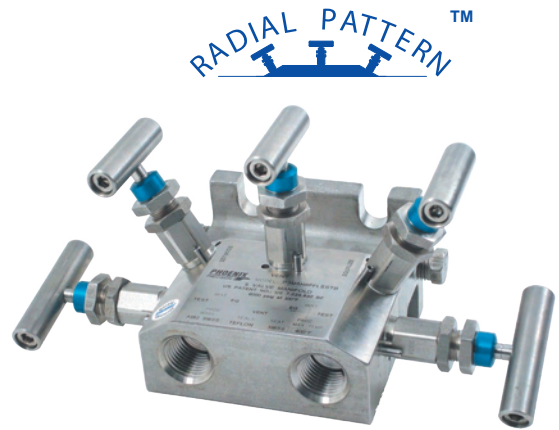


5-VALVE MANIFOLD - GAS STYLE US PATENT NO.: US 7,225,832 B2

3/16" Bore 5-Valve Gas Style Manifold

The 5-valve manifold features 2 isolation valves, 2 equalizer valves and 1 vent valve in a single body for isolation and calibration of differential pressure transmitters. The manifold bonnets are configured in a Radial Pattern™ for easy operation. Additional features include a body manufactured from extruded solid bar, robust stems and Phoenix's innovative design which ensures a bubble tight seal in a variety of conditions. All Phoenix valves are manufactured and designed in accordance with MSS-SP105.



Standard Features

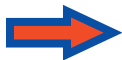
Hydrotested at 150% of rated pressure (shell test). Nitrogen gas tested to 2000 psi.



Benefits

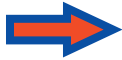
Complies with ASME B31.1 & B31.3 shell testing procedures as standard. Ensures structural integrity of valve.

Seat tightness (zero leakage) verified to 110% of rated pressure. Nitrogen gas tested to 2000 psi.



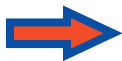
Complies with ASME B31.1 & B31.3 seat testing procedures as standard. Ensures zero leakage at seats for proper calibration.

Packing below stem threads



Prevents corrosion of critical stem threads

Metal body-to-bonnet seals are in compression, not tension



Mitigates risk of stress cracking

Stem threads are rolled, not cut



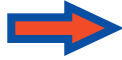
Higher quality stem for longer service life

8 RMS stem finish



Extended packing life

True globe pattern valve



Extended packing life

V-Style Teflon™ packing



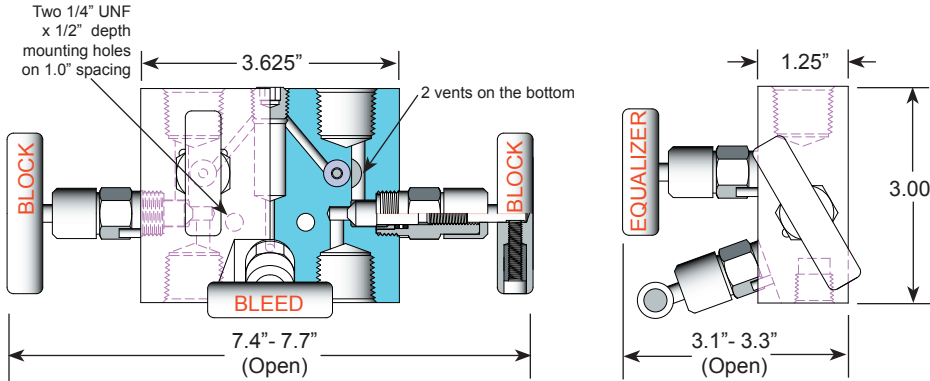
30-40% less operational torque and less frequent packing adjustments than traditional Teflon™ packed valves.

Pressure component materials sourced from the US, Canada or Europe



Reliable material traceability. MTR's provided with every order for pressure containing components.

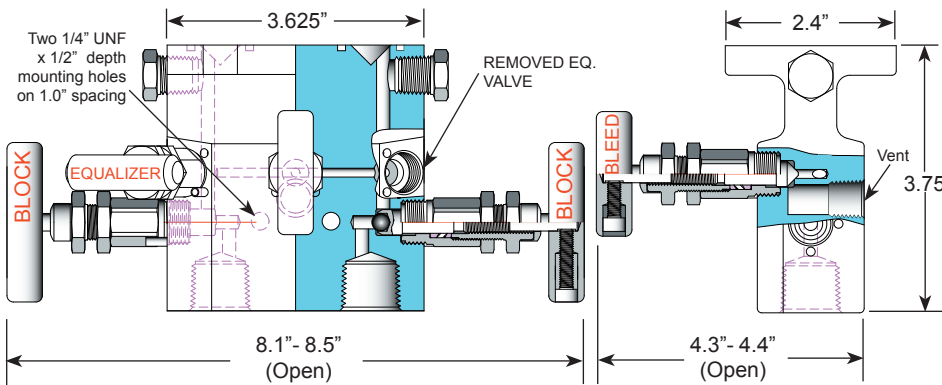
Pipe x Pipe Configuration



Specifications:

