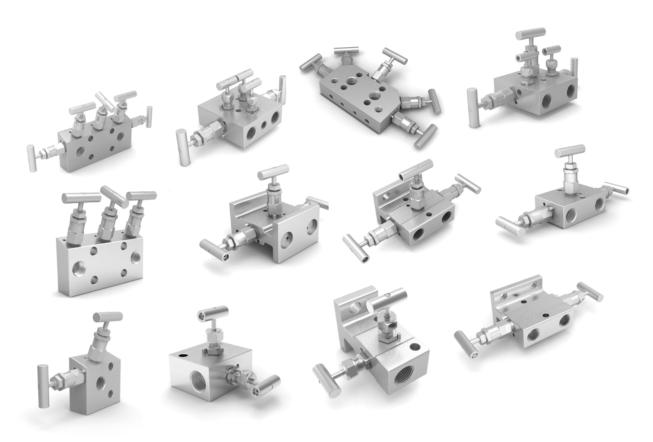
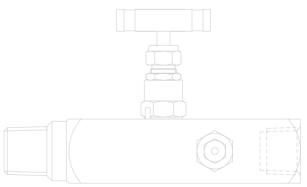
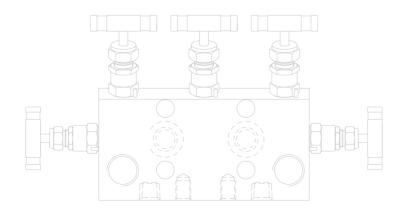
Gauge Valves and Instrument Manifolds



Climate Control
Electromechanical
Filtration
Fluid & Gas Handling
Hydraulics
Process Control
Sealing & Shielding









CONTENTS

Gauge Valves and Instrument Manifolds

Gauge Valves 71 Series	1
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75R and 75D Series	13



Gauge Valves 71 Series



Features

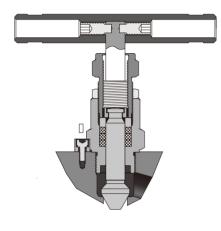
- Maximum working pressures:
 Stainless steel: up to 6000 psig (414 bar)
 Alloy 400: up to 5000 psig (345 bar)
- Working temperature:

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

 Graphite packing: -65°F to 1200°F (-54°C to 649°C)
- Non-rotating lower stem, ball tip and plug tip designs
- Variety of materials for packing
- Safety back seating seals in fully open position
- Rolled spindle operating threads
- Lubricant for stem thread isolated from the media
- Externally adjustable gland
- Bonnet locking pin fitted as standard
- Low torque operating T bar handle
- Steady and durable fastening of the handle by double lock-pins
- Suitable for sour gas service; materials are selected inaccordance with NACE MR0175/ISO 15156.
- Every valve is 100% factory tested with nitrogen.



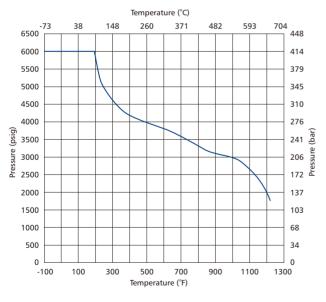
Standard Materials of Construction



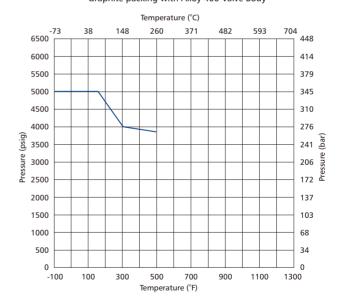
ltem	Part	,	Valve Body Materia	I		
item	rart	316 SS	Alloy 400	NACE MR0175		
1	Handle	A	Anodized aluminum			
2	Set Screw	Nickel	cadmium-plated ste	el		
3	Packing Bolt		321 SS/A276			
4	Upper Stem		316 SS/A276			
5	Lock Nut		316 SS/B783			
6	Bonnet	316 SS/A479 Alloy R-405/B164		Annealed 316 SS/A479		
7	Gland		316 SS/A276			
8	Packing	F	TFE or graphite			
9	Lock Pin		304 SS/A276			
10	Lower Stem	Chrome-plated 316 SS/A276	Alloy R-405/B164	Alloy R-405/B164		
11	Body	316 SS/A479 316 SS/A182	Alloy 400/B164, B127,B564	Annealed 316 SS/A479		
	Lubricant	Molybdenum disulfide-based				

