

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

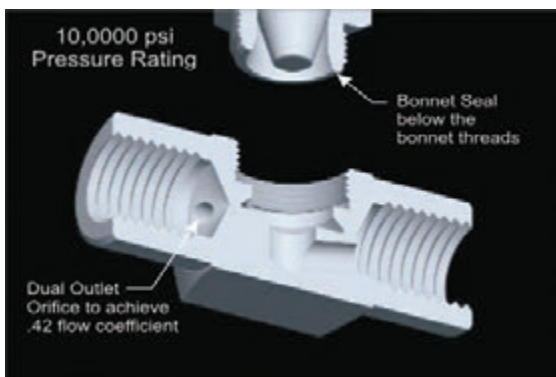
NOSHOK VALVES PATENTED FOR SUPERIOR DESIGN

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.



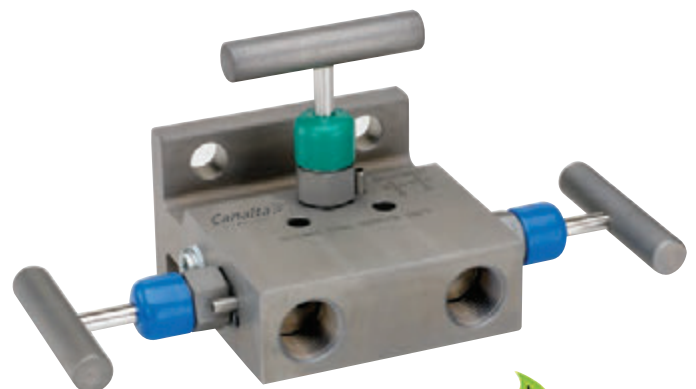
SUPERIOR CORROSION-RESISTANT ZINC-NICKEL PLATING ON ALL CARBON STEEL NOSHOK VALVES

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.





T A B L E O F C O N T E N T S

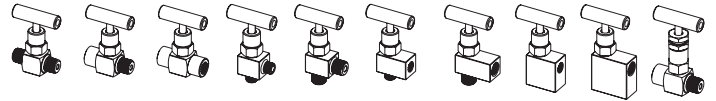
WARRANTY INFORMATION & THE NOSHOK ADVANTAGE

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

NEEDLE VALVES

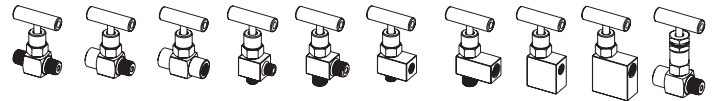
Mini, Hard Seat:

100 SERIES 6-13



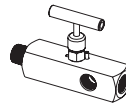
Mini, Soft Tip:

150 SERIES 14-21



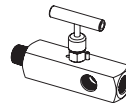
Multiport, Hard Seat:

200 SERIES 22-25



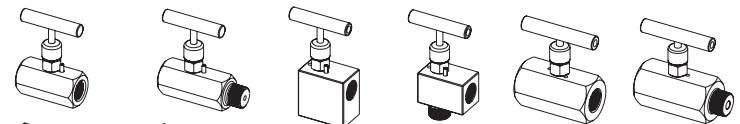
Multiport, Soft Seat:

300 SERIES 26-29



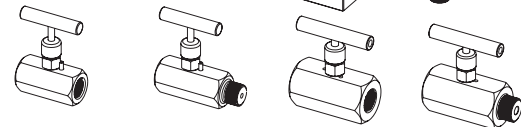
Standard, Hard Seat:

400 SERIES 30-35



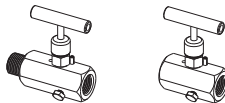
Standard, Soft Seat:

500 SERIES 36-39



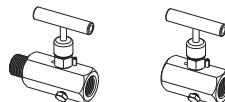
Block & Bleed, Hard Seat:

600 SERIES 40-43



Block & Bleed, Soft Seat:

700 SERIES 44-47



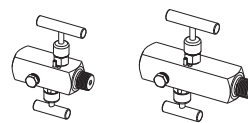
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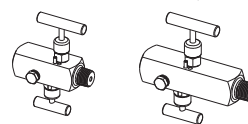
2-Valve Block & Bleed, Hard Seat:

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NEEDLE VALVE OPTIONS

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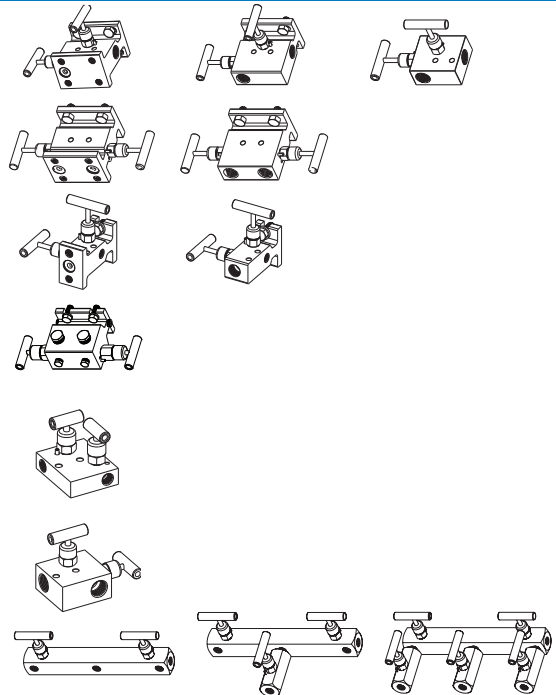
Delrin® and Kalrez® are registered trademarks of DuPont™
Graphite is a registered trademark of Grafftech, Inc.™

T A B L E O F C O N T E N T S



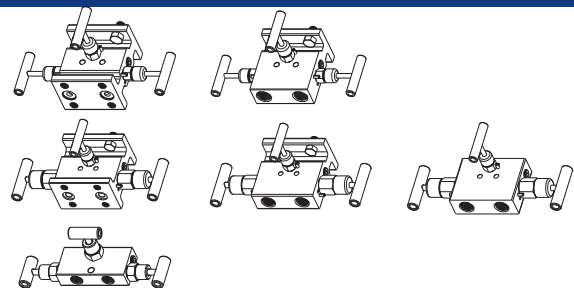
MANIFOLD VALVES, 2-VALVE

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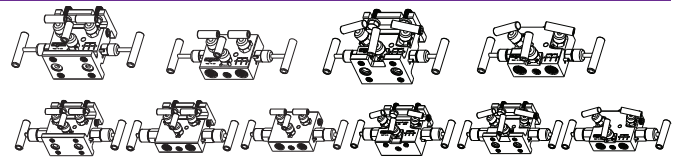
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In keeping with and for purpose of product and/or manufacturing process improvements, NOSHOK, Inc. reserves the right to make design changes without prior notice.

Mini, Hard Seat

100 SERIES



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

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

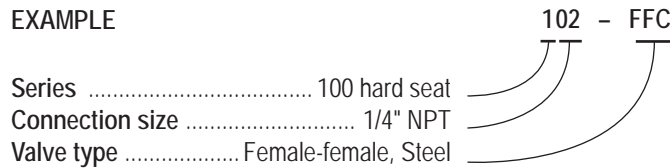
NOTE: All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

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



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 (Kalrez® 3018 or equivalent)	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.

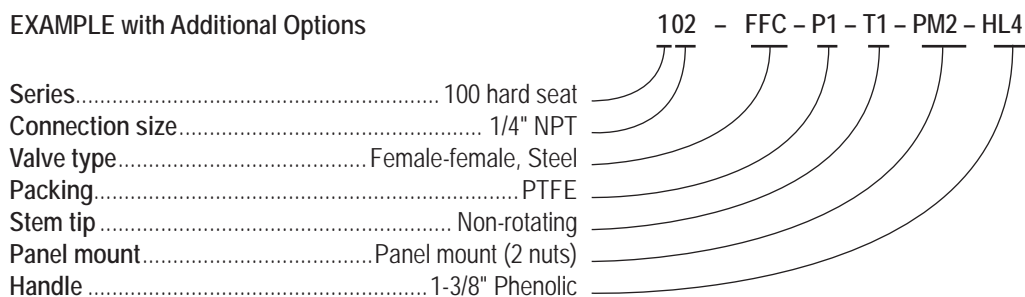
* If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

** 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).

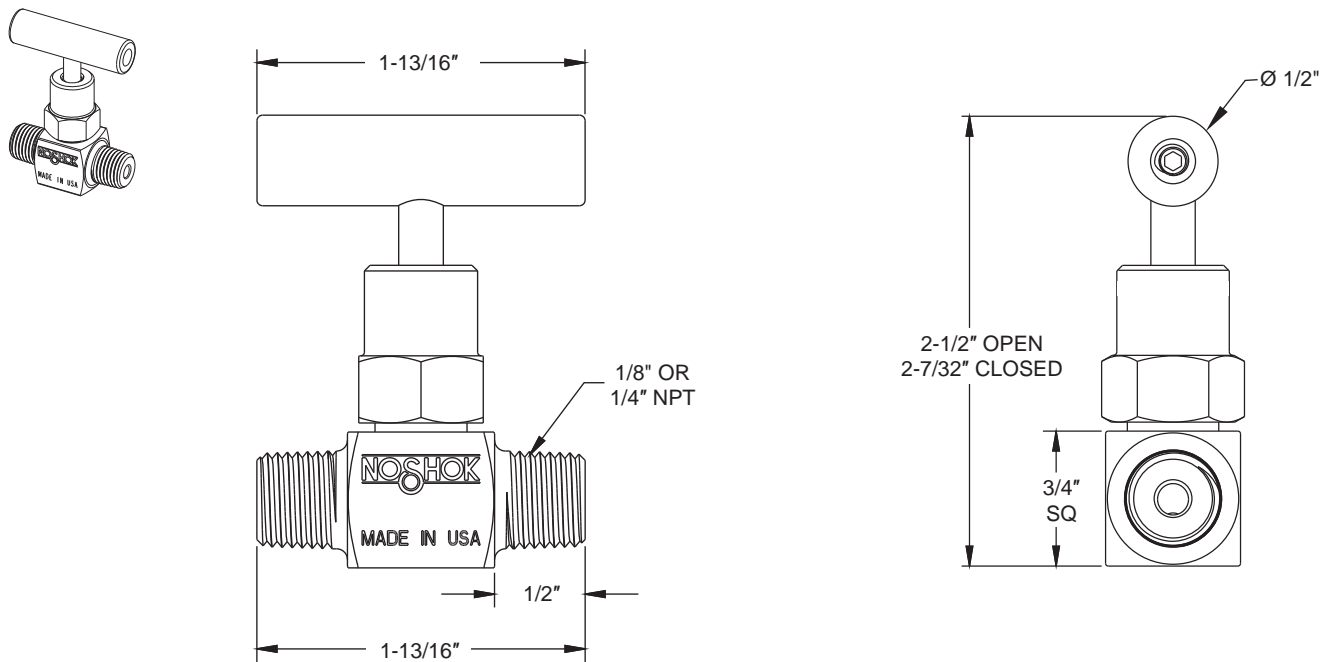
The handle material will always match the material of the valve, unless otherwise specified. For example, the round knurled (HL3) on a 102-FFB will be Brass. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

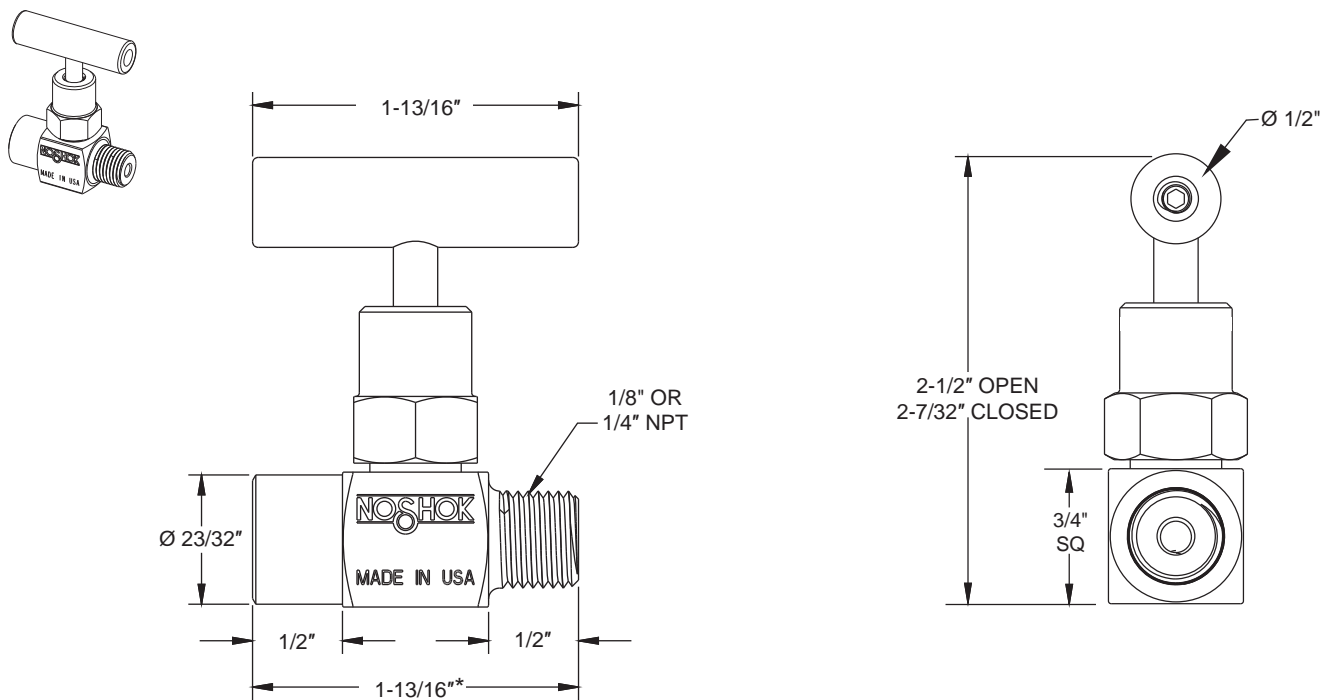


Dimensions

Male-Male

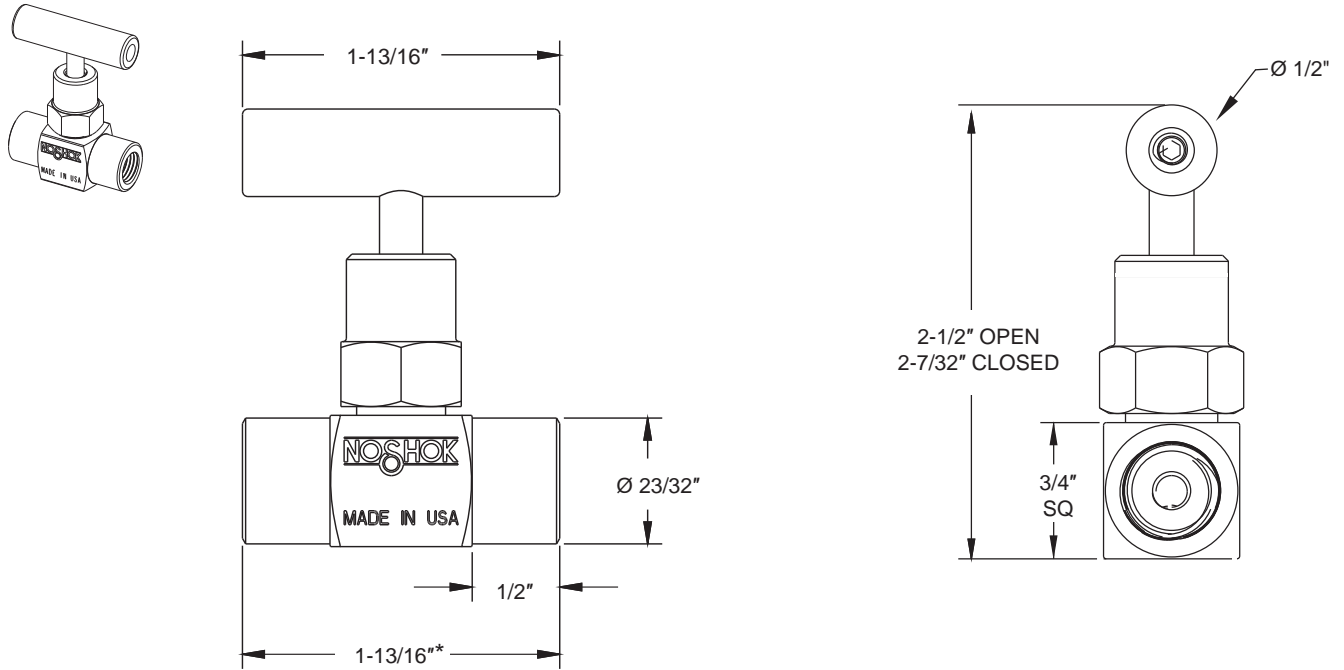


Male-Female



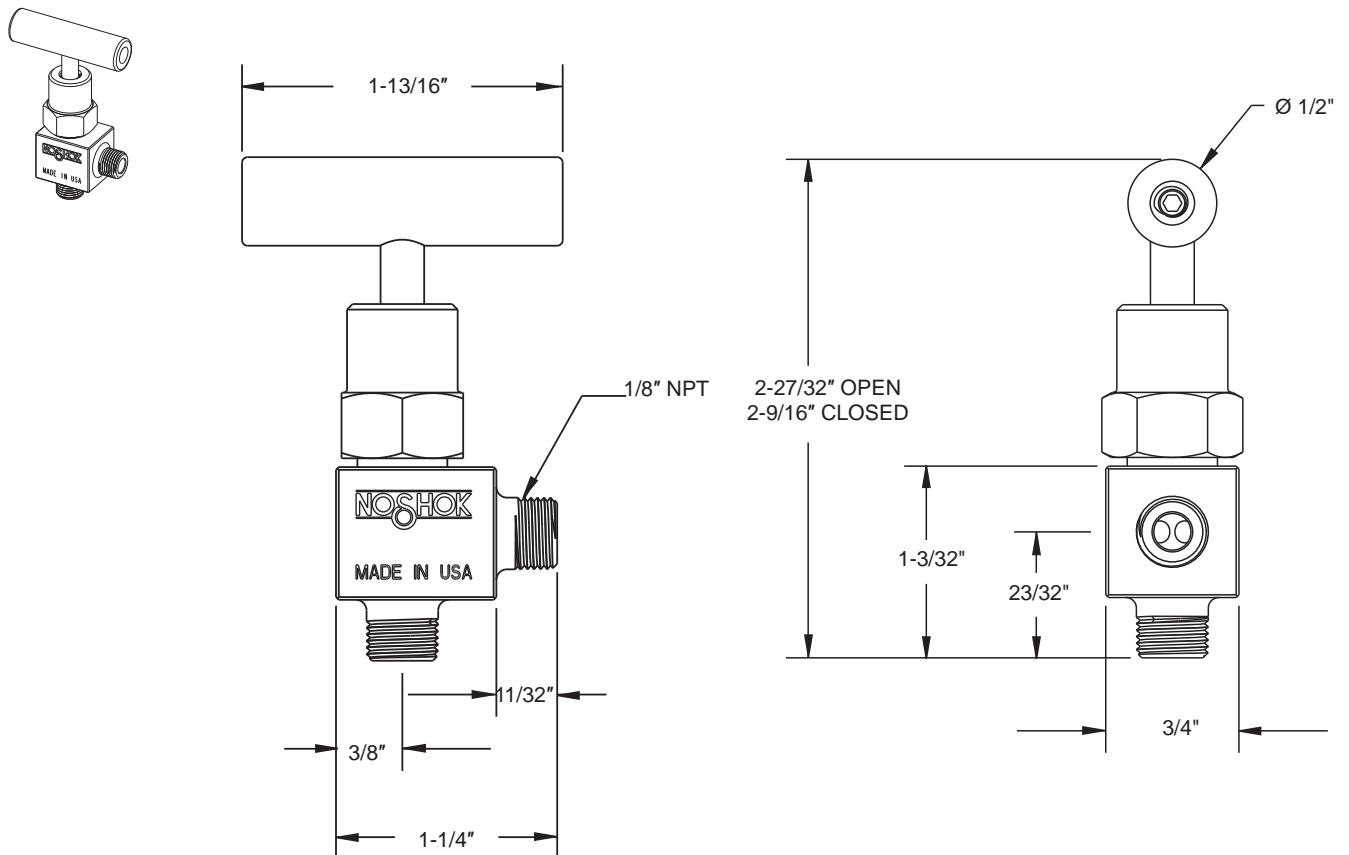
*Dimension on extended version is 2-1/4"

Female-Female



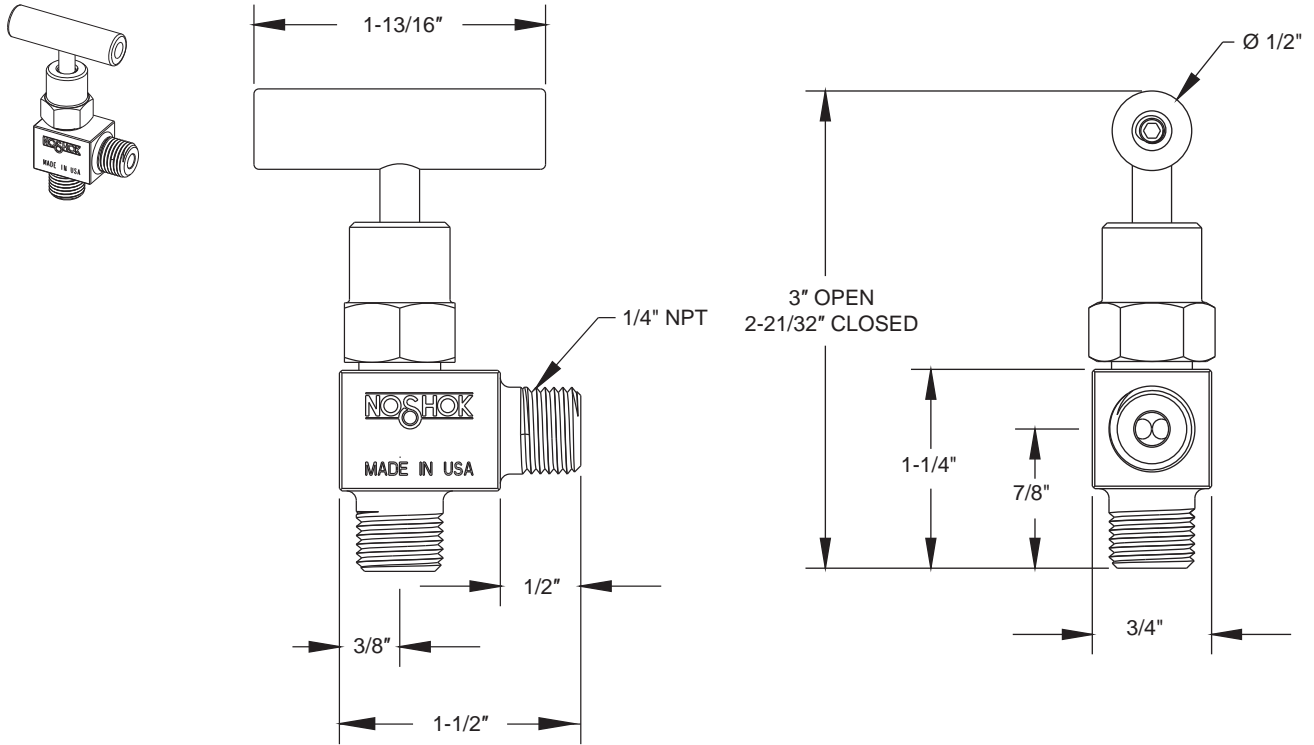
*Dimension on extended version is $2-1/4"$

1/8" Male-Male Angle

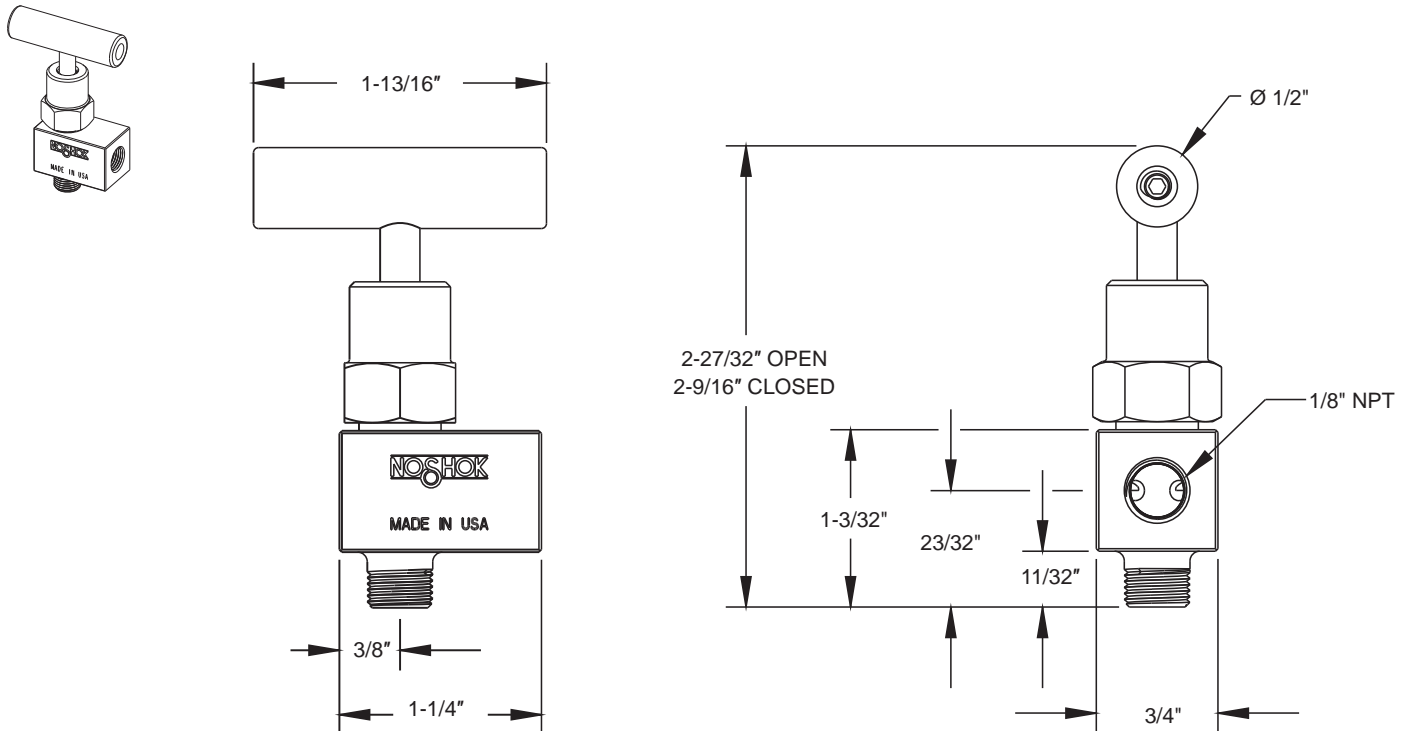


Dimensions

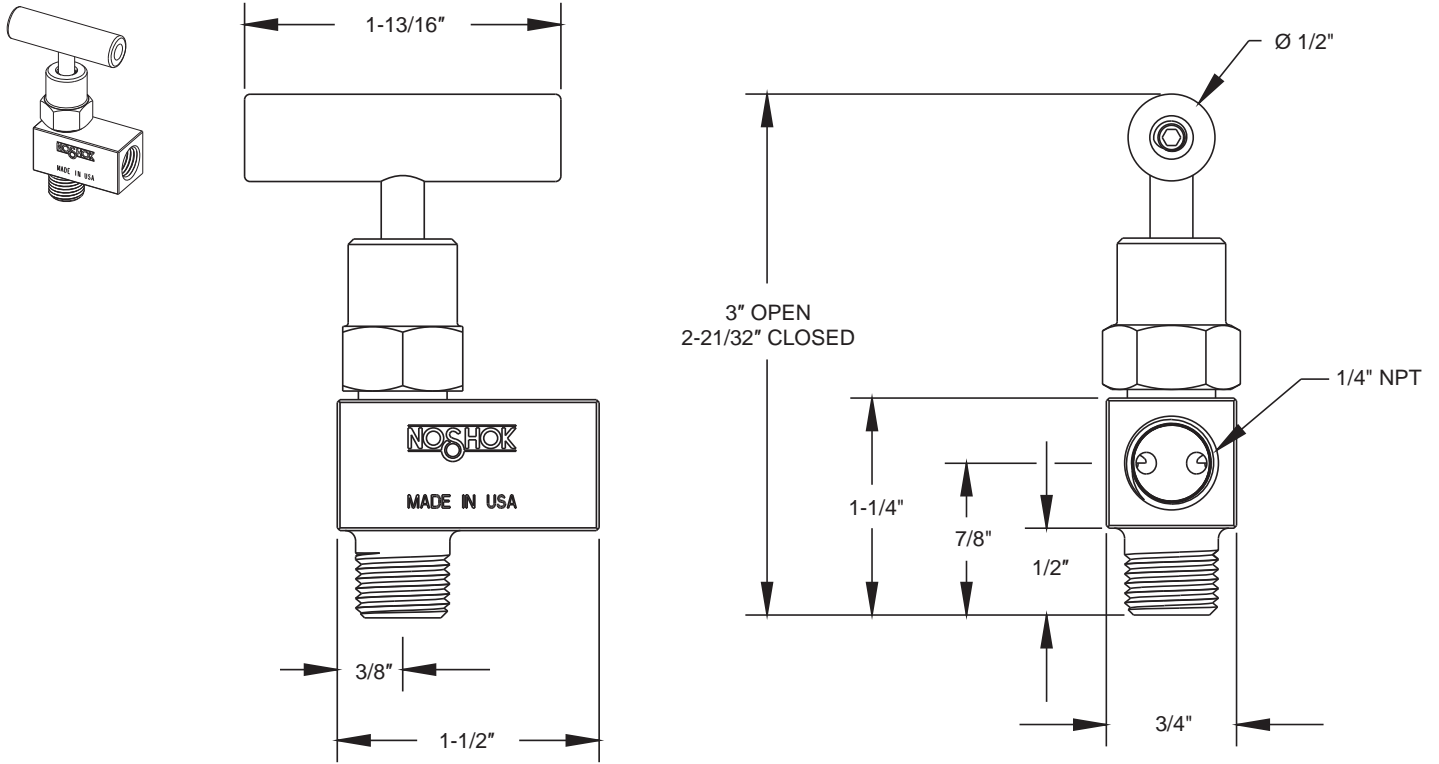
1/4" Male-Male Angle



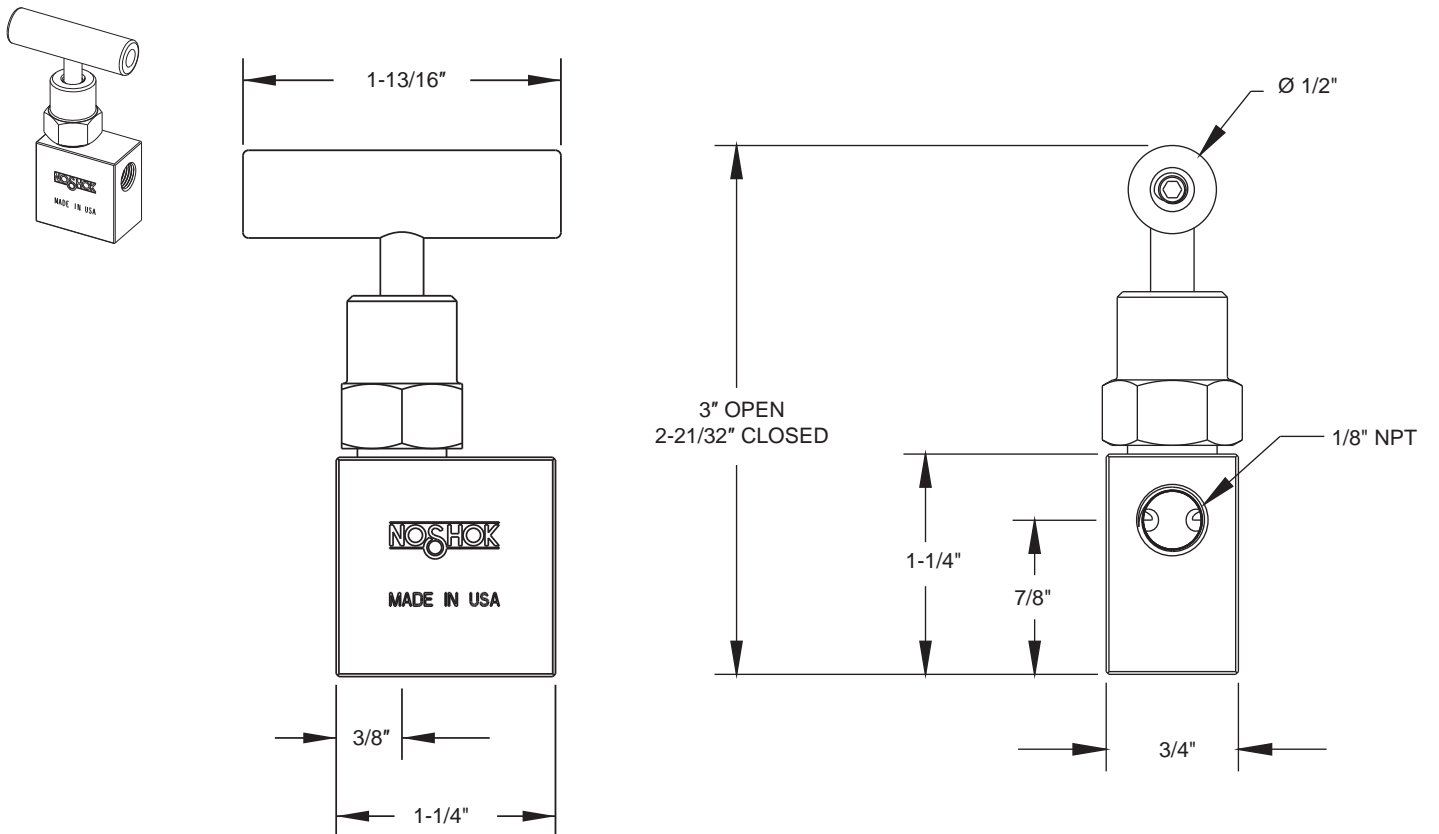
1/8" Male-Female Angle



1/4" Male-Female Angle

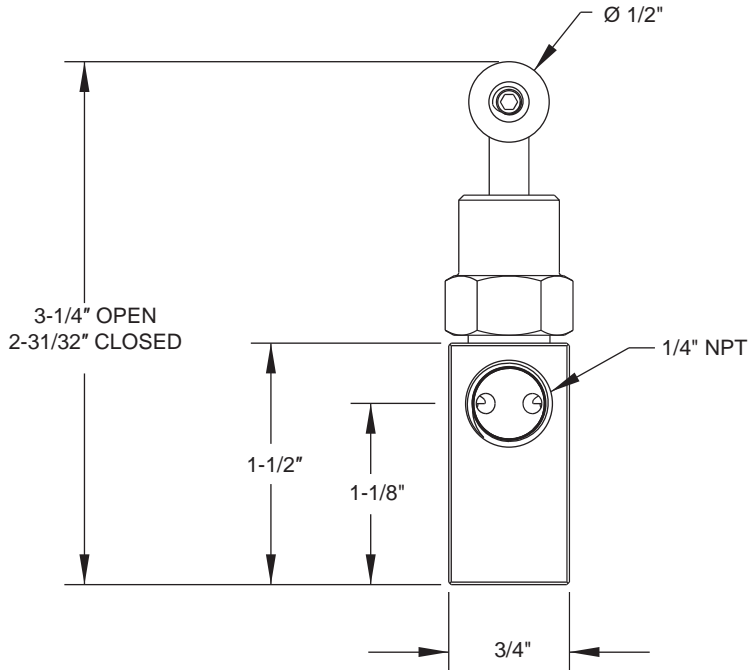
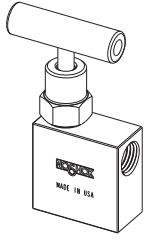


1/8" Female-Female Angle



Dimensions

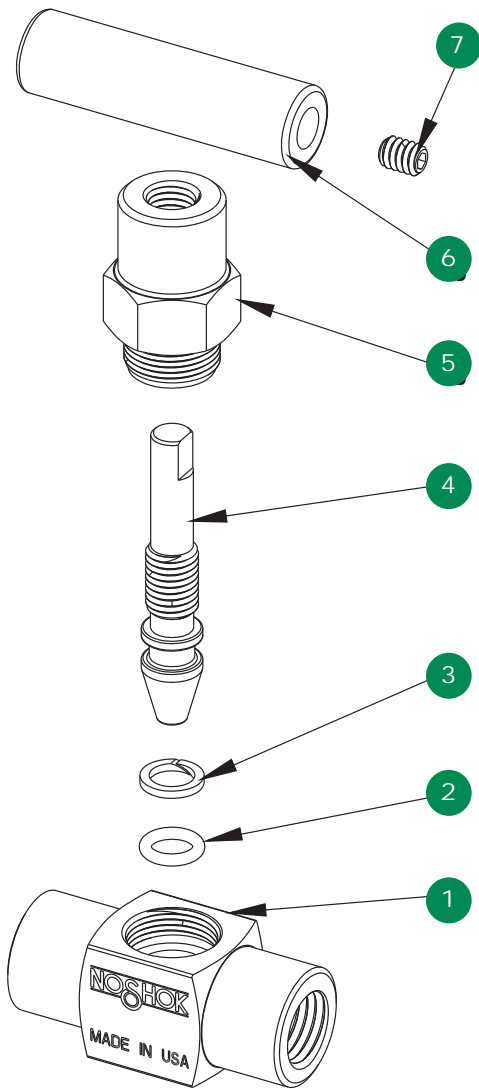
1/4" Female-Female Angle



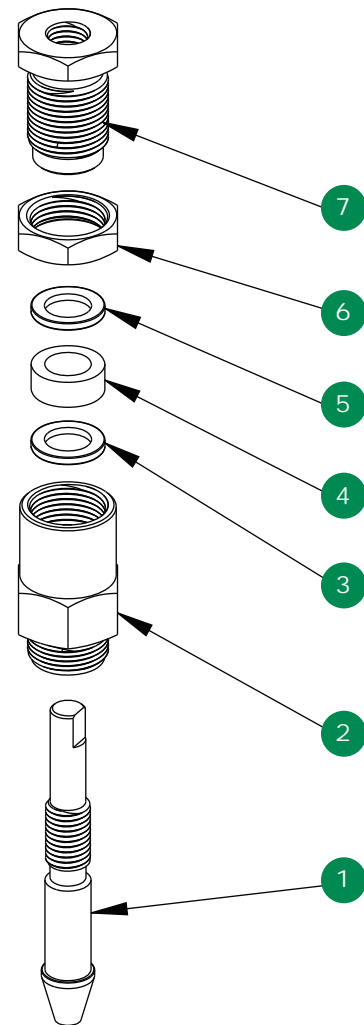
For panel mount, packing, & stem tip dimensions, see pgs. 64-67.

Mini, Hard Seat

Option With Packing



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



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

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 Delrin® non-rotating soft tip stem, and a back-up metal-to-metal seal (**U.S. Patent 6,820,857**)
- Available in Zinc-Nickel plated Steel, electropolished Stainless Steel, and Brass
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE packing optional
- All stem threads are rolled for strength and ease of operation
- Patented body-to-bonnet, metal-to-metal seal is designed to significantly increase the pressure range of the valve (**U.S. Patent 7,758,014**)

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.

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

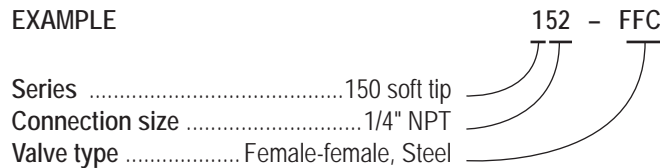
NOTE: All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

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



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.

PACKING	P1 PTFE		
STEM TIPS	T3 PCTFE	T10 Regulating Delrin®	T12 Regulating PEEK
	T4 PEEK	T11 Regulating PCTFE	
O-RINGS*	EM1 EPDM	KZ1 FFKM (Kalrez® 3018 or equivalent)	NB1 NBR
PANEL MOUNTINGS	PM1 Panel mount (1 nut)	PM2 Panel mount (2 nuts)	
HANDLE	HL3 1" Round knurled		

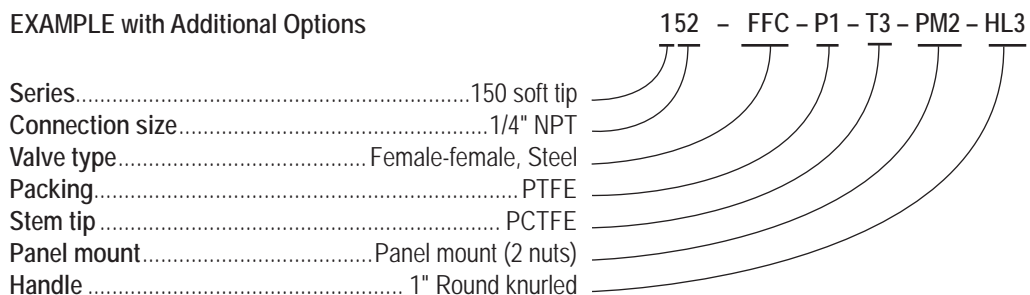
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

* 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 handles (HL3), Steel 1-3/8" mini "T" handles (HL7), and 316SS 1-3/8" mini "T" handles (HL7).

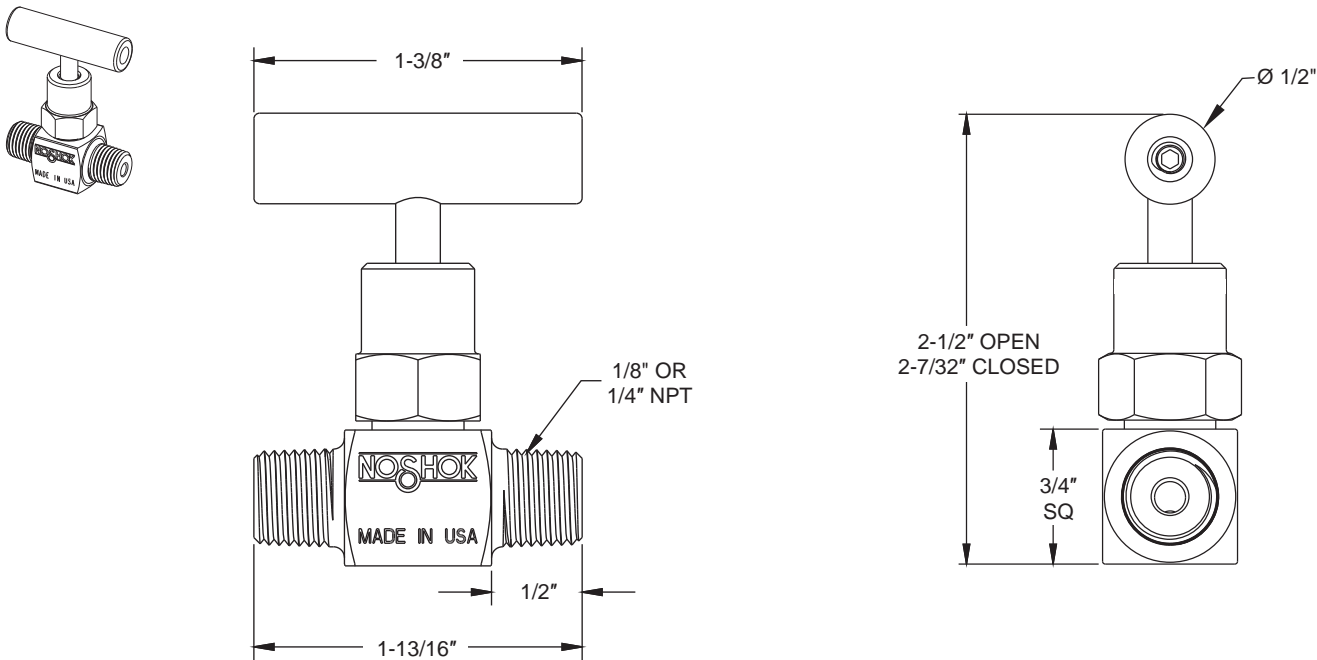
The handle material will always match the material of the valve, unless otherwise specified. For example, the round knurled (HL3) on a 152-FFB will be Brass. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

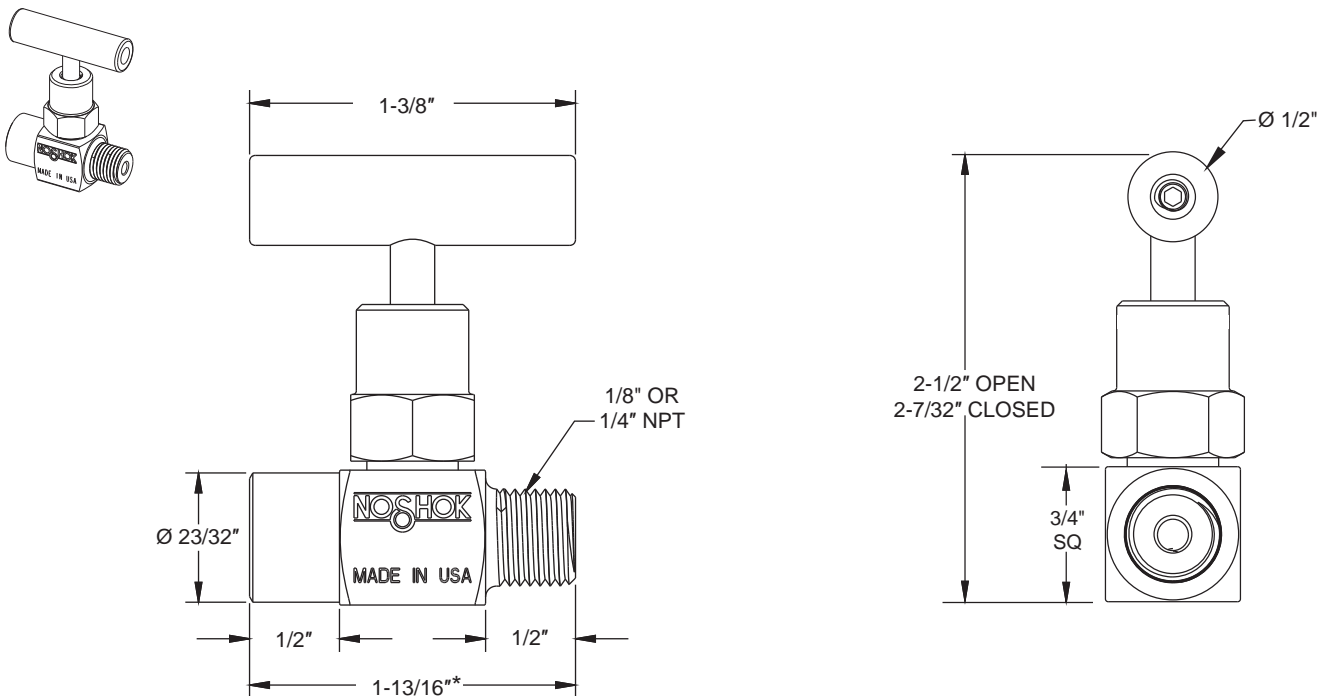


Dimensions

Male-Male

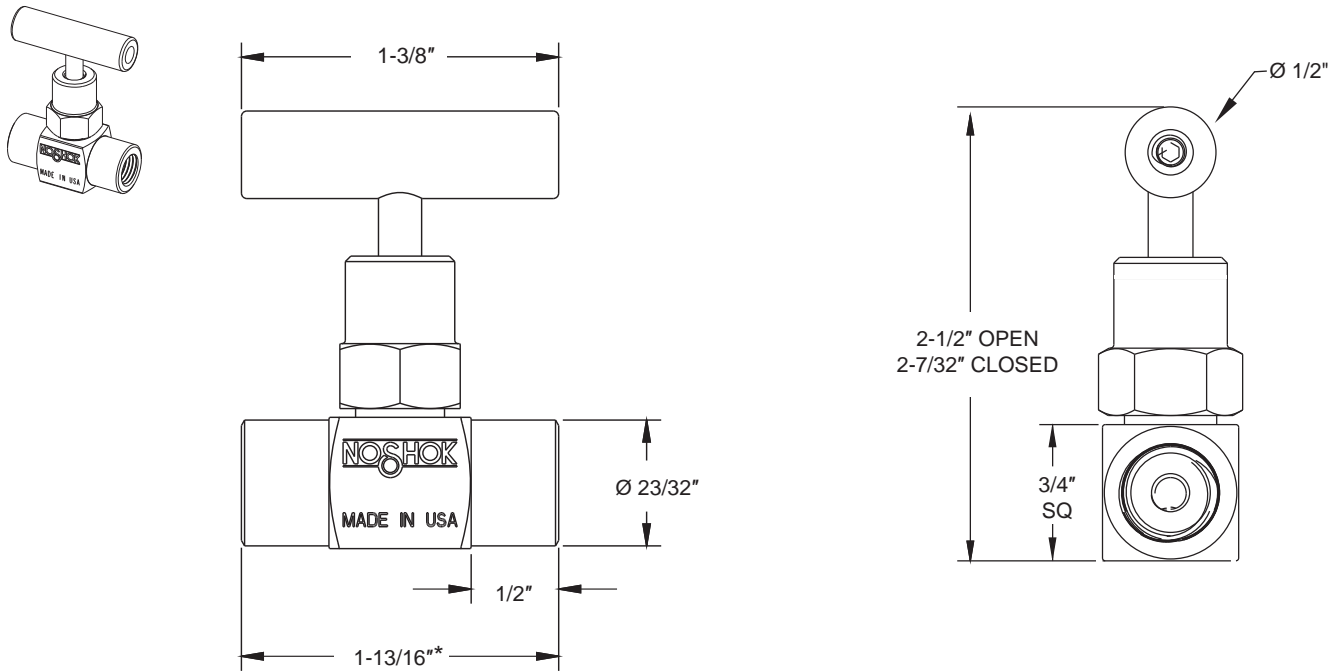


Male-Female



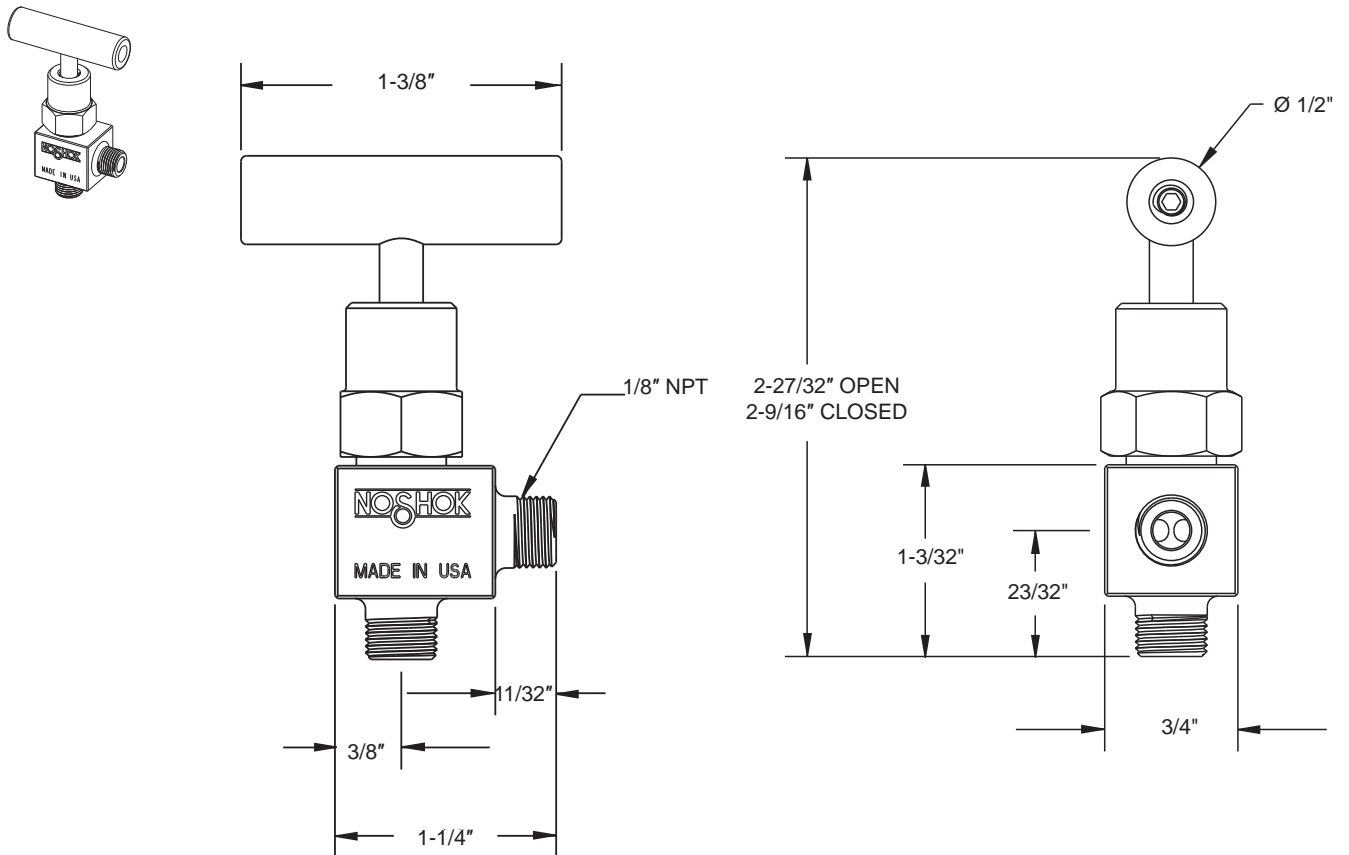
*Dimension on extended version is 2-1/4"

Female-Female



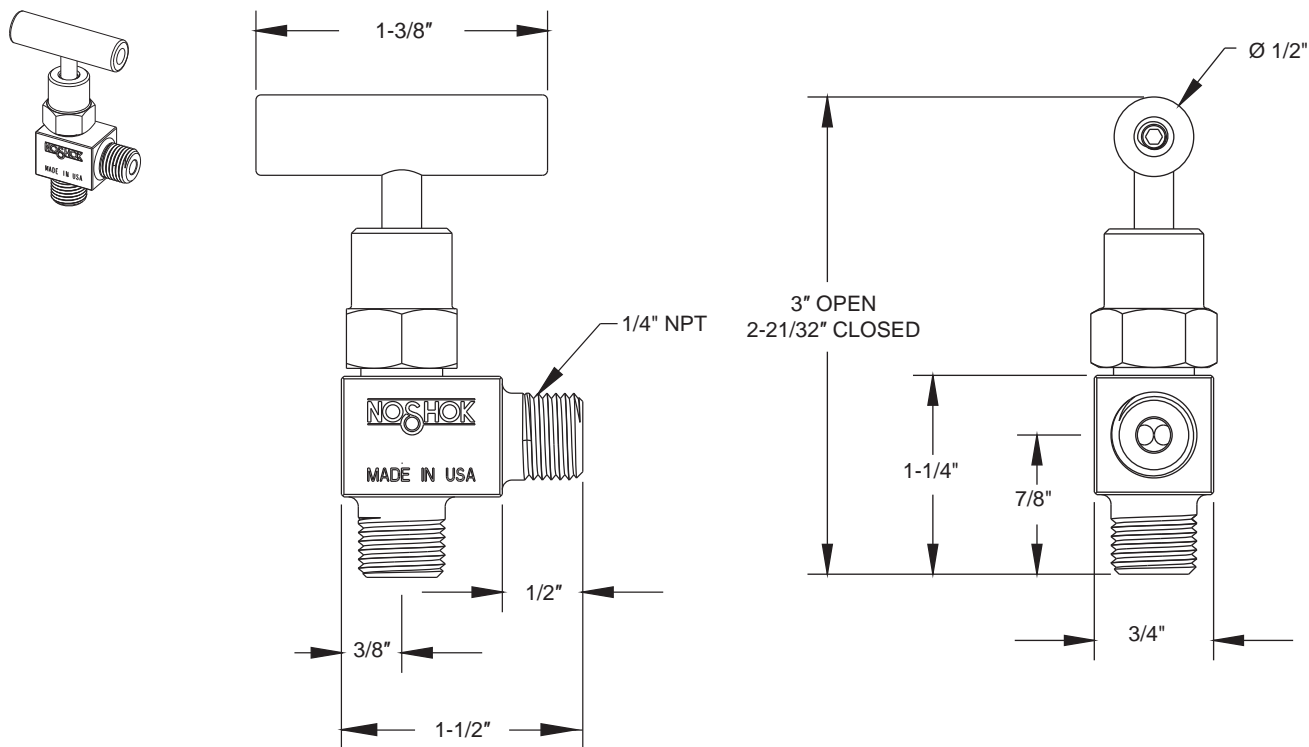
*Dimension on extended version is 2-1/4"

