

Anderson Greenwood Instrumentation Manifolds - Two/Three/Five Valve

A range of 2, 3 or 5-valve integral manifolds for connection to bottom inlet, low-profile pressure and differential pressure transmitters with 2.125 inch (54mm) flanged connections.

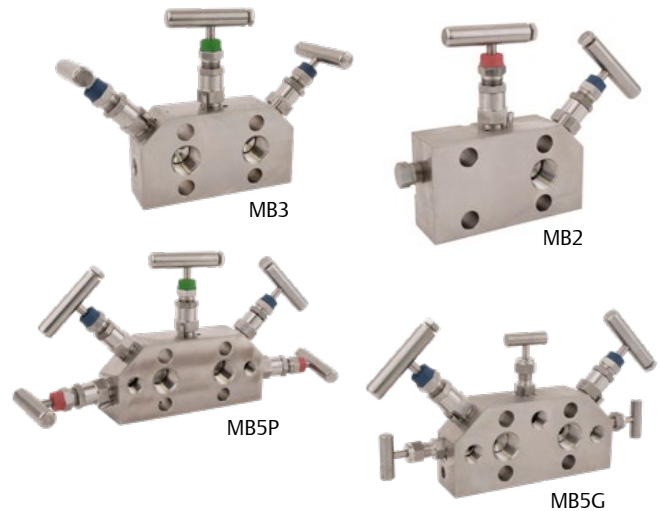
General Application

The MB series includes 2 valve manifolds for static pressure; 3 and 5 valve models for differential pressure transmitters with specific variants for gas, liquid and power services, including those that meet ASME B31.1 or B31.3 for fossil fuel power plants.

TECHNICAL DATA

Materials:	316 SS, Hastelloy®
Seats:	Metal
Connections:	Pipe x flanged
Instrument:	Flanged
Process:	1/2" NPT
Orifice size:	0.156" (4.8 mm)
Pressure (max):	6000 psig (414 barg)
Temperature range (min/max):	-313°F to 1000°F (-192°C to 538°C)

Hastelloy® is a registered trademark of Haynes International, Inc.



Features

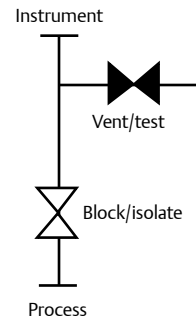
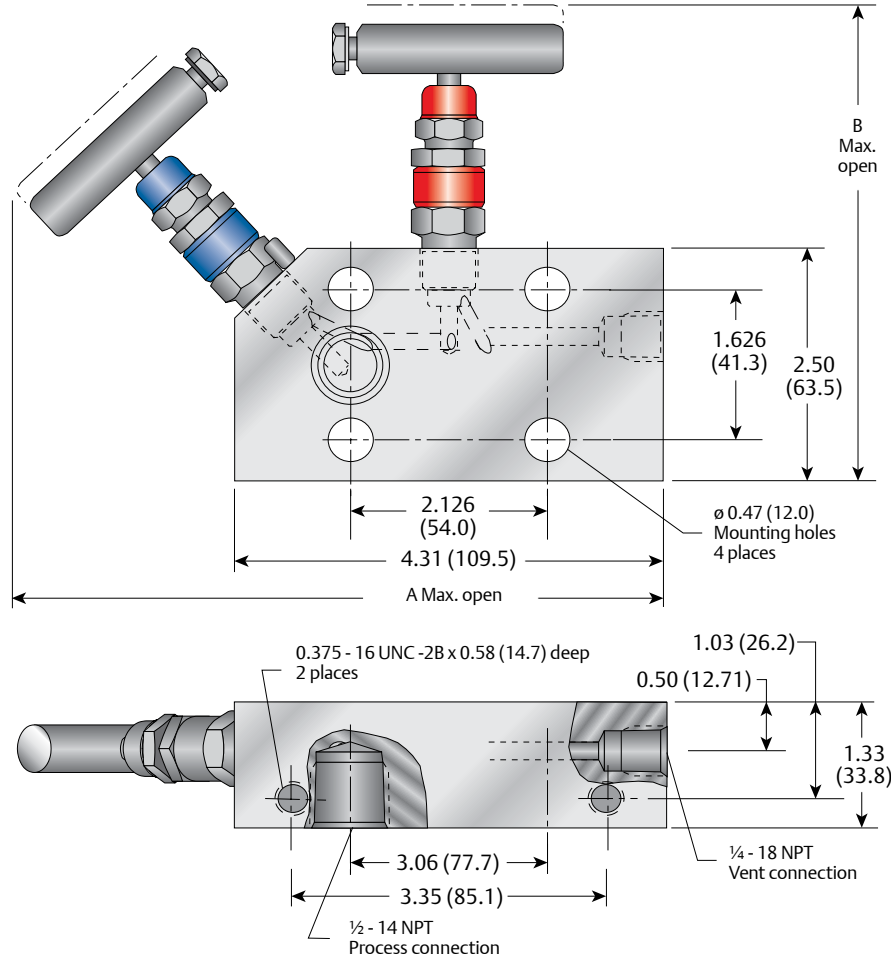
- Ball end stems eliminate seat galling, provide bubble-tight shutoff and long life. Hardened, non-rotating balls ensure perfectly aligned closure.
- Packing below threads prevents lubricant washout, thread corrosion, process contamination and eliminates galling.
- Easily adjustable PTFE or Graphite packing decreases replacement downtime and increases valve life.
- Dust caps protect stems from lubricant contamination.
- Safety back seating prevents stem blowout or accidental removal and provides a metal-to-metal secondary stem seal while in the fully open position.
- ENC plated 316 SS stems prevent galling of stem threads.
- Rolled stem and bonnet threads provide additional strength.
- Mirror stem finish in the packing areas provides smooth operation and extends packing life.
- Metal-to-metal body-to-bonnet seals in constant compression prevent bonnet thread corrosion, eliminate possible tensile breakage and give reliable seal points.
- Bonnet lock pins prevent accidental separation from the body while enabling easy maintenance and repair.
- Manifold transmitter installation envelope same as Coplanar installation.
- Dust Caps are colored and Ring Label identify valve function.

