Product Overview

The M5 and M51 are multi-port gauge valves allowing the versatile positioning of gauges or pressure switches without requiring additional penetration of the main piping. For high-pressure applications, the M51 is a metal seat version of the lightweight, compact instrument isolation valve.

The standard configuration has a male or female inlet and three 1/2-inch FNPT outlet ports. All valves with male inlet connections are available threaded or prepared for welding and with either standard or extended inlets. The M5 is available with an integral metal seat or as a soft seated plug type allowing the valve to be rodded out.

Features and Benefits

- **Cost savings** are realized with multi-port design by reducing the number of components and process penetrations required for multiple instrument installations. Possible leak points are decreased.

- **Compact design** requires minimum space for operation and installation. Lower valve weight increases strength at the process connection and reduces gauge whip.

- **Long body configuration** allows for a maximum of 4-inch [102 mm] pipe insulation.

- **Roddable seat design** is supplied with replaceable seats, providing easy clean-out and seat replacement.

- **Replaceable soft seat** allows replacement of the soft seat insert without removing the valve from the line. It operates in dirty service with repetitive bubble-tight shutoff.

- **Mirror stem finish** burnished to a 16 RMS finish in the packing area enables smooth stem operation and extends packing life.

- **Body-to-bonnet seal** is metal-to-metal in constant compression below the bonnet threads. Prevents bonnet thread corrosion, eliminates possible tensile breakage of bonnet, and gives a reliable seal point.

- **Ball end stem** eliminates seat galling, provides bubble-tight shutoff and long life. The hardened, non-rotating ball ensures perfect alignment closure.

- **Packing below threads** prevents lubricant washout, thread corrosion, and keeps solids from entering the thread area, which can cause galling. It also prevents process contamination.

- **Adjustable packing** adjusts easily – loosen jam nut, tighten bushing slightly, then retighten jam nut. Decreases packing replacement downtime and increases valve life.

- **Dust cover** prevents lubricant washout and keeps contaminants (dirt, rain, etc.) out of bonnet assembly.

- **Safety back seating** prevents stem blowout or accidental removal while in operation and provides a metal-to-metal secondary stem seal while in the full open position.

- **Chrome plating of 316 SS** prevents galling or freezing of stem threads when similar metals mate. CS valves use a 303 SS stem.

- **Rolled threads** provide additional thread strength. The stem, bonnet, and male NPT threads are rolled, not cut.

- **Bonnet lock pin** is another safety feature which prevents the accidental separation of the bonnet from the body. However, normal valve maintenance and repair are still easily accomplished.
Multi-Port Gauge Valves – M5 and M51 Specifications

Notes

1. M5 metal seat only.
2. Approximate valve weight:
   - standard 2.5 lb [1.1 kg]
   - long 3.0 lb [1.4 kg]
Orifice Size: 0.187-inch [4.8 mm] diameter
Valve Cₜ 0.523 maximum.
Long body length 7.25-inch [184.2 mm] for 4-inch [102.0 mm] insulation.

Note

1. Approximate valve weight:
   - standard 2.5 lb [1.1 kg]
   - long 3.0 lb [1.4 kg]
Orifice Size: 0.187-inch [4.8 mm] diameter
Valve Cₜ 0.83 maximum.
## Multi-Port Gauge Valves – M5 and M51 Specifications

### Standard Materials

#### M5 Metal Seat

<table>
<thead>
<tr>
<th>Valve</th>
<th>Body</th>
<th>Bonnet</th>
<th>Stem</th>
<th>Ball</th>
<th>Packing</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS&lt;sup&gt;1&lt;/sup&gt;</td>
<td>A105 CS</td>
<td>A105 CS</td>
<td>A581 303 SS</td>
<td>17-4 PH</td>
<td>GRAFOIL&lt;sup&gt;®&lt;/sup&gt;, Low Emission Graphite</td>
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<tr>
<td>CS&lt;sup&gt;1&lt;/sup&gt;</td>
<td>A105 CS</td>
<td>A108 CS</td>
<td>A581 303 SS</td>
<td>17-4 PH</td>
<td>Teflon&lt;sup&gt;®&lt;/sup&gt;</td>
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<tr>
<td>SS</td>
<td>A479 316 SS</td>
<td>A479 316 SS</td>
<td>A276 316 SS</td>
<td>316 SS</td>
<td>GRAFOIL&lt;sup&gt;®&lt;/sup&gt;, Low Emission Graphite</td>
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<tr>
<td>SS</td>
<td>A479 316 SS</td>
<td>A479 316 SS</td>
<td>A276 316 SS</td>
<td>316 SS</td>
<td>Teflon&lt;sup&gt;®&lt;/sup&gt;</td>
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<tr>
<td>Monel&lt;sup&gt;®&lt;/sup&gt;</td>
<td>Monel&lt;sup&gt;®&lt;/sup&gt; R405</td>
<td>Monel&lt;sup&gt;®&lt;/sup&gt; R405</td>
<td>Monel&lt;sup&gt;®&lt;/sup&gt; 400</td>
<td>Monel&lt;sup&gt;®&lt;/sup&gt; K500</td>
<td>Teflon&lt;sup&gt;®&lt;/sup&gt;</td>
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<tr>
<td>SG&lt;sup&gt;2&lt;/sup&gt;</td>
<td>A479 316 SS</td>
<td>A479 316 SS</td>
<td>Monel&lt;sup&gt;®&lt;/sup&gt; 400</td>
<td>Monel&lt;sup&gt;®&lt;/sup&gt; K500</td>
<td>GRAFOIL&lt;sup&gt;®&lt;/sup&gt;, Low Emission Graphite</td>
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<tr>
<td>SG&lt;sup&gt;2&lt;/sup&gt;</td>
<td>A479 316 SS</td>
<td>A479 316 SS</td>
<td>Monel&lt;sup&gt;®&lt;/sup&gt; 400</td>
<td>Monel&lt;sup&gt;®&lt;/sup&gt; K500</td>
<td>Teflon&lt;sup&gt;®&lt;/sup&gt;</td>
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#### M51 Metal Seat

