Gauge Valves and Instrumentation Manifolds

GV, GVH, GR Series

2D, 2R, 2DH, 2RH Series 2-valve Manifolds

3D, 3R, 3DH, 3RH Series 3-valve Manifolds

5D, 5R, 5DH, 5RH Series 5-valve Manifolds





Contents

Gauge Valves

Features	C-04
Standard Materials of Construction	C-04
Pressure vs. Temperature	C-05
Types and Dimensions	C-06
Standard Type	C-06
Lagging Extension Body Type	C-06
Miniature Type	C-06
Instrumentation Manifolds	
Features	C-08
Standard Materials of Construction	C-08
Pressure vs. Temperature	C-09
Design Standards	C-09
Manifolds Mounting Application	C-10
Types and Dimensions	C-12
Remote Mount Manifolds	C-12
Direct Mount Manifolds (transmitter with coplanar mounting flange)	C-17
Direct Mount Manifolds (transmitter with traditional flange)	C-18
Direct Mount Manifolds (transmitter without flange)	C-23
Accessories	
Manifold Mounting Bracket Kit	C-24
Kidney Flanges and Eccentric Flanges	C-25

Notes:

- O Packing may need to be adjusted during valve use.
- © For better maintenance, FITOK gauge valves and instrumentation manifolds should be stored in the half-open position.



Gauge Valves

GV Series, GVH Series and GR Series

Features

- Working pressure (stainless steel):
 GV, GR series up to 6000 psig (414 bar)
 GVH series up to 10000 psig (690 bar)
- O Working temperature:

PTFE packing: -65°F to 450°F (-54°C to 232°C)
Graphite packing: -65°F to 1200°F (-54°C to 649°C)

Acetal seat: $-20^{\circ}F$ to $250^{\circ}F$ ($-28^{\circ}C$ to $121^{\circ}C$) PEEK seat: $-20^{\circ}F$ to $400^{\circ}F$ ($-28^{\circ}C$ to $204^{\circ}C$)

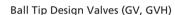
- Orifice: GV and GVH Series: 0.157" (4.0 mm) GR Series: 0.25" (6.4 mm)
- Non-rotating lower stem, GV/GVH series lower stem ball tip design, GR series lower stem plug stem design
- Safety back seating seals in fully open position
- O Rolled spindle operating threads
- O Lubricant for stem thread isolated from the media
- O Externally adjustable gland
- O Bonnet locking pin fitted as standard
- Option for different colored handles
- © Every gauge valve leak tested at factory at rated working pressure

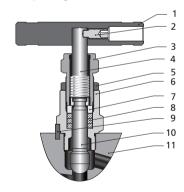


Standard Materials of Construction

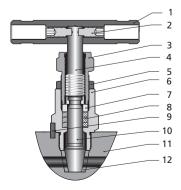
Item	Component	Material Grade/ASTM Specification
1	Handle	Aluminum alloy
2	Set Screw	Zinc-plated carbon steel
3	Packing Bolt	304 SS/A479
4	Upper Stem	316 SS/A479
5	Lock Nut	Stainless steel
6	Bonnet	316 SS/A479
7	Gland	316 SS/A479
8	Packing	PTFE or graphite
9	Lock Pin	Stainless steel
10	Lower Stem	Hardened 316 SS/A479
11	Body	316 SS/A479 316 SS/A182
12	Seat	Acetal or PEEK (GR series only)
	Lubricant	Molybdenum disulfide-based
		I .

Note: Wetted components are listed in italics.





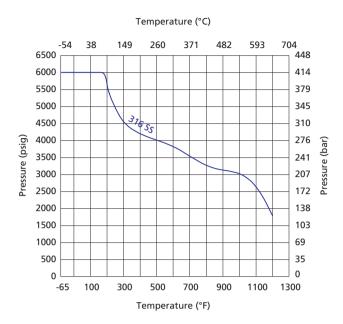
Plug Tip Design Valves (GR)

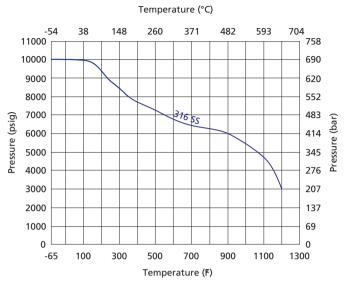




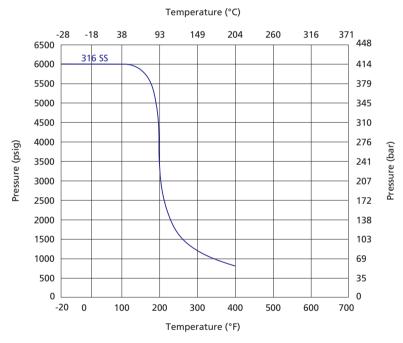
Pressure vs. Temperature

GV Series GVH Series





GR Series



- 1. GV, GVH series are based on graphite packing.
- 2. GR series are based on PEEK seat and PTFE packing.
- 3. Contact FITOK Group or our authorized distributors for curve graph of GR series with Acetal seat.

