

Anderson Greenwood Instrumentation Manifolds - Five Valve

Three or five valve manifolds with a $\frac{3}{16}$ " (4.8 mm) or $\frac{3}{8}$ " (9.5 mm) orifice for differential pressure natural gas services to 6000 psig (414 barg)

General Application

M6TW and M6TAW offer a choice of connection options for remotely mounted differential pressure transmitter applications. The M66 offers a larger orifice for positive drainage of wet gas and hydrates and reduced signal variance in pulsating flows.

TECHNICAL DATA

Materials

CS, 316 SS, Hastelloy®

Seats:

Metal or soft

Connections:

Instrument: Flanged

Process: Flanged or 1/2" NPT

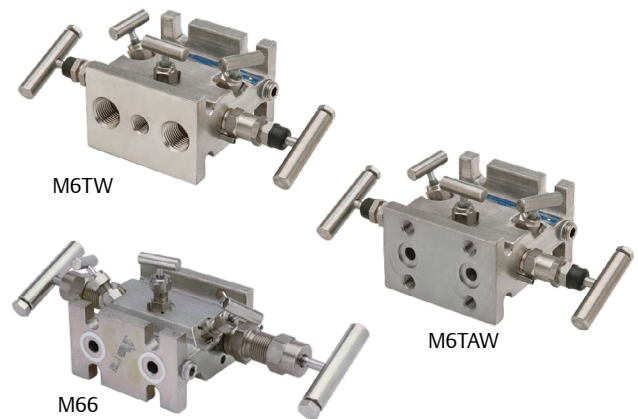
Pressure (max):

6000 psig (414 barg) standard

Temperature range (min/max):

-70°F to 1000°F

(-57°C to 538°C)



Features

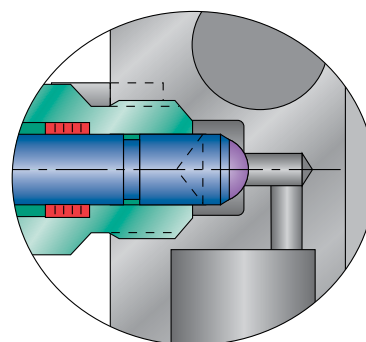
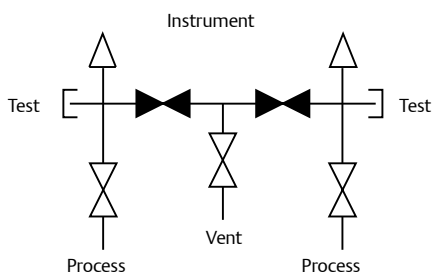
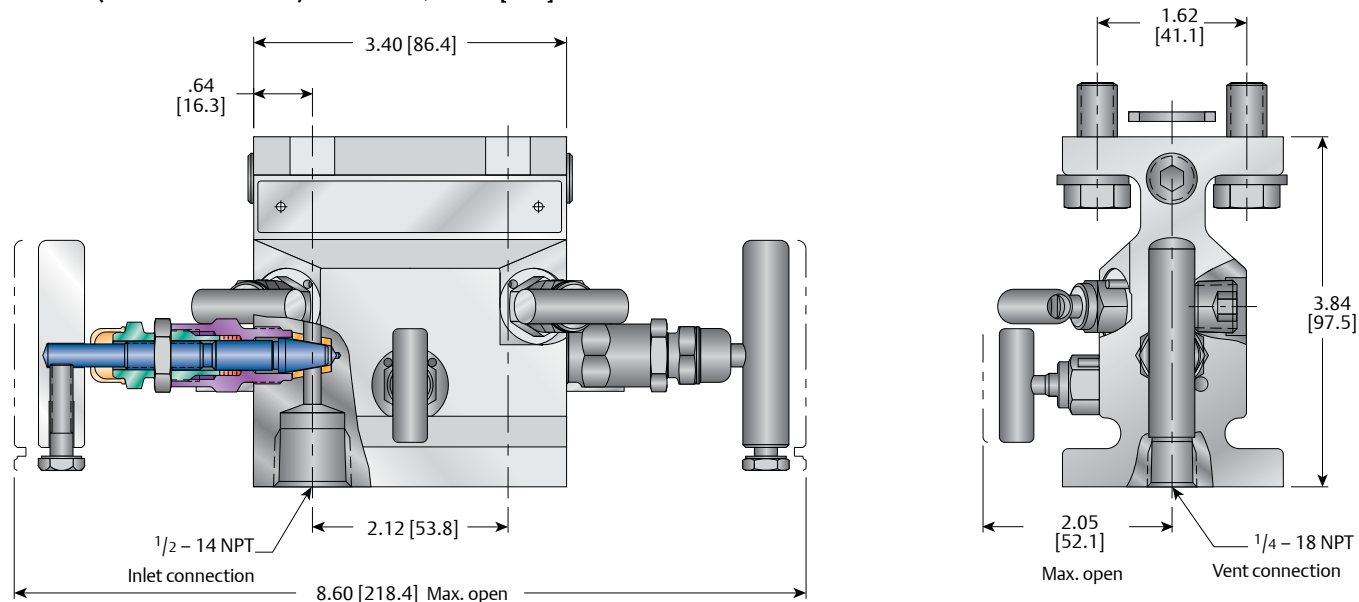
- Easy Installation of lightweight M6TW and M66 using pipestand mount with no additional support required.
- Available as 3 valve equalizer or 5 valve gas pattern assemblies.
- Upstream or downstream $\frac{1}{4}$ " FNPT ports for connecting the static pressure to the meter.
- Hard or field-replaceable soft seats for bubble-tight performance in abrasive applications.
- Bonnet-to-body and stem threads isolated from process corrosion - important in sour gas applications.
- Stem backout prevention eliminates accidental removal while under pressure.
- FKM O-ring with PTFE back-up ring standard stem packing with long life assured by mirror finish stem in the packing area.
- Integral hard back seat forms a secondary seal for the stem threads when valve is fully opened.
- ENC plated rolled stem threads increase strength and extend life.
- Single or double ferrule tube fittings integral to the body reduce potential leak points.