<table>
<thead>
<tr>
<th>Valve</th>
<th>Body</th>
<th>Bonnet</th>
<th>Stem</th>
<th>Ball</th>
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<td>A151 316 SS</td>
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<td>A479 316 SS</td>
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#### M5 Soft Seat

<table>
<thead>
<tr>
<th>Valve</th>
<th>Body</th>
<th>Bonnet</th>
<th>Stem</th>
<th>Packing</th>
<th>Seat</th>
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<tbody>
<tr>
<td>CS&lt;sup&gt;1&lt;/sup&gt;</td>
<td>A108 CS</td>
<td>A108 CS</td>
<td>A581 303 SS</td>
<td>Teflon&lt;sup&gt;®&lt;/sup&gt;</td>
<td>Delrin&lt;sup&gt;®&lt;/sup&gt;</td>
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<td>A479 316 SS</td>
<td>A276 316 SS</td>
<td>Teflon&lt;sup&gt;®&lt;/sup&gt;</td>
<td>Delrin&lt;sup&gt;®&lt;/sup&gt;</td>
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<tr>
<td>Monel&lt;sup&gt;®&lt;/sup&gt;</td>
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<td>Teflon&lt;sup&gt;®&lt;/sup&gt;</td>
<td>PCTFE&lt;sup&gt;4&lt;/sup&gt;</td>
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<td>Teflon&lt;sup&gt;®&lt;/sup&gt;</td>
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### Pressure and Temperature Ratings

#### M5 Metal Seat

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<th>Packing</th>
<th>Ratings</th>
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</thead>
<tbody>
<tr>
<td>CS</td>
<td>GRAFOIL&lt;sup&gt;®&lt;/sup&gt;, Low Emission Graphite</td>
<td>6000 psig @ 200°F</td>
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<tr>
<td></td>
<td></td>
<td>1500 psig @ 850°F</td>
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<td>SS, SG</td>
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<td>6000 psig @ 200°F</td>
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<tr>
<td></td>
<td></td>
<td>1500 psig @ 1000°F</td>
</tr>
<tr>
<td>CS, SS, Monel&lt;sup&gt;®&lt;/sup&gt;, SG</td>
<td>Teflon&lt;sup&gt;®&lt;/sup&gt;</td>
<td>6000 psig @ 200°F</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4000 psig @ 500°F</td>
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</table>

#### M51 Metal Seat

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<thead>
<tr>
<th>Valve</th>
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<tr>
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<td>4000 psig @ 500°F</td>
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#### M5 Soft Seat

<table>
<thead>
<tr>
<th>Valve</th>
<th>Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS, SS, Monel&lt;sup&gt;®&lt;/sup&gt;, SG</td>
<td>6000 psig @ 200°F</td>
</tr>
</tbody>
</table>

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**Notes**

1. CS is zinc-cobalt plated to prevent corrosion.
2. SG (Sour Gas) meets the requirements of NACE MR0175-latest revision.
3. PEEK and Teflon<sup>®</sup> also available.
4. PCTFE (Polychlorotrifluoroethylene) is the exact equivalent of Kel-F<sup>®</sup>.