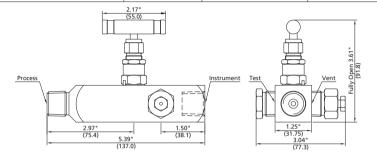


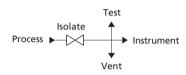
Types and Dimensions

Standard Type

Basic Ordering Number	Process	Instrument	Vent & Test
GV □□-NS8-FNS8			
GVH□□-NS8-FNS8	1/2 Male NPT		4/2 F L NDT
GR □□-NS8-FNS8		1/2 Female NPT	1/2 Female NPT (Bleed Valve
GV □□-NS12-FNS8		1/2 remaie NPT	with Plug)
GVH□□-NS12-FNS8	3/4 Male NPT		,
GR □□-NS12-FNS8			



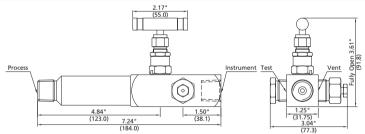


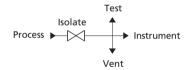


Lagging Extension Body Type

Basic Ordering Number	Process	Instrument	Vent & Test
GV □□-NS8-FNS8-E			1/2 Female NPT
GVH□□-NS8-FNS8-E	1/2 Male NPT	1/2 Female NPT	(Bleed Valve
GR □□ -NS8-FNS8-E			with Plug)





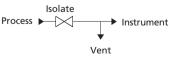


Lagging extension body is inserted through pipe insulation.

Miniature Type

Basic Ordering Number	Process	Instrument	Vent
GV□□-NS8-FNS8-C			
GVH□□-NS8-FNS8-C	1/2 Male NPT	1/2 Female NPT	Vent stem
GR □□-NS8-FNS8-C			
2.1 (55			(88.7) (88.7)

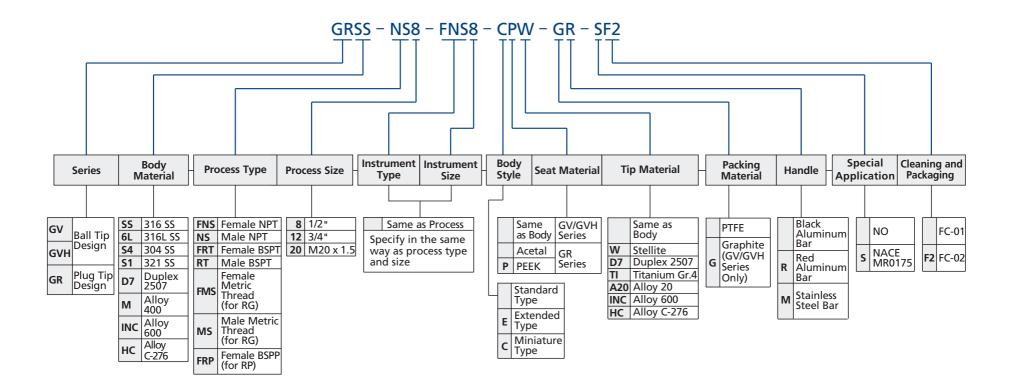




The dimensions shown are for GV series gauge valves. If you need the dimensions of GVH, GR series, please contact FITOK Group or our authorized distributors.



Ordering Number Description



Notes:

- 1. Cleaning and Packaging:
- FC-01: Standard cleaning and packaging for general industrial procedures.
- FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C.
- 2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available. If you have any questions, please contact FITOK Group or our authorized distributors.

Instrumentation Manifolds

Features

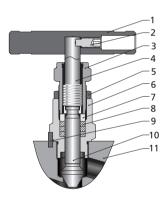
- Working pressure:
 2D, 2R, 3D, 3R, 5D, 5R series up to 6000 psig (414 bar)
 2DH, 2RH, 3DH, 3RH, 5DH, 5RH series up to 10000 psig (690 bar)
- Working temperature: PTFE packing: -65°F to 450°F (-54°C to 232°C) Graphite packing: -65°F to 1200°F (-54°C to 649°C)
- Orifice: 0.157" (4.0 mm)
- Two-piece stem design: Upper stem threads cold rolled and lower stem hardened for high strength and smooth operation
- O Upper stem thread lubricant isolated from system media
- Linear instead of rotary motion of the rising, non-rotating stem minimizes packing abrasion and reduces the friction between the seat and the tip
- O Safety back seating seals in fully open position
- O Steady and durable fastening of the handle by handle set screw
- © Every gauge valve leak tested at factory at rated working pressure



Standard Materials of Construction

		Valve Body Material			
Item	Component	316 SS	Alloy C-276		
		Material Grade/	ASTM Specification		
1	Handle	Alum	inum alloy		
2	Set Screw	Zinc-pla	ated carbon steel		
3	Packing Bolt	304 SS	/A479		
4	Upper Stem	316 SS/A479			
5	Lock Nut	Stainles	ss steel		
6	Bonnet	316 SS/A479	Alloy C-276/B574		
7	Gland	316 SS	/A479		
8	Packing	PTFE or 0	Graphite		
9	Lock Pin	Stainles	s steel		
10	Lower Stem	Hardened 316 SS/A479	Alloy C-276/B574		
11	Body	316 SS/A479 316 SS/A182	Alloy C-276/B564		
	Lubricant	Molybdenum d	disulfide-based		

Note: Wetted components are listed in italics.



