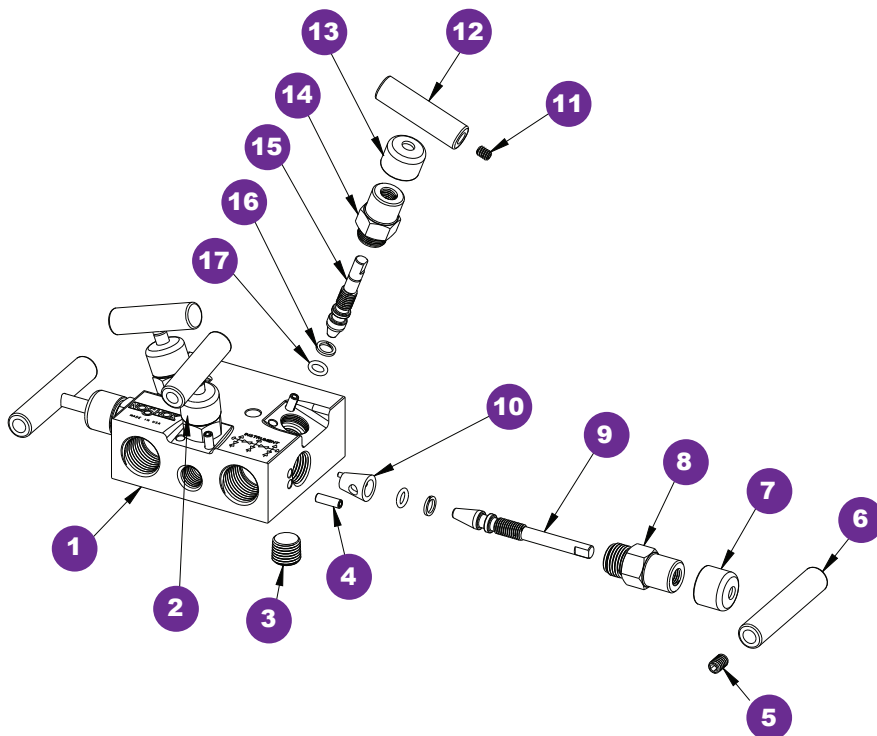
126

Hard Seat



- 1 Flare Pattern™ valve body
- 2 Red dust cap
- 3 Plug
- 4 Slotted spring pin
- 5 Set screw
- 6 Valve "T" handle
- 7 Blue dust cap
- 8 Valve bonnet
- 9 Valve stem
- 10 Gasket ring
- 11 Washer
- 12 Set screw
- 13 Mini valve "T" handle
- 14 Green dust cap
- 15 PTFE back-up ring
- 16 Valve stem
- 17 PTFE back-up ring
- 18 FKM o-ring
- 19 Head bolt

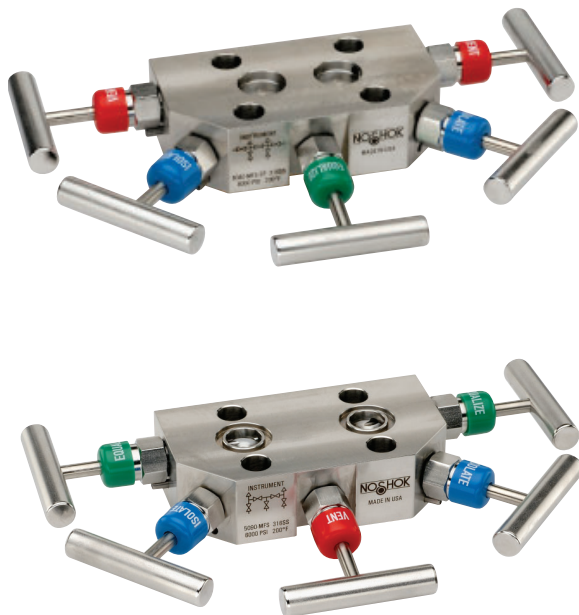
Soft Seat



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

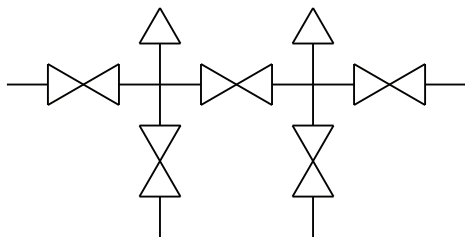
Compact Style Hard Seat

5040/5090 SERIES

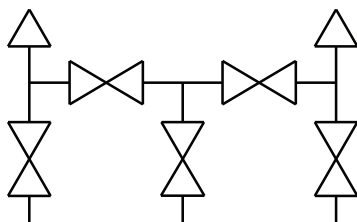


- Compact style, power pattern is designed for use with differential pressure transmitters incorporating two isolation valves, one equalizing valve and two vent valves in power pattern applications
- Compact style, natural gas flow is designed for use with differential pressure transmitters incorporating two isolation valves, two equalizing valves and a vent valve in natural gas applications
- 100% helium leak tested to 1×10^{-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
- 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

**Differential/Power Pattern
Flow Schematic (5040)**



**Natural Gas
Flow Schematic (5090)**



SPECIFICATIONS

Materials	Electropolished 316 Stainless Steel*
Connection	1/2" NPT-flange
Pressure ratings	6,000 psi @ 200 °F
Orifice size	0.125"
Flow coefficient	C _v 0.30
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	Packings, regulating stem and stem tips o-ring materials and handles
Weight	Approximately 4.4 lb.

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

For NOSHOK Valves with Stainless Steel valve types:



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

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	5	5-valve	
SEAT	0	Hard seat	
PROCESS TYPE	4	Compact style, power pattern	9 Compact style, natural gas flow
CONNECTION	0	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.....5-valve
 Seat.....Hard seat
 Process type..... Compact style, power pattern
 Connection..... 1/2" NPT standard
 Valve type..... Flange-female, Stainless Steel

5 0 4 0 - MFS

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			
PACKINGS	P1 PTFE	P2 Graphite	
STEM TIPS	T1 Non-rotating (316 Stainless)	T6 Ball (carbide)	T8 Ball (Monel)
	T5 Ball (440C Stainless)	T7 Ball (ceramic)	T9 Non-rotating regulating (316 Stainless)
O-RINGS*	EM1 EPDM	KZ1 FFKM (Perfluoroelastomer)	NB1 NBR

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

* Other o-ring materials available on request.

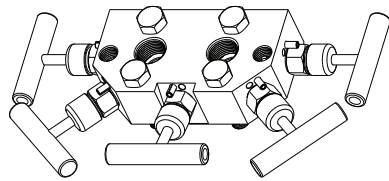
EXAMPLE with Additional Options

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

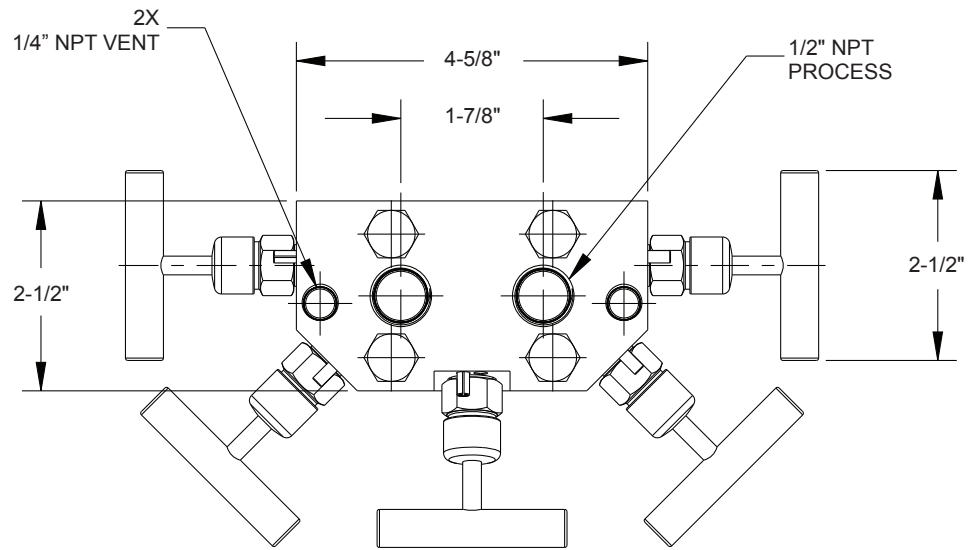
5 0 9 0 - MFS - KZ1

Dimensions

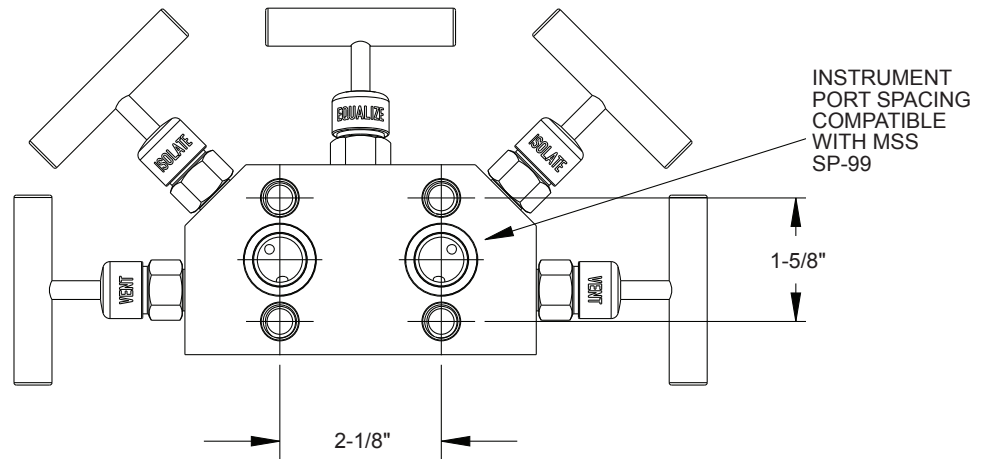
Flange-Female Power Pattern MSS SP-99 Spacing



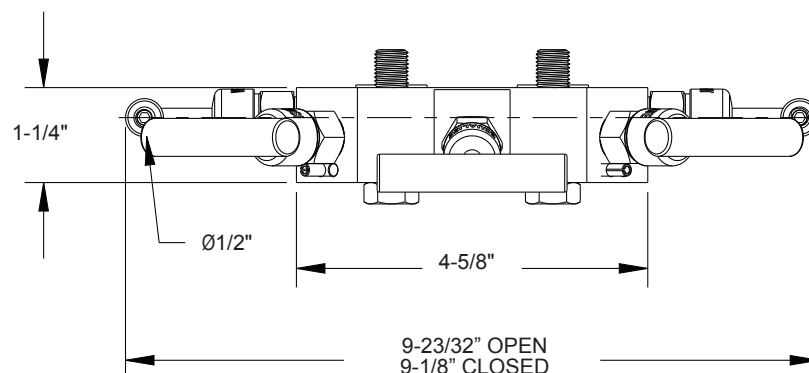
Bottom View



Top View



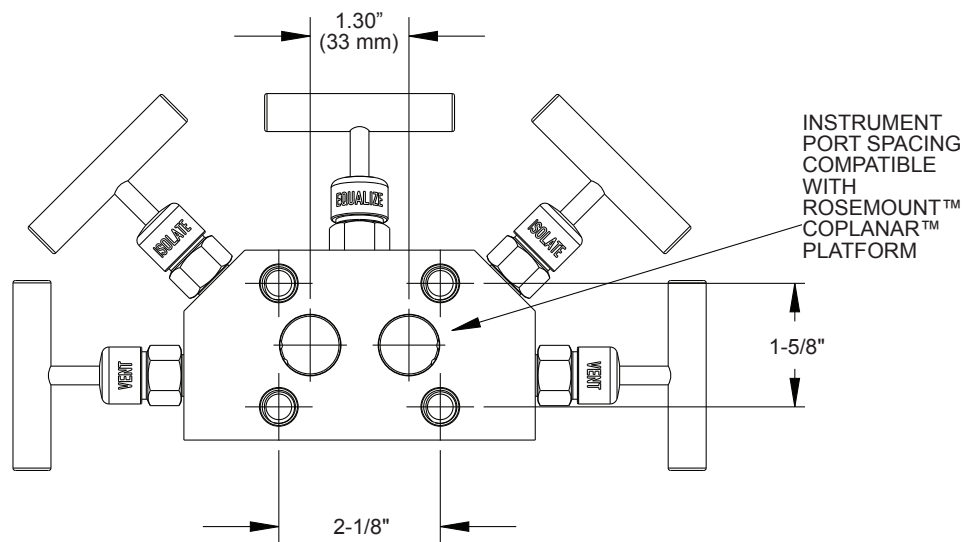
Front View



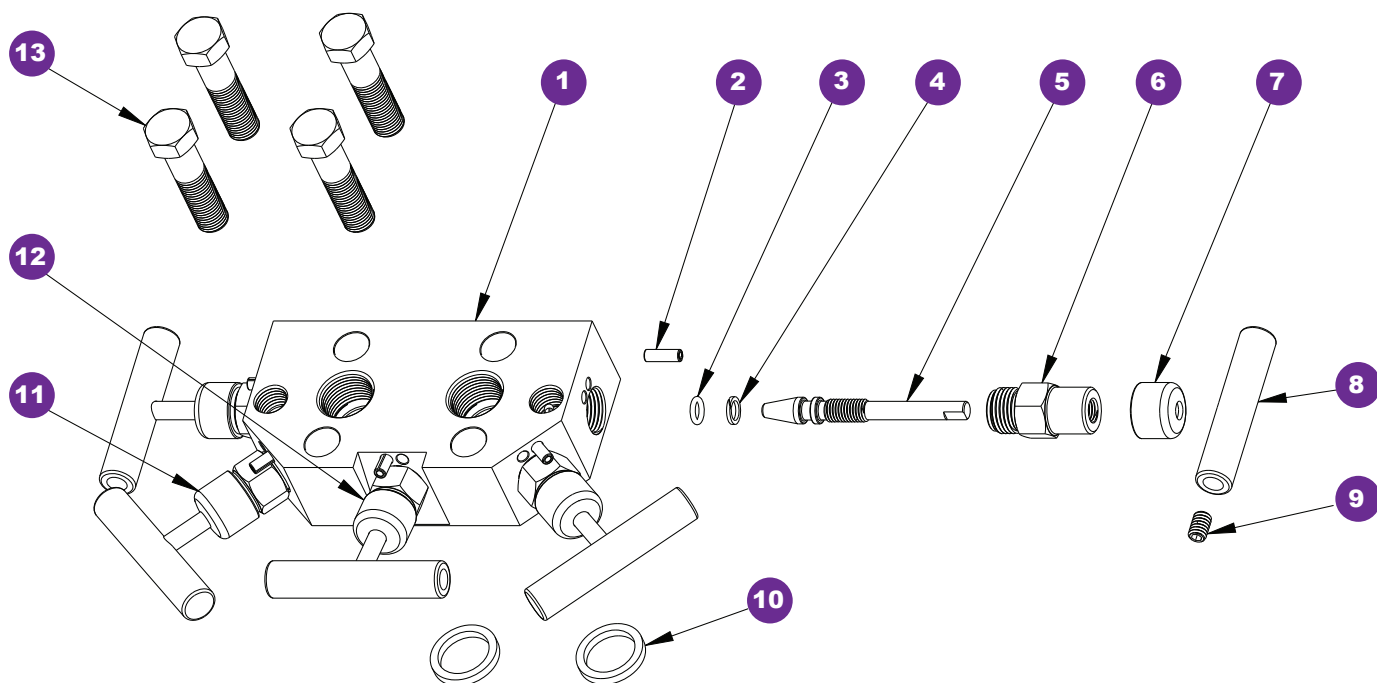
Flange-Female Power Pattern Coplanar™ Spacing

