

Manifolds - Two Valve

Two valve calibration manifolds with a choice of metal and soft seats for static pressures up to 6000 psig (414 barg)

General Application

PTM two-valve calibration manifolds are used on static pressure transmitters, switches or gauges. The PT7 manifold is available for elevated temperatures with an integral metal seat and can be used for B31.1 applications. Available for panel or pipe stand mounting.

TECHNICAL DATA

Materials

CS, 316 SS, Monel, Hastelloy

Seats:

Metal or soft

Connections:

Instrument: ½" (15 mm) NPT

Process: ½" (15 mm) NPT

Pressure (max):

6000 psig (414 barg)

Temperature range (min/max):

-70°F to 1000°F

(-57°C to 538°C)



Features

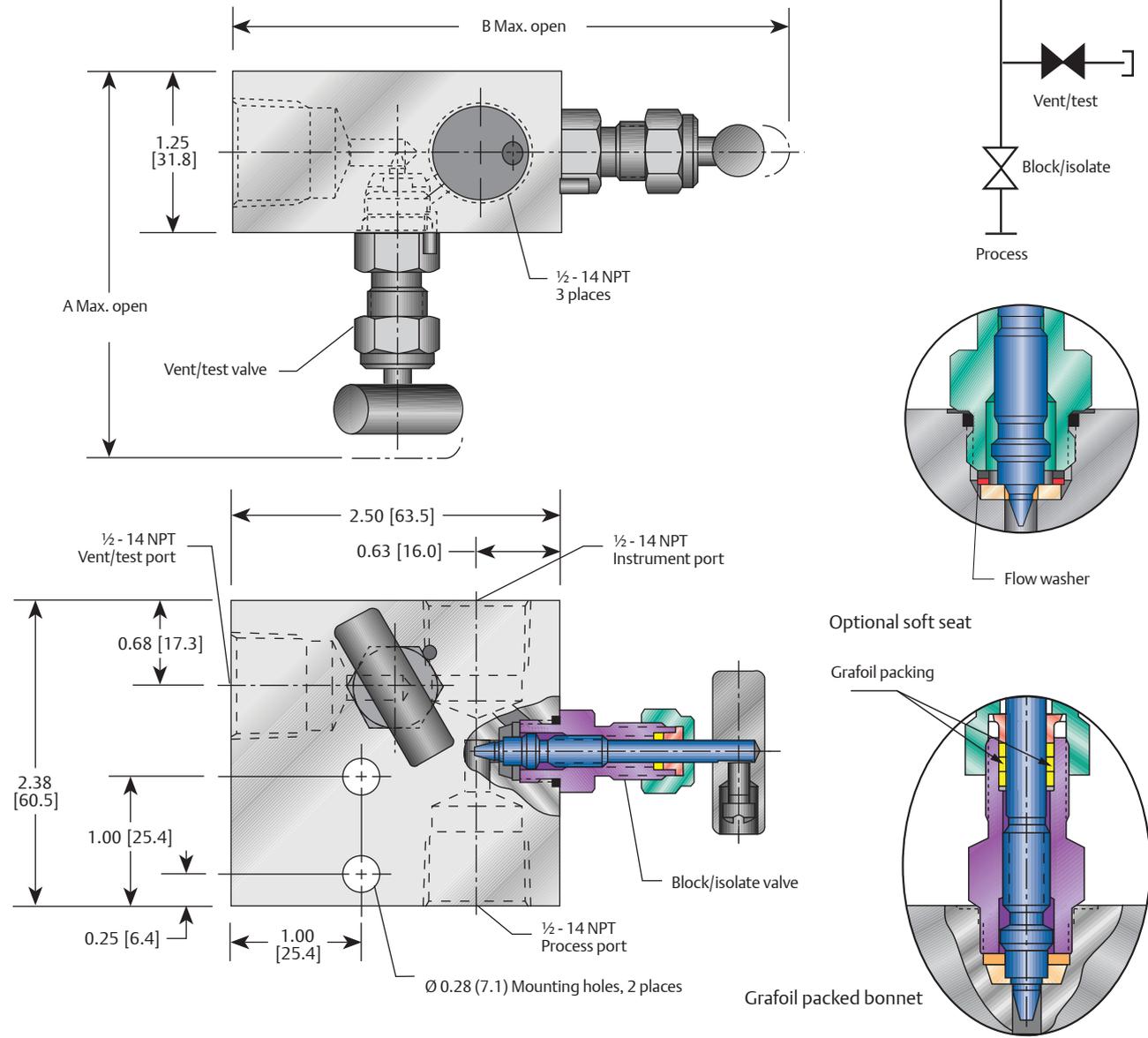
- Cost savings of 20-30% when manifolding instruments by eliminating several parts used in conventional methods of 'piping up'.
- Compact design requires minimum space for operation and installation.
- Shutoff valve, tee, calibration valve and all immediate tubing/fittings available in one simple manifold.
- PTM's unique valve seat can be converted from soft to hard simply by removing two insert washers.
- Stem and bonnet threads are rolled for increased strength, preventing galling and adding years to the useful life of the valve.
- Fewer leak points reduce leakage by having fewer parts to assemble.
- PTFE and graphite adjustable packing is easily adjusted for leak-proof, long service life.
- PTM's O-ring stem seal stem design isolates the stem threads from the process, preventing galling and corrosion.
- Back seat stem prevents blowout.