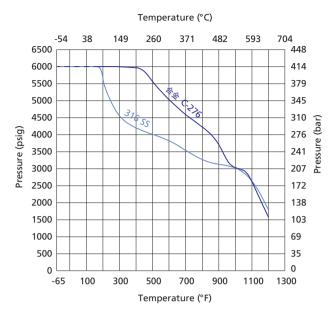
Handle colors indicate function: BLACK=Isolate RED=Vent

GREEN=Equalize

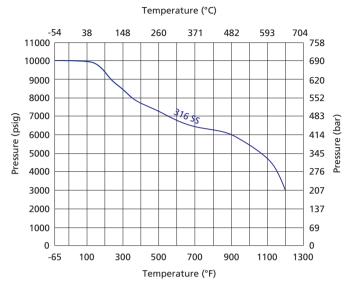


Pressure vs. Temperature

2D, 2R, 3D, 3R, 5D, 5R Series



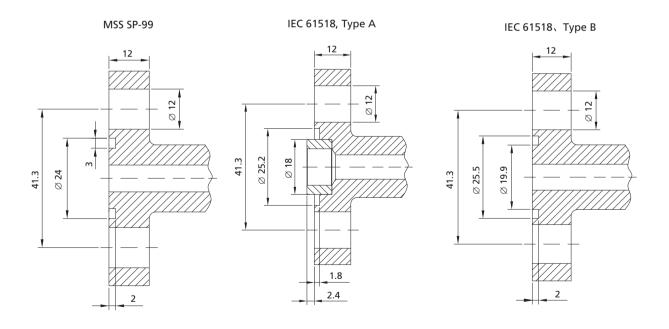
2DH, 2RH, 3DH, 3RH, 5DH, 5RH Series



- 1. Based on graphite packing.
- 2. Contact FITOK Group or our authorized distributors for curve graph of other materials.

Design Standards

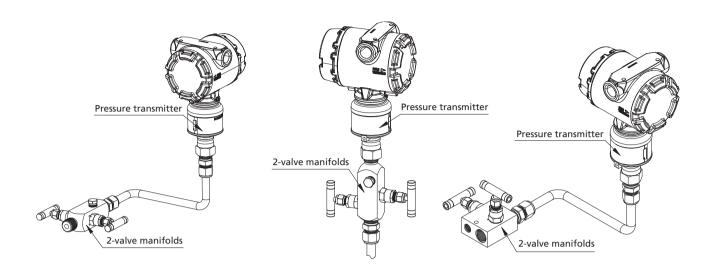
© Flanges in compliance with MSS SP-99 or IEC 61518 are available. Dimensions are as follows.

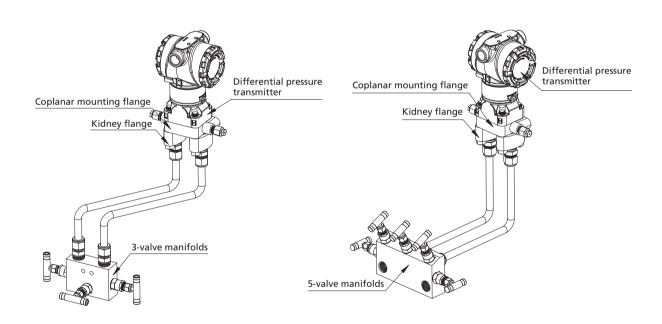




Manifolds Mounting Application

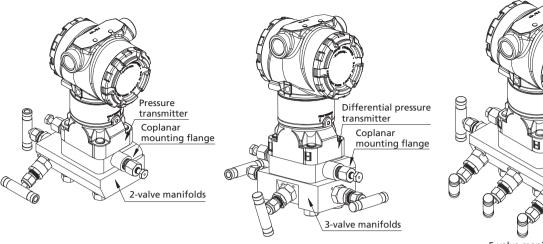
© Remote Mount Manifolds (with transmitter) For 2R, 2RH, 3R, 3RH, 5R, 5RH series manifolds

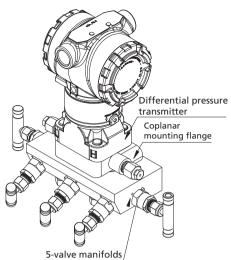




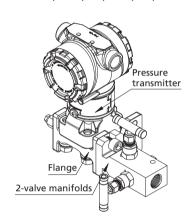


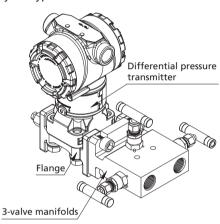
© Direct Mount Manifolds (transmitter with coplanar mounting flange) For 2D, 2DH, 3D, 3DH, 5D, 5DH series layout type A and type L manifolds

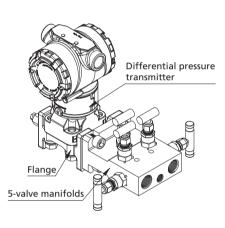




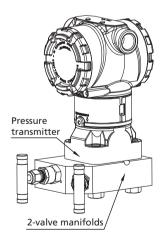
© Direct Mount Manifolds (transmitter with traditional flange) For 2D, 2DH, 3D, 3DH, 5D, 5DH series layout type V manifolds

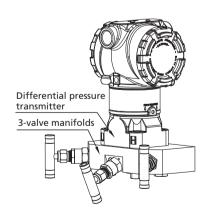


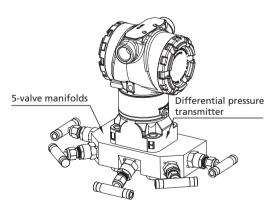




Direct Mount Manifolds (transmitter without flange)
 For integrated mount 2DSS-FNS8-C, 3DSS-FNS8-C-T, 5DSS-FNS8-C manifolds only