MB SERIES

Anderson Greenwood Instrumentation Manifolds - Two Valve

MB2 Dimensions

MB2 2-valve manifold for static pressure-Dimensions, Inches (mm)



Cap Color Coding	
	Block / Isolate
	Vent

Standard Materials

Valve	Body and bonnet	Stem and ball
316 SS	A479-316 316	A276-316 316
SG ^[2]	A479-316 316	Monel [®] 400 Monel [®] K500
SG3 ^[3]	Hastelloy [®] C-276	Hastelloy [®] C-276 Elgiloy [®]

Dimensions - Inches (mm)

Valve ⁽¹⁾	PTFE packed and Graphite	Low emissions graphite packed
A	6.96 (176.8)	7.49 (190.2)
B	5.15 (130.8)	5.75 (146.1)

Minimum Temperature

316 SS O-ring seal	-20°F (-29°C)
316 SS, Monel [®] , Hastelloy [®] , PTFE packed	-313°F (-192°C)
316 SS, Monel [®] , Hastelloy [®] , Graphite packed	-313°F (-192°C)

Pressure and Temperature Ratings

Valve	Packing	Ratings
316 SS	PTFE	6000 psig at 200°F (414 barg at 93°C) 4000 psig at 500°F (276 barg at 260°C)
316 SS	Graphite/ Low emissions graphite	6000 psig at 200°F (414 barg at 93°C) 1500 psig at 1000°F (103 barg at 538°C)
SG ^[2]	PTFE	6000 psig at 200°F (414 barg at 93°C) 4000 psig at 500°F (276 barg at 260°C)
SG ^[2]	Graphite/ Low emissions graphite	6000 psig at 200°F (414 barg at 93°C) 1500 psig at 1000°F (103 barg at 538°C)
SG3 ^[3]	PTFE	6000 psig at 200°F (414 barg at 93°C) 4000 psig at 500°F (276 barg at 260°C)
SG3 ^[3]	Graphite/ Low emissions graphite	6000 psig at 200°F (414 barg at 93°C) 1500 psig at 1000°F (103 barg at 538°C)