1/8" Male-Male Angle

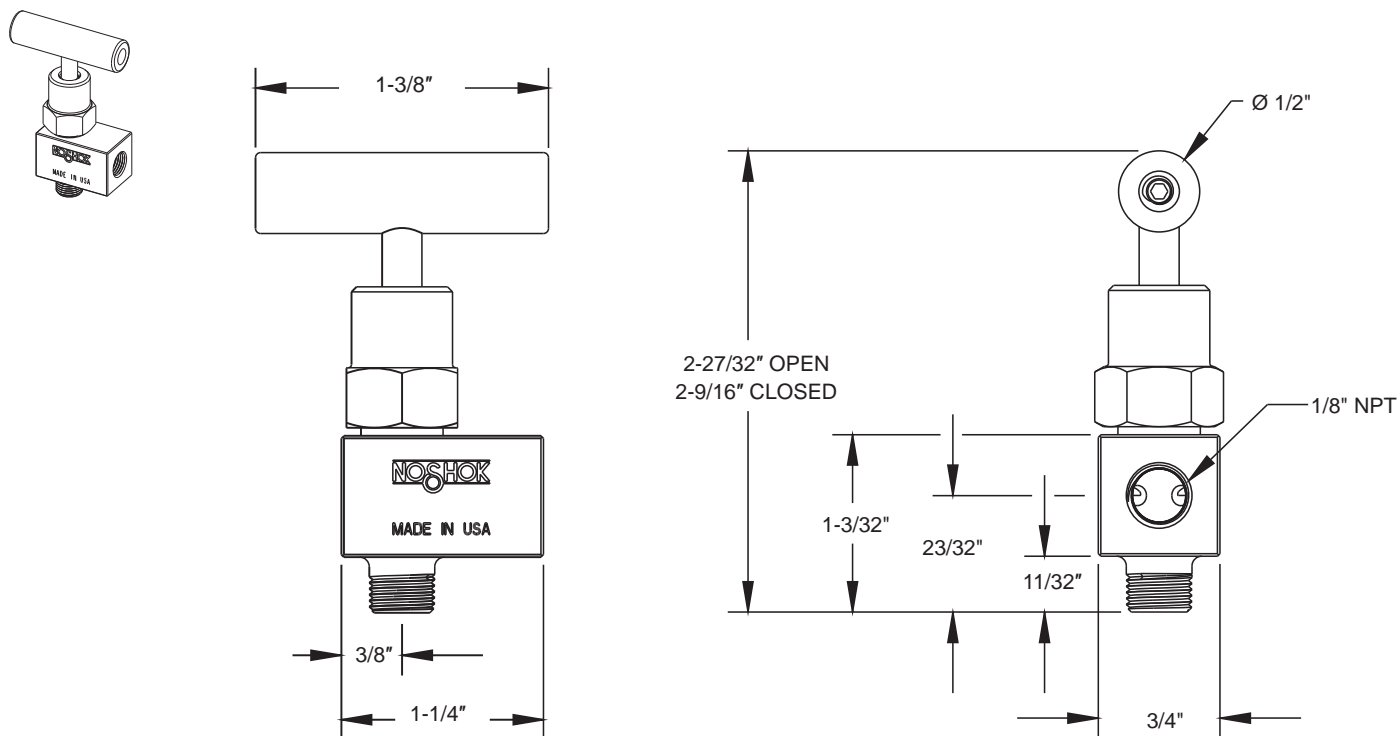


Dimensions

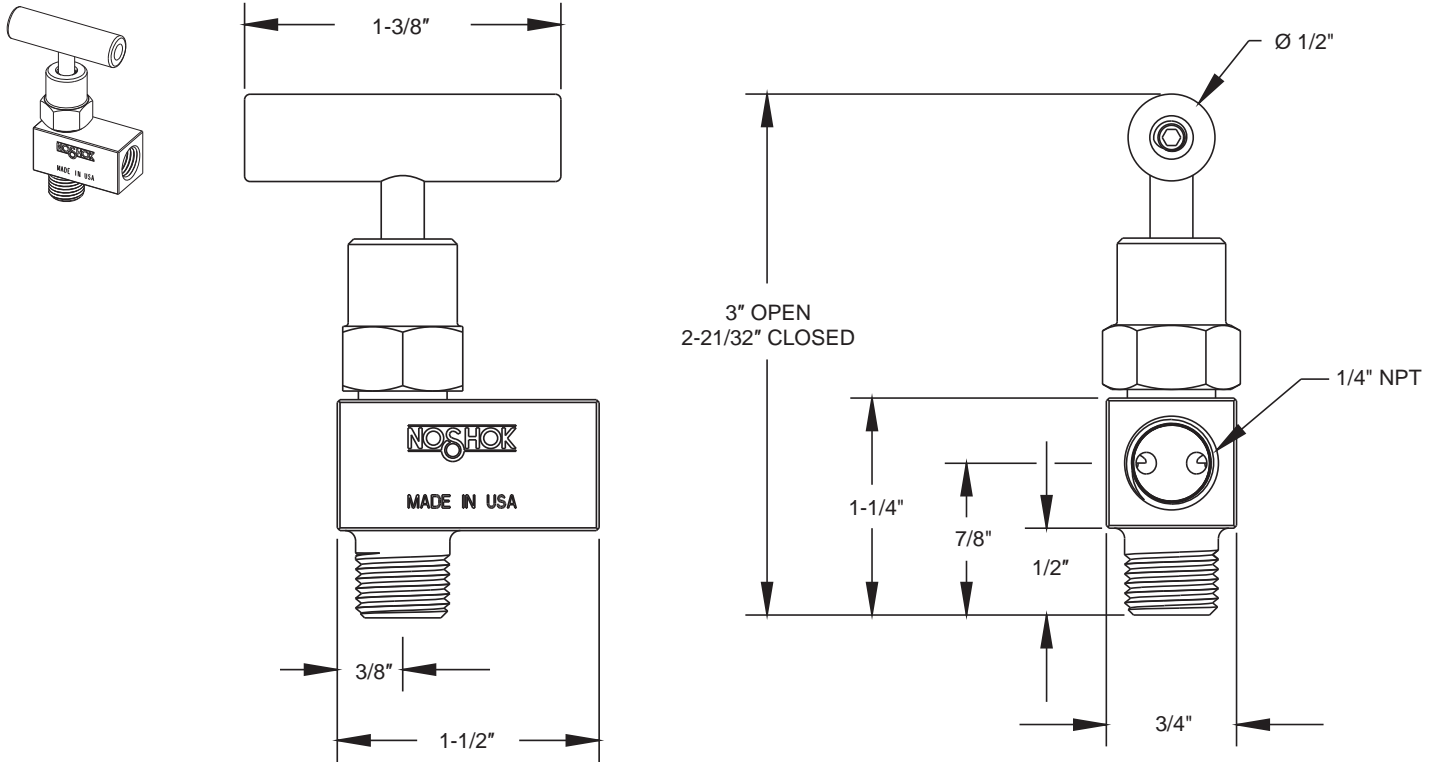
1/4" Male-Male Angle



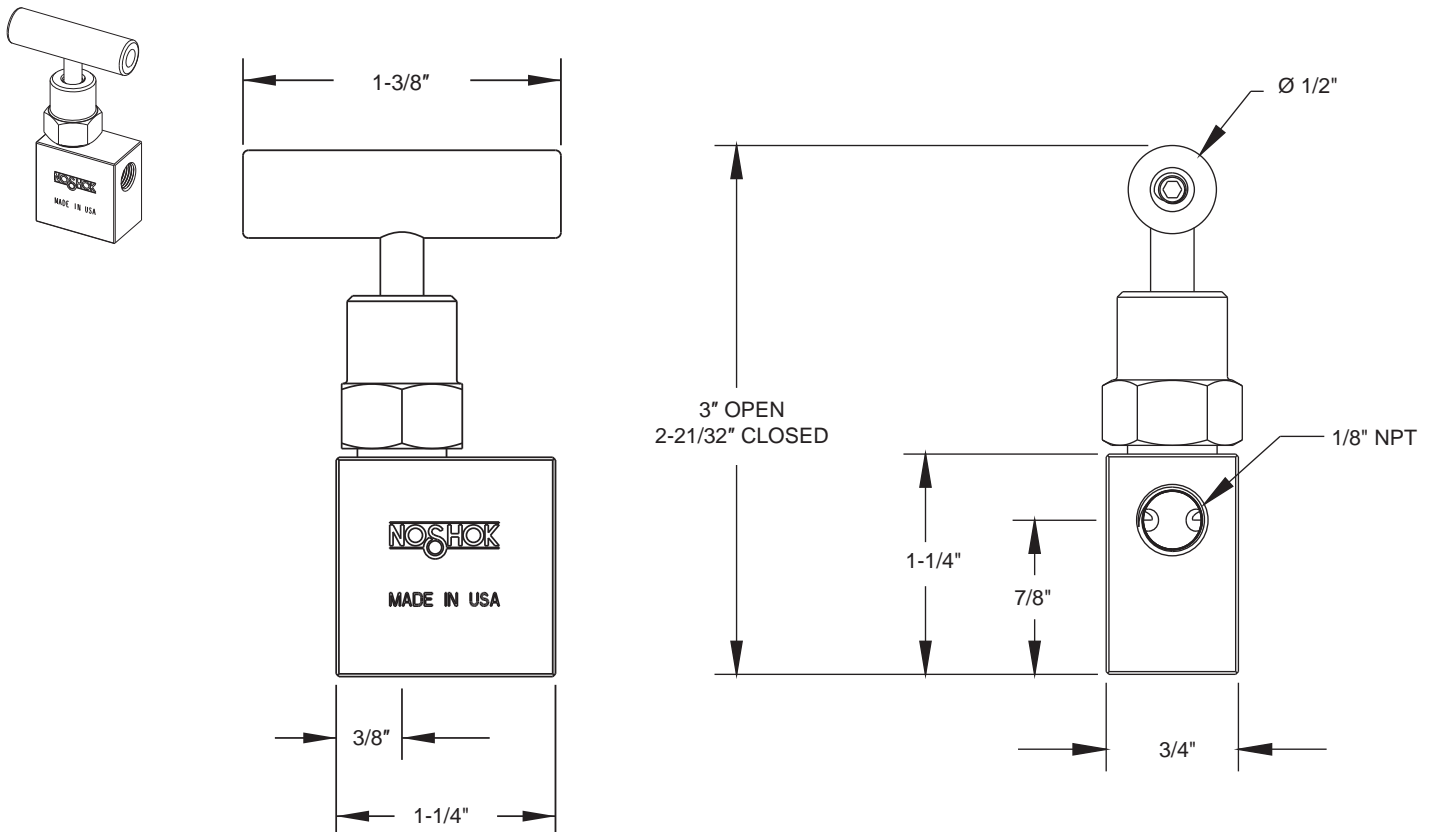
1/8" Male-Female Angle



1/4" Male-Female Angle

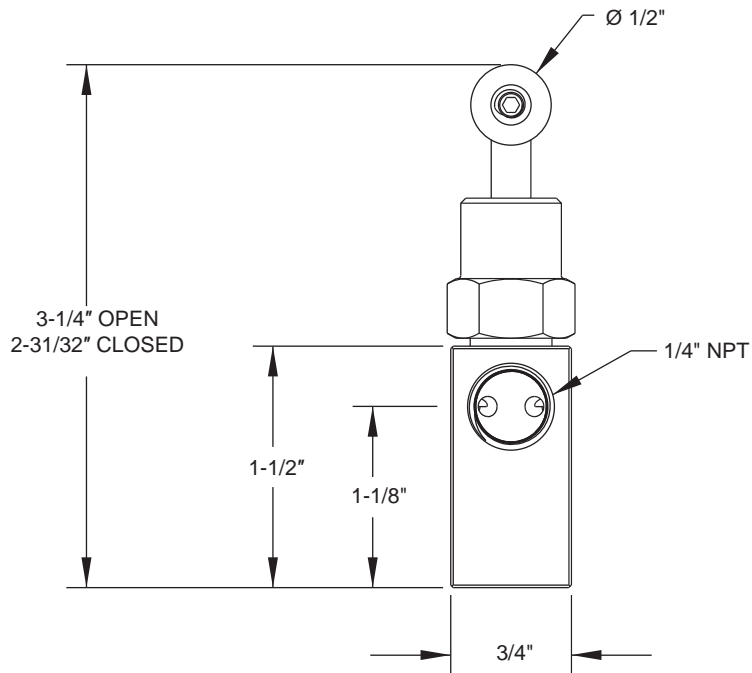
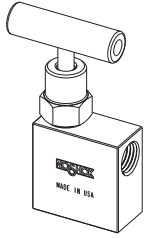


1/8" Female-Female Angle



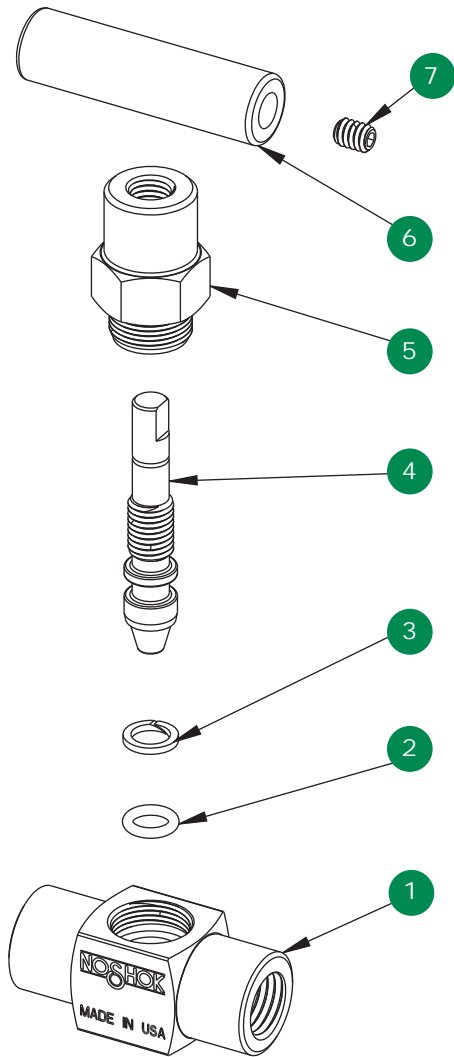
Dimensions

1/4" Female-Female Angle

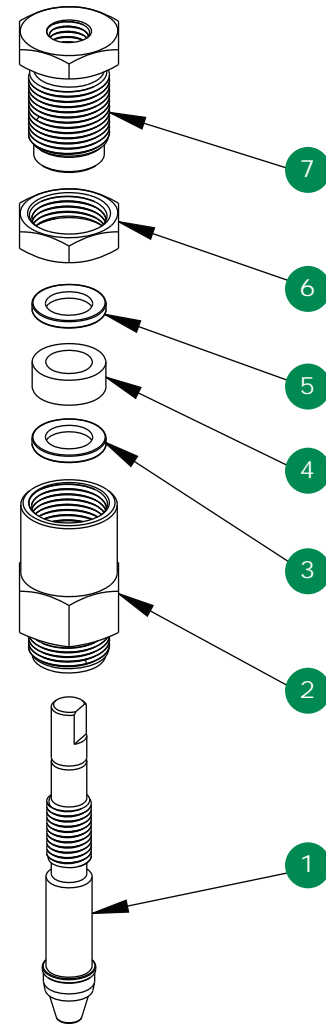


Mini, Soft Tip

Option With Packing



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



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

Multiport, 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:



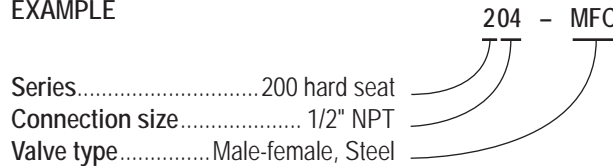
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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



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 (Kalrez® 3018 or equivalent)	NB1 NBR
PANEL MOUNTINGS	PM1 Panel mount (1 nut)	PM2 Panel mount (2 nuts)	
HANDLES	HL1 1-13/16" Mini "T"	HL4 1-3/8" Phenolic	HL5 1-3/4" Phenolic

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.

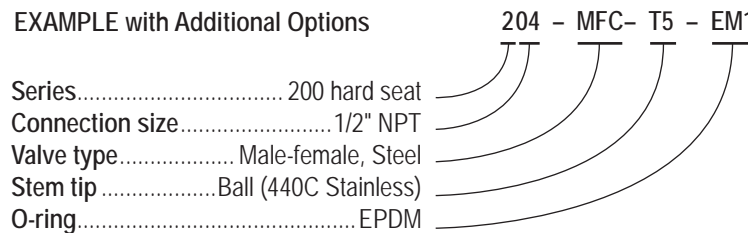
** Other o-ring materials available on request.

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).

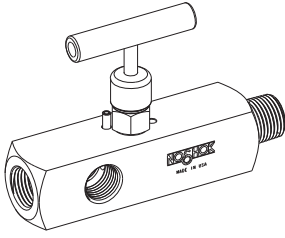
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 204-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

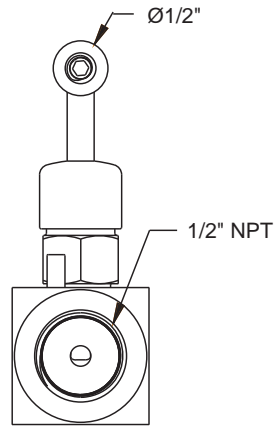


Dimensions

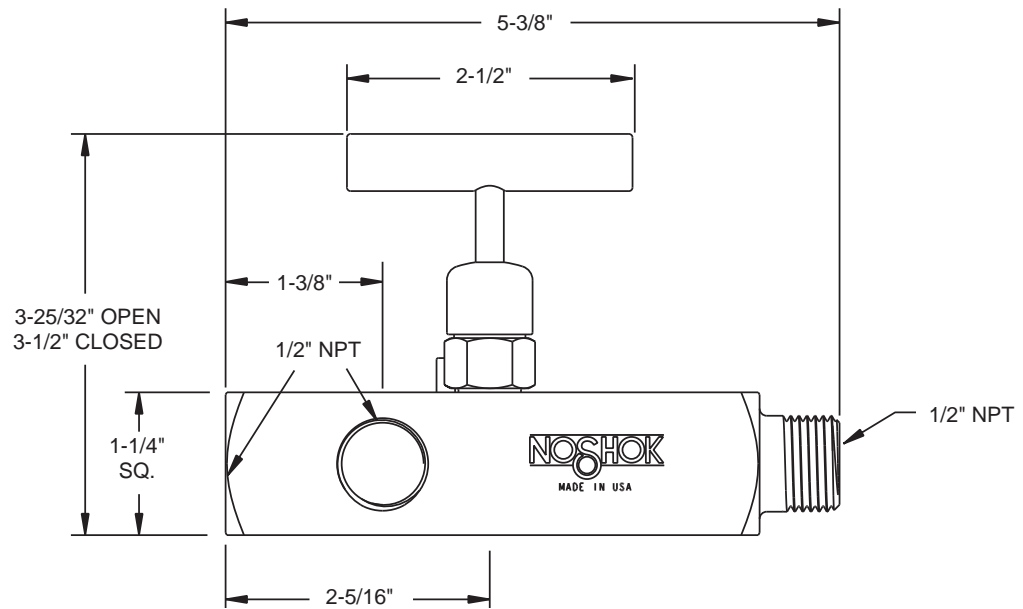
Male-Female



Front View

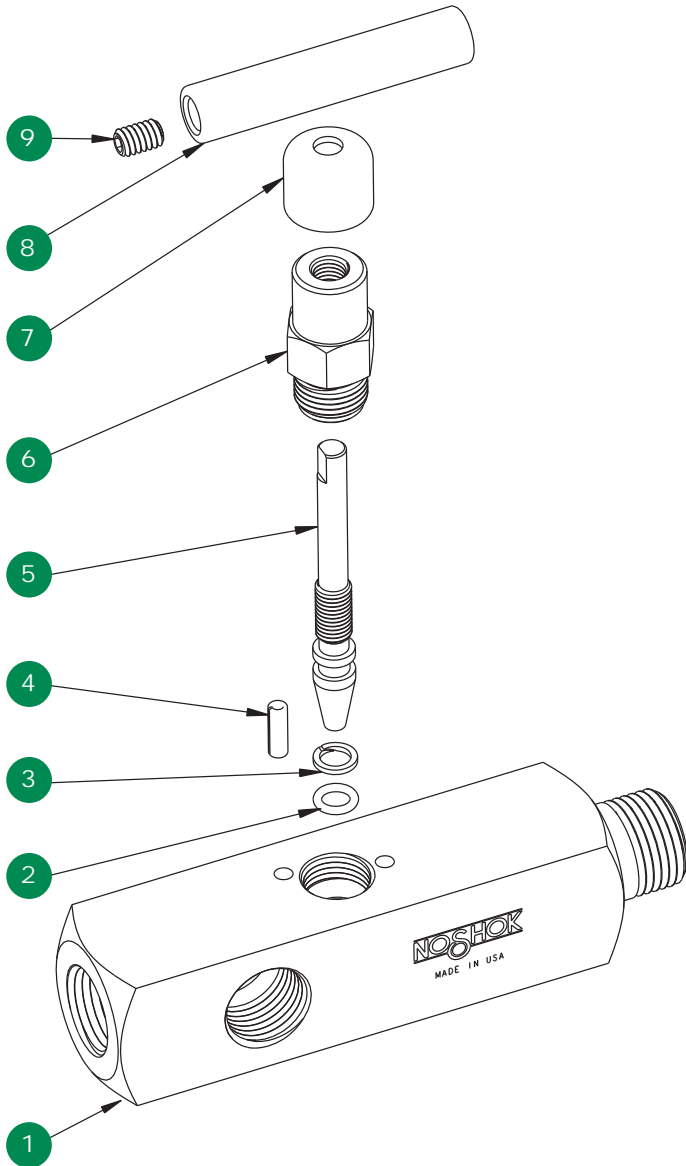


Side View

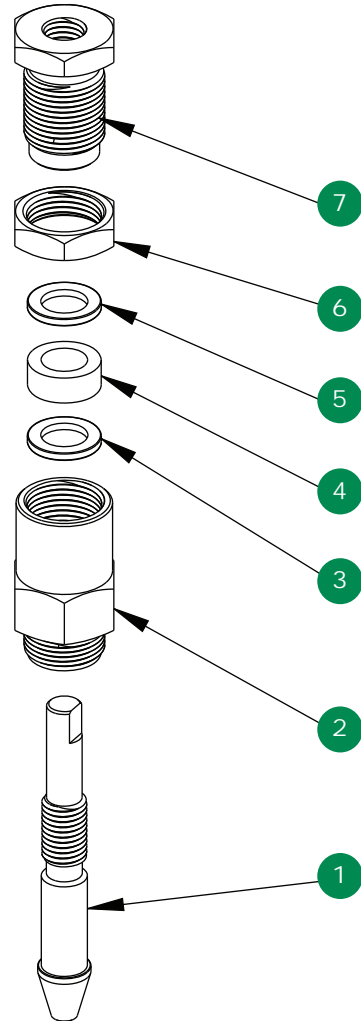


Multiport, Hard Seat

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 Delrin® seat and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
- PCTFE or PEEK soft seat optional
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE packing optional
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Vinyl dust cap for bonnet and stem (non-packing)

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:



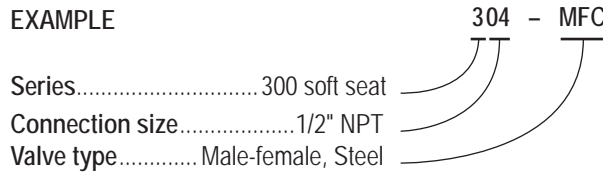
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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



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 (Kalrez® 3018 or equivalent)	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.

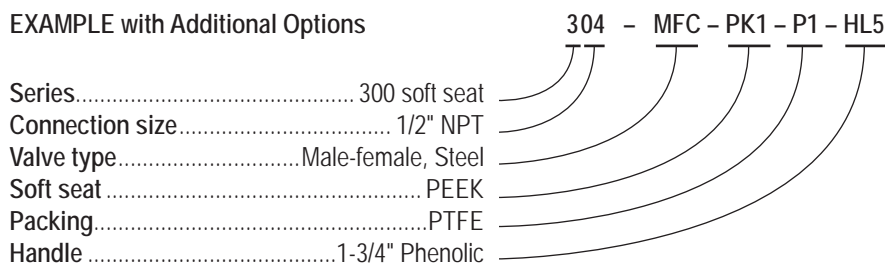
* Other o-ring materials available on request.

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).

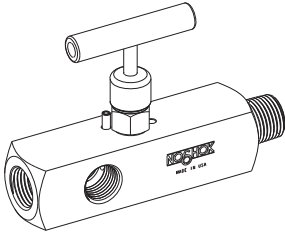
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 304-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

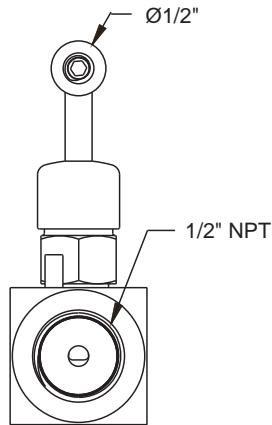


Dimensions

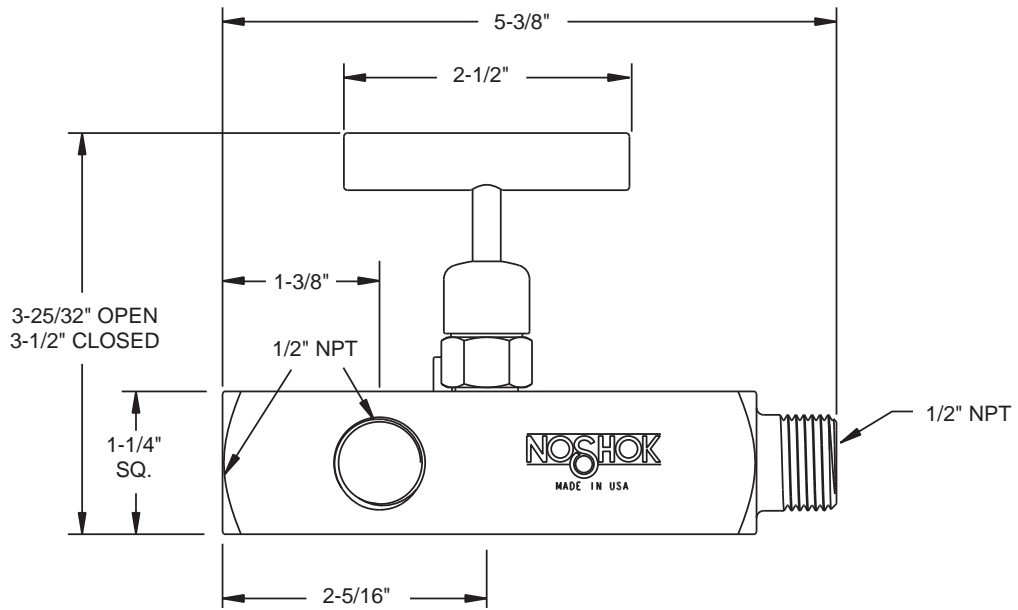
Male-Female



Front View



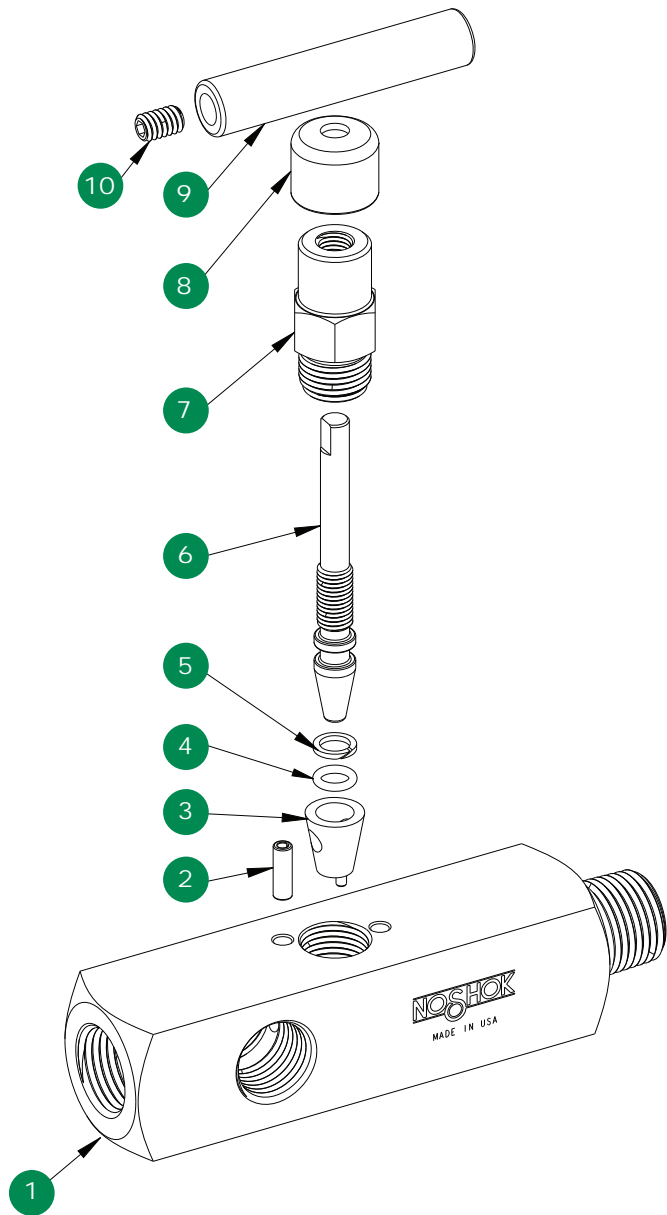
Side View



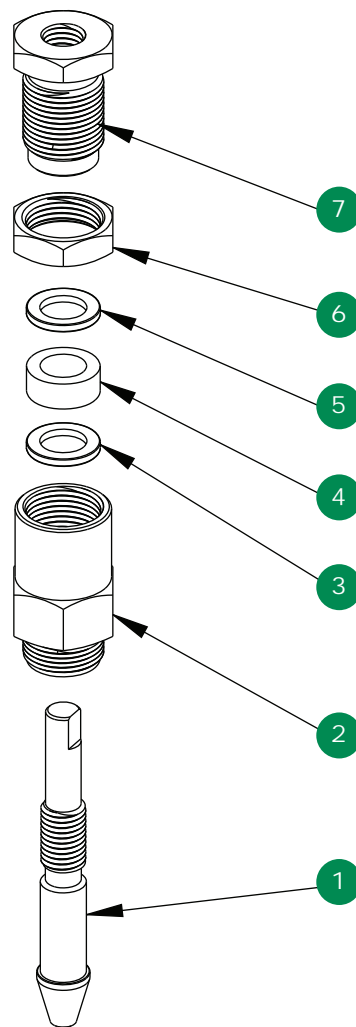
For panel mount, packing, & stem tip dimensions, see pgs. 64-67.

Multiport, Soft Seat

Option With Packing



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



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

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:



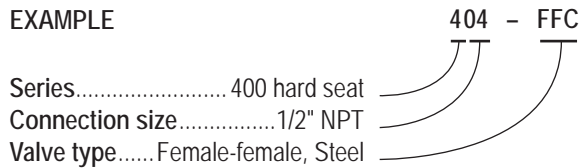
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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	12 1-1/2" NPT
	03 3/8" NPT	08 1" NPT	42 7/16"-20 UNF (#4 SAE, J1926)
	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



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 (Kalrez® 3018 or equivalent)	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.

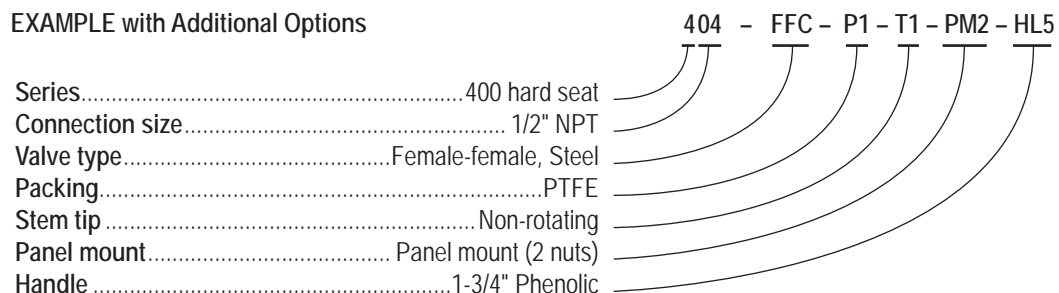
* Other o-ring materials available on request.

** 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).

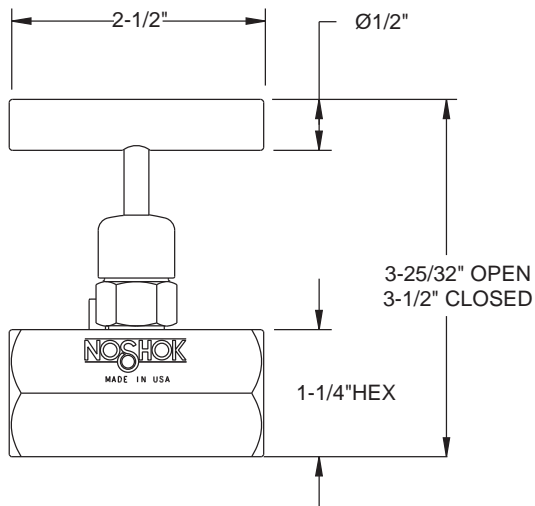
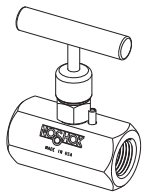
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 404-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

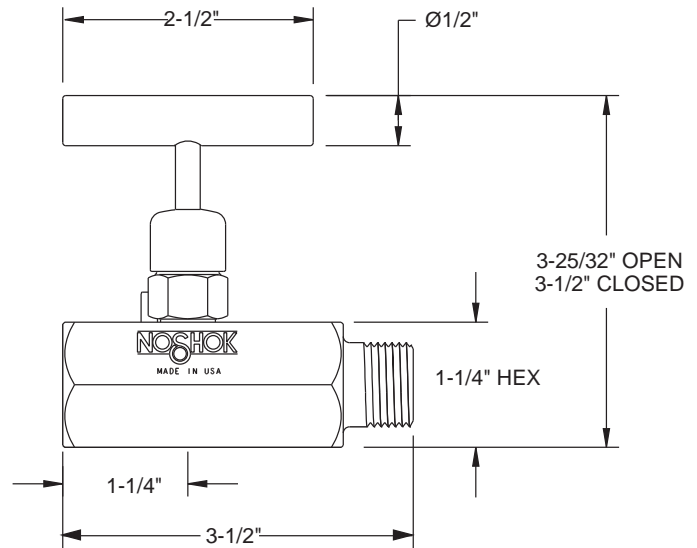
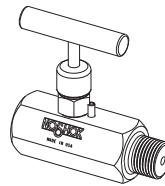


Dimensions

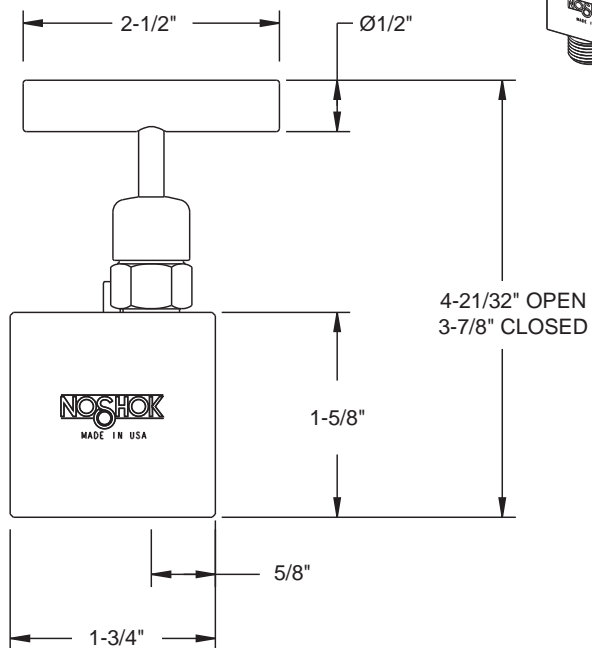
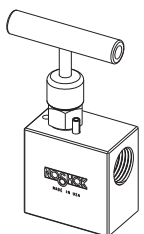
1/4" - 1/2" Female-Female



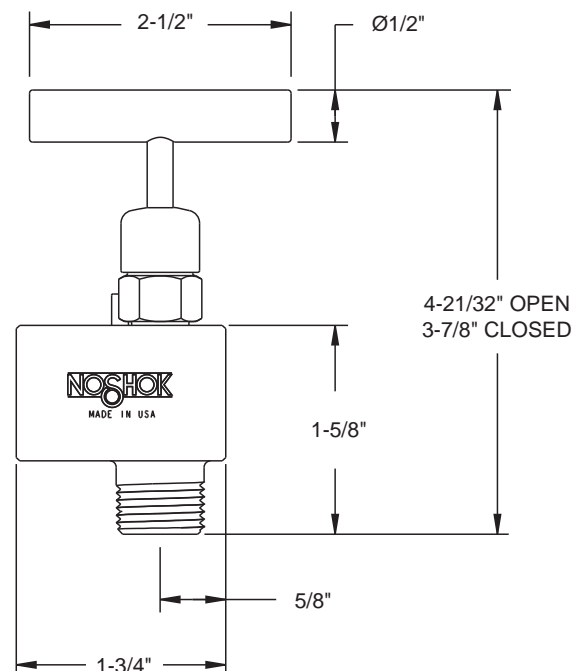
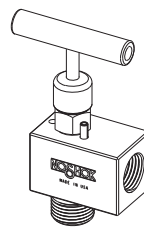
1/4" - 1/2" Male-Female



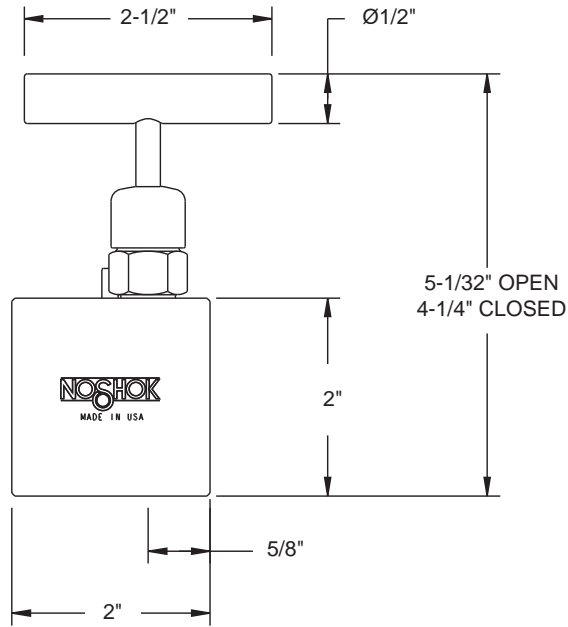
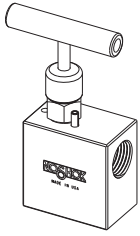
1/4" Female-Female Angle



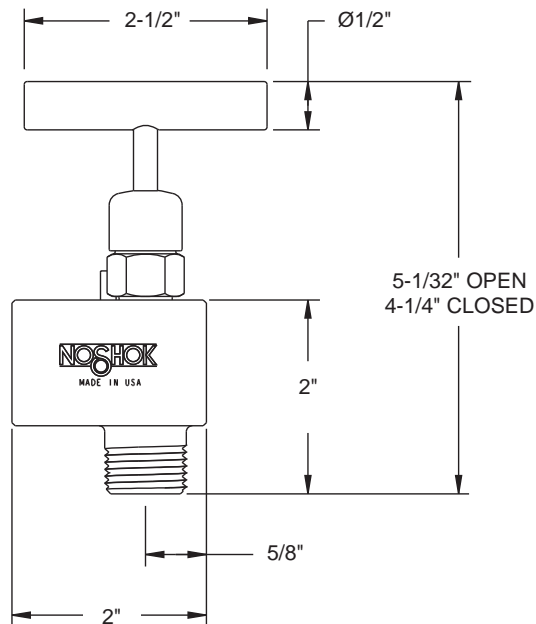
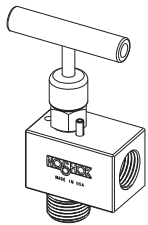
1/4" Male-Female Angle



1/2" Female-Female Angle

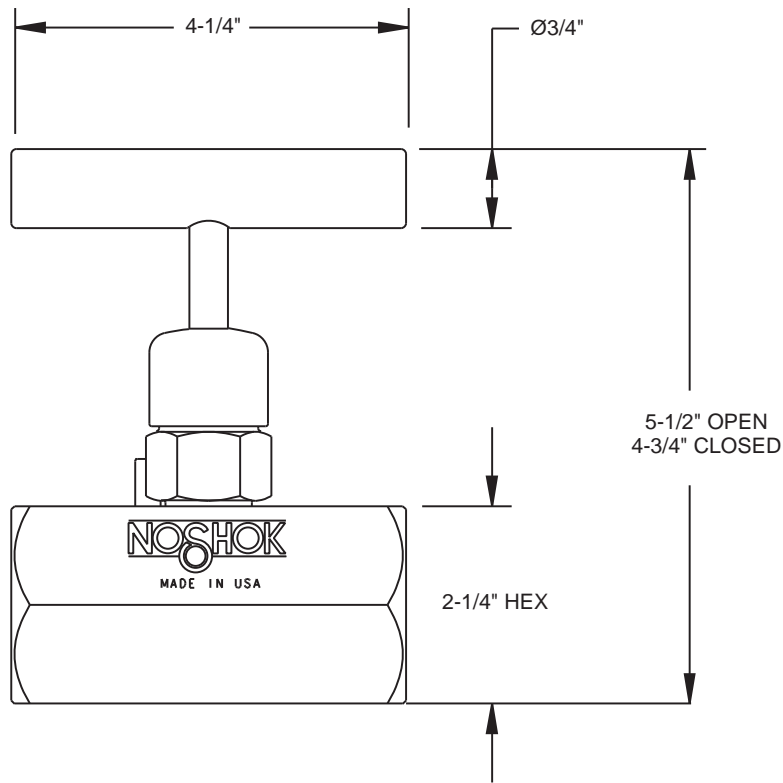
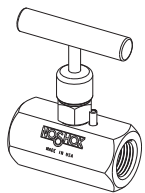


1/2" Male-Female Angle

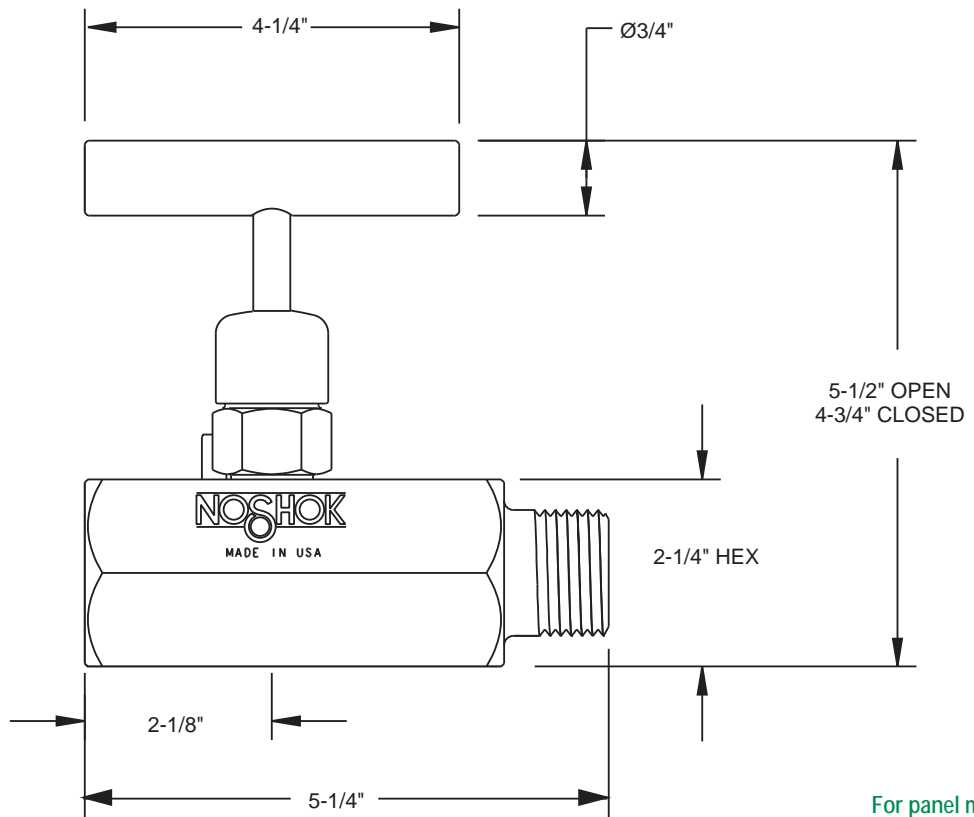
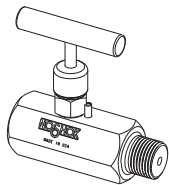


Dimensions

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



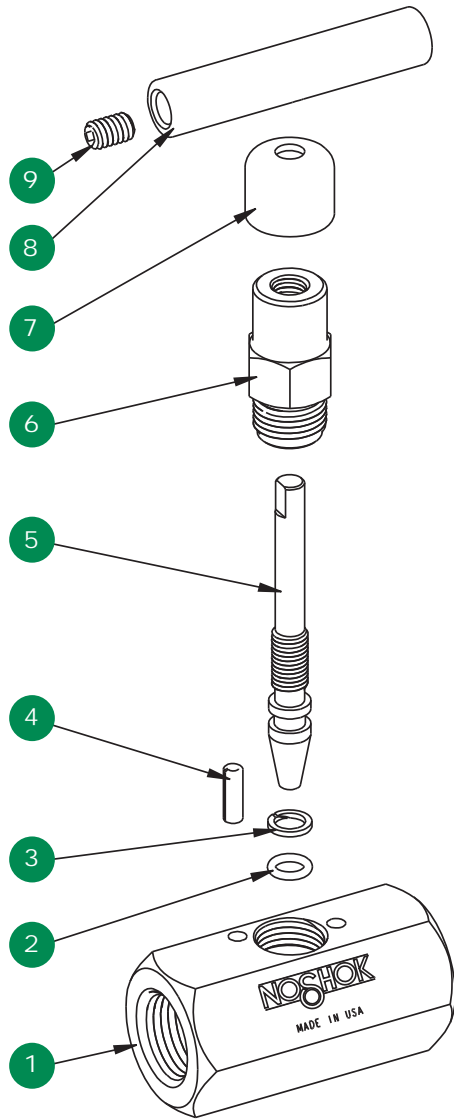
3/4" - 1-1/2" Male-Female



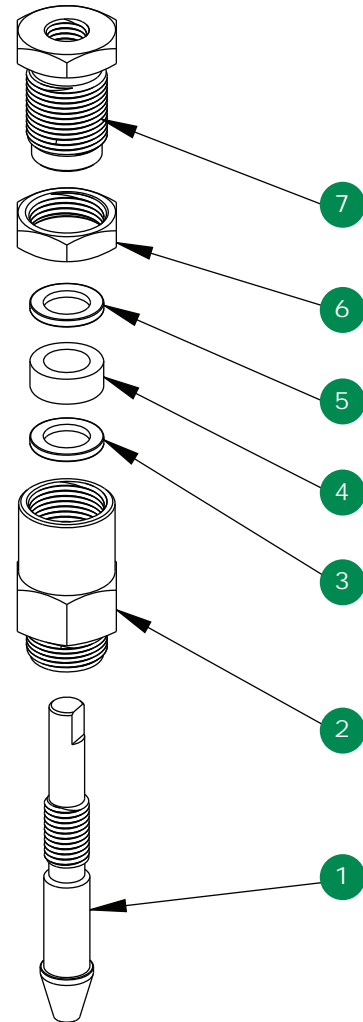
For panel mount, packing, & stem tip dimensions, see pgs. 64-67.

Standard, Hard Seat

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

500 SERIES



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

SPECIFICATIONS

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:



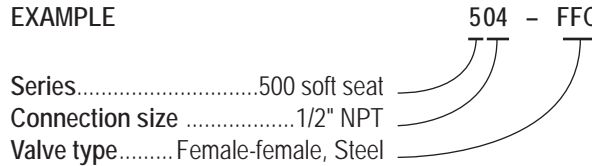
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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



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 (Kalrez® 3018 or equivalent) 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.

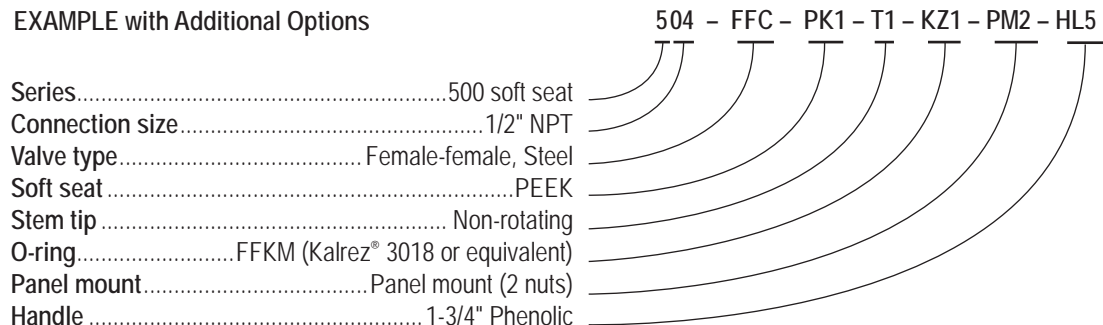
* Other o-ring materials available on request.

** 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).

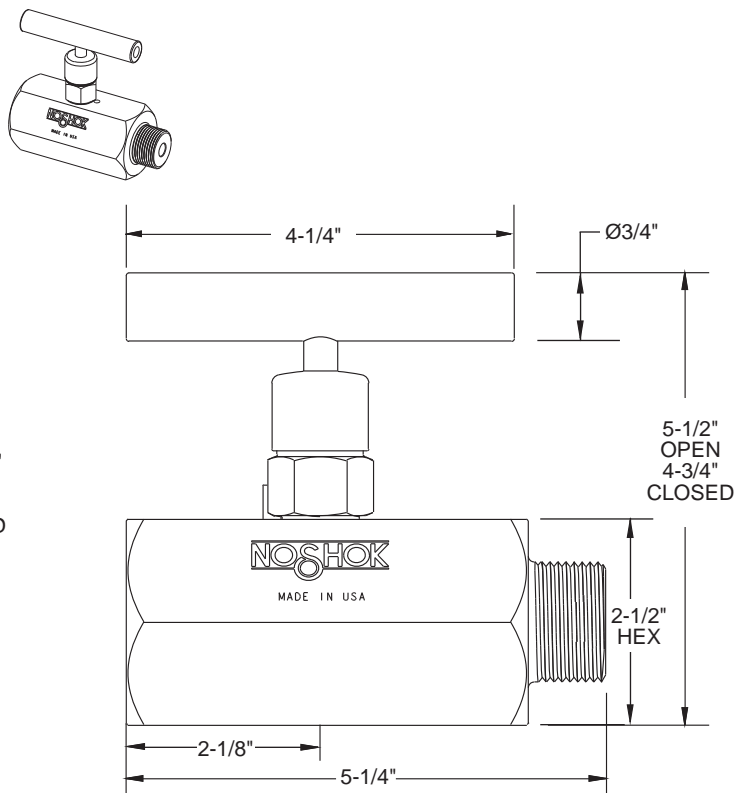
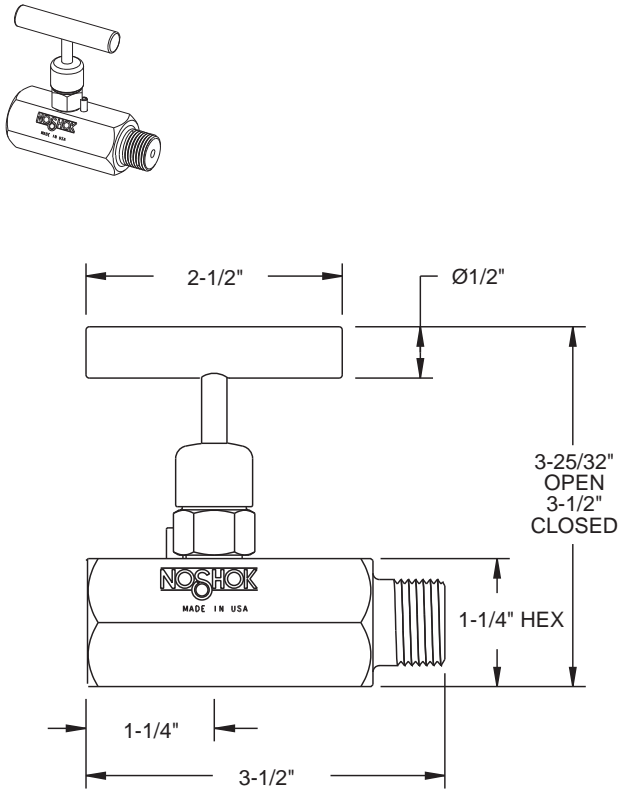
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 504-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

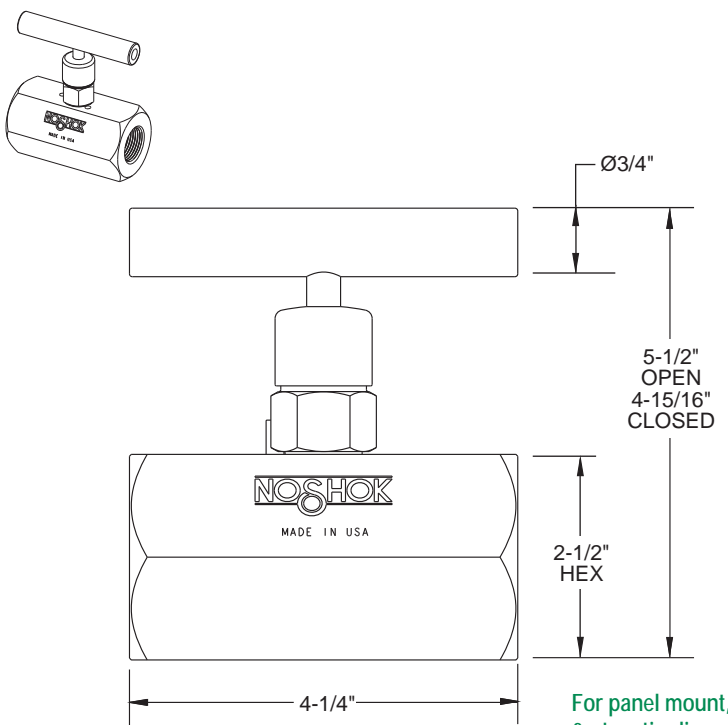
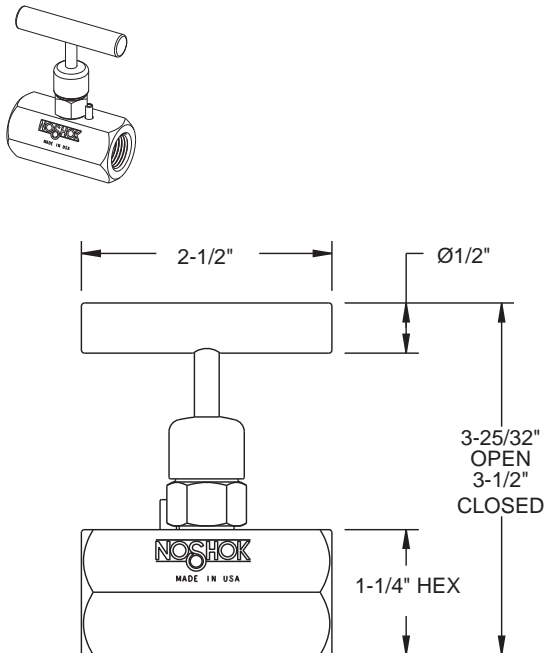


Dimensions

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



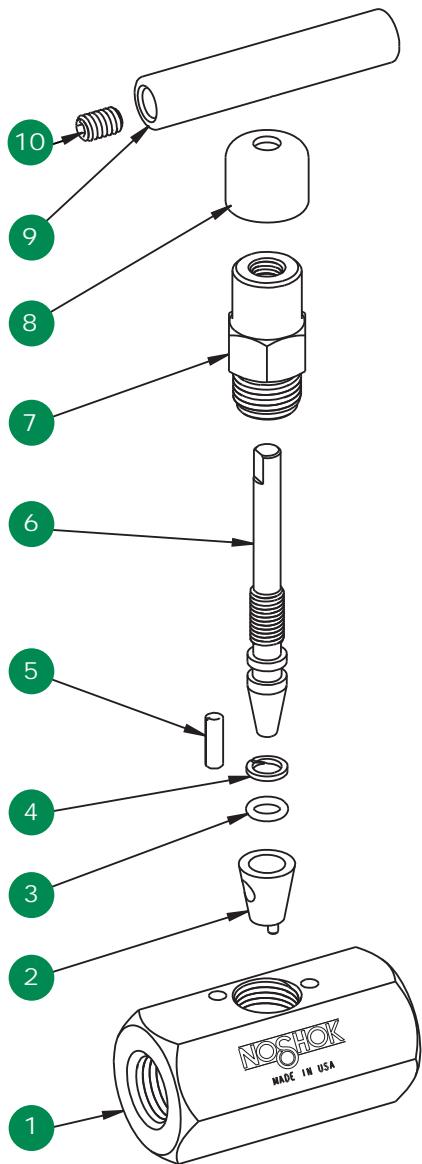
1/4" - 1/2" Female-Female 3/4" - 1-1/2" Female-Female



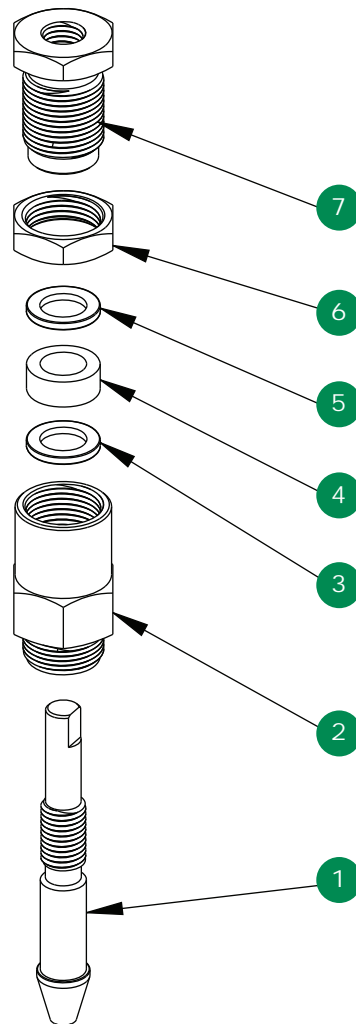
For panel mount, packing, & stem tip dimensions, see pgs. 64-67.