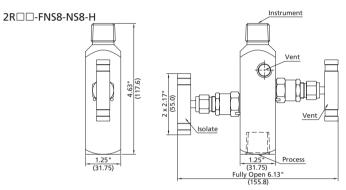
Types and Dimensions

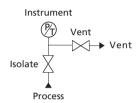
Remote Mount Manifolds

2-valve manifolds

Basic Ordering Number	Process	Instrument	Vent
2R□□-FNS8-NS8-H	1/2 Female NPT		
2RH□□-FNS8-NS8-H	1/2 remale NPT		4/4 F I . NDT
2R□□-NS8-H		1/2 Male NPT	1/4 Female NPT
2RH□□-NS8-H	1/2 Male NPT		
2R□□-NS8-H-P			1/4 Female NPT with plug





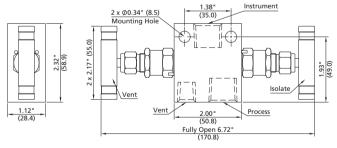


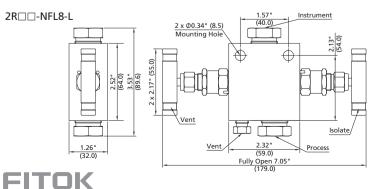
The dimensions shown are for 2R series manifolds. If you need the dimensions of 2RH series, please contact FITOK Group or our authorized distributors.

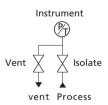
Basic Ordering Number	Process	Instrument	Vent
2R□□-FNS8-L	- 1/2 Female NPT	1/2 Female NPT	1/4 Female NPT
2R□□-FNS8-L-P			1/4 Female NPT with Plug
2R□□-NFL8-L	1/2"Female FITOK Tube Fitting	1/2"Female FITOK Tube Fitting	1/4"Female FITOK Tube Fitting



2R□□-FNS8-L



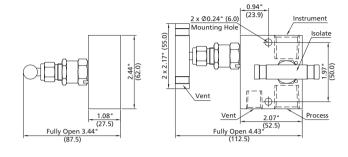




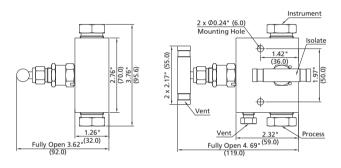
Basic Ordering Number	Process	Instrument	Vent
2R□□-FNS8-V	- 1/2 Female NPT	1/2 Female NPT	1/4 Female NPT
2R□□-FNS8-V-P			1/4 Female NPT with Plug
2R□□-NFL8-V	1/2"Female FITOK Tube Fitting	1/2"Female FITOK Tube Fitting	1/4"Female FITOK Tube Fitting

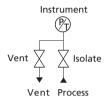


2R□□-FNS8-V



2R□□-NFL8-V



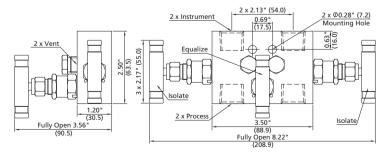


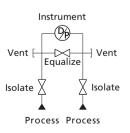
3-valve manifolds

Basic Ordering Number	Process	Instrument	Vent
3R□□-FNS8-V			-
3RH□□-FNS8-V-P	1/2 Female NPT	1/2 Female NPT	1/4 Female NPT with Plug
3RH□□-FNS8-V			_
3R□□-NFL8-V	1/2"Female FITOK Tube Fitting	1/2"Female FITOK Tube Fitting	



3R□□-FNS8-V-P

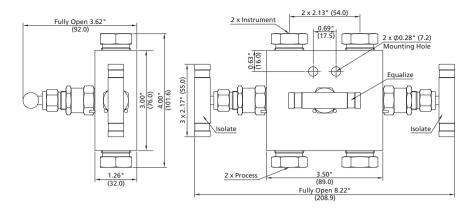


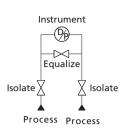


The dimensions shown are for 3R series manifolds. If you need the dimensions of 3RH series, please contact FITOK Group or our authorized distributors.



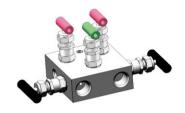
3R□□-NFL8-V



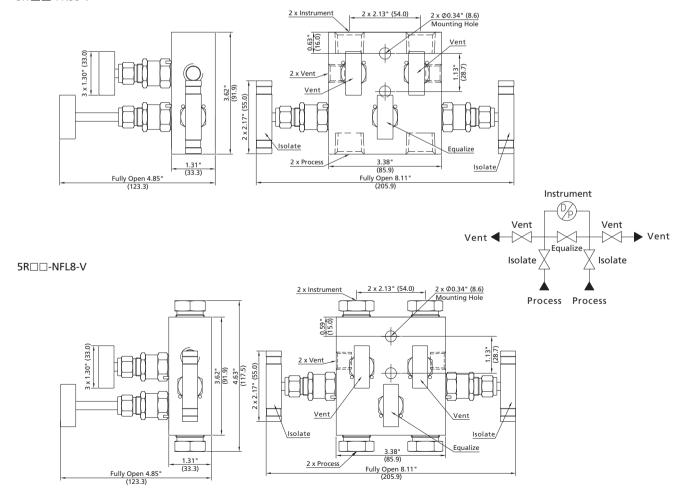


5-valve manifolds

Basic Ordering Number	Process	Instrument	Vent
5R □□-FNS8-V	1/2 Female NPT	1/2 Female NPT	1/4 Female NPT
5R□□-FNS8-V-P	1/2 remaie NPT	1/2 Female NP1	1/4 Female NPT with Plug
5R□□-NFL8-V	1/2"Female FITOK Tube Fitting	1/2"Female FITOK Tube Fitting	1/4 Female NPT