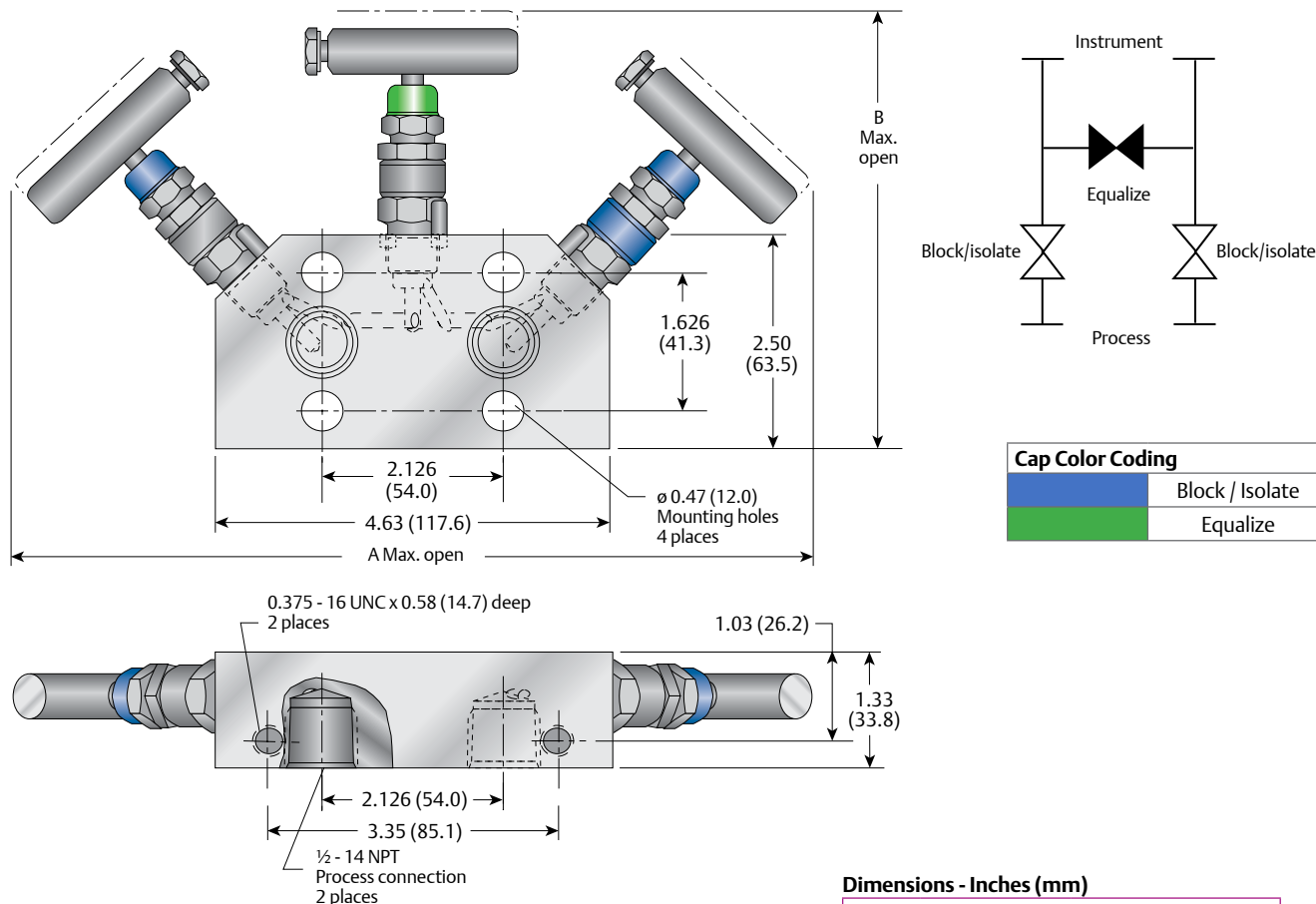
NOTES

- Approximate valve weight: 4.1 lb (1.9 kg).
0.156 inch (4.0 mm) diameter orifice.
Valve Cv 0.36 maximum.
- SG (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions ≤ 50 mg/l [ppm]) and NACE MR0103.
- SG3 (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions > 50 mg/l [ppm]).

Anderson Greenwood Instrumentation Manifolds - Three Valve

MB3 Dimensions

MB3 3-valve manifold with optional externally valved test ports-Dimensions, Inches (mm)



Standard Materials

Valve ^[2]	Body and bonnet	Stem and ball
316 SS	A479-316 316	A276-316 316
SG ^[3]	A479-316 316	Monel [®] 400 Monel [®] K500
SG3 ^[4]	Hastelloy [®] C-276	Hastelloy [®] C-276 Elgiloy [®]

Dimensions - Inches (mm)

Valve ^[1]	PTFE packed and Graphite	Low emissions graphite packed
A	9.93 (252.2)	10.98 (278.9)
B	5.15 (130.8)	5.75 (146.1)