Standard, Soft Seat

Option With Packing



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



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

Block & Bleed, 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:



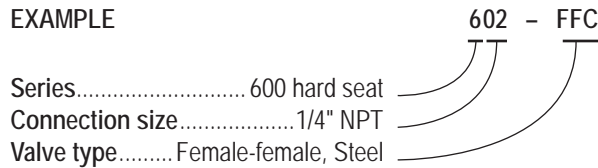
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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 FFC Female-Female, Steel	MFS Male-Female, Stainless 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 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 (Kalrez [®] 3018 or equivalent)	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.

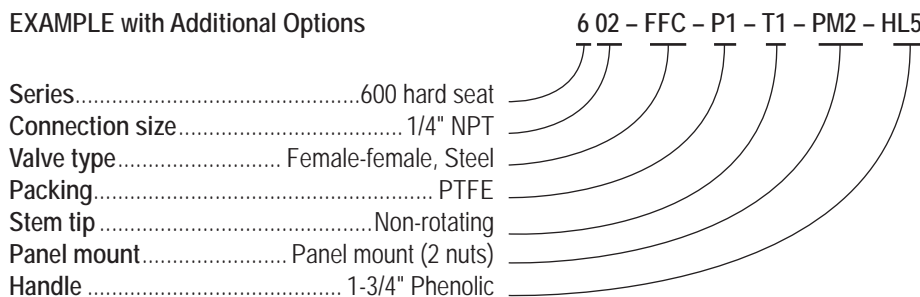
[†] If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

* 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).

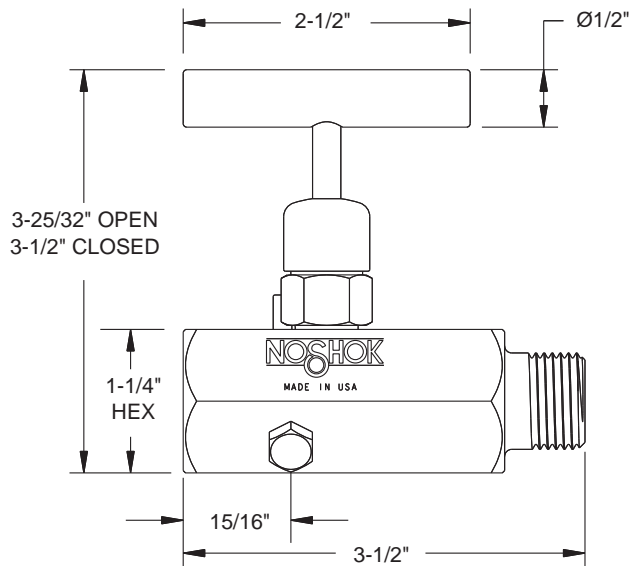
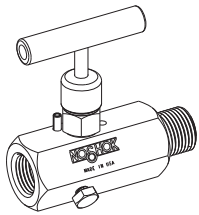
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 602-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

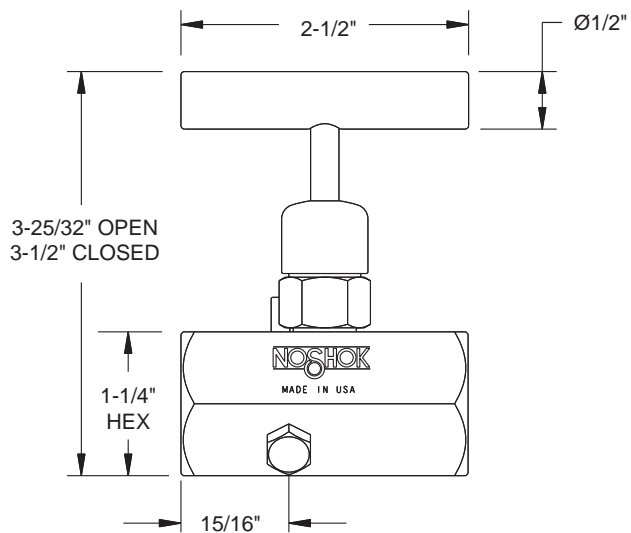
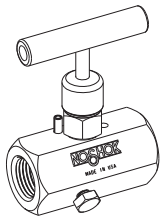


Dimensions

Male-Female

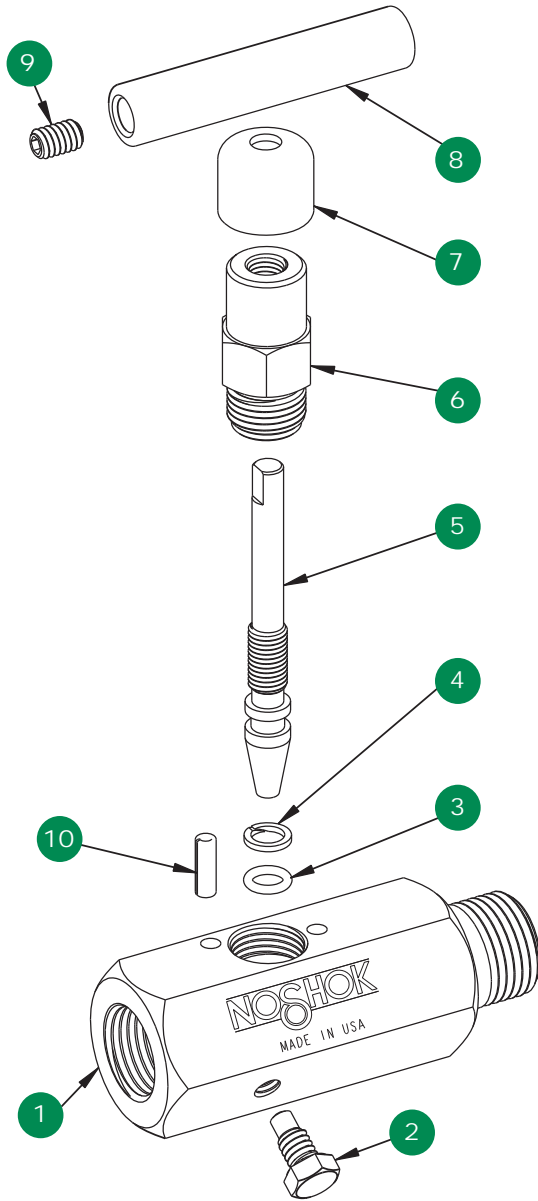


Female-Female

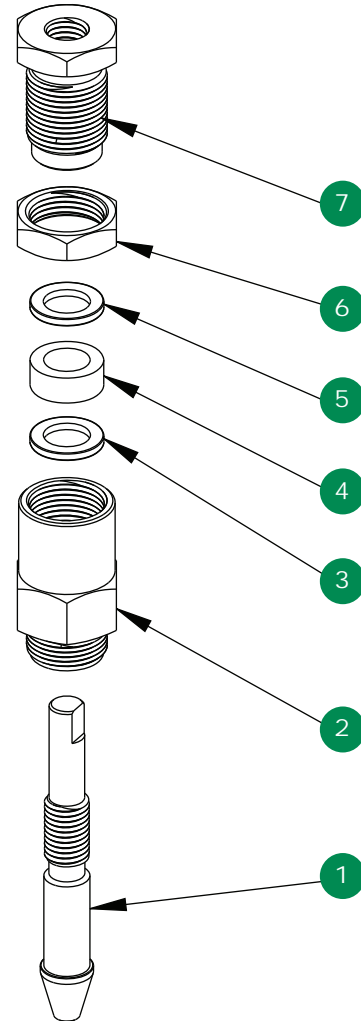


Block & Bleed, Hard Seat

Option With Packing



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



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

Block & Bleed, Soft Seat

700 SERIES



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

SPECIFICATIONS

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:

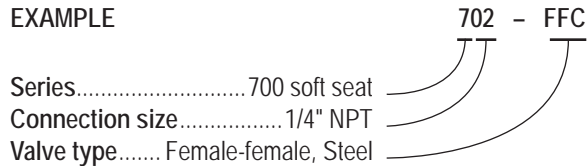


WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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 FFC Female-Female, Steel	MFS Male-Female, Stainless Steel FFS Female-Female, Stainless Steel

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



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

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

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

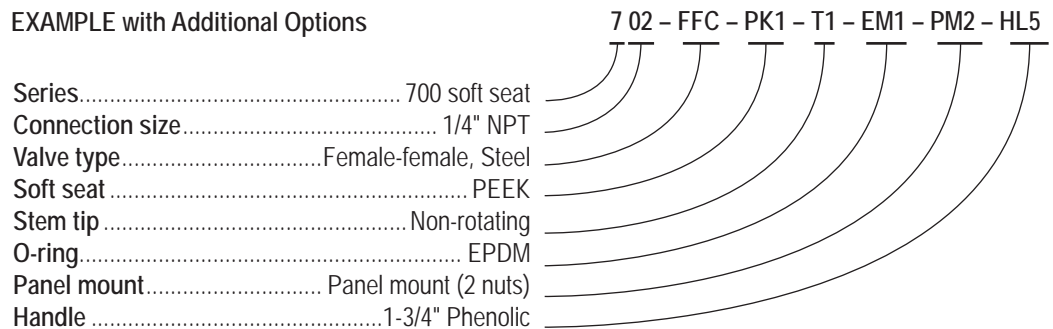
ORDERING INFORMATION - ADDITIONAL OPTIONS			
SOFT SEATS	PK1 PEEK	KF1 PCTFE	
PACKING†	P1 PTFE		
STEM TIP	T1 Non-rotating (316 Stainless)		
O-RINGS*	EM1 EPDM	KZ1 FFKM (Kalrez® 3018 or equivalent)	NB1 NBR
PANEL MOUNTINGS	PM1 Panel mount (1 nut)	PM2 Panel mount (2 nuts)	
HANDLES	HL4 1-3/8" Phenolic	HL5 1-3/4" Phenolic	

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

* Other o-ring materials available on request.

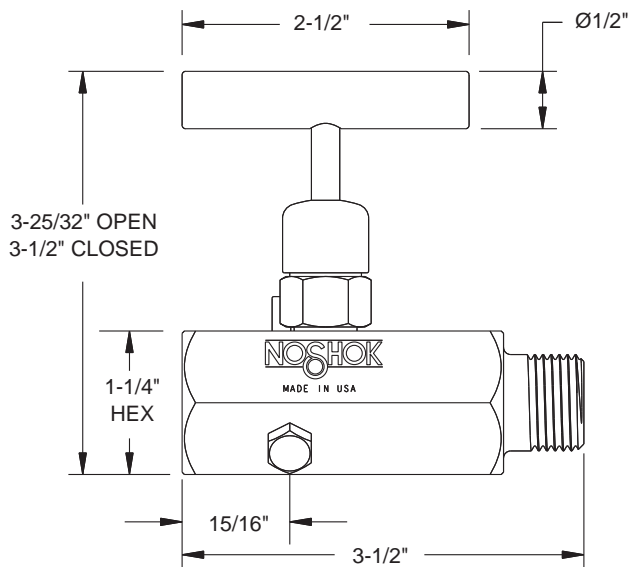
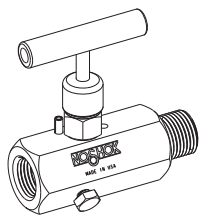
Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are "T" handles (HL2).

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.

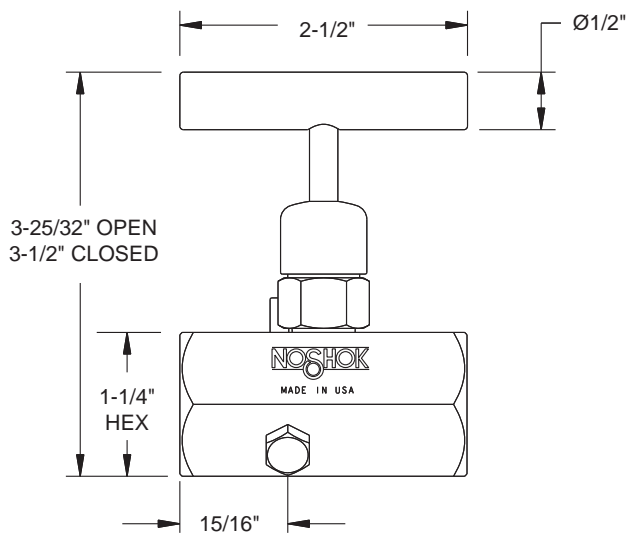
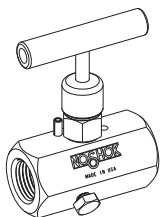


Dimensions

Male-Female

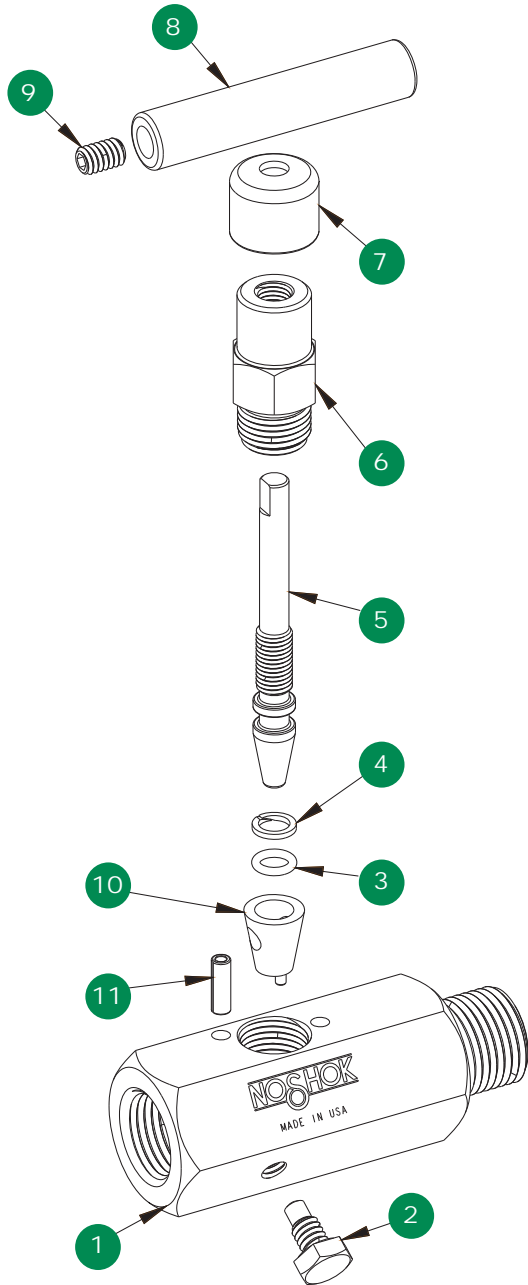


Female-Female

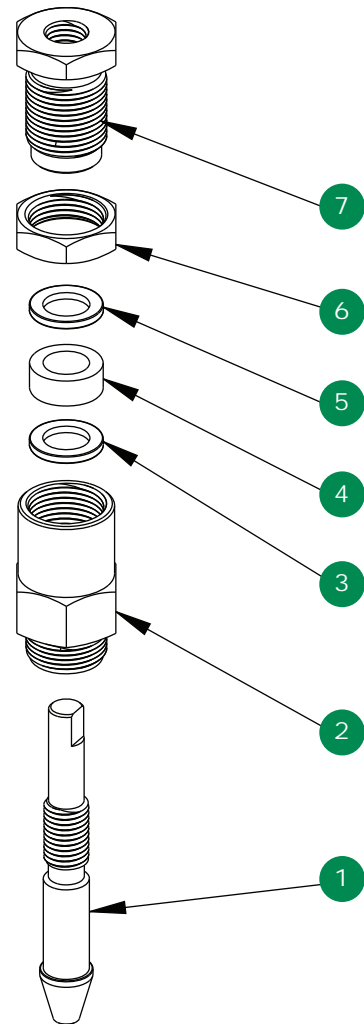


Block & Bleed, Soft Seat

Option With Packing



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



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

Bleed, Hard Seat & Soft Tip



800/850 SERIES

- Bleed valves provide a convenient means to relieve process pressures trapped between a shut off valve and the instrument
- Uses the same bonnet assemblies of the 100/150 Series mini valves with an integrated single threaded body for insertion in vent port
- Soft tip valves feature a patented Delrin® non-rotating soft tip stem, and a back-up metal-to-metal seal (**U.S. Patent 6,820,857**)
- 100% helium leak tested to 1×10^{-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:



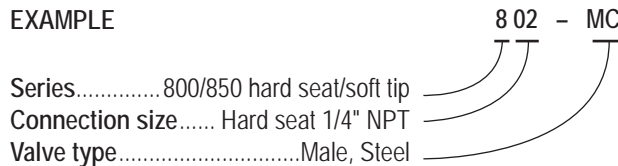
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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.

SERIES	8 800/850 Series, hard seat/soft tip			
CONNECTION SIZES	02	Hard seat 1/4" NPT	52	Delrin® soft tip 1/4" NPT
	04	Hard seat 1/2" NPT	54	Delrin® 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



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)**
	T3	PCTFE***	T6	Ball (carbide)**
	T4	PEEK***	T7	Ball (ceramic)**
O-RINGS*	EM1	EPDM	KZ1	FFKM (Kalrez® 3018 or equivalent)
HANDLES	HL2	2-1/2" *T***	HL4	1-3/8" Phenolic**
	HL3	1" Round knurled	HL5	1-3/4" Phenolic**
			NB1	NBR

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.

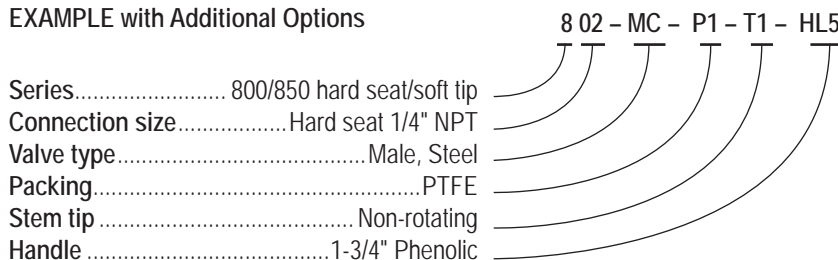
** For 800 Series only.

*** 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.

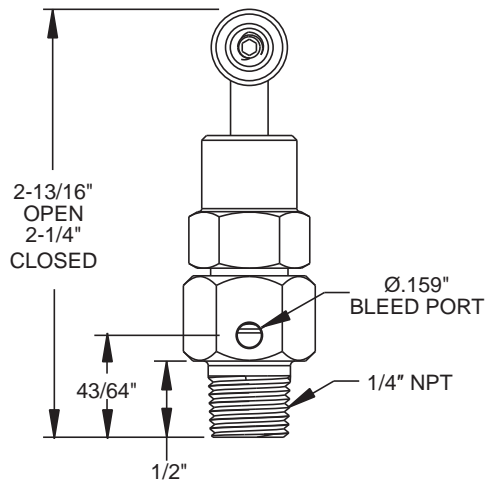
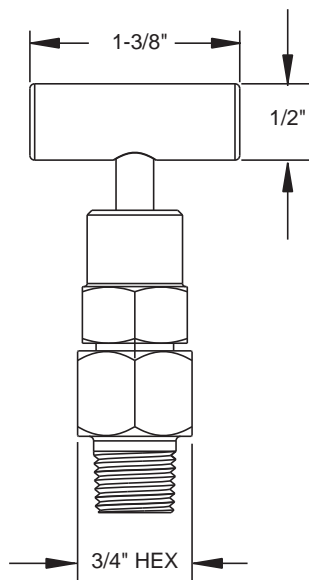
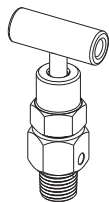
The handle material will always match the material of the valve, unless otherwise specified. For example, the mini "T" handle (HL7) on the 802-MC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application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

EXAMPLE with Additional Options

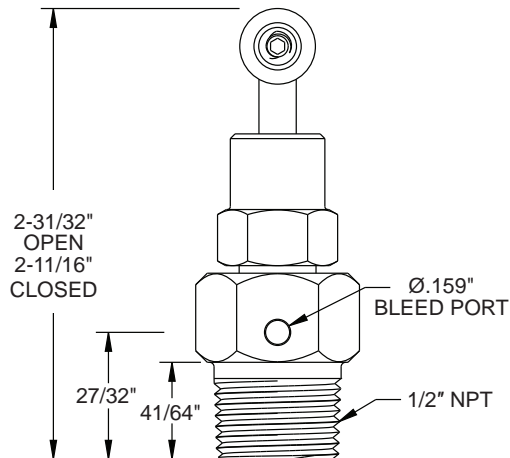
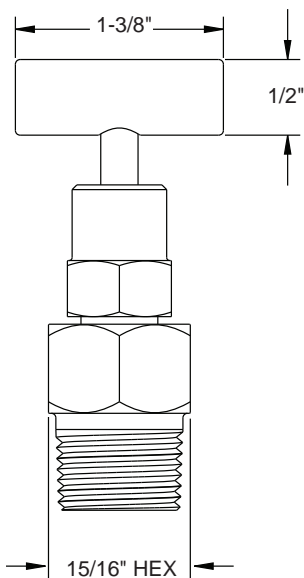
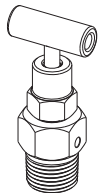


Dimensions

1/4" Bleed Valve



1/2" Bleed Valve

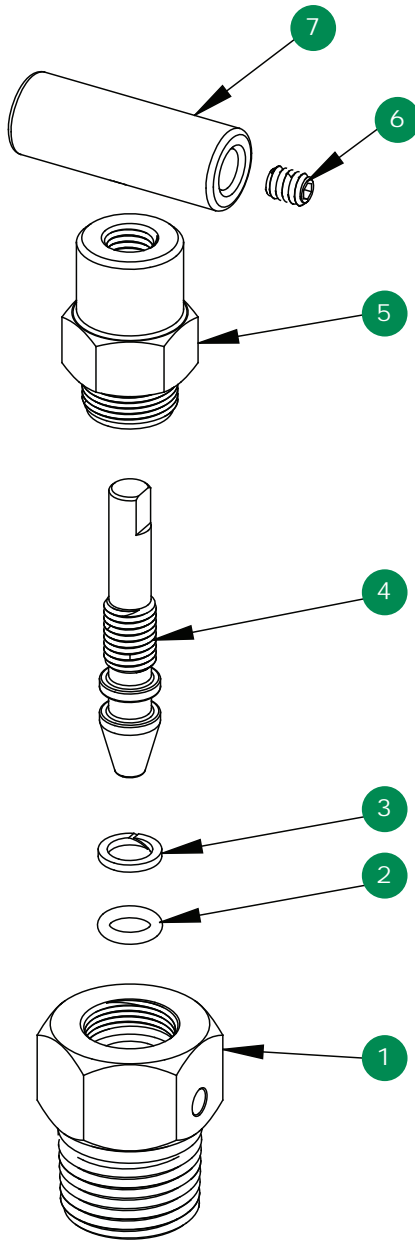


For panel mount, packing,
& stem tip dimensions,
see pgs. 64-67.

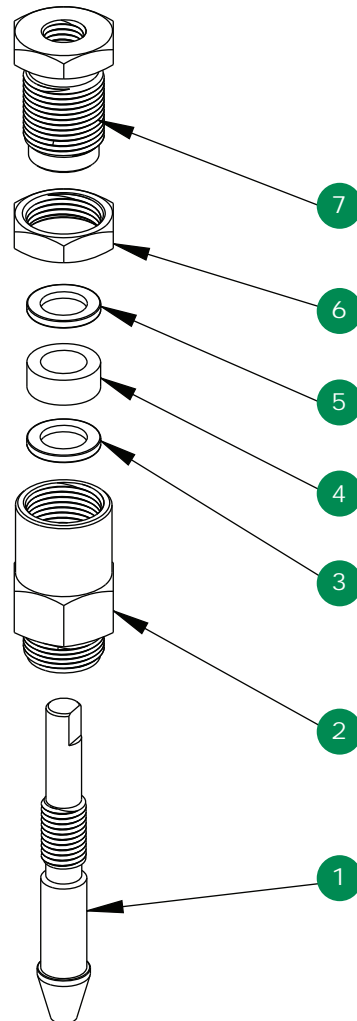
Bleed, Hard Seat

Option With Packing, Hard Seat

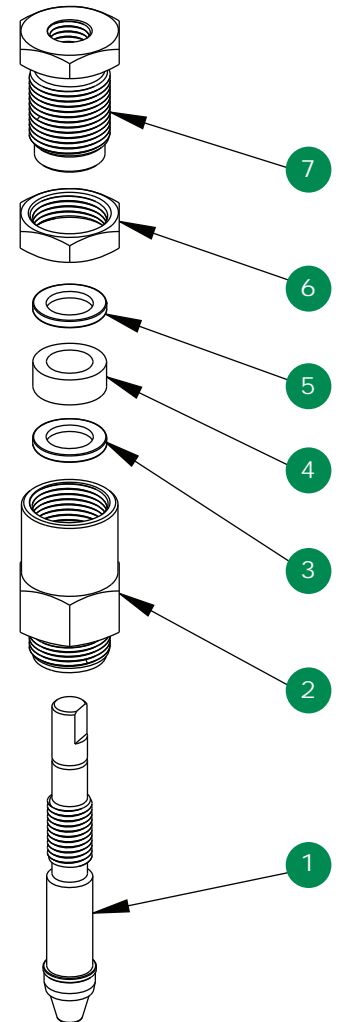
Option With Packing, Soft Tip



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



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



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

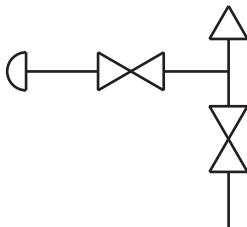
Block & Bleed, Hard Seat

2070 SERIES



- Combines isolating and venting in a single valve, eliminating the need for tubing and fittings
- Block valve isolates the downstream process fluids, and the bleed valve exhausts upstream fluids enabling instruments to be removed without disturbing the permanent piping installation
- The 1/4" NPT vent plug is located 90° to the left and may be removed and replaced with exhaust piping to direct the fluids to a safe location
- 100% helium leak tested to 1×10^{-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)

Flow Schematic



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:



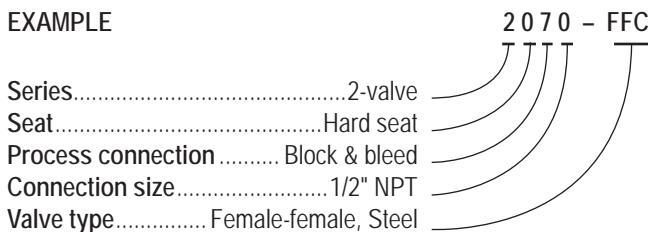
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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	0604 3/4" NPT male - 1/2" NPT male or female
VALVE TYPES	MFC Male-Female, Steel	FMC Female-Male, Steel	FFCR Female-Female, Steel, Right Vent
	MFCR Male-Female, Steel, Right Vent	EFMC Extended Female-Male, Steel	EFFC Extended Female-Female, Steel
	EMFC Extended Male-Female, Steel	FMS Female-Male, Stainless Steel	FFS Female-Female, Stainless Steel
	MFS Male-Female, Stainless Steel	EFMS Extended Female-Male, Stainless Steel	FFSR Female-Female, Stainless Steel, Right Vent
	MFSR Male-Female, Stainless Steel, Right Vent	FFC Female-Female, Steel	EFFS Extended Female-Female, Stainless Steel
	EMFS Extended Male-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 (Kalrez® 3018 or equivalent)	NB1 NBR
HANDLES	HL1 1-13/16" Mini "T"	HL3 1" Round knurled	HL5 1-3/4" Phenolic
	HL2 2-1/2" "T"	HL4 1-3/8" Phenolic	

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

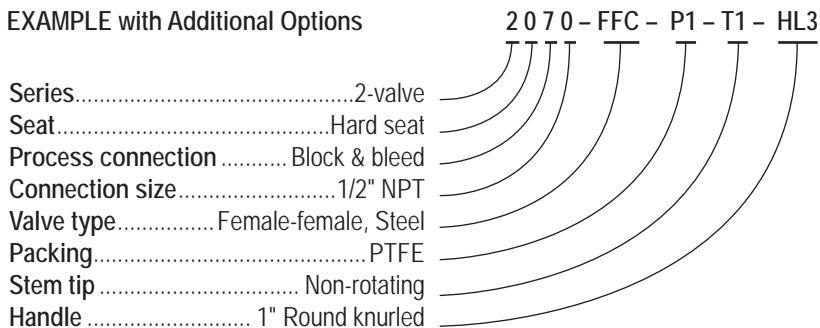
† If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

* 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).

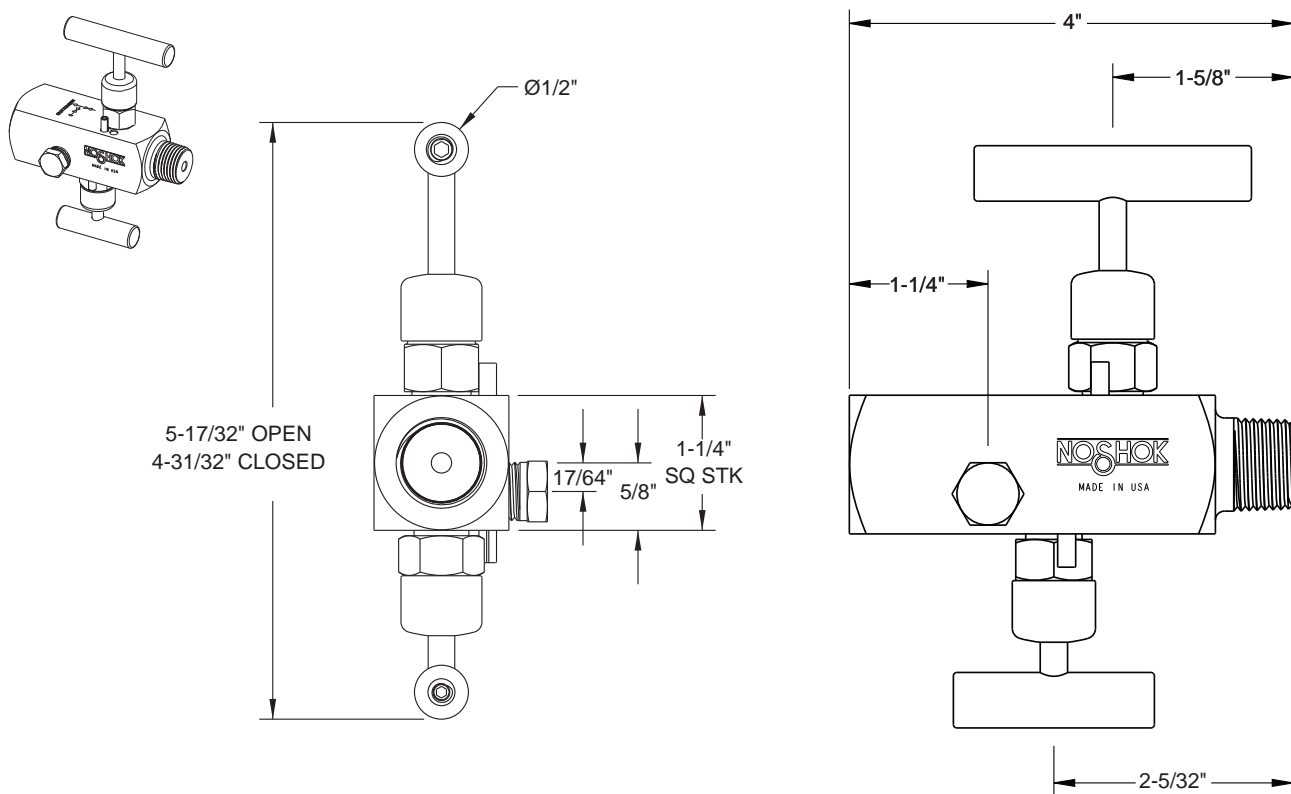
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 2070-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

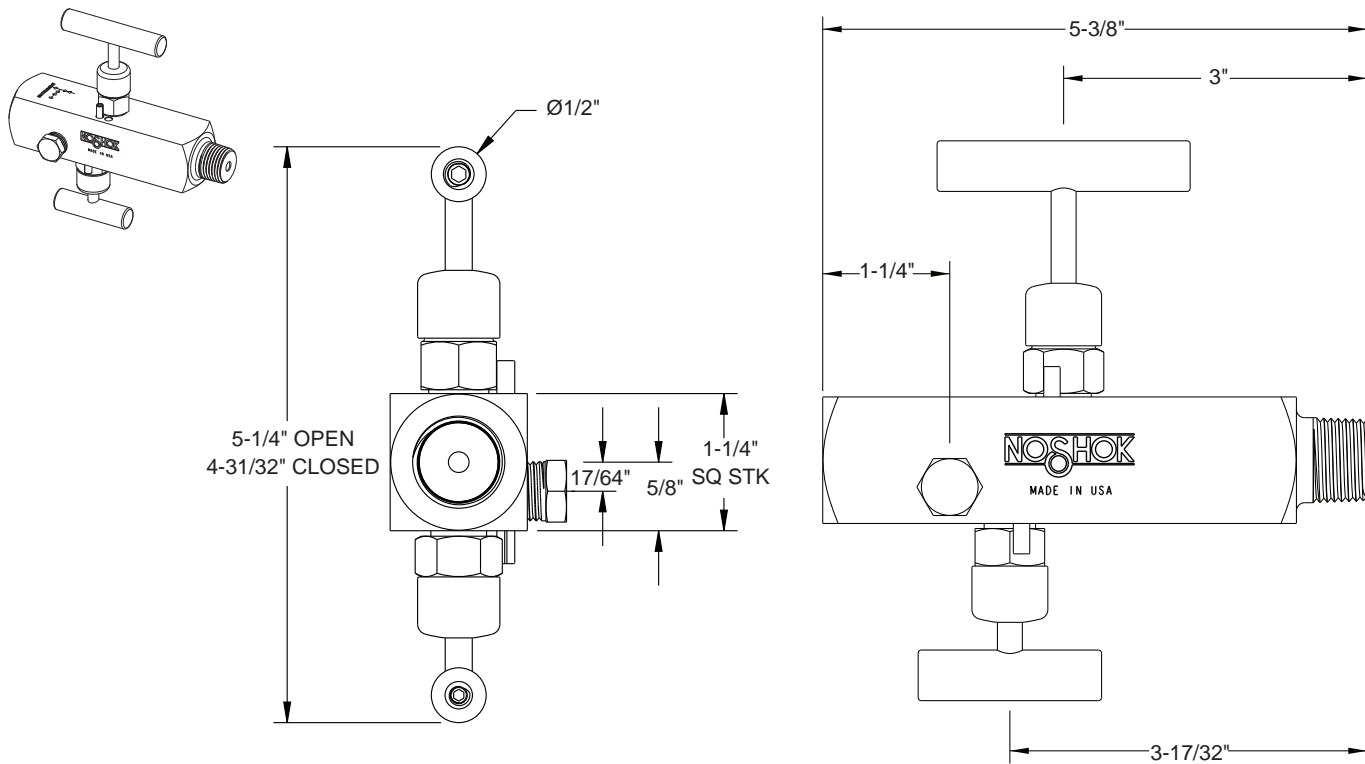


Dimensions

Male-Female



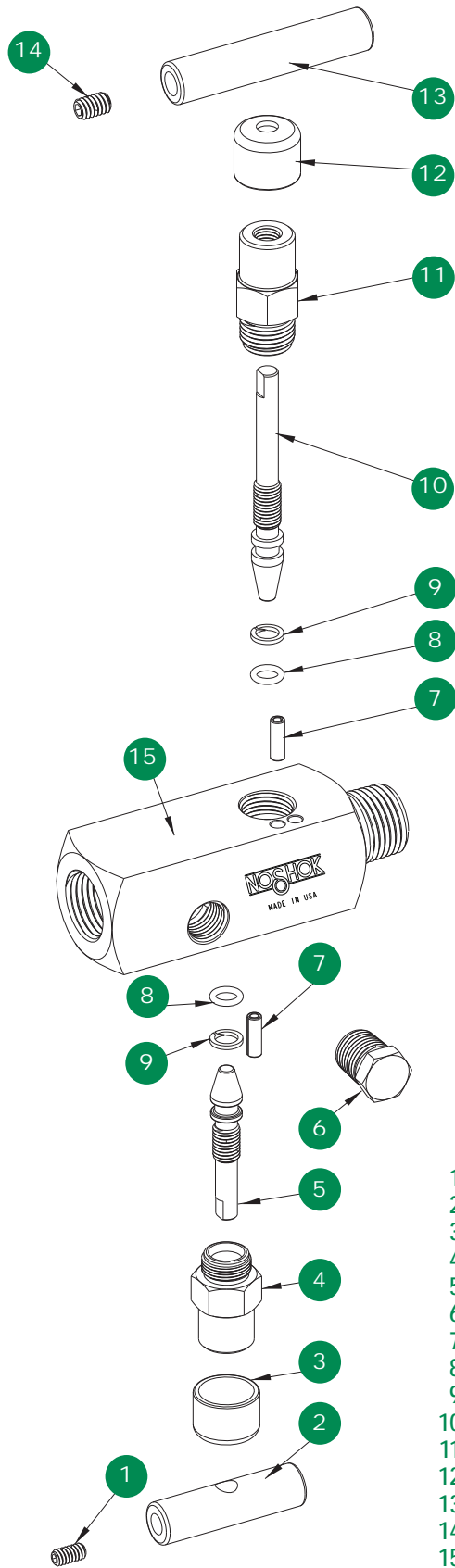
Extended Male-Female



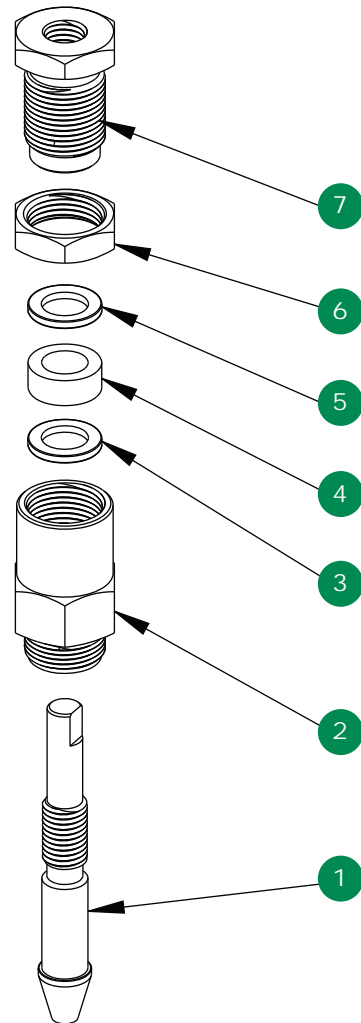
For panel mount, packing, & stem tip dimensions, see pgs. 64-67.

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



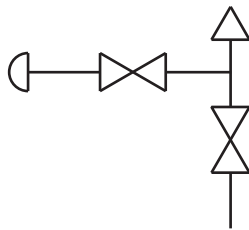
- 1 Mini valve packing stem and valve packing stem
- 2 Mini valve packing bonnet and valve packing bonnet
- 3 Packing washer
- 4 Packing
- 5 Packing washer
- 6 Jam nut
- 7 Packing adjustment screw

Block & Bleed, Soft Seat

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 Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
- PCTFE or PEEK soft seat optional
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE packing optional
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Vinyl dust cap for bonnet and stem (non-packing)

SPECIFICATIONS

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:



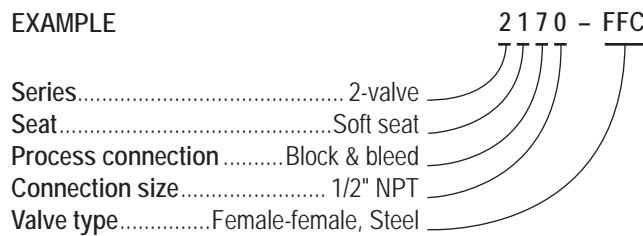
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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	FFCR	Female-Female, Steel, Right Vent
	MFCR	Male-Female, Steel, Right Vent	EFMC	Extended Female-Male, Steel	EFFC	Extended Female-Female, Steel
	EMFC	Extended Male-Female, Steel	FMS	Female-Male, Stainless Steel	FFS	Female-Female, Stainless Steel
	MFS	Male-Female, Stainless Steel	EFMS	Extended Female-Male, Stainless Steel	FFSR	Female-Female, Stainless Steel, Right Vent
	MFSR	Male-Female, Stainless Steel, Right Vent	FFC	Female-Female, Steel	EFFS	Extended Female-Female, Stainless Steel
	EMFS	Extended Male-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: 2170-FFC-PK1)

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

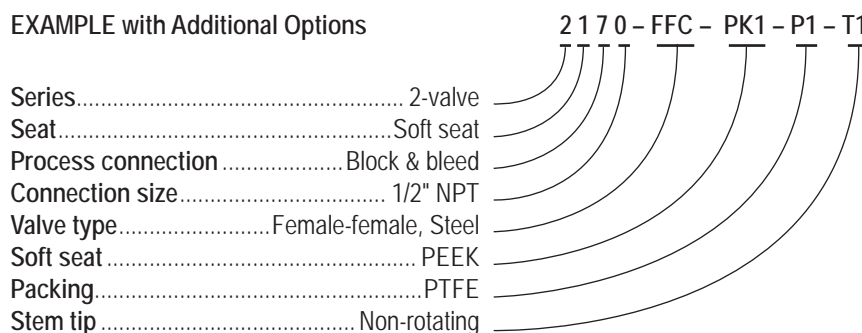
ORDERING INFORMATION - ADDITIONAL OPTIONS			
SOFT SEATS	PK1 PEEK	KF1 PCTFE	
PACKING	P1 PTFE		
STEM TIP	T1 Non-rotating (316 Stainless)		
O-RINGS*	EM1 EPDM	KZ1 FFKM (Kalrez® 3018 or equivalent)	NB1 NBR
HANDLES	HL1 1-13/16" Mini "T"	HL3 1" Round knurled	HL5 1-3/4" Phenolic
	HL2 2-1/2" "T"	HL4 1-3/8" Phenolic	

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

* Other o-ring materials available on request.

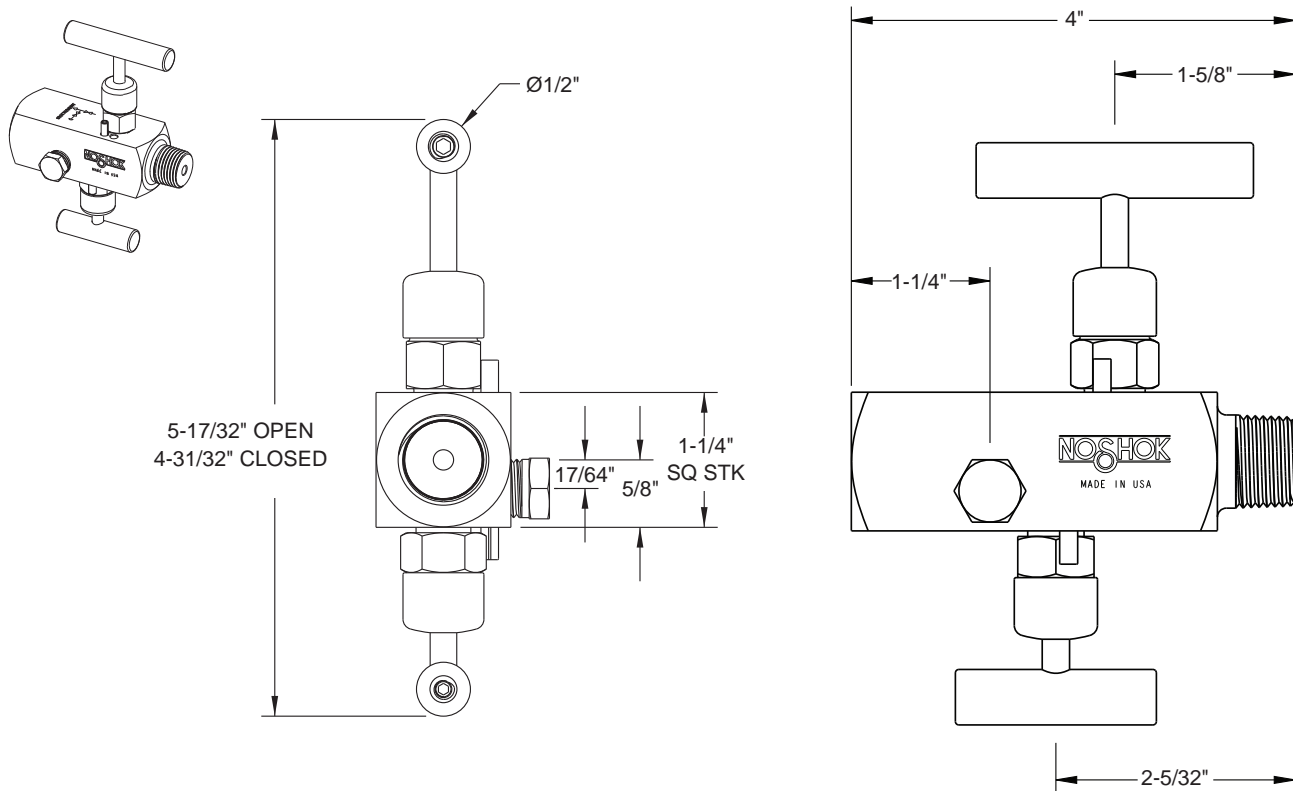
Please note that the standard o-ring in all the NOSHOK valves is FKM and the standard handles are block "T" handles (HL2) and bleed 1-3/8" mini "T" handle (HL7). The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 2170-FFC 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

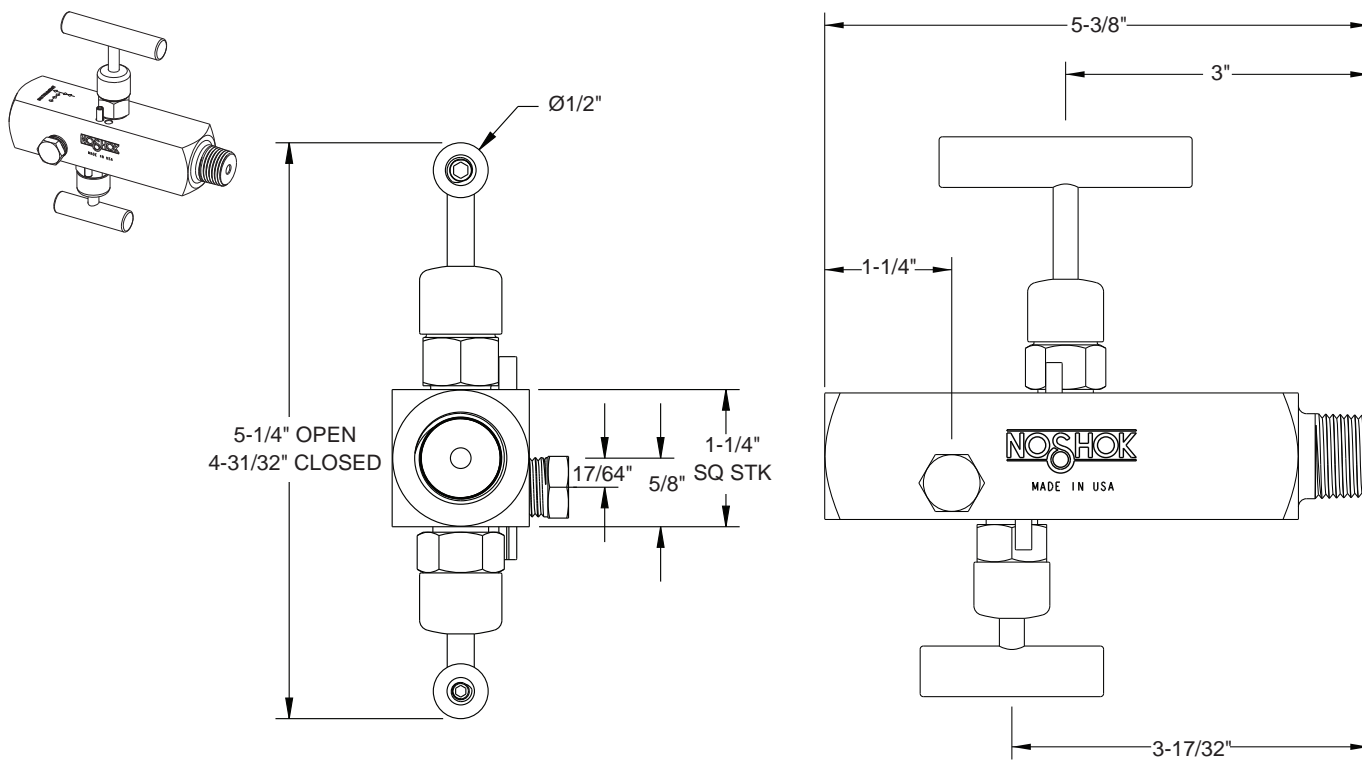


Dimensions

Male-Female



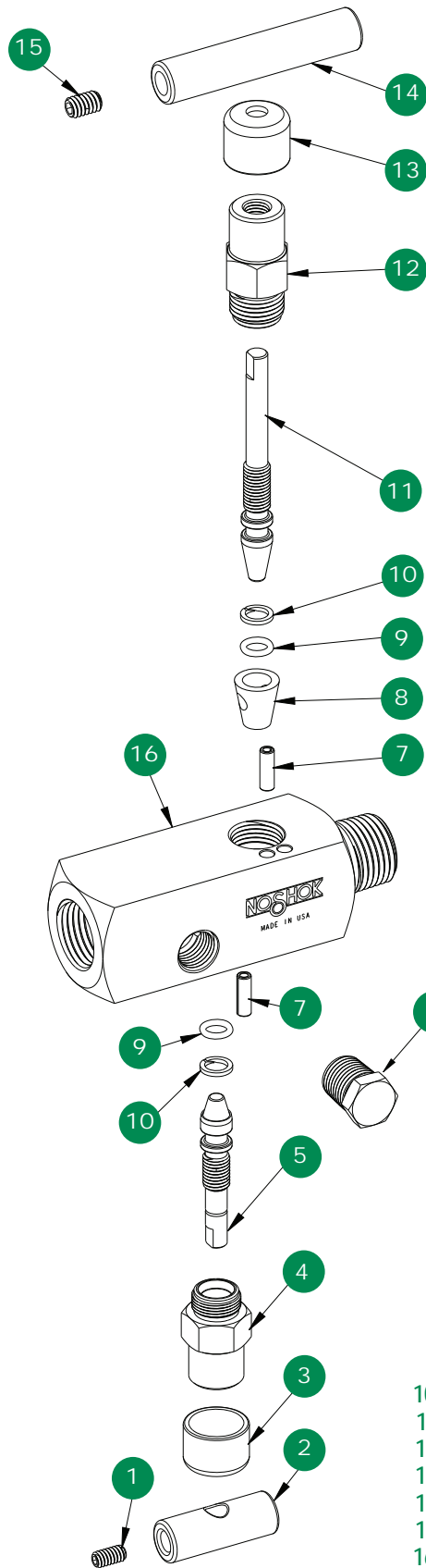
Extended Male-Female



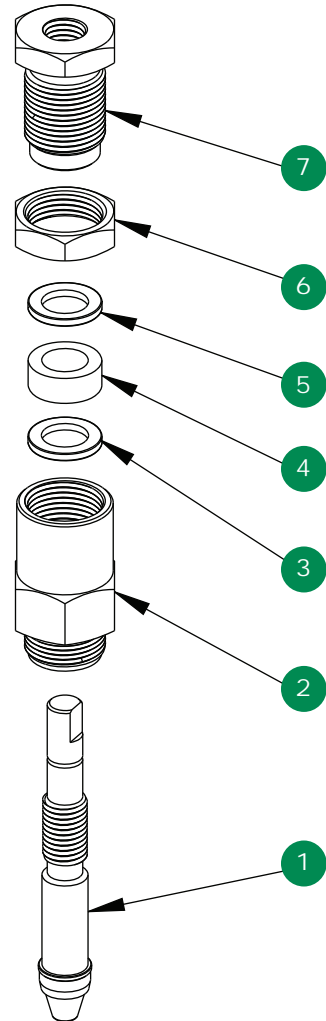
For panel mount, packing, & stem tip dimensions, see pgs. 64-67.

