Natural Gas Manifolds – M6A, M6T, M6TA 5-Valve Manifolds

Product Overview
The M6A 5-Valve Manifold for natural gas applications was first designed and manufactured in 1960. It soon took over as the standard for recording orifice meters. Today, it is still widely used. The M6A is usually supported in the vertical meter tubing from the orifice flange union. Static pressure and calibration test connections are standard. The unit is available with integral tube fittings, if desired.

Differential pressure transmitter accuracy and stability have improved, resulting in their broader use for natural gas measurement in production and transmission applications.

To meet the requirements for differential pressure transmitter applications, the M6T (pipe x flange) and M6TA (flange x flange) were designed to provide the family of M6A, M6T, M6TA for various field applications.

Recent natural gas measurement field research has shown that better accuracy results when the transmitter is installed directly on the orifice flanges or orifice fitting. Anderson Greenwood has designed a family of manifolds and installation configurations to meet the more accurate installations and users’ requirements.

Refer to ACCU-Mount™ Catalog.

Features and Benefits

M6A
- **Easy Installation.** The lightweight M6A is easily installed in meter tubing. No additional support is generally required.
- **Upstream or downstream 1/4-inch FNPT ports** are standard for connecting the static pressure to the meter.
- **Available with soft or hard seats.** Soft seats are easily replaced in the field in the event of damage from hydrated or sand. Soft seats are tolerant to much abuse from sand, grit, etc. remaining bubble-tight.
- **Bonnet-to-body and stem threads** are isolated from process corrosion – important in sour gas applications.
- **Stem backout prevention** eliminates accidental removal while under pressure.
- **Stem packing** is standard Viton® O-ring with TFE back-up ring with long life assured by mirror finish on stem in the packing area.
- **Integral hard backseat** forms a secondary seal for the stem threads when valve is fully opened.
- **Stem threads** are rolled (not cut) to increase strength and longer life.
- **Either single or double ferrule tube fittings** are available integral to the body. This reduces potential leak points.

M6T and M6TA
- **Same features and benefits as the M6A** plus the following.
- **May be pipestand mounted** using the appropriate AGCO Mount Kit. This allows the manifold to be mounted prior to receipt of transmitter. Makes it easier and quicker to remove the transmitter for servicing since it is attached only to the manifold and power source.
Natural Gas Manifolds – M6A Specifications

M6A Soft Seat (Metal Seat available) Dimensions, inches [mm]

Note

1. Approximate valve weight: 4.0 lb [1.8 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.
Natural Gas Manifolds – M6T Specifications

M6T Soft Seat (Metal Seat available) Dimensions, inches [mm]

Notes

1. M6T Installation Kit consists of 4 bolts 7/16-inch -20 x 1-inch A193-B7, 4 washers, and 2 Teflon® gaskets.

2. 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.

Natural Gas Manifolds – M6TA Specifications

M6TA 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. M6TA Installation Kit consists of 4 bolts 7/16-inch -20 x 1-inch A193-B7, 4 washers, and 2 Teflon® gaskets.
3. The M6TA high pressure extrusion has flanged (integral) instrument and process connections.
# Natural Gas Manifolds – M6A, M6T, M6TA Specifications

## Standard Materials

<table>
<thead>
<tr>
<th>Valve</th>
<th>Seat</th>
<th>Body</th>
<th>Bonnet</th>
<th>Stem</th>
<th>Ball</th>
<th>Flow Washer</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS</td>
<td>Soft</td>
<td>A105²</td>
<td>A108</td>
<td>A581-303</td>
<td>N/A</td>
<td>316</td>
</tr>
<tr>
<td>CS</td>
<td>Integral</td>
<td>A105²</td>
<td>A108</td>
<td>A581-303</td>
<td>17-4PH</td>
<td>N/A</td>
</tr>
<tr>
<td>SS</td>
<td>Soft</td>
<td>A479-316</td>
<td>A479-316</td>
<td>A276-316</td>
<td>N/A</td>
<td>316</td>
</tr>
<tr>
<td>SS</td>
<td>Integral</td>
<td>A479-316</td>
<td>A479-316</td>
<td>A276-316</td>
<td>316</td>
<td>N/A</td>
</tr>
<tr>
<td>SG³</td>
<td>Soft</td>
<td>A479-316</td>
<td>A479-316</td>
<td>Monel® 400</td>
<td>N/A</td>
<td>316</td>
</tr>
<tr>
<td>SG³</td>
<td>Integral</td>
<td>A479-316</td>
<td>A479-316</td>
<td>Monel® 400</td>
<td>Monel® K500</td>
<td>N/A</td>
</tr>
</tbody>
</table>