M6TW SERIES

Anderson Greenwood Instrumentation Manifolds - Five Valve

M6TW Dimensions

Soft seat (metal seat available) Dimensions, inches [mm]



M6TW and M6TAW Metal Seat

NOTES

- M6TW installation kit consists of 4 B7 CS bolts 7/16-inch -20 x 1-inch A193-B7, 4 washers, and 2 PTFE as standard.
- Approximate valve weight: 6.0 lb [2.7 kg].

Metal seat:

0.156-inch (4.0 mm) diameter orifice.
Valve Cv 0.36 maximum.

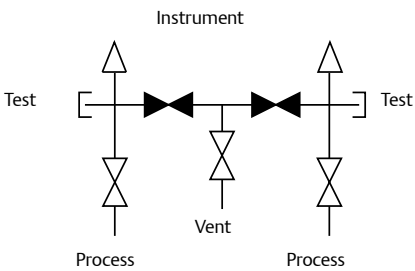
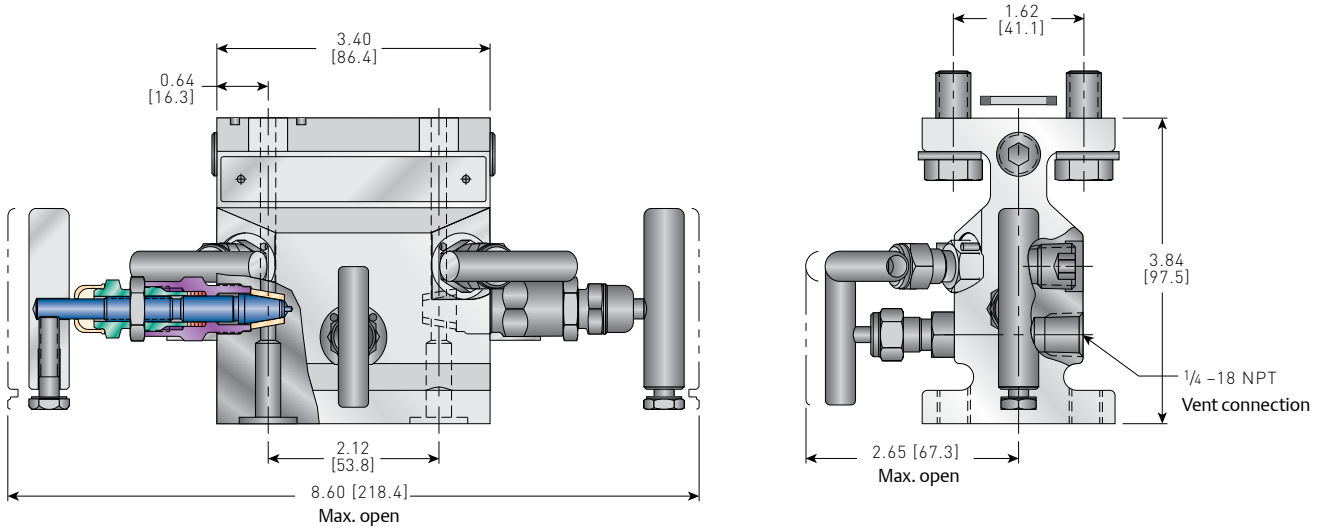
Soft seat:

0.187-inch (4.8 mm) diameter orifice.
Valve Cv 0.83 maximum.

Anderson Greenwood Instrumentation Manifolds - Five Valve

M6TAW Dimensions

Soft Seat (Metal Seat available) Dimensions, inches [mm]



NOTES

1. Approximate valve weight: 6.0 lb (2.7 kg).

Metal seat:

0.156-inch (4.0 mm) diameter orifice.
Valve Cv 0.36 maximum.

Soft seat:

0.187-inch (4.8 mm) diameter orifice.
Valve Cv 0.83 maximum.

2. M6TAW installation kit consists of 4 B7 Cs bolts ⁷/₁₆-inch -20 x 1-inch A193-B7, 4 washers, and 2 PTFE as standard.

3. The M6TAW high pressure extrusion has flanged (integral) instrument and process connections.

M6TW/M6TAW/M66 SERIES

Anderson Greenwood Instrumentation Manifolds - Five Valve

Bonnet Assemblies

The M6TW and M6TAW offer the option of metal or soft seats. All stem threads are rolled and lubricated to prevent galling and reduce operating torque. All bonnets are assembled with a bonnet locking pin to prevent accidental removal while in service and a protective dust cap is fitted to contain stem lubricant and prevent the influx of contaminants.

Soft-seated Bonnet Assemblies

The soft-seated bonnet assemblies have a one-piece rotating stem and plug with standard stem packing provided by an FKM O-ring and PTFE back-up ring or PTFE packing.

Metal-seated bonnet assemblies

The metal-seated bonnet assemblies have a rotating stem with free swivel ball-type seat for long service life. The specially hardened ball seat is ideal for natural gas service. The stem seal is a patented PTFE packing gland or graphoil which is adjustable in service.

Standard Materials

Valve	Seat	Body	Bonnet	Stem	Ball	Flow washer
CS ^[1]	Soft	A105	A108	A581-303	N/A	316
CS ^[1]	Integral	A105	A108	A581-303	17-4PH	N/A
316 SS	Soft	A479-316	A479-316	A276-316	N/A	316
316 SS	Integral	A479-316	A479-316	A276-316	316	N/A
SG	Soft	A479-316	A479-316	Monel [®] 400	N/A	316
SG ^[4]	Integral	A479-316	A479-316	Monel [®] 400	Monel [®] K500	N/A
SG3 ^[5]	Hastelloy [®] C-276	Hastelloy [®] C-276	Hastelloy [®] C-276	Hastelloy [®] C-276	Elgiloy [®]	Hastelloy [®]