PTM SERIES

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PTM Dimensions

PTM dimensions, inches (mm)



Dimensions, inches (mm)

Packing	A	B
O-ring	2.50 (63.5)	3.75 (95.3)
PTFE	3.10 (78.7)	4.35 (110.5)
Grafoil	3.57 (90.7)	4.82 (122.4)

NOTE

1. Approximate valve weight: 2.0 lb (0.9 kg). 0.136-inch (3.5 mm) diameter orifice. Valve Cv hard seat 0.25 maximum. Valve Cv soft seat 0.24 maximum.

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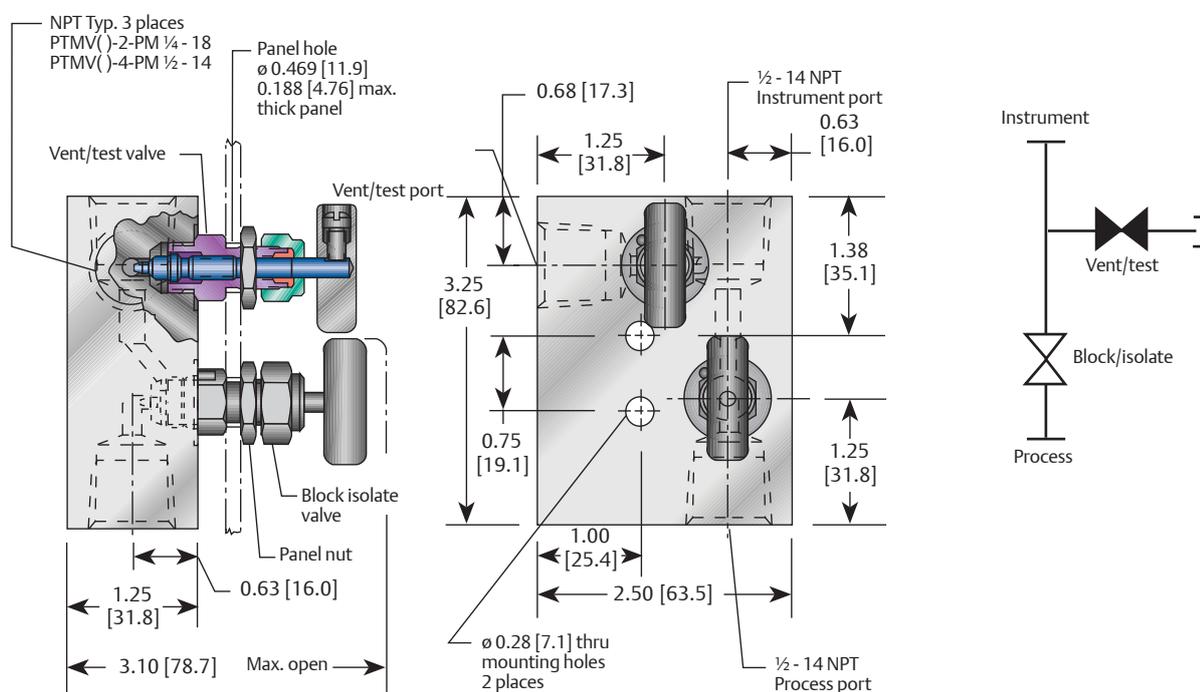
Bonnet Assemblies

The PTM features mini-valve bonnet technology compact design with a V tipped stem, back seat design and soft or metal seated operation. The stem threads are rolled and lubricated to prevent galling, reducing torque and providing longer service life. All mini valve designed manifolds have a unique valve seat design which may be converted from soft seat to metal simply by removing the seat and flow washer.