Type: **P3M5H** 5-Valve Manifold, Globe Pattern
 Rating: Up to 6000 psi @ 100°F
 (41370 kPa @ 38°C)
 Stem: Needle tip or Ball tip
 Packing: Viton™ O-ring, Teflon™ or Grafoil™
 Seat: Integral
 Handle: Removable
 Bore Size: 3/16" (Primary), 1/8" (EQ., Bleed)
 Inlet Connections: FNPT
 Outlet Connections: FNPT
 Bonnet Lock: Pin or Plate
 Body Stock: 3.625" x 3.00" x 1.25"
 Weight: 4.1 - 4.3 lbs
 Special Service: O₂ or CL cleaning available*
 *Other specifications or services may be available.

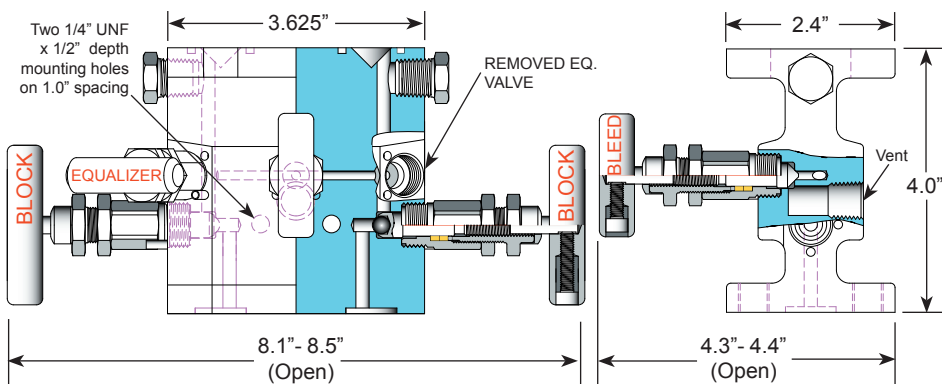
Pipe x Flange Configuration



Specifications:

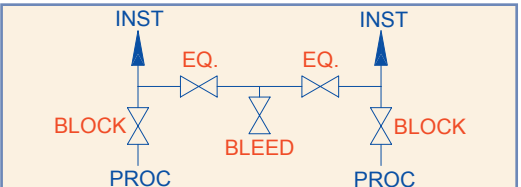
Type: **P3M5H** 5-valve Manifold, Globe Pattern
 Rating: Up to 6000 psi @ 100°F
 (41370 kPa @ 38°C)
 Stem: Needle tip or Ball tip
 Packing: Viton™ O-ring, Teflon™ or Grafoil™
 Seat: Integral
 Handle: Removable
 Bore Size: 3/16" (Primary), 1/8" (EQ., Bleed)
 Inlet Connections: FNPT
 Outlet Connections: Flange
 Bonnet Lock: Pin or Plate
 Body Stock: 3.625" x 3.750" x 2.4" x 1.5"
 Weight: 5.8 - 6.1 lbs
 Special Service: O₂ or CL cleaning available*
 *Other specifications or services may be available.

Flange x Flange Configuration



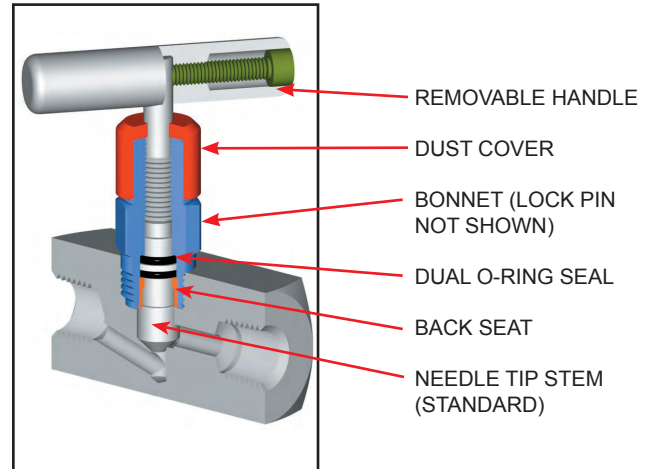
Specifications:

Type: **P3M5H** 5-Valve Manifold, Globe Pattern
 Rating: Up to 6000 psi @ 100°F
 (41370 kPa @ 38°C)
 Stem: Needle tip or Ball tip
 Packing: Viton™ O-ring, Teflon™ or Grafoil™
 Seat: Integral
 Handle: Removable
 Bore Size: 3/16" (Primary), 1/8" (EQ., Bleed)
 Inlet Connections: Flange
 Outlet Connections: Flange
 Bonnet Lock: Pin or Plate
 Body Stock: 3.625" x 4.0" x 2.4" x 1.5"
 Weight: 6.7 - 7.0 lbs
 Special Service: O₂ or CL cleaning available*
 *Other specifications or services may be available.