Minimum Temperature

316 SS O-ring seal	-20°F (-29°C)
316 SS, Monel [®] , Hastelloy [®] , PTFE packed	-313°F (-192°C)
316 SS, Monel [®] , Hastelloy [®] , Graphite packed	-313°F (-192°C)

Pressure and Temperature Ratings

Valve	Packing	Ratings
316 SS	PTFE	6000 psig at 200°F (414 barg at 93°C) 4000 psig at 500°F (276 barg at 260°C)
316 SS	Graphite/ Low emissions graphite	6000 psig at 200°F (414 barg at 93°C) 1500 psig at 1000°F (103 barg at 538°C)
SG ^[3]	PTFE	6000 psig at 200°F (414 barg at 93°C) 4000 psig at 500°F (276 barg at 260°C)
SG ^[3]	Graphite/ Low emissions graphite	6000 psig at 200°F (414 barg at 93°C) 1500 psig at 1000°F (103 barg at 538°C)
SG3 ^[4]	PTFE	6000 psig at 200°F (414 barg at 93°C) 4000 psig at 500°F (276 barg at 260°C)
SG3 ^[4]	Graphite/ Low emissions graphite	6000 psig at 200°F (414 barg at 93°C) 1500 psig at 1000°F (103 barg at 538°C)

NOTES

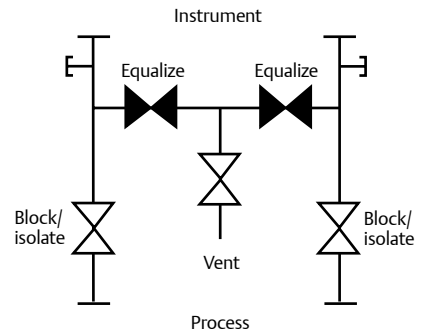
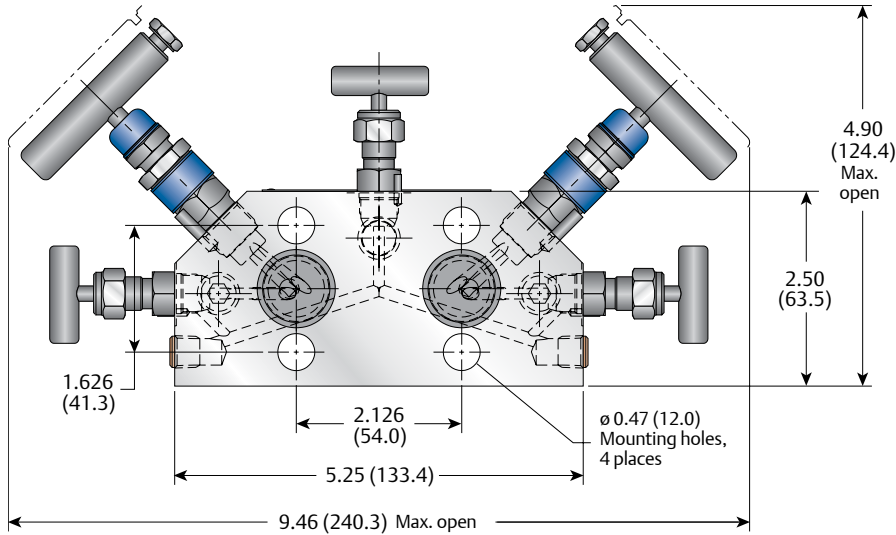
- Approximate valve weight:
5.0 lb (2.3 kg) for MC3VI ()-4-H5,
4.4 lb (2.0 kg) for MC3VI ()-4
0.156 inch (4.0 mm) diameter orifice.
Valve Cv 0.36 maximum.
- Optional test port valves are H5VDS-22, soft seat only.
- SG (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions ≤ 50 mg/l [ppm]) and NACE MR0103.
- SG3 (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions > 50 mg/l [ppm]).