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

Top View



Flange-Female Power Pattern



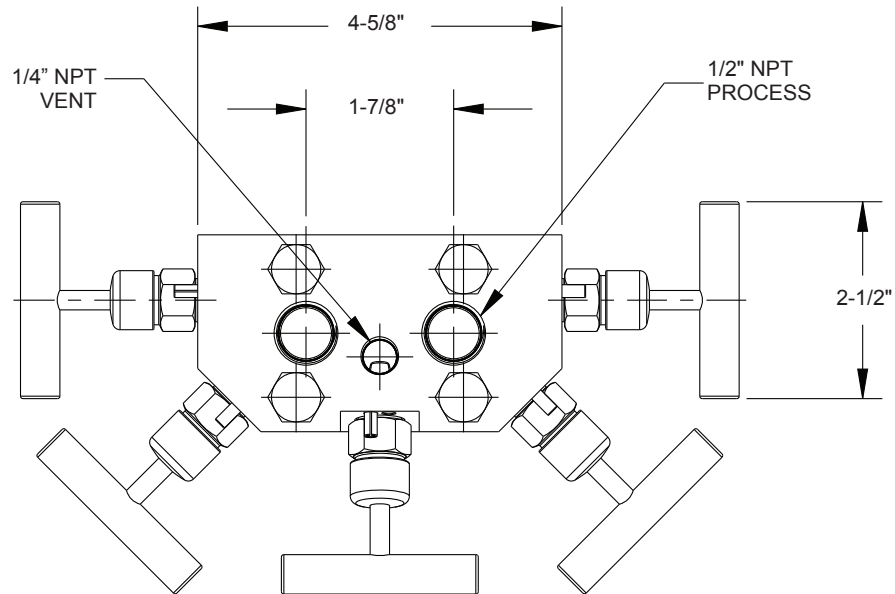
- 1 Valve body
- 2 Slotted spring pin
- 3 FKM o-ring
- 4 PTFE back-up ring
- 5 Valve stem
- 6 Valve bonnet
- 7 Red dust cap

- 8 Valve "T" handle
- 9 Set screw
- 10 Gasket ring
- 11 Blue dust cap
- 12 Green dust cap
- 13 Head bolt

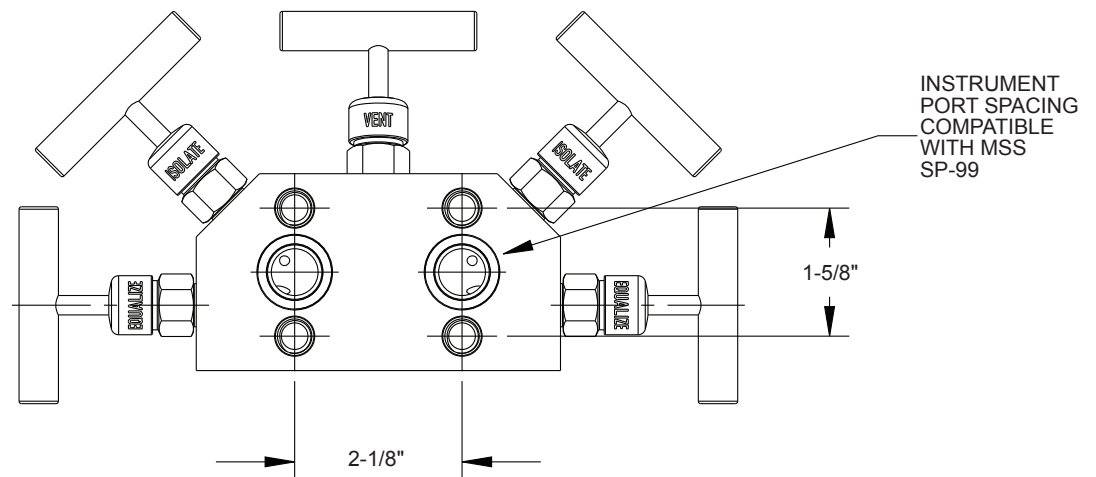
Dimensions

Flange-Female Natural Gas Flow MSS SP-99 Spacing

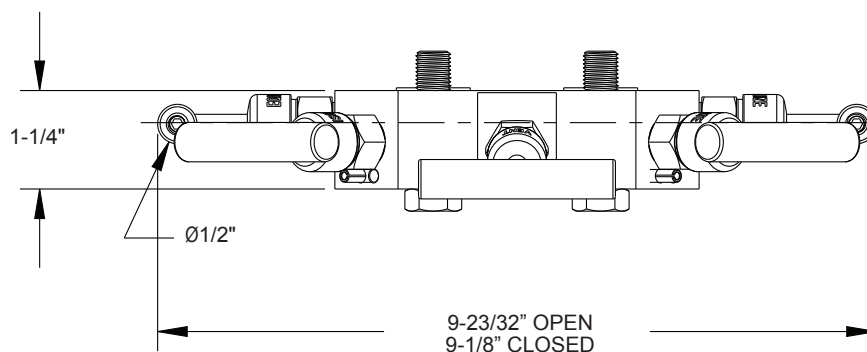
Bottom View



Top View



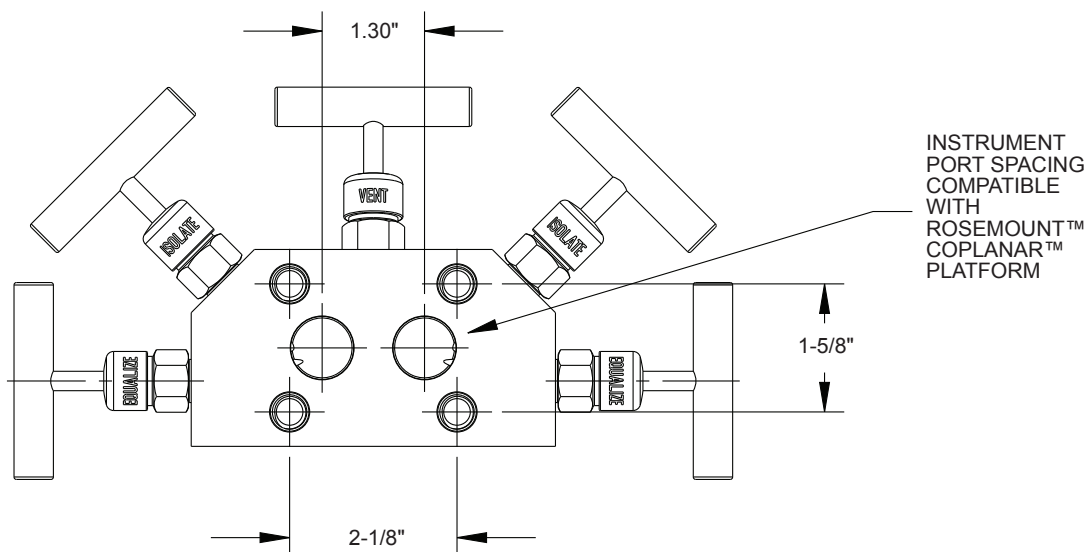
Front View



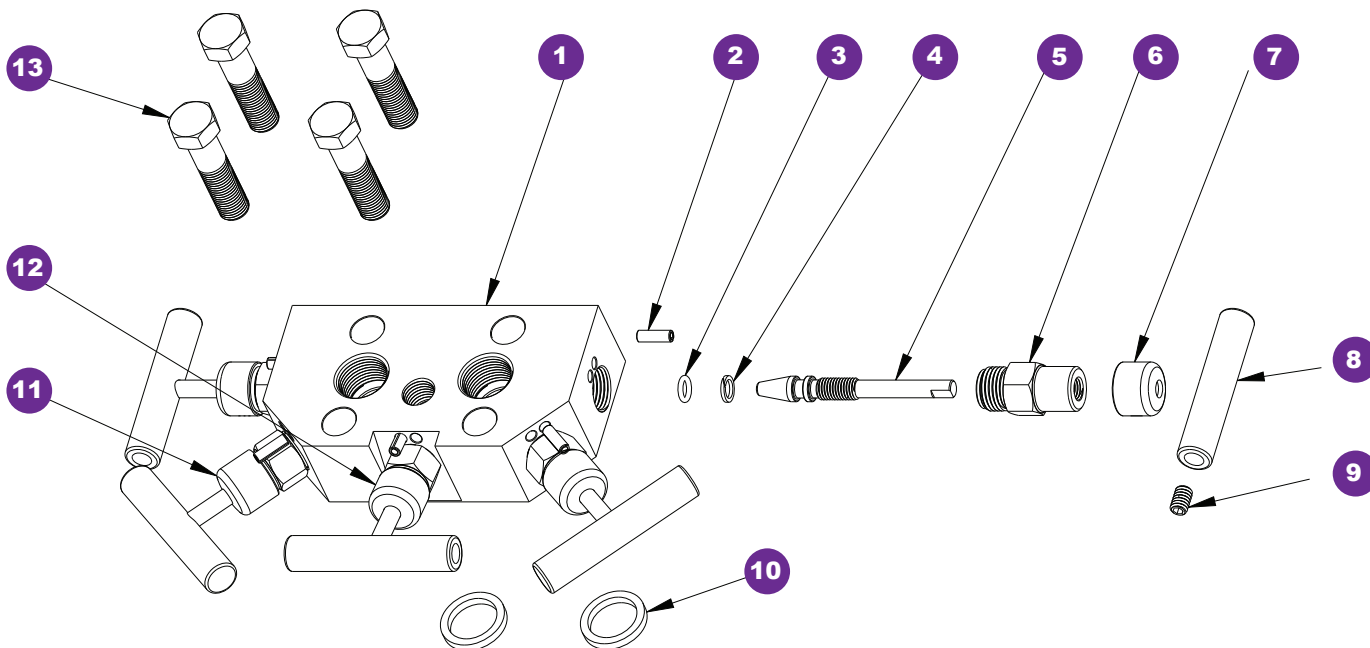
Flange-Female Natural Gas Flow Coplanar™ Spacing

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

Top View

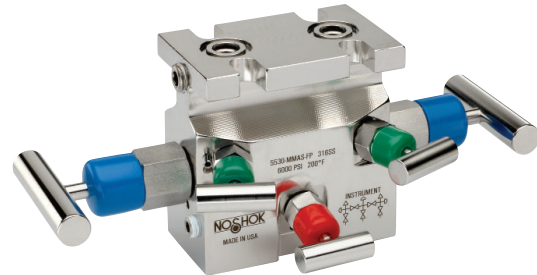
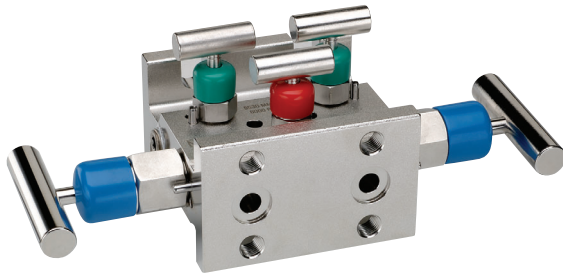


Flange-Female Natural Gas



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

Soft Seat/Tip (0.375" Orifice)



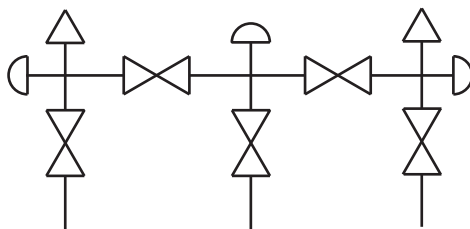
90° Angle option



Flare Pattern™ option



Flow Schematic



5530 SERIES

- Designed for use with differential pressure transmitters incorporating two isolation valves, two equalizing valves and a vent valve in natural gas applications
- Flare Pattern™ valve configuration provides maximum clearance for fingers during operation
- Soft tip valves feature a patented 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 1×10^{-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

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

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

For NOSHOK Valves with Steel valve types:



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

For NOSHOK Valves with Stainless Steel valve types:



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

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

SERIES	5	5-valve		
SEAT	5	Soft seat/tip 0.375" orifice		
PROCESS TYPE	3	Natural gas flow		
CONNECTION	0	1/2" NPT standard or flange		
VALVE TYPES	MFC	Flange-Female, Steel	FFS	Female-Female, Stainless Steel
	FFC	Female-Female, Steel	MMC	Flange-Flange, Steel
	MFS	Flange-Female, Stainless Steel	MMAC*	Flange-Flange 90° Angle, Steel
			MMS	Flange-Flange, Stainless Steel
			MMAS*	Flange-Flange 90° Angle, Stainless Steel

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

* Only available in Flare Pattern™ configuration.

EXAMPLE

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

5 5 3 0 - MMAS

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				
BODY CONFIGURATION	FP	Flare Pattern™		
SOFT SEATS	PK1	PEEK	KF1	PCTFE
O-RINGS*	EM1	EPDM	KZ1	FFKM (Perfluoroelastomer)
HANDLES	HL3	1" Round knurled	HL4	1-3/8" Phenolic
			NB1	NBR

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.