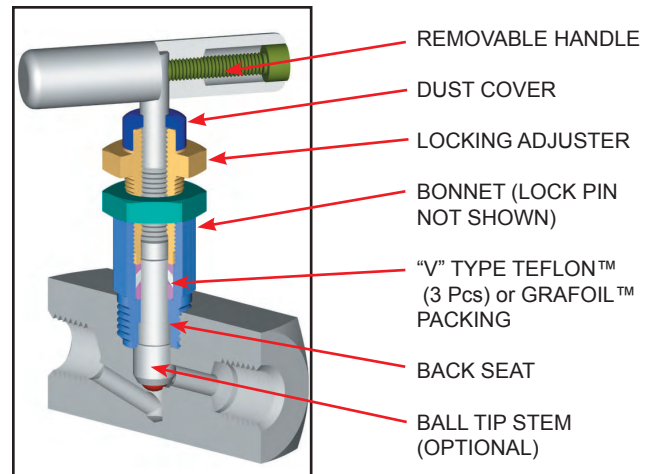
O-Ring Bonnet Assembly

Standard Materials					
Valve	Body	Bonnet	Stem	Ball	Packing
CS	ASTM A108CS	ASTM A108CS	ASTM A582 303SS	SEE OPTION CODES ON PAGE 4	Dual Viton™ O-ring with Teflon™ backup ring
SC	ASTM A105CS	ASTM A182 316SS	ASTM A182 316SS		
316SS	ASTM A182 316SS	ASTM A182 316SS	ASTM A182 316SS		

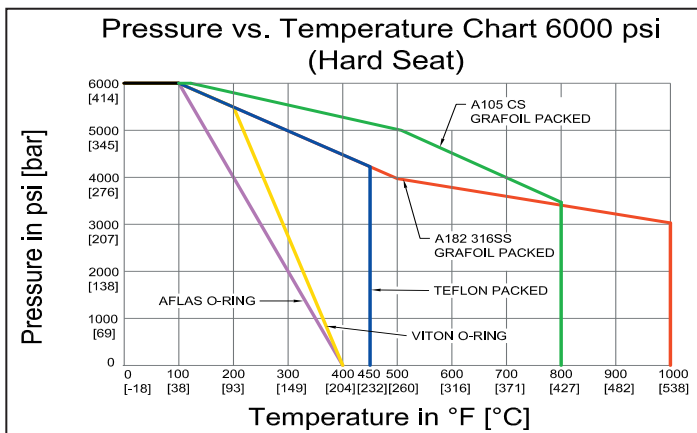


Teflon™ or Grafoil™ Bonnet Assembly

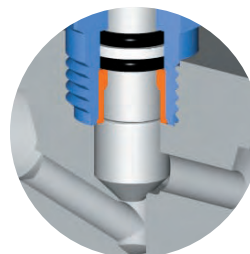
Standard Materials					
Valve	Body	Bonnet	Stem	Ball	Packing
CS	ASTM A108CS	ASTM A108CS	ASTM A582 303SS	SEE OPTION CODES ON PAGE 4	Teflon™ and Grafoil™
SC	ASTM A105CS	ASTM A182 316SS	ASTM A182 316SS		
316SS	ASTM A182 316SS	ASTM A182 316SS	ASTM A182 316SS		



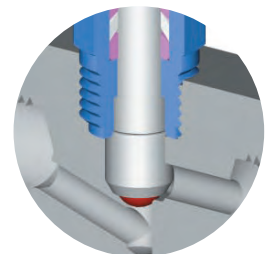
NOTE: Optional low torque Grafoil™ available (G4 Packing Code)



Stem and Seat Configurations



Needle Tip
(Standard)



Ball Tip
(Optional)

Note: Body material specifications based on ASME B16.34 - 2009. Packing material ratings based on manufacturer's specifications. Approximations only. Phoenix does not represent these values as finite. They are provided only as representative values.

