

## Multi-Port Gauge Valves

A 3/8 inch (9.5 mm) orifice multi-port gauge valve that is available with replaceable roddable metal or soft seats for pressures up to 6000 psig (414 barg)

### General Application

The M5A is designed to be used with gauge mounting and other instrument tie-ins in the process industries without requiring additional penetrations of the main piping.

### TECHNICAL DATA

#### Materials

CS, SS, Monel® and other exoctic materials

#### Seats:

Metal and soft

#### Connections:

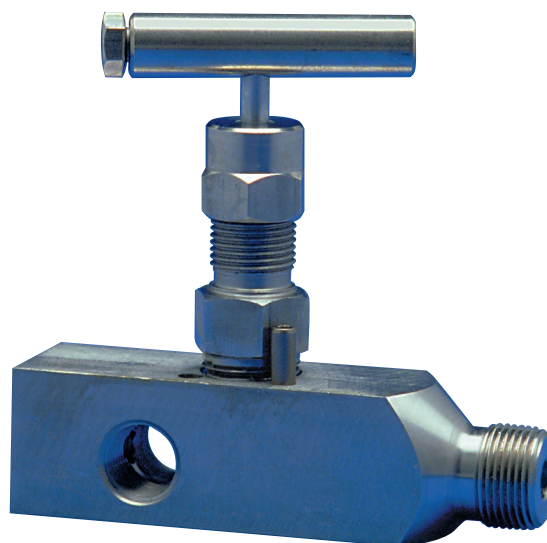
½" to ¾" (15 to 19mm) NPT; welded also available

#### Pressure (max):

M5: 6,000 psig (414 barg)

#### Temperature (max):

1000°F (538°C)  
(min): -70°F (-57°C)



### Features

- Cost savings through minimized components and process penetrations for instrument installation with reduced possible leak points.
- Compact design minimizes space requirements; low weight improves connection strength and reduces gauge whip.
- Unique metal seat has straight through flow path design for reduced plugging in high-temperature service.
- Long body option allows up to 4" (102 mm) pipe insulation.
- Replaceable soft seat; valve operates in dirty service with repetitive bubble-tight shutoff.
- Mirror stem finish in the packing area enables smooth operation and extends packing life.
- Metal-to-metal body-to-bonnet seal in constant compression prevents bonnet thread corrosion, eliminates possible tensile breakage and gives a reliable seal point.
- Easily adjustable packing decreases replacement down time and increases valve life.
- Safety back seating prevents stem blowout or accidental removal.
- ENC plated 316 SS prevents galling or freezing of stem threads.
- Rolled stem, bonnet and male NPT threads provide additional strength.

# M5A SERIES

## Multi-Port Gauge Valves

### Bonnet Assembly Options

The M5A offers the option of a roddable metal seat or soft seated design with replaceable seats, providing easy cleanout and replacement.

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.

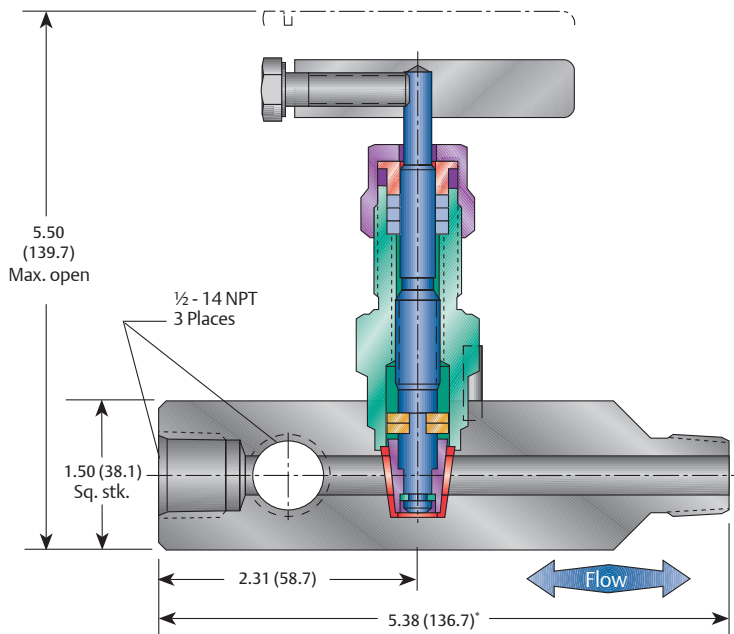
### Soft-Seated Bonnet Assembly

The soft-seated bonnet assembly has a one-piece rotating stem and plug and adjustable PTFE packing gland.