5R □□-FNS8-V

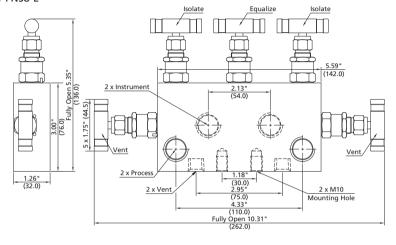


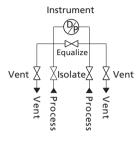


Basic Ordering Number	Process	Instrument	Vent
5R□□-FNS8-L	1/2 Female NPT		1/4 Female NPT
5R□□-FNS8-L-P		1/2 Female NPT	1/4 Female NPT with Plug
5RH□□-FNS8-L			1/4 Female NPT



5R□□-FNS8-L

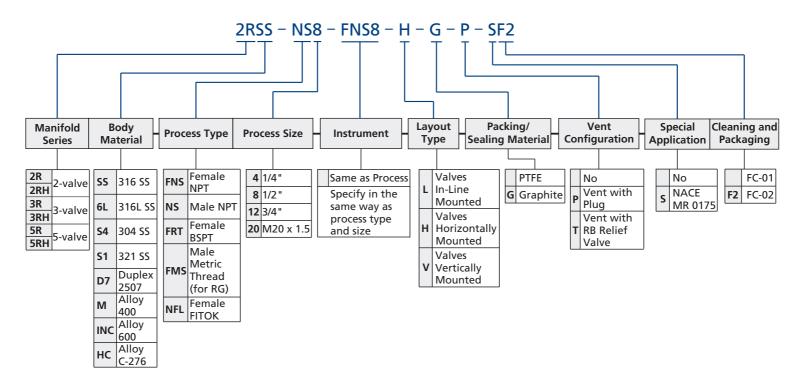




The dimensions shown are for 5R series manifolds. If you need the dimensions of 5RH series, please contact FITOK Group or our authorized distributors.



Ordering Number Description



Notes:

- 1. Cleaning and Packaging:
 - FC-01: Standard cleaning and packaging for general industrial procedures.
 - FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C.
- 2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available, If you have any questions, please contact FITOK Group or our authorised distributors.

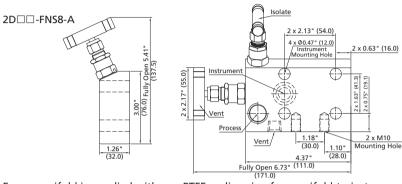
Direct Mount Manifolds (transmitter with coplanar mounting flange)

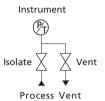
This type of manifolds is designed for Rosemount® coplanar™ pressure transmitter. Manifolds for other companies' transmitters, please contact FITOK Group or our authorized distributors.

2-valve Manifolds

Basic Ordering Number	Process	Instrument	Vent
2D□□-FNS8-A	1/2 Female NPT	MSS SP-99 Flange	1/4 Female NPT
2D□□-FNS8-A-P			1/4 Female NPT with Plug
2DH□□-FNS8-A			1/4 Female NPT





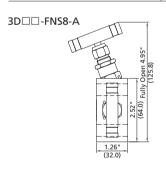


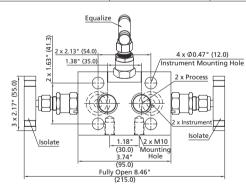
Every manifold is supplied with one PTFE sealing ring for manifold-to-instrument and four 7/16" UNF x 1.75" high tensile bolts. Dimensions shown are for 2D Series manifolds. For dimensions of 2DH Series manifolds, please contact FITOK Group or our authorized distributors.

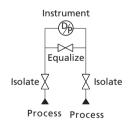
O 3-valve Manifolds

Basic Ordering Number	Process	Instrument	Vent
3D□□-FNS8-A	1/2 Female NPT	MSS SP-99 Flange	-
3D□□-FNS8-A-P			1/4 Female NPT with Plug
3DH□□-FNS8-A			-

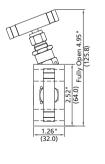


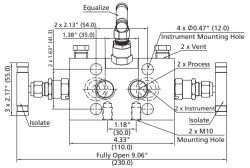


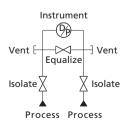












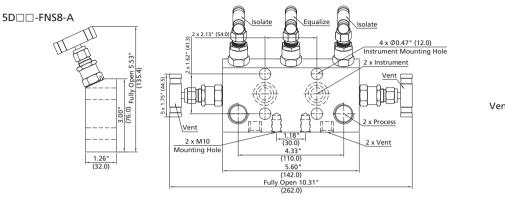
Every manifold is supplied with two PTFE sealing rings for manifold-to-instrument and four 7/16" UNF x 1.75" high tensile bolts. Dimensions shown are for 3D Series manifolds. For dimensions of 3DH Series manifolds, please contact FITOK Group or our authorized distributors.