Pressure and Temperature Ratings

Valve	Packing	Seat material	Standard bolting		SS bolting	
CS ^[1] , 316 SS, SG ^[4] , SG3 ^[5]	PTFE O-ring	Delrin [®] PCTFE ^[2]	3000 psig at 200°F	[207 barg at 93°C]	3000 psig at 200°F	[207 barg at 93°C]
CS ^[1] , 316 SS, SG ^[4] , SG3 ^[5]	PTFE O-ring	PEEK	6000 psig at 200°F	[414 barg at 93°C]	4500 psig at 100°F	[310 barg at 38°C]
CS ^[1] , 316 SS, SG ^[4] , SG3 ^[5]	PTFE	PTFE ^[3]	3000 psig at 300°F	[207 barg at 149°C]	3000 psig at 300°F	[207 barg at 149°C]
CS ^[1] , 316 SS, SG ^[4] , SG3 ^[5]	PTFE	PTFE ^[3]	1000 psig at 150°F	[69 barg at 66°C]	1000 psig at 150°F	[69 barg at 66°C]
CS ^[1] , 316 SS, SG ^[4] , SG3 ^[5]	PTFE	Body material	200 psig at 500°F	[14 barg at 260°C]	200 psig at 500°F	[14 barg at 260°C]
CS ^[1] , 316 SS, SG ^[4] , SG3 ^[5]	PTFE	Body material	6000 psig at 200°F	[414 barg at 93°C]	4500 psig at 100°F	[310 barg at 38°C]
	Graphite/Low emissions		6000 psig at 200°F	[414 barg at 93°C]	4500 psig at 100°F	[310 barg at 38°C]
	Graphite		1500 psig at 1000°F	[103 barg at 538°C]	4500 psig at 100°F	[310 barg at 38°C]

NOTES

- CS parts are zinc TCP plated to prevent corrosion.
- PCTFE (Polychlorotrifluoroethylene) is the exact equivalent of Kel-F[®].
- Block valves only.
- SG (Sour Gas) meets the requirements of NACE MR0175/ISO 15156-3 (for chloride conditions ≤ 50 mg/l [ppm]) and NACE MR0103-2005.
- SG3 (Sour Gas) meets the requirements of NACE MR0175/ISO 15156-3 (for chloride conditions > 50 mg/l [ppm]).
- 316 SS bolts lower pressure ratings to a maximum of 4500 psi [310 barg]. Consult factory for full rating with 316 SS bolts.
- Minimum Temperature:**
Carbon Steel -20°F (-29°C); 316 SS -70°F (-57°C), except for Oring -20°F (-29°C);
and 316 SS PTFE bonnet Delrin[®] seats -40°F (-40°C)

Anderson Greenwood Instrumentation Manifolds - Five Valve

Selection Guide - M6TW, M6TAW (3/16-inch (4.8 mm) Orifice)

M6TAW	V	D	S	-4	-SG
BASIC SERIES	PACKING	SEAT	BODY MATERIAL	PROCESS CONNECTIONS	OPTIONS
M6TW Pipe x flange	V PTFE	SOFT V PTFE (block valves only)	C CS, A105	4 ⁽²⁾ 1/2-inch FNPT	A- AGCO Mount kit for 2-inch pipe
M6TAW Flange x flange	R O-ring	D Delrin®	S 316 SS, A479-316		BC Accessory bracket for mounting conduit with AGCO Mount
	H Graphite	E PEEK	J Hastelloy®		HD Hydrostatic testing (100 percent) (MSS SP-61)
	E Low emissions graphite	K PCTFE			OC00 Cleaned for oxygen service
		HARD I Integral (body material)			R3V ⁽⁴⁾ Add for use with Rosemount® model 3051C (SS 18-8 bolts)
					SSA ⁽⁴⁾ 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 ⁽⁴⁾ 316 Flange bolt (B8M) - maximum pressure rating 4500 psi [310 barg]
					SG (Sour Gas) meets the requirements of NACE MR0175/ISO 15156-3 for chloride conditions ≤ 50 mg/l [ppm] and NACE MR0103-2005
					SG3 (Sour Gas) meets the requirements of NACE MR0175/ISO 15156-3 for chloride conditions > 50 mg/l [ppm]
					OR O-ring seals for gaskets
					PMI00 PMI body only
					SS All materials 316 SS on non wetted components
					T Wide groove for gasket seal
					TB Bottom test port