Pressure vs. Temperature





Graphite packing with Alloy 400 Valve Body



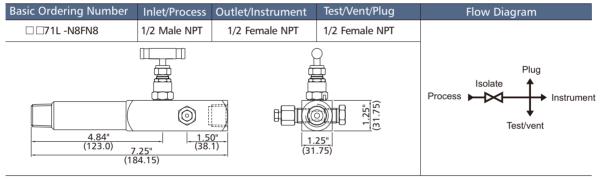


Types and Dimensions

Standard Type

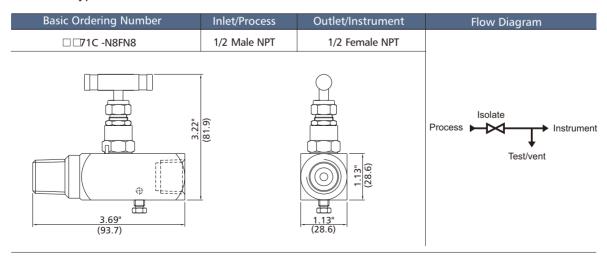
Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent/Plug	Flow Diagram
□ □ 71 -N8FN8	1/2 Male NPT	1/2 Female NPT	1/2 Female NPT	
□ □ 71 -N12FN12	3/4 Male NPT	3/4 Female NPT	1/2 Female NPT	
2.97" (75.4) 5.37 (136.5)		1.25 (31.7	(31.75)	Plug Isolate Instrument Test/vent

Lagging Extension Body Type



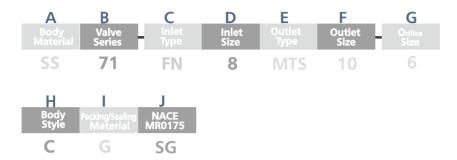
Lagging extension body is inserted through pipe for insulation.

Miniature Type

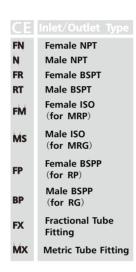




71 Series Gauge Valves How to Order



Α	Body Material
SS:	316 SS
6L:	316L SS
S4 :	304 SS
4L:	304L SS
S1 :	321 SS
91:	F91
92:	F92
D5 :	Duplex 2205
D7 :	Duplex 2507
TI:	Titanium
A20:	Alloy 20
M:	Alloy 400
INC:	Alloy 600
HC:	Alloy C-276



DF	Inlet/Outlet Size
2	1/8"
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	10 mm
12	3/4" or 12 mm
14	14 mm or M14 x 1.5
16	1" or 16 mm
18	18 mm
20	1 ¹ / ₄ " or 20 mm or M20 x 1.5
22	22 mm or M22 x 1.5
24	M24 x 1.5



В	Valve Series
71:	71 Series Gauge Valves

Standard Same as Body			
w	Stellite		
D5	Duplex 2205		
TI	Titanium Gr.4		
A20	Alloy 20		
INC	Alloy 600		
HC	Alloy C-276		

Remark:

1. Standard thread pitch for metric threads are as follows:

M10 and below: 1 mm M12 to M24: 1.5 mm M27 and above: 2 mm

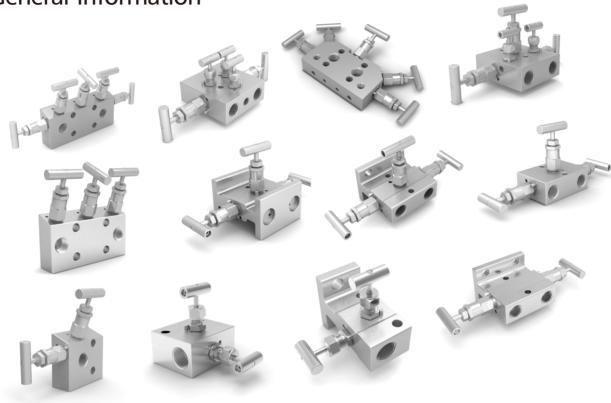
Standard thread pitch should be ignored in the ordering

number, others should be specified.