## Pressure and Temperature Ratings

<table>
<thead>
<tr>
<th>Valve</th>
<th>Packing</th>
<th>Seat Material</th>
<th>Standard Bolting</th>
<th>SS Bolting</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS, SS, SG³, Monel®</td>
<td>Teflon® O-ring</td>
<td>Delrin® PCTFE</td>
<td>3000 psig @ 200°F [207 barg @ 93°C]</td>
<td>3000 psig @ 200°F [207 barg @ 93°C]</td>
</tr>
<tr>
<td>CS, SS, SG³, Monel®</td>
<td>Teflon® O-ring</td>
<td>PEEK</td>
<td>6000 psig @ 200°F [414 barg @ 93°C]</td>
<td>4500 psig @ 100°F [310 barg @ 38°C]</td>
</tr>
<tr>
<td>Monel®</td>
<td>Teflon® O-ring</td>
<td>PEEK</td>
<td>5300 psig @ 200°F [365 barg @ 93°C]</td>
<td>4500 psig @ 100°F [310 barg @ 38°C]</td>
</tr>
<tr>
<td>CS, SS, SG³, Monel®</td>
<td>Teflon®</td>
<td>Teflon®</td>
<td>1000 psig @ 150°F [69 barg @ 66°C]</td>
<td>1000 psig @ 150°F [69 barg @ 66°C]</td>
</tr>
<tr>
<td>CS, SS, SG³</td>
<td>Teflon® GRAFOIL® Low Emissions Graphite</td>
<td>Body Material</td>
<td>4000 psig @ 500°F [276 barg @ 260°C]</td>
<td>3000 psig @ 500°F [207 barg @ 260°C]</td>
</tr>
<tr>
<td>Monel®</td>
<td>Teflon® GRAFOIL® Low Emissions Graphite</td>
<td>Body Material</td>
<td>5300 psig @ 200°F [365 barg @ 93°C]</td>
<td>4500 psig @ 100°F [310 barg @ 38°C]</td>
</tr>
</tbody>
</table>

## Notes

1. CS parts are zinc cobalt plated to prevent corrosion.
2. M6A body material is A108.
3. SG (Sour Gas) meets the requirements of NACE MR0175-latest revision.
4. PCTFE (Polychlorotrifluoroethylene) is the exact equivalent of Kel-F®.
5. M6A Monel® ratings are:
   - 6000 psig @ 200°F [414 barg @ 93°C]
   - 4000 psig @ 500°F [276 barg @ 260°C].
6. Block valves only.
Natural Gas Manifolds – M6A, M6T, M6TA Specifications

**Pressure vs. Temperature – Standard Bolting**

- Delrin®/PCTFE®
- PEEK (CS, SS)
- PEEK (Monel®)
- Teflon®
- Metal Seat (CS, SS)
- Metal Seat (Monel®)

Denotes intersecting data

**Pressure vs. Temperature – SS Bolting**

- Delrin®/PCTFE®
- PEEK
- Teflon®
- Metal Seat

Denotes intersecting data

Notes

1. PCTFE (Polychlorotrifluoroethylene) is the exact equivalent of Kel-F®.
2. M6A Monel® ratings are:
   - 6000 psig @ 200°F [414 barg @ 93°C]
   - 4000 psig @ 500°F [276 barg @ 260°C].

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## Natural Gas Manifolds

### Ordering Information

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>M6A</th>
<th>V</th>
<th>D</th>
<th>S</th>
<th>–4</th>
<th>–SG</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16-inch [4.8 mm] orifice</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M6A</td>
<td></td>
<td>V</td>
<td>D</td>
<td>S</td>
<td>–4</td>
<td>–SG</td>
</tr>
<tr>
<td>M6T</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M6TA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Packing

- V – Teflon® (patent protected)
- R – O-ring
- H – GRAFOIL®
- E – Low Emissions Graphite

### Seat

- Soft:
  - V – Teflon® (Block Valves only)
  - D – Delrin®
  - E – PEEK
  - K – PCTFE
- Hard:
  - I – Integral (body material)

### Body Material

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

### Process Connections

- 4 3/8 – ½-inch FNPT
- AT 3 – Integral Single Ferrule tube fittings
- ATD 3 – Integral Double Ferrule tube fittings
  - 3AT 3/8-inch
  - 3ATD 3/8-inch, 316 SS Ferrule and Nut
  - 4AT 1/2-inch, 316 SS Ferrule and Nut

### Options

- AM AGCO Mount Kit for 2-inch pipestand mounting of manifold (page 138).
- BC Accessory bracket for mounting conduit with AGCO Mount.
- BP Accessory bracket for mounting purge meters with AGCO Mount.
- CL Cleaned for Chlorine Service.
- HD Hydrostatic testing - includes test report (MSS-SP-61)
- OC Cleaned for Oxygen Service.
- R3V Add when mounting to Rosemount® Model #3051C, 2024, -3095. Specify on all components. Use SS columns for rating. (M6T, M6TA only)
- SG Sour Gas meets the requirements of NACE MR0175-latest revision. (B7 mounting bolts standard, SS mounting bolts optional) (SS valves only) (Not available for O-ring packed valves)
- TB Static/Test Ports (bottom of manifold) ¼-inch -18 NPT, 2 places, M6T, M6TA only
- EL () Installed street elbows in static test ports (M6T, M6TA only)
- EL1 – Elbow facing bottom of manifold
- EL2 – Elbow facing outlet of manifold
- SP Special Requirements - provide complete description of requirements.