**FMAE31**

**Forbes Marshall Air Eliminator**

**Description**
The Forbes Marshall Air Eliminator, FMAE31, is a float type air vent for liquid systems. The body and cover are of cast iron and the complete unit is easily maintainable.

**Sizes and End Connections**
DN 15, 20 and 25 Screwed BSPT / NPT / BSP

**Limiting Conditions**
- **PMA** - Max. allowable pressure: 13.0 bar g
- **TMA** - Max. allowable temperature: 220°C
- **TMO** - Max. operating temperature: 220°C
- **Cold hydraulic test pressure**: 26.0 bar g
- **PMX** - Max. differential pressure: 13 bar g
- **Min Operating temperature**: 0°C

**Operating range**

<table>
<thead>
<tr>
<th>Temperature °C</th>
<th>Pressure bar g</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>50</td>
<td>2</td>
</tr>
<tr>
<td>100</td>
<td>8</td>
</tr>
<tr>
<td>150</td>
<td>13</td>
</tr>
<tr>
<td>200</td>
<td>19</td>
</tr>
<tr>
<td>220</td>
<td>26</td>
</tr>
</tbody>
</table>

Steam saturation

**Materials**

<table>
<thead>
<tr>
<th>No</th>
<th>Part</th>
<th>Material</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Base</td>
<td>Cast Iron</td>
<td>IS 210 FG 260</td>
</tr>
<tr>
<td>2</td>
<td>Cover Bolts</td>
<td>Carbon Steel</td>
<td>ASTM A 193 B7</td>
</tr>
<tr>
<td>3</td>
<td>Cover Gaskets</td>
<td>SS Reinforced Exfoliated Graphite</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Cover</td>
<td>Cast Iron</td>
<td>IS 210 FG 260</td>
</tr>
<tr>
<td>5</td>
<td>Valve Seat</td>
<td>Stainless Steel</td>
<td>ASTM A743 Gr. CA 40</td>
</tr>
<tr>
<td>6</td>
<td>Valve Seat Gasket</td>
<td>Stainless Steel Type 420</td>
<td>ASTM A240</td>
</tr>
<tr>
<td>7</td>
<td>Set Screws</td>
<td>Stainless Steel Type 304</td>
<td>IS 1364</td>
</tr>
<tr>
<td>8</td>
<td>Ball Float and Lever</td>
<td>Stainless Steel Type 304</td>
<td>ASTM A240</td>
</tr>
<tr>
<td>9</td>
<td>Pivot Frame</td>
<td>Stainless Steel Type 304</td>
<td>ASTM A240</td>
</tr>
</tbody>
</table>

**Dimensions (approx.) in mm**

<table>
<thead>
<tr>
<th>Size</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>DN 15/20</td>
<td>130</td>
<td>109</td>
<td>72</td>
<td>152</td>
<td>120</td>
<td>4 Kg</td>
</tr>
<tr>
<td>DN 25</td>
<td>141</td>
<td>109</td>
<td>72</td>
<td>160</td>
<td>135</td>
<td>4 kg</td>
</tr>
</tbody>
</table>
How to Fit Main Valve Assembly
Undo cover bolts and lift off base. Remove complete float assembly by undoing the two screws. Remove main valve seat and replace with a new one supplied with new gasket. Fit complete new float assembly by tightening the assembly set screw. Refit cover using new gasket.

Recommended Tightening Torques

<table>
<thead>
<tr>
<th>Part</th>
<th>Torque (Nm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover Bolts</td>
<td>25-35</td>
</tr>
<tr>
<td>Valve Seat</td>
<td>25-35</td>
</tr>
<tr>
<td>Set Screw</td>
<td>2.5-3</td>
</tr>
</tbody>
</table>

Available spares (refer fig. below)

- Main valve assembly: A, B, C, D, E, F, G, T
- Set of gaskets (Packet of 3): B, T
- Float assembly: C

How to Order Spares
Always order spares by using the description given in the column headed “Available Spares” in user manual

Maintenance
This can be carried out easily with the FMAE31 automatic air vent by closing the isolating ball valve. When reassembling makes sure that all joint faces are clean and always use a new cover gasket. Open isolating valve.

How to Order
Example: DN 20 Forbes Marshall Air Eliminator FMAE31 Screwed BSPT.

Installation
The FMAE31 must be fitted in a vertical plane above the point being vented with the direction of flow as indicated on cover so that the float arm falls and rises vertically. The arrow on the nameplate should point downwards. As with all automatic air vents, dribbling may occur if the valve is fouled with dirt. It is therefore recommended that a drip pipe is fitted to the outlet discharging to a safe place. Refer user manual for further details.

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