The mini-valve bonnets come in three designs:

- An adjustable PTFE stem packed bonnet which is suitable for panel mounting via external bonnet threads.
- O-ring bonnet assemblies which use a FKM O-ring seal below the stem thread.
- Grafoil packing for applications with temperatures up to 1,000°F.

PTMV () - () - PM (Panel Mount) dimensions, inches (mm)



Standard Materials

Valve	Body	Bonnet	Stem	Flow washer ^[4]
CS ^[2]	A108	A108	A581-303	316 SS
316 SS	A479-316	A479-316	A276-316	316
SG ^[3]	A476-316	A479-316	Monel® R405	316
Monel®	Monel® 400	Monel® R405	Monel® R405	Monel® 400

NOTES

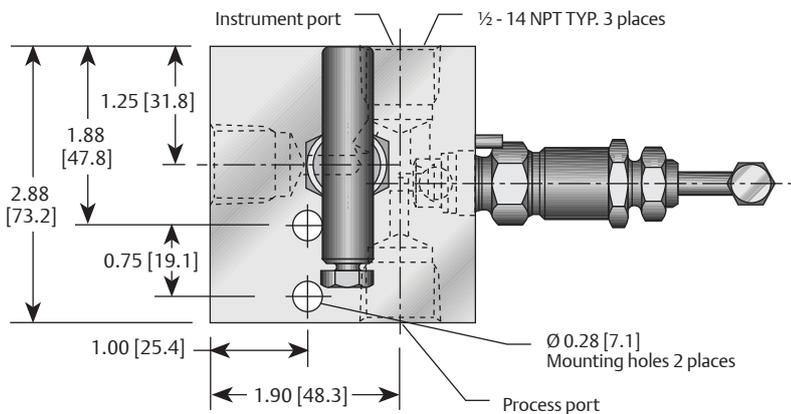
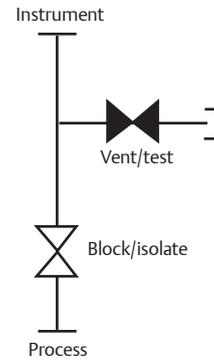
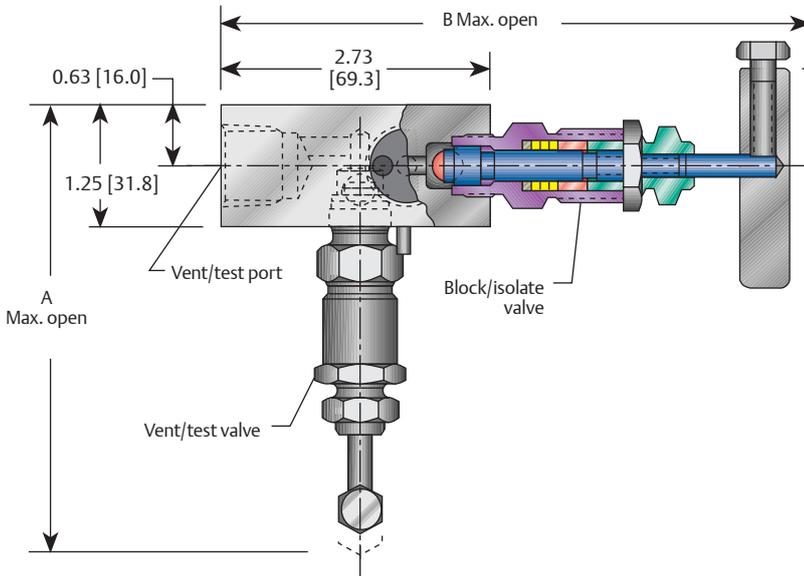
1. Approximate valve weight: 2.7 lb (1.2 kg).
0.136-inch (3.5 mm) diameter orifice.
Valve Cv hard seat 0.25 maximum.
Valve Cv soft seat 0.24 maximum.
2. CS is zinc TCP plated to prevent corrosion.
3. SG (Sour Gas) - Meets the requirements of NACE MRO175/ISO15156 (for chloride conditions < 50 mg/l (ppm)) and NACE MRO103-2005
4. Soft seated valves only.

PT7 SERIES

Manifolds - Two Valve

PT7 Dimensions

PT7 dimensions, inches (mm)



Bonnet assemblies

The PT7 is available with metal seated bonnet assemblies which have a rotating stem with free swivel ball-type seat for long service life. All stem threads are rolled and lubricated to prevent galling and reduce operating torque. The stem seal is a patented PTFE packing gland which is adjustable in service. 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.