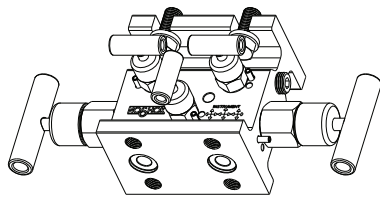
EXAMPLE with Additional Options

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

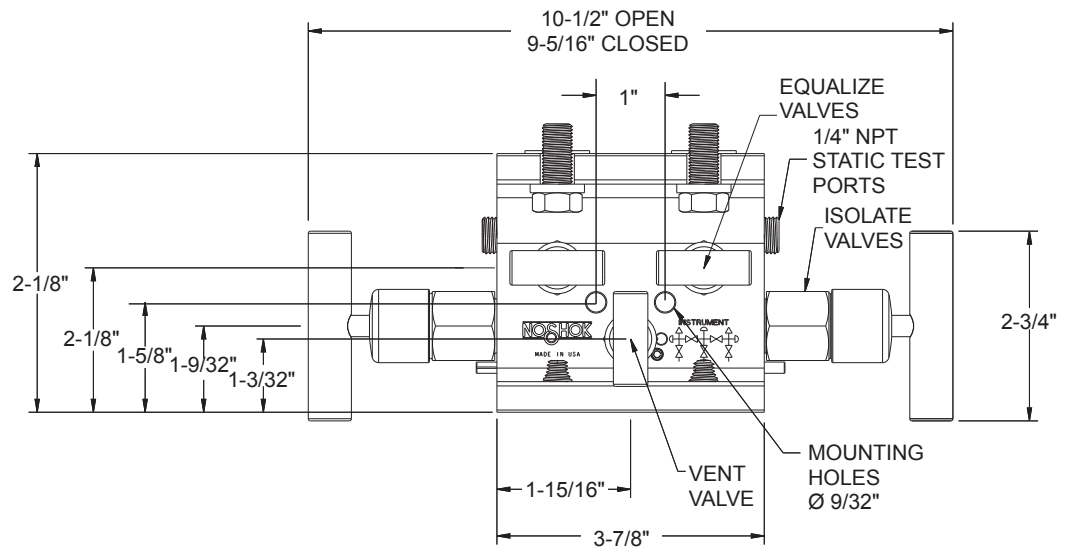
5 5 3 0 - MFC - FP - PK1 - KZ1

Dimensions

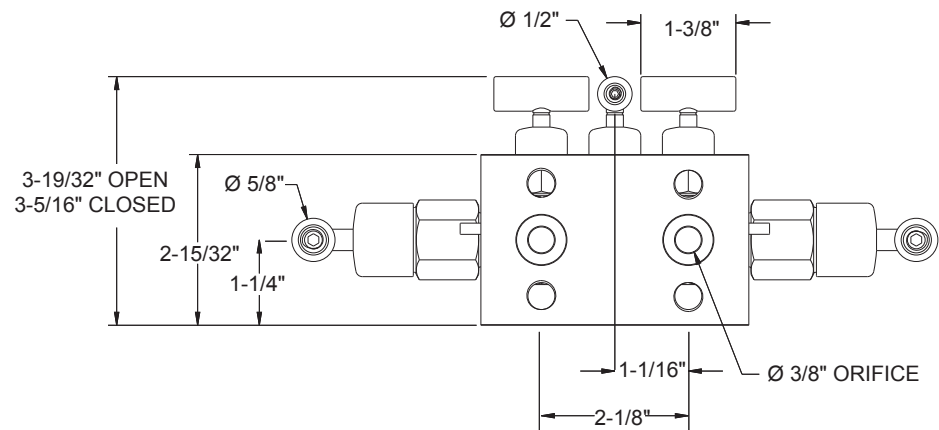
Flange-Flange



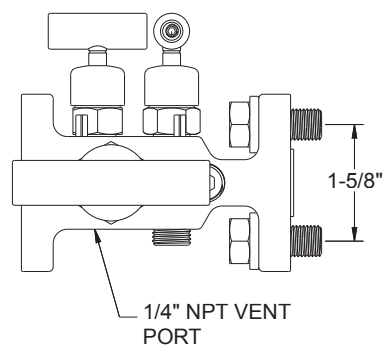
Top View



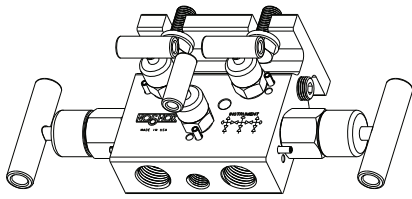
Front View



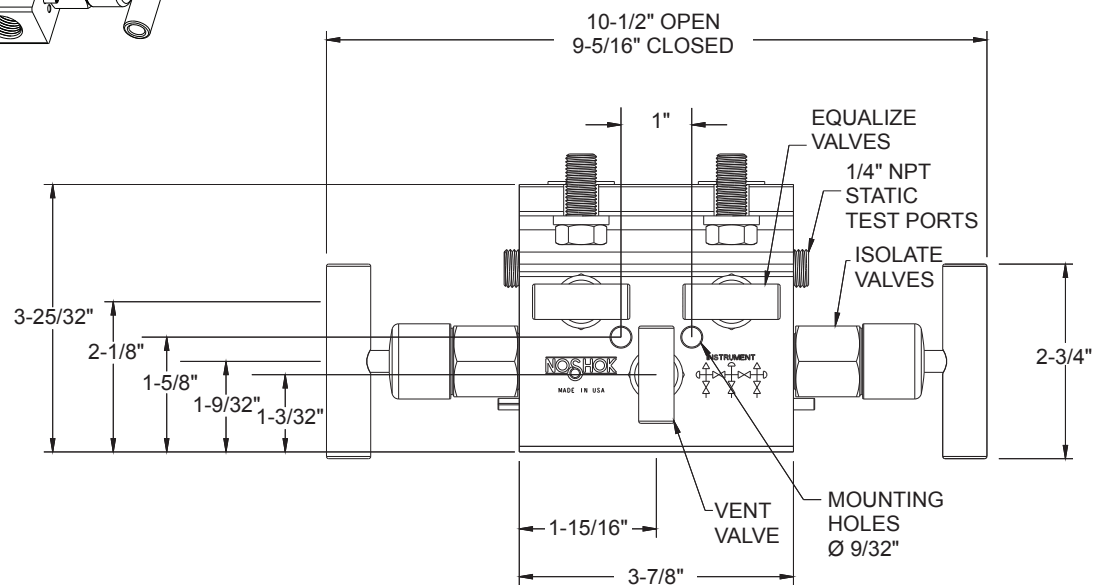
Side View



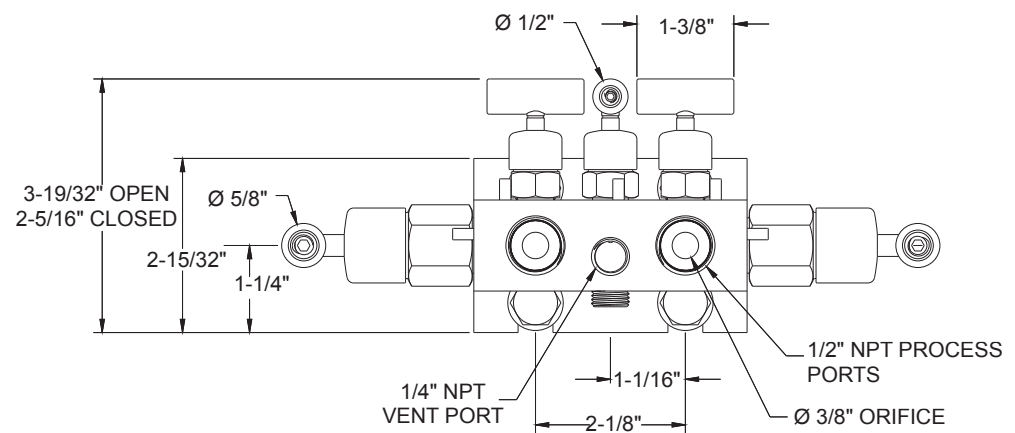
Flange-Female



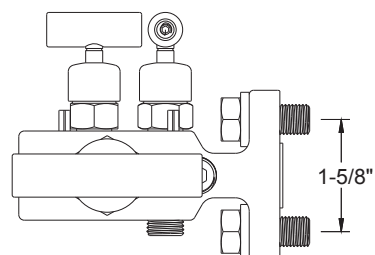
Top View



Front View

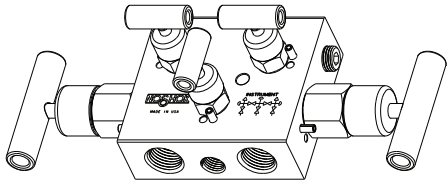


Side View

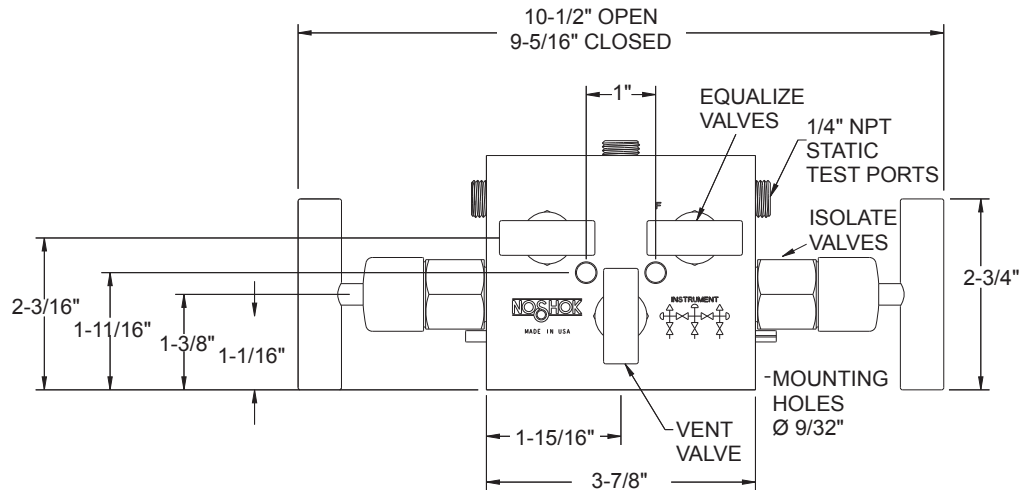


Dimensions

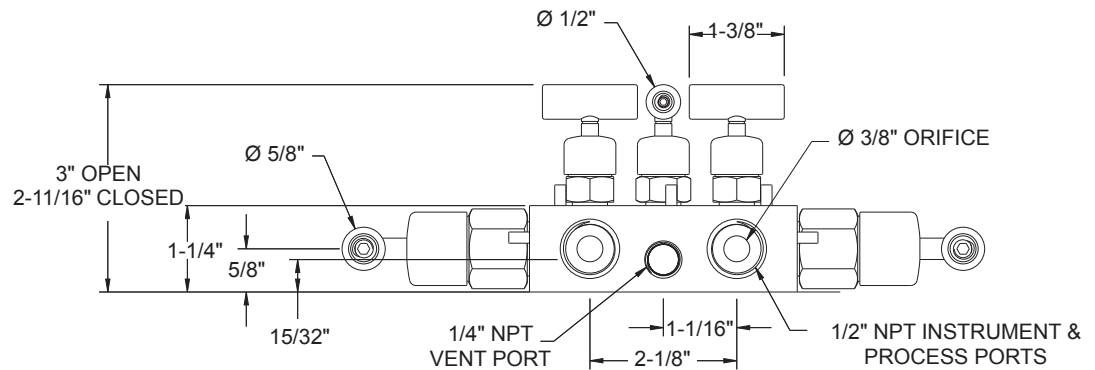
Female-Female



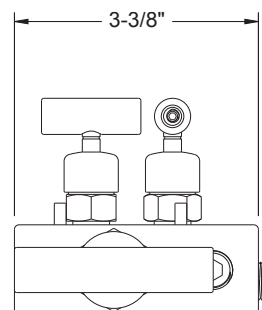
Top View



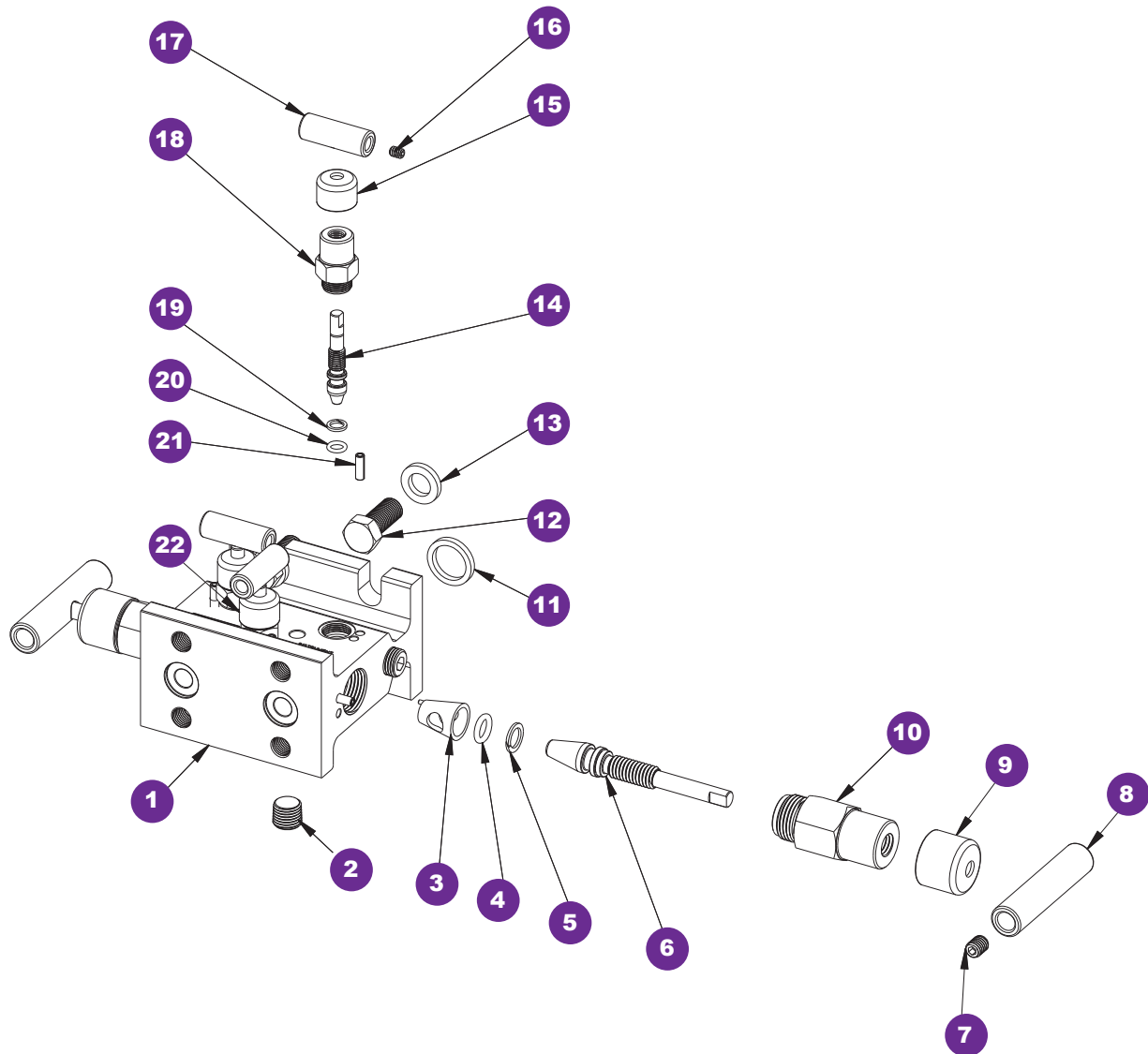
Front View



Side View



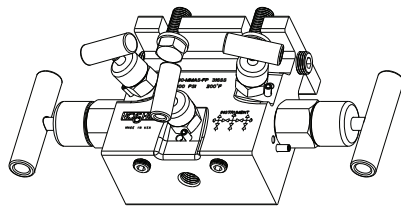
For panel mount or packing dimensions, see pg. 66.



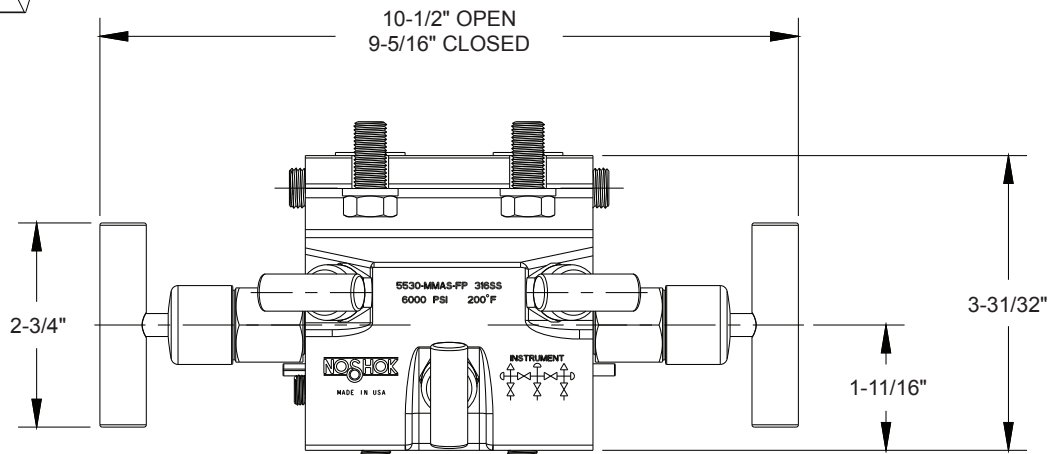
- | | |
|---------------------|--------------------------|
| 1 Valve body | 12 Head bolt |
| 2 Plug | 13 Washer |
| 3 Acetal seat | 14 Soft tip stem |
| 4 FKM o-ring | 15 Green dust cap |
| 5 PTFE back-up ring | 16 Set screw |
| 6 Non-rotating stem | 17 Mini valve "T" handle |
| 7 Set screw | 18 Mini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

