FLOWSTREAM Flange Assembly

For Topside Flow Measurement

Flow Measurement Excellence
Widely recognized by the Oil, Gas & Petrochemical industries worldwide, Solartron ISA offers more than 45 years experience in the design and manufacture of primary Differential Pressure flow meter devices.

Solartron ISA: Engineering a solution for the metering community.

Orifice Flange Assembly
The use of the orifice flange assembly negates the requirement for further pipe drilling. Ensuring the quality of the tapping to ISO 5167-2 and minimizing the errors of the system. Although the weld beads and condition of the upstream piping should be considered when assessing the overall accuracy of the flow meter.

The traditional orifice flange assembly consists of a pair of flanges, orifice plate, bolts, nuts, gaskets, jacking screws and plugs, (where requested). The flanges are generally weld neck design, but other options are available, such as Slip-on and threaded, although careful consideration should be taken in the location of the orifice tappings with these designs.

Available Tapping options include:

Flange Tap Flanges tappings
- For internal line sizes greater 50mm
Corner Tap Flanges with annular chamber tappings
- For internal line sizes under 50mm
Corner Tap Flanges with angle tappings
- For internal line sizes under 50mm

Benefits
Solartron ISA is able to advise the most suitable flow measurement solution for each application, using proven flow metering technology with Differential Pressure measurement covered in ISO 5167-2, ISO TR-15377, AGA3 and ASME MFC-3M. Improved metering uncertainty as the orifice flange ensures the orifice plate and orifice tappings are compliant to ISO 5167-2, ISO TR-15377, AGA3 and ASME MFC-3M. These devices are low maintenance with no moving parts, and considered an economical cost effective flow measurement solution for many gas, liquid and steam applications.

Applications
✓ Hydrocarbon Gas & Liquids
✓ Process Measurement

Key Parameters
✓ Proven Technology
✓ Flow Measurement in Circular Pipes
✓ Quality Orifice tappings to ISO 5167-2
✓ No moving parts

Standards
✓ ISO 5167-2
✓ ISO TR-15377
✓ ASME MFC-3M
✓ AGA3
✓ ISO 9001
✓ PED-97/23/EC
## Functional Specifications

<table>
<thead>
<tr>
<th>Line Size</th>
<th>Solutions</th>
<th>Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN15 (1/2&quot;) to DN1200 (48&quot;)</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Types of Plate</strong></th>
<th><strong>Types of Tappings</strong></th>
<th><strong>Beta Ratio</strong></th>
<th><strong>Reynolds Number</strong></th>
<th><strong>Accuracy (Flow Rate)</strong></th>
<th><strong>Flow Turndown</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Square Edge</td>
<td>Flange</td>
<td>0.15 to 0.80</td>
<td>From 80 to an unlimited maximum</td>
<td>±1% with a calibrated spool</td>
<td>Typically &gt;10:1, depending on Transmitter configuration</td>
</tr>
<tr>
<td>Conical Entrance</td>
<td>Corner (Annular Chamber)</td>
<td>(Plate type dependent)</td>
<td>(Dependent on design of plate)</td>
<td></td>
<td></td>
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<tr>
<td>Quarter Circle</td>
<td>Corner</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Eccentric</td>
<td></td>
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<table>
<thead>
<tr>
<th><strong>Plate / Carrier Material</strong></th>
<th><strong>Flange Taps</strong></th>
<th><strong>Corner Annular Taps</strong></th>
<th><strong>Corner Angle Taps</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>304ss / 316ss / 321ss / UNS S31803</td>
<td><img src="image1" alt="Flange Taps" /></td>
<td><img src="image2" alt="Corner Annular Taps" /></td>
<td><img src="image3" alt="Corner Angle Taps" /></td>
</tr>
<tr>
<td>UNS S32760 / UNS S31254</td>
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<tr>
<td>Alloy 400 / 625 / 825 / C276</td>
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<tr>
<td>Titanium</td>
<td></td>
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<tr>
<td>A105N / A350 LF2</td>
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<tr>
<td>Low Alloy – A182 F1 / F5 / F9 / F11 / F22</td>
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<tr>
<td>Others available on request</td>
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