MB SERIES

Anderson Greenwood Instrumentation Manifolds - Five Valve

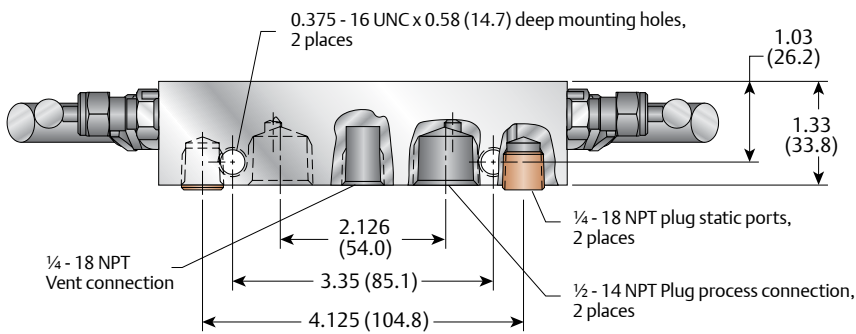
MB5G Dimensions

MB5G 5-valve manifold for gas service (patent protected)-Dimensions, Inches (mm)



Cap Color Coding

Block / Isolate



Standard Materials

Valve ^[1]	Body and bonnet	Stem and ball	Packing
316 SS	A479-316 316	A276-316 316	PTFE
SG ^[2]	A479-316 316	Monel® 400 Monel® K500	PTFE
SG3 ^[3]	Hastelloy® C-276	Hastelloy® C-276 Elgiloy®	PTFE

Pressure and Temperature Ratings

Valve	Ratings
316 SS, SG ^[2] , SG3 ^[3]	6000 psig at 200°F (414 barg at 93°C) 4000 psig at 500°F (276 barg at 260°C)

Minimum Temperature

316 SS O-ring seal	-20°F (-29°C)
316 SS, Monel®, Hastelloy®, PTFE packed	-70°F (-57°C)
316 SS, Monel®, Hastelloy®, Graphite packed	-70°F (-57°C)

NOTES

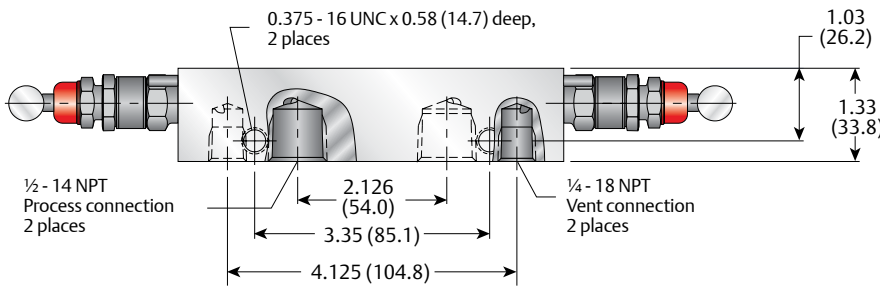
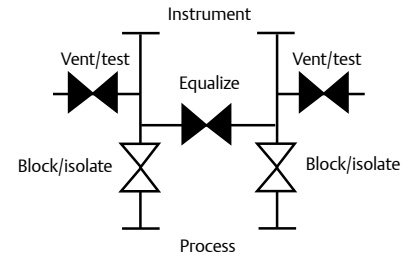
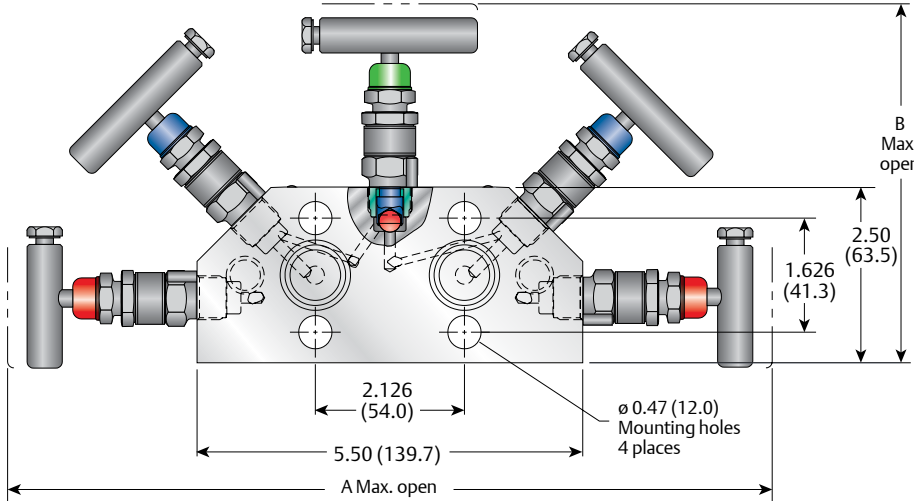
- Approximate valve weight: 5.3 lb (2.4 kg).
0.156 inch (4.0 mm) diameter orifice.
Valve Cv 0.36 maximum.
- SG (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions ≤ 50 mg/l [ppm]) and NACE MR0103.
- SG3 (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions > 50 mg/l [ppm]).