Instrument Manifolds

General Information



Features

- Maximum working pressures:
 Stainless steel: up to 6000 psig (414 bar)
 Alloy C-276: up to 6000 psig (414 bar)
 Alloy 400: up to 5000 psig (345 bar)
- Working temperatures:

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 in. (4.0 mm), CV: 0.35

- Two-stem design: thread hardened upper stem and
- smooth surface hardened lower stem

Upper stem thread lubricant isolated from system media

- Linearly instead of helical movement of the nonrotating lower
- stem, avoiding galling damage to the seat and tip, as well as reducing the total friction area between the packing and the lower stem

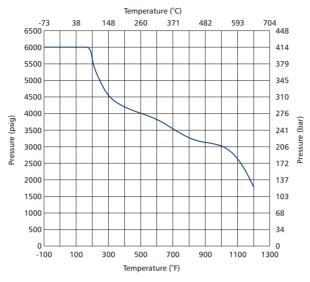
Safety back seating seals in fully open position

- Steady and durable fastening of the handle by double lock-pins
- Suitable for sour gas service; materials are selected inaccordance with NACE MR0175/ISO 15156.
- Every valve is 100% factory tested with nitrogen.

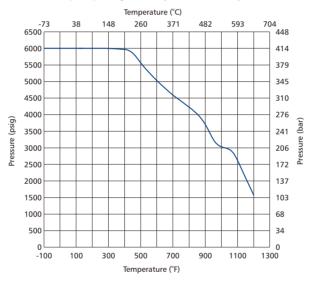


Pressure vs. Temperature

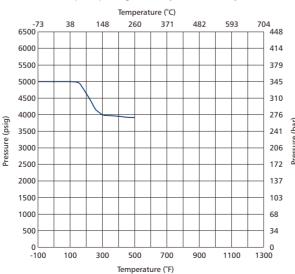
Graphite packing with 316 SS Valve Body



Graphite packing with Alloy C-276 Valve Body



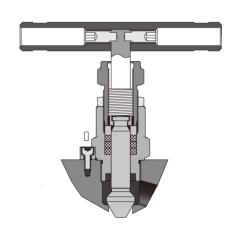
Graphite packing with Alloy 400 Valve Body





Standard Materials of Construction

Item	Part	Valve Body Material				
item	rait	316 SS Alloy 400		Alloy C-276		
1	Handle	S	Stainless Steel			
2	Set Screw	Ni	ckel cadmium-pla	ted steel		
3	Packing Bolt		321 SS/A276	_		
4	Upper Stem		316 SS/A276			
5	Lock Nut		316 SS/B783			
6	Bonnet	316 SS/A479	Alloy R-405/B164	Alloy C-276/B574		
7	Gland	316 SS/A276				
8	Packing		PTFE or PEEK or	graphite		
9	Lock Pin		304 SS/A276	5		
10	Lower Stem	Chrome-plated 316 SS/A276	Alloy R-405/B164	Alloy C-276/B574		
11	Body	316 SS/A479 316 SS/A182	Alloy 400/B164, B127,B564	Alloy C-276/B564		
	Lubricant	N	lolybdenum disult	fide-based		



Process interface valves for sour gas service are available. Materials are selected in accordance with NACE MR0175/ISO 15150. Contact the authorized representative or VFK if any request.

Instrument Manifolds

- Instrument manifold are manufactured in accordance with ANSI B31.1 and B31.3, specifications meet MSS-SP-105. Flange design meets the requirements of MSS SP-99.
- © 2-valve manifold are used with pressure gauges or pressure transmitters.
- © 3-valve and 5-valve manifold are used with differential pressure transmitters.

2-valve Manifolds

Consist of one block valve and one bleed valve

Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent	Flow Diagram
□ □72D-FN8-A □ □72D-FN8-AG	1/2 Female NPT	Flanged	1/4 Female NPT	
4 x \(\frac{\phi 0.472}{\phi 12.0}\) 1.73 (44.0)		(21.0) (21.0) (32.0)	(76.0)	Instrument Isolate Test/Vent Process

Every manifold is supplied with one PTFE sealing ring for manifold-to-instrument and four 7/16" UNF x 1.75" high tensile bolts.



Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent	Flow Diagram
□ □72D-FN8-L □ □72D-FN8-LG	1/2 Female NPT	Flange	1/4 Female NPT	
2 x $\frac{\phi_{0.472}}{(\phi_{12.0})}$	1.30" (33.0) (33.0) (30.0) (2.68" (68.0)		(63.5)	Instrument Isolate Test/Vent Process

Every manifold is supplied with one PTFE sealing ring for manifold—to–instrument and two 7/16'' UNF x 1.75'' high tensile bolts.

Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent	Flow Diagram
□ □72D-FN8-T □ □72D-FN8-TG	1/2 Female NPT	Flange	1/4 Female NPT	
-	81" (32.0)	2 x <u>@0.28"</u> 1.9 (4)	38" 7.8)	Instrument Isolate Test/Vent Process

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

Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent	Flow Diagram
☐ ☐ 72D-FN8-H☐ ☐ ☐ 72D-FN8-HG	1/2 Female NPT	Flange	1/4 Female NPT	
	1.18" (30.0) 3.5" (88.9) 7.83" (198.7)	(41.2) 2.5" (63.5)		Instrument Isolate Test/Vent Process
0 1111 {		(31.75)		

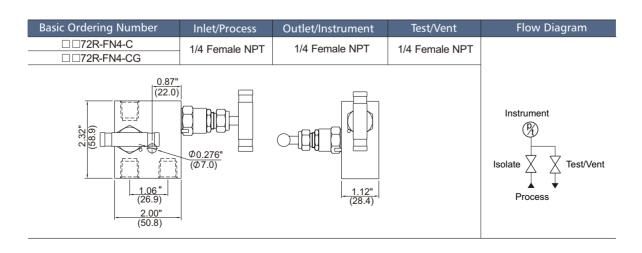
Every manifold is supplied with one PTFE sealing ring for manifold-to-instrument and two 7/16" UNF x 1.75" high tensile bolts.



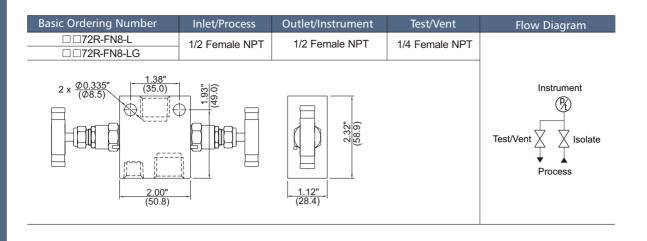
Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent	Flow Diagram
□ □72D-F-H □ □72D-F-HG	Flange	Flange	1/4 Female NPT	
	1.0" (25.4 (25.4 (30.0) 3.5" (88.9) 7.83" (198.7)			Instrument Isolate Test/Vent Process
	—————————————————————————————————————	1.25"		

Every manifold is supplied with one PTFE sealing ring for manifold-to-instrument and two 7/16" UNF x 1.75" high tensile bolts.

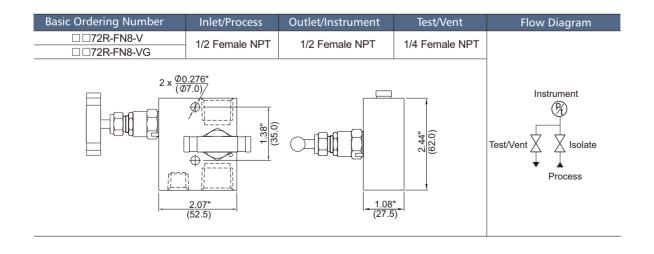
Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent	Flow Diagram
☐ ☐ 72R-FN4-A ☐ ☐ 72R-FN4-AG	1/4 Female NPT	1/4 Female NPT	1/4 Female NPT	
2 x $\frac{\phi_{0.276}}{(\phi_{7.0})}$ $\frac{8}{(\phi_{7.0})}$ $\frac{1.38^{"}}{(58.9)}$	0.53" (13.5)	1.112' (28.4		Test/Vent Instrument Process Isolate







Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent	Flow Diagram
□ □72R-FN8N8-H □ □72R-FN8N8-HG	1/2 Female NPT	1/2 Male NPT	1/4 Female NPT	
□ □ 72R-N8-H □ □ 72R-N8-HG	1/2 Male NPT	1/2 Male NPT	1/4 Female NPT	
	1.25" 31.75)	1.25" (31.75)		Instrument Test/Vent Isolate Process