Block & Bleed, Soft Seat

Option With Packing



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



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

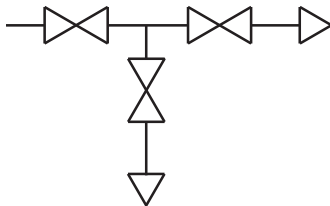
Double Block & Bleed, Hard Seat

3070 SERIES



- Combines isolating and venting in a single valve, eliminating the need for tubing and fittings
- Block valve isolates the downstream process fluids, and the bleed valve exhausts upstream fluids enabling instruments to be removed without disturbing the permanent piping installation on the bottom
- The 1/4" NPT vent plug is located 90° to the left and may be removed and replaced with exhaust piping to direct the fluids to a safe location
- 100% helium leak tested to 1×10^{-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)

Flow Schematic



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:



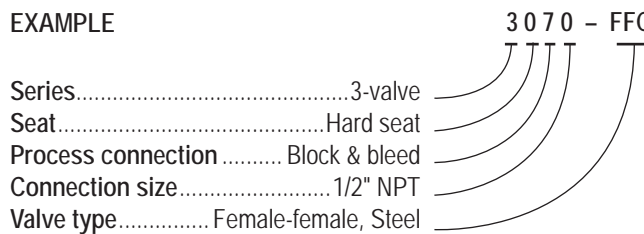
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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	FFCR Female-Female, Steel, Right Vent
	MFCR Male-Female, Steel, Right Vent	EFMC Extended Female-Male, Steel	EFFC Extended Female-Female, Steel
	EMFC Extended Male-Female, Steel	FMS Female-Male, Stainless Steel	FFS Female-Female, Stainless Steel
	MFS Male-Female, Stainless Steel	EFMS Extended Female-Male, Stainless Steel	FFSR Female-Female, Stainless Steel, Right Vent
	MFSR Male-Female, Stainless Steel, Right Vent	FFC Female-Female, Steel	EFFS Extended Female-Female, Stainless Steel
	EMFS Extended Male-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: 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) T5 Ball (440C Stainless)	T6 Ball (carbide) T7 Ball (ceramic)	T8 Ball (Monel) T9 Non-rotating regulating (316 Stainless)
O-RINGS*	EM1 EPDM	KZ1 FFKM (Kalrez® 3018 or equivalent)	NB1 NBR
HANDLES	HL1 1-13/16" Mini "T" 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.

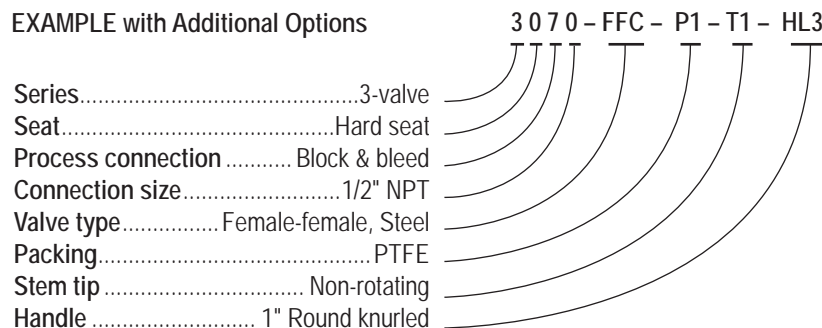
[†] If a packing option is chosen, maximum pressure rating is 6,000 psi. Refer to the "Pressure vs. Temperature: Packing Style with Compatible Fluid" chart at the back of this catalog.

* 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).

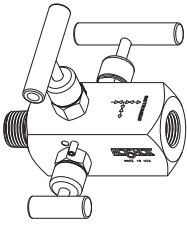
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 3070-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

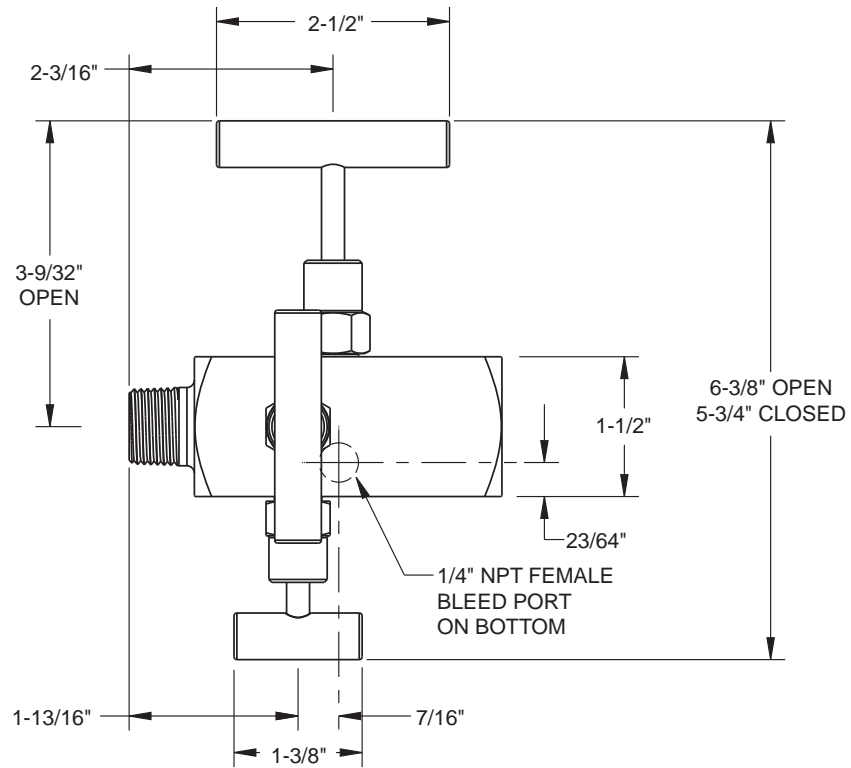


Dimensions

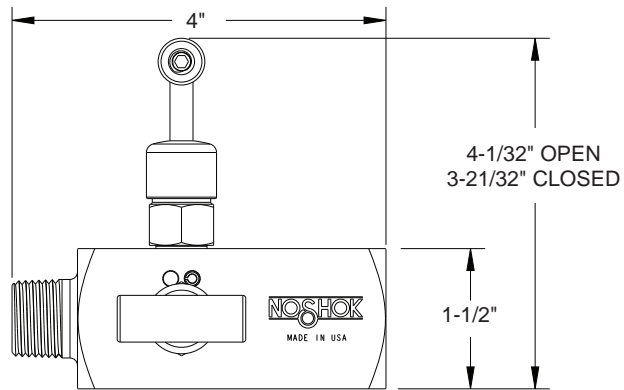
Male-Female



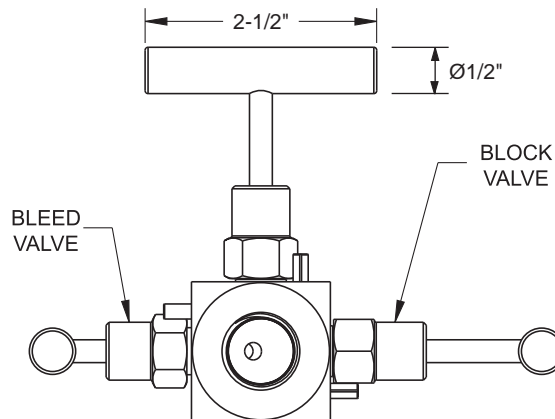
Top View



Front View

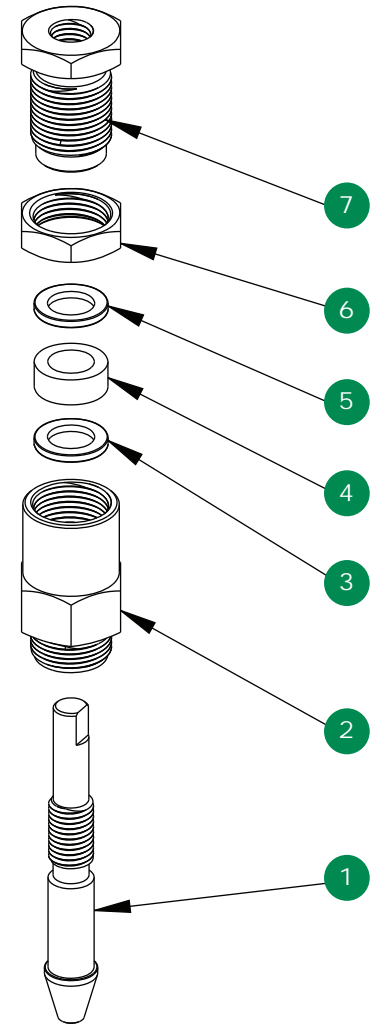
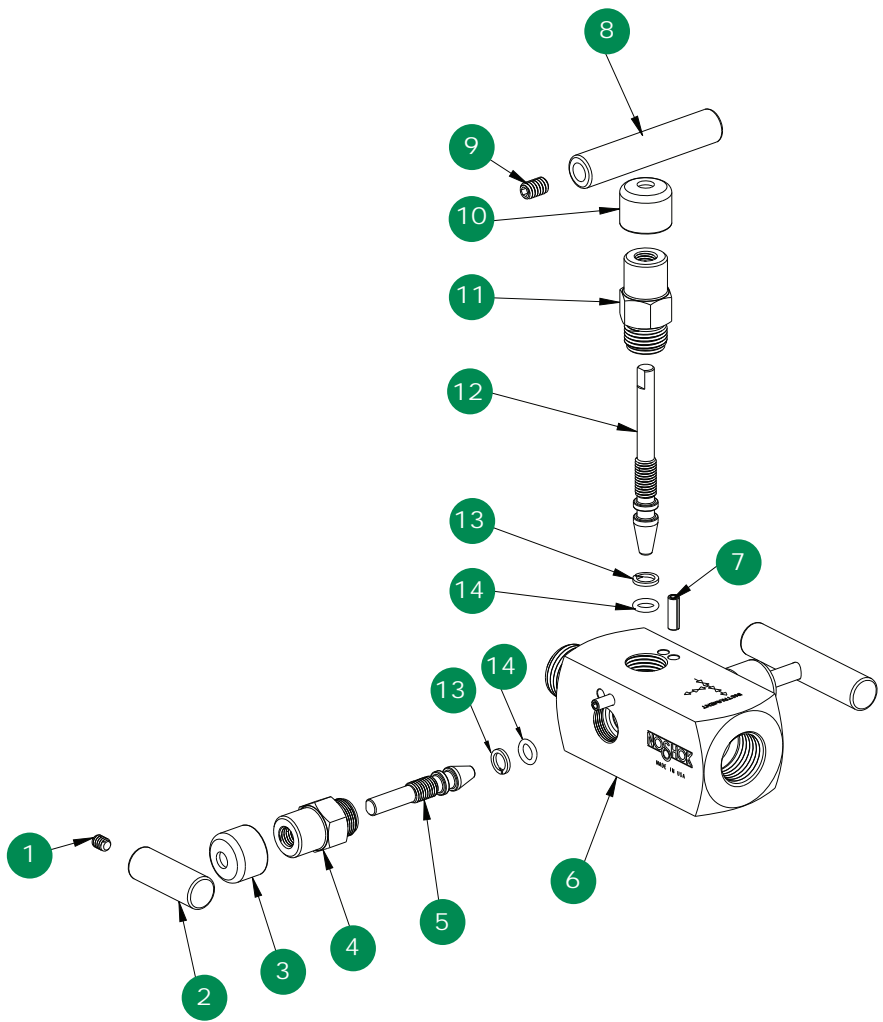


Side View



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

Double Block & Bleed, Hard Seat **Option With Packing**

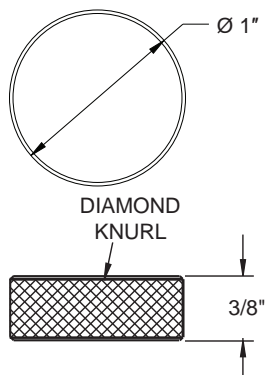


- 1 Set screw
- 2 Mini valve "T" handle
- 3 Red dust cap
- 4 Mini valve bonnet
- 5 Mini valve stem
- 6 Valve body
- 7 Slotted spring pin
- 8 Valve "T" handle
- 9 Set screw
- 10 Blue dust cap
- 11 Valve bonnet
- 12 Valve stem
- 13 PTFE back-up ring
- 14 FKM o-ring

- 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

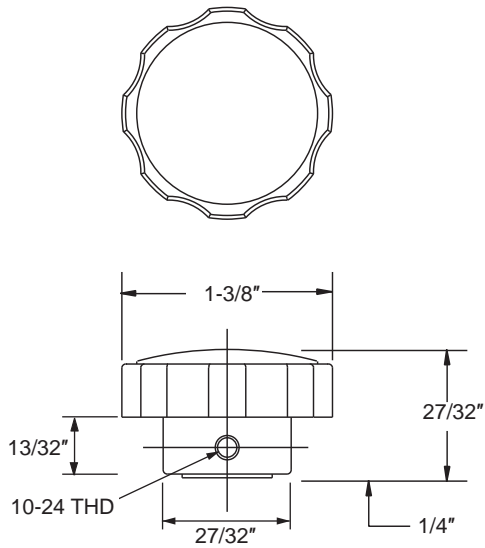
Needle Valve Options

Knurled Handle HL3



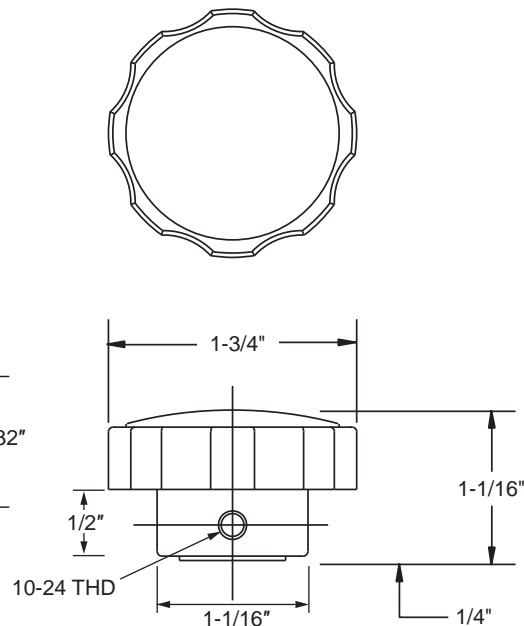
PART NUMBER	MATERIAL
HL3-CS1-ZN1	Steel
HL3-SS1-EP	Stainless Steel
HL3-BR1	Brass

Phenolic Handle HL4



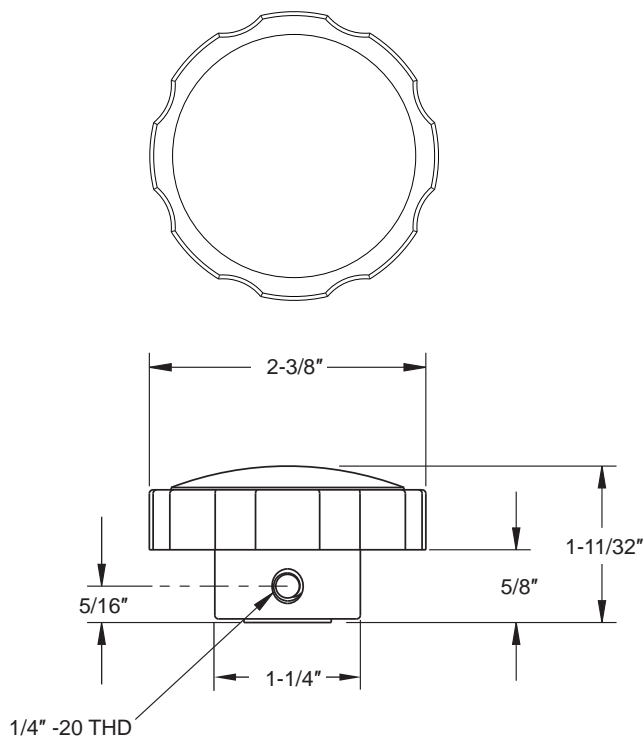
PART NUMBER	MATERIAL
HL4-PH1	Phenolic

Phenolic Handle HL5



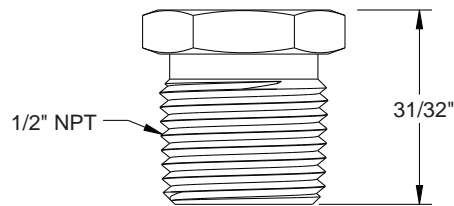
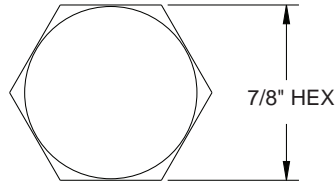
PART NUMBER	MATERIAL
HL5-PH1	Phenolic

Phenolic Handle HL9



PART NUMBER	MATERIAL
HL9-PH1	Phenolic

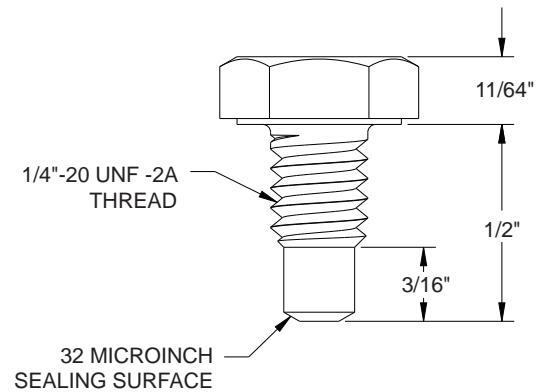
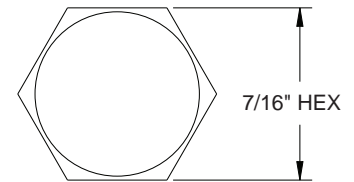
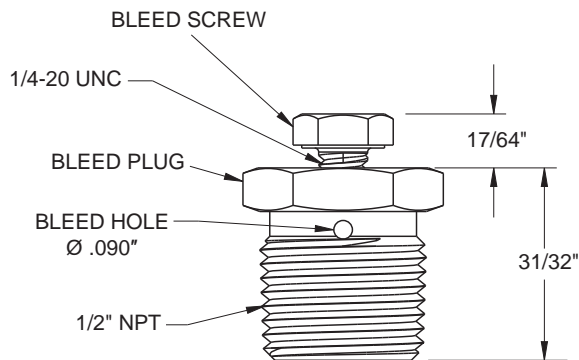
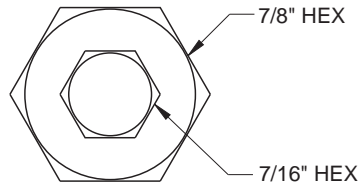
Plug



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

Bleed Plug

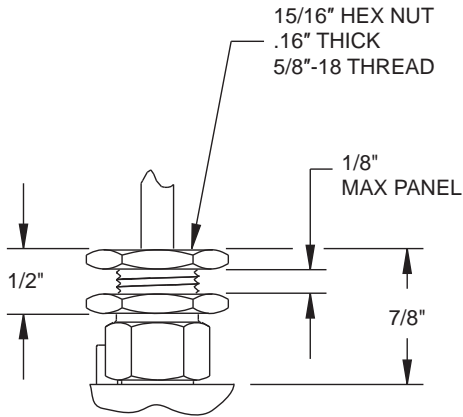
Bleed Screw



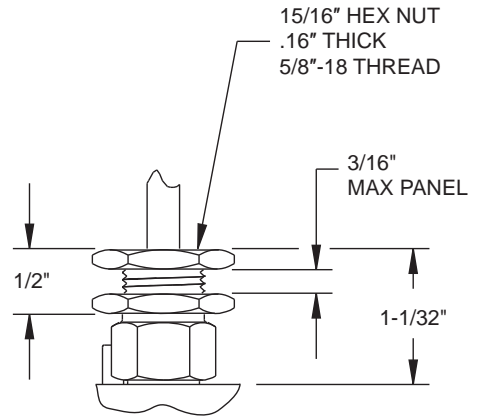
PART NUMBER	MATERIAL
BP1-C	Steel
BP1-S	Stainless Steel

Needle Valve Options

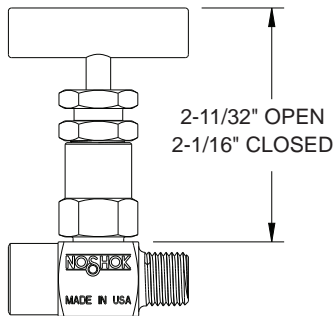
Panel Mount Detail, Mini Valves



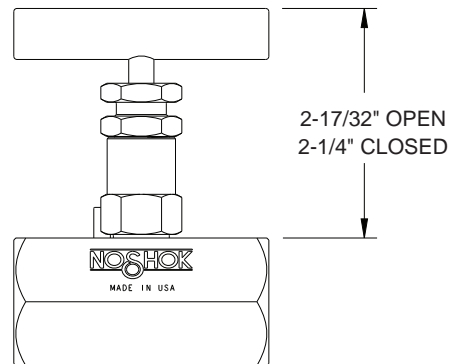
Panel Mount Detail, Needle Valves



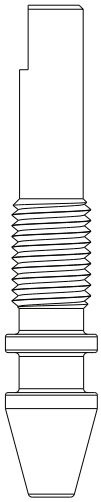
Packing, Mini Valves



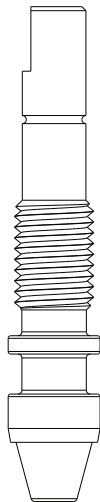
Packing, Needle Valves



Stem Tip Options



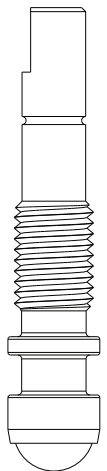
STANDARD
CONE TIP



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

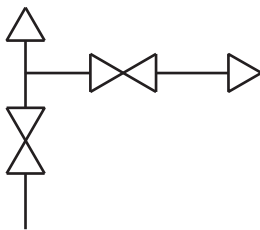
2000/2100 SERIES



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 Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or 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:



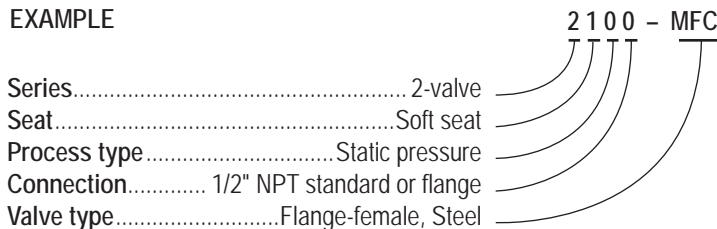
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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 (Kalrez® 3018 or equivalent)	NB1 NBR
HANDLES	HL1 1-13/16" Mini "T"	HL4 1-3/8" Phenolic	
	HL3 1" Round knurled	HL5 1-3/4" Phenolic	

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

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

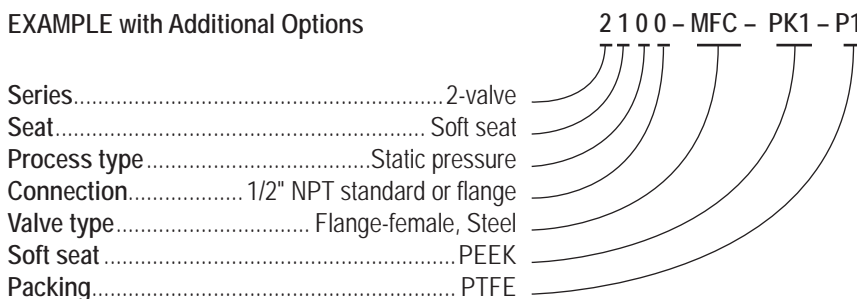
* Other o-ring materials available on request.

** For 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).

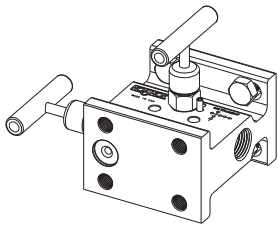
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 2100-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

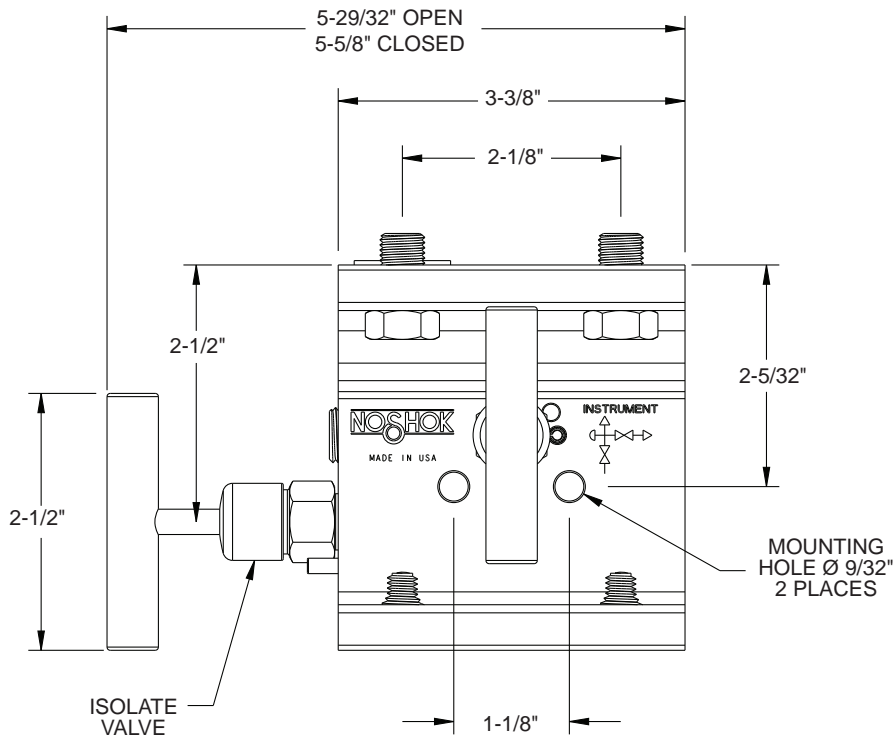


Dimensions

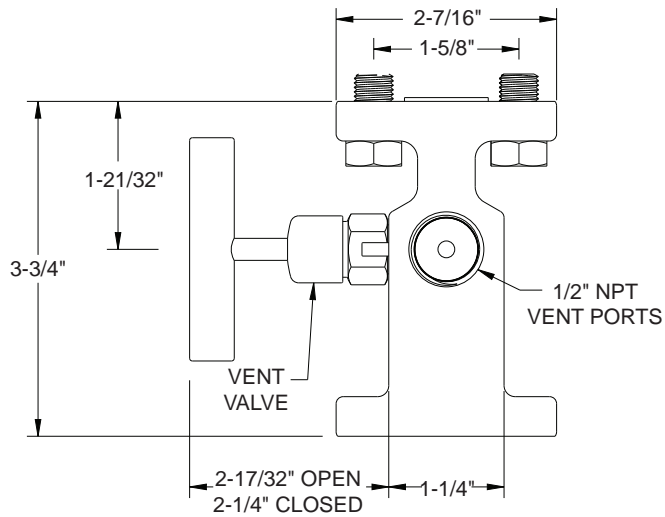
Flange-Flange



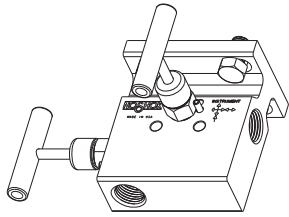
Top View



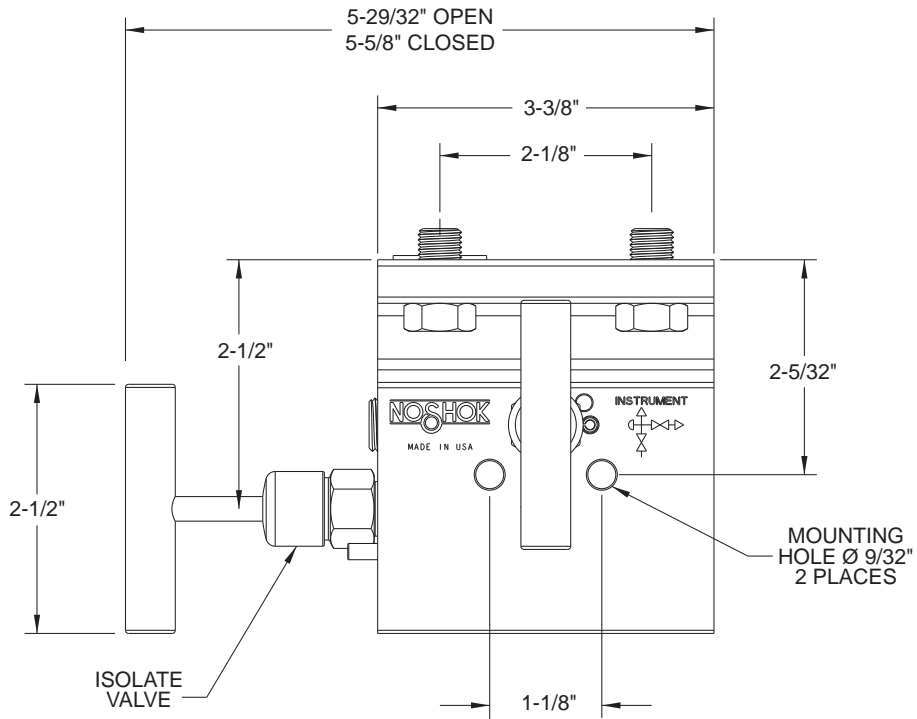
Side View



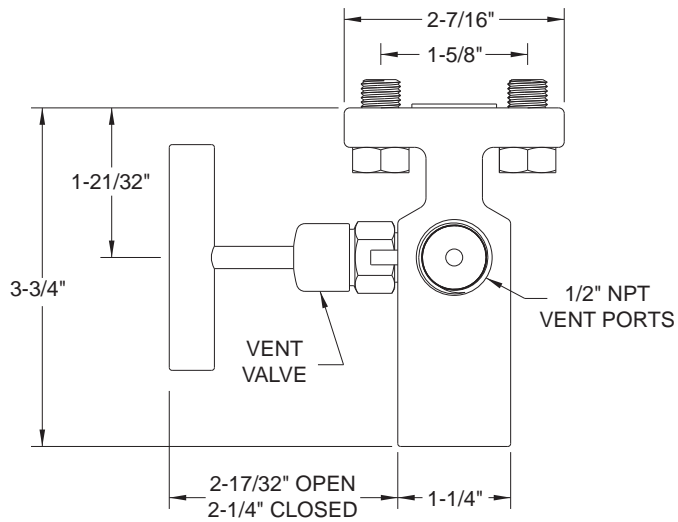
Flange-Female



Top View

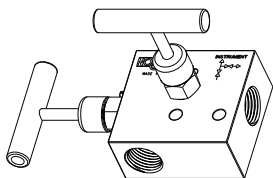


Side View

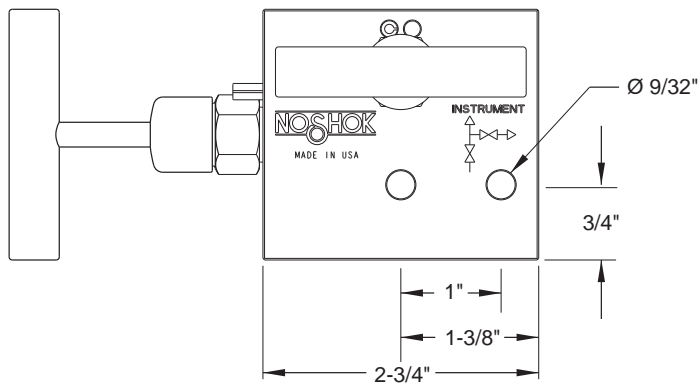


Dimensions

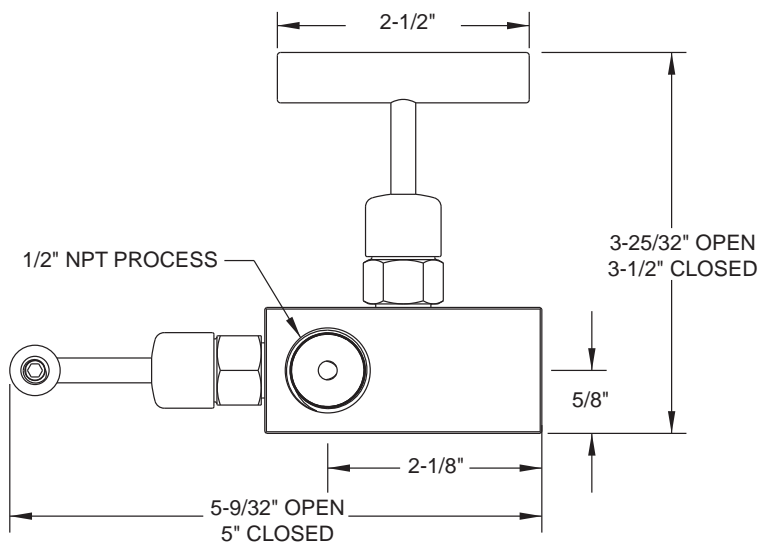
Female-Female



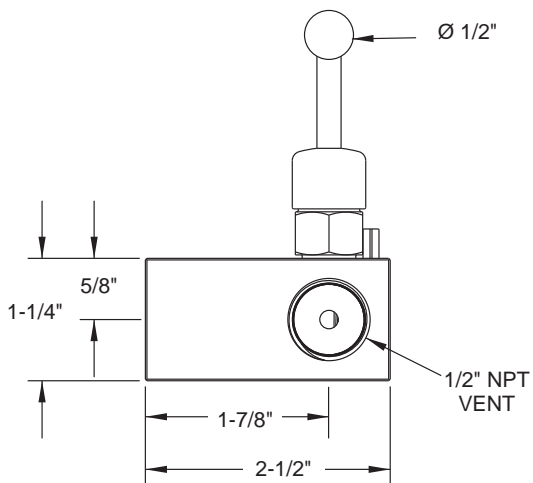
Top View



Front View



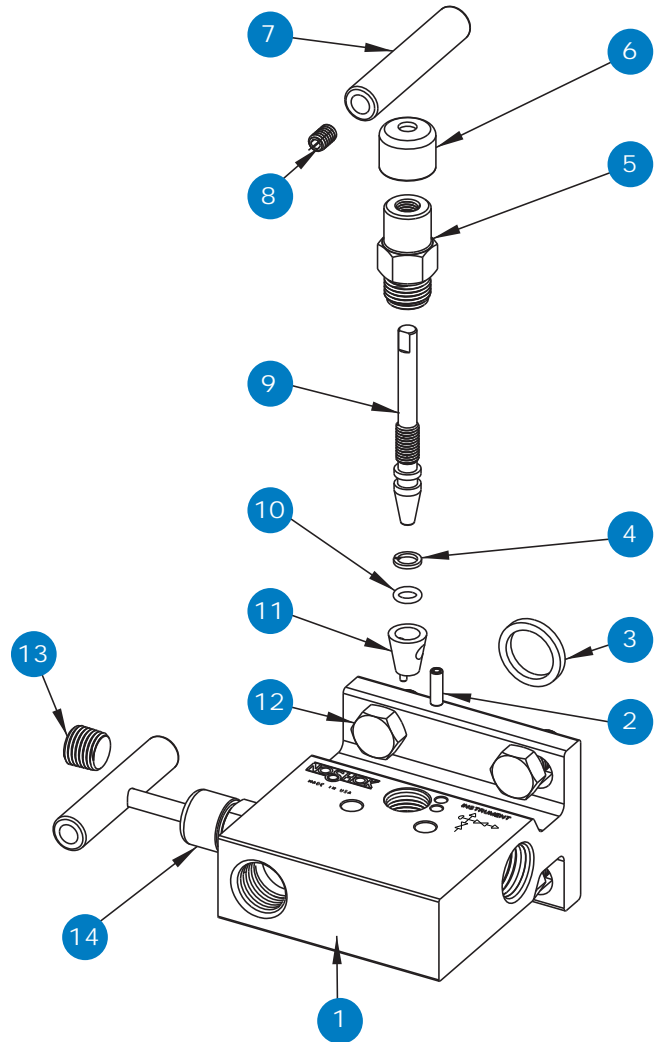
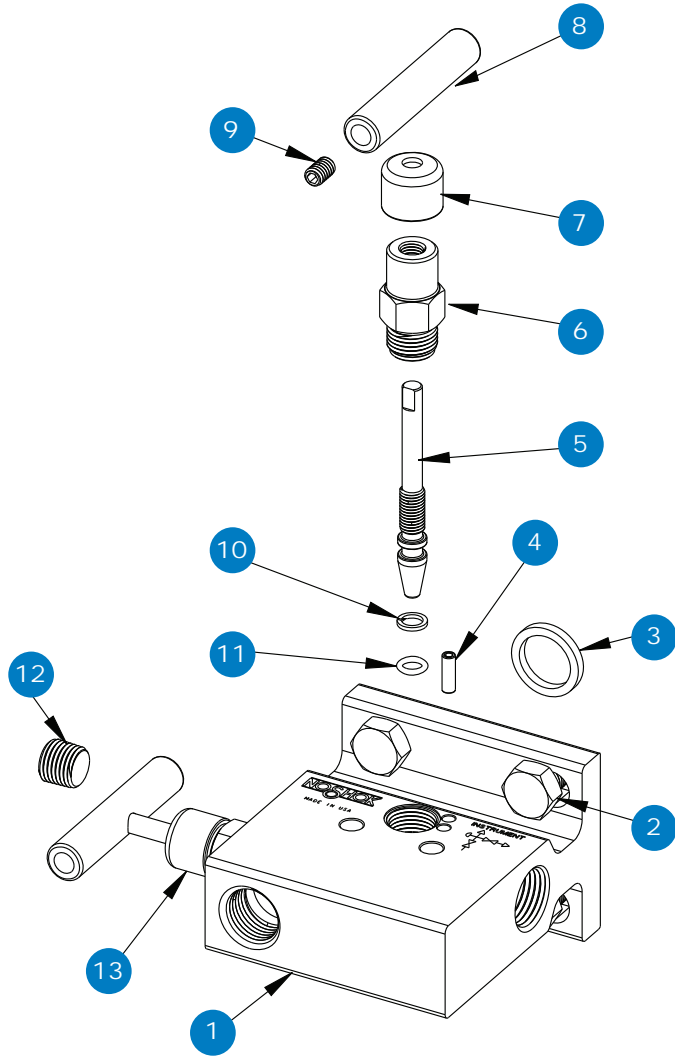
Side View



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

Hard Seat

Soft Seat

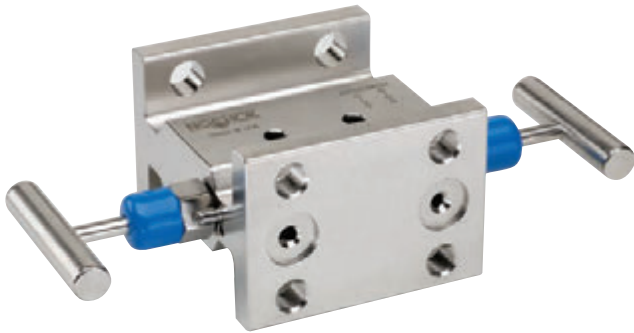


- 1 Valve body
- 2 Head bolt
- 3 Gasket ring
- 4 Slotted spring pin
- 5 Valve stem
- 6 Valve bonnet
- 7 Red dust cap
- 8 Valve "T" handle
- 9 Set screw
- 10 PTFE back-up ring
- 11 FKM o-ring
- 12 Plug
- 13 Blue dust cap

- 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 Delrin® seat
- 12 Head bolt
- 13 Plug
- 14 Blue dust cap

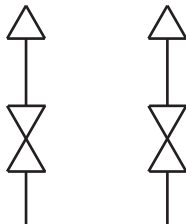
Hard & Soft Seat

2020/21 20 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 Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or 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:



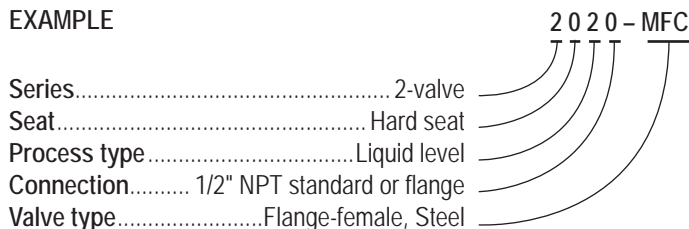
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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 (Kalrez® 3018 or equivalent)	NB1 NBR
HANDLES	HL1 1-13/16" Mini "T"	HL4 1-3/8" Phenolic	
	HL3 1" Round knurled	HL5 1-3/4" Phenolic	

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

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

* Other o-ring materials available on request.

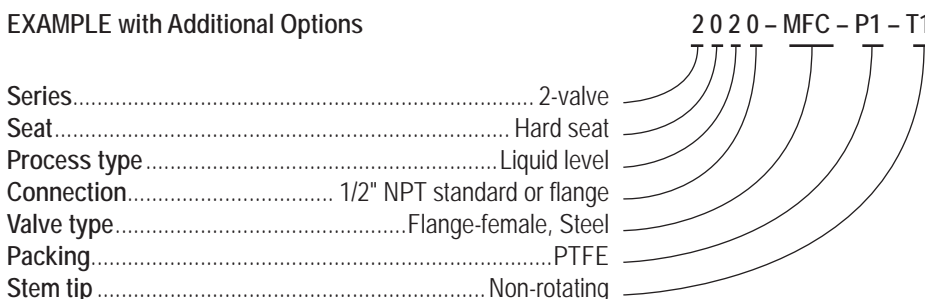
** For 2020 Series only.

*** 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).

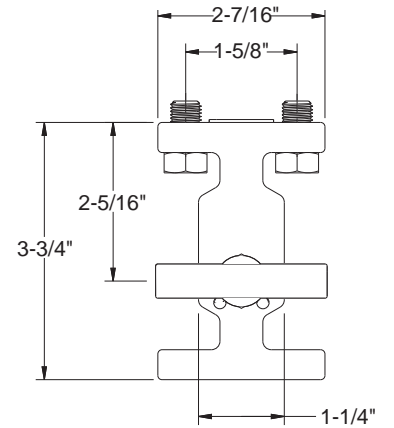
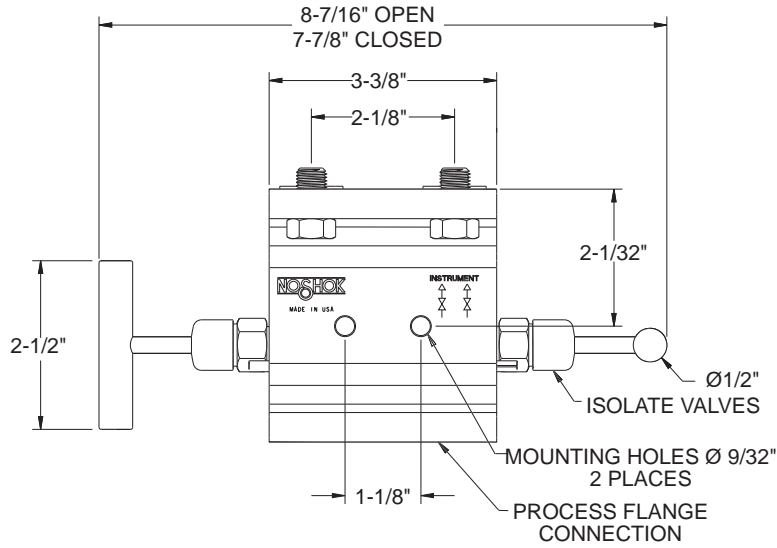
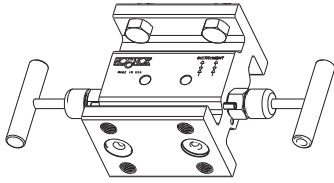
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 2020-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

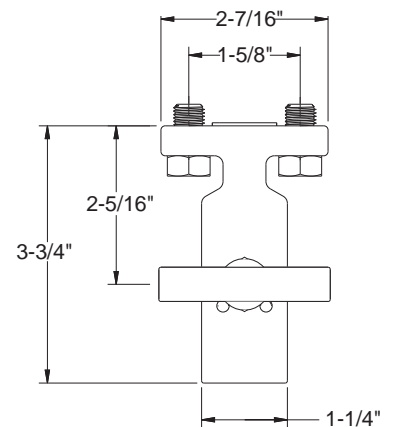
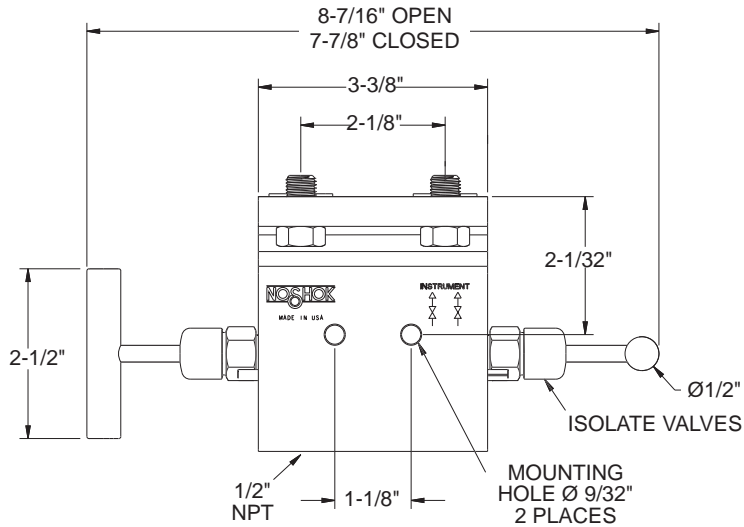
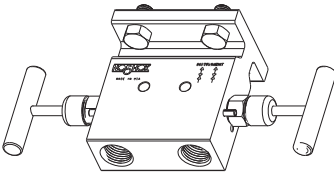


Dimensions

Flange-Flange

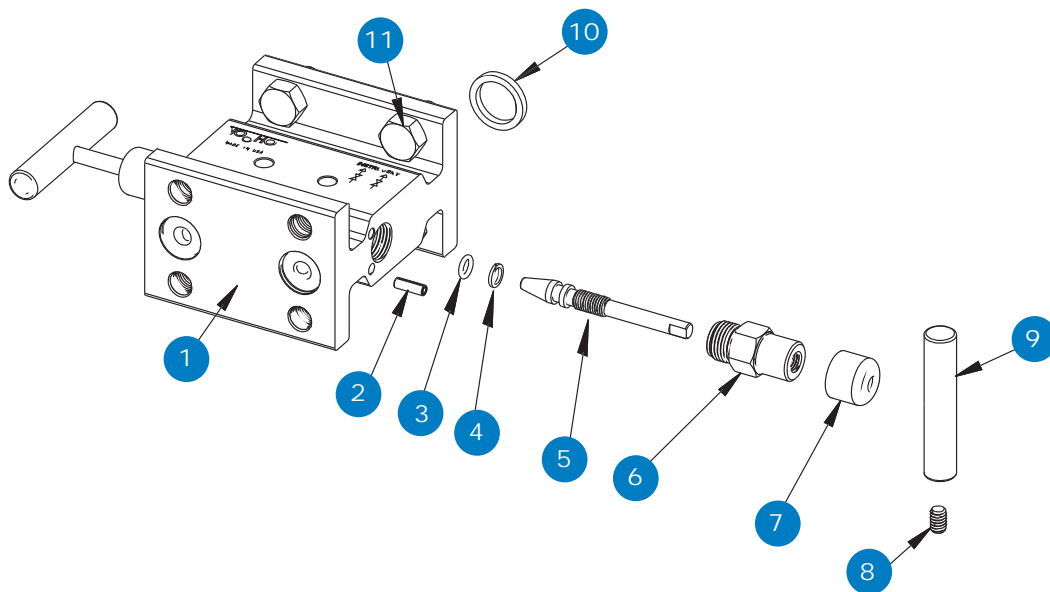


Flange-Female



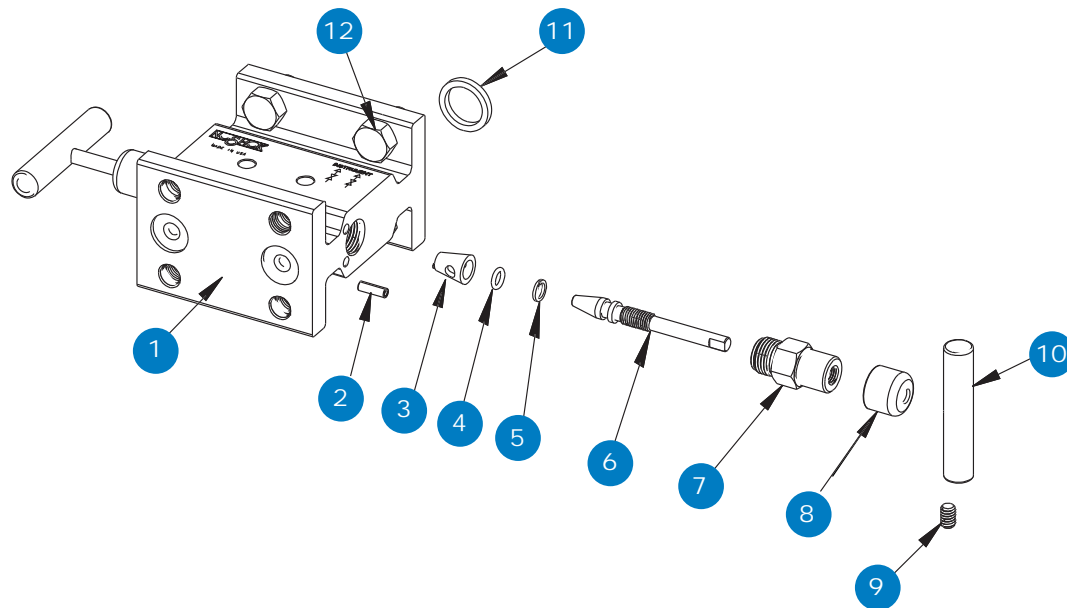
For panel mount or packing dimensions, see pg. 66.

Hard Seat



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

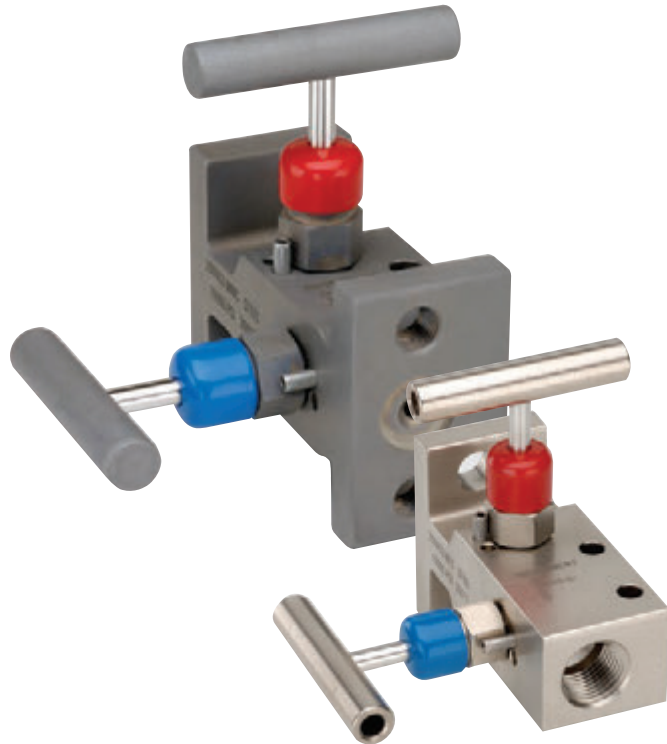
Soft Seat



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

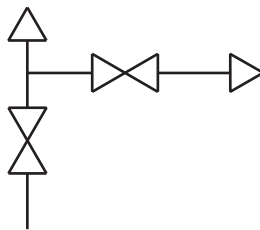
Narrow Block & Bleed, Hard Seat & Soft Seat

200002/210002 SERIES 200402/210402 SERIES



- Combines isolating and venting in a single valve, eliminating the need for tubing and fittings
- Block valve isolates the downstream process fluids and the bleed valve exhausts upstream fluids enabling static pressure transmitters, switches or gauges to be removed without disturbing the permanent piping installation
- Block valve is located on the left side and the bleed valve is located on top in a 90° orientation, venting is to the right
- 100% helium leak tested to 1×10^{-4} ml/s for performance and reliability
- 210002/210402 Series valves also feature a replaceable Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
- PCTFE or PEEK soft seat optional
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or 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)

Flow Schematic



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

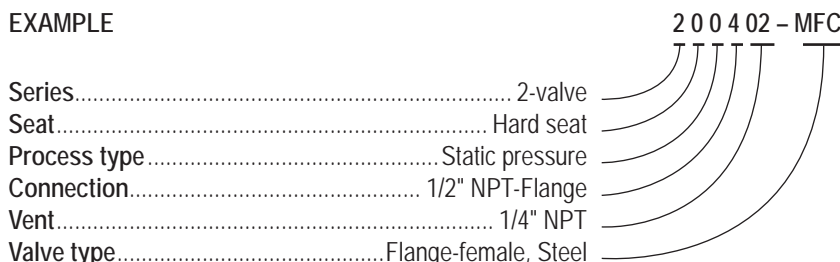
NOTE: All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

200002/210002 & 200402/210402 SERIES ORDERING INFORMATION

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



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 (Kalrez® 3018 or equivalent)	NB1 NBR
HANDLES	HL1 1-13/16" Mini "T"	HL4 1-3/8" Phenolic	
	HL3 1" Round knurled	HL5 1-3/4" Phenolic	

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

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

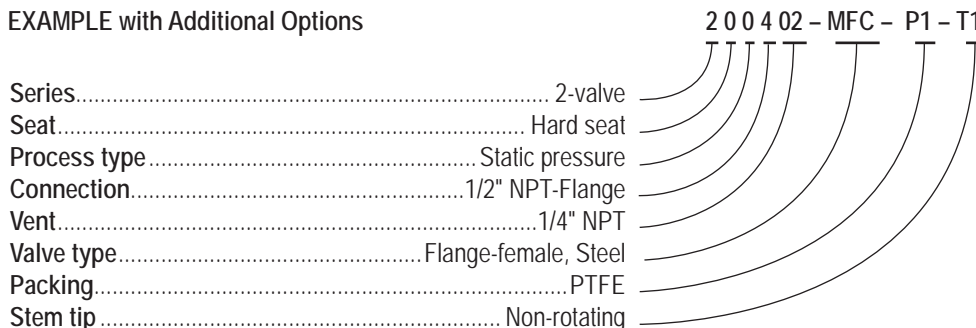
* Other o-ring materials available on request.