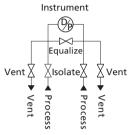


5-valve Manifolds

Basic Ordering Number	Process	Instrument	Vent
5D□□-FNS8-A	1/2 Female NPT	MSS SP-99 Flange	1/4 Female NPT
5D□□-FNS8-A-P			1/4 Female NPT with Plug
5DH□□-FNS8-A			1/4 Female NPT







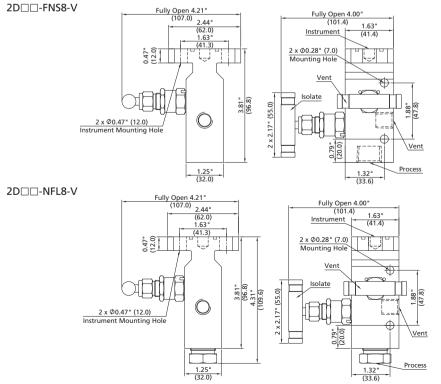
Every manifold is supplied with two PTFE sealing rings for manifold-to-instrument and four 7/16" UNF x 1.75" high tensile bolts. Dimensions shown are for 5D Series manifolds. For dimensions of 5DH Series manifolds, please contact FITOK Group or our authorized distributors.

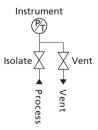
Direct Mount Manifolds (transmitter with traditional flange)

O 2-valve Manifolds

Basic Ordering Number	Process	Instrument	Vent
2D□□-FNS8-V	1/2 Female NPT		1/4 Female NPT
2D□□-FNS8-V-P	1/2 remaie NP1	MSS SP-99 Flange	1/4 Female NPT with Plug
2D□□-NFL8-V	1/2"Female FITOK Tube Fitting		1/4 Female NPT





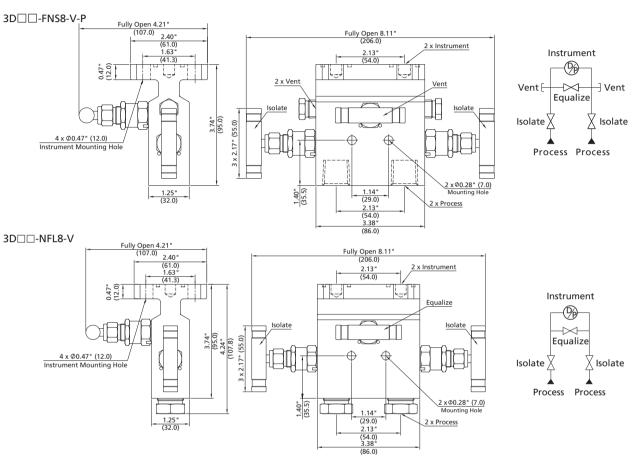


Every manifold is supplied with one PTFE sealing ring for manifold-to-instrument and two 7/16" UNF x 24mm high tensile bolts.

O 3-valve Manifolds

Basic Ordering Number	Process	Instrument	Vent
3D□□-FNS8-V	1/2 Female NPT		-
3D□□-FNS8-V-P	1/2 remale NP1	MSS SP-99 Flange	1/4 Female NPT with Plug
3D□□-NFL8-V	1/2"Female FITOK Tube Fitting		-





Every manifold is supplied with two PTFE sealing rings for manifold-to-instrument and four 7/16" UNF x 24mm high tensile bolts.

Basic Ordering Number	Process	Instrument	Vent	S Latter S
3D□□-F-V	Flange	MSS SP-99 Flange	-	
3D□□-F-V-P	riange	Wiss St -55 Flatige	1/4 Female NPT with Plug	
BD -F-V Fully Open 4 (107.0)	21" 44" (41. 3)	Fully Open 8.1 (206.0)	-	
	1.63* (41.3)	2.13" (54.0)	2 x Instrument Equalize	Instrument Equalize Isolate X X Isola
4 x 00.47" (12.0) Instrument Mounting Hole	3 x 2.17" (55.0)	Isolate		Process Process
35 <u>1 L </u>	1.63° 4 x 7 / 16-20 (41.3) Thread Mounting I	Hole 1.14" (29.0) 2.13" (54.0) 3.39" (86.0)	2 x Ø 0.28" (7.0) Mounting Hole 2 x Process	

Every manifold is supplied with two PTFE sealing rings for manifold-to-instrument and four 7/16" UNF x 24mm high tensile bolts.

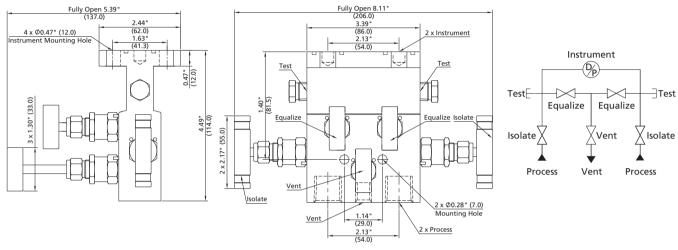


5-valve Manifolds

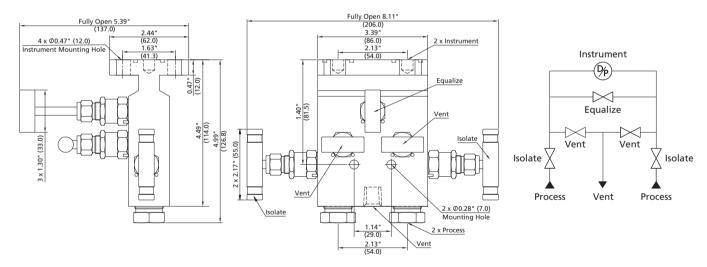
Basic Ordering Number	Process	Instrument	Vent	Test
5D□□-FNS8-V			1/4 Female NPT	_
5D□□-FNS8-V-P	1/2 Female NPT	MSS SP-99 Flange	1/4 Female NPT with Plug	-
5D□□-FNS8-VB-E		Wiss SF-99 Flatige	1/4 Female NPT	1/4 Female NPT with Plug
5D□□-NFL8-V	1/2"Female FITOK Tube Fitting		1/4 Female NP1	-