### Metal-Seated Bonnet Assembly

The metal-seated bonnet assembly has a one-piece rotating stem and plug and either adjustable PTFE or Grafoil® packing gland.

Dimensions, inches [mm]



\* Long body length 7.75 inch (196.8 mm).

## Standard Materials

Valve <sup>[1]</sup>	Metal and Soft Seats		
	Body	Stem	Bonnet
CS <sup>[2]</sup>	A105 CS	A582-303 SS	A108 CS
316 SS	A479-316 SS	A276-316 SS	A479-316 SS
316L SS	A479-316L SS	A276-316 SS	A479-316 SS
SG <sup>[2]</sup>	A479-316 SS	Monel® R405	A479-316 SS
Monel®	Monel® 400	Monel® R405	Monel® R405
SG3 <sup>[3]</sup>	Hastelloy® C-276	Hastelloy® C-276	Hastelloy® C-276

### NOTES

- CS is zinc TCP plated to prevent corrosion. Black Oxide for socket weld or butt weld valves.
- SG (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions  $\leq 50$  mg/l (ppm)) and NACE MR0103-2005.
- SG3 (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions  $> 50$  mg/l (ppm)).
- Cv = 3.0 max.
- Minimum temperature Carbon steel -20°F (-28°C). 316SS teflon or graphoil packing Delrin -40°F (-40°C), PCTFE, Peek, PTFE and 316SS Seat -70°F (-57°C)

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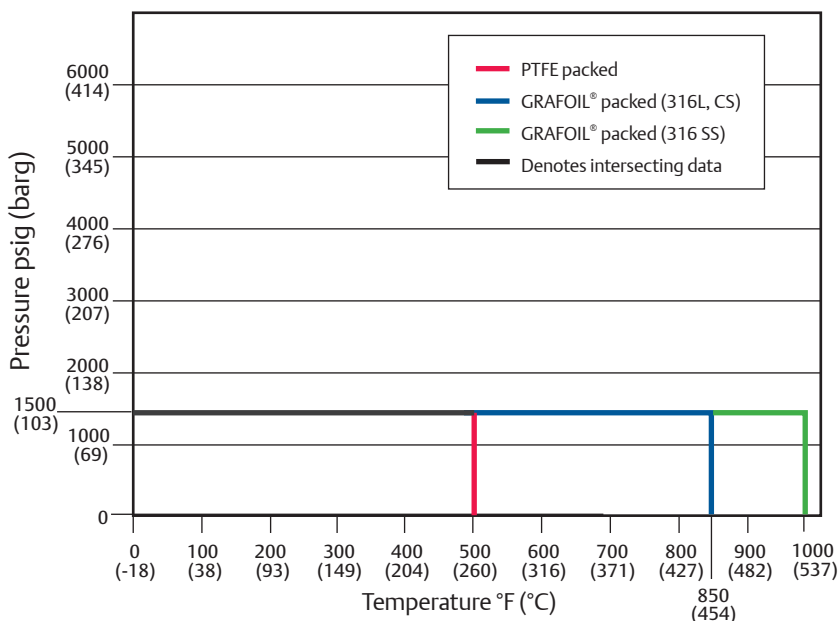
### Pressure vs. Temperature

#### Pressure and Temperature Ratings

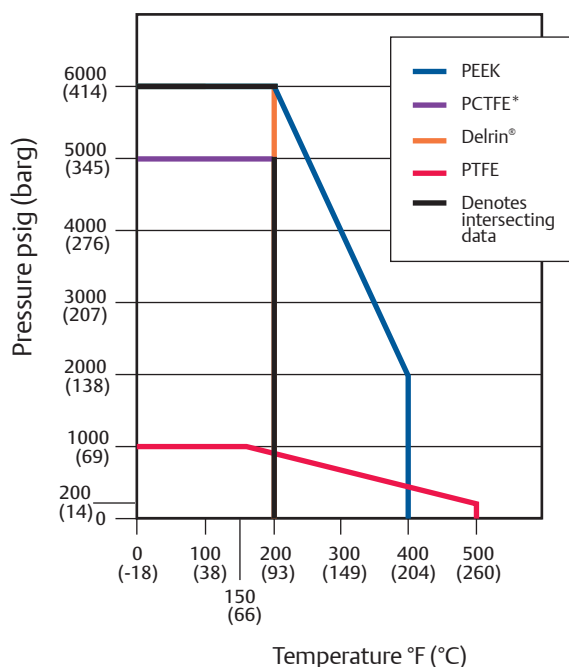
Metal seat	
PTFE packed	1500 psig at 500°F (103 barg at 260°C)
Grafoil® packed	1500 psig at 850°F (103 barg at 454°C)
Carbon Steel	316 SS 1500 psig at 1000°F (103 barg at 538°C)