P3M5H™ 5-Valve Gas Style Manifold Model Numbering System

Phoenix	Orifice Size	Type	Inlet Size	Inlet Type	Outlet Size	Outlet Type	Material	Packing	Seat	Stem Tip	Option Codes	Description							
P	3=3/16"	M5H	8=1/2"	F=FNPT	8=1/2"	F=FNPT	SS=ASTM A182 316/316L	A=Aflas™	Integral (leave blank)	Needle Tip Standard (leave blank)	LB	Bonnet Lock							
				FL=Flange		FL=Flange	SC=ASTM A105 CS*	V=Viton™ (FKM)		B=316SS Ball Tip	CC	Chlorine Clean							
				FT=Female Tube Fitting		FT=Female Tube Fitting	CS=ASTM A108 CS*	T=Teflon™ (PTFE)		BC=Ceramic Ball Tip	OC	Oxygen Clean							
							C5=ASTM A350 LF2	G=Grafoil™		BM=Monel™ Ball Tip	TG	SS Tag							
							N4=Monel™ 400	G4=Low Torque Grafoil™			SGL	Sour Gas ISO NACE Latest Rev.							
							N6=Inconel™ 625				N4	Monel™ 400 Stem							
							N8=Inconel™ 825				N5	Monel™ 500 Stem							
							N2=Hastelloy™ C276				N6	Inconel™ 625 Stem							
											N8	Inconel™ 825 Stem							
											N2	Hastelloy™ C276 Stem							
											H(V)MB	Horizontal (Vertical) Mounting Bracket							
											H(V)MBS	SS Horizontal (Vertical) Mounting Bracket							
EXAMPLE: P3M5H8FLLSSTB = 3/16" Orifice, 5-Valve Manifold, 1/2" FNPT Inlet, Flange Outlet, 316 SS Body, Teflon™ Packing, Integral Seat, Ball Tip Stem																			
P	3	M5H	8	F		FL	SS	T		B	S6	316 SS Bolts							
*For code applications, A105 CS must be selected for CS valves. Code grade bolts must be specified for code applications. Note: Standard Bolting Options , CS - carbon steel, Gr.8, zinc plated bolts; SS - stainless steel, 18.8 (304SS) bolts.																			
<table border="1"> <thead> <tr> <th colspan="2">Code Bolting Information</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>B7, B8C1, B8MC1, B8C2, B8MC2 are code grades to ASTM A193;</td> </tr> <tr> <td>2.</td> <td>To specify code grade bolting, example: 225B7, indicates 2.25" bolt length; B7 grade, alloy steel, AISI 4140/4142</td> </tr> <tr> <td>3.</td> <td>QT-Quenched & Tempered; ST-Carbide Solution Treated; SH-Strain Hardened</td> </tr> </tbody> </table>												Code Bolting Information		1.	B7, B8C1, B8MC1, B8C2, B8MC2 are code grades to ASTM A193;	2.	To specify code grade bolting, example: 225B7, indicates 2.25" bolt length; B7 grade, alloy steel, AISI 4140/4142	3.	QT-Quenched & Tempered; ST-Carbide Solution Treated; SH-Strain Hardened
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3.	QT-Quenched & Tempered; ST-Carbide Solution Treated; SH-Strain Hardened																		
											TB	1/4" FNPT Test Ports Bottom							
											PB	1/4" FNPT Purge Ports Bottom							
											B7	AISI 4140/4142 QT							
											B8C1	Class 1, 304SS, ST							
											B8MC1	Class 1, 316SS, ST							
											B8C2	Class 2, 304SS, ST, SH							
											B8MC2	Class 2, 316SS, ST, SH							

Use with Confidence, Phoenix Precision Products Meet the Following Specifications:

- ✓ ASME B31.1 Power Piping
- ✓ ASME B31.3 Process Piping
- ✓ ASME B16.34 Valves - Flanged, Thread, and Welding End
- ✓ API 598 Valve Inspection and Testing
- ✓ MSS SP-25 Standard Marking Systems for Valves, Fittings and Flange Unions
- ✓ MSS SP-99 Instrument Valves
- ✓ MSS SP-105 Instrument Valves for Code Applications
- ✓ NACE MR0175 for all 316SS valves and A105CS body/316SS bonnet (SC Material Code)

Seal and Seat Material Temperature Rating

Code	Description	Min. Temp.	Max. Temp.
A	Aflas™	15°F (-10°C)	400°F (204°C)
V	Viton™	-20°F (-29°C)	400°F (204°C)
T	Teflon™	-65°F (-54°C)	450°F (232°C)
G	Grafoil™ (SS Body)	-70°F (-56°C)	1000°F (537°C)
	Grafoil™ (CS Body)	-70°F (-56°C)	800°F (427°C)

Note: Grafoil™ is suitable for services in excess of 1000°F in a non-oxidizing environment.

For further information please contact:

Phoenix Precision Ltd.
2620 21st Street N.E.
Calgary, Alberta T2E 7L3
Phone: (403) 291-3154
Fax: (403) 291-3292
email: phoenix@phoenixprecision.ca
www.phoenixprecisionvalves.com



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