The bonnet assemblies use an ENC plated stem and bonnet incorporating adjustable graphite rings and back-up pressure rings to ensure a leak-free stem seal.

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Standard Materials

Valve ^[1]	Body	Bonnet	Stem	Ball	Packing
CS ^[2]	A105	A108	A581-303	17-4 PH	PTFE
CS ^[2]	A105	A105	A581-303	17-4 PH	Grafoil®/Low emissions graphite
316 SS	SS, A479-316	SS, A479-316	A276-316	316	PTFE
316 SS	SS, A479-316	SS, A479-316	A276-316	316	Grafoil®/Low emissions graphite
SG ^[3]	SS, A479-316	SS, A479-316	Monel® 400	Monel® K500	PTFE
SG ^[3]	SS, A479-316	SS, A479-316	Monel® 400	Monel® K500	Grafoil®/Low emissions graphite

Dimensions, inches (mm)

Packing	A	B
PTFE	3.85 (97.8)	5.33 (135.4)
Grafoil®	4.50 (114.3)	5.98 (151.9)

NOTES

- Approximate valve weight: 3.0 lb (1.4 kg).
0.187-inch (4.8 mm) diameter orifice.
Valve Cv 0.52 maximum.
- CS is zinc TCP plated to prevent corrosion.
- SG (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions ≤ 50 mg/l (ppm)) and NACE MR0103-2005.

Pressure vs. Temperature

Pressure and Temperature Ratings - PTM

Packing	PCTFE/Delrin® seat		PEEK seat/metal seat	
PTFE	3000 psig at	200°F	6000 psig at	200°F
	(207 barg at	93°C)	3000 psig at	300°F
			(414 barg at	93°C)
			(207 barg at	149°C)
			(276 barg at	260°C)
O-ring	3000 psig at	200°F	6000 psig at	200°F
	(207 barg at	93°C)	(414 barg at	93°C)

Pressure and Temperature Ratings - PT7

Valve	Packing	Ratings	
CS	PTFE	6000 psig at 200°F (414 barg at 93°C)	4000 psig at 500°F (276 barg at 260°C)
CS	GRAFOIL®/Low emissions graphite	6000 psig at 200°F (414 barg at 93°C)	1500 psig at 850°F (103 barg at 454°C)
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	GRAFOIL®/Low emissions graphite	6000 psig at 200°F (414 barg at 93°C)	1500 psig at 1000°F (103 barg at 538°C)
SG	PTFE	6000 psig at 200°F (414 barg at 93°C)	4000 psig at 500°F (276 barg at 260°C)
SG	GRAFOIL®/Low emissions graphite	6000 psig at 200°F (414 barg at 93°C)	1500 psig at 1000°F (103 barg at 538°C)

NOTE

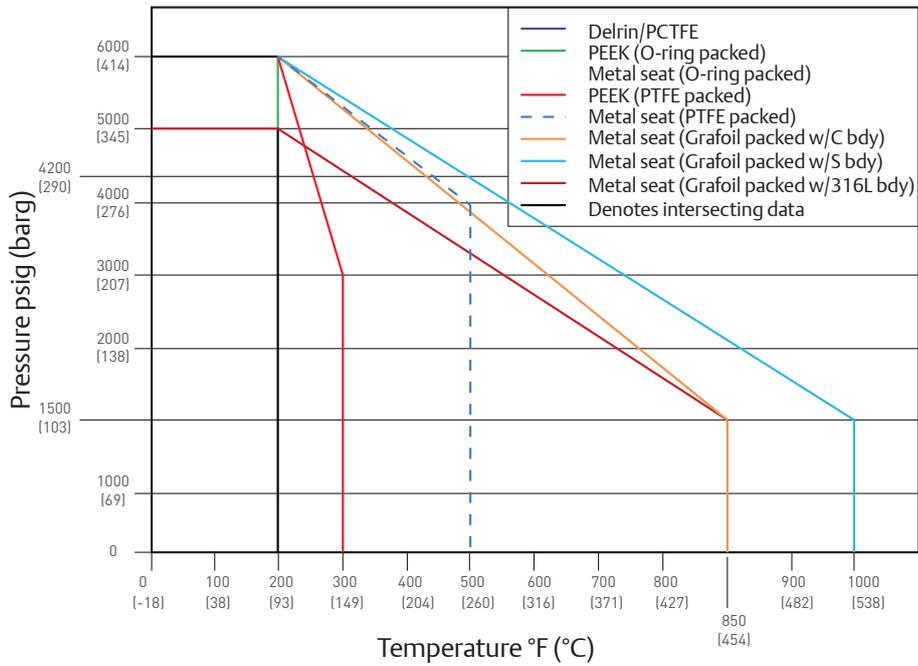
Minimum temperature for 316 SS, Grafoil and PTFE packed bonnets is -70°F (-57°C).