Anderson Greenwood Instrumentation Manifolds - Five Valve

MB5P Dimensions

MB5P 5-valve manifold with two integral test valves (patent protected)-Dimensions, Inches (mm)



Bonnet Lock (BL)

The Anderson Greenwood bonnet lock prevents accidental loosening of the bonnet-to-body seal. A high-strength, short bonnet pin aligns a hex collar over the bonnet. Tests indicate the minimum torque required to break the collar loose is greater than the torque required to twist off the handle.



Standard Materials

Valve	Body and bonnet	Stem and ball	Packing
316 SS	A479-316 316	A276-316 316	PTFE
SG ^[2]	A479-316 316	Monel [®] 400 Monel [®] K500	PTFE
SG3 ^[3]	Hastelloy [®] C-276	Hastelloy [®] C-276 Elgiloy [®]	PTFE

Pressure and Temperature Ratings

Valve	Ratings
316 SS, SG ^[2] , SG3 ^[3]	6000 psig at 200°F (414 barg at 93°C) 4000 psig at 500°F (276 barg at 260°C)

Dimensions - Inches (mm)

Valve ^[1]	PTFE packed and Graphite	Low emissions graphite packed
A	10.80 (274.3)	12.40 (315.0)
B	5.15 (130.8)	5.75 (146.1)

Minimum Temperature

Carbon steel	-20°F (-29°C)
316 SS O-ring seal	-20°F (-29°C)
316 SS, Monel [®] , Hastelloy [®] , PTFE packed	-313°F (-192°C)
316 SS, Monel [®] , Hastelloy [®] , Graphite packed	-313°F (-192°C)

NOTES

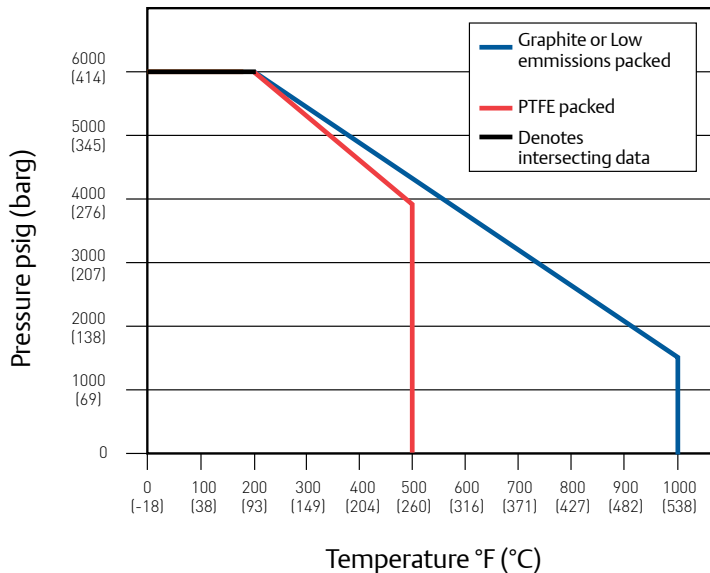
- Approximate valve weight: 5.3 lb (2.4 kg).
0.156 inch (4.0 mm) diameter orifice.
Valve Cv 0.36 maximum.
- SG (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions ≤ 50 mg/l [ppm]) and NACE MR0103.
- SG3 (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions > 50 mg/l [ppm]).
- Valve bonnet labels not supplied on Graphite packed bonnets due to temperature limitations.

MB SERIES

Anderson Greenwood Instrumentation Manifolds - Two/Three/Five Valve

MT2 Dimensions

Pressure vs. Temperature



Minimum temperature

316 SS O-ring seal	-20°F (-29°C)
316 SS, Monel®, Hastelloy®, PTFE packed	-313°F (-192°C)
316 SS, Monel®, Hastelloy®, Graphite packed	-313°F (-192°C)

Bonnet Assemblies

The metal-seated bonnet assemblies have rotating stems with free swivel ball-type seats for long service life. The specially hardened ball seat is ideal for both gas and liquid service.