** For 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).

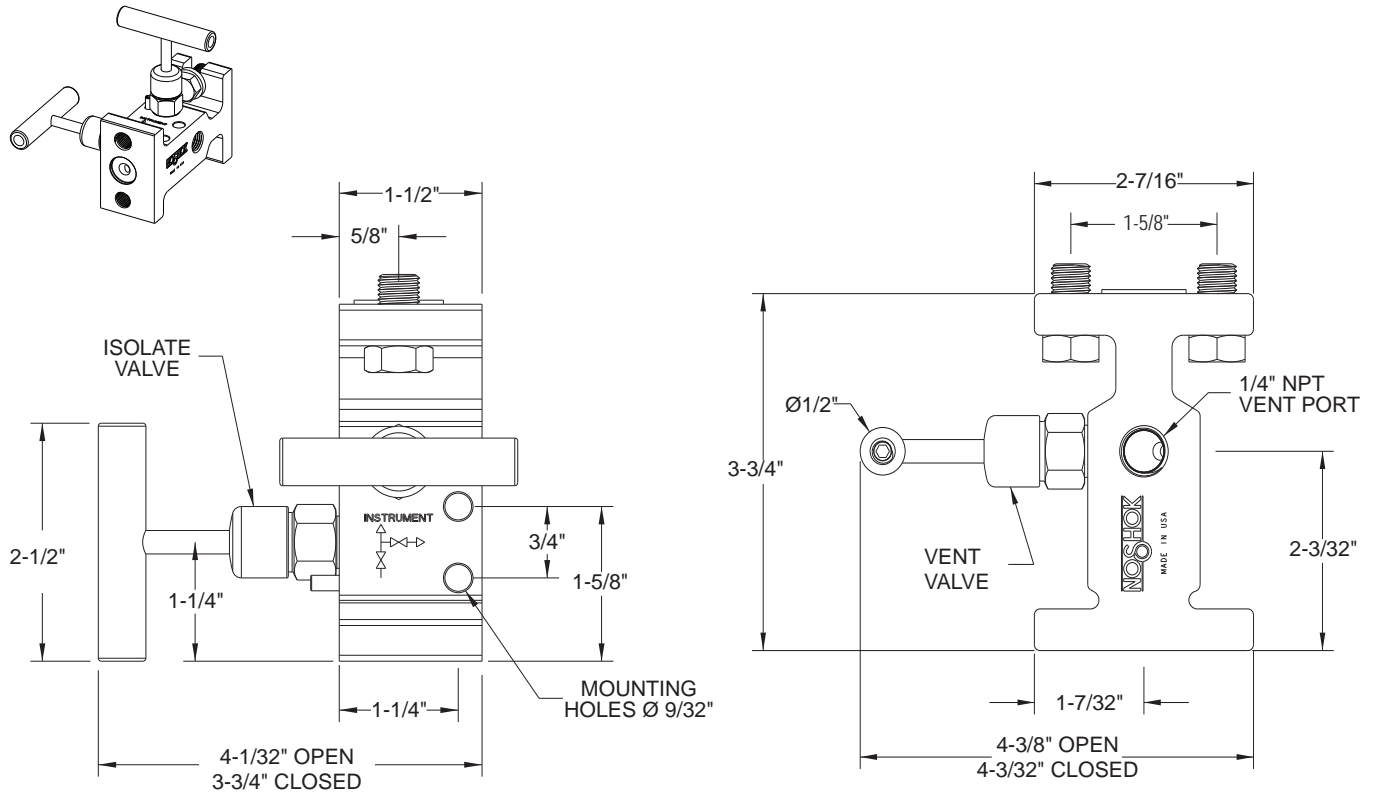
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 200402-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application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

EXAMPLE with Additional Options

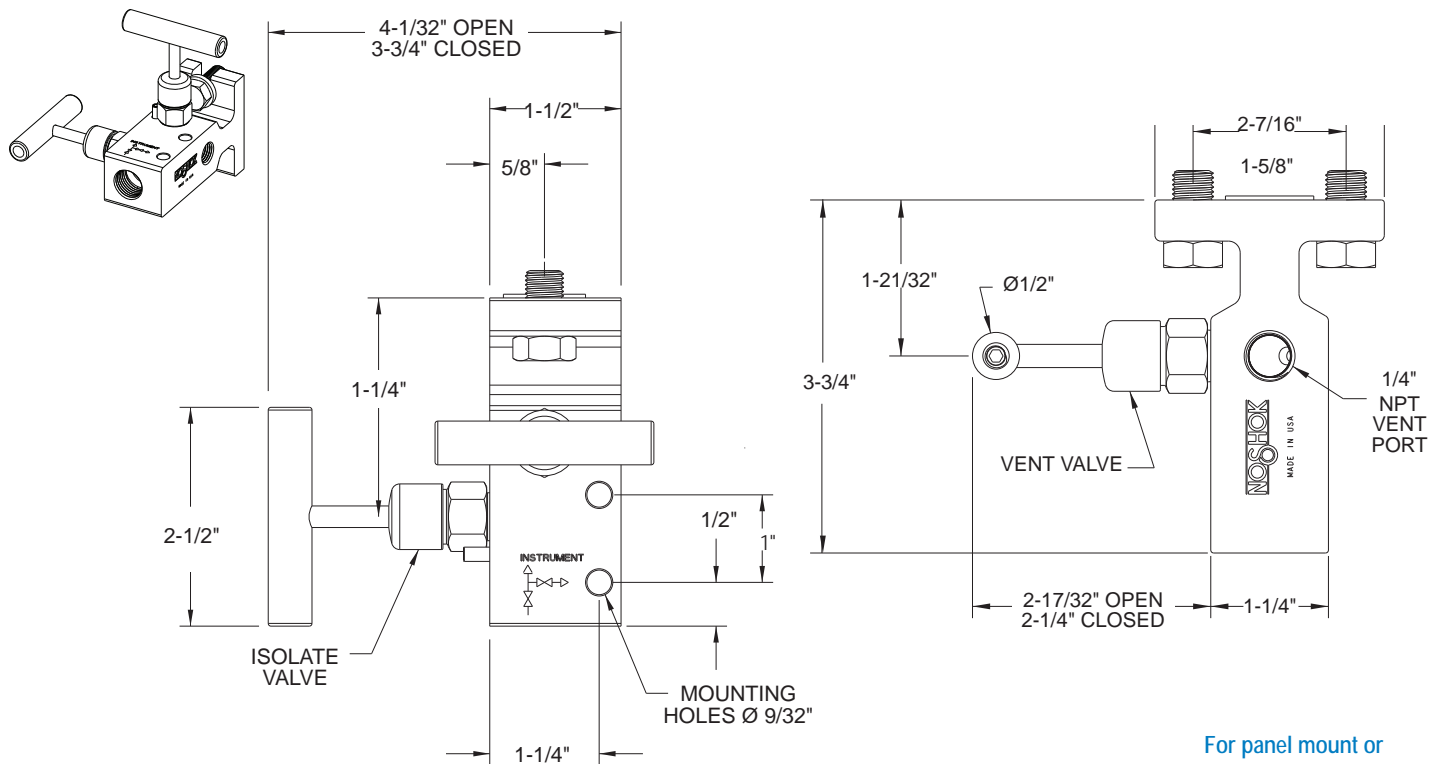


Dimensions

Flange-Flange



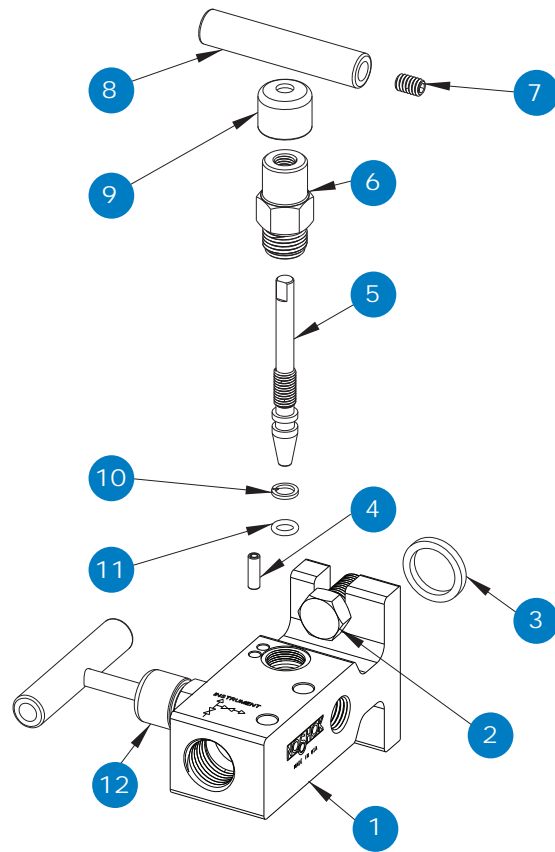
Flange-Female



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

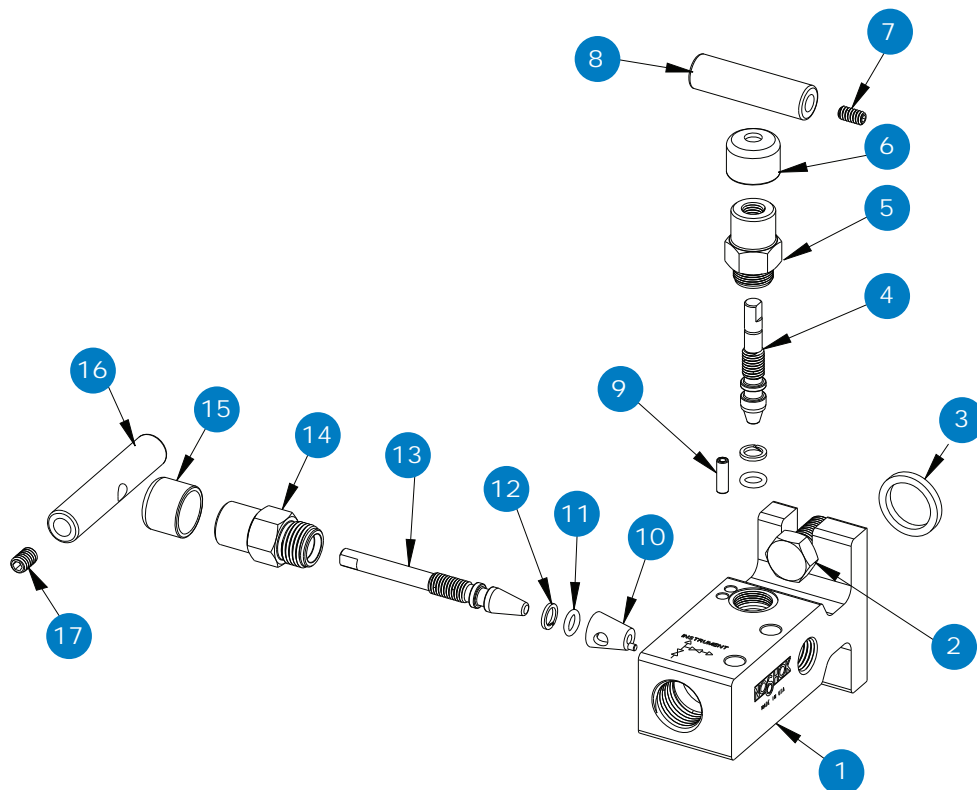
200002/210002 & 200402/210402 SERIES DIMENSIONS

Hard Seat



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

Soft Seat



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

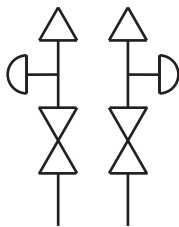
Large Bore, Angle (0.375" Orifice)

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 Delrin® seat, and straight through porting for easy roddable cleaning of the block valves
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Color coded vinyl dust caps for bonnets and stems
- Rod Out Ports and Drain Ports are standard on the 90° Angle design

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:



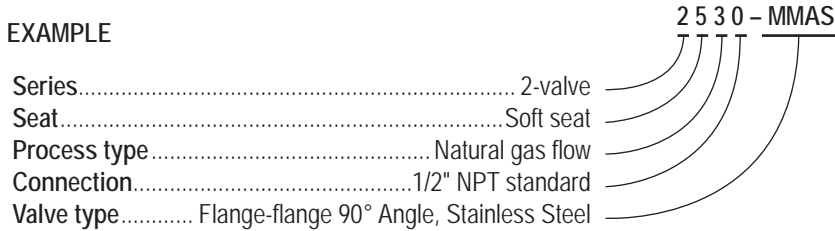
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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



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.

SOFT SEATS	PK1	PEEK	KF1	PCTFE	
O-RINGS*	EM1	EPDM	KZ1	FFKM (Kalrez® 3018 or equivalent)	
				NB1	NBR

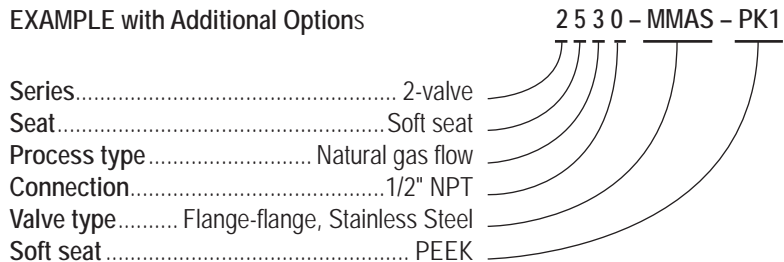
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

* 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).

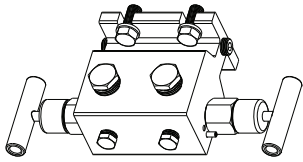
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle on the 2530-MMAC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

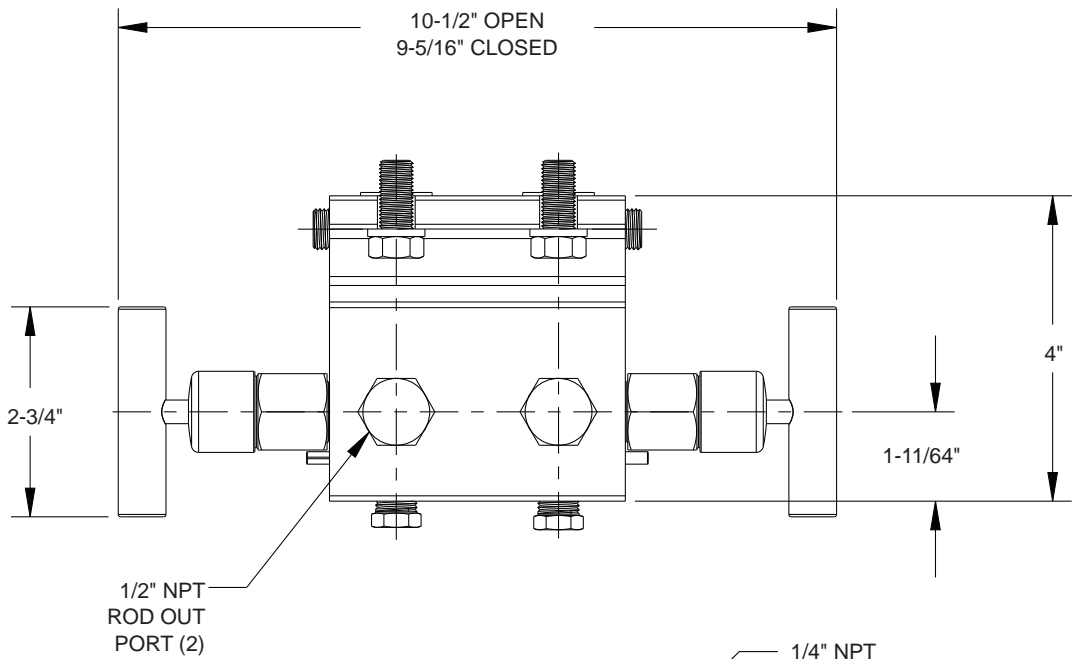


Dimensions

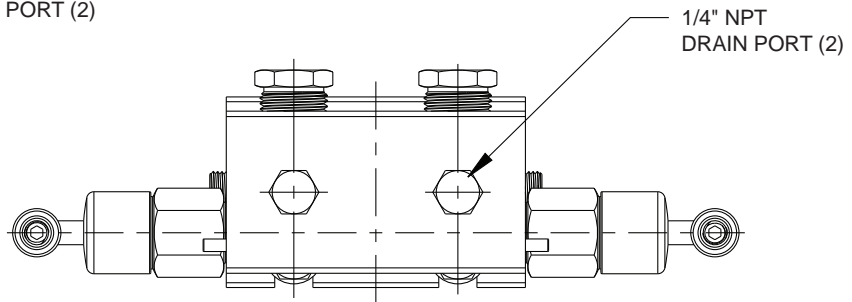
Flange-Flange



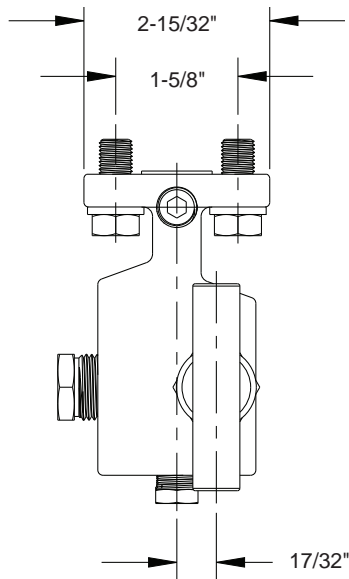
Top View

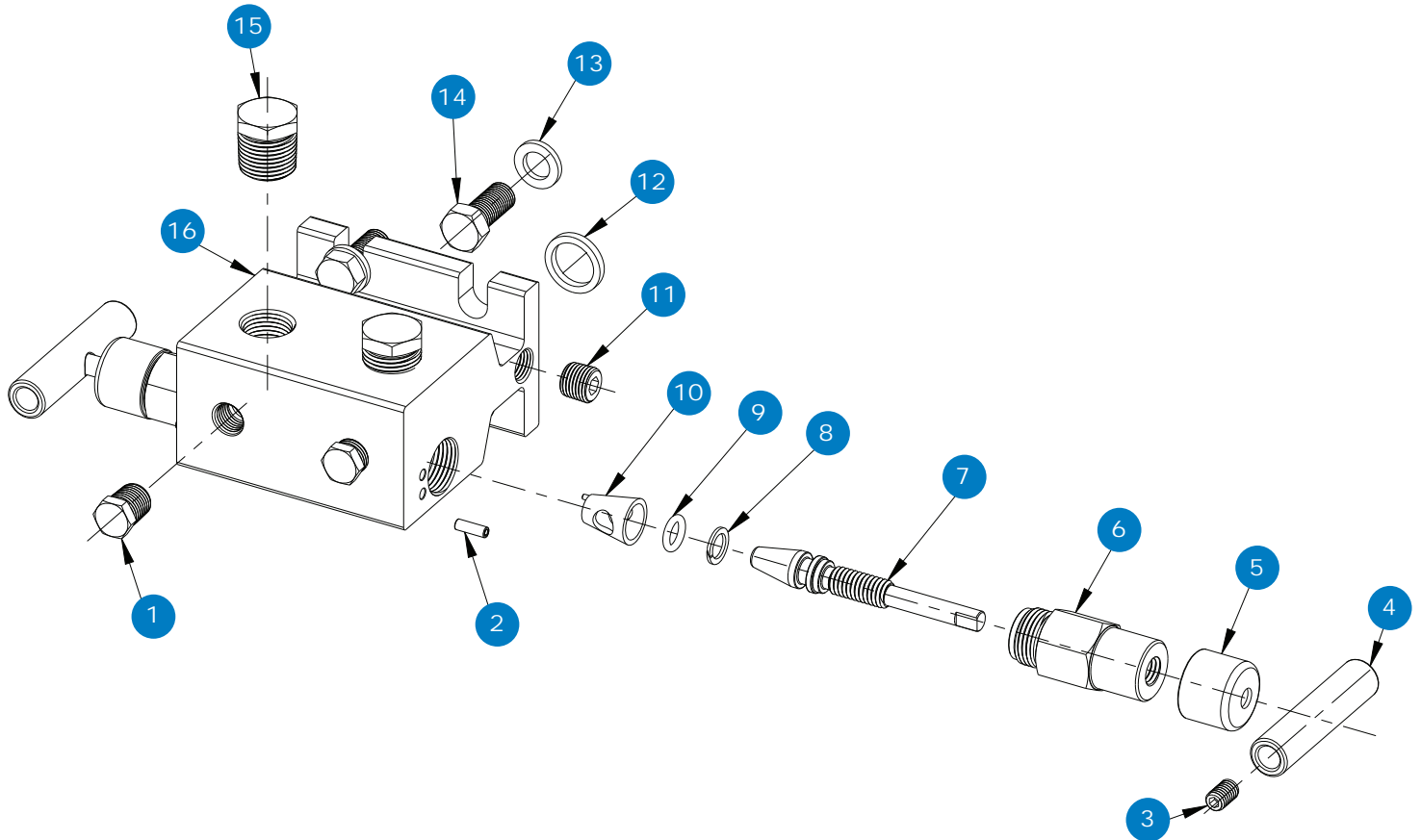


Front View



Side View





- | | |
|----------------------|----------------|
| 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 Delrin® seat | |

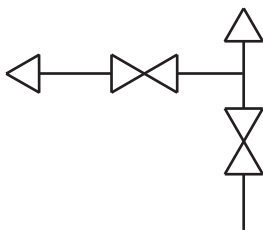
Mini Block & Bleed, Hard Seat & Soft Tip (0.141" Orifice)

2602/2702 SERIES



- Combines isolating and venting in a single valve, eliminating the need for tubing and fittings
- Block valve isolates the downstream process fluids and the bleed valve exhausts upstream fluids enabling static pressure transmitters, switches or gauges to be removed without disturbing the permanent piping installation
- Valves are located on the top to fit into compact spaces and two holes are provided for mounting, venting is to the left
- 100% helium leak tested to 1×10^{-4} ml/s for performance and reliability
- Soft tip valves feature a patented Delrin® non-rotating soft tip stem, and a back-up metal-to-metal seal (**U.S. Patent 6,820,857**)
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or 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**)

Flow Schematic



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:



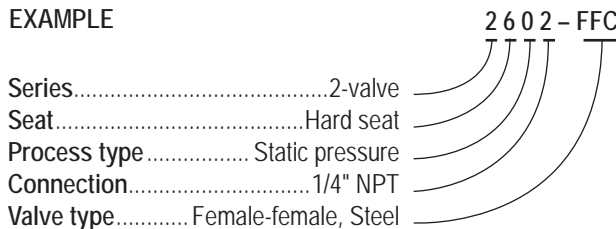
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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



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 Delrin****
	T2 Delrin® (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 (Kalrez® 3018 or equivalent)	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.

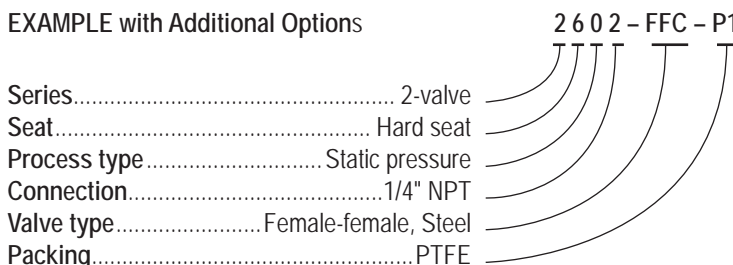
** Hard seat only.

*** 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).

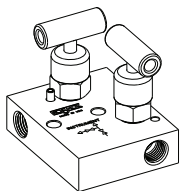
The handle material will always match the material of the valve, unless otherwise specified. For example, the 1-3/8" mini "T" handle (HL7) on the 2602-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application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

EXAMPLE with Additional Options

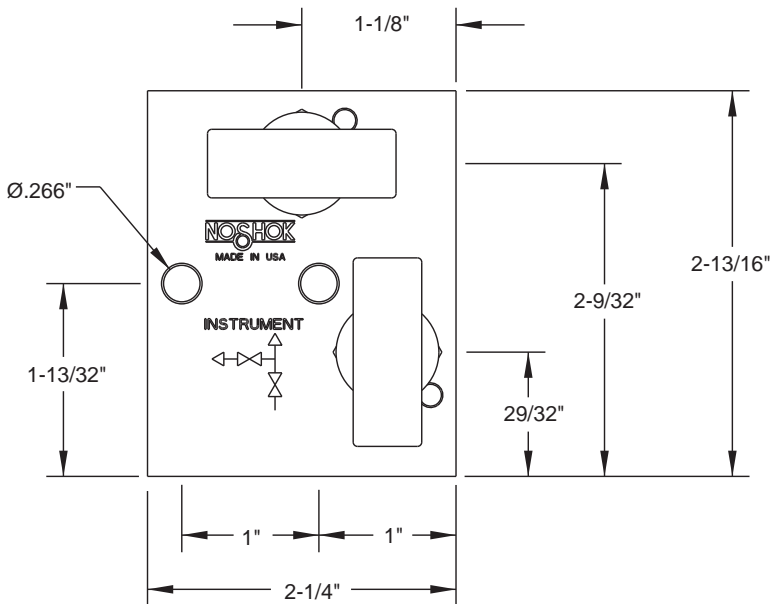


Dimensions

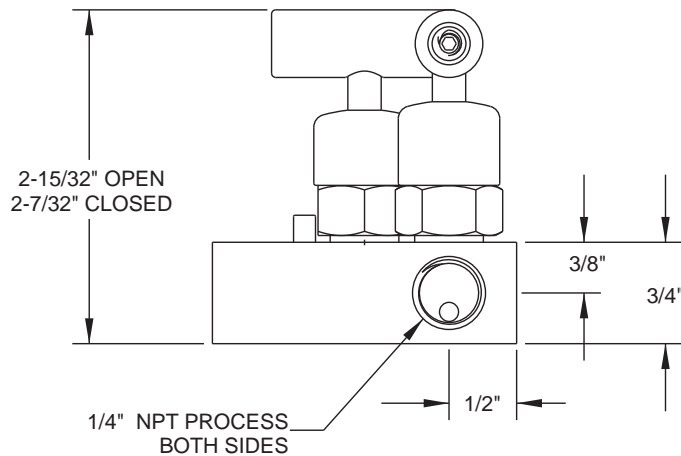
Female-Female



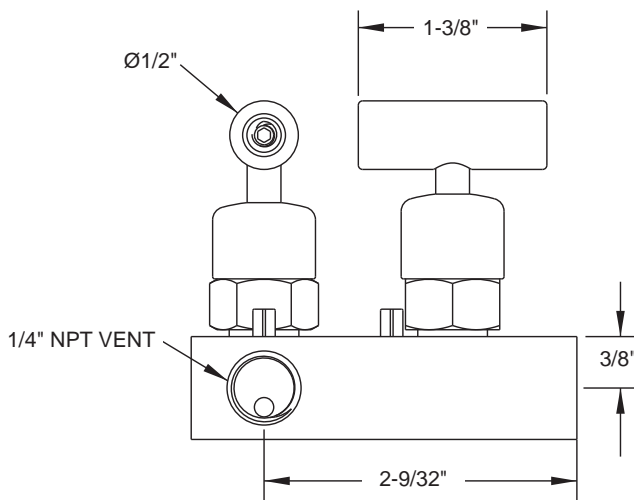
Top View



Front View

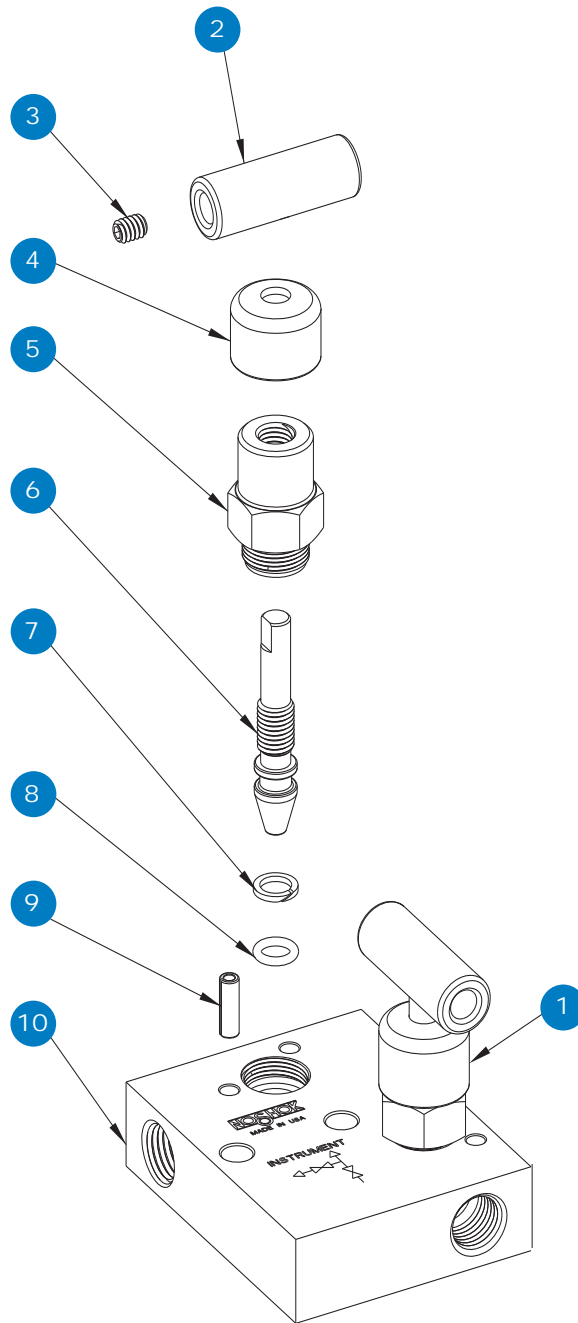


Side View



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

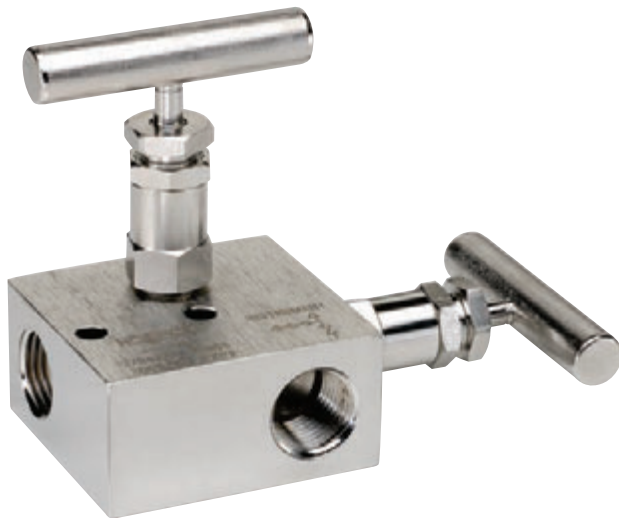
2602/2702 SERIES DIMENSIONS



- 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)

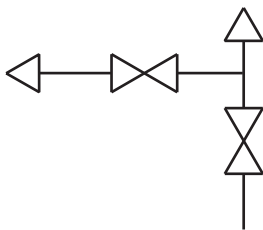
2603/2703 SERIES 2604/2704 SERIES



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

- 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 Delrin® non-rotating soft tip stem, and a back-up metal-to-metal seal (U.S. Patent 6,820,857)
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or 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)

Flow Schematic



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

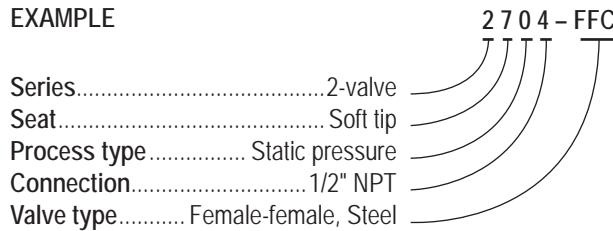
NOTE: All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

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



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 Delrin****
	T2 Delrin® (Acetal)***	T5 Ball (440C Stainless)**	T8 Ball (Monel)**	T11 Regulating PCTFE***
	T3 PTFE***	T6 Ball (carbide)**	T9 Non-rotating regulating (316 Stainless)**	T12 Regulating PEEK***
O-RINGS*	EM1 EPDM	KZ1 FFKM (Kalrez® 3018 or equivalent)	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.

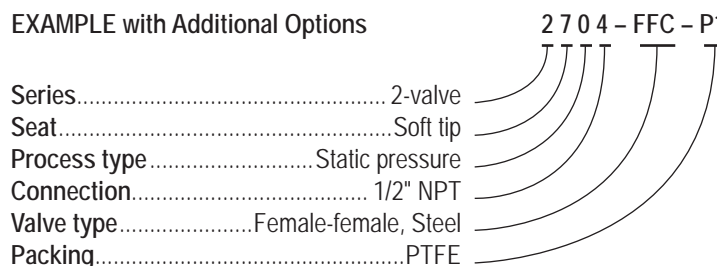
** Hard seat only.

*** 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).

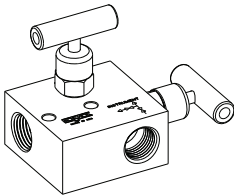
The handle material will always match the material of the valve, unless otherwise specified. For example, the mini "T" handle (HL1) on the 2704-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application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

EXAMPLE with Additional Options

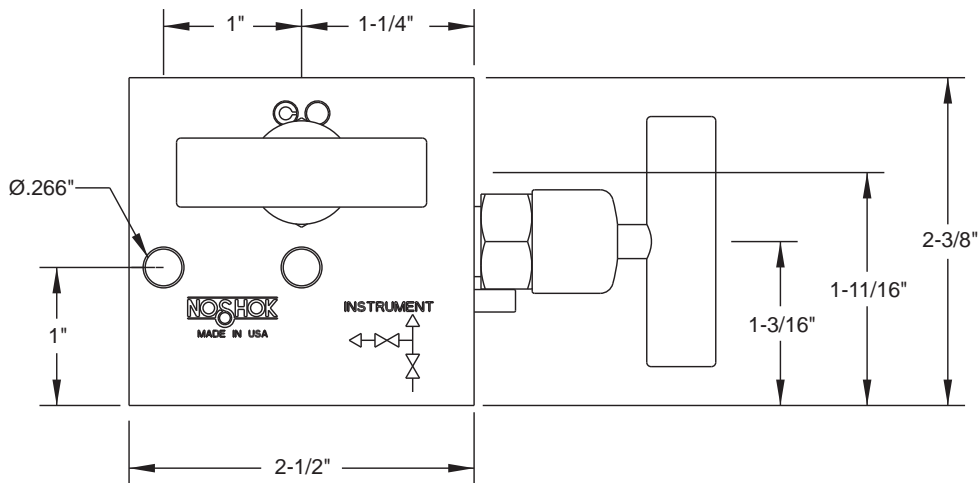


Dimensions

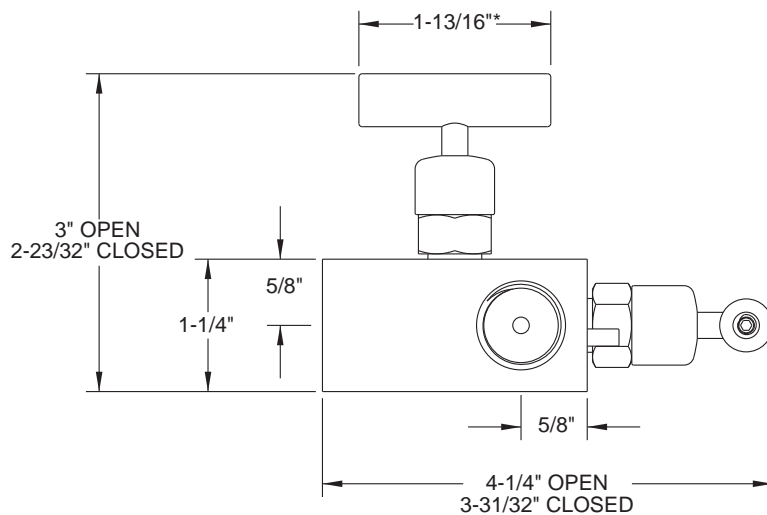
Female-Female



Top View

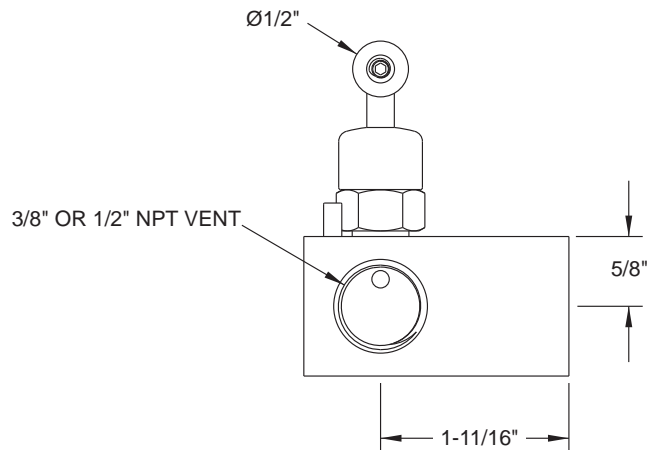


Front View



* 1-3/8" for soft tip versions

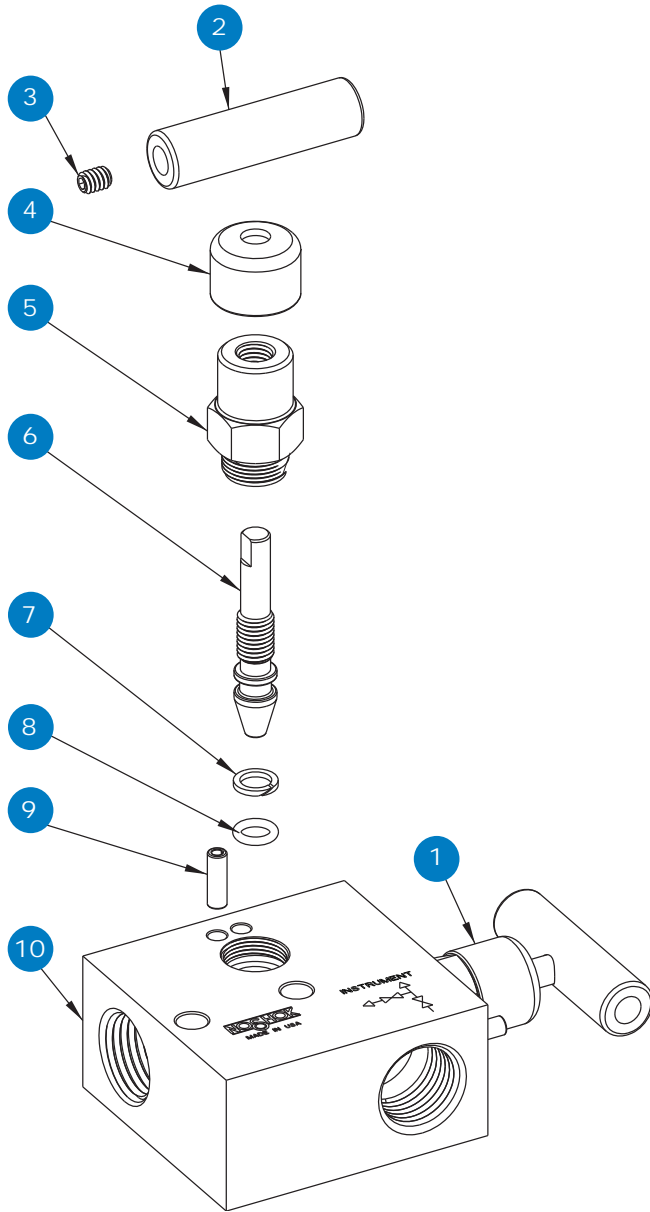
Side View



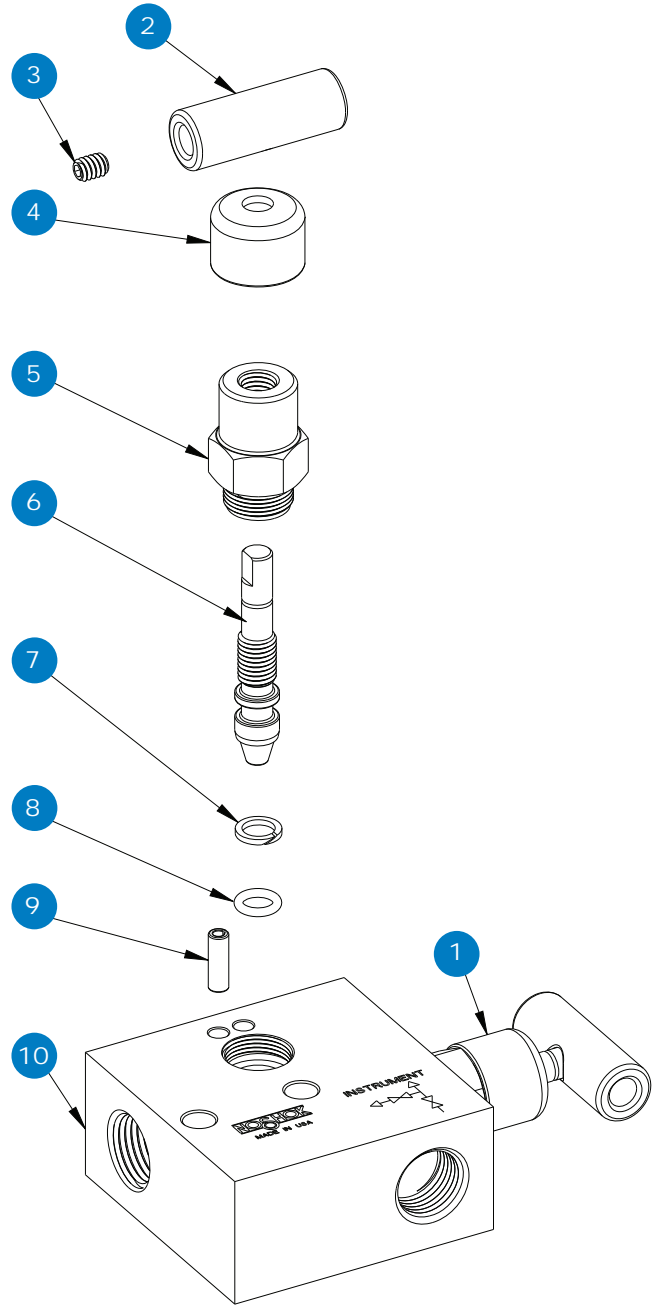
For panel mount or packing dimensions, see pg. 66.

2603/2703 & 2604/2704 SERIES DIMENSIONS

Hard Seat **Soft Tip**



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



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

Meter Manifold, Soft Seat



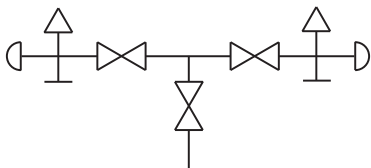
Optional 3 and 5 valve configurations also shown. Additional needle valves sold separately.

Flow Schematics

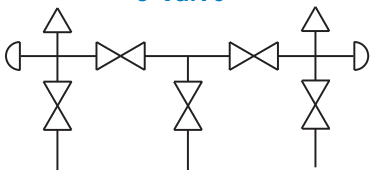
2-Valve



3-Valve



5-Valve



2180 SERIES

- Designed for use with orifice meters
- 100% helium leak tested to 1×10^{-4} ml/s for performance and reliability
- Replaceable Delrin® seat and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE packing optional
- 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:



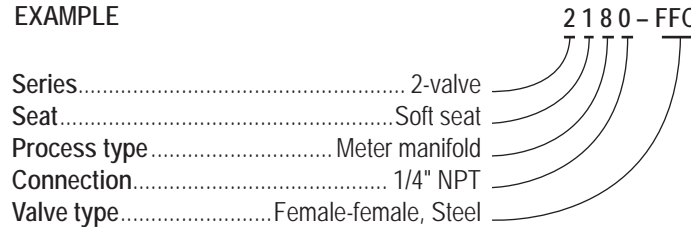
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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.

SERIES	2	2-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



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 (Kalrez® 3018 or equivalent)
			NB1 NBR
HANDLES	HL3	1" Round knurled	HL4 1-3/8" Phenolic
			HL5 1-3/4" Phenolic

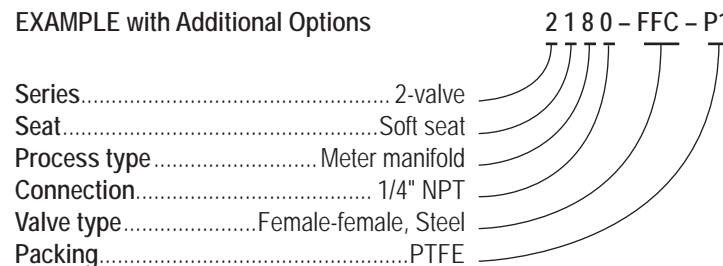
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

* 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).

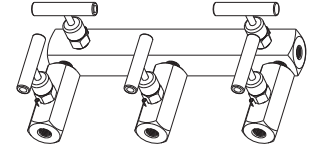
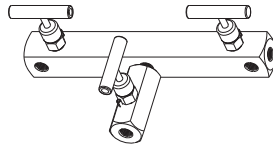
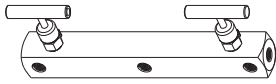
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 2180-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

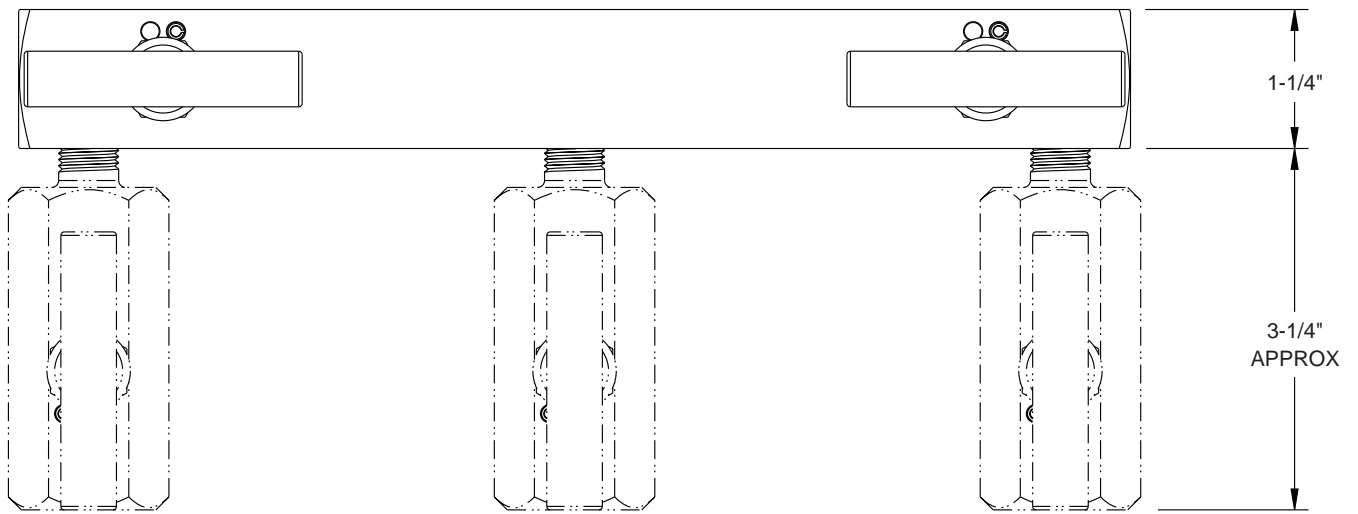


Dimensions

Female-Female



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

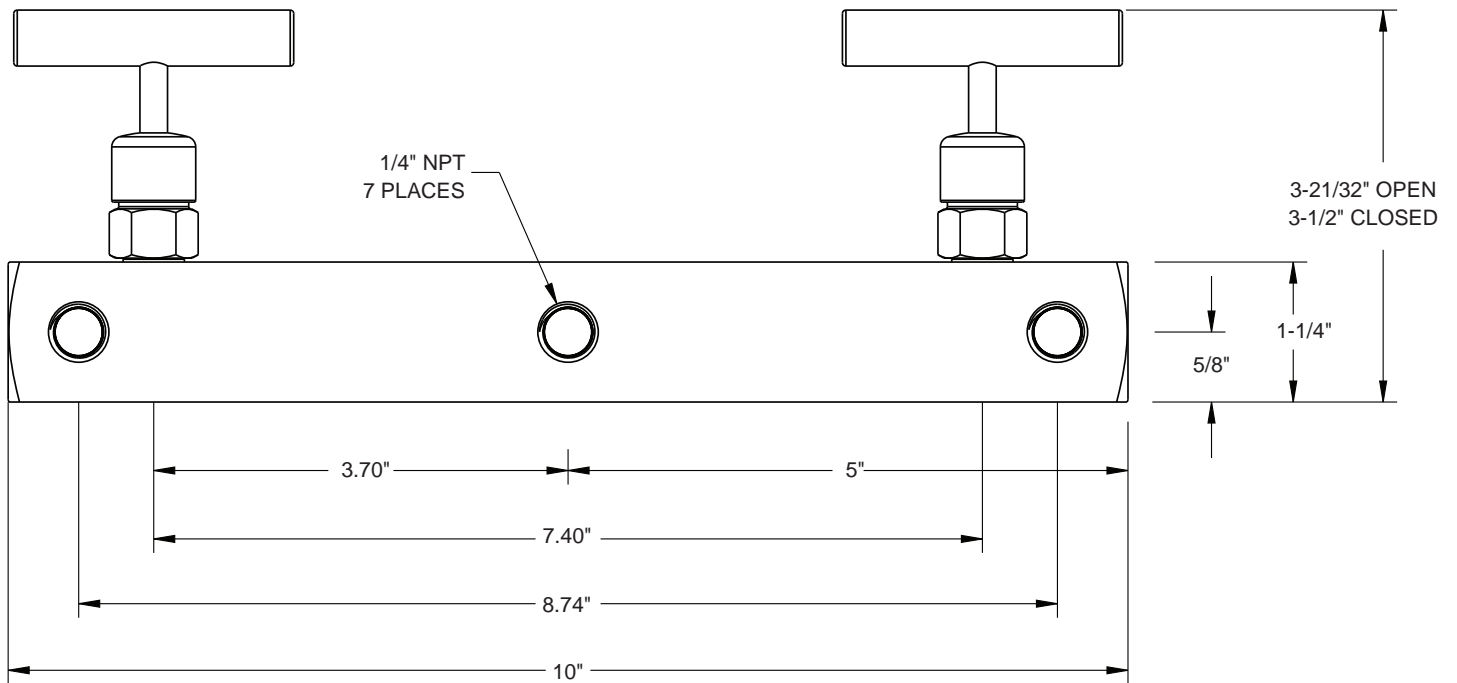


BLOCK VALVE

BLEED VALVE

BLOCK VALVE

2180 SERIES DIMENSIONS



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

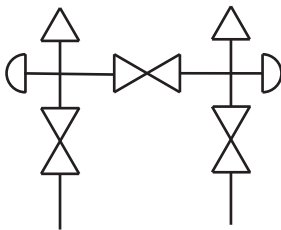
Hard Seat & Soft Seat

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 Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or 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:



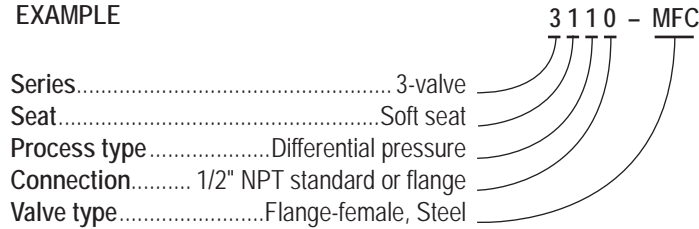
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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	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: 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 (Kalrez® 3018 or equivalent)	NB1 NBR
HANDLES	HL1 1-13/16" Mini "T"	HL4 1-3/8" Phenolic	
	HL3 1" Round knurled	HL5 1-3/4" Phenolic	

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

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

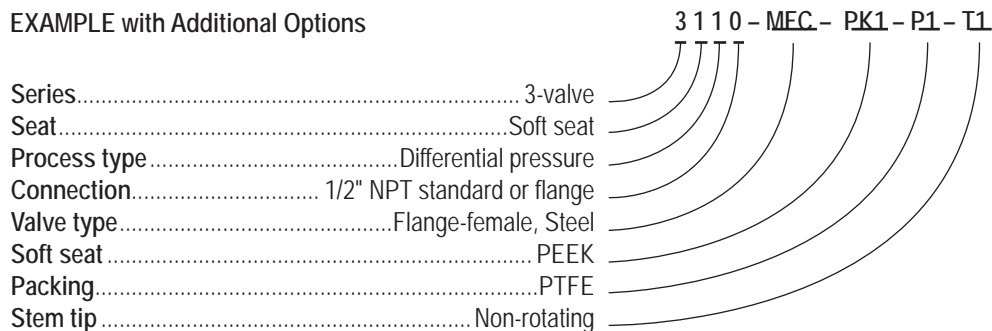
* Other o-ring materials available on request.