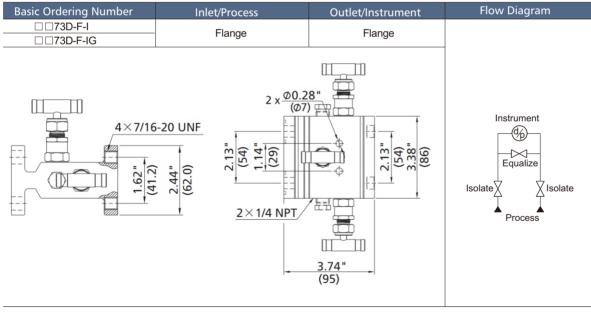


3-valve Manifolds

Consist of two block valves and one equalizer valve

Basic Ordering Number	Inlet/Process	Outlet/Instrument	Flow Diagram
□ □73D-FN8-T □ □73D-FN8-TG	1/2 Female NPT	Flange	
□ □73D-FX8-T □ □73D-FX8-TG	1/2" VFK	Flange	
3.74" (95.0)	1.25" (32.0) 1.62" (41.22) 2.40 (61)	2.13" (54) 3.38" (86)	Instrument Equalize Isolate Process

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



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



Basic Ordering Number	Inlet/Process	Outlet/Instrument	Flow Diagram
□ □ 73D-FN8-A □ □ 73D-FN8-AG	1/2 Female NPT	Flange	
□ □73D-FX8-A	1/2" VFK	Flange	
□□73D-FX8-AG 4 x	1.62" 1.62" (41.2)	Flange 1.25" (32.0)	Instrument Equalize Isolate Process

Every manifold is supplied with two PTFE sealing rings manifold-to-instrument and four 7/16" UNF x 1.75" high tensile bolts.

Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent	Flow Diagram
□ □ 73D-FN8-L □ □ 73D-FN8-LG	1/2 Female NPT	Flange	Optional	
□ □ 73D-FX8-L □ □ 73D-FX8-LG	1/2" VFK	Flange	Optional	
(3 2 (5 4 (5	1.18" 10.00) 1.25" 14.0)	1.25" (32.0)	(76.0)	Plug Equalize Plug Isolate Process

Every manifold is supplied with two PTFE sealing rings for manifold-to- instrument and four 7/16''' UNF x 1.75''' high tensile bolts.

Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent	Flow Diagram	
□ □ 73R-FN8-V □ □ 73R-FN8-VG	1/2 Female NPT	1/2 Female NPT	Optional		
□ □ 73R-FX8-V □ □ 73R-FX8-VG	1/2" VFK	1/2" VFK	Optional	Instrument	
[17. 17. 2.12. (54.	□□73R-FX8-VG .69"				



5-valve Manifolds

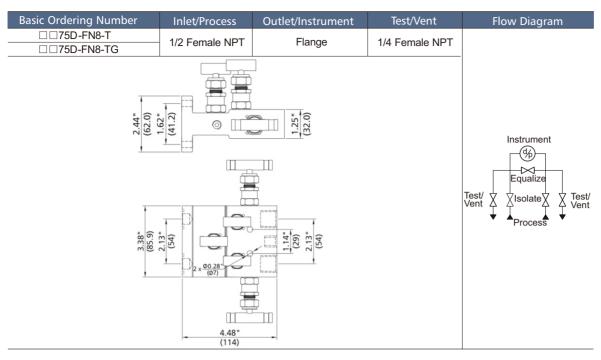
Double-bleed Function of 5-valve Manifold

Consist of two block valves, two bleed valves, and one equalizer valve

Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent	Flow Diagram
□ □75D-FN8-A □ □75D-FN8-AG	1/2 Female NPT	Flange	1/4 Female NPT	
□ □75D-FX8-A □ □75D-FX8-AG	1/2" VFK	Flange	1/4 Female NPT	
4 x \$\frac{\phi_0 472}{\phi_0 12.0}\$ \frac{1.18''}{(\phi_1 12.0)}\$ \frac{1.18''}{(\phi_2 12.0)}\$ \frac{2.125''}{(\phi_5 0)}\$ \frac{4.33''}{(\phi_1 10.0)}\$ \frac{5.60''}{(142.0)}\$	19.70	1.25" (32.0)		Instrument Compared to the content of the conten

Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent	Flow Diagram
□ □75R-FN8-L □ □75R-FN8-LG	1/2 Female NPT	1/2 Female NPT	1/4 Female NPT	
□ □75R-FX8FN8-L □ □75R-FX8FN8-LG	1/2" VFK	1/2 Female NPT	1/4 Female NPT	
1.18 (300 2.125 (54.0 2.95 (750.0 4.33" (110.0 5.60" (142.0		1.25" (32.0)	(0.97)	Instrument Equalize Test/ Vent Process Test/ Vent