PTM/PT7 SERIES

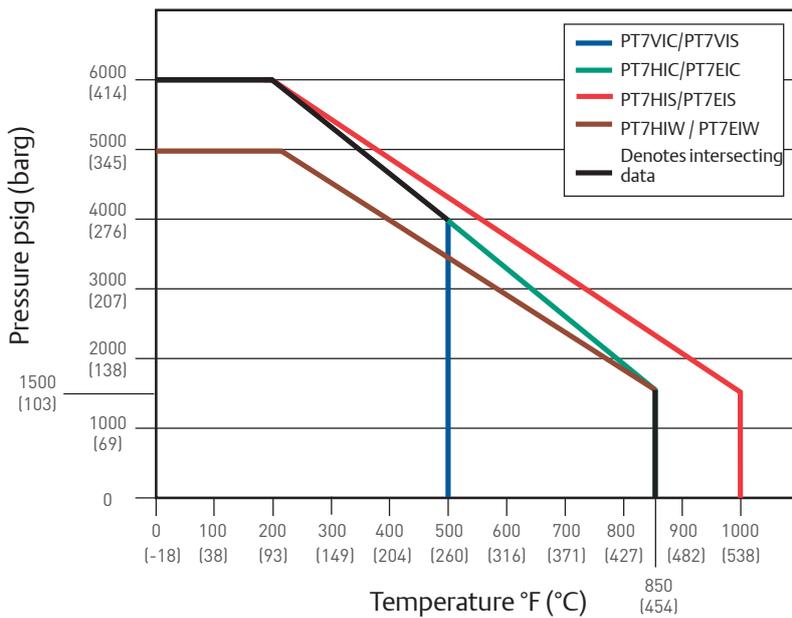
Manifolds - Two Valve

Pressure vs. Temperature

PTM Pressure vs. Temperature



PT7 Pressure vs. Temperature



Manifolds - Two Valve

Selection Guide - PTM

PTM	V	I	S	-4	-SG
BASIC SERIES	BONNET PACKING	SEAT MATERIAL	BODY MATERIAL	CONNECTIONS	OPTIONS
PTM	V PTFE	D Delrin® (standard)	C A180	4 ½-inch FNPT (inlet) x ½-inch FNPT (outlet) x ½-inch FNPT (vent)	AM AGCO mount
	R O-ring (soft seat only)	K PCTFE	S A479-316 SS	2 ¼-inch FNPT (inlet) x ¼-inch FNPT (outlet) x ¼-inch FNPT (vent)	AMS AGCO mount kit (Stainless steel)
		E PEEK	M Monel®		AMV AGCO mount kit (verticle)
		I Integral (body material)			HD Hydrostatic testing (100%) (MSS-SP-61)
				OC00 Oxygen cleaned (OC)	
					PM100 PMI body only
					SG SG (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions ≤ 50 mg/l (ppm)) and NACE MR0103-2005
					SG3 (Sour Gas) Meets the requirements of NACE MRO175/ISO15156 (for chloride conditions > 50 mg/l (ppm)) Hastelloy Material used for all wetted materials
					PV Vent plug