** For 3010 only.

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

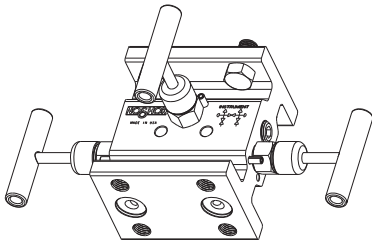
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle (HL2) on the 3110-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

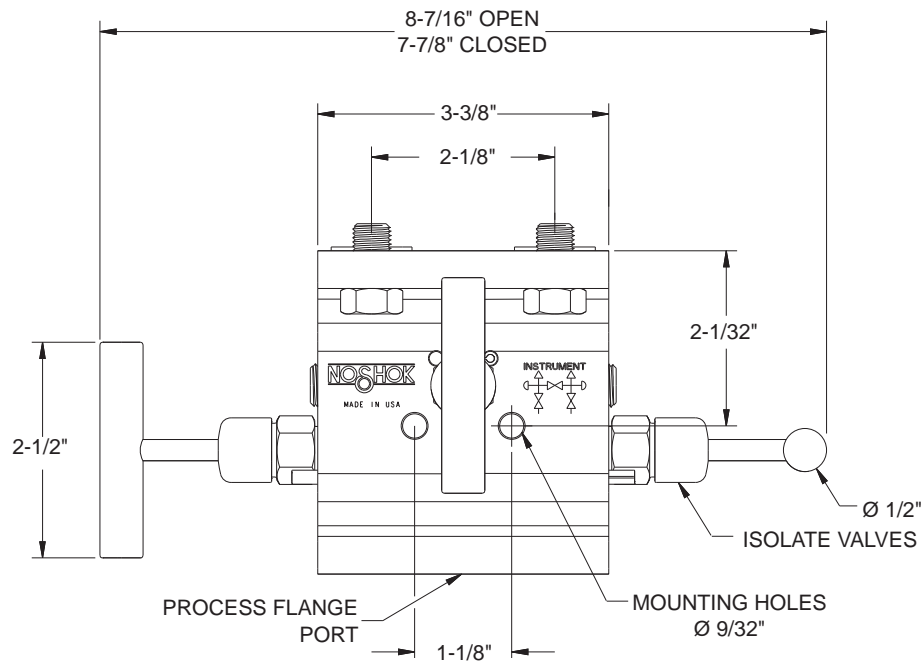


Dimensions

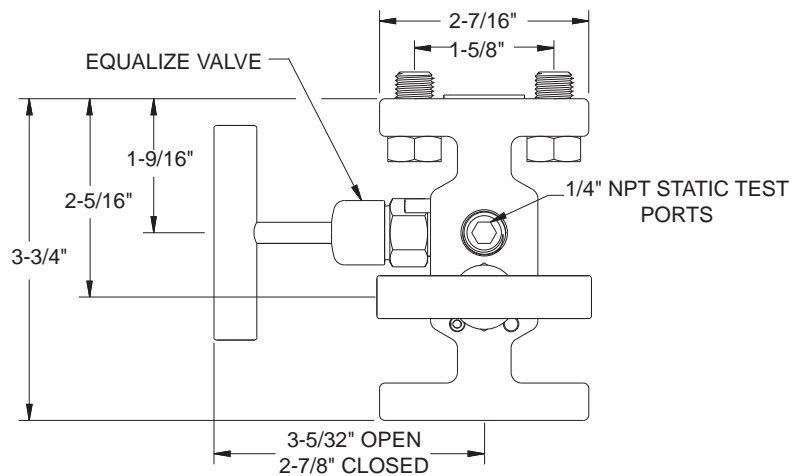
Flange-Flange



Top View

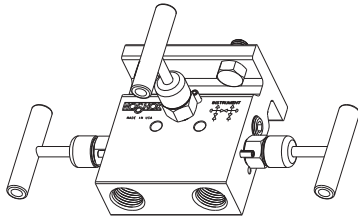


Side View

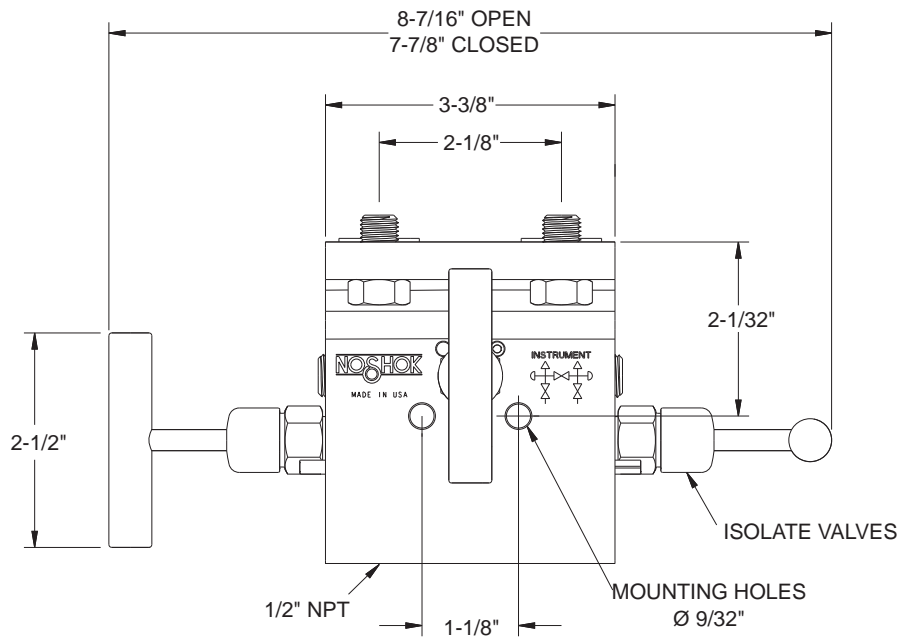


3010/3110 SERIES DIMENSIONS

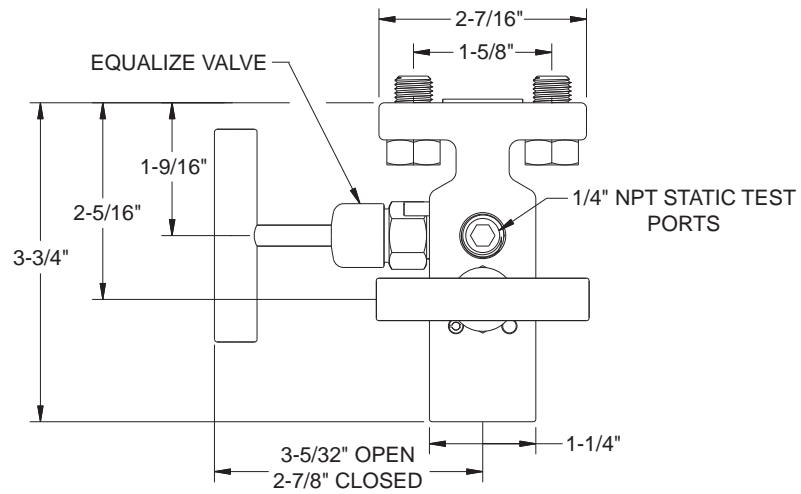
Flange-Female



Top View

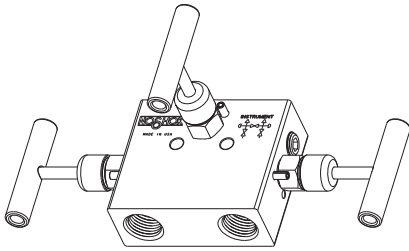


Side View

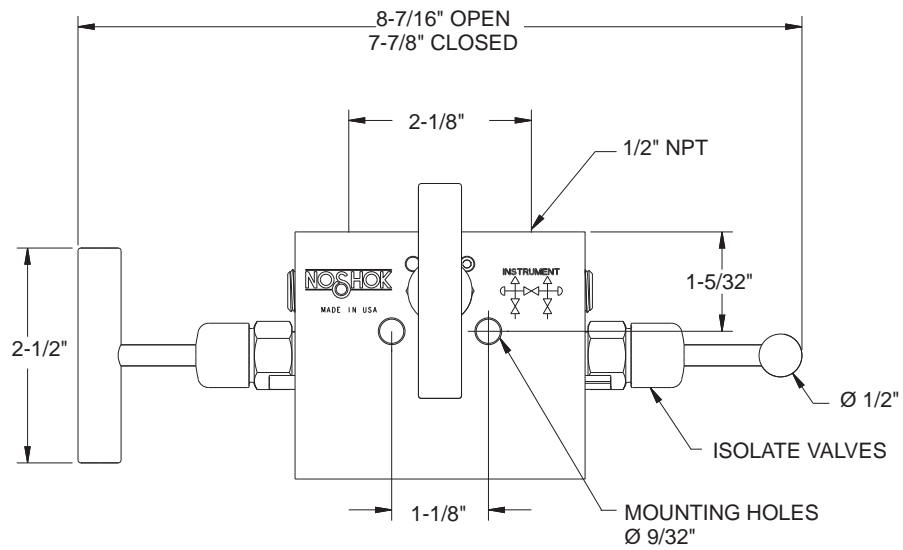


Dimensions

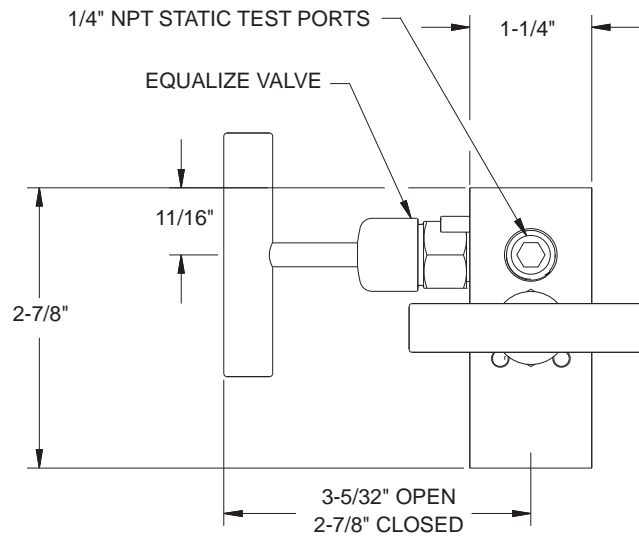
Female-Female



Top View



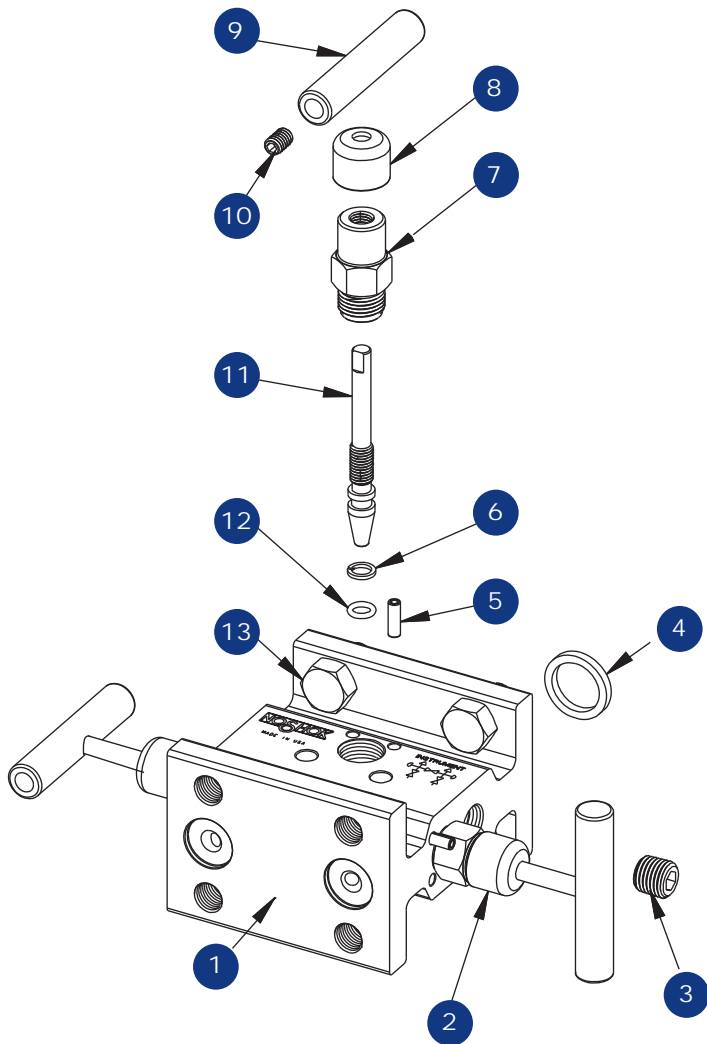
Side View



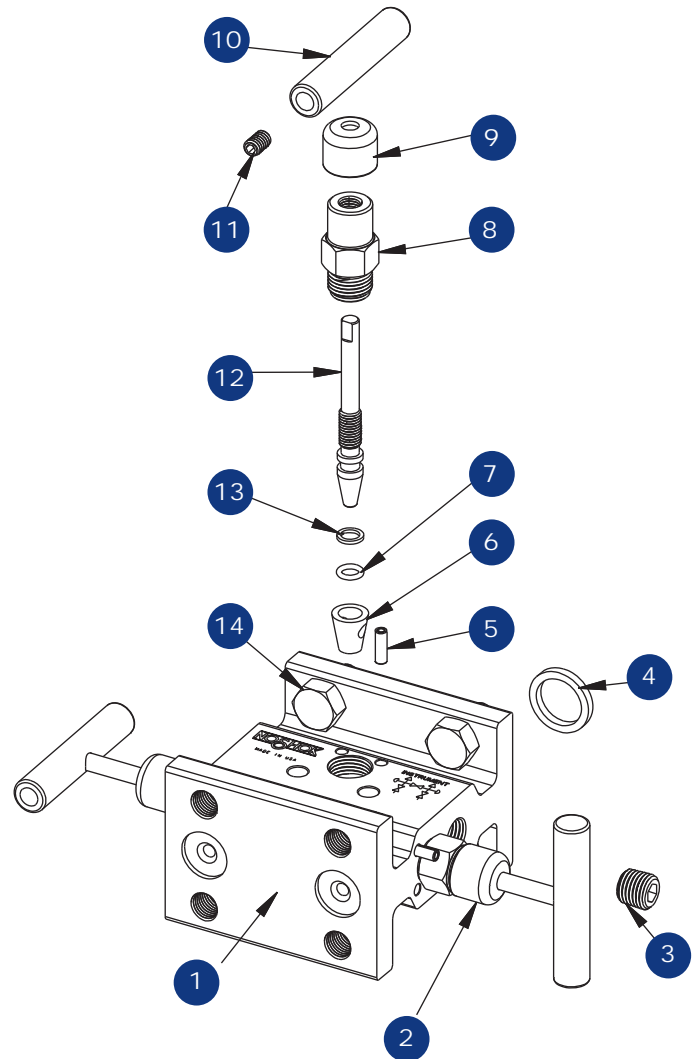
3010/3110 SERIES DIMENSIONS

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 Delrin® seat
- 7 FKM o-ring
- 8 Valve bonnet
- 9 Green dust cap
- 10 Valve "T" handle
- 11 Set screw
- 12 Valve stem
- 13 PTFE back-up ring
- 14 Head bolt

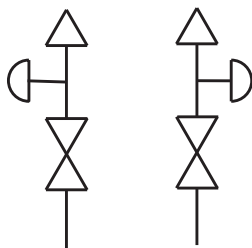
Soft Seat (0.375" Orifice)

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 Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy roddable cleaning
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling
- All stem threads are rolled for strength and ease of operation
- One-piece bonnet with a metal-to-metal seal to the valve body below the bonnet threads
- Slotted spring pin to prevent accidental loosening
- Color coded vinyl dust caps for bonnets and stems
- Non-rotating stem tip standard on isolation valves

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:



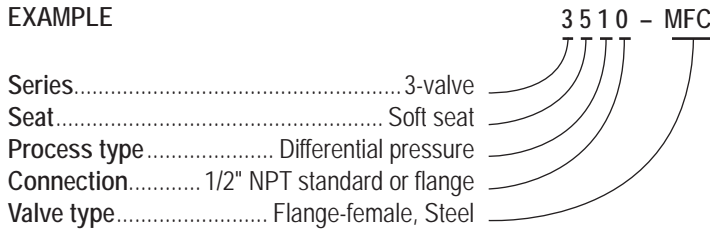
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

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



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:

SOFT SEATS	PK1 PEEK	KF1 PCTFE
O-RINGS*	EM1 EPDM	KZ1 FFKM (Kalrez® 3018 or equivalent) NB1 NBR
HANDLES	HL3 1" Round knurled	HL4 1-3/8" Phenolic HL5 1-3/4" Phenolic

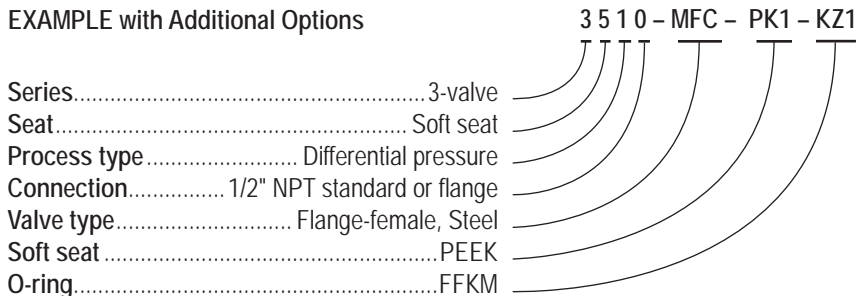
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

* 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).

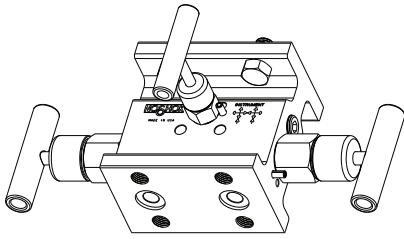
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle on the 3510-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

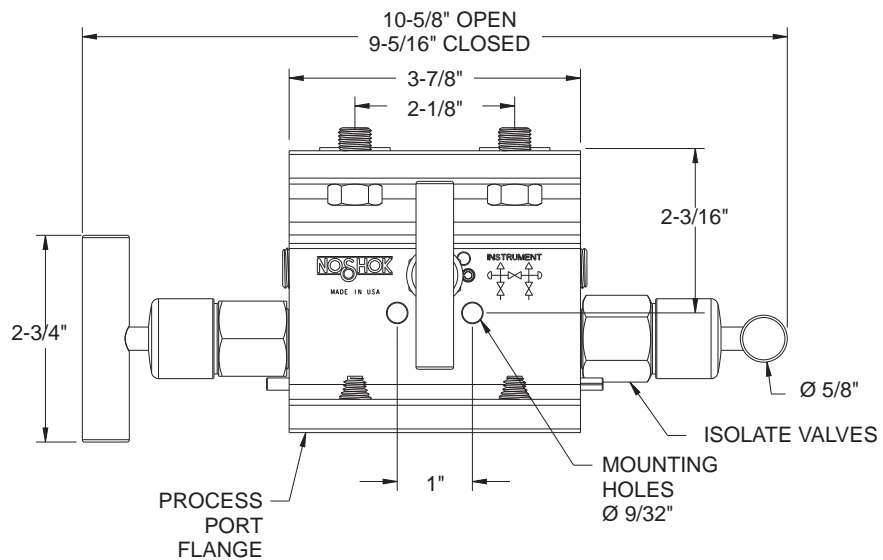


Dimensions

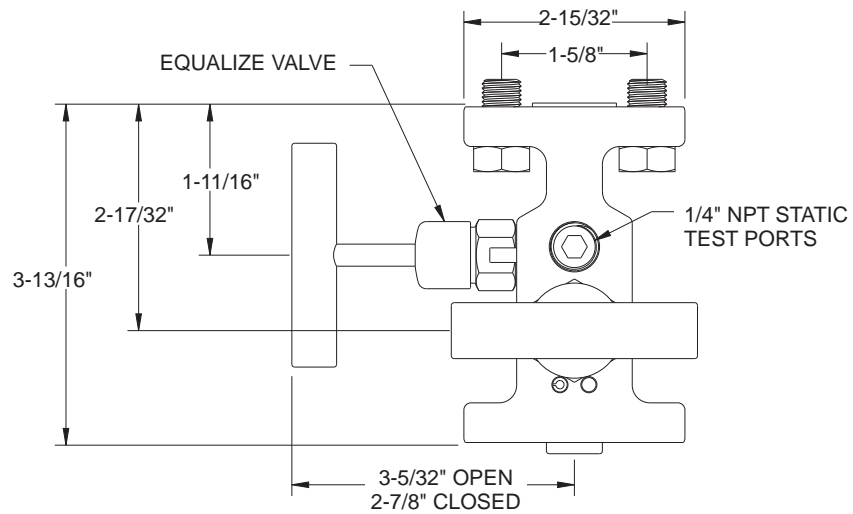
Flange-Flange



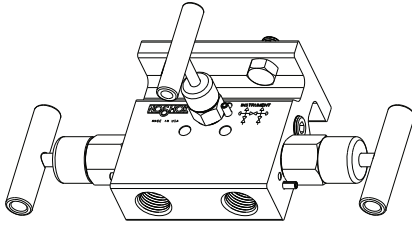
Top View



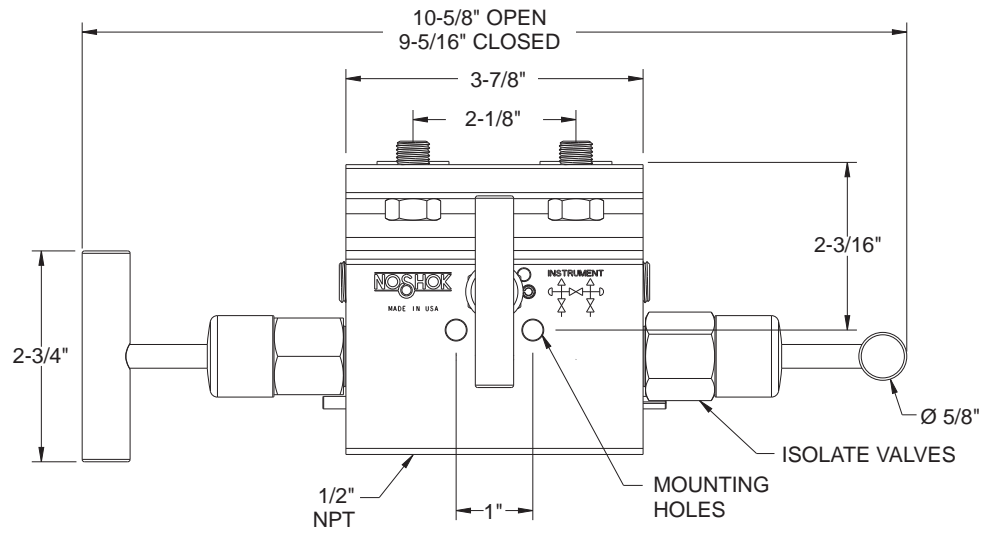
Side View



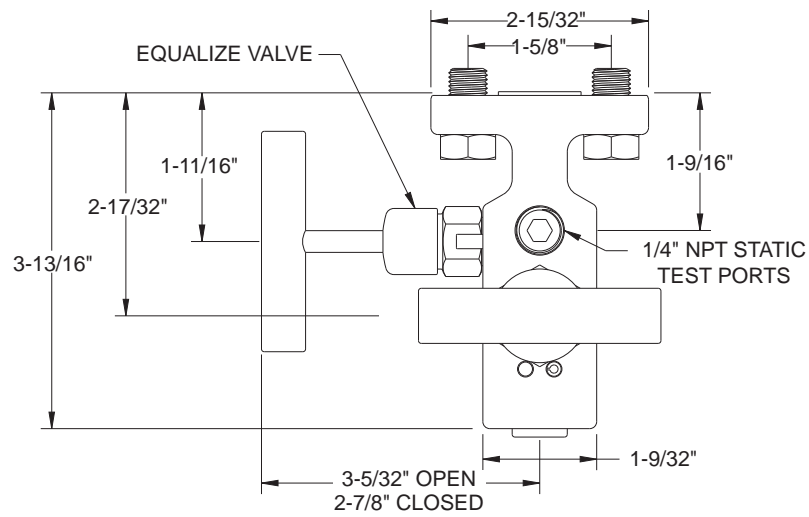
Flange-Female



Top View

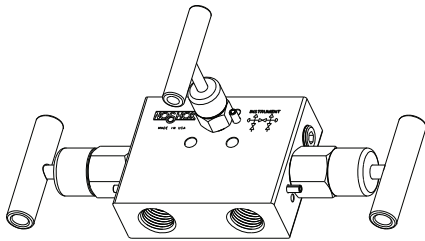


Side View

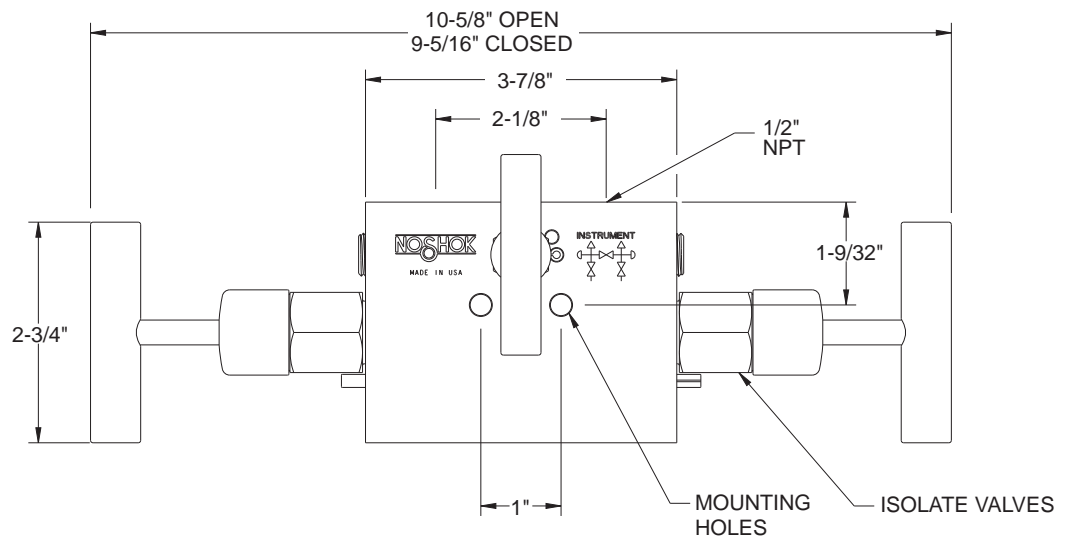


Dimensions

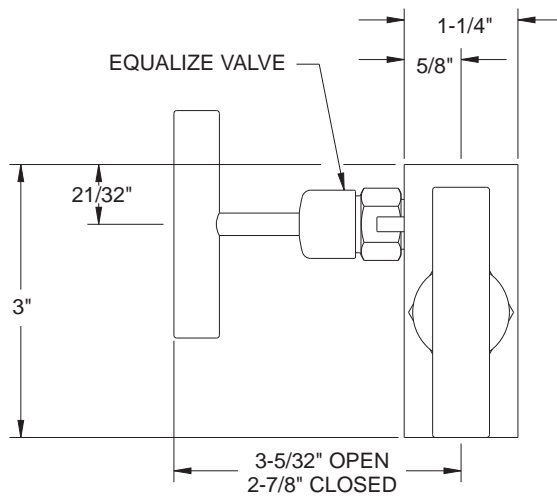
Female-Female



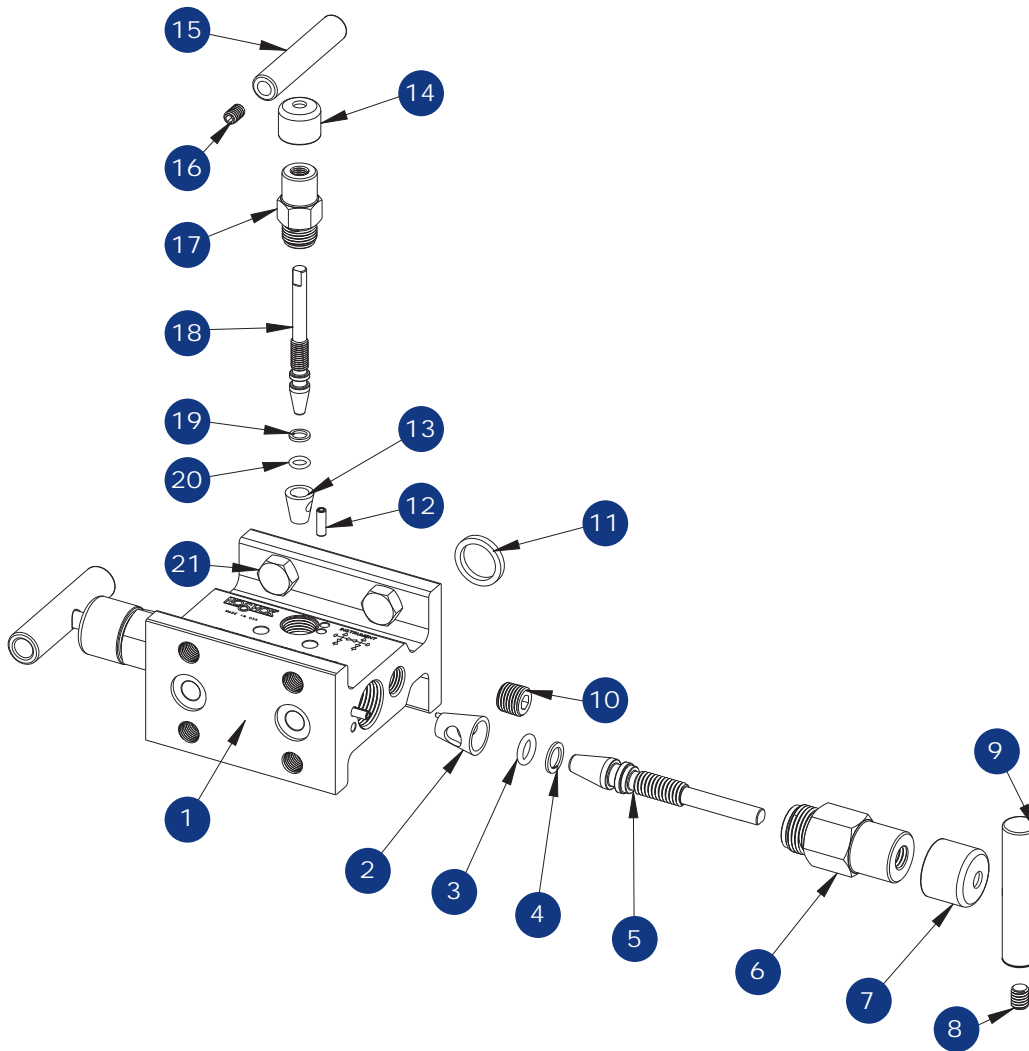
Top View



Side View



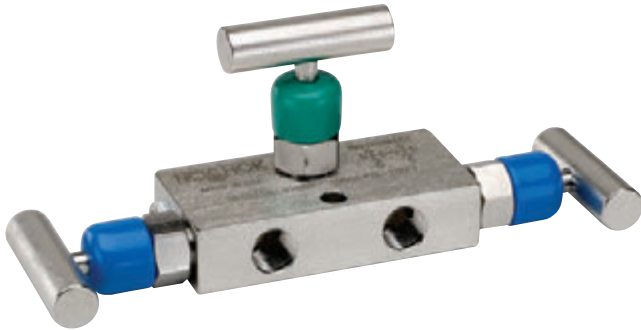
For panel mount or packing dimensions, see pg. 66.



- | | |
|------------------------------|-----------------------|
| 1 Valve body | 12 Slotted spring pin |
| 2 Delrin® seat | 13 Delrin® 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 | |

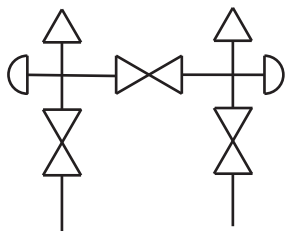
Mini, Hard Seat & Soft Tip (0.141" Orifice)

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 Delrin® non-rotating soft tip stem, and a back-up metal-to-metal seal (**U.S. Patent 6,820,857**)
- Blow-out proof stem provides a secondary stem seal in the full open position
- FKM o-ring seal and PTFE back-up ring below the stem threads to protect from corrosion and galling; PTFE or 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

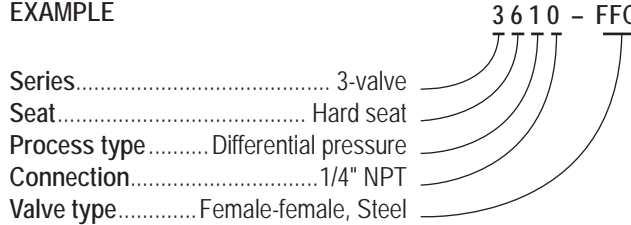
NOTE: All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

3610/3710 SERIES ORDERING INFORMATION

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***	
	T2	Delrin® (Acetal)***	T5	Ball (440C Stainless)**	
	T3	PCTFE***	T6	Ball (carbide)**	
O-RINGS*	EM1	EPDM	KZ1	FFKM (Kalrez® 3018 or equivalent)	
	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.

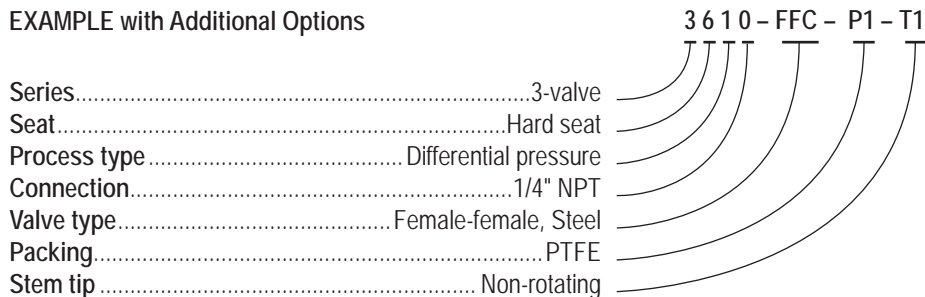
*** For 3710 only.

† 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).

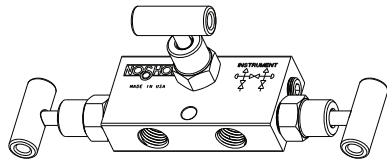
The handle material will always match the material of the valve, unless otherwise specified. For example, the 1-3/8" mini "T" handle (HL7) on the 3710-FFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application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

EXAMPLE with Additional Options

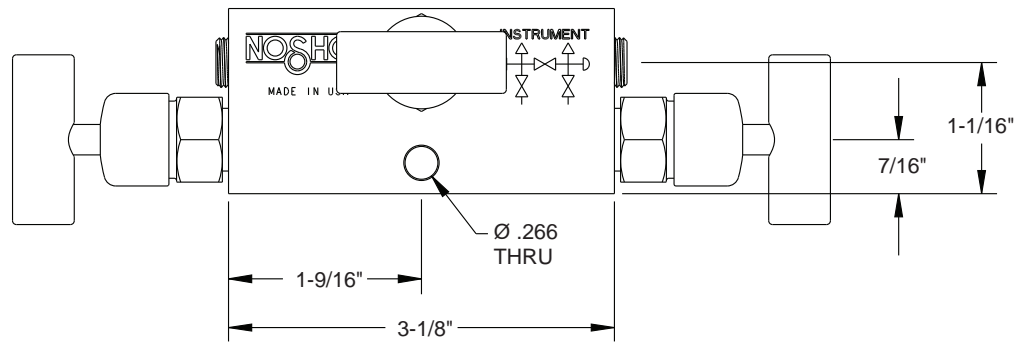


Dimensions

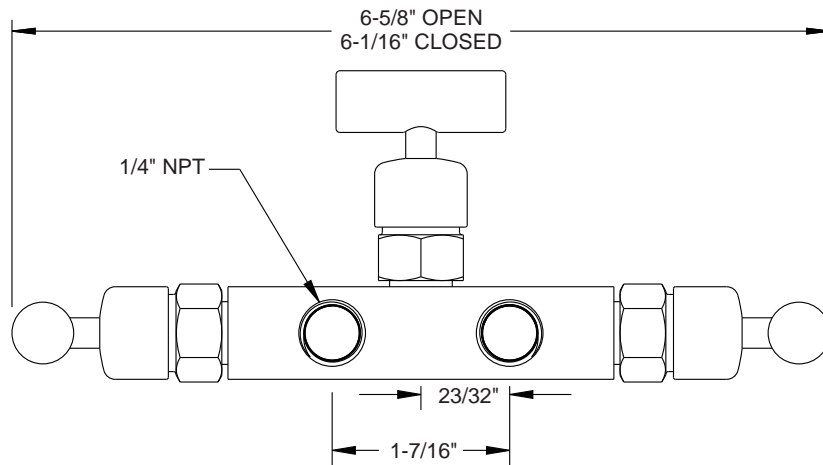
Female-Female



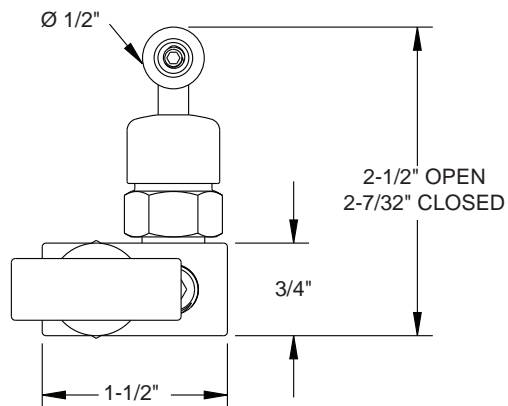
Top View



Front View

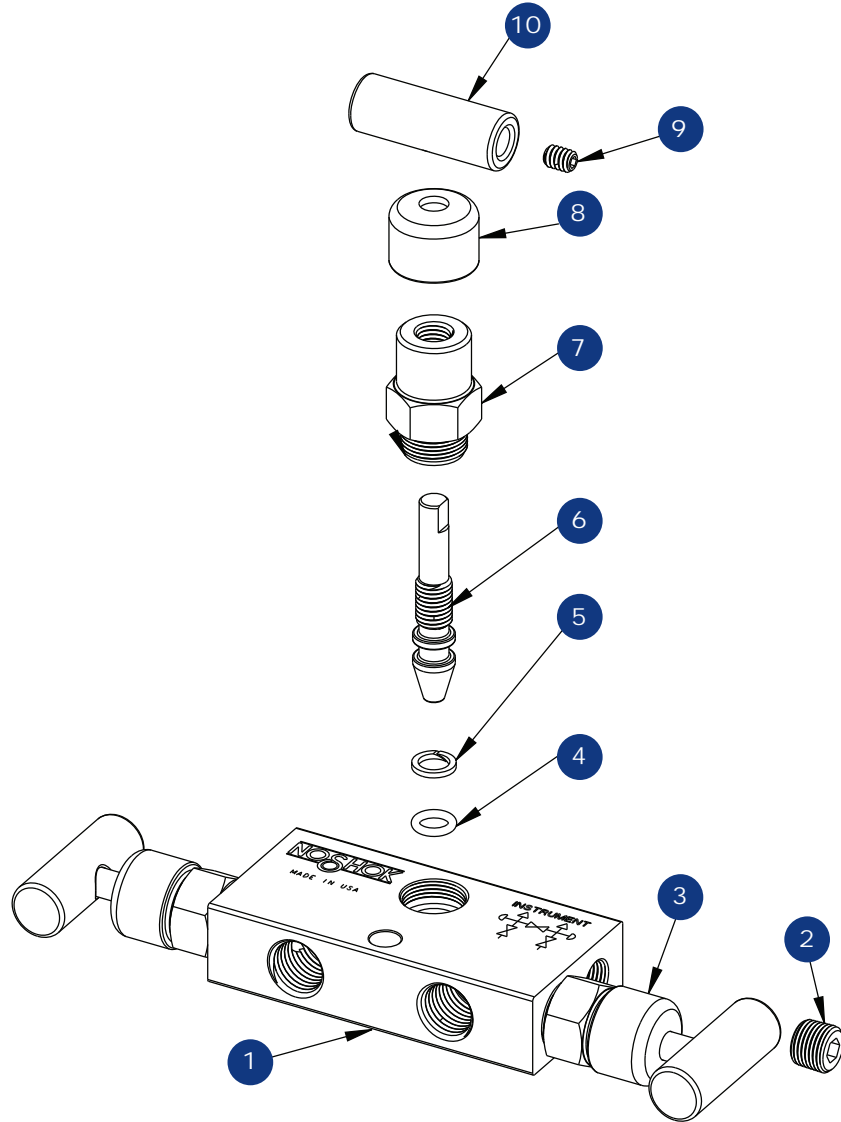


Side View



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

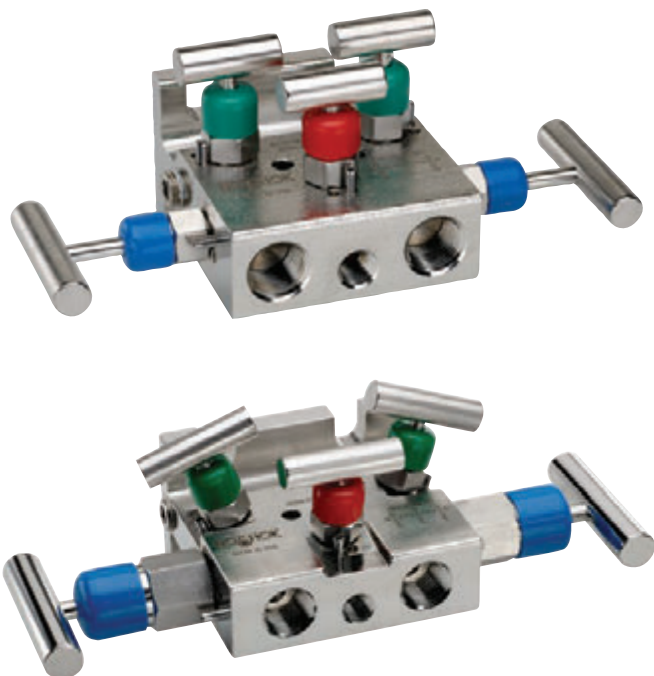
3610/3710 SERIES DIMENSIONS



- 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

- Designed for use with differential pressure transmitters incorporating two isolation valves, two equalizing valves and a vent valve required in natural gas applications
- Flare Pattern™ valve configuration provides maximum clearance for fingers during operation
- Soft tip valves feature a patented Delrin® non-rotating soft tip stem, and a back-up metal-to-metal seal (**U.S. Patent 6,820,857**)
- Available in block, single flange, or double flange connection for remote or direct installation
- 100% helium leak tested to 1×10^{-4} ml/s for performance and reliability
- 5130 Series valves also feature a replaceable Delrin® seat, and straight through porting for bidirectional, high capacity flow and easy 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

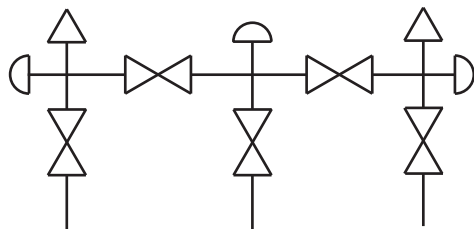
For NOSHOK Valves with Stainless Steel valve types:



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



Flow Schematic



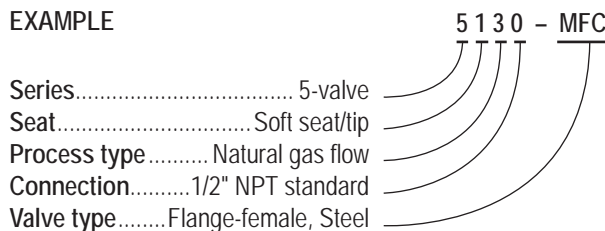
NOTE: All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

5030/5130 SERIES ORDERING INFORMATION

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 Delrin****
	T2 Delrin® (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 (Kalrez® 3018 or equivalent)		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.

† 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.

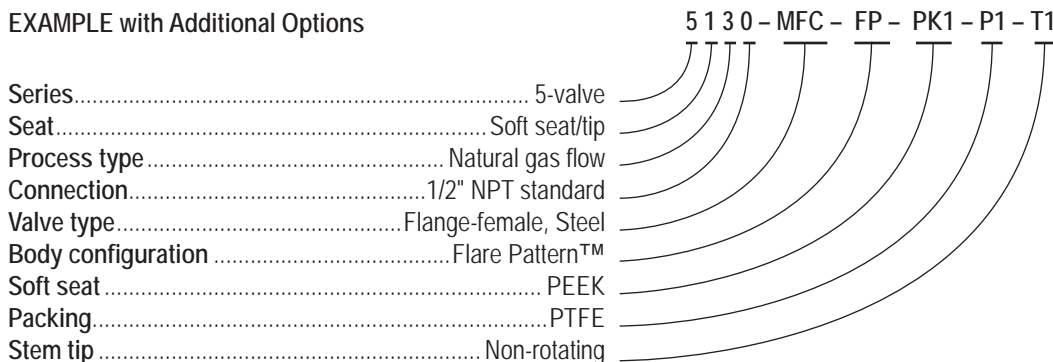
** For 5030 only.

*** For 5130 only.

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).

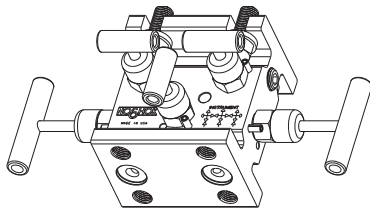
The handle material will always match the material of the valve, unless otherwise specified. For example, handles on the 5130-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

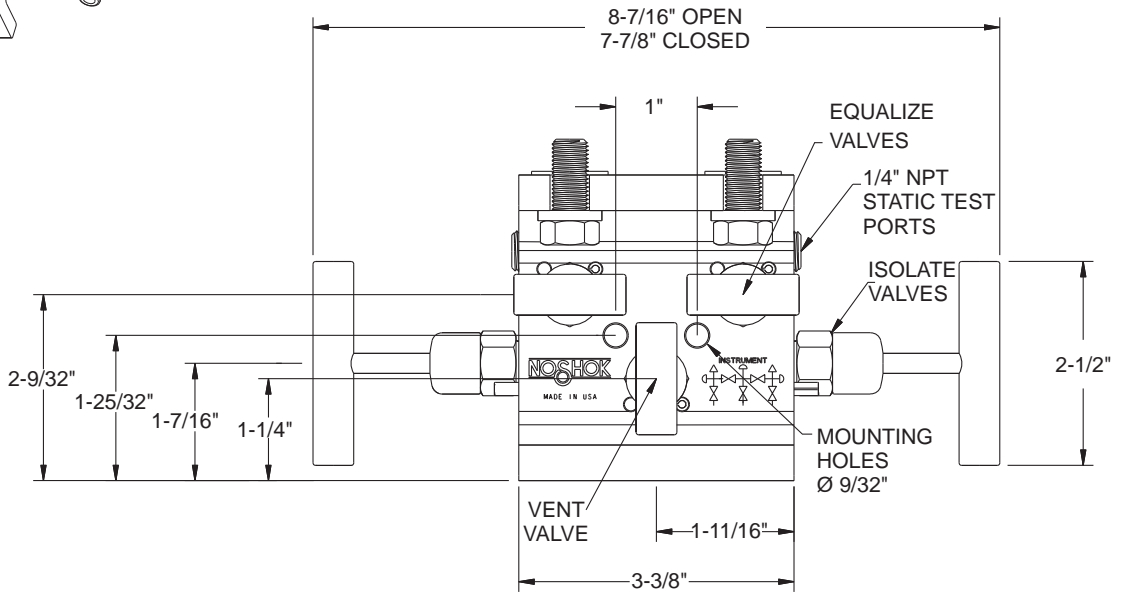


Dimensions

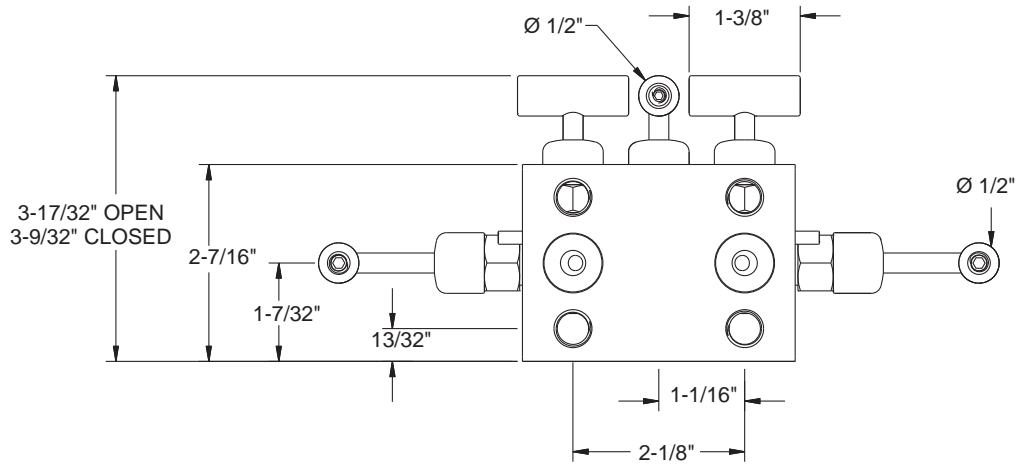
Flange-Flange



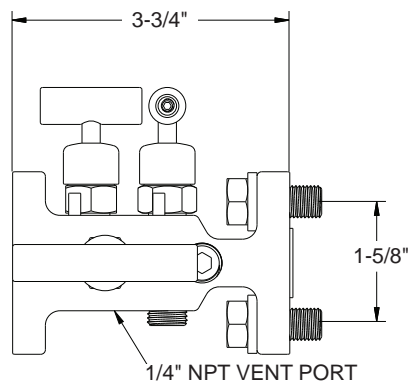
Top View



Front View

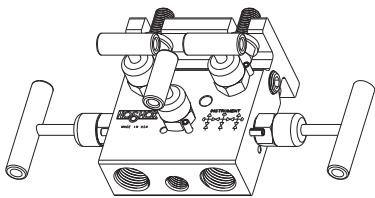


Side View

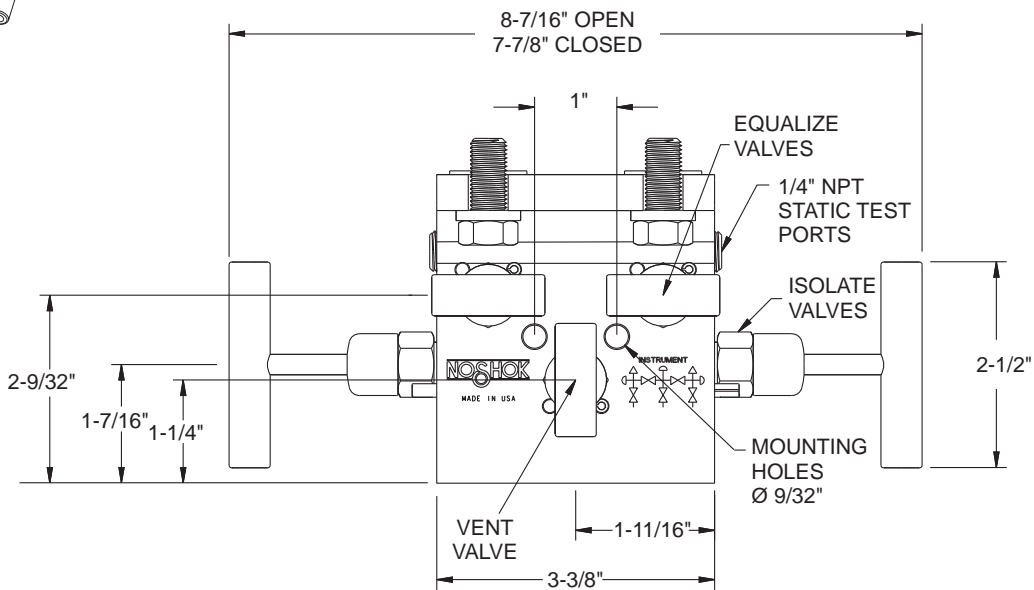


5030/5130 SERIES DIMENSIONS

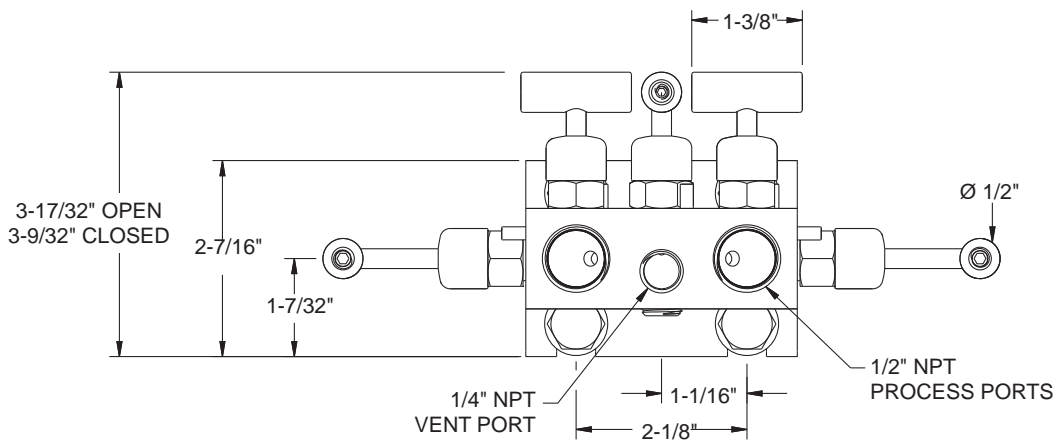
Flange-Female



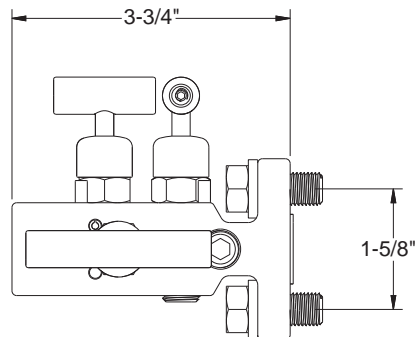
Top View



Front View

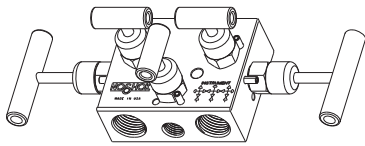


Side View

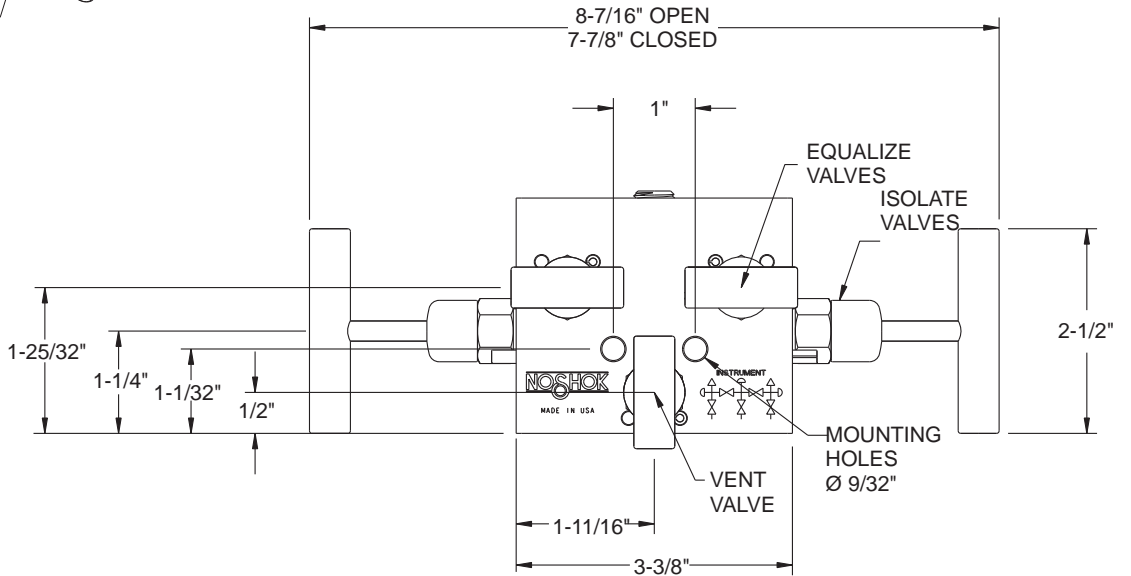


Dimensions

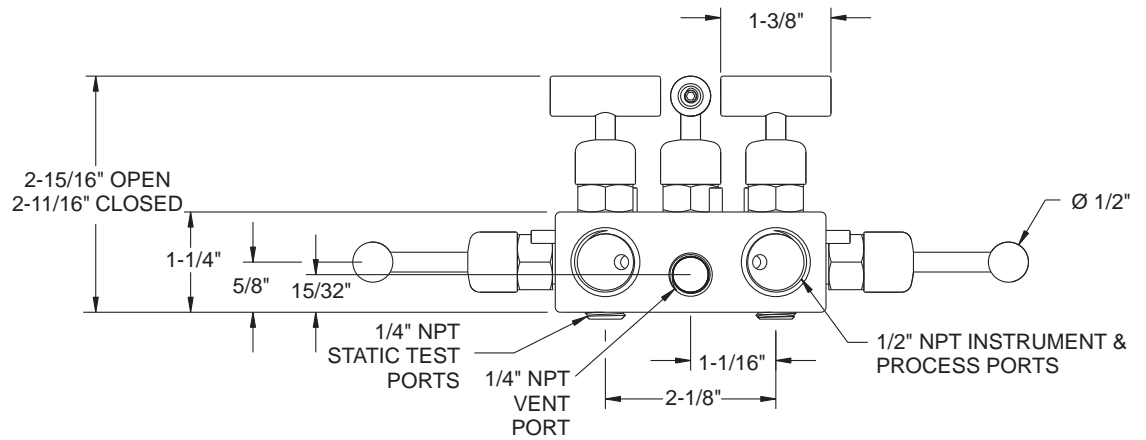
Female-Female



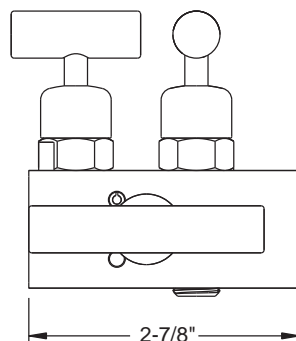
Top View



Front View



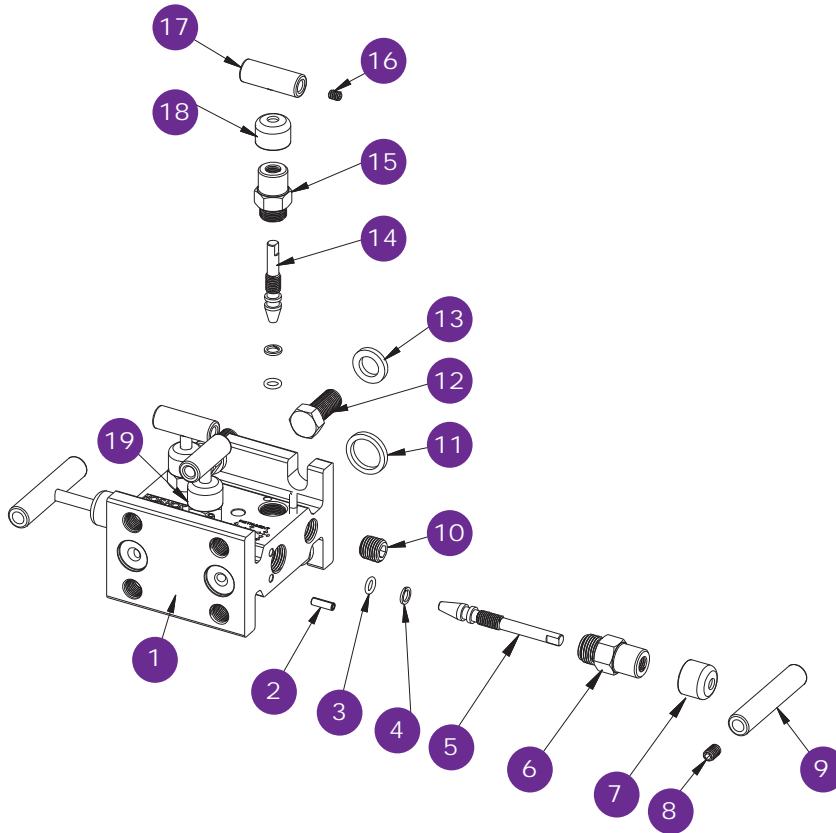
Side View



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

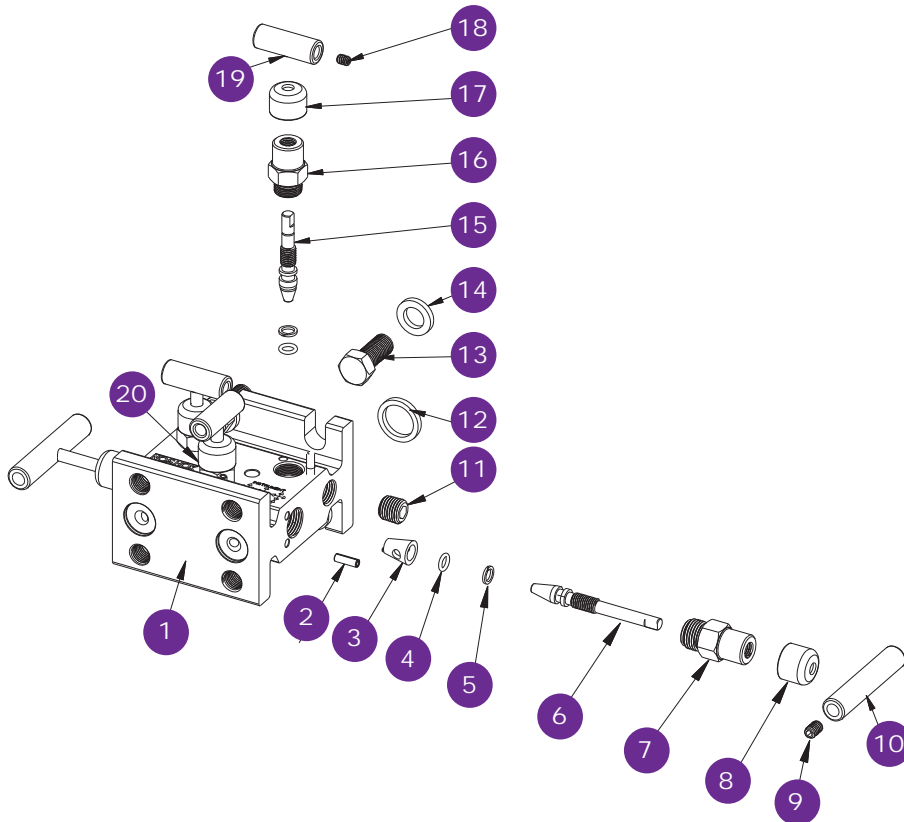
5030/5130 SERIES DIMENSIONS

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

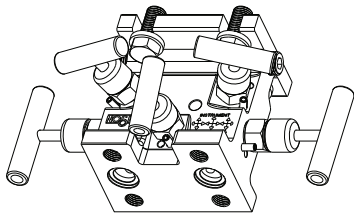
Soft Seat



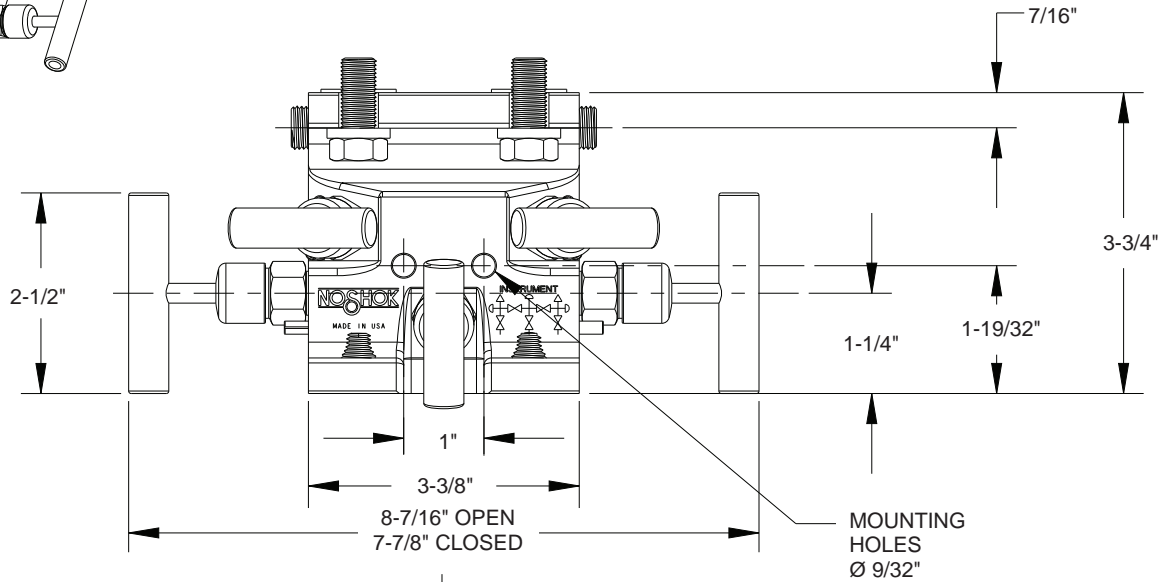
- 1 Valve body
- 2 Slotted spring pin
- 3 Delrin® seat
- 4 FKM o-ring
- 5 PTFE back-up ring
- 6 Valve stem
- 7 Valve bonnet
- 8 Blue dust cap
- 9 Set screw
- 10 Valve "T" handle
- 11 Plug
- 12 Gasket ring
- 13 Head bolt
- 14 Washer
- 15 Soft tip stem
- 16 Mini valve bonnet
- 17 Green dust cap
- 18 Set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