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Multi-Port Gauge Valves – M5 and M51 Specifications

Pressure vs. Temperature – M5 and M51 Metal Seat

Notes
2. PCTFE (Polychlorotrifluoroethylene) is the exact equivalent of Kel-F®.
# Multi-Port Gauge Valves – M5 Specifications

## Ordering Information – Metal Seat

<table>
<thead>
<tr>
<th>M5</th>
<th>H</th>
<th>I</th>
<th>S</th>
<th>–44L</th>
<th>–SG</th>
</tr>
</thead>
</table>

### Packing

- **H** – GRAFOIL®
- **V** – Teflon® (patent protected)
- **E** – Low Emission Graphite

### Seat

- **I** – Integral

### Body Material

- **C** – CS, A105
- **S** – SS, A479-316
- **M** – Monel®

### Connections (Inlet/Outlet)

- **44** – 1/2-inch MNPT x (3) 1/2-inch FNPT
- **46** – 3/4-inch MNPT x (3) 1/2-inch FNPT

- **C** – Male plain end (CS is black oxide coated)
- **L** – Long body extension (4-inch insulation)

### Options

- **BL** – Bonnet Lock Device (patent protected)
- **CLC** – Chlorine Cleaning
- **HD** – Hydrostatic Testing (100%)(MSS-MSP-61)
- **OC** – Oxygen Cleaning
- **SG** – Sour Gas meets the requirements of NACE MR0175-latest revision (SS only)
- **SP** – Special Requirements - please specify

### Note

1. Call factory for optional material, or other sizes and flange connections.
Multi-Port Gauge Valves – M5 Specifications

Ordering Information – Soft Seat

<table>
<thead>
<tr>
<th>M5</th>
<th>V</th>
<th>D</th>
<th>S</th>
<th>44L – SG</th>
</tr>
</thead>
</table>

Packing

V – Teflon® (patent protected)
R – Viton® O-ring

Seat

V – Teflon®
D – Delrin® (standard)
E – PEEK
K – PCTFE®

Body Material

C – CS, A108
S – SS, A479-316
M – Monel®

Connections (Inlet/Outlet)

44 – 1/2-inch MNPT x (3) 1/2-inch FNPT
46 – 3/4-inch MNPT x (3) 1/2-inch FNPT

C – Male plain end (CS is black oxide coated)
L – Long body extension (4-inch insulation)

Options

BL – Bonnet Lock Device (patent protected)
CLC – Chlorine Cleaning
HD – Hydrostatic Testing (100%) (MSS-MSP-61)
OC – Oxygen Cleaning
SG – Sour Gas meets the requirements of NACE MR0175-latest revision (SS only)
SP – Special Requirements - please specify

Notes

1. PCTFE (Polychlorotrifluoroethylene) is the exact equivalent of Kel-F®.
2. Call factory for optional material, or other sizes and flange connections.
## Multi-Port Gauge Valves – M5 ASME B31.1 Specifications

### Ordering Information – Power Industry Applications

<table>
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<tr>
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<th>44</th>
<th>LC</th>
<th>XP</th>
<th>SP</th>
</tr>
</thead>
</table>

### Body Material
- C – CS, A105
- S – SS, A479-316

### Connections (Inlet/Outlet)
- 44 – 1/2-inch MNPT x (3) 1/2-inch FNPT
- 46 – 3/4-inch MNPT x (3) 1/2-inch FNPT
- C – Male plain end (CS is black oxide coated)
- L – Long body (4-inch insulation)

### Options
- SP – Special Requirements - please specify

### Note
1. All Power M5 Gauge Valves come standard with GRAFOIL® packing, integral seats, bonnet locks, and are subjected to hydrostatic testing.
## Multi-Port Gauge Valves – M51 Specifications

### Ordering Information

<table>
<thead>
<tr>
<th></th>
<th>V</th>
<th>I</th>
<th>S</th>
<th>– 44LC</th>
<th>– SG</th>
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<tbody>
<tr>
<td>Packing</td>
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<tr>
<td>Seat</td>
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<tr>
<td>Body Material †</td>
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<tr>
<td>Connections (Inlet/Outlet) †</td>
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<tr>
<td>Options</td>
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<tr>
<td>Note</td>
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</tbody>
</table>

### Packing

- **V** – Teflon® (patent protected)

### Seat

- **I** – Integral

### Body Material †

- **S** – SS, A479-316

### Connections (Inlet/Outlet) †

- **44** – 1/2-inch MNPT x (3) 1/2-inch FNPT
- **46** – 3/4-inch MNPT x (3) 1/2-inch FNPT

- **C** – Male plain end (CS is black oxide coated)
- **L** – Long body extension (4-inch insulation)

### Options

- **BL** – Bonnet Lock Device (patent protected)
- **CLC** – Chlorine Cleaning
- **HD** – Hydrostatic Testing (100%) (MSS-MSP-61)
- **OC** – Oxygen Cleaning
- **SG** – Sour Gas meets the requirements of NACE MR0175-latest revision (SS only)
- **SP** – Special Requirements - please specify

### Note

1. Call factory for optional material, or other sizes and end connections.