Dimensions

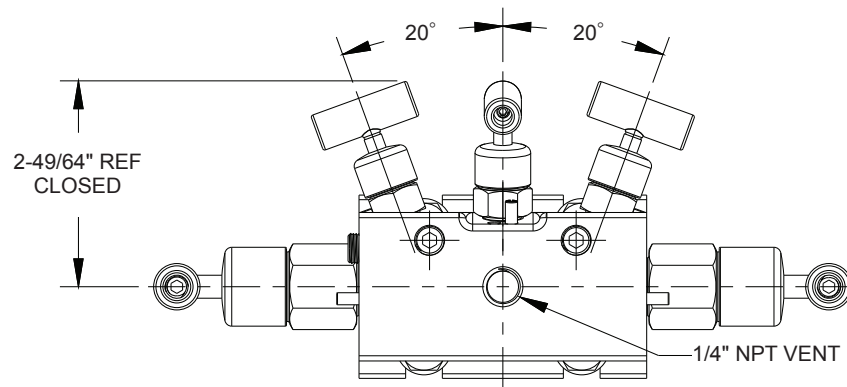
Flange-Flange 90° Angle



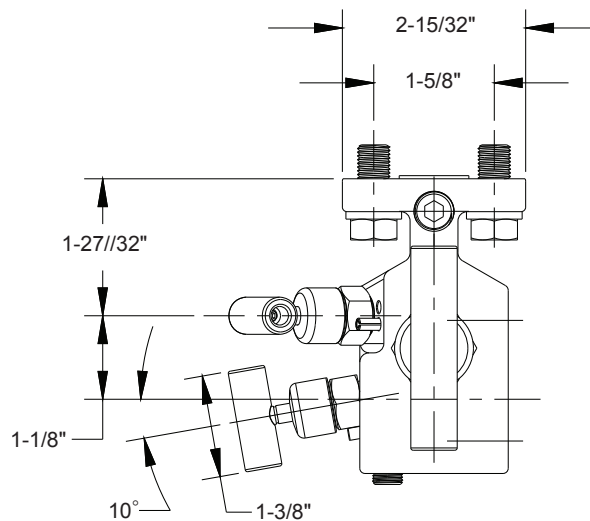
Top View

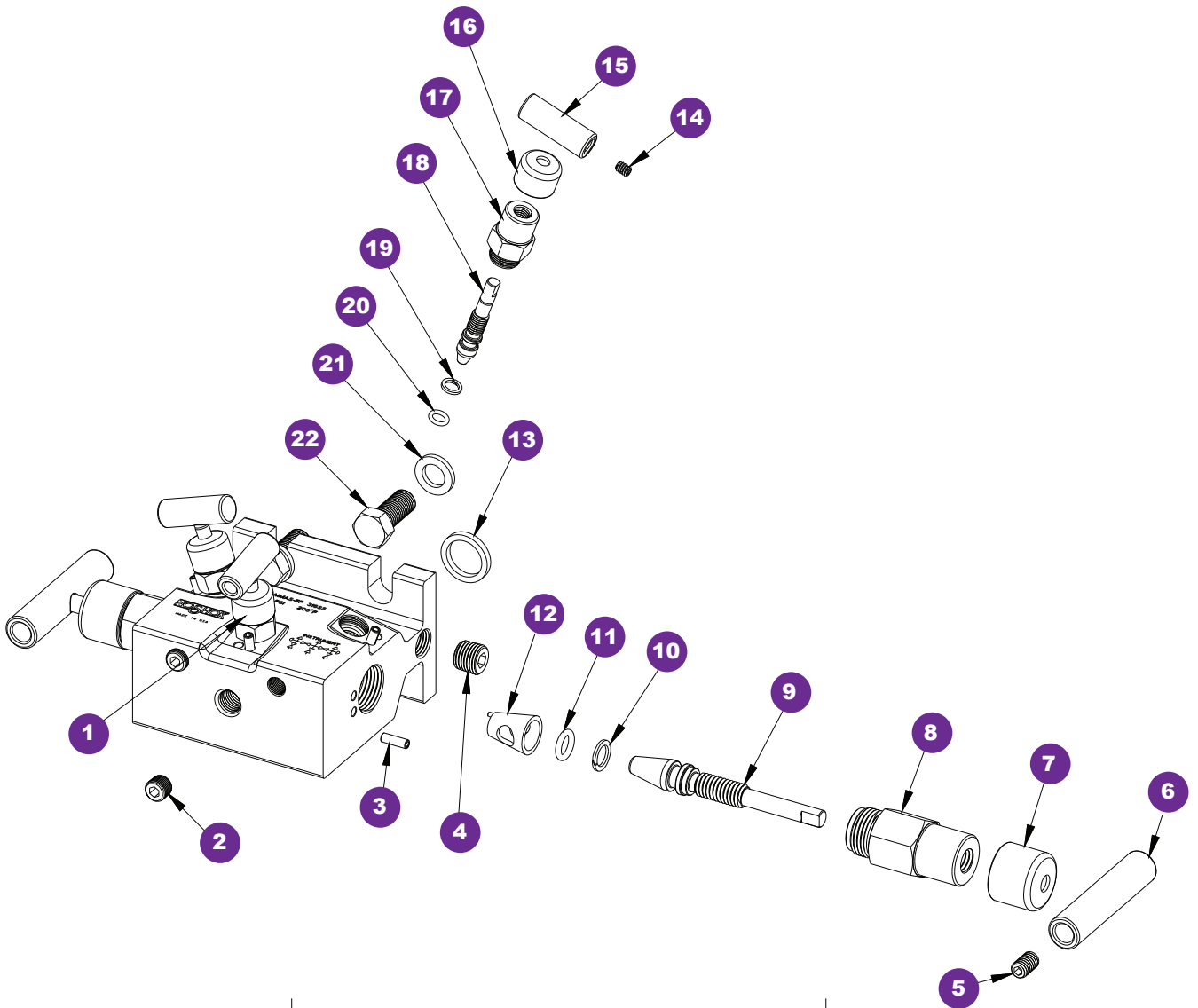


Front View



Side View

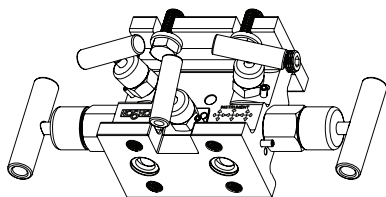




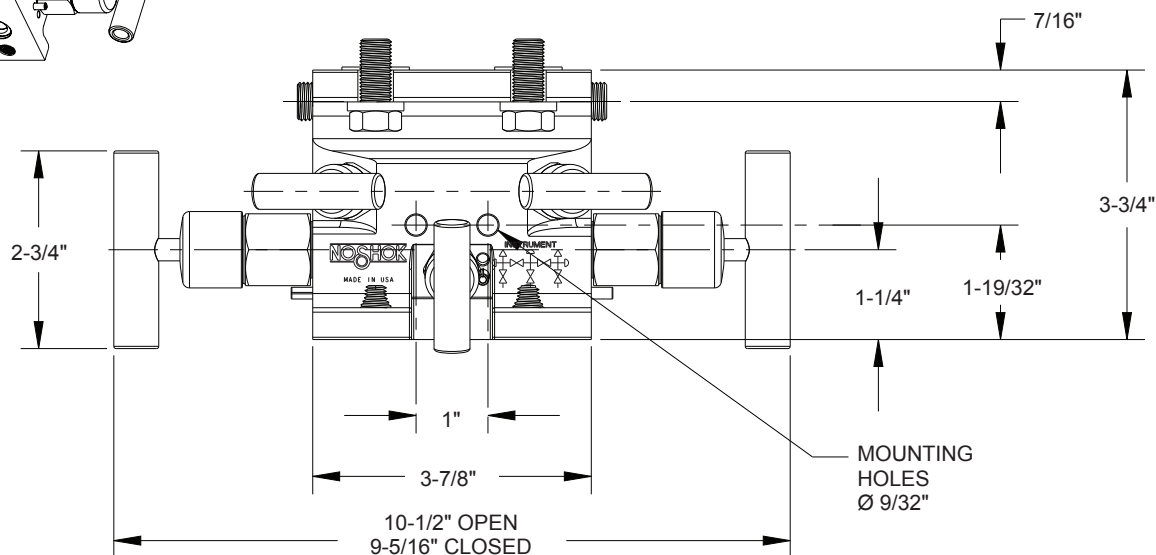
- | | |
|----------------------|--------------------------|
| 1 Red dust cap | 13 Gasket ring |
| 2 Plug | 14 Set screw |
| 3 Slotted spring pin | 15 Mini valve "T" handle |
| 4 Plug | 16 Green dust cap |
| 5 Set screw | 17 Mini valve bonnet |
| 6 Valve "T" handle | 18 Soft tip stem |
| 7 Blue dust cap | 19 PTFE back-up ring |
| 8 Valve bonnet | 20 FKM o-ring |
| 9 Non-rotating stem | 21 Washer |
| 10 PTFE back-up ring | 22 Head bolt |
| 11 FKM o-ring | |
| 12 Acetal seat | |