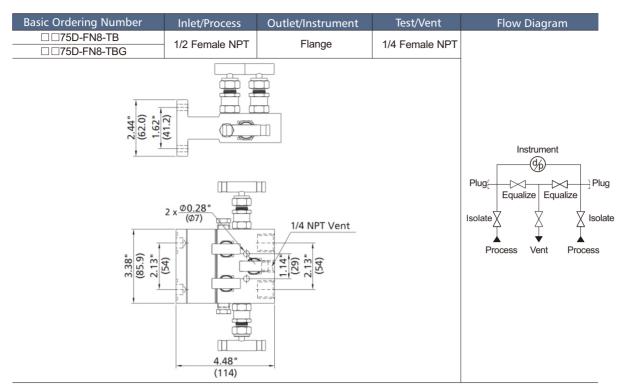


Every manifold is supplied with two PTFE sealing rings for manifold-to-instrument and four 7/16" UNF x 24 mm high tensile bolts.

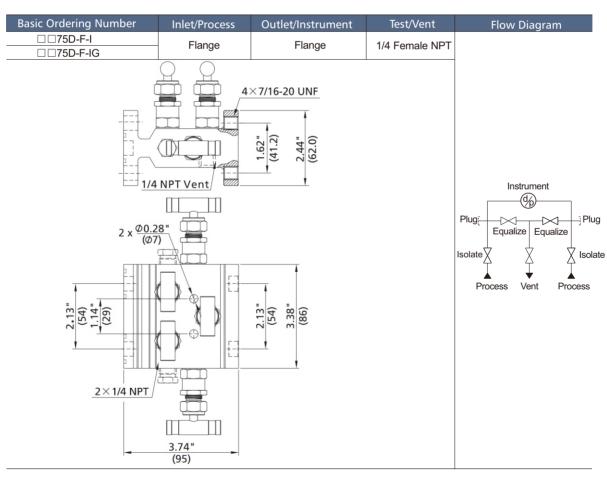
5-valve Custody Transfer/Fiscal Metering Manifold Consist of two block valves, one bleed valve, and two equalizer valves

Basic Ordering Number	Inlet/Process	Outlet/Instrument	Vent	Test	Flow Diagram
□ □ 75D-FN8-B □ □ 75D-FN8-BG	1/2 Female NPT	Flanged	1/4 Female NPT	Optional	
□ □ 75D-FX8-B □ □ 75D-FX8-BG	1/2" VFK	Flanged	1/4 Female NPT	Optional	
4 x \(\frac{\phi_{0.472}}{(\phi_{12.0})}\)	2.125" (54.0) 4.33" (110.0) 5.60" (142.0)	(19.0)	(0.97) 1.70 (0.35) 1.70 (0.35)		Instrument Plug Pl



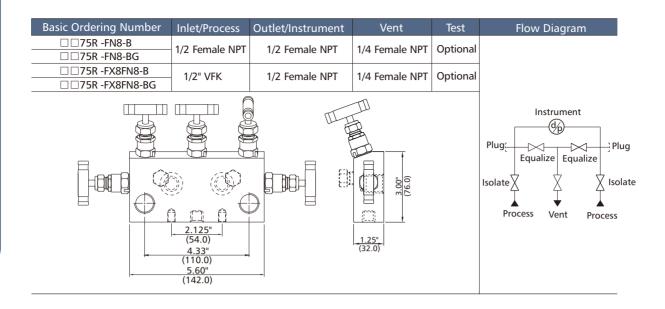


Every manifold is supplied with two PTFE sealing rings for manifold-to-instrument and four 7/16'' UNF x 24 mm high tensile bolts.



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



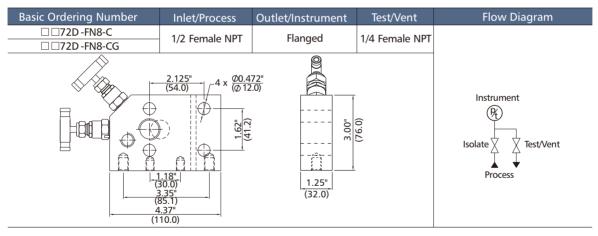


C-Integral Manifolds

This section is presently characterized by manifold designed specifically for Rosemount[®] coplanar[™] pressure transmitters including the model 3051C, model 3051P, model 2024 and the model 3095.