PT7 SERIES

Manifolds - Two Valve

Selection Guide - PT7

PT7	V	I	S	-4	-SG	
BASIC SERIES	BONNET PACKING	SEAT MATERIAL	BODY MATERIAL	CONNECTIONS	OPTIONS	
PT7	V	PTFE	I Integral (body material)	C CS	3TC4 3/8-inch tube stub (inlet) x 3/8-inch tube stub (outlet) x 1/2-inch FNPT (vent)	AM AGCO mount
	H	GRAFOIL®		J Hastelloy	4 1/2-inch tube stub (inlet) x 1/2-inch tube stub (outlet) x 1/2-inch FNPT (vent)	AMS AGCO mount kit (Stainless steel)
	E	Low emissions graphite		M Monel®	3 3/8-inch tube stub (inlet) x 3/8-inch tube stub (outlet) x 1/2-inch FNPT (vent)	AMV AGCO mount kit (verticle)
				S 316 SS	3TC 3/8-inch tube stub (inlet) x 3/8-inch tube stub (outlet) x 3/8-inch FNPT (vent)	BL Bonnet lock device (Graphoil only, all bonnet seal materials call factory)
				W 316L SS	3TC44 3/8-inch tube stub (inlet) x 1/2-inch FNPT (outlet) x 1/2-inch FNPT (vent)	HD Hydrostatic testing (100%) (MSS-SP-61)
					422 1/2-inch tube stub (inlet) x 1/2-inch FNPT (outlet) x 1/2-inch FNPT (vent)	LAT Lockable anti tamper
				442 1/2-inch tube stub (inlet) x 1/2-inch FNPT (outlet) x 1/2-inch FNPT (vent)	OC00 Oxygen clean (OC)	
				4B2 1/2-inch FSW (inlet) x 1/4-inch FNPT (outlet) x 1/4-inch FNPT (vent)	PM100 PMI body only	
				4TC4 1/2-inch FSW (inlet) x 1/4-inch FNPT (outlet) x 1/4-inch FNPT (vent)	SG (Sour Gas) Meets the requirements of NACE MRO175/ISO15156 (for chloride conditions < 50 mg/l (ppm)) and NACE MRO103-2005	
				4TC44 1/2-inch tube stub (inlet) x 1/2-inch FNPT (outlet) x 1/2-inch FNPT (vent)	SG3 (Sour Gas) Meets the requirements of NACE MRO175/ISO15156 (for chloride conditions > 50 mg/l (ppm)) Hastelloy Material used for all wetted materials	
	VP Plug					

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Selection Guide - PT7MHP- Power Industry Applications¹

PT7MHP	S	-4	-XP	-SG
BASIC SERIES	BODY MATERIAL	CONNECTIONS		OPTIONS
PT7MHP	C A105	3TC4	3/8-inch tube stub (inlet) x 3/8-inch tube stub (outlet) x 1/2-inch FNPT (vent)	AM AGCO mount
	S A479-316 SS	4	1/2-inch tube stub (inlet) x 1/2-inch tube stub (outlet) x 1/2-inch FNPT (vent)	AMS AGCO mount kit (Stainless steel)
		3	3/8-inch tube stub (inlet) x 3/8-inch tube stub (outlet) x 1/2-inch FNPT (vent)	AMV AGCO mount kit (verticle)
		3TC	3/8-inch tube stub (inlet) x 3/8-inch tube stub (outlet) x 3/8-inch FNPT (vent)	BL Bonnet lock device
		3TC44	3/8-inch tube stub (inlet) x 1/2-inch FNPT (outlet) x 1/2-inch FNPT (vent)	HD Hydrostatic testing (100%) (MSS-SP-61)
		422	1/2-inch tube stub (inlet) x 1/2-inch FNPT (outlet) x 1/2-inch FNPT (vent)	LAT Lockable anti tamper
		442	1/2-inch tube stub (inlet) x 1/2-inch FNPT (outlet) x 1/2-inch FNPT (vent)	OC00 Oxygen clean (OC)
		4B2	1/2-inch FSW (inlet) x 1/4-inch FNPT (outlet) x 1/4-inch FNPT (vent)	PM100 PMI body only
		4TC4	1/2-inch FSW (inlet) x 1/4-inch FNPT (outlet) x 1/4-inch FNPT (vent)	SG (Sour Gas) Meets the requirements of NACE MRO175/ISO15156 (for chloride conditions <_ 50 mg/l (ppm)) and NACE MRO103-2005
		4TC44	1/2-inch tube stub (inlet) x 1/2-inch FNPT (outlet) x 1/2-inch FNPT (vent)	SG3 (Sour Gas) Meets the requirements of NACE MRO175/ISO15156 (for chloride conditions > 50 mg/l (ppm)) Hastelloy Material used for all wetted materials
			VP Vent plug	
			XP ASME B31.1	
			SS All 316 SS materials wetted and non wetted components	

NOTES

1. All manifolds come standard with GRAFOIL® packing, integral seats, bonnet locks, and are subjected to hydrostatic testing.

2. Manifold ratings:

- SST 6000 psig at 100°F
3030 psig at 1000°F
(414 barg at 38°C)
(201 barg at 538°C)
- CS 6170 psig at 100°F
3430 psig at 800°F
(425 barg at 38°C)
(236 barg at 427°C)