Dimensions

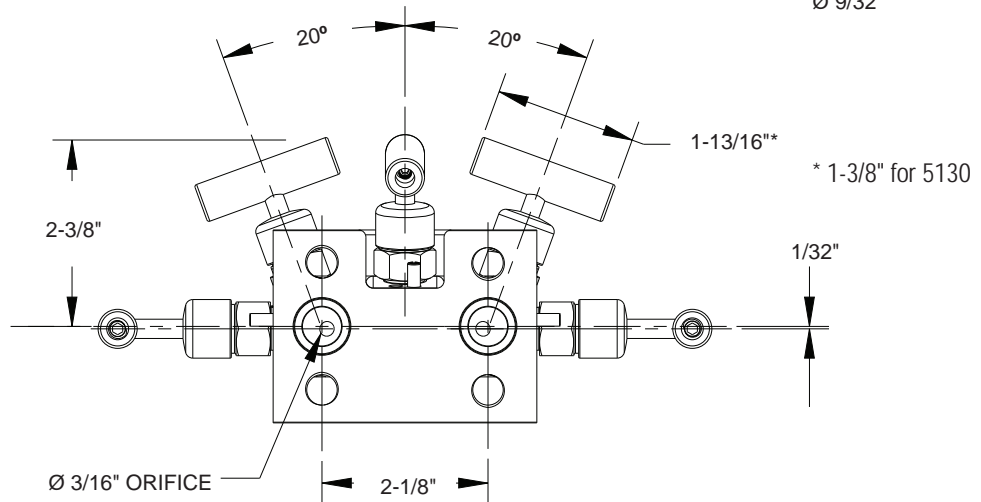
Flare Pattern™ Flange-Flange



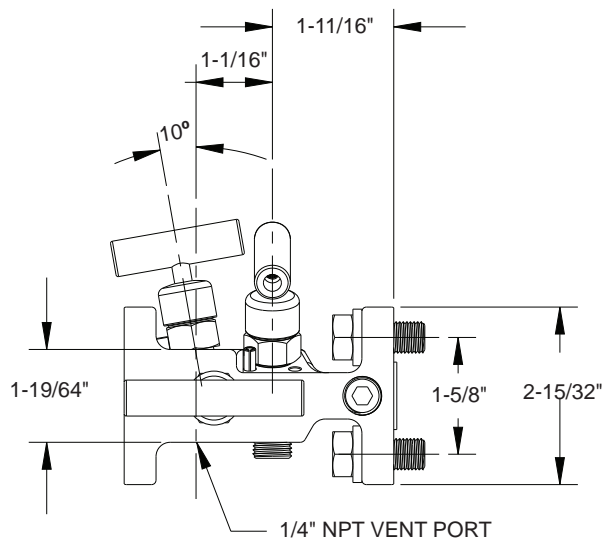
Top View



Front View

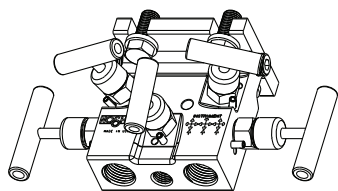


Side View

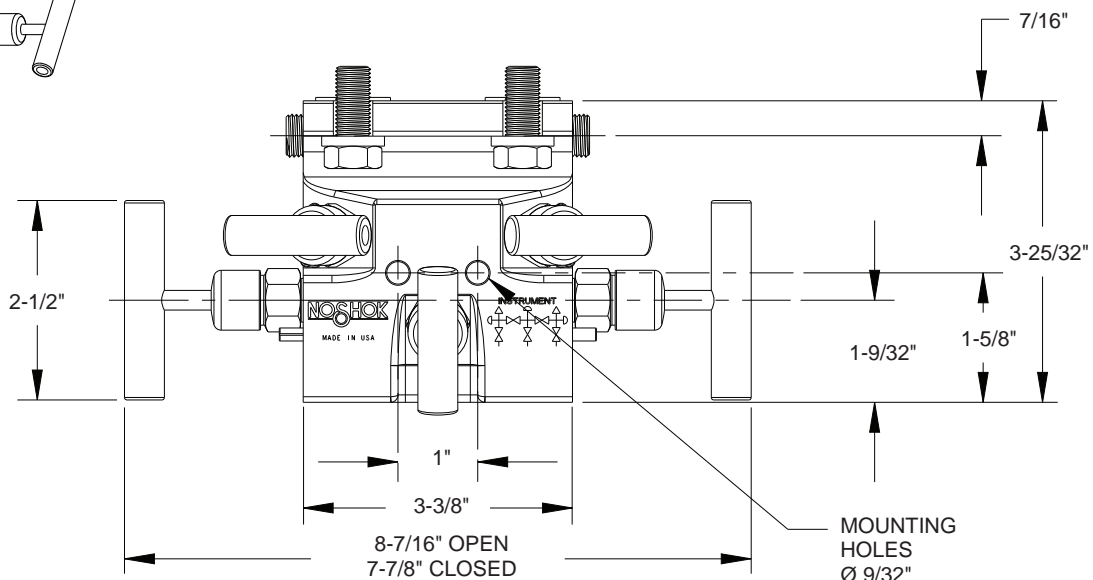


5030/5130 SERIES DIMENSIONS

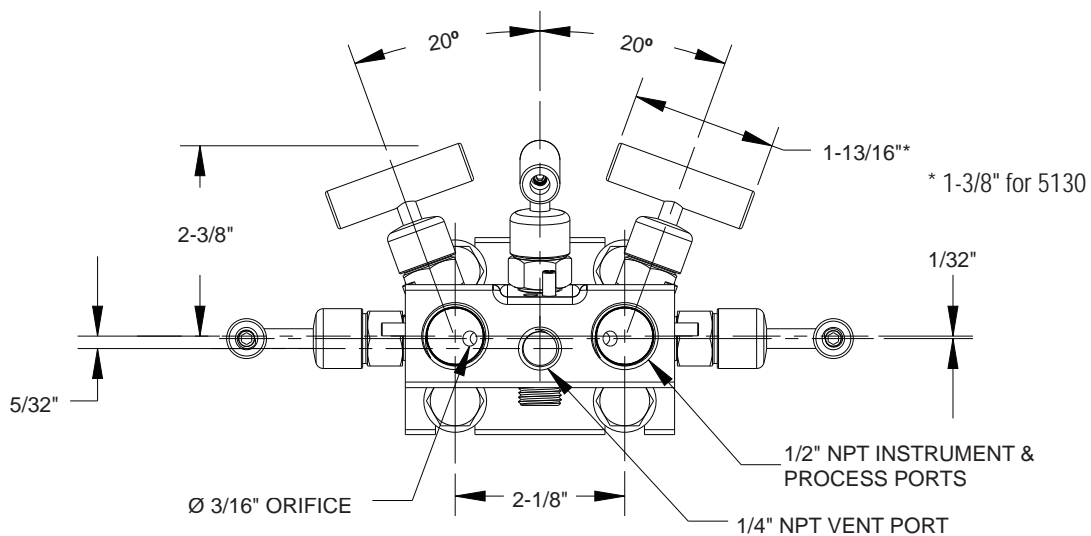
Flare Pattern™ Flange-Female



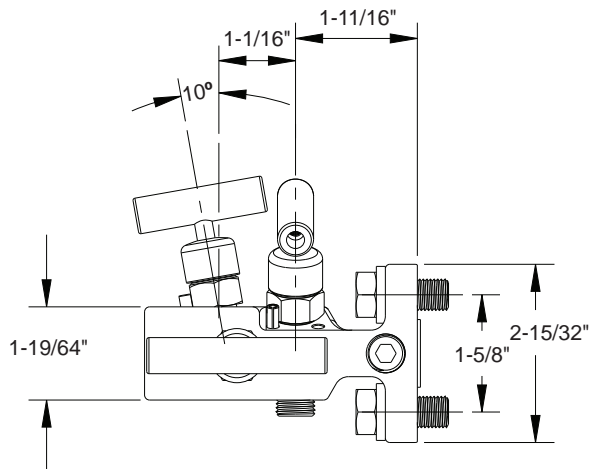
Top View



Front View

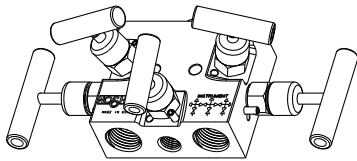


Side View

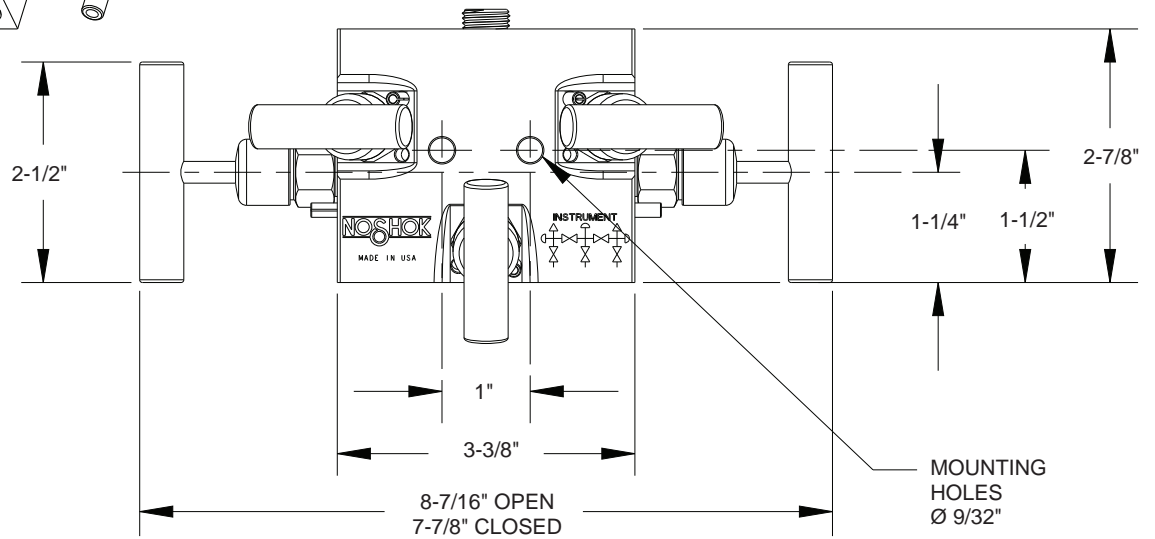


Dimensions

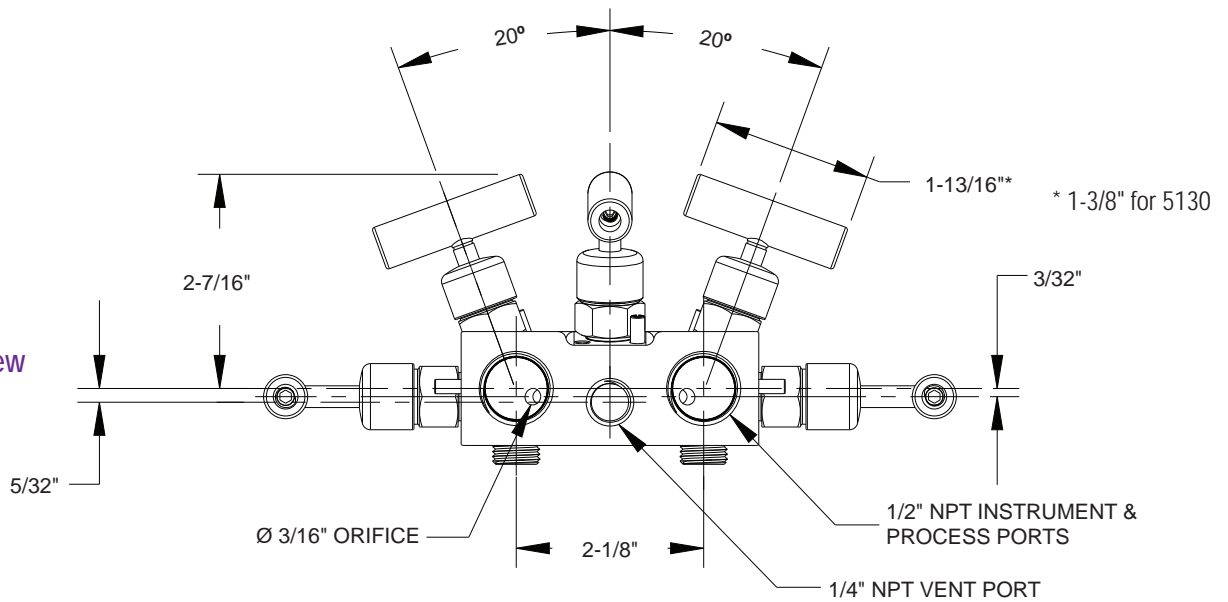
Flare Pattern™ Female-Female



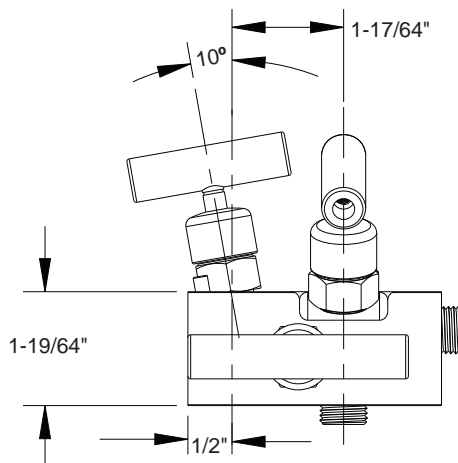
Top View



Front View



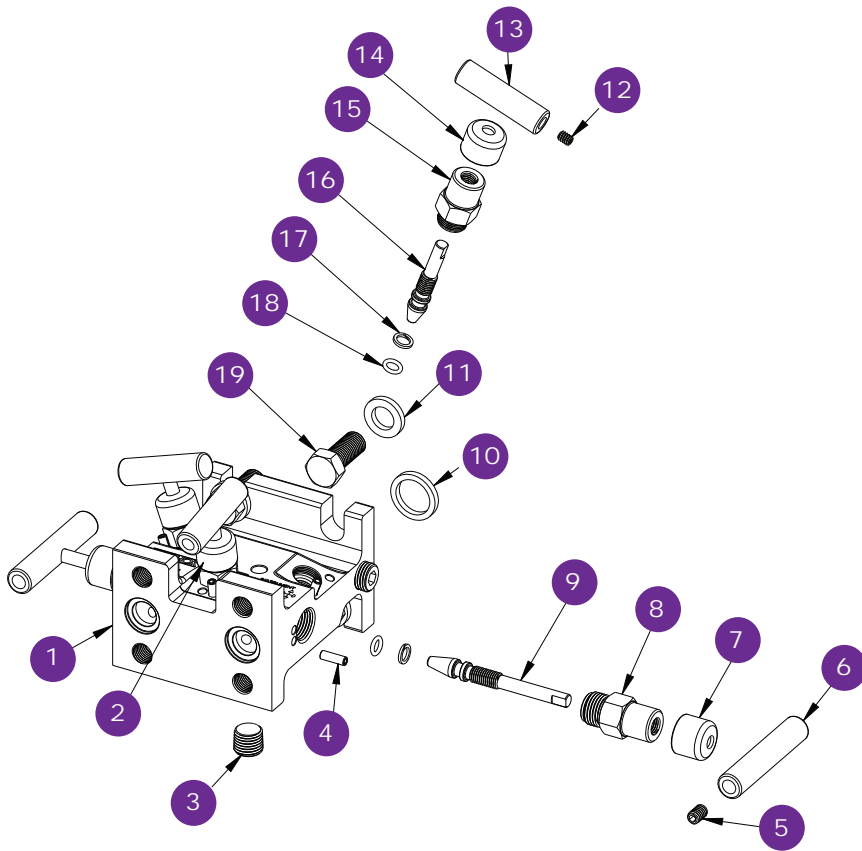
Side View



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

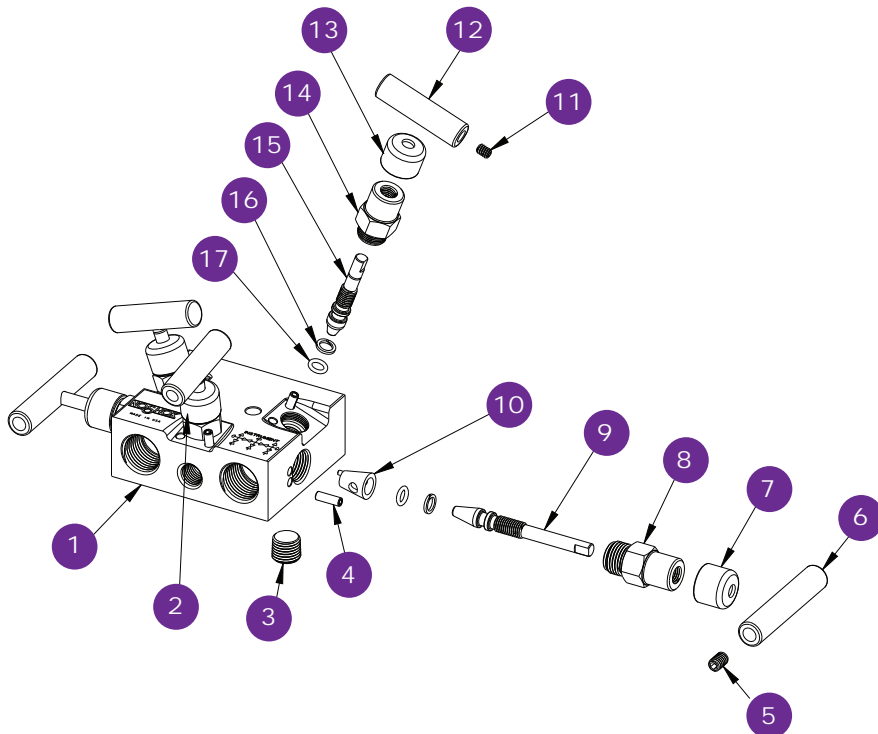
5030/5130 SERIES DIMENSIONS

Hard Seat



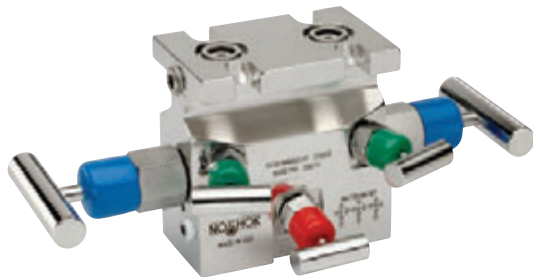
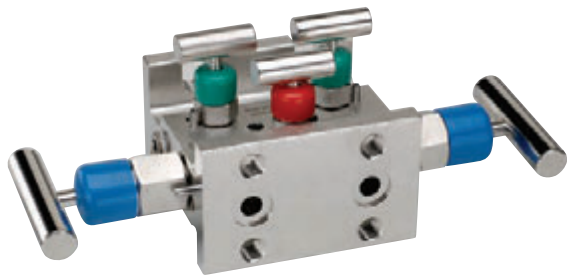
- 1 Flare Pattern™ valve body
- 2 Red dust cap
- 3 Plug
- 4 Slotted spring pin
- 5 Set screw
- 6 Valve "T" handle
- 7 Blue dust cap
- 8 Valve bonnet
- 9 Valve stem
- 10 Gasket ring
- 11 Washer
- 12 Set screw
- 13 Mini valve "T" handle
- 14 Green dust cap
- 15 PTFE back-up ring
- 16 Valve stem
- 17 PTFE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

Soft Seat/Tip (0.375" Orifice)



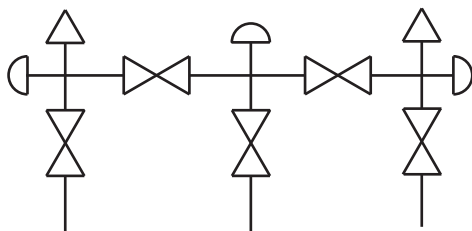
90° Angle option



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

SPECIFICATIONS

Materials	Zinc-Nickel plated 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

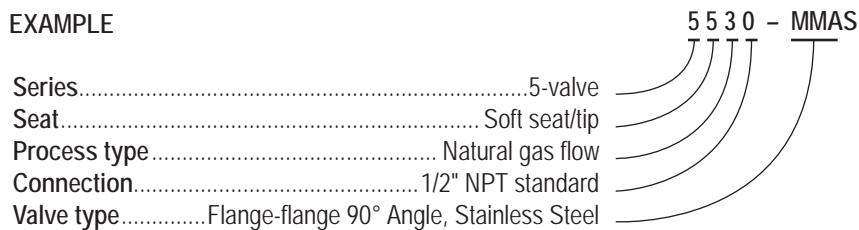
NOTE: All NOSHOK valve products conform to the MSS SP-99 instrument valves standards, and valves supplied with packing also conform to MSS SP-132 compression packing systems for instrument valves standard.

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



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:

BODY CONFIGURATION	FP	Flare Pattern™	
SOFT SEATS	PK1	PEEK	KF1 PCTFE
O-RINGS*	EM1	EPDM	KZ1 FFKM (Kalrez® 3018 or equivalent) NB1 NBR
HANDLES	HL3	1" Round knurled	HL4 1-3/8" Phenolic

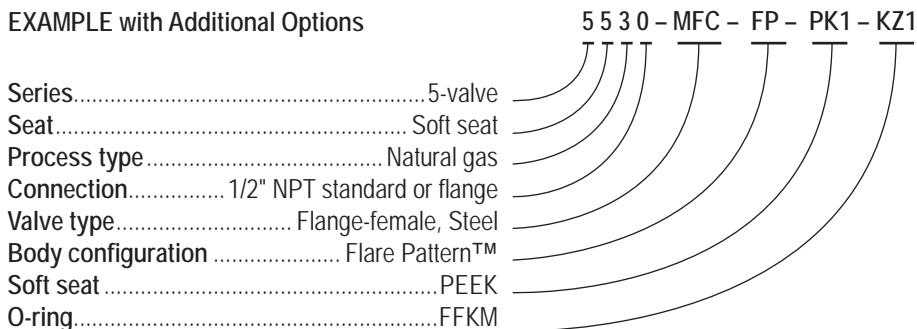
Please consult your local NOSHOK Distributor or NOSHOK, Inc. for availability and delivery information.

* 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 isolation "T" handles (HL8) and equalizing/vent 1-3/8" mini "T" handles (HL7).

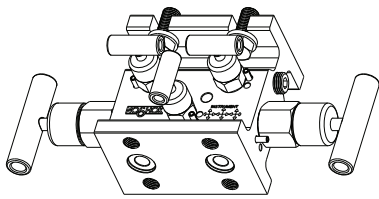
The handle material will always match the material of the valve, unless otherwise specified. For example, the "T" handle on the 5530-MFC will be Steel. When only the standard configuration is needed, no additional designations are necessary. Please consult the factory for special application requests.

EXAMPLE with Additional Options

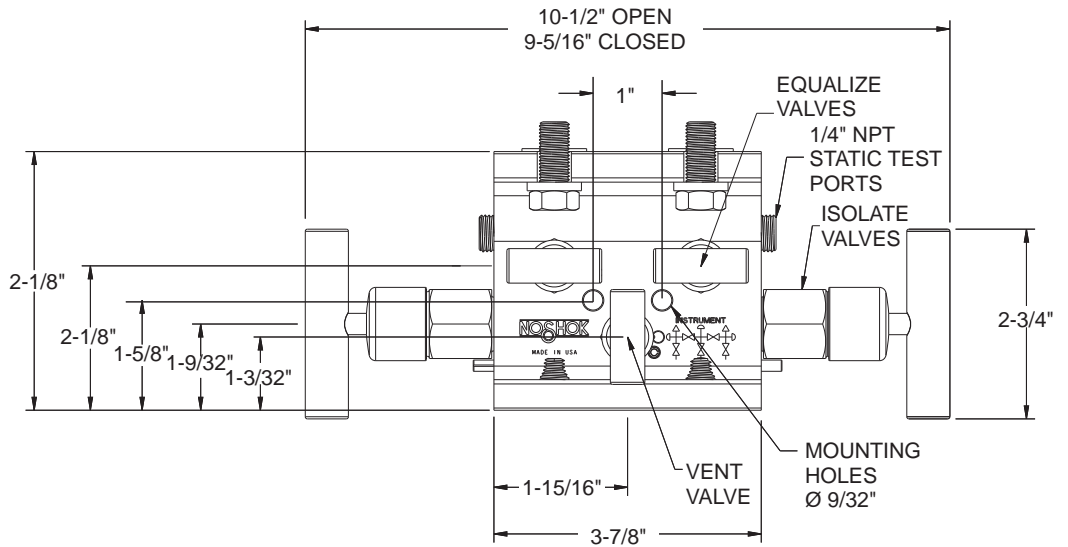


Dimensions

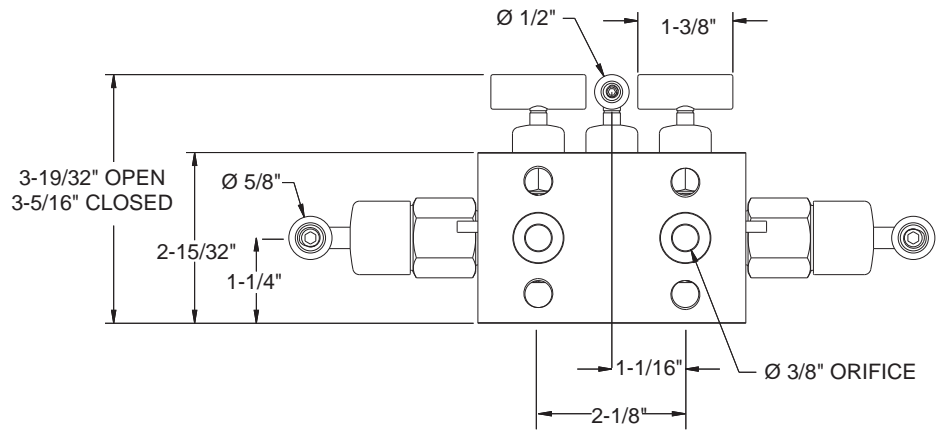
Flange-Flange



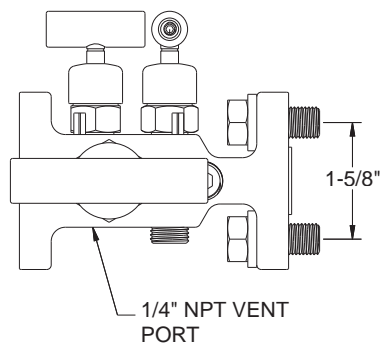
Top View



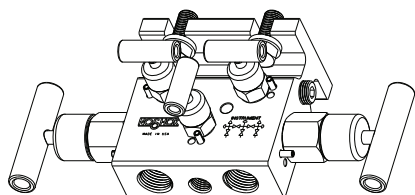
Front View



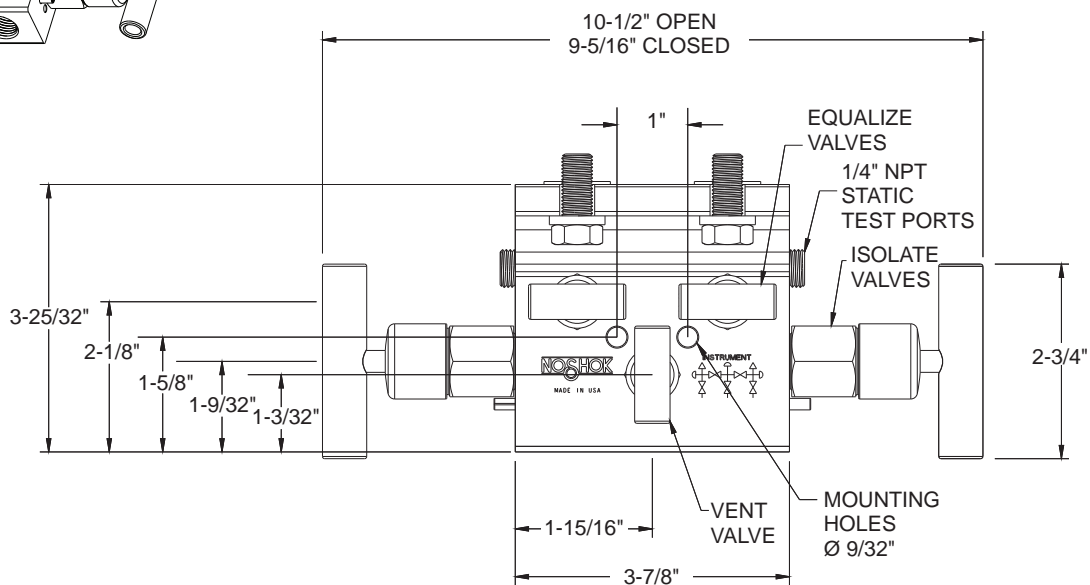
Side View



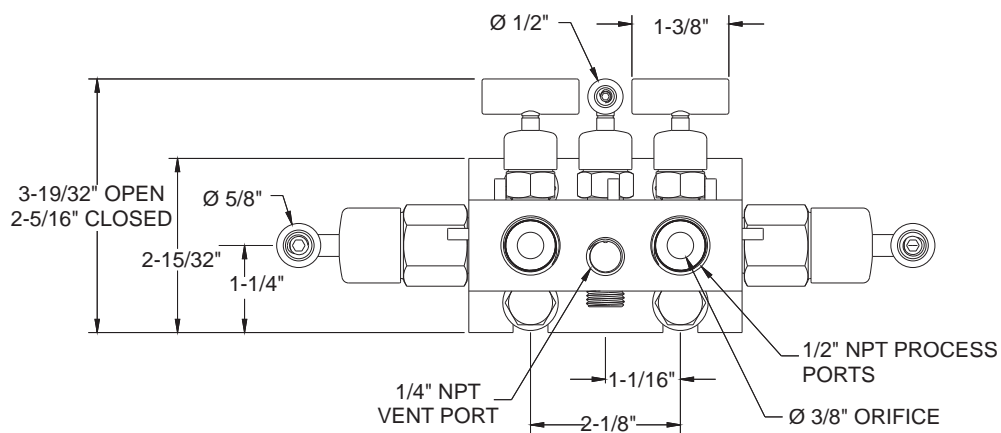
Flange-Female



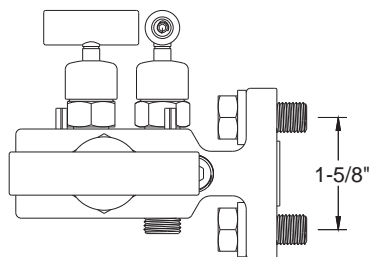
Top View



Front View

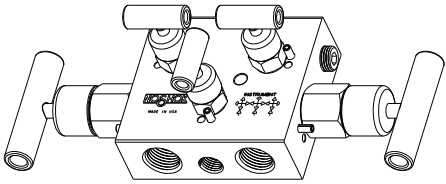


Side View

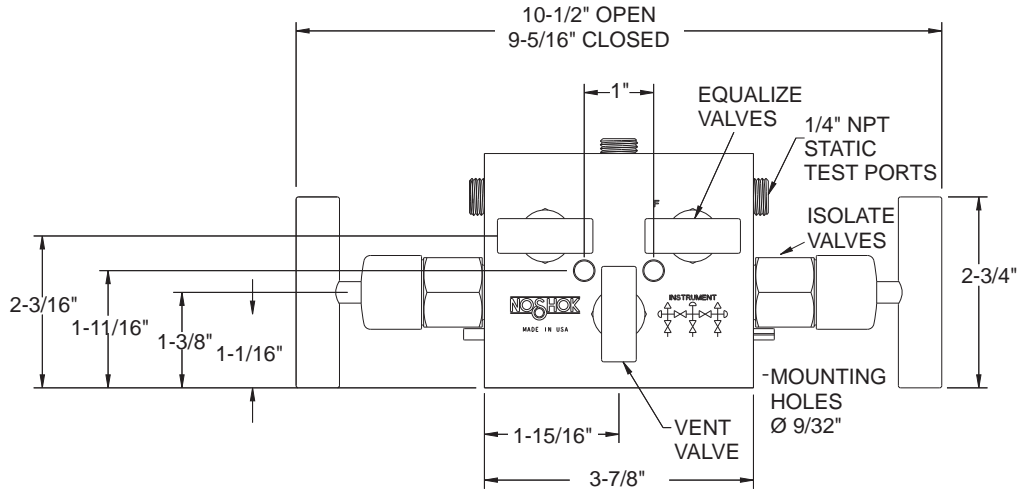


Dimensions

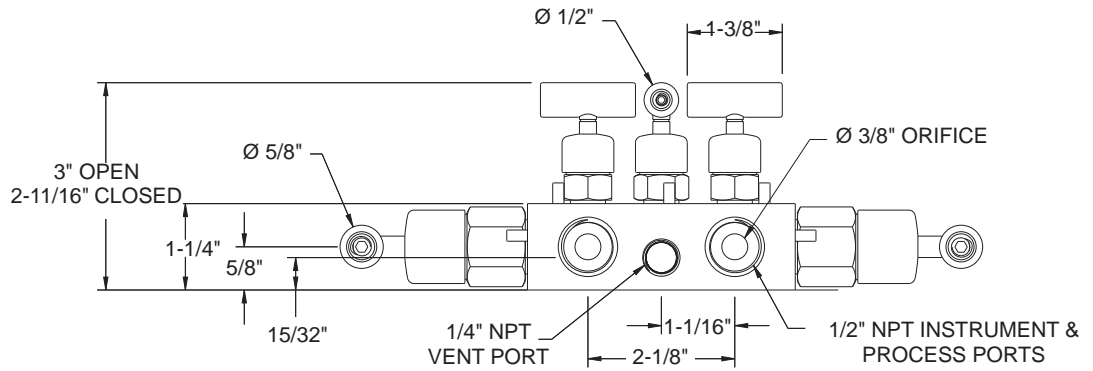
Female-Female



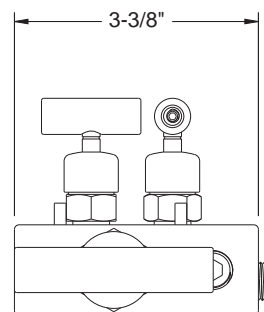
Top View



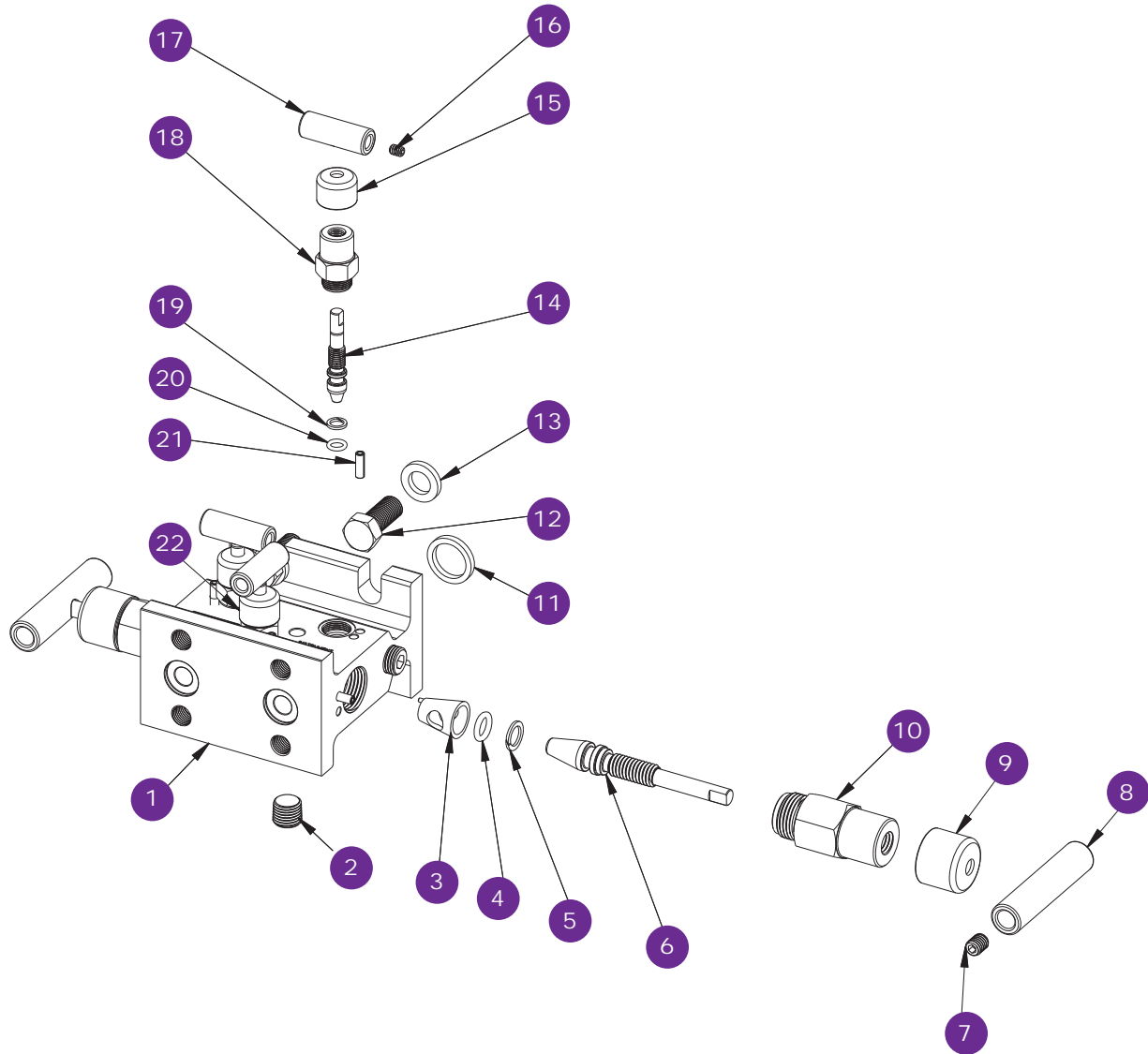
Front View



Side View



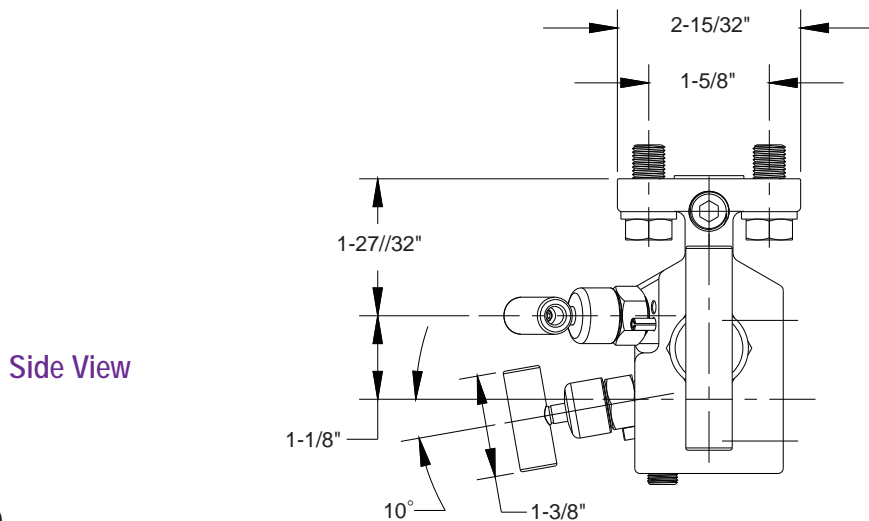
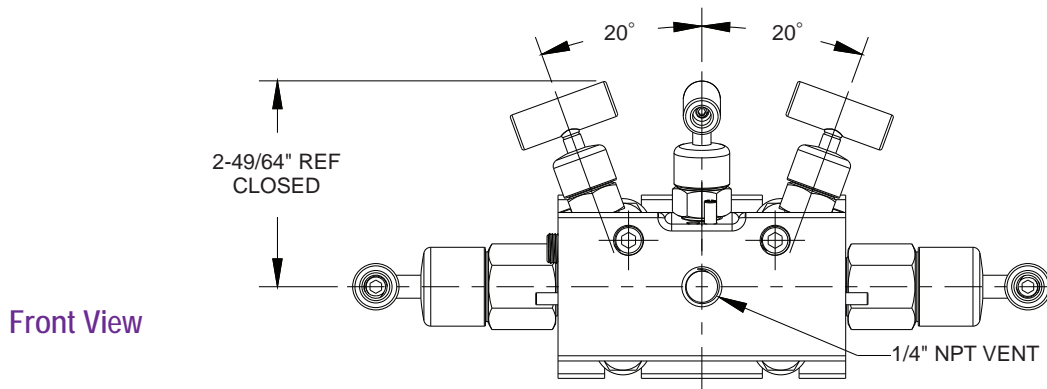
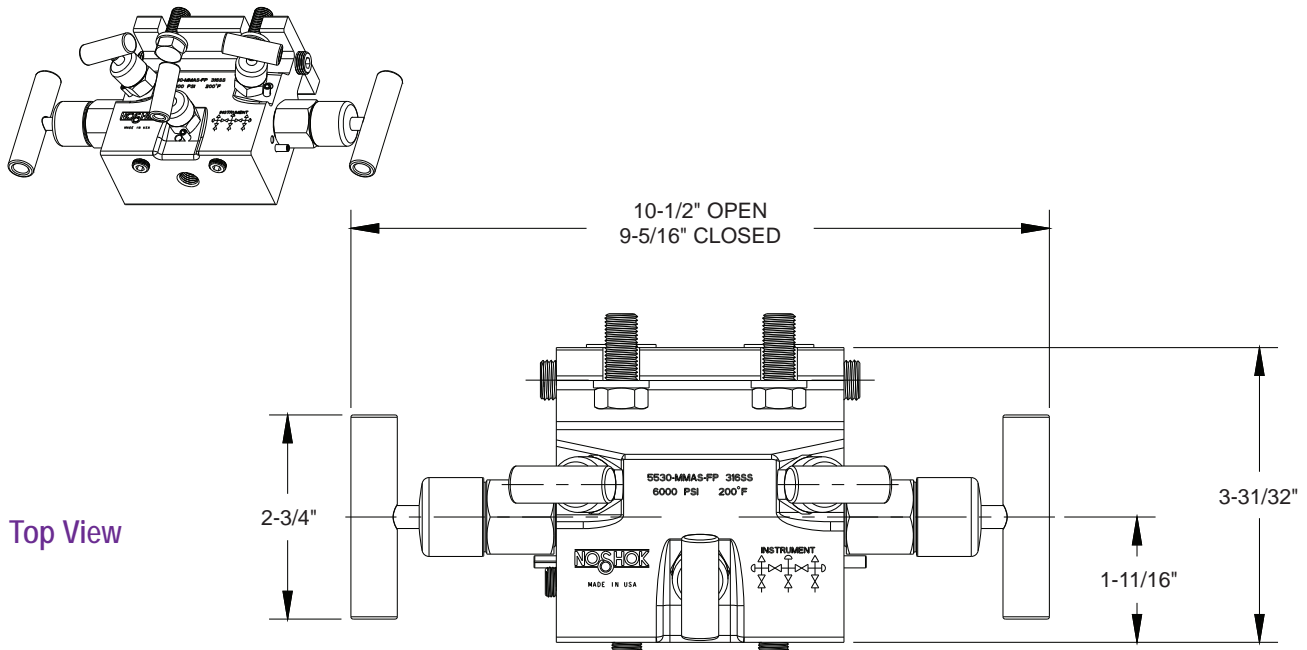
For panel mount or packing dimensions, see pg. 66.



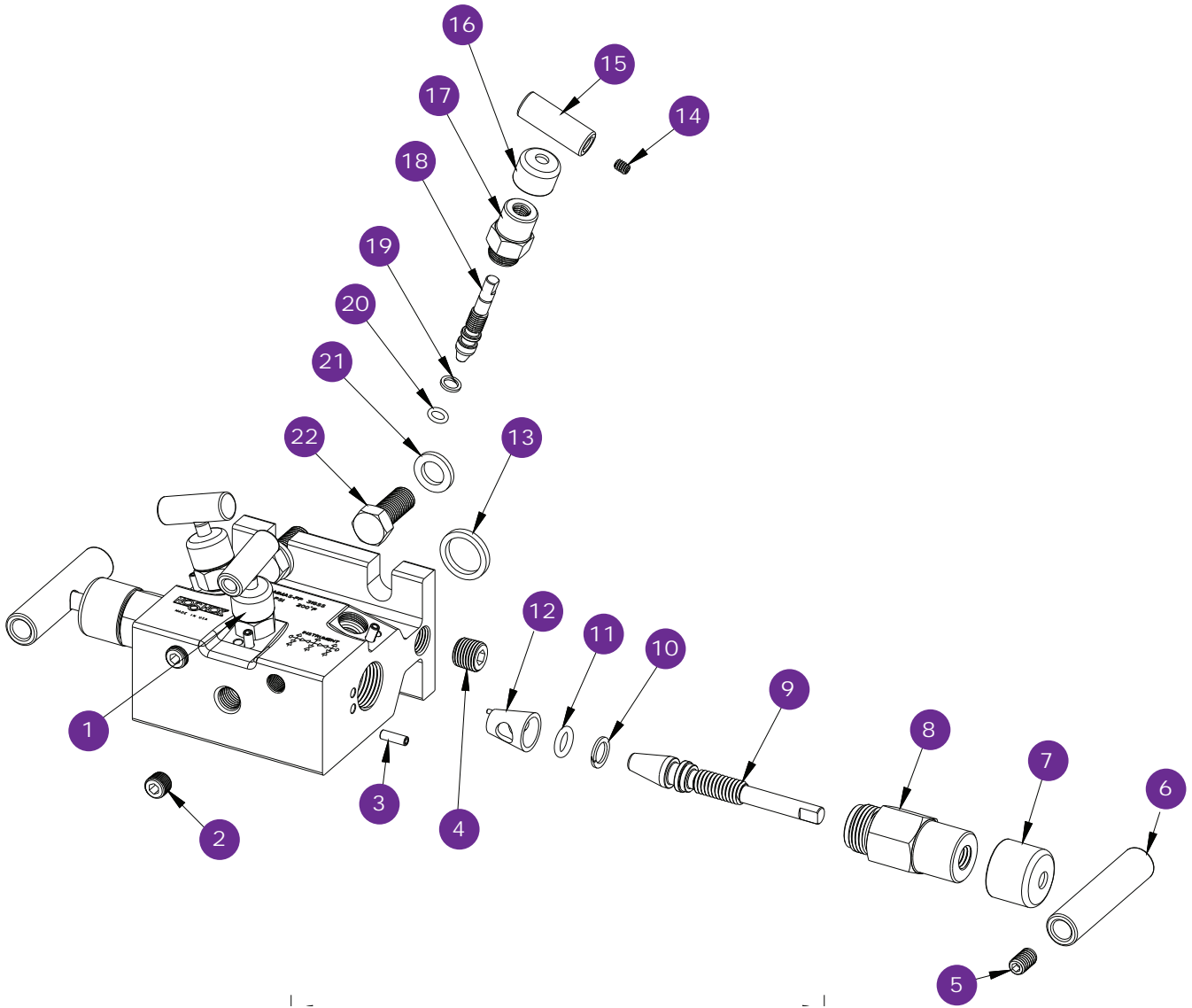
- | | |
|---------------------|--------------------------|
| 1 Valve body | 12 Head bolt |
| 2 Plug | 13 Washer |
| 3 Delrin® seat | 14 Soft tip stem |
| 4 FKM o-ring | 15 Green dust cap |
| 5 PTFE back-up ring | 16 Set screw |
| 6 Non-rotating stem | 17 Mini valve "T" handle |
| 7 Set screw | 18 Mini 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



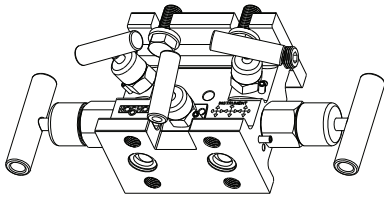
5530 SERIES DIMENSIONS



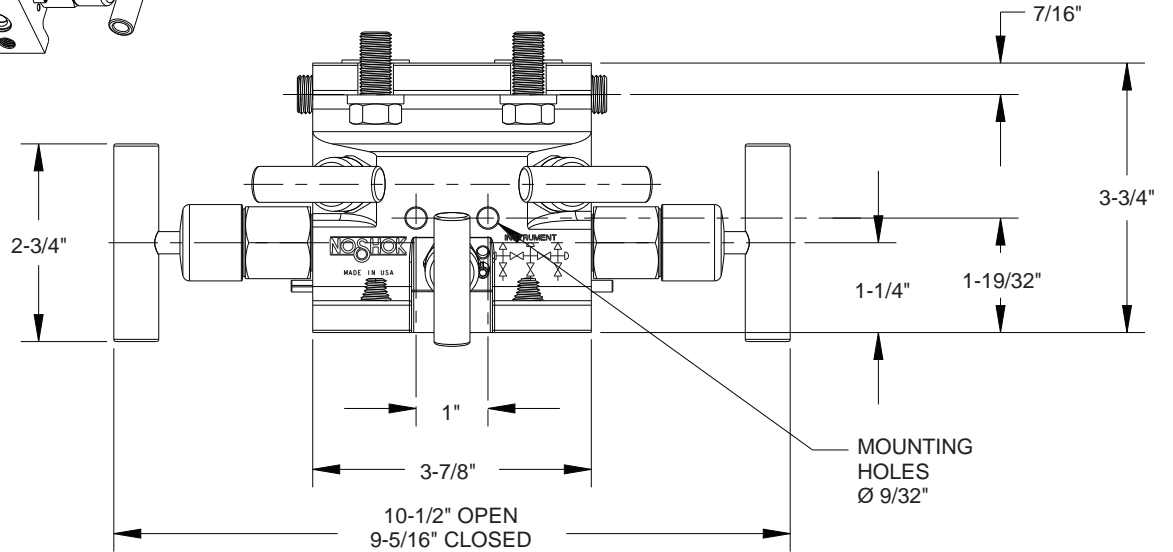
- | | |
|----------------------|--------------------------|
| 1 Red dust cap | 13 Gasket ring |
| 2 Plug | 14 Set screw |
| 3 Slotted spring pin | 15 Mini valve "T" handle |
| 4 Plug | 16 Green dust cap |
| 5 Set screw | 17 Mini valve bonnet |
| 6 Valve "T" handle | 18 Soft tip stem |
| 7 Blue dust cap | 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 Delrin® seat | |