Each of the following manifold contains four 7/16" UNF x 1.75" high tensile bolts.

2-valve Manifolds

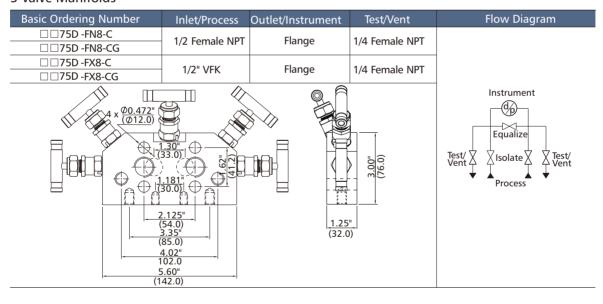




3-valve Manifolds

Basic Ordering Number	Inlet/Process	Outlet/Instrument	Test/Vent	Flow Diagram
□ □ 73D -FN8-C □ □ 73D -FN8-CG	1/2 Female NPT	Flange	Optional	
□ □ 73D -FX8-C □ □ 73D -FX8-CG	1/2" VFK	Flange	Optional	
00.472 00.472 00.120	1.181" (33.0) (54.0) 3.35" (85.0) 5.60" 142.0)	1.25 (32.0	<u> </u>	Plug Equalize Isolate Process

5-valve Manifolds





Accessories

Kidney Flange and Eccentric Flange

Features

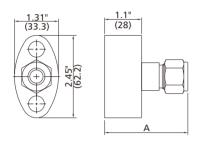
■ Working temperature :

PTFE: -65°F to 450°F (-54°C to 232°C) Graphite: -65°F to 1000°F (-54°C to 538°C)

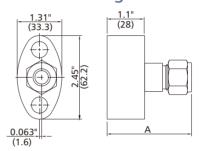
■ Integral forged body

■ Standard material: A182 F316

Kidney Flange



Eccentric Flange



The process connection type of transmitter can be transformed to other connection types.

Ordering Information

Basic Ordering Number	Connection Type and Size	Dimension in. (mm) A
SSKF-FN4	1/4 Female NPT	1.1 (28)
SSKF-FN8	1/2 Female NPT	1.1 (28)
SSKF-FX8	1/2" VFK	2.48 (63)
SSKF-PB8	1/2 PB	2.1 (53.3)

A kidney flange set contains a PTFE flange seal ring and two 7/16 - 20 UNF high tensile bolts.

Ordering Information

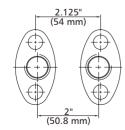
Basic Ordering Number	Connection Type and Size	Dimension in. (mm) A	
SSEF-FN4	1/4 Female NPT	1.1 (28)	
SSEF-FN8	1/2 Female NPT	1.1 (28)	
SSEF-FX8	1/2" VFK	2.48 (63)	
SSEF-PB8	1/2 PB	2.1 (53.3)	

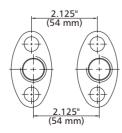
- 1. Eccentric flange needs to be ordered in whole set.
- 2. A whole eccentric flange set contains two eccentric flanges, two PTFE flange seal rings and four 7/16 20 UNF high tensile bolts.

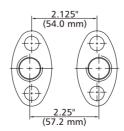
The Selection of Flange Seal Materials

The standard flange seal material is PTFE, graphite is an option, to order graphite flange seal material, add -G as a suffix.

Various Combinations of Eccentric Flange Set



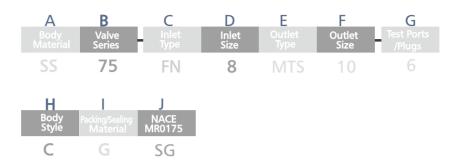




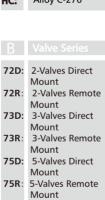
Combinations of eccentric flange set can give different center line distances of 2.0" (50.8 mm), 2.125" (54 mm) and 2.25" (57 mm).