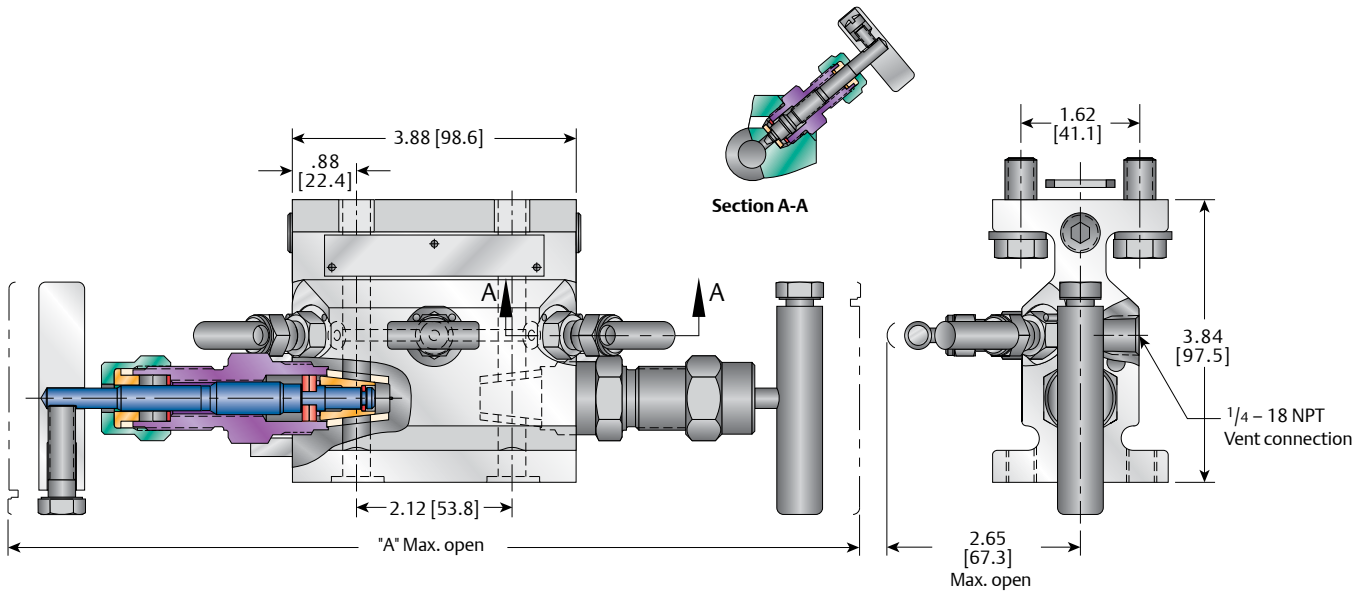
NOTES

- For close couple Futbols (NPT and tube-ended) and adapter kits, order by part number noted within respective tables or as part of ACCU-Mount™ Catalog.
- Available for M6TW only.
- Available for M6TW only.
- 316 SS bolts lower pressure ratings to a maximum of 4500 psi [310 barg]. Consult factory for full rating with 316 SS bolts.