Dimensions

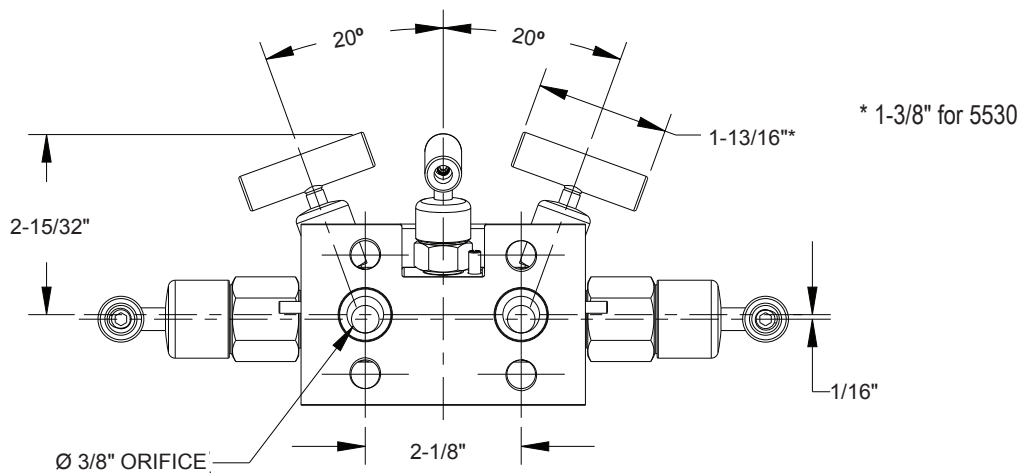
Flare Pattern™ Flange-Flange



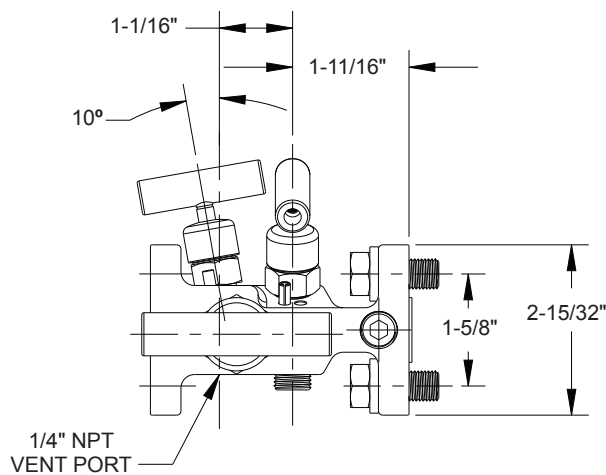
Top View



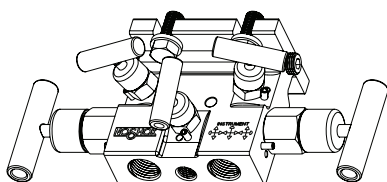
Front View



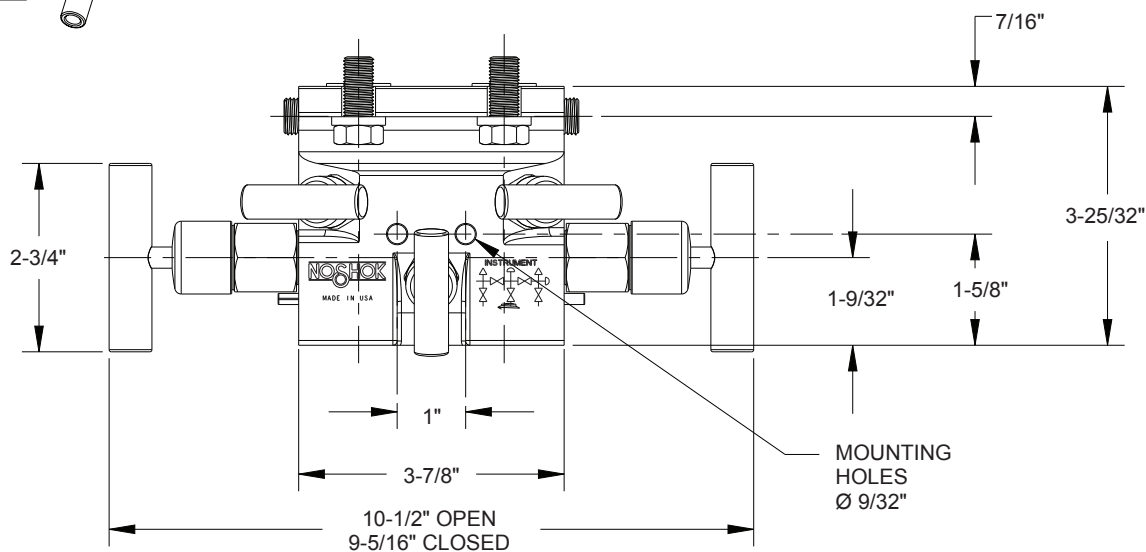
Side View



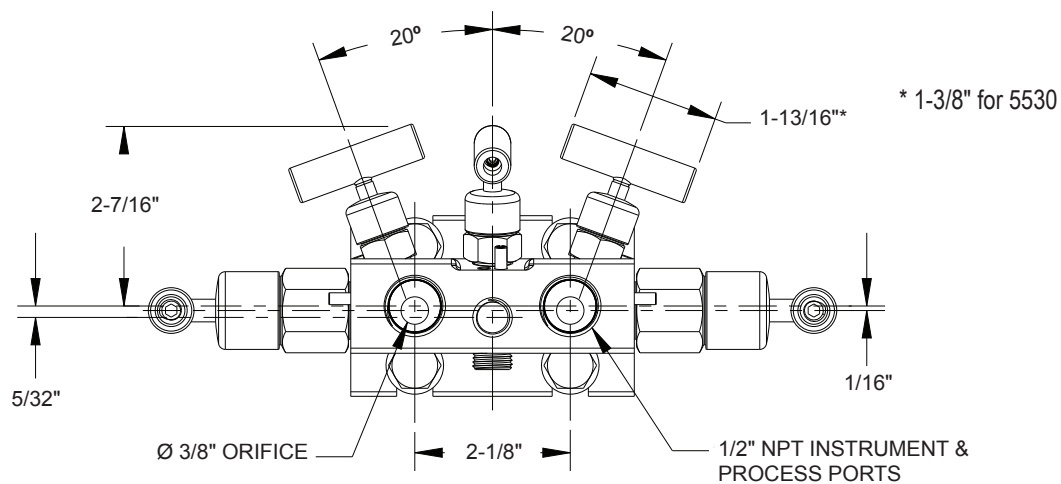
Flare Pattern™ Flange-Female



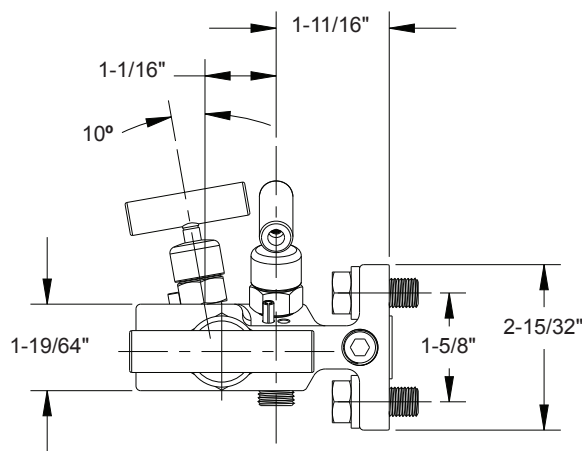
Top View



Front View

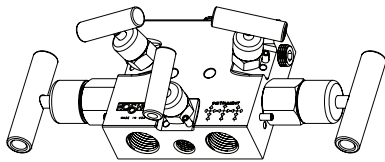


Side View

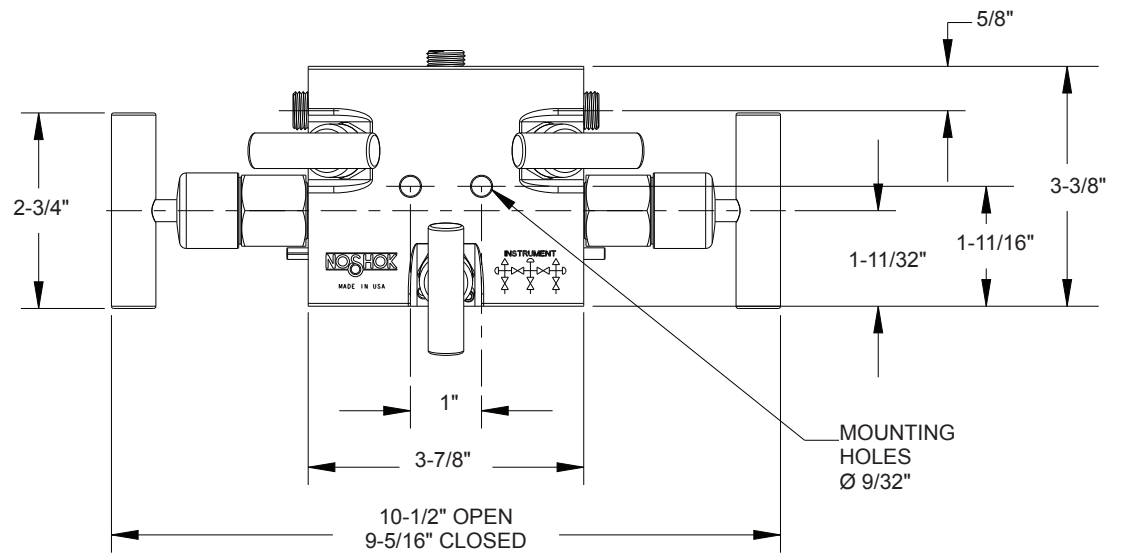


Dimensions

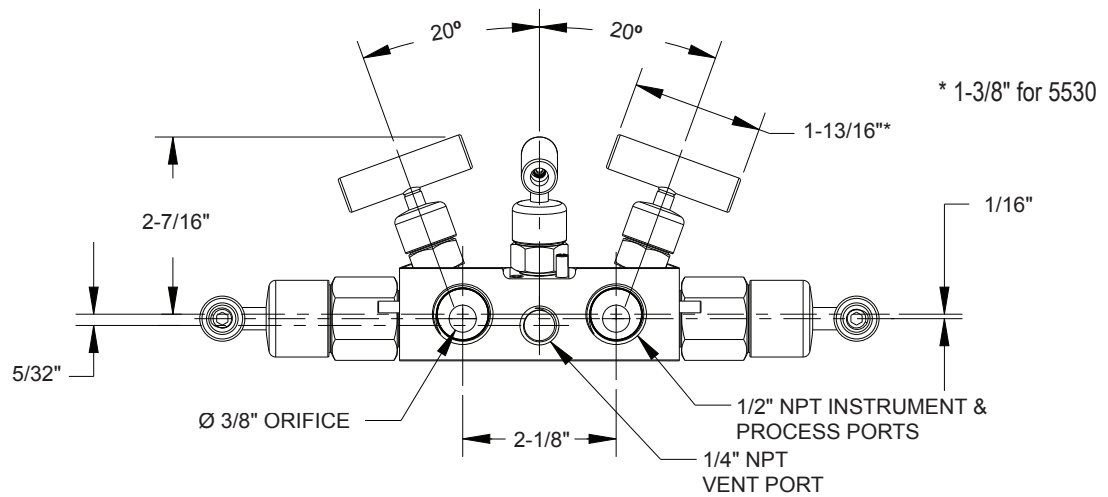
Flare Pattern™ Female-Female



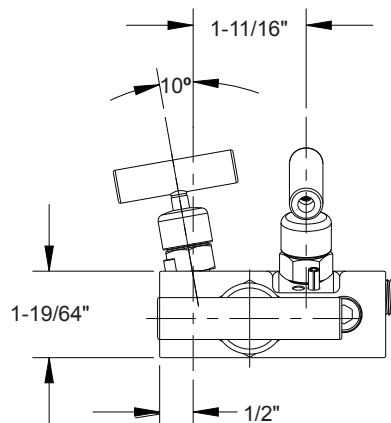
Top View

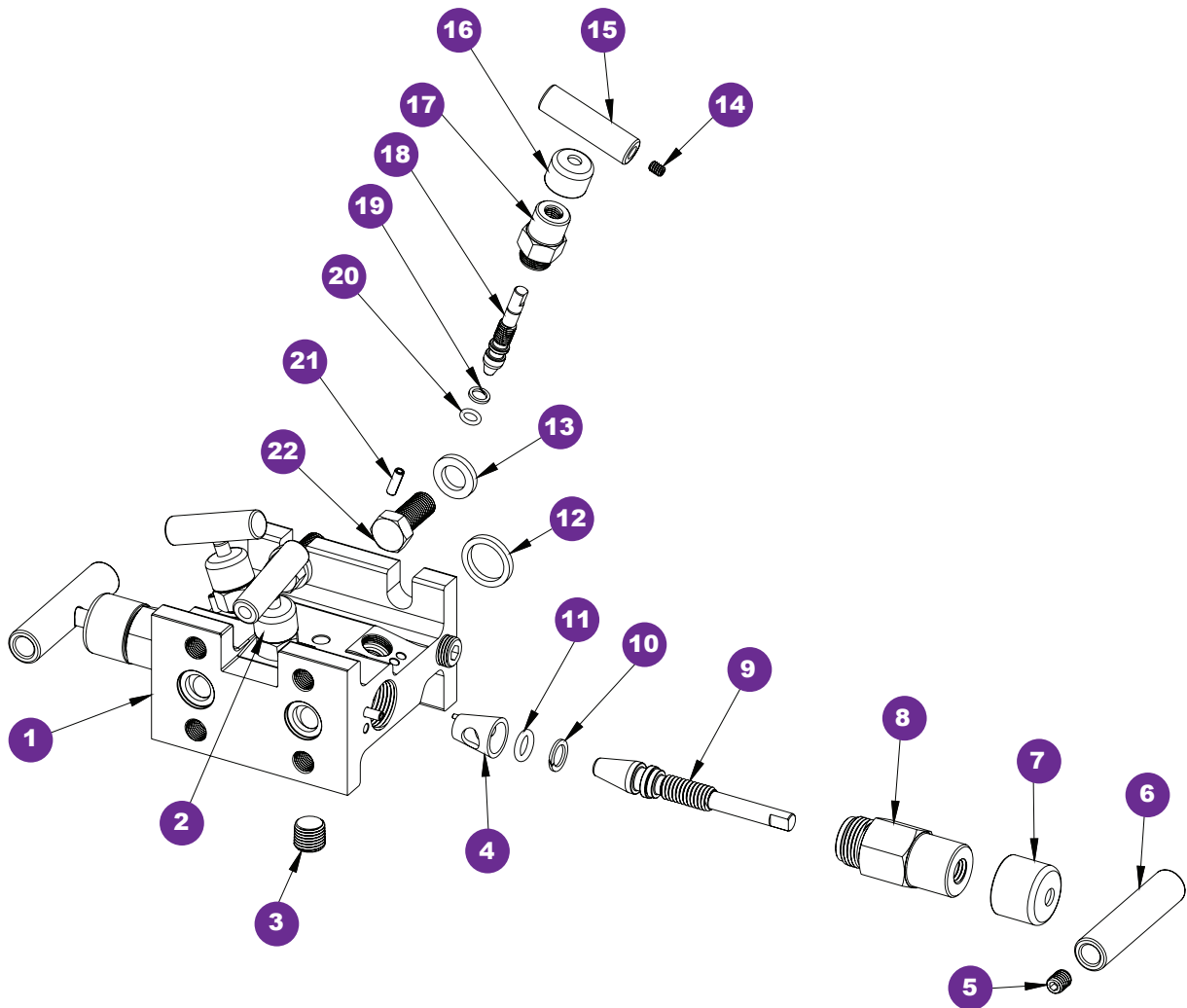


Front View



Side View





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

Stabilized & Non-Stabilized



Stabilized Connectors

Note: Shown with flange adaptor for round installations.



Non-stabilized Connector

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

Materials	Zinc-Nickel plated Carbon Steel, 316 Stainless Steel*
Bolts	Carbon Steel
Connection	1/2" NPT-flange
Pressure rating	10,000 psi at 200 °F
Orifice	0.375"
Weight	Approximately 3.3 lb. (Short stabilized) Approximately 4.5 lb. (Long stabilized) Approximately 2.9 lb. (Non-stabilized)

* 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

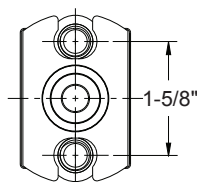
For NOSHOK Stainless Steel Connectors:



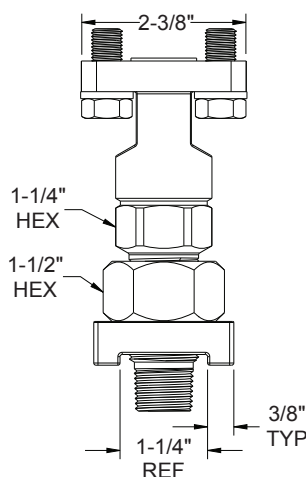
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Long Stabilized Connector

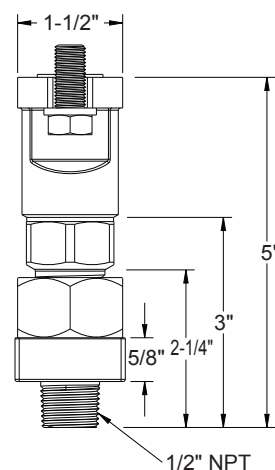
Top View



Front View



Side View



ORDERING INFORMATION					
SERIES	SZ	Connector			
MATERIALS	C	Steel		S	Stainless Steel
CONNECTOR TYPES	1	Short stabilized pair*		4	Long stabilized pair with flange adaptor**
	2	Short stabilized pair, with flange adaptor**		5	Non-stabilized pair
	3	Long stabilized pair*			
OPTIONS†	DK1	One Piece Dielectric Gasket, Pair		DK2	PTFE Gasket with Dielectric Shim, Pair
	DK1-SS	One Piece Dielectric Gasket, Pair w/SS Bolts		DK2-SS	PTFE Gasket with Dielectric Shim, Pair w/SS Bolts

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

† For more information on Dielectric Kits, see page 140

* For flat installations (orifice fitting)

** For round installations (orifice flange)

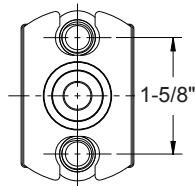
EXAMPLE

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

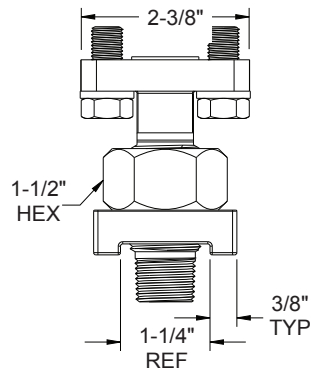
SZC1 - DK1

Short Stabilized Connector

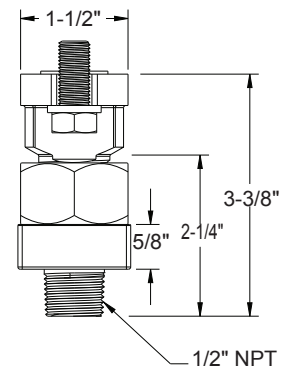
Top View



Front View

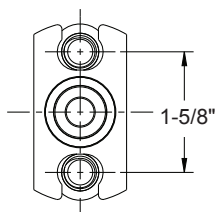


Side View

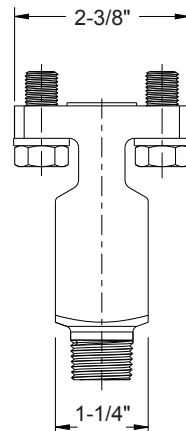


Non-Stabilized Connector

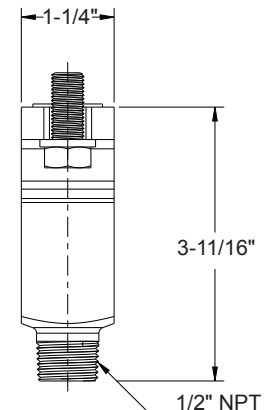
Top View



Front View



Side View



Stabilized With Integral Block Valve

SV SERIES



Note: Shown with flange adaptor for round installations.

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

- 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

Materials	Zinc-Nickel plated Carbon Steel, 316 Stainless Steel*
Bolts	Carbon Steel
Connection	1/2" NPT-flange
Pressure rating	6,000 psi at 200 °F
Orifice	0.375"
Flow coefficient	C _v 3.0
Stem seal & type	All 316 Stainless Steel stems with FKM o-ring and PTFE back-up ring below the threads
Weight	Approximately 10.6 lb. (pair)

For NOSHOK Steel Connectors:



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

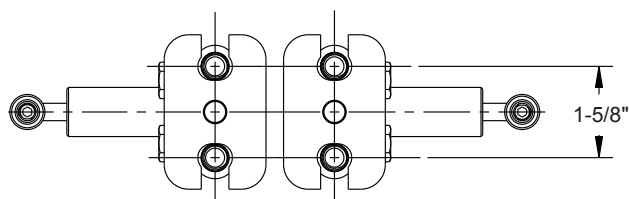
For NOSHOK Stainless Steel Connectors:



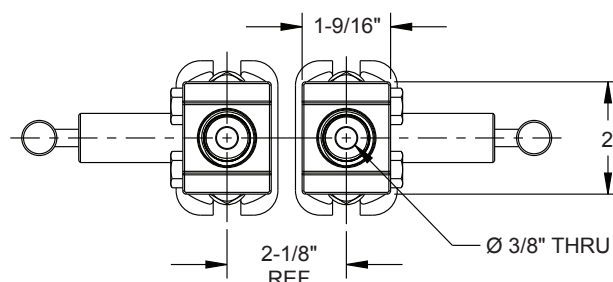
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Stabilized Connector with Integral Block Valve

Top View



Bottom View



ORDERING INFORMATION			
SERIES	SV	Stabilized connector with integral block valve	
MATERIALS	C	Steel	S Stainless Steel
CONNECTOR TYPES	1	Stabilized connector pair with integral valve*	2 Stabilized connector pair with integral valve, flange adaptor**
OPTIONS†	DK1	One Piece Dielectric Gasket, Pair	DK2 PTFE Gasket with Dielectric Shim, Pair
	DK1-SS	One Piece Dielectric Gasket, Pair w/SS Bolts	DK2-SS PTFE Gasket with Dielectric Shim, Pair w/SS Bolts

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

† For more information on Dielectric Kits, see page 140

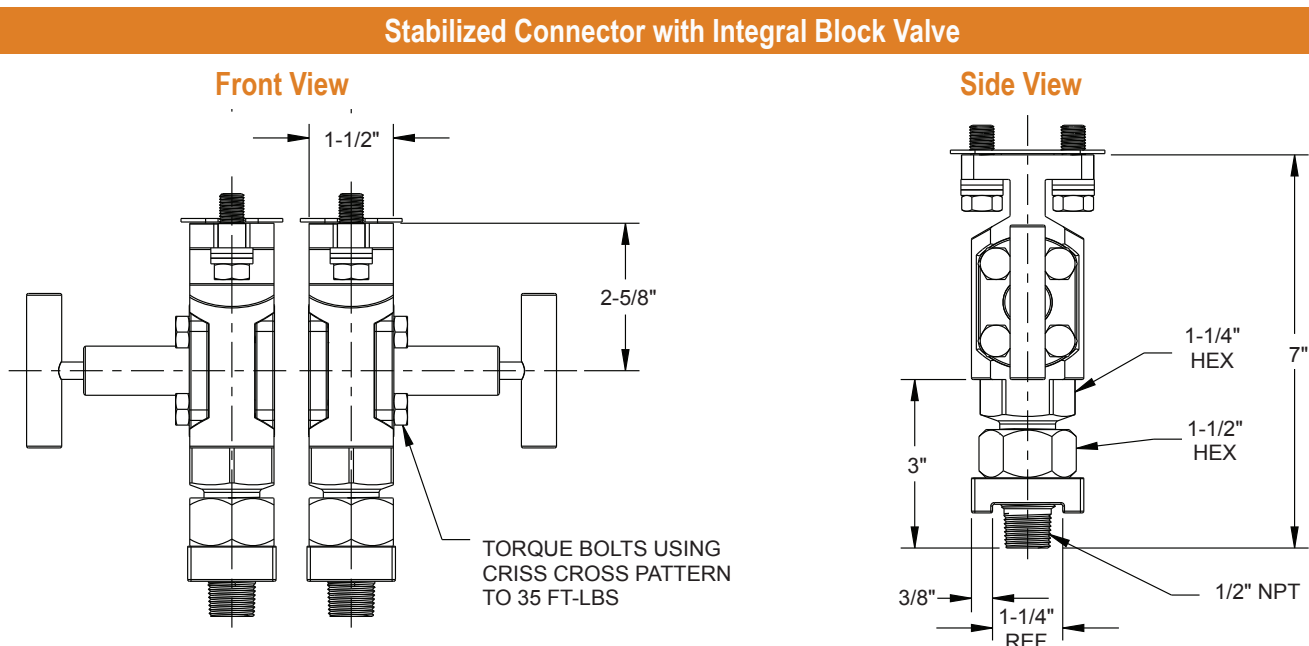
* For flat installations (orifice fitting)