5D□□-FNS8-VB-E



5D□□-NFL8-V



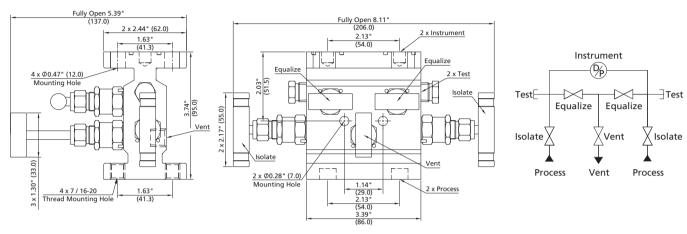
Every manifold is supplied with two PTFE sealing rings for manifold-to-instrument and four 7/16" UNF x 24mm high tensile bolts.



Basic Ordering Number	Process	Instrument	Vent	Test
5D□□-F-VB			1/4 Female NPT	
5D□□-F-VB-P	Flange	MSS SP-99 Flange	1/4 Female NPT with Plug	-
5D□□-F-VB-E			1/4 Female NPT	1/4 Female NPT with Plug



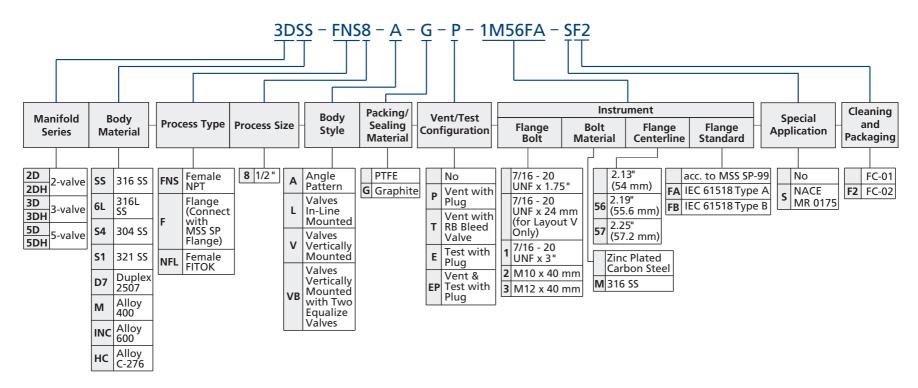
5D□□-F-VB-E



Every manifold is supplied with two PTFE sealing rings for manifold-to-instrument and four 7/16" UNF x 24mm high tensile bolts.



Ordering Number Description



Notes:

- Standard manifold instrument is flange (according to MSS SP-99), flange distance (center-to-center) is 2.13" (54 mm).
 Distance of 2.19" (55.6 mm) suitable for transmitters of range 6, 7 and 1151.
 Distance of 2.25" (57.2 mm) transmitters of range 8 and 1151.
- 2. Cleaning and Packaging:
 - FC-01: Standard cleaning and packaging for general industrial procedures.
 - FC-02: Special cleaning and packaging for wetted system components to ensure compliance with product cleanliness requirement as stated in ASTM G93 Level C.
- 3. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available. If you have any questions, please contact FITOK Group or our authorised distributors.

Direct Mount Manifolds (transmitter without flange)

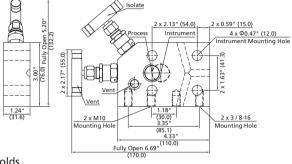
Specifically designed for assembly to Rosemount®coplanar™ pressure transmitters (including 3051C, 3051S, 2024 and 3095 models). Each manifold is included with: 4 pcs 7/16" UNF x 2" high tensile bolts. Assembles directly to transmitter.

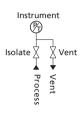
2-valve manifolds

Basic Ordering Number	Process	Instrument	Vent
2D□□-FNS8-C			1/4 Female NPT
2D□□-FNS8-C-P	1/2 Female NPT	Flange	1/4 Female NPT with Plug
2DH□□-FNS8-C			1/4 Female NPT







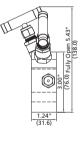


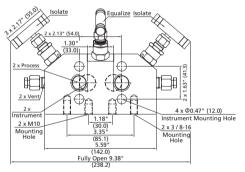
3-valve manifolds

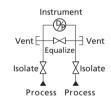
Basic Ordering Number	Process	Instrument	Vent
3D□□-FNS8-C-T	1/2 Farrala NDT	Flange	1/4 Female NPT
3DH□□-FNS8-C-T	1/2 Female NPT	riange	with Relief Valve









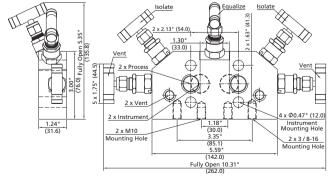


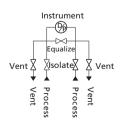
© 5-valve manifolds

Basic Ordering Number	Process	Instrument	Vent
5D□□-FNS8-C	1/2 Female NPT		1/4 Female NPT
5D□□-FNS8-C-P		Flange	1/4 Female NPT with Plug
5DH□□-FNS8-C			1/4 Female NPT