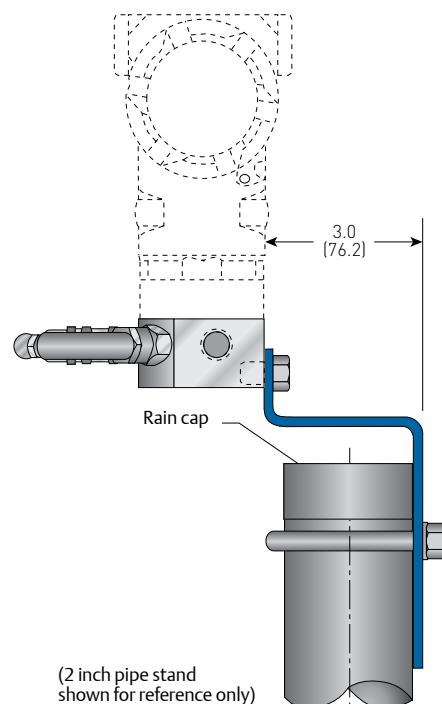
All stem threads are rolled and lubricated to prevent galling and reduce operating torque. The PTFE and Graphite stem seal is adjustable in service. All bonnets are assembled with a bonnet locking pin to prevent accidental removal while in service. PTFE and Graphite bonnets have a protective dust cap fitted to contain stem lubricant and prevent the influx of contaminants.

AGI Mount Kits

Manifold style	Kit part no.	Material
-AM	06.1662.502	CS ^[1]
-AMS	06.1662.501	316 SS

NOTE

1. Zinc chromate plated.



Anderson Greenwood Instrumentation Manifolds - Two/Three/Five Valve

Selection Guide - MB Specifications

MB	3	V	I	S	-4	-AM
BASIC SERIES	TYPE	PACKING	SEAT	MATERIAL	END CONNECTION	OPTIONS
MB	2 2 valve (static pressure)	V PTFE	I Integral (body material)	S 316 SS	4 1/2-inch FNPT	AM AGI Mount kit for 2-inch pipe stand mounting of manifold
	3 3 valve (ΔP)	H Graphite (not available for MB5G)		J Hastelloy®		AMS AGI Mount kit for 2- inch pipe stand mounting of manifold 316SS
	5G 5 valve (gas)(ΔP)	E Low emissions-graphite (not available for MB5G)				BL Bonnet lock device
	5P 5 valve (power)(ΔP)					CB Ceramic ball ended stem
						H5 H5VDS-22 vent valve (2) (MB3 only)
						1H5 H5VDS-22 vent valve (1) (MB2, MB3 only)
						HD Hydrostatic testing (100 percent) (MSS SP-61)
						OC00 Cleaned for oxygen service
						SSA ⁽¹⁾ SS flange bolt (grade 18-8) - maximum pressure rating 4500 psi (310 barg)
						SSB 316 SS flange bolt (B8M Class 2) - will provide full pressure rating
						SSC ⁽¹⁾ 316 flange bolt (B&M) - maximum pressure rating 4500 psi (310 barg)
						SG (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions ≤ 50 mg/l [ppm]) and NACE MR0103
						SG3 (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions > 50 mg/l [ppm])
						SS All 316 SS materials on non wetted components
						LT Low Temperature for integral seat 316SS -313°F (-192°C) @ 2500 psi (1782 bar) for integral seat (I) graphite packing. Must include -SBB option to use. For Integral seat manifolds MB2, MB3 And MB5P

NOTES

1. 316 SS bolts lower pressure ratings to a maximum of 4500 psi (310 barg). Consult factory for full rating with 316 SS bolts.
2. Bolts, plugs, bleed plugs and gaskets are not included; contact factory if bolts, plugs or gaskets are required.

MC SERIES

Anderson Greenwood Instrumentation Manifolds - Two/Three/Valve

Selection Guide - MB ASME B31.1 - Power Industry Applications^[1]

MB	3HP	S	-4 -XP	-AM
BASIC SERIES	TYPE	MATERIAL	END CONNECTION	OPTIONS
MB	2HP 2 valve (static pressure) 3HP 3 valve (ΔP) 5HP 5 valve (power)(ΔP)	S 316 SS	4 1/2-inch FNPT	AM AGI Mount kit for 2-inch pipe stand mounting of manifold AMS AGI Mount kit for 2- inch pipe stand mounting of manifold 316SS

NOTES

1. All Manifolds come standard with Graphite packing, integral seats, bonnet locks, and are subjected to hydrostatic testing.
2. To ASME B31.1 or B31.3 specifications, meets MSS SP-105.