A compact dual duty manifold from the world’s leading supplier of tracing traps

For over 50 years Spirax Sarco has been designing, manufacturing and supplying steam traps to customers worldwide. Since the 1960s part of our range has been dedicated specifically to tracing applications which is often a major part of the steam system. Our experience in this area is second to none.

Steam tracing is used principally to maintain a reasonable product temperature and viscosity in order to simplify pumping and avoid freezing, solidification or stagnation. Although the condensate flowrates are relatively small trap populations will be high as all tracer lines should be individually trapped. For ease of design and layout the condensate from the traps is collected in a manifold. Similarly the steam to the tracers is manifolded.

Traditionally these manifolds are custom designed to an appropriate piping code, then fabricated and tested on site. The number of individual components needed to construct these manifolds is large and the labour needed to procure, weld, test and inspect them is expensive. These manifolds are large, heavy and a complex piece of the tracing system. After construction insulation can be awkward because of their widely differing geometry.

The modern method of manifolding is to purchase the manifold as a standard piece of equipment just like buying a steam trap. The convenience of this type of manifold with its optional insulation jacket and mounting kit is available from Spirax Sarco.

The Spirax Sarco steam distribution and condensate collection manifold type MSC is a dual duty (steam or condensate) manifold specifically designed for tracing applications. It is an ANSI Class 300 (ISO PN50) product in ASTM specification material. The main pressure retaining parts are all carbon steel forgings with EN 10204 3.1.B certification available as standard.

Low temperature carbon steel, low alloy steel and austenitic stainless steel versions are available on request.

**Product range and options**

<table>
<thead>
<tr>
<th>Manifold type</th>
<th>Number of tracer connections</th>
<th>DN 15</th>
<th>DN 20</th>
<th>Tracer connections</th>
<th>EN 10204 3.1.B certification</th>
<th>Options</th>
<th>Insulation jacket</th>
<th>Mounting kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSC04</td>
<td>4</td>
<td>●</td>
<td>●</td>
<td>● ● ● ● ●</td>
<td>Standard</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>MSC08</td>
<td>8</td>
<td>●</td>
<td>●</td>
<td>● ● ● ● ●</td>
<td>Standard</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>MSC12</td>
<td>12</td>
<td>●</td>
<td>●</td>
<td>● ● ● ● ●</td>
<td>Standard</td>
<td>●</td>
<td>●</td>
<td>●</td>
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</tbody>
</table>

● Available options. For tracing options, see sales brochures ‘Steam traps for tracing applications’.
Non-critical tracing (product lines)
Steam is distributed through one manifold to the tracer line attached to the product line. At the end of the tracer line the steam trap discharges the condensate into another manifold and is returned to the condensate main.

User benefits
- Eliminates on-site fabrication and testing.
- Lower cost than conventional welded design.
- Shortens project lead times.
- Space saving with standardised design.
- Lightweight to support and easy to install with optional mounting kit.
- Easy to maintain.
- Optional insulation jacket for energy conservation.
- Spirax Sarco’s guarantee of technical support, knowledge and service.
The piston valve: how it works

The piston valve is a variant of the conventional globe valve in which the seat and cone are replaced by a piston and lantern bush. This overcomes the difficulties usually associated with the replacement of conventional seats.

A precision ground piston (1) is connected to the valve stem and handwheel. The piston passes through two sealing rings (an upper (3) and lower (4) ring) separated by a lantern bush (2). When assembled the two sealing rings are compressed around the piston by the load exerted through the bonnet. The upper sealing ring acts as a conventional gland packing and the lower sealing ring acts as the seat. The lantern bush is needed to maintain separation between the upper and lower rings and to allow flow through the valve. Perfect tightness is assured because of the large sealing area between the piston and sealing rings.

If the valve needs maintaining then all the internals are easily removed by undoing the cover nuts and withdrawing the piston followed by the rings and lantern bush.

The piston valve is well suited to on-off duties such as steam trap isolation, particularly those applications where the valve body is permanently installed as part of the system pipework and plant downtime needs to be minimised.

Sizes and pipe connections

The steam main/condensate return connection is DN40 socket weld to ANSI B16.11 Class 3000

The tracer line connections are available as DN15 or DN20, screwed BSP or NPT or socket weld to ANSI B16.11 Class 3000

K_v values

<table>
<thead>
<tr>
<th>DN15</th>
<th>DN20</th>
</tr>
</thead>
<tbody>
<tr>
<td>K_v 1.8</td>
<td>K_v 1.8</td>
</tr>
</tbody>
</table>

For conversion C_v(UK) = 0.97 K_v C_v(USA) = 1.17 K_v

The K_v value stated is for each valve rather than the complete manifold.

Dimensions (approximate in mm)

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
<th>J</th>
<th>K</th>
<th>L</th>
<th>M</th>
<th>N</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSC04</td>
<td>330</td>
<td>160</td>
<td>85</td>
<td>110</td>
<td>71</td>
<td>48</td>
<td>37.5</td>
<td>75</td>
<td>102</td>
<td>120</td>
<td>50</td>
<td>M12</td>
<td>45</td>
<td>10 kg</td>
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<tr>
<td>MSC08</td>
<td>650</td>
<td>160</td>
<td>85</td>
<td>110</td>
<td>71</td>
<td>48</td>
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<td>102</td>
<td>120</td>
<td>50</td>
<td>M12</td>
<td>45</td>
<td>20 kg</td>
</tr>
<tr>
<td>MSC12</td>
<td>970</td>
<td>160</td>
<td>85</td>
<td>110</td>
<td>71</td>
<td>48</td>
<td>37.5</td>
<td>75</td>
<td>102</td>
<td>120</td>
<td>50</td>
<td>M12</td>
<td>45</td>
<td>30 kg</td>
</tr>
</tbody>
</table>

Some of the products shown may not be available in certain markets.