Dimensions

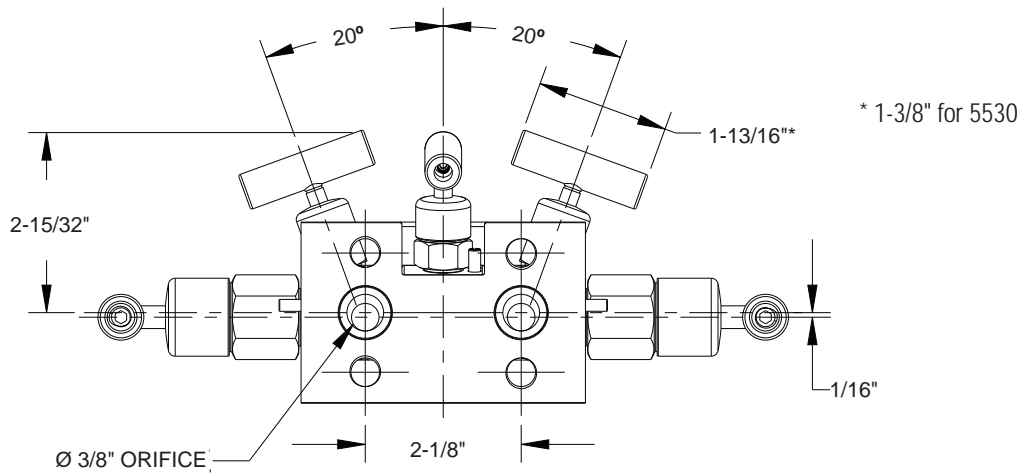
Flare Pattern™ Flange-Flange



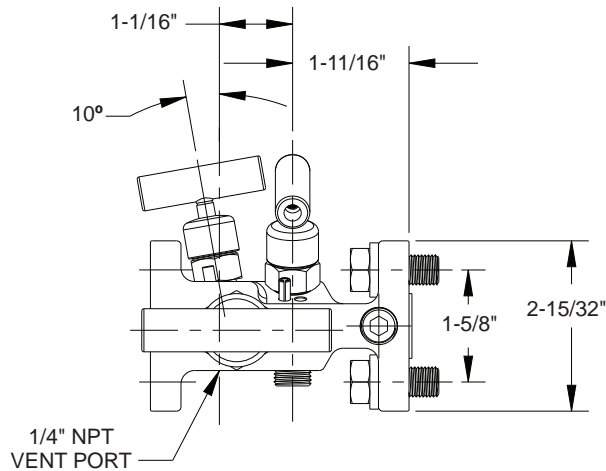
Top View



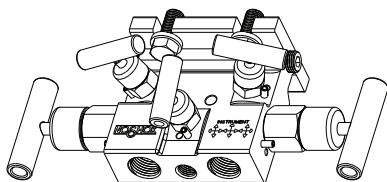
Front View



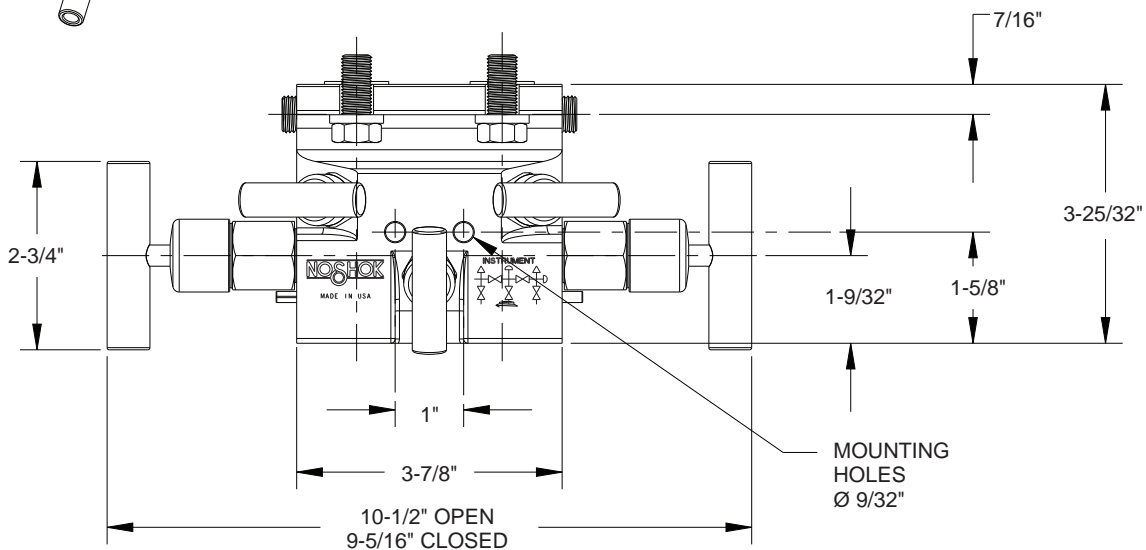
Side View



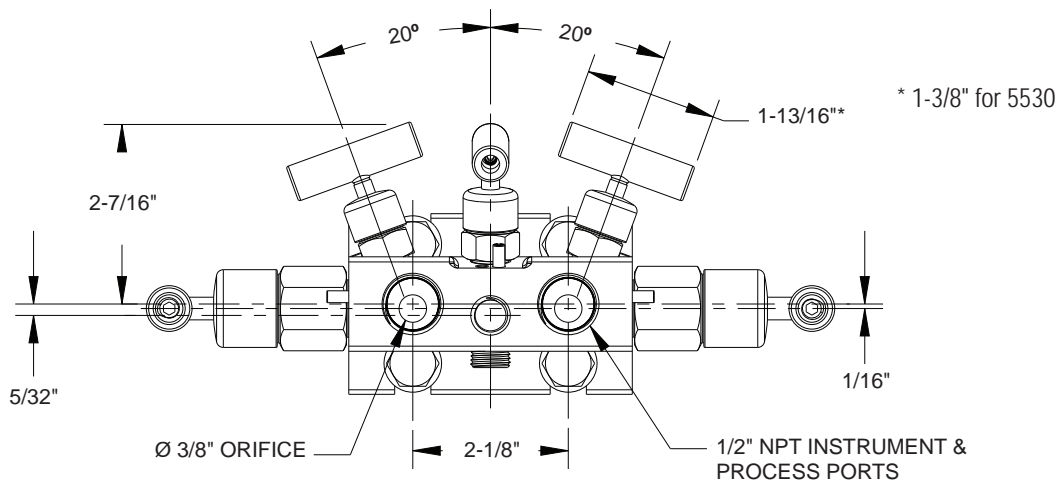
Flare Pattern™ Flange-Female



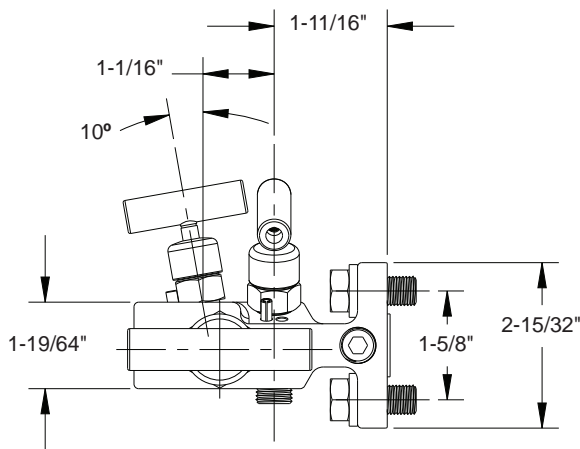
Top View



Front View

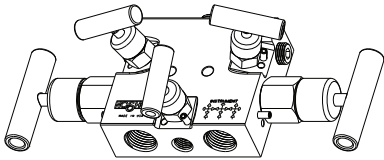


Side View

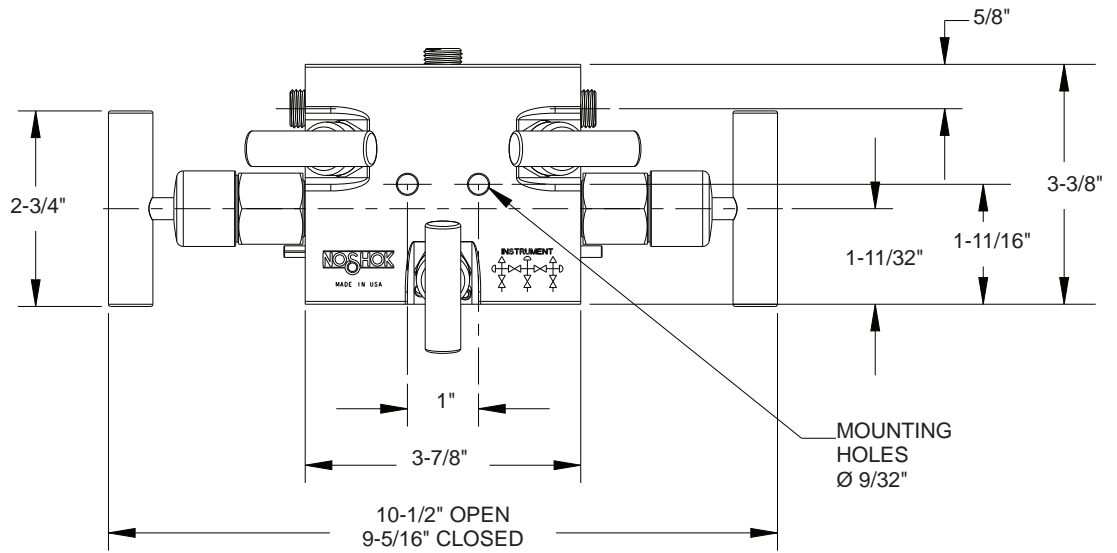


Dimensions

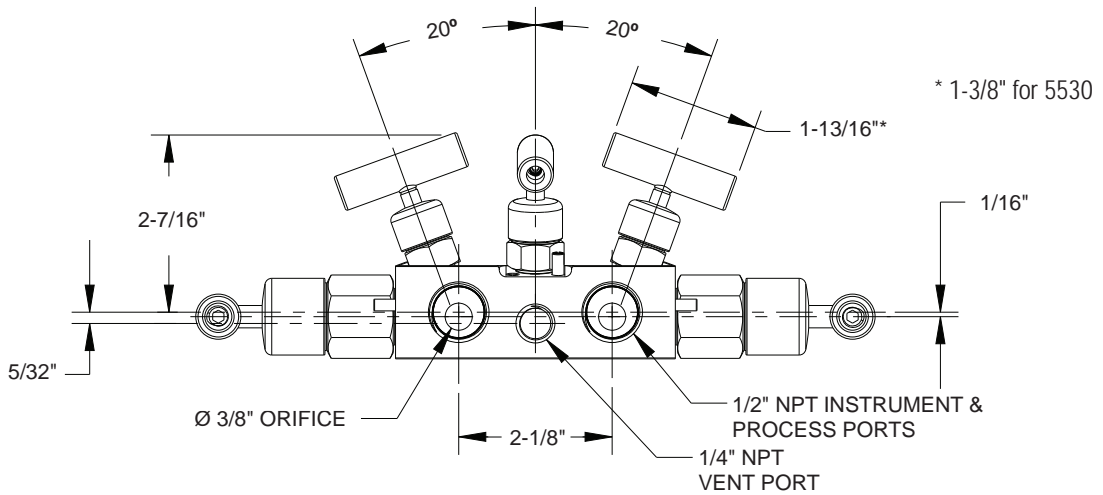
Flare Pattern™ Female-Female



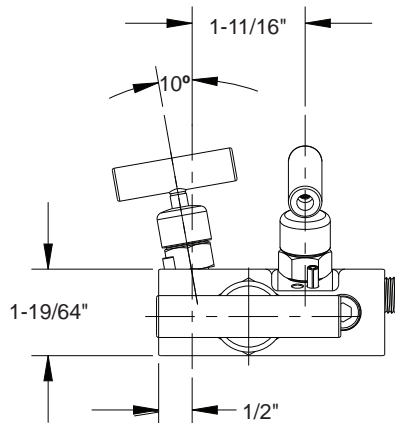
Top View

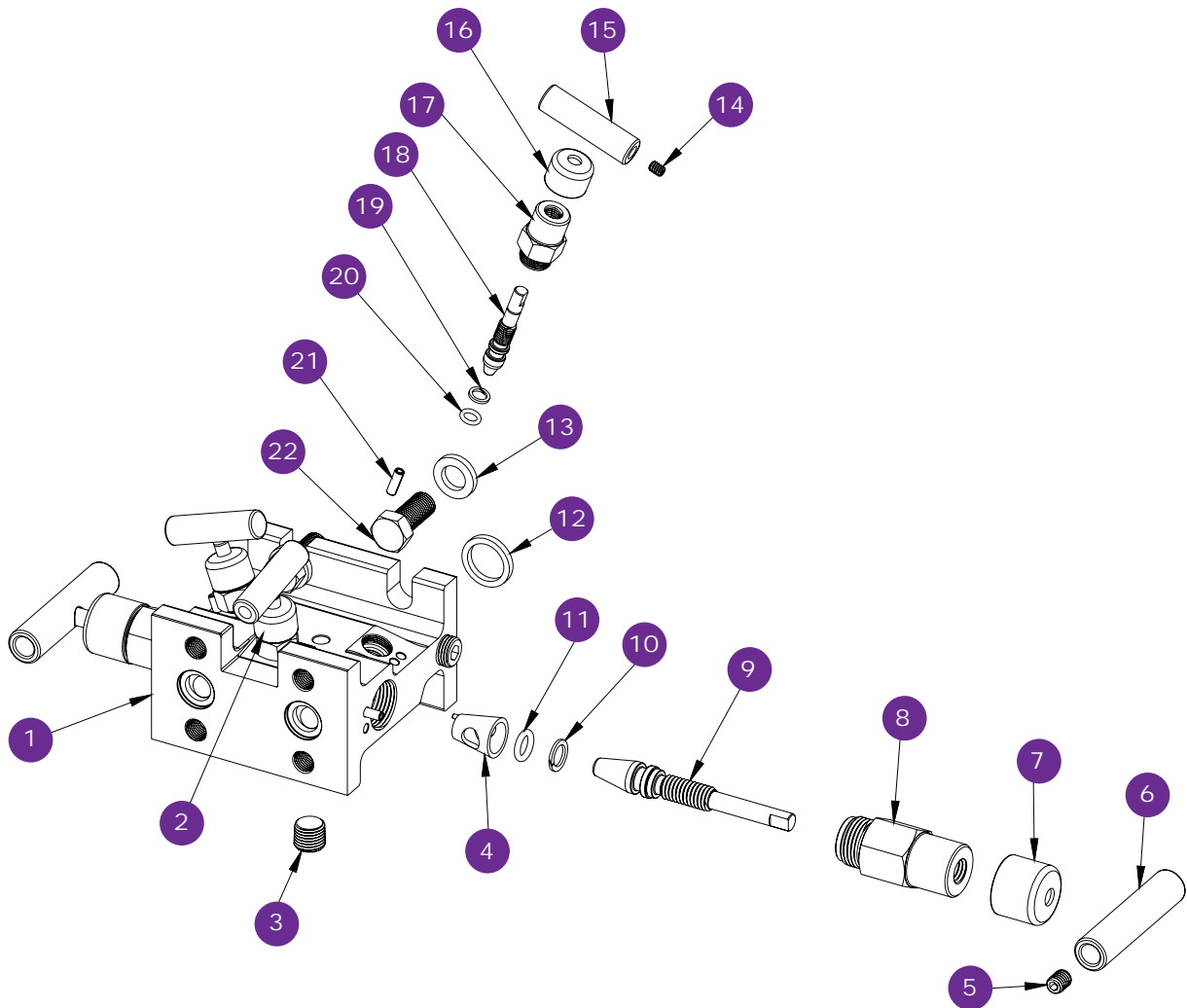


Front View



Side View





- | | |
|-----------------------------|--------------------------|
| 1 Flare Pattern™ valve body | 12 Gasket ring |
| 2 Red dust cap | 13 Washer |
| 3 Plug | 14 Set screw |
| 4 Delrin® 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

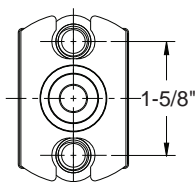
For NOSHOK Stainless Steel Connectors:



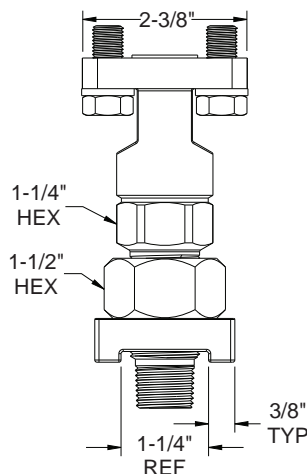
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Long Stabilized Connector

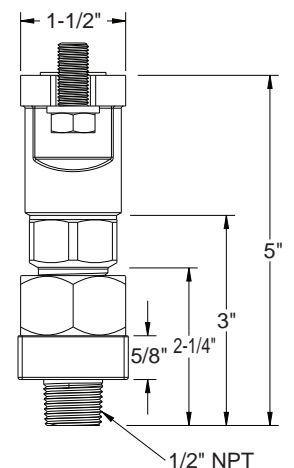
Top View



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)

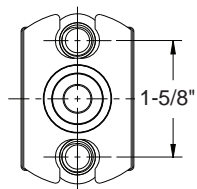
** For round installations (orifice flange)

EXAMPLE

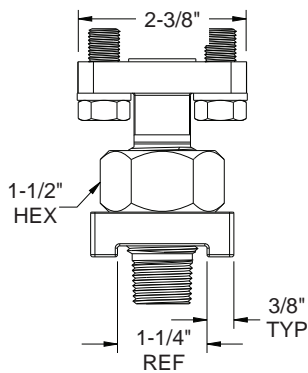


Short Stabilized Connector

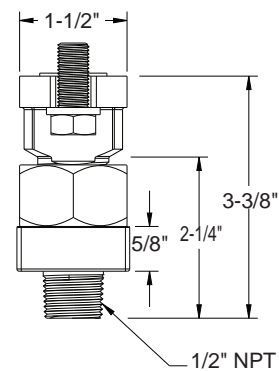
Top View



Front View

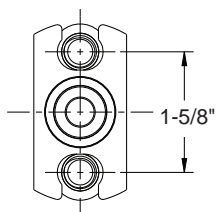


Side View

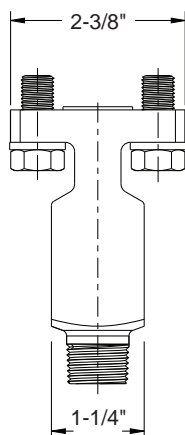


Non-Stabilized Connector

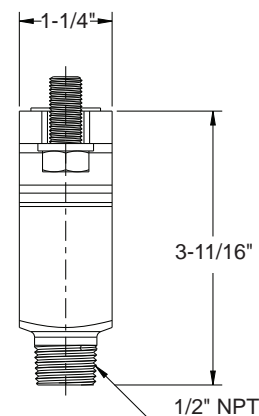
Top View



Front View



Side View



Stabilized With Integral Block Valve

SV SERIES



Note: Shown with flange adaptor for round installations.

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

SPECIFICATIONS

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)

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

For NOSHOK Steel Connectors:



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

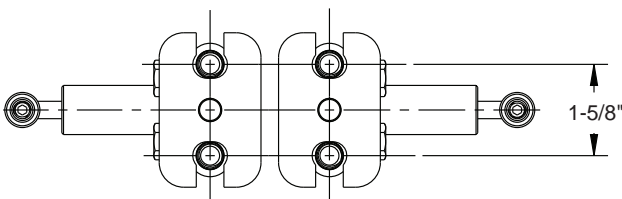
For NOSHOK Stainless Steel Connectors:



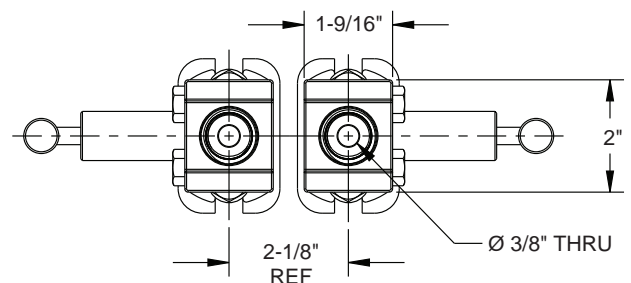
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Stabilized Connector with Integral Block Valve

Top View



Bottom View



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

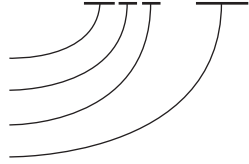
* For flat installations (orifice fitting)

** For round installations (orifice flange)

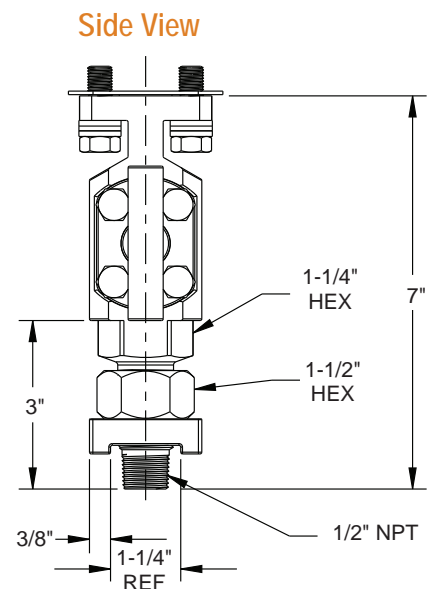
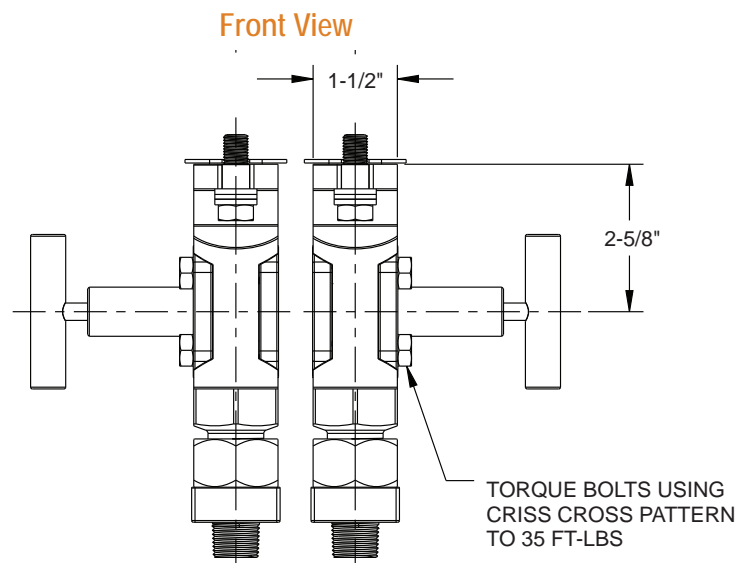
EXAMPLE

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

SVC1 - DK1

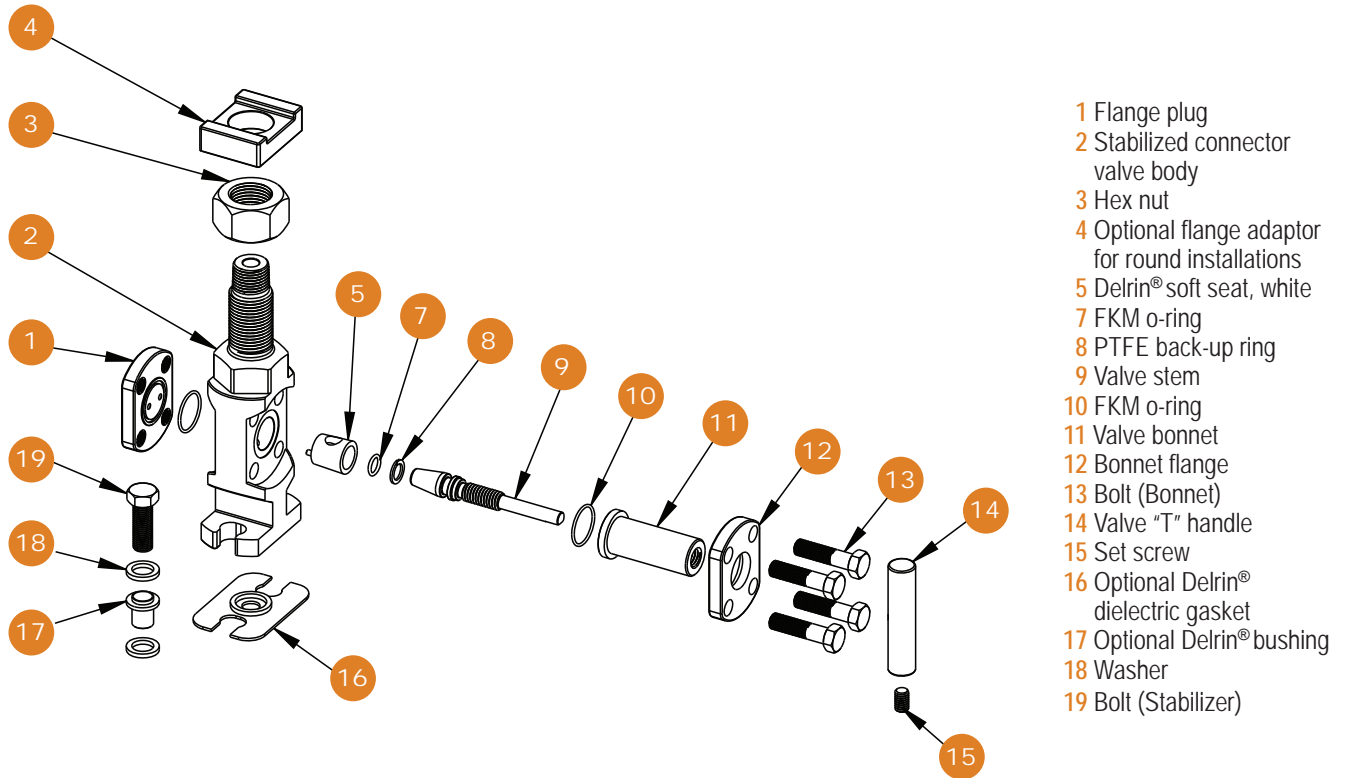


Stabilized Connector with Integral Block Valve



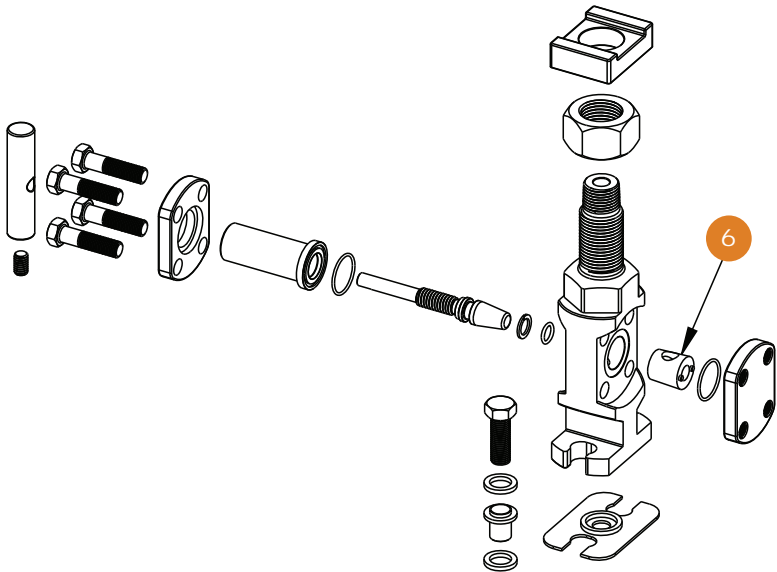
Dimensions

Stabilized Connector with Integral Block Valve



- 1 Flange plug
- 2 Stabilized connector valve body
- 3 Hex nut
- 4 Optional flange adaptor for round installations
- 5 Delrin® soft seat, white
- 7 FKM o-ring
- 8 PTFE back-up ring
- 9 Valve stem
- 10 FKM o-ring
- 11 Valve bonnet
- 12 Bonnet flange
- 13 Bolt (Bonnet)
- 14 Valve "T" handle
- 15 Set screw
- 16 Optional Delrin® dielectric gasket
- 17 Optional Delrin® bushing
- 18 Washer
- 19 Bolt (Stabilizer)

Optional Assembly With Soft Seat Installed on Opposite Side Of Valve



6 Delrin® soft seat, black

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.

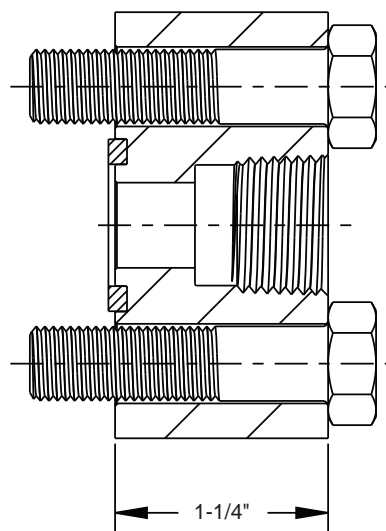
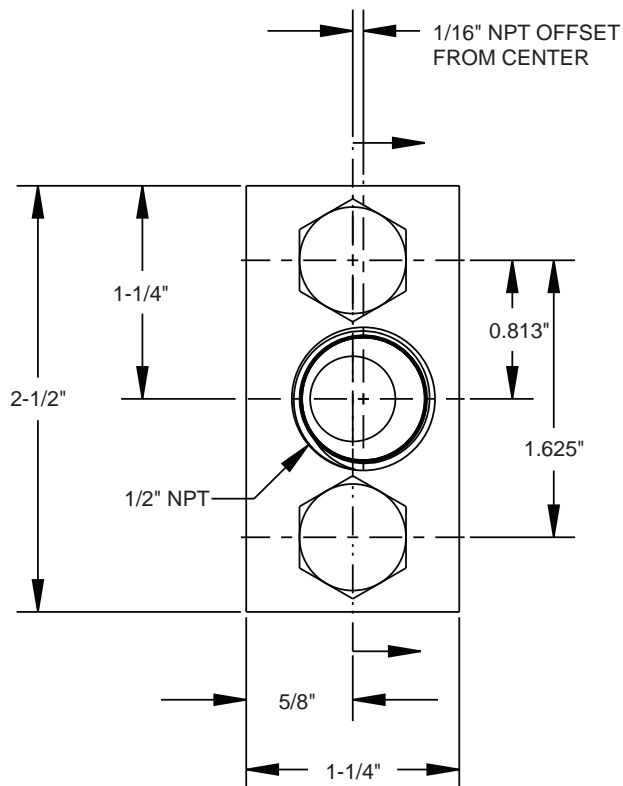
EXAMPLE

Series..... Futbol 50FA1CS
 Material..... Steel

Futbols

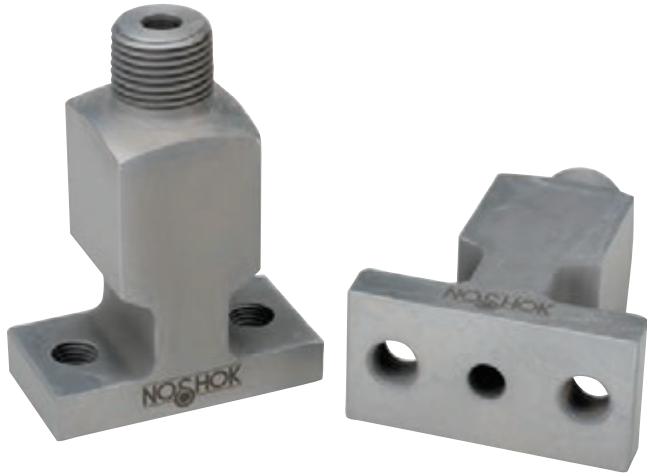
Front View

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

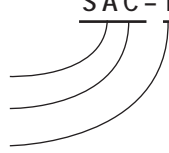
ORDERING INFORMATION			
SERIES	SA Static adaptor		
MATERIALS	C Steel	S	316 Stainless Steel
CONNECTIONS	1 1/2" NPT Female - Flange	2	1/2" NPT Male - Flange

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

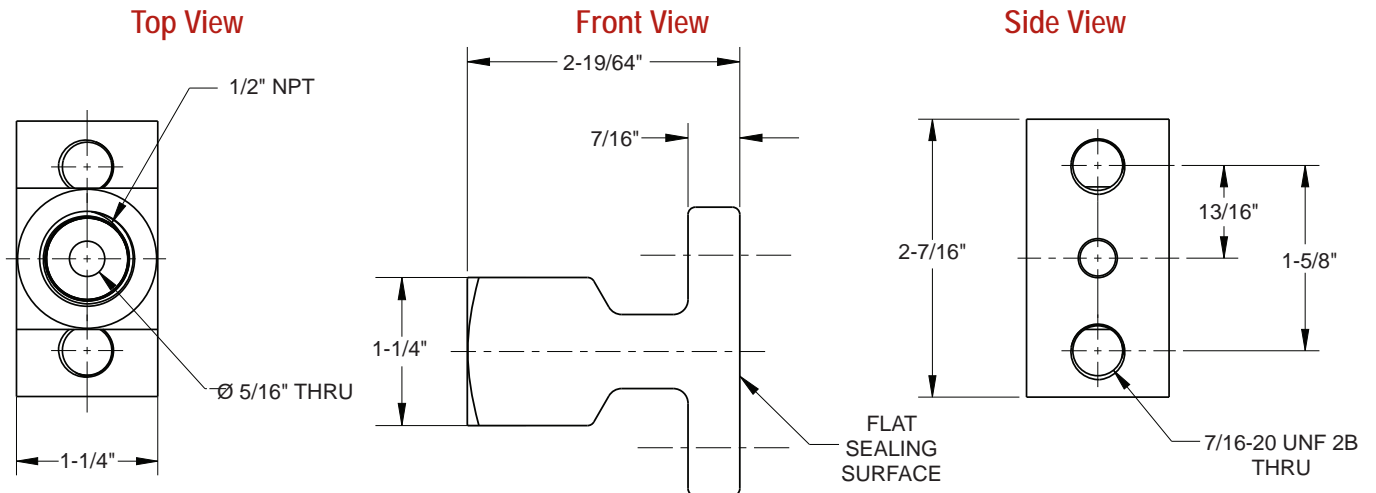
EXAMPLE

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

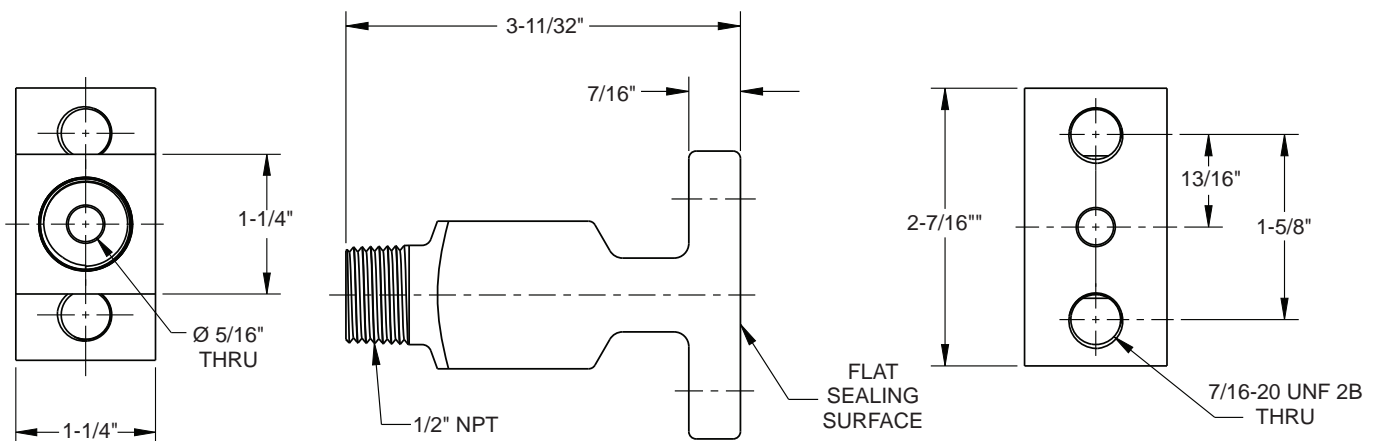
SAC-1



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 Delrin® sealing gasket and Delrin® dielectric shim
- Bolts, washers and dielectric bushings are included with the kits
- Seal rings or o-rings not required

DK2

- Used as an alternative to a one piece design when a separate sealing gasket 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: Delrin®, PVC
- Max operating temp 150 °F
- Dielectric strength exceeds 1/32 air arc gap approximately 2,500 Vdc



DK-1



DK-2

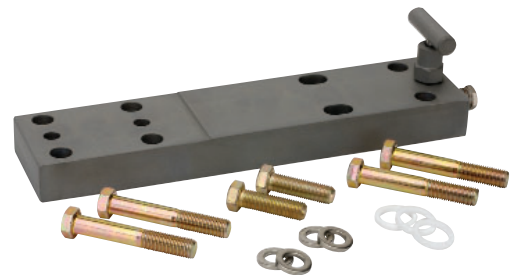
MANIFOLD MOUNTING KIT

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.



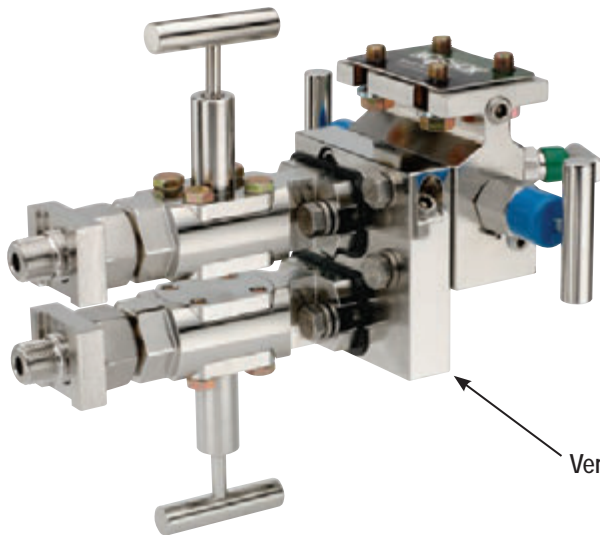
DP1-DP1-CS / DP1-DP1-SS*
3/8" bore, 23" length



DP2-DP12-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

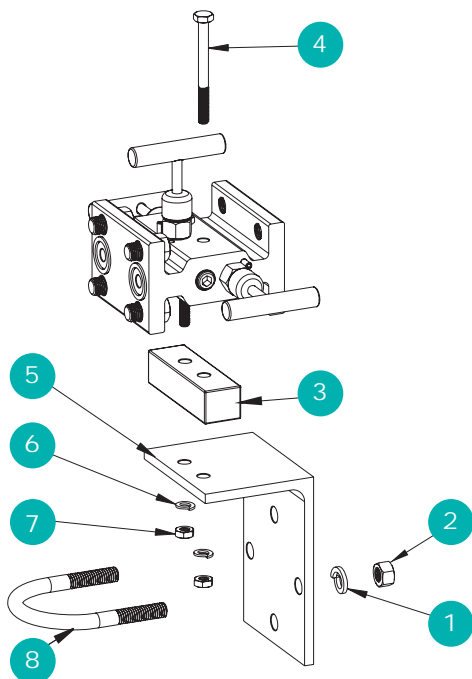
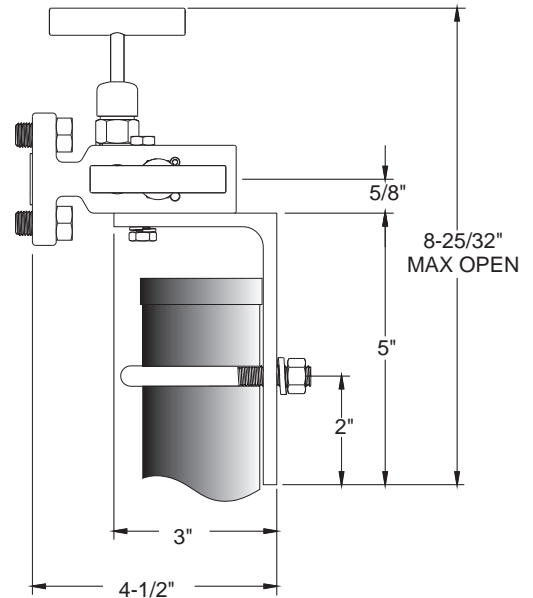
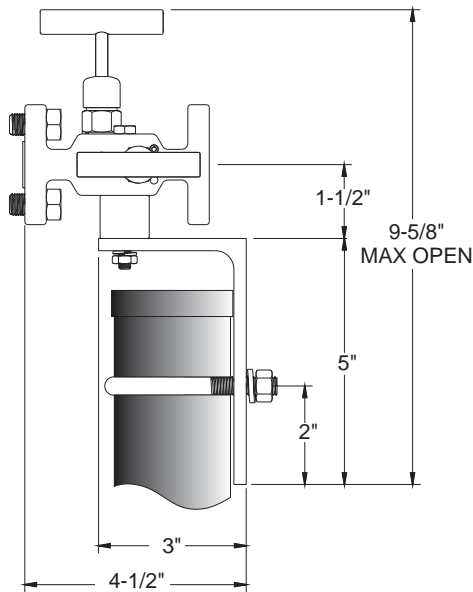
For products shown above that are composed of Stainless Steel:



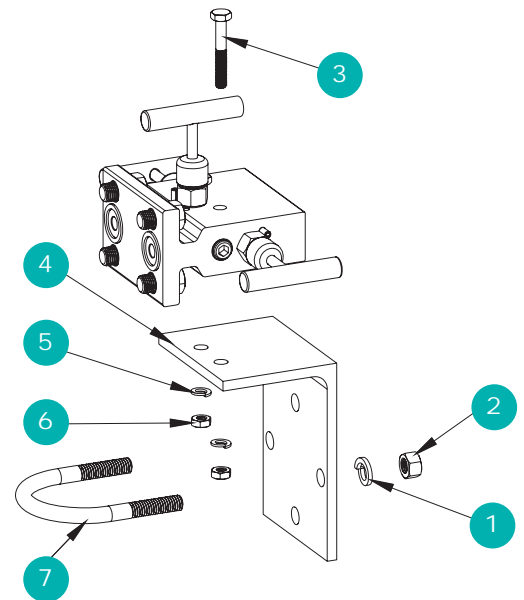
WARNING: This product can expose you to chemicals including Chromium (VI) and Nickel, which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov

Mounting Diagrams for 2000, 3000 & 5000 Series Manifold Valves

2000 & 3000 Series Mounting Kit Flange-Flange **2000 & 3000 Series Mounting Kit Flange-NPT, NPT-NPT**

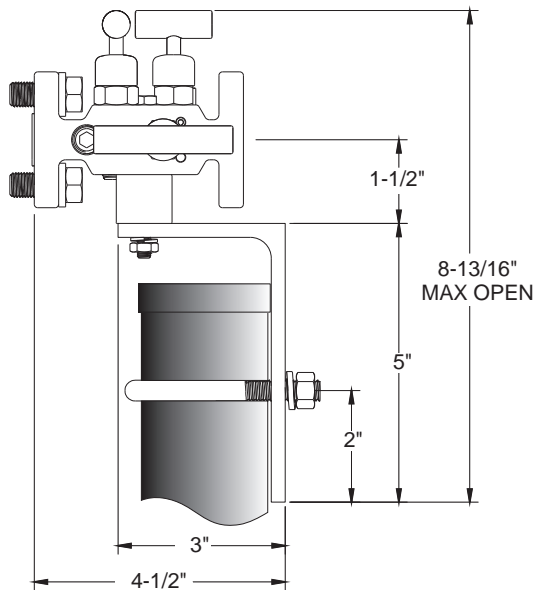


- 1 Lock washer
- 2 Nut
- 3 Spacer
- 4 Bolt
- 5 Bracket
- 6 Lock washer
- 7 Nut
- 8 U-bolt

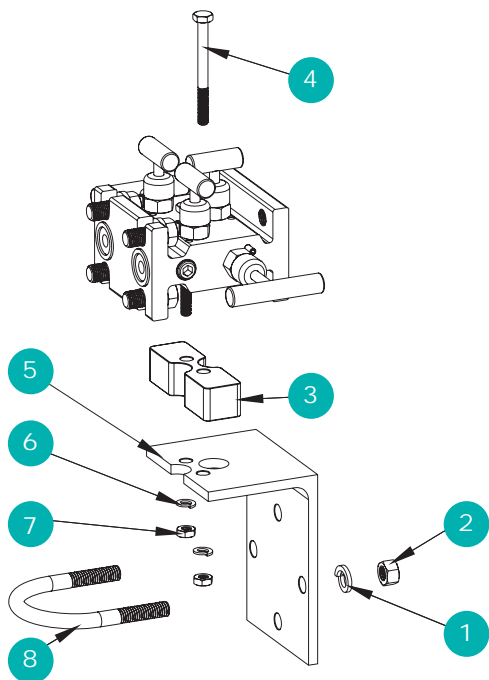
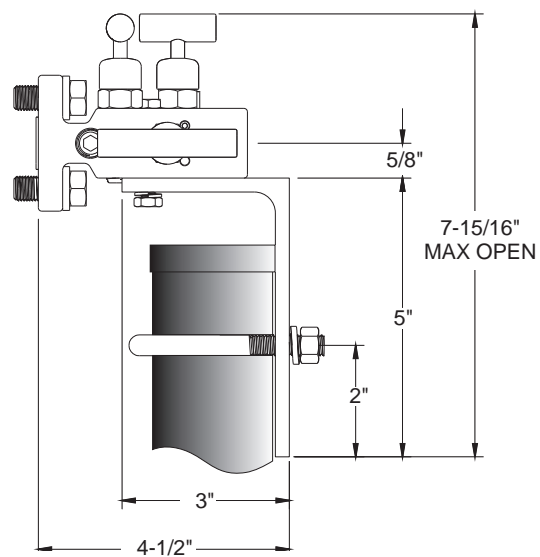


- 1 Lock washer
- 2 Nut
- 3 Bolt
- 4 Bracket
- 5 Lock washer
- 6 Nut
- 7 U-bolt

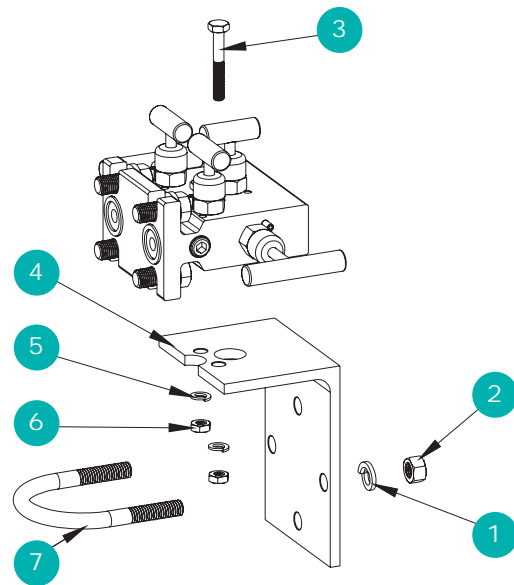
5000 Series Mounting Kit
Flange-Flange



5000 Series Mounting Kit
Flange-NPT, NPT-NPT



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



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

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					*	*							
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	Delrin®				*				*				*	
	PEEK				*				*				*	
	PCTFE				*				*				*	
Stem Tips	Rotating (316 Stainless)	*	*	*	*	*	*	*	*	*	*	*	*	*
	Delrin®		*								*		*	
	Non-rotating (316 Stainless)	*	*	*	*	*	*	*	*	*	*	*	*	*
	Ball (440C Stainless)	*	*	*	*	*	*	*	*	*	*	*	*	*
	Ball (carbide)	*	*	*	*	*	*	*	*	*	*	*	*	*
	Ball (ceramic)	*	*	*	*	*	*	*	*	*	*	*	*	*
	Ball (Monel)	*	*	*	*	*	*	*	*	*	*	*	*	*
	Regulating hard	*	*	*	*	*	*	*	*	*	*	*	*	*
	PCTFE		*								*			
	PEEK		*								*			
	Regulating Delrin®		*											
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	*	*	*	*	*	*	*	*	*	*	*	*	*
Panel Mountings	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 Tip
		2000	2100	2020	2120	200002	200402	210002	210402	2602	2702
SERIES											
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										
4.00											
Stem Seal	EKM	•	•	•	•	•	•	•	•	•	•
	PTFE	•	•	•	•	•	•	•	•	•	•
	EPDM	•	•	•	•	•	•	•	•	•	•
	FFKM	•	•	•	•	•	•	•	•	•	•
	NBR	•	•	•	•	•	•	•	•	•	•
Packings	PTFE	•	•	•	•	•	•	•	•	•	•
	Graphite	•		•		•	•			•	
Soft Seats	Delrin®		•		•			•	•		
	PEEK		•		•			•	•		
	PCTFE		•		•			•	•		
Stem Tips	Rotating (316 Stainless)	•		•		•	•	•	•	•	
	Delrin®										•
	Non-rotating (316 Stainless)		•	•	•	•	•	•	•	•	•
	Ball (440C Stainless)	•		•		•	•			•	
	Ball (carbide)	•		•		•	•			•	
	Ball (ceramic)	•		•		•	•			•	
	Ball (Monel)	•		•		•	•			•	
	Regulating hard	•		•		•	•			•	
	PCTFE										•
	PEEK										•
	Regulating Delrin®										•
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 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	EKM	*	*	*	*	*	*	*	*	*	*	*	*	
	PTFE	*	*	*	*	*	*	*	*	*	*	*	*	
	EPDM	*	*	*	*	*	*	*	*	*	*	*	*	
	FFKM	*	*	*	*	*	*	*	*	*	*	*	*	
	NBR	*	*	*	*	*	*	*	*	*	*	*	*	
Packings	PTFE	*	*	*	*	*	*	*	*	*	*	*	*	
	Graphite	*	*				*	*		*	*	*	*	
Soft Seats	Delrin®					*		*	*	*	*	*	*	
	PEEK					*		*	*	*	*	*	*	
	PCTFE					*		*	*	*	*	*	*	
Stem Tips	Rotating (316 Stainless)	*	*			*	*	*	*	*	*	*	*	
	Delrin®			*	*	*				*	*	*	*	
	Non-rotating (316 Stainless)	*	*			*		*	*	*	*	*		
	Ball (440C Stainless)	*	*			*	*	*	*	*	*	*		
	Ball (carbide)	*	*			*	*	*	*	*	*	*		
	Ball (ceramic)	*	*			*	*	*	*	*	*	*		
	Ball (Monel)	*	*			*	*	*	*	*	*	*		
	Regulating hard	*	*			*	*	*	*	*	*	*		
	PCTFE			*	*					*	*	*	*	
	PEEK			*	*					*	*	*	*	
	Regulating Delrin®			*	*					*	*	*	*	
	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	*	*	*	*	*	*	*	*	*	*	*	*	

Tips for Selecting the Best NOSHOK Valve for Your Application

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

1. System Parameters

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

2. Function

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

3. Media Compatibility

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

4. Flow

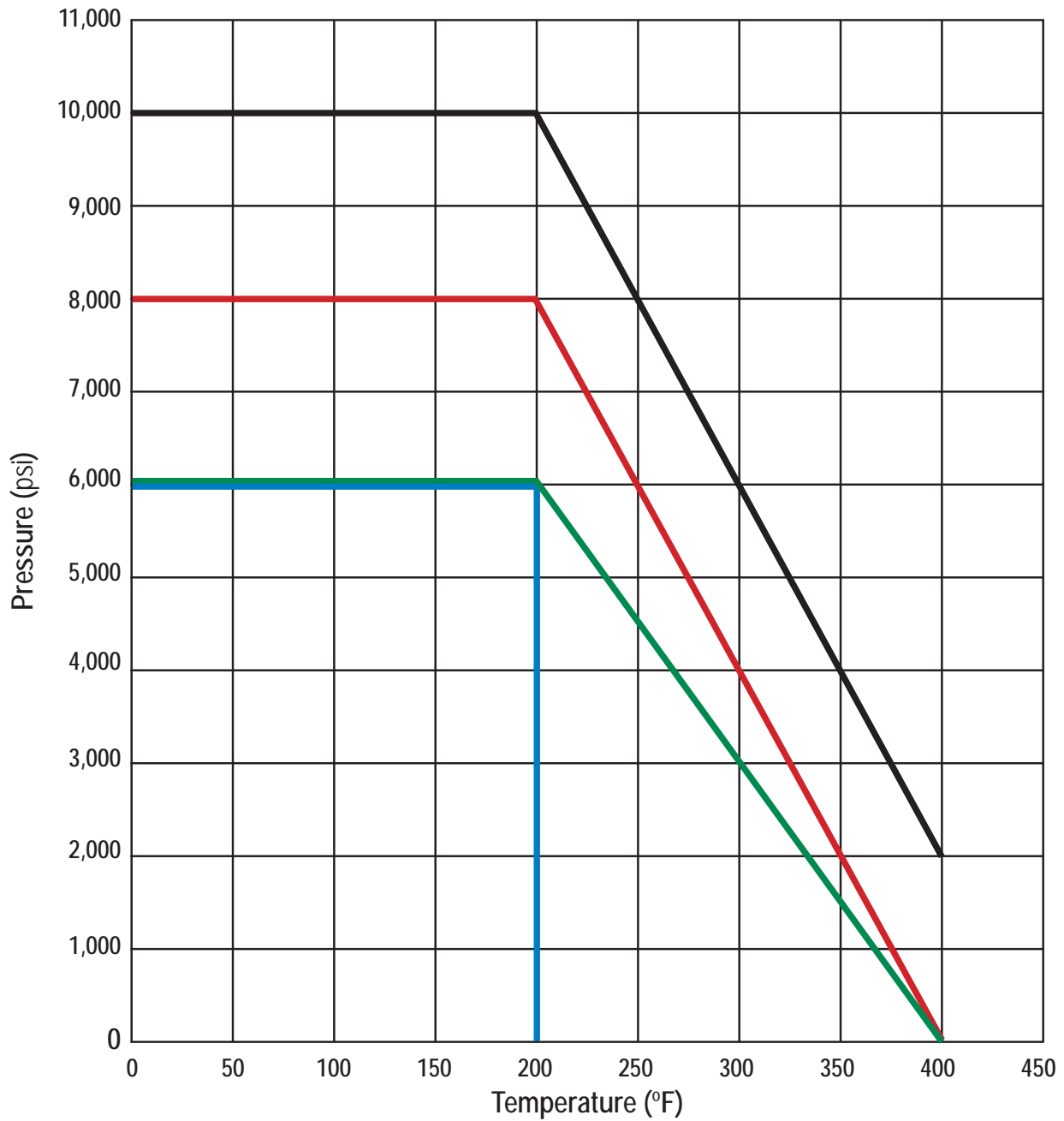
Every NOSHOK valve is rated with a flow coefficient, C_v , which identifies the relationship between rate of flow and the pressure drop across the valve's orifice. Understanding the flow coefficient of your system will aid in deciding the proper size NOSHOK valve required.

5. Installation Configuration

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

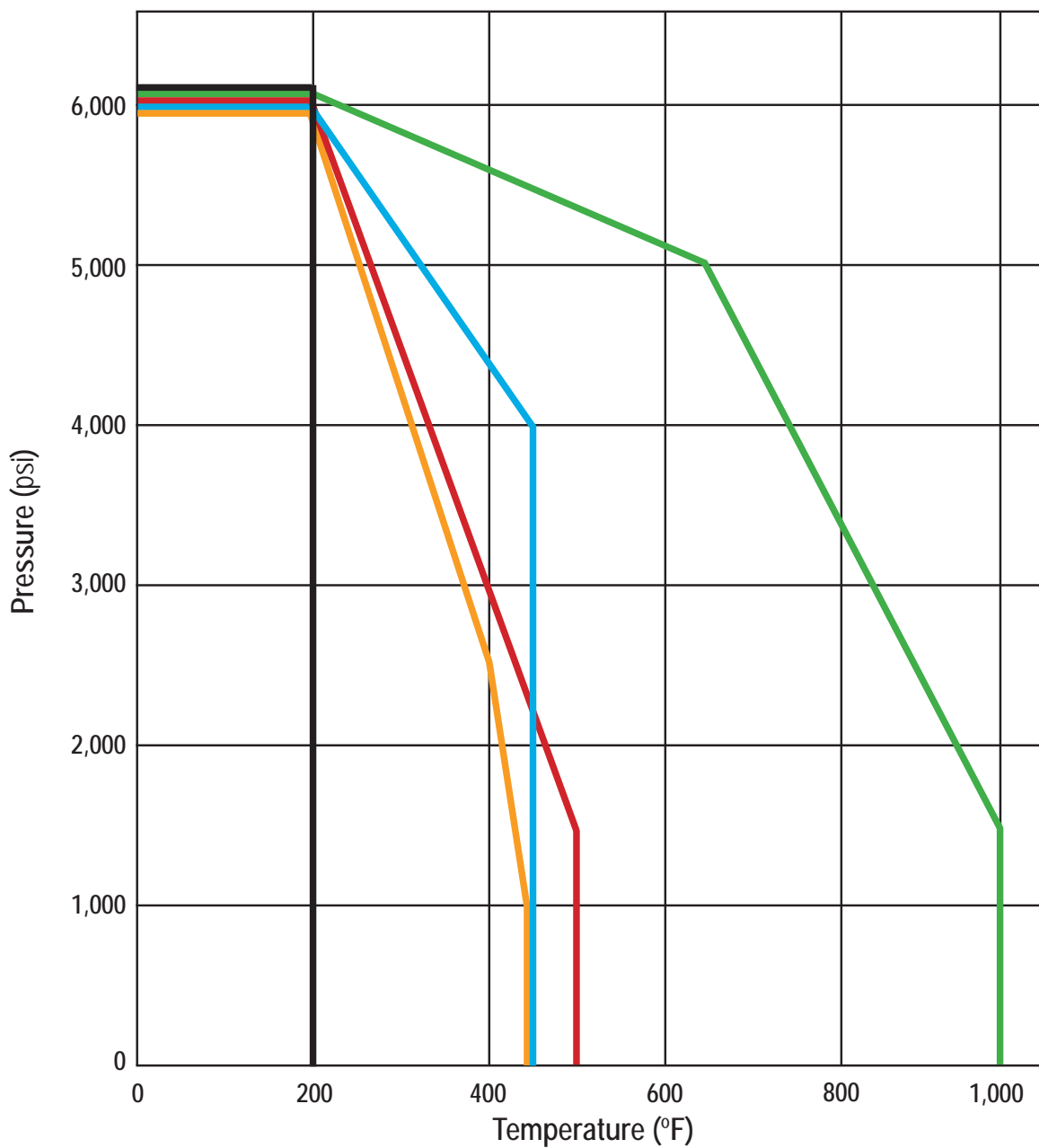
Answering the aforementioned questions will help you select which NOSHOK needle or manifold valve is best for your application. NOSHOK's Customer Support Team is also available at 440.243.0888 should you need further assistance.

Needle Valves Pressure vs. Temperature: FKM O-Ring with Compatible Fluid



- 100, 200, 402-406, 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 Delrin® soft seat or Delrin® 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 improve customer satisfaction by focusing on customer requirements for the design, manufacture and distribution of pressure, temperature, and force measurement instruments along with needle and manifold valves including custom manifold systems for industrial applications.

All from world class technology.

Combined with real-world stamina.

The highest value with the industry's best warranty.

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

All from your Single Source Instrumentation Company.



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