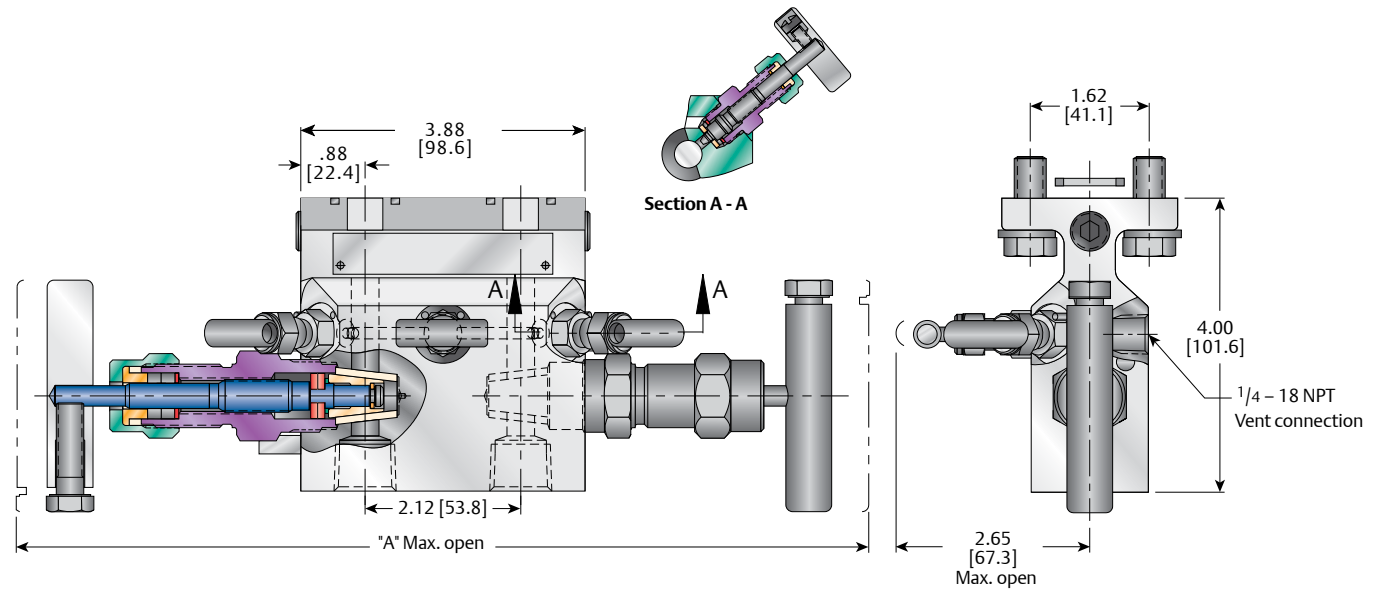
M66 SERIES

Anderson Greenwood Instrumentation Manifolds - Five Valve

M66A Dimensions, Inches (mm)



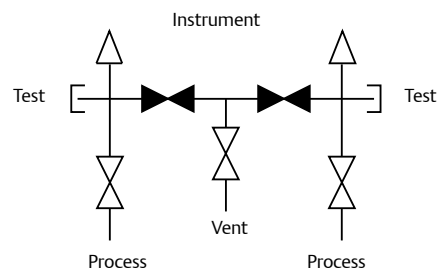
M66T Dimensions, inches (mm)



Packing	A	
PTFE	11.90	(302.3)
O-ring	11.36	(288.5)

NOTES

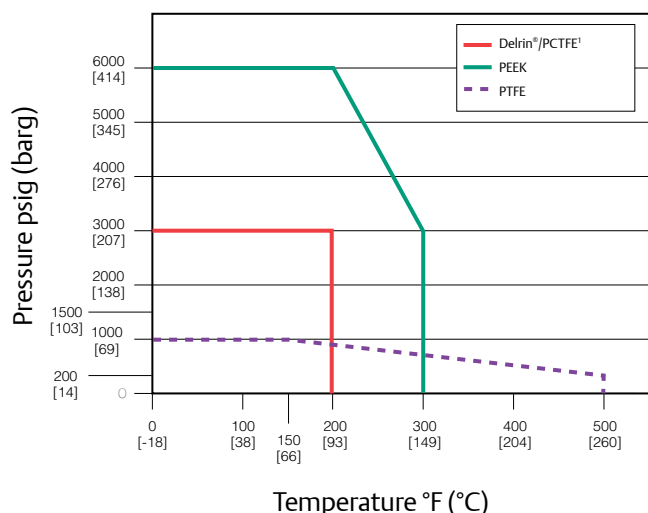
1. Approximate valve weight: 7.6 lb (3.4 kg). 0.375-inch [9.5 mm] diameter orifice. Valve Cv 3.0 maximum.
2. Bottom static pressure connections 1/4-inch - 18 NPT available.
3. Installation kit consists of 4 B7 CS bolts 7/16-inch - 20 x 1-inch A193-B7, 4 washers, and 2 PTFE as standard.