Soft seat	
Delrin	6000 psig at 200°F (414 barg at 93°C)
PCTFE (Kel-F®)	5000 psig at 200°F (345 barg at 93°C)
PEEK	6000 psig at 200°F (414 barg at 93°C) 2000 psig at 400°F (138 barg at 204°C)
PTFE	1000 psig at 150°F (69 barg at 66°C) 200 psig at 500°F (14 barg at 260°C)

#### Pressure vs. Temperature - Metal seat



#### Pressure vs. Temperature - Soft seat



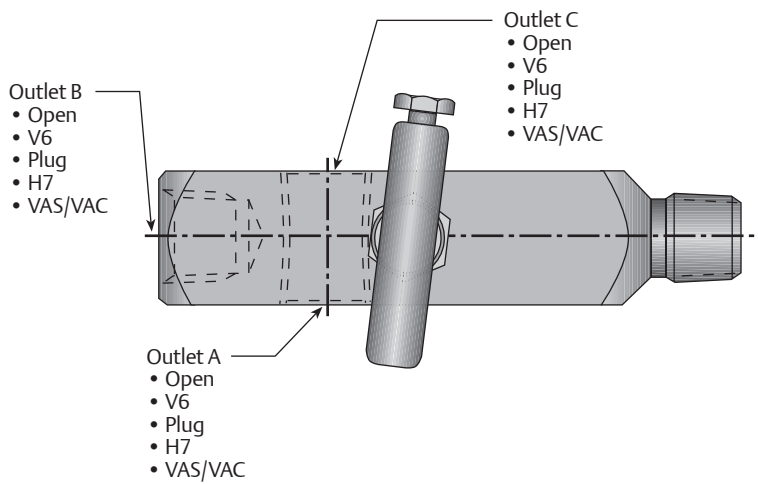
\* PCTFE (Polychlorotrifluoroethylene) is the exact equivalent of Kel-F®.

# M5A SERIES

## Multi-Port Gauge Valves

### Selection Guide - Metal Seat

M5A	H	S	S	-44L	-SG
BASIC SERIES	PACKING	SEAT	BODY MATERIAL	CONNECTIONS (INPUT/OUTPUT)	OPTIONS
M5A	H GRAFOIL®	S 316SS (standard)	C CS, A105	44 ½-inch MNPT x (3) ½-inch FNPT	BL Bonnet Lock device (patent protected)
	V PTFE	M Monel®	S SS, A479-316	46 ¾-inch MNPT x (3) ½-inch FNPT	HD Hydrostatic Testing (100%) (MSS-SP-61)
			M Monel® 400	C Male socket weld	OC00 Gaseous oxygen clean (OC)
			W SS, A479-316L	L Long body (7.75-inch [196.8mm])	SG Sour Gas meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions ≤ 50 mg/l (ppm)) and NACE MR0103-2005 (SS only)
					SG3 3 Sour Gas meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions > 50 mg/l (ppm)). If accessories are added, consult factory for materials.



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Selection Guide - Soft Seat

M5A	V	D	S	-44L	-SG
BASIC SERIES	PACKING	SEAT	BODY MATERIAL	CONNECTIONS (INPUT/OUTPUT)	OPTIONS
M5A	V PTFE	V PTFE	C CS, A105	44 ½-inch MNPT x (3) ½-inch FNPT	BL Bonnet Lock device (patent protected)
		D Derlin® (standard)	S SS, A479-316 SS	46 ¾-inch MNPT x (3) ½-inch FNPT	HD Hydrostatic Testing (100%) (MSS-SP-61)
		E PEEK	M Monel® 400	C Male socket weld	OC00 Gaseous oxygen clean (OC)
		K PCTFE <sup>[1]</sup>	W SS, A479-316L	L Long body (7.75-inch [196.8mm])	SG Sour Gas meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions ≤ 50 mg/l (ppm)) and NACE MR0103-2005 (SS only)  SG3 (Sour Gas) meets the requirements of NACE MR0175/ISO 15156 (for chloride conditions > 50 mg/l (ppm)). If accessories are added, consult factory for materials.