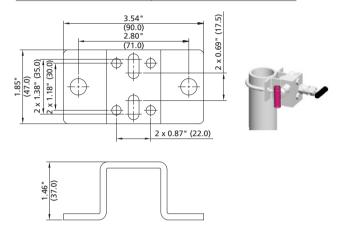
Accessories

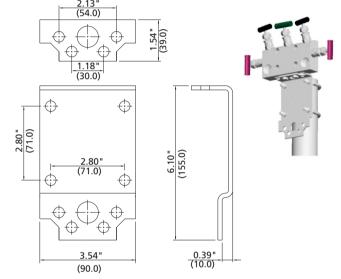
Manifold Mounting Bracket Kit

The integral assembly includes: bracket, U-bolts, bolts, gaskets, nuts

Basic Ordering Number	Mounting Manifold
SS-M2P-2BK	2R□□-XX-A, 2R□□-XX-L, 2RH□□-XX-A
SS-M2P-2BK-50	2R□□-XX-V
SS-M2P-2BK-17.5	3R□□-XX-V
SS-M2P-2BK-28.7	5R□□-XX-VB, 5R□□-XX-V

Basic Ordering Number	Mounting Manifold
SS-M2P-4BK	2D - XX-A, 2D - XX-L, 3D - XX-A, 3D - XX-L, 5D - XX-A, 5D - XX-AB, 5R - XX-L, 5R - XX-AB, 2DH - XX-A, 3DH - XX-A, 5DH - XX-A, 5RH - XX-AB

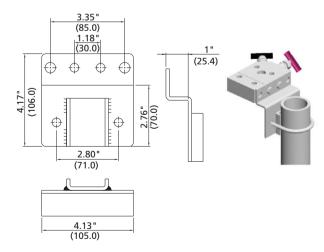


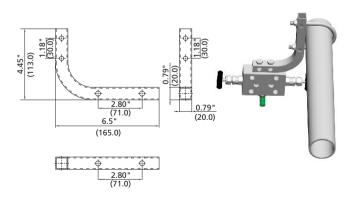


Dimensions shown are for manifold SS-M2P-2BK. For dimensions of other manifolds, please contact FITOK Group or our authorized distributors.

Basic Ordering Number	Mounting Manifold
SS-M2P-6BK	2D

Basic Ordering Number	Mounting Manifold
SS-M2P-8BK	2D□□-XX-A, D□□-XX-A, 3D□□-XX-L, 2D□□-XX-C, 3D□□-XX-C, 5D□□-XX-C





 $For more installation information \ regarding \ other \ manifolds, \ please \ contact \ FITOK \ Group \ or \ our \ authorized \ distributors.$



Kidney Flanges and Eccentric Flanges

Features

Working temperature:

PTFE: -65°F to 450°F (-54°C to 232°C) Graphite: -65°F to 1200°F (-54°C to 649°C)

- integrally forged body
- O Standard material: A182 F316
- The process connection of transmitter can be changed to other connection types

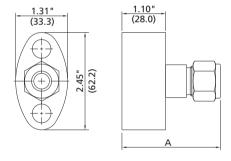
Types and Dimensions

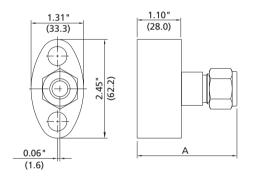
KF Series

Basic Ordering	Connection Type and Size	Dimension in. (mm)
Number	aliu size	Α
SS-KF-FNS4	1/4 Female FITOK	1.10 (28.0)
SS-KF-FNS8	1/2 Female FITOK	1.10 (28.0)
SS-KF-FL8	1/2 FITOK	2.48 (63.0)
SS-KF-PB8	1/2 PB	2.10 (53.3)

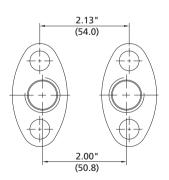
EF Series (Eccentric)

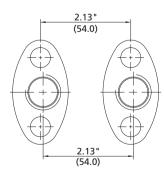
Basic Ordering	Connection Type	Dimension in. (mm)
Number	and Size	Α
SS-EF-FNS4	1/4 Female FITOK	1.10 (28)
SS-EF-FNS8	1/2 Female FITOK	1.10 (28)
SS-EF-FL8	1/2 FITOK	2.48 (63)
SS-EF-PB8	1/2 PB	2.10 (53.3)

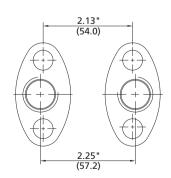




- 1. A kidney flange set contains a kidney flange, a PTFE flange seal ring and two 7/16 20 UNF high tensile bolts.
- 2. A whole eccentric flange set contains two eccentric flanges, two PTFE flange seal rings and four 7/16 20 UNF high tensile bolts.
- 3. The standard flange seal material is PTFE, graphite is an option. To order graphite flange seal material, add "- G" as a suffix.
- 4. A variety of center line distances can be obtained by using various combinations of kidney flanges sets: 2.00" (50.8 mm), 2.13" (54.0 mm) and 2.25" (57.2 mm).









info@fitok.com www.fitok.com

FK-IC-GV-12-EN-221120