Anderson Greenwood Instrumentation Manifolds - Five Valve

Pressure vs. Temperature

Pressure vs. Temperature – Standard Bolting^[1]



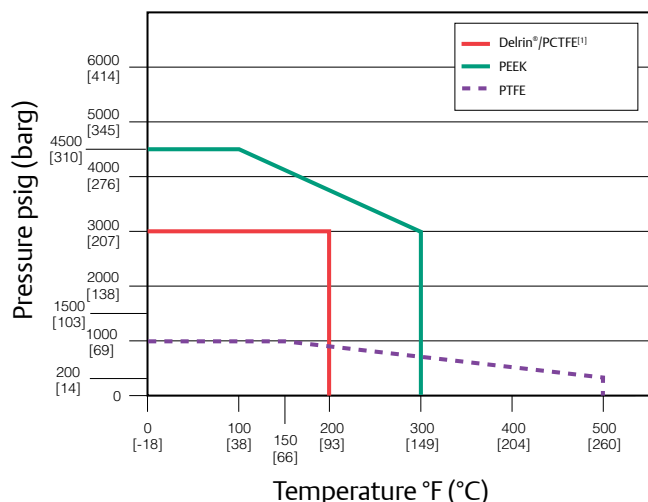
Minimum temperature

Carbon steel	-20°F	[-29°C]
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

1. PCTFE (Polychlorotrifluoroethylene) is the exact equivalent of Kel-F®.
2. 316 SS bolts lower pressure ratings to a maximum of 4500 psi [310 barg]. Consult factory for full rating with 316 SS bolts.
3. **Minimum Temperature:**
Carbon Steel -20°F (-29°C); 316SS -70°F (-57°C), except for O-ring -20°F (-29°C); and 316 SS PTFE bonnet Delrin® seats -40°F (-40°C)

Pressure vs. Temperature – SS Bolting^[2]



Bonnet Assemblies

The M66 offers the option of metal or soft seats.

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

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The metal-seated bonnet assemblies have a rotating stem with free swivel ball-type seat for long service life. The specially hardened ball seat is ideal for natural gas service. The stem seal is a patented PTFE packing gland which is adjustable in service.

M66 SERIES

Anderson Greenwood Instrumentation Manifolds - Five Valve

Selection Guide - M66 (3/8 inch (9.5 mm) Orifice)

M66A	V	D	S	-4	-SG
BASIC SERIES	PACKING	SEAT (CONE) SOFT (BLOCK VALVES ONLY)	BODY MATERIAL	PROCESS CONNECTIONS (M66T ONLY)	OPTIONS
M66T Pipe x flange	V PTFE	V PTFE	C CS, (zinc TCP plated to resist corrosion), A105	4 1/2-inch FNPT	AM AGCO Mount kit for 2-inch pipe stand mounting of manifold (see table p 6)
M66A Flange x flange	R O-ring	D Delrin® E PEEK K PCTFE	S 316 SS, A479-316		BC Accessory bracket for mounting conduit with AGCO Mount BP Accessory bracket for mounting purge meters with AGCO Mount. HD Hydrostatic testing (100 percent) (MSS SP-61) OC00 Cleaned for oxygen service R3V Add when mounting to Rosemount® model #3051C, 2024, -3095. Specify on all components. Use SS columns for rating SG NACE MR0175/ISO 15156-3 (for chloride conditions ± 50 mg/l [ppm]) and NACE MR0103-2005 (B7 mounting bolts standard, SS mounting bolts optional) (SS valves only) (not available for O-ring packed valves) SG3 NACE MR0175/ISO 15156-3 (for chloride conditions > 50 mg/l [ppm]) SSA SS flange bolts (Grade 18-8) - Max. pressure rating 4500 psi [310 barg] SSC SS flange bolts (316 SS) - Max. pressure rating 4500 psi [310 barg] TB Static/test ports (bottom of manifold) ¼" -18 NPT, 2 places EL() Installed street elbows in static test ports EL1 - Elbow facing bottom of manifold EL2 - Elbow facing outlet of manifold EL3 - Elbow facing top of manifold SS 316 SS material on non wetted components PMI00 PMI of body only

Differential Pressure