Instrument Manifolds How to Order



Α	
A	Body Materia
SS:	316 SS
6L:	316L SS
S4:	304 SS
4L:	304L SS
S1:	321 SS
91:	F91
92:	F92
D5:	Duplex 2205
D7:	Duplex 2507
TI:	Titanium
A20:	Alloy 20
M:	Alloy 400
INC:	Alloy 600
HC:	Alloy C-276

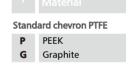


CE	Inlet/Outlet Type
FN	Female NPT
Ņ	Male NPT
FR	Female BSPT
RT	Male BSPT
FM	Female ISO (for MRP)
MS	Male ISO (for MRG)
FP	Female BSPP (for RP)
ВР	Male BSPP (for RG)
FX	Fractional Tube Fitting
MX	Metric Tube Fitting
F	Flange

DF	Inlet/Outlet Size
2	1/8"
4	1/4"
6	3/8" or 6 mm
8	1/2" or 8 mm
10	10 mm
12	3/4" or 12 mm
14	14 mm or M14 x 1.5
16	1" or 16 mm
18	18 mm
20	1½" or 20 mm or M20 x 1.5
22	22 mm or M22 x 1.5
24	M24 x 1.5
	Tost Ports/Plugs

	Standard with no Test Ports and Plugs		
Т	1/4 Female NPT with Relief Valve		
P	1/4 Female NPT with Plug		

Α	Angle Pattern
В	Double-equalize Function
С	Compact Pattern
L	Valves In-Line Mounted
н	Valves Horizontally Mounted
V	Valves Vertically Mounted
Т	Valves Body "T" Style Mounted
1	Valves Body "H" Style Mounted



J NACE MR0175
Standard with no
NACE applicable

with NACE MR0175



The auxiliary installation for manifolds and transmitters of different brands

Model of FEDEX Manifolds Model of Transmitters	73(5)DXX-XX-X	73(5)RXX-FXXX-X	72DXX-XXX-X	72RXX-FXXX-X
Rosemount Transmitters				
3051 CD X X 2 (3, 4, 5, 7, 8) X X X X	A4			
3051 CD X X 0 X X X X H2 (H3, H4, H7, HJ)	A1			
3051 CD X X 0 X X X X HK	A2			
3051 CD X X 0 X X X X HL	A3			
3051 CD X X 0 X X X X DF	A5	А		
3051 CG (CA) X X 2 (3, 4, 5, 7, 8) X X X X			A4	
3051 CG (CA) X X 0 X X X X H2 (H3, H4, H7, HJ)			A1	
3051 CG (CA) X X 0 X X X X HK			A2	
3051 CG (CA) X X 0 X X X X HL			A3	
3051 CG (CA) X X 0 X X X X DF			A5	Α
1151 D (H) P 3 (4, 5) X XX XX	A1			
1151 A (G) P 3 (4, 5) X XX XX			A1	
1151 D (H) P X X XX XX DF	A5	А		
EJA Transmitters				
EJA1X0A-XXX0 (5) X-XXXX	A1			
EJA1X0A-XXX1 (2, 3, 4) X-XXXX	A5	Α		
EJA3 (4, 5) X0A-XXX0 (5)X-XXXX			A1	
EJA3 (4, 5) X0A-XXX1 (2,3,4)X-XXXX			A5	A
Honeywell Transmitters				
STDXXX-XXA-XXX	A1			
STDXXX-XXH-XXX	A5	А	A5	
STXXXX-XXG-XXX			A1	Α
STGXXX-XXA-XXX				
SMXXXX-XXA-XXX	A1			
SMXXXX-XXH-XXX	A5	А		
SIEMENS Transmitters				
7MF433X-XXX0 (4) X-XXXX			A2	А
7MF433X-XXX2 (6) X-XXXX			A1	Α
7MF44 (5) 3X-XXX0 (4) X-XXXX	A2			
7MF44 (5) 3X-XXX2 (3, 6, 7) X-XXXX	A1			
7MF44 (5) 3X-XXX1 (5) X-XXXX	A3			

A: Connecting with fittings

A1: Connecting with flange and sealing rings, using 7/16 - 20 UNF x 1.75" bolts

A2: Connecting with flange and sealing rings, using M10 x 40 mm bolts

A3: Connecting with flange and sealing rings, using M12 x 40 mm bolts

A4: Connecting with flange and sealing rings, using 7/16 - 20 UNF x 3" bolts

A5: Remove the kidney flanges and then connect with flange and sealing rings



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