** For round installations (orifice flange)

EXAMPLE

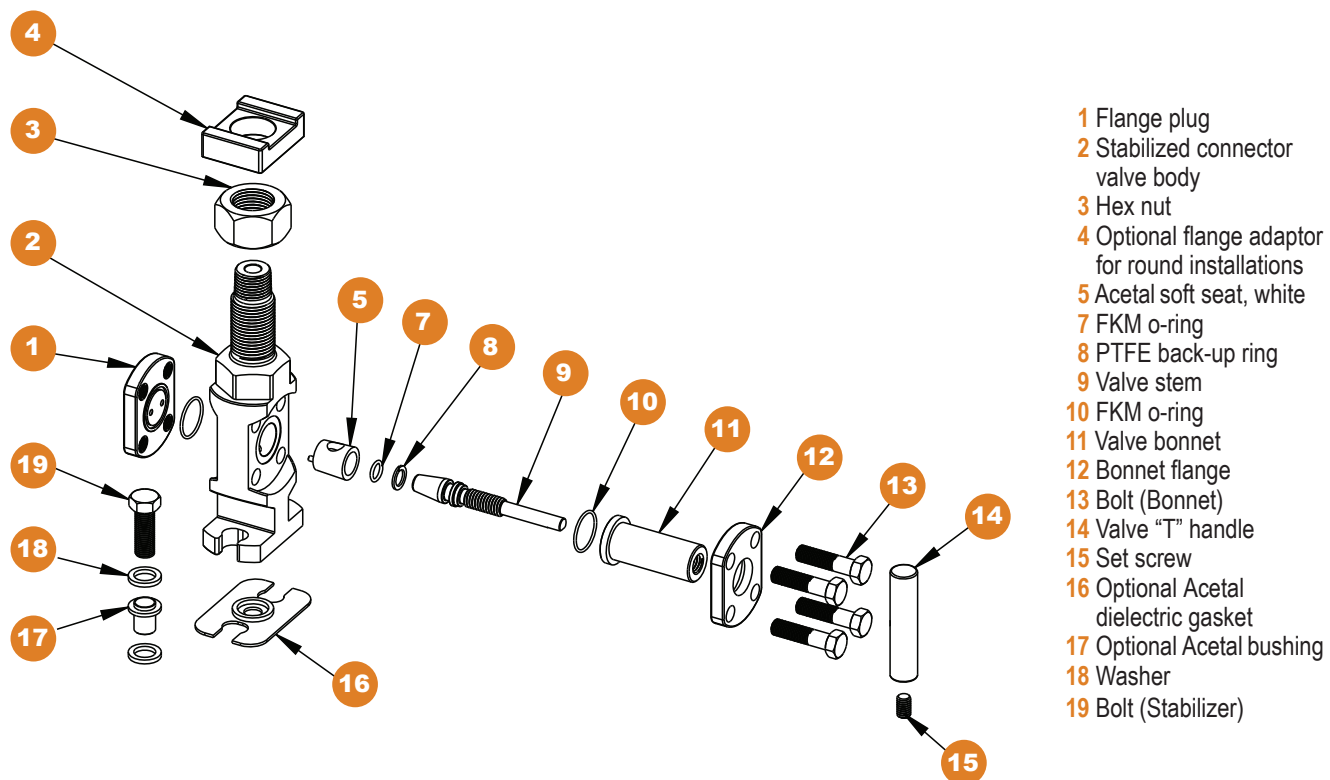
Series.....Connector with integral block valve
 Material.....Steel
 Connector type.....Stabilized connector pair with integral valve
 Option.....One piece Dielectric gasket, pair

SVC1 - DK1

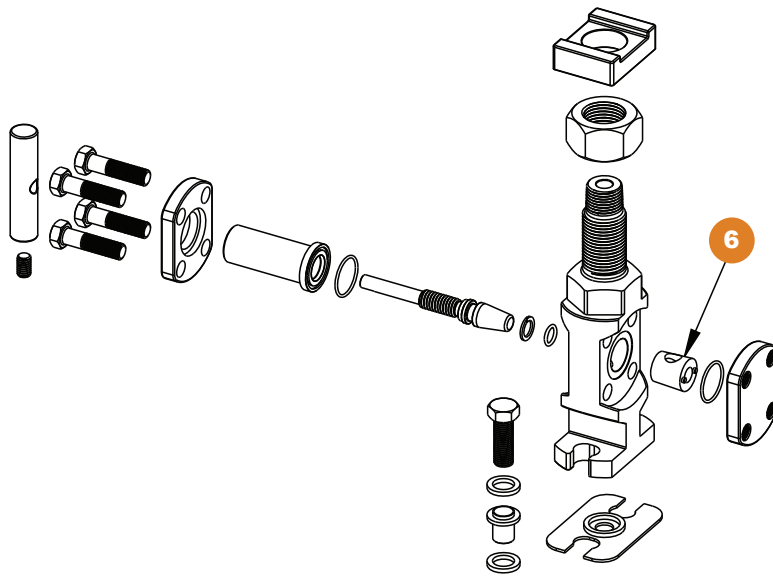


Dimensions

Stabilized Connector with Integral Block Valve

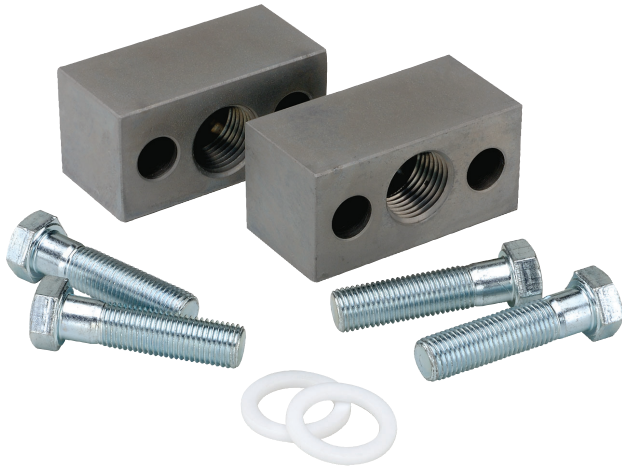


Optional Assembly With Soft Seat Installed on Opposite Side Of Valve



6 Acetal soft seat, black

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

Materials	Zinc-Nickel plated Carbon Steel, 316 Stainless Steel*
Connection	1/2" NPT
Weight	Approximately 2.1 lb.

* 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			
SERIES	50FA1	Futbol	
MATERIALS	CS	Steel	SS 316 Stainless Steel

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

EXAMPLE

Series.....

Material.....

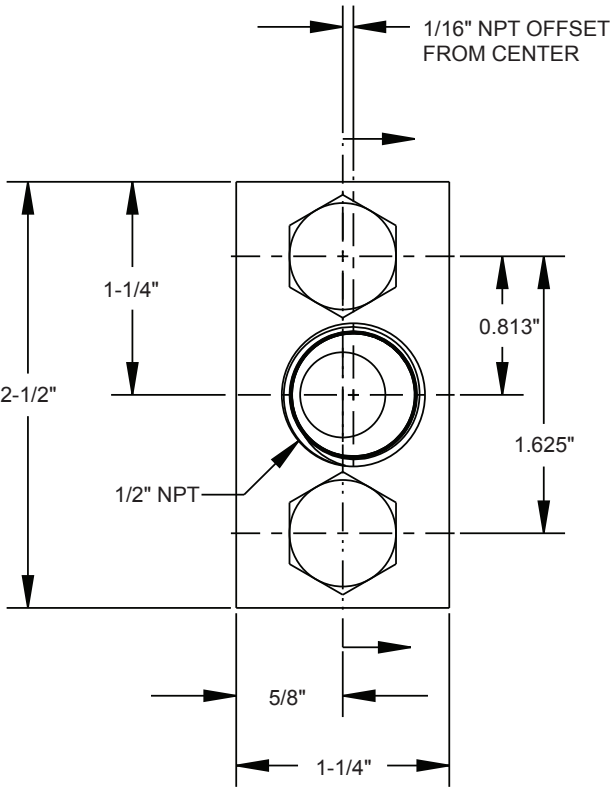
Futbol

Steel

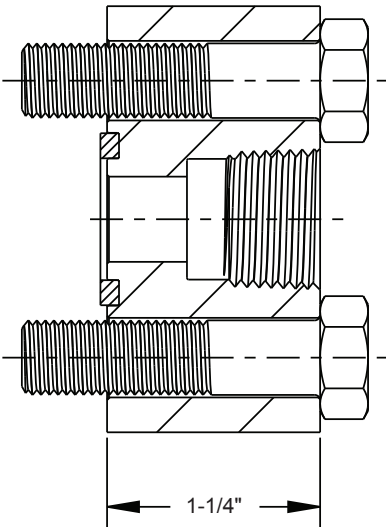
50FA1CS

Futbols

Front View

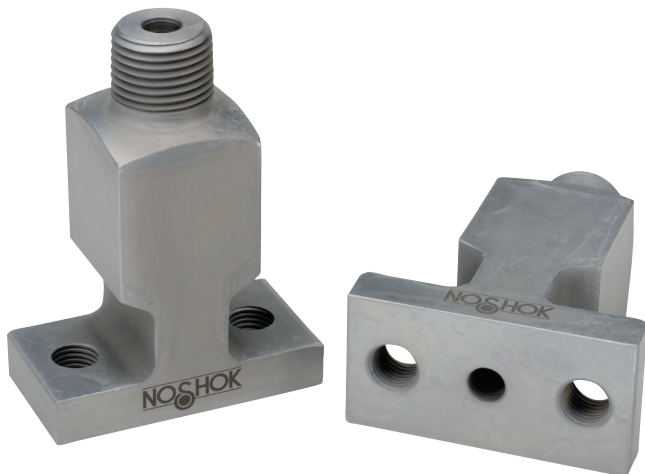


Side View



Static Adaptors

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

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.

For NOSHOK Steel Static Adaptors:



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

For NOSHOK Stainless Steel Static Adaptors:



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

ORDERING INFORMATION			
SERIES	SA Static adaptor		
MATERIALS	C Steel	S	316 Stainless Steel
CONNECTIONS	1 1/2" NPT Female - Flange	2	1/2" NPT Male - Flange

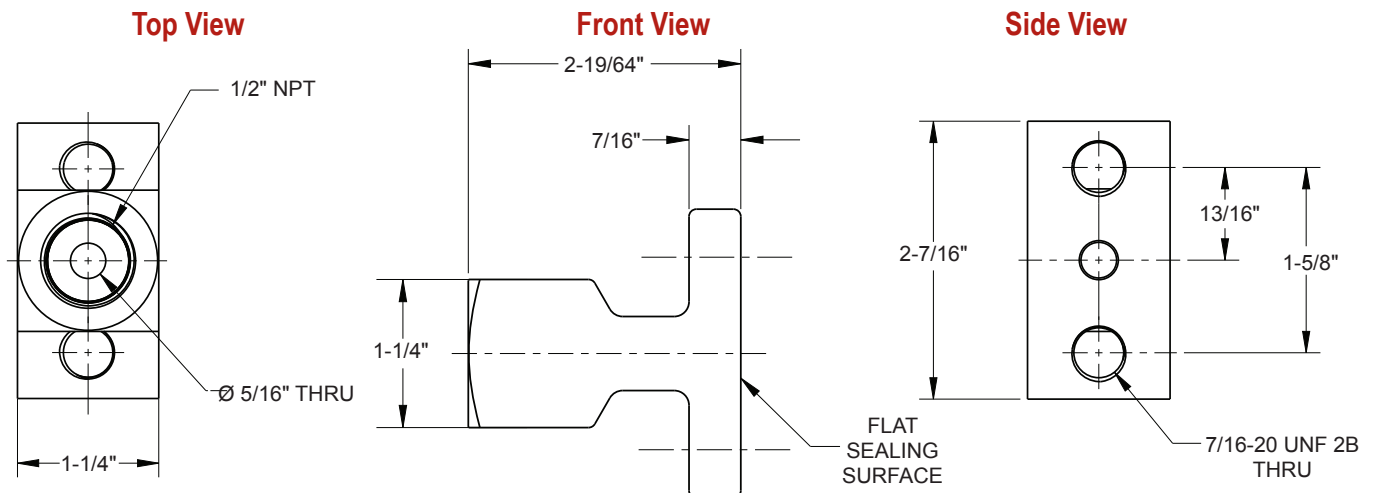
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

EXAMPLE

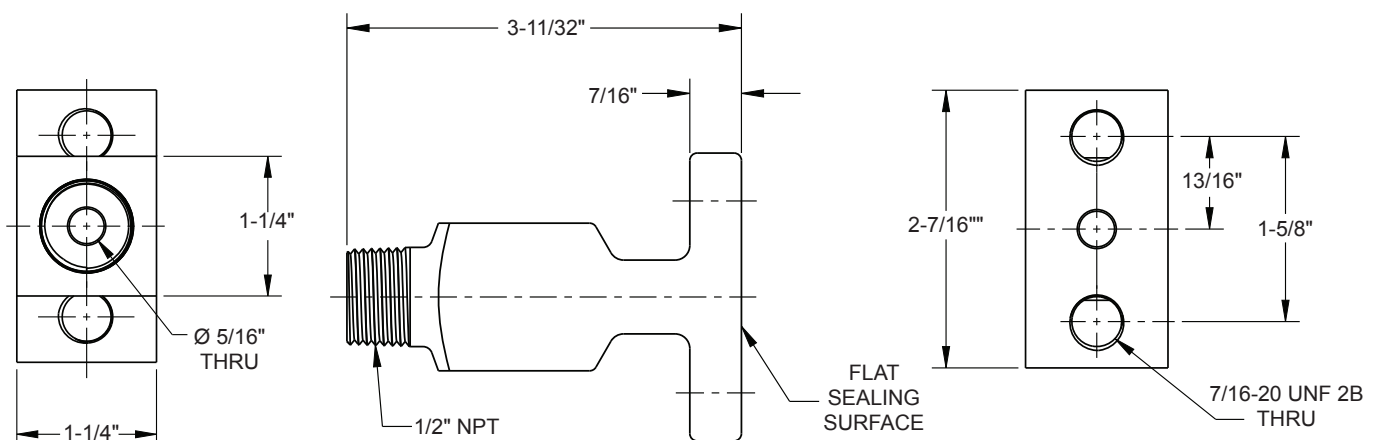
Series..... Static Adaptor
 Material..... Steel
 Connection..... 1/2" NPT Female - Flange

SAC-1

Static Adaptor, Female NPT



Static Adaptor, Male NPT



Manifold Valve Accessories

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



DK-1



DK-2

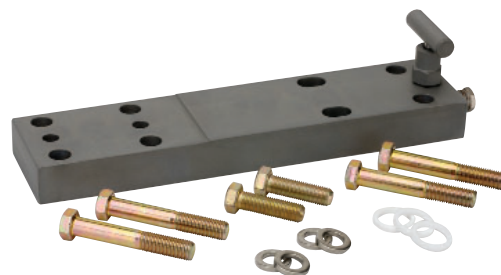
MANIFOLD MOUNTING KIT

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.



Δ 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.



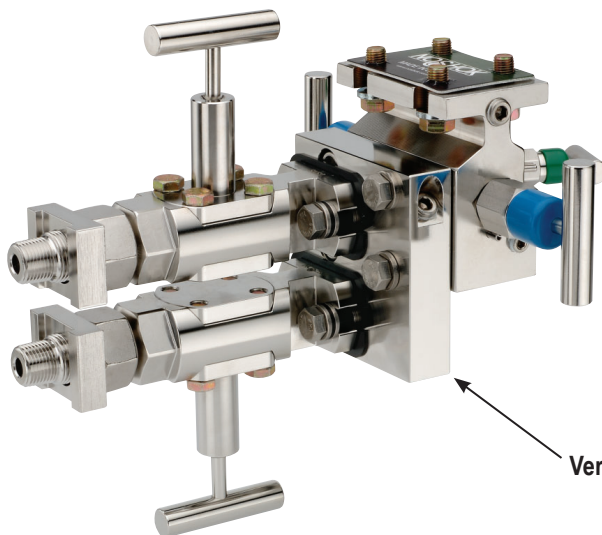
DP1-DP1-CS / DP1-DP1-SS*
3/8" bore, 23" length



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

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.



Vertical to Horizontal Adaptor Kit



VHC/VHS*

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

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

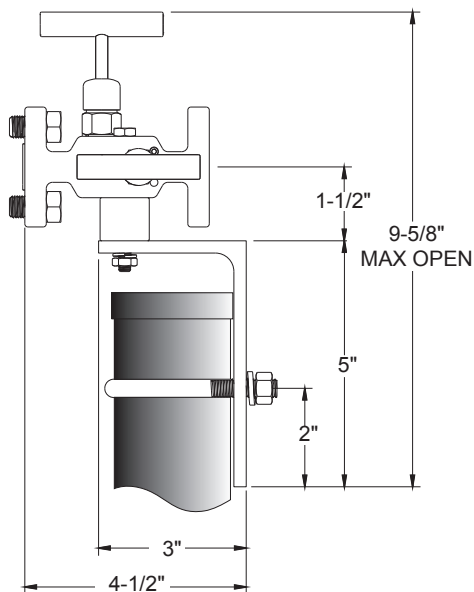
For products shown above that are composed of Stainless Steel:



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

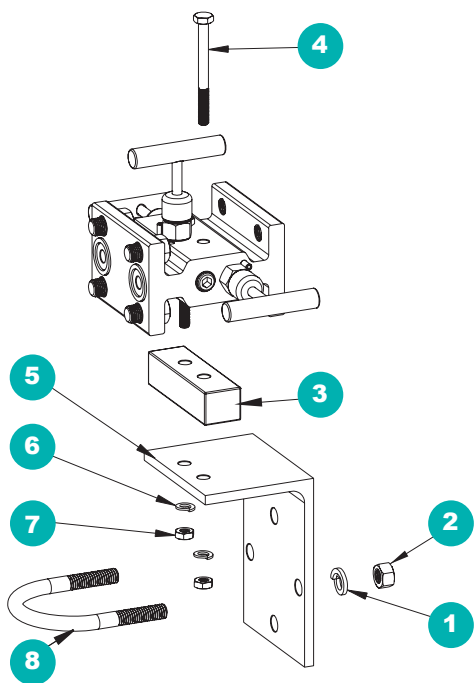
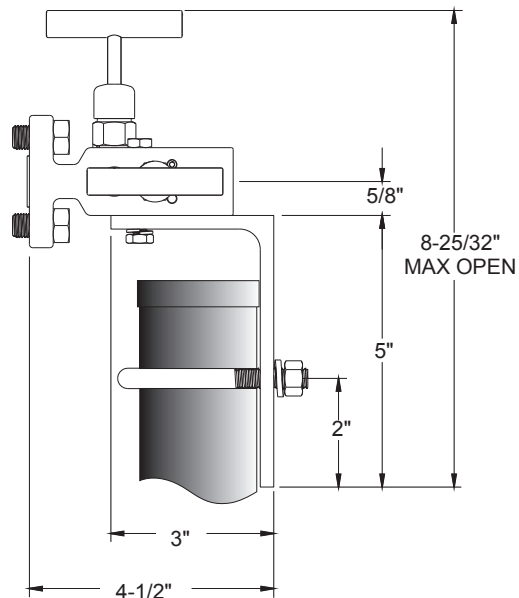
Mounting Diagrams for 2000, 3000 & 5000 Series Manifold Valves

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

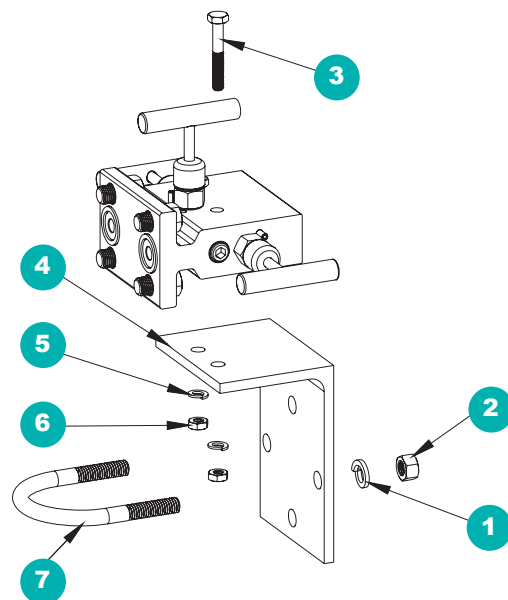


**MK2-CS1 Steel / MK2-SS2 Stainless Steel
Mounting Kit**

Flange-NPT (2000 & 3000 Series Except 3510), NPT-NPT (3000 Series Except 3510)

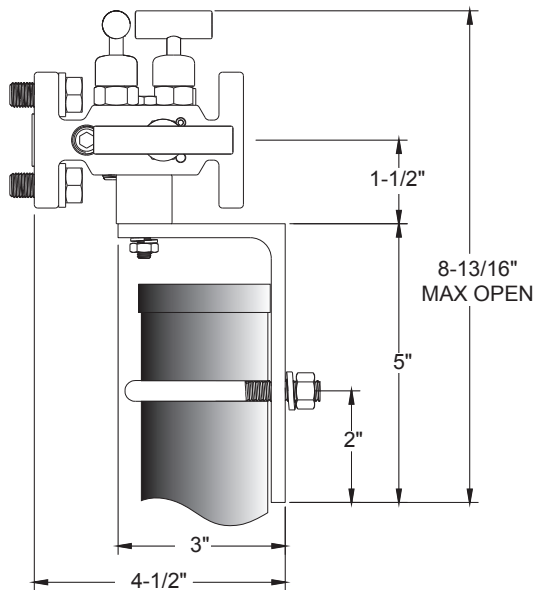


- | | |
|---------------|---------------|
| 1 Lock washer | 5 Bracket |
| 2 Nut | 6 Lock washer |
| 3 Spacer | 7 Nut |
| 4 Bolt | 8 U-bolt |

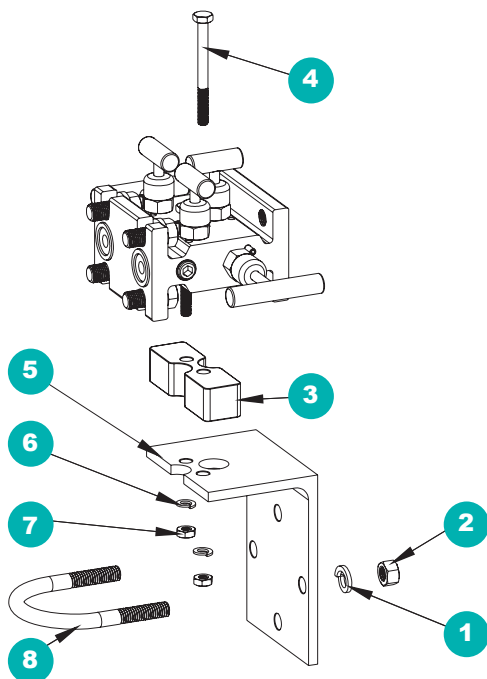
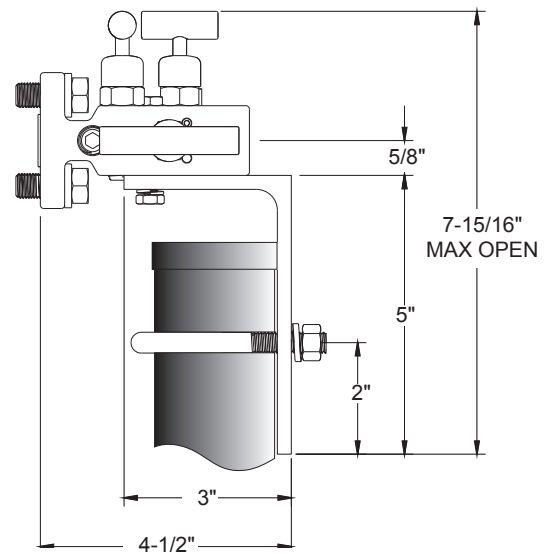


- | | |
|---------------|---------------|
| 1 Lock washer | 5 Lock washer |
| 2 Nut | 6 Nut |
| 3 Bolt | 7 U-bolt |
| 4 Bracket | |

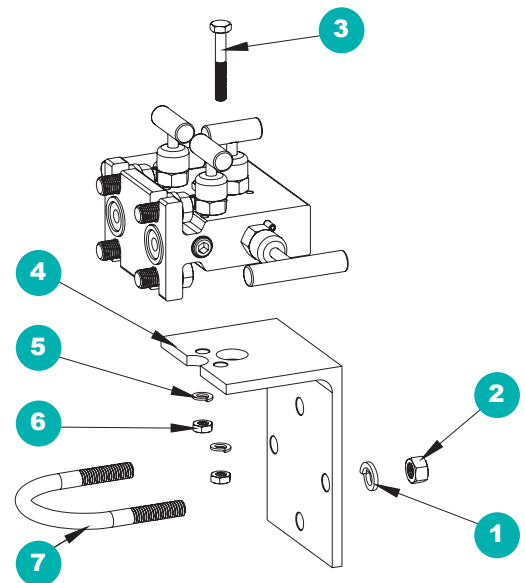
**MK3-CS1 Steel / MK3-SS2 Stainless Steel
Mounting Kit**
Flange-Flange (3510 & 5000 Series)



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



- | | |
|---------------|---------------|
| 1 Lock washer | 5 Bracket |
| 2 Nut | 6 Lock washer |
| 3 Spacer | 7 Nut |
| 4 Bolt | 8 U-bolt |



- | | |
|---------------|---------------|
| 1 Lock washer | 5 Lock washer |
| 2 Nut | 6 Nut |
| 3 Bolt | 7 U-bolt |
| 4 Bracket | |

NOSHOK Needle Valves Reference Chart

		Mini		Multiport		Standard		Block & Bleed		Bleed		2-Valve Block & Bleed		3-Valve Double Block & Bleed
		Hard Seat	Soft Tip	Hard Seat	Soft Seat	Hard Seat	Soft Seat	Hard Seat	Soft Seat	Hard Seat	Soft Tip	Hard Seat	Soft Seat/Tip	Hard Seat
SERIES		100	150	200	300	400	500	600	700	800	850	2070	2170	3070
Materials	Zinc-Nickel plated Steel	*	*	*	*	*	*	*	*	*	*	*	*	*
	Electropolished 316 Stainless Steel	*	*	*	*	*	*	*	*	*	*	*	*	*
	360 Brass	*	*							*	*			
Connections	1/8" NPT	*	*											
	1/4" NPT	*	*			*	*	*	*	*	*	*	*	*
	3/8" NPT					*	*							
	7/16"-20 UNF 2B	*	*			*								
	1/2" NPT			*	*	*	*	*	*	*	*	*	*	*
	1/2" NPT male - 1/4" NPT female					*								
	9/16"-18 UNF 2B	*	*											
	3/4" NPT					*	*							
	3/4" NPT male - 1/2" NPT female			*	*									
	1" NPT					*	*							
Valve Type	1-1/4" NPT					*	*							
	1-1/2" NPT					*	*							
	Male-Male	*	*											
	Male-Female	*	*	*	*	*	*	*	*			*	*	*
	Female-Female	*	*			*	*	*	*			*	*	*
	Female-Male											*	*	*
	Male-Male Angle	*	*											
	Male-Female Angle	*	*			*								
	Female-Female Angle					*								
	Male									*	*			
	Male-Female Extended											*	*	*
	Female-Male Extended											*	*	*
	Female-Female Extended											*	*	*
	Flange-Female													
	Flange-Flange													
Pressure Ratings	3,000 psi		*							*	*			
	6,000 psi	*	*		*		*		*	*	*		*	
	10,000 psi	*		*		*		*	*	*	*	*	*	*
Orifice Size	0.141"													
	0.156"													
	0.172"	*	*											
	0.187"			*	*	*	*	*	*			*	*	*
	0.375"													
	0.438"					*	*							
Flow Coefficient (Cv)	0.38													
	0.42	*	*											
	0.44			*		*		*				*		*
	0.64				*									
	0.76					*	*		*				*	
	2.70					*								
	3.00													
Stem Seal	4.00						*							
	FKM	*	*	*	*	*	*	*	*	*	*	*	*	*
	PTFE	*	*	*	*	*	*	*	*	*	*	*	*	*
	EPDM	*	*	*	*	*	*	*	*	*	*	*	*	*
	FFKM	*	*	*	*	*	*	*	*	*	*	*	*	*
Packings	NBR	*	*	*	*	*	*	*	*	*	*	*	*	*
	PTFE	*	*	*	*	*	*	*	*	*	*	*	*	*
Soft Seats	Graphite	*		*		*		*		*		*		*
	Acetal				*		*		*				*	
Stem Tips	PEEK				*		*		*				*	
	PCTFE				*		*		*				*	
Handles	Rotating (316 Stainless)	*		*	*	*	*	*	*	*		*	*	*
	Acetal		*							*			*	
	Non-rotating (316 Stainless)	*		*	*	*	*	*	*	*	*	*	*	*
	Ball (440C Stainless)	*		*		*		*		*		*		*
	Ball (carbide)	*		*		*		*		*		*		*
	Ball (ceramic)	*		*		*		*		*		*		*
	Ball (Monel)	*		*		*		*		*		*		*
	Regulating hard	*		*		*		*		*		*		*
	PCTFE		*								*			
	PEEK		*								*			
	Regulating Acetal		*											
	Regulating PCTFE		*											
	Regulating PEEK		*											
Panel Mountings	1-13/16" Mini "T" - HL1	*	*	*	*	*	*	*	*	*	*	*	*	*
	2-1/2" "T" - HL2	*		*	*	*	*	*	*	*	*	*	*	*
	1" Round Knurled - HL3	*	*			*	*	*	*	*	*	*	*	*
	1-3/8" Phenolic - HL4	*		*	*	*	*	*	*	*	*	*	*	*
	1-3/4" Phenolic - HL5	*		*	*	*	*	*	*	*	*	*	*	*
	1-3/8" Mini "T" - HL7					*	*		*	*	*			
	2-3/8" Phenolic - HL9					*	*		*	*	*			
	1 Nut	*	*	*	*	*	*	*	*					
	2 Nuts	*	*	*	*	*	*	*	*					

NOSHOK Manifold Valves Reference Chart (Continued on next page)

		Static Pressure Block & Bleed		Liquid Level		Static Pressure Narrow Block & Bleed				Static Pressure Mini Block & Bleed	
		Hard Seat	Soft Seat	Hard Seat	Soft Seat	Hard Seat	Soft Seat	Hard Seat	Soft Seat	Hard Seat	Soft Tip
SERIES		2000	2100	2020	2120	200002	200402	210002	210402	2602	2702
Materials	Zinc-Nickel plated Steel	•	•	•	•	•	•	•	•	•	•
	Electropolished 316 Stainless Steel	•	•	•	•	•	•	•	•	•	•
	360 Brass										
Connections	1/8" NPT									•	•
	1/4" NPT	•	•							•	•
	3/8" NPT										
	7/16"-20 UNF 2B										
	1/2" NPT	•	•	•	•	•	•	•	•		
	1/2" NPT male - 1/4" NPT female										
	9/16"-18 UNF 2B										
	3/4" NPT										
	3/4" NPT male - 1/2" NPT female										
	1" NPT										
Valve Type	1-1/4" NPT										
	1-1/2" NPT										
	Male-Male										
	Male-Female										
	Female-Female	•	•							•	•
	Female-Male										
	Male-Male Angle										
	Male-Female Angle										
	Female-Female Angle										
	Male										
	Male-Female Extended										
	Female-Male Extended										
	Female-Female Extended										
	Flange-Female	•	•	•	•	•	•	•	•		
	Flange-Flange	•	•	•	•	•	•	•	•		
Pressure Ratings	3,000 psi										
	6,000 psi		•		•			•	•		•
	10,000 psi	•		•		•	•			•	
Orifice Size	0.141"									•	•
	0.156"										
	0.172"										
	0.187"	•	•	•	•	•	•	•	•		
	0.375"										
Flow Coefficient (Cv)	0.438"										
	0.38									•	•
	0.42										
	0.44	•		•		•	•				
	0.64										
	0.76		•		•			•	•		
	2.70										
Stem Seal	3.00										
	4.00										
	FKM	•	•	•	•	•	•	•	•	•	•
	PTFE	•	•	•	•	•	•	•	•	•	•
	EPDM	•	•	•	•	•	•	•	•	•	•
Packings	FFKM	•	•	•	•	•	•	•	•	•	•
	NBR	•	•	•	•	•	•	•	•	•	•
Soft Seats	PTFE	•	•	•	•	•	•	•	•	•	•
	Graphite	•		•		•	•			•	
Stem Tips	Acetal		•		•			•	•		•
	PEEK		•		•			•	•		•
	PCTFE		•		•			•	•		•
Handles	Rotating (316 Stainless)	•	•	•	•	•	•	•	•	•	
	Acetal										•
	Non-rotating (316 Stainless)		•	•	•	•	•	•	•	•	•
	Ball (440C Stainless)	•		•		•	•			•	
	Ball (carbide)	•		•		•	•			•	
	Ball (ceramic)	•		•		•	•			•	
	Ball (Monel)	•		•		•	•			•	
	Regulating hard	•		•		•	•			•	
	PCTFE										•
	PEEK										•
	Regulating Acetal										•
	Regulating PCTFE										•
	Regulating PEEK										•
Handles	1-13/16" Mini "T" - HL1	•	•	•	•	•	•	•	•		
	2-1/2" "T" - HL2	•	•	•	•	•	•	•	•		
	1" Round Knurled - HL3	•	•	•	•	•	•	•	•	•	•
	1-3/8" Phenolic - HL4	•	•	•	•	•	•	•	•		
	1-3/4" Phenolic - HL5	•	•	•	•	•	•	•	•		
	1-3/8" Mini "T" - HL7									•	•
Handles	2-3/8" Phenolic - HL9										

NOSHOK Manifold Valves Reference Chart

		Static Pressure Block & Bleed				Meter Manifold	Differential Pressure					Natural Gas		
		Hard Seat		Soft Tip		Soft Seat	Hard Seat		Soft Seat		Soft Tip	Hard Seat	Soft Seat/Tip	
SERIES		2603	2604	2703	2704	2180	3010	3610	3110	3510	3710	5030	5130	5530
Materials	Zinc-Nickel plated Steel	*	*	*	*	*	*	*	*	*	*	*	*	*
	Electropolished 316 Stainless Steel	*	*	*	*	*	*	*	*	*	*	*	*	*
	360 Brass													
Connections	1/8" NPT													
	1/4" NPT					*		*			*			
	3/8" NPT	*		*										
	7/16"-20 UNF 2B													
	1/2" NPT		*		*		*		*	*		*	*	*
	1/2" NPT male - 1/4" NPT female													
	9/16"-18 UNF 2B													
	3/4" NPT													
	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	*	*	*	*	*	*	*	*	*	*	*	*	*
	Female-Male													
	Male-Male Angle													
	Male-Female Angle													
	Female-Female Angle													
	Male													
	Male-Female Extended													
	Female-Male Extended													
	Female-Female Extended													
	Flange-Female						*		*	*		*	*	*
	Flange-Flange						*		*	*		*	*	*
Pressure Ratings	3,000 psi			*	*	*			*	*	*		*	*
	6,000 psi								*	*	*		*	*
	10,000 psi	*	*				*	*				*		
Orifice Size	0.141"							*			*			
	0.156"	*	*	*	*									
	0.172"													
	0.187"					*	*		*			*	*	
	0.375"									*				*
	0.438"													
Flow Coefficient (Cv)	0.38													
	0.42													
	0.44	*	*	*	*		*	*			*	*		
	0.64													
	0.76					*			*				*	
	2.70													
	3.00									*				*
	4.00													
Stem Seal	FKM	*	*	*	*	*	*	*	*	*	*	*	*	*
	PTFE	*	*	*	*	*	*	*	*	*	*	*	*	*
	EPDM	*	*	*	*	*	*	*	*	*	*	*	*	*
	FFKM	*	*	*	*	*	*	*	*	*	*	*	*	*
	NBR	*	*	*	*	*	*	*	*	*	*	*	*	*
Packings	PTFE	*	*	*	*	*	*	*	*	*	*	*	*	*
	Graphite	*	*				*	*				*		
Soft Seats	Acetal					*			*	*			*	*
	PEEK					*			*	*			*	*
	PCTFE					*			*	*			*	*
Stem Tips	Rotating (316 Stainless)	*	*			*	*	*	*	*	*	*	*	*
	Acetal			*	*	*					*		*	*
	Non-rotating (316 Stainless)	*	*			*	*		*			*	*	
	Ball (440C Stainless)	*	*				*	*				*		
	Ball (carbide)	*	*				*	*				*		
	Ball (ceramic)	*	*				*	*				*		
	Ball (Monel)	*	*				*	*				*		
	Regulating hard	*	*				*	*				*		
	PCTFE			*	*						*		*	
	PEEK			*	*						*		*	
	Regulating Acetal			*	*						*		*	
	Regulating PCTFE			*	*						*		*	
	Regulating PEEK			*	*						*		*	
Handles	1-13/16" Mini "T" - HL1	*	*	*	*		*	*	*	*	*	*	*	*
	2-1/2" "T" - HL2	*	*	*	*	*	*	*	*	*	*	*	*	*
	1" Round Knurled - HL3	*	*	*	*	*	*	*	*	*	*	*	*	*
	1-3/8" Phenolic - HL4	*	*	*	*	*	*	*	*	*	*	*	*	*
	1-3/4" Phenolic - HL5	*	*	*	*	*	*	*	*	*	*	*	*	*
	1-3/8" Mini "T" - HL7											*	*	*
	2-3/8" Phenolic - HL9													

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

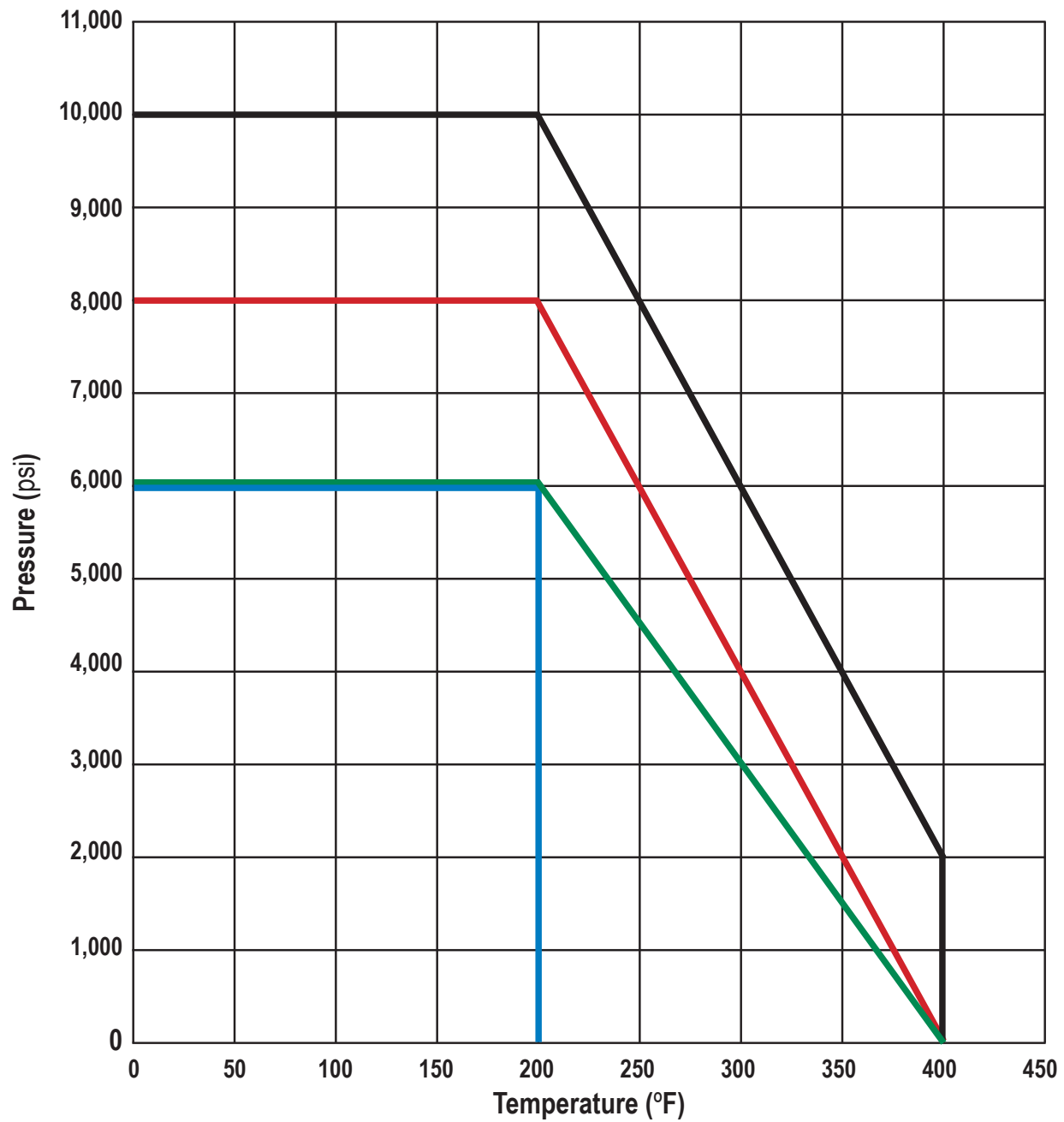
Every NOSHOK valve is rated with a flow coefficient, C_v , which identifies the relationship between rate of flow and the pressure drop across the valve's orifice. Understanding the flow coefficient of your system will aid in deciding the proper size NOSHOK valve required.

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.

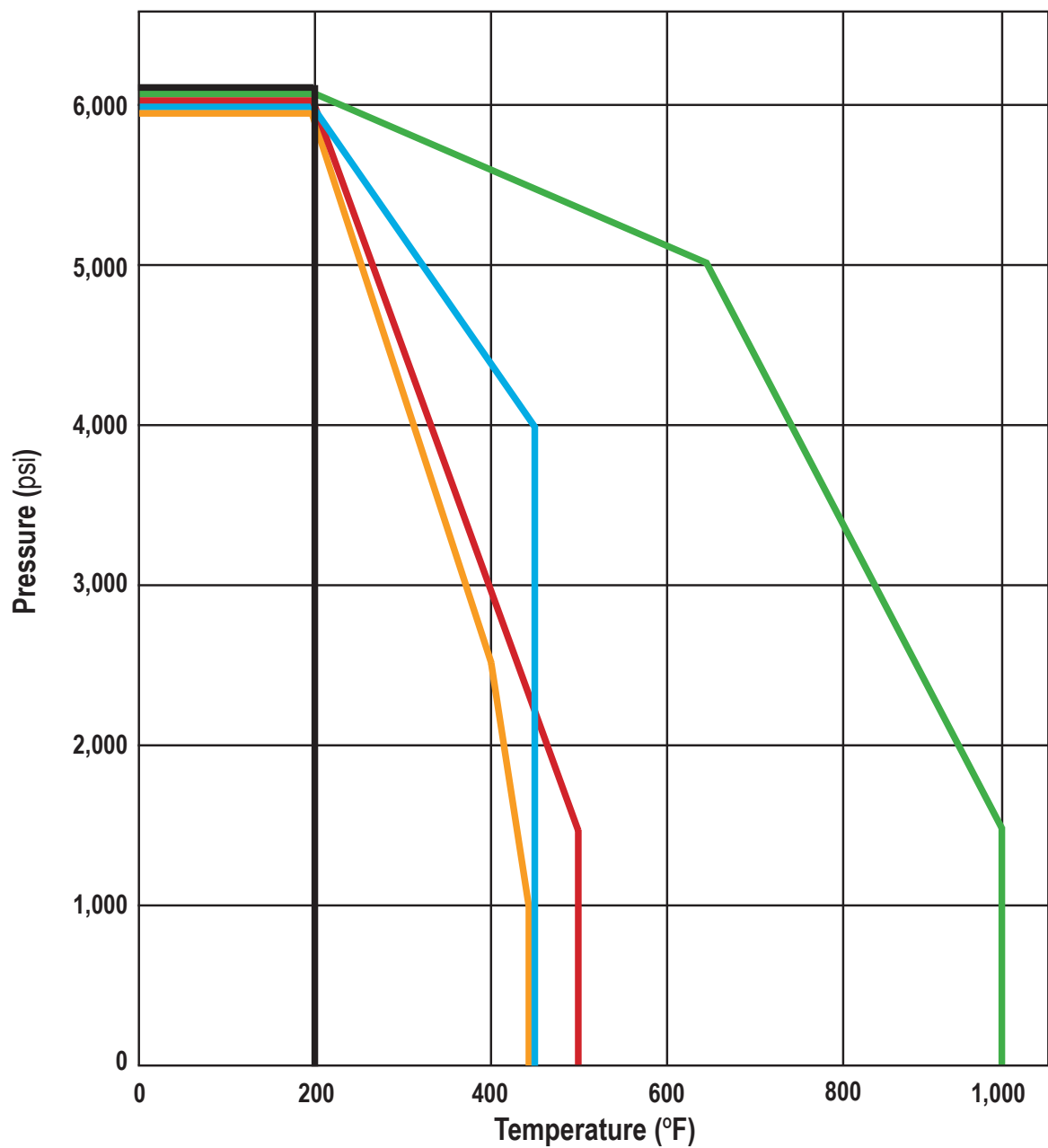
Answering the aforementioned questions will help you select which NOSHOK needle or manifold valve is best for your application. NOSHOK's Customer Support Team is also available at 440.243.0888 should you need further assistance.

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.

Category:	C. Valves
Type of Fitting:	All line valves

Alberta	0C15217.52
British Columbia	Exempt
Manitoba	0C15217.54
New Brunswick	0C15217.57
Newfoundland & Labrador	0C15217.50
Northwest Territories	0C15217.5T
Nova Scotia	0C15217.58
Nunavut	0C15217.5N
Ontario	0C15217.5
Prince Edward Island	0C15217.59
Quebec	CSA-0C15217.56
Saskatchewan	CSA-0C15217.56
Yukon Territory	0C15217.5Y

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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.

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