Steam Injection Liquid Heating System

Superior to Venturi and Static Mixer Designs

Constant Flow Heater

Benefits

• Eliminates harmful vibration and steam hammer
• Widest operating range of any steam injection heater
• Smooth, quiet operation within acceptable dBA limits
• Precise, accurate temperature control
• Complete absorption of steam into liquid at point of contact - not dependent on high velocity mixing in downstream piping
• Low liquid pressure drop
• 100% heat transfer - cuts fuel costs as much as 30% compared with indirect heat exchangers

Features

• 10 sizes - steam capacity ratings from 700 to 50,000 lbs/hr
• Available in 316 stainless steel, carbon steel, cast iron or special alloys on request
• Complete instrumentation available
• Over 70 years of experience in design, installation and service of steam injection heating systems

Applications:

• Reactor Vessels
• CIP
• Sterilization
• Centrifuge or Filter Backflush
• Jacketed Kettles
• Tempered Water
• Retorts
• Extruders
• Pasteurizers
• Tank Filling
• Slurries
• Green Liquor Heating
• Felt Washing
• Boiler Feed Water
• Condensate Mixing

Learn more at www.pickheaters.com
Pick Heaters, Inc. — 730 S. Indiana Ave. — West Bend, WI 53095 USA
Phone: (262) 338-1191 — Email: info1@pickheaters.com
### Specifications - 10 Standard Sizes

<table>
<thead>
<tr>
<th>Model No.</th>
<th>6X7-3</th>
<th>6X10-3</th>
<th>6X25-3</th>
<th>6X50-3</th>
<th>6X75-3</th>
<th>6X100-3</th>
<th>6X150-3</th>
<th>6X200-3</th>
<th>6X350-3</th>
<th>6X500-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steam Capacity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lb/hr</td>
<td>700</td>
<td>1,250</td>
<td>2,500</td>
<td>5,000</td>
<td>7,500</td>
<td>10,000</td>
<td>15,000</td>
<td>20,000</td>
<td>35,000</td>
<td>50,000</td>
</tr>
<tr>
<td>Kg/hr</td>
<td>320</td>
<td>565</td>
<td>1,130</td>
<td>2,260</td>
<td>3,390</td>
<td>4,520</td>
<td>6,780</td>
<td>9,040</td>
<td>15,820</td>
<td>22,600</td>
</tr>
<tr>
<td>Liquid Pipe Size Range (inches). See selection chart below</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Threaded</td>
<td>½ - 1 ⅛</td>
<td>1 - 2</td>
<td>1 ⅛ - 2 ⅜</td>
<td>1 ½ - 3</td>
<td>2 - 4</td>
<td>2 ½ - 4</td>
<td>3</td>
<td>--</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Flanged</td>
<td>¾ - 2</td>
<td>1 - 3</td>
<td>1 ⅛ - 4</td>
<td>2 - 4</td>
<td>2 ½ - 6</td>
<td>3 - 8</td>
<td>4 - 10</td>
<td>4 - 10</td>
<td>6 - 12</td>
<td></td>
</tr>
<tr>
<td>Approximate Dimensions (inches)</td>
<td>A</td>
<td>44</td>
<td>48</td>
<td>54</td>
<td>60</td>
<td>66</td>
<td>74</td>
<td>80</td>
<td>110</td>
<td>120</td>
</tr>
<tr>
<td>B</td>
<td>32</td>
<td>38</td>
<td>44</td>
<td>50</td>
<td>65</td>
<td>68</td>
<td>82</td>
<td>94</td>
<td>105</td>
<td>130</td>
</tr>
<tr>
<td>Shipping Weight (lbs)</td>
<td>275</td>
<td>300</td>
<td>350</td>
<td>440</td>
<td>600</td>
<td>825</td>
<td>950</td>
<td>1,800</td>
<td>2,400</td>
<td>3,000</td>
</tr>
</tbody>
</table>

### Liquid Pipe Selection Chart – Choose best pipe size based on water flow rate in GPM

<table>
<thead>
<tr>
<th>Pipe Size</th>
<th>1</th>
<th>1-1/4</th>
<th>1-1/2</th>
<th>2</th>
<th>2-1/2</th>
<th>3</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. GPM</td>
<td>15</td>
<td>30</td>
<td>45</td>
<td>90</td>
<td>140</td>
<td>230</td>
<td>500</td>
<td>1000</td>
<td>1800</td>
<td>3000</td>
</tr>
</tbody>
</table>

Dimensions are approximate. Heaters are available with cast iron, carbon steel, or 316SS materials of construction.

### Sizing the Constant Flow Heater

Steam demand (lb/hr) = 0.43 x flow(GPM) x ∆T (°F)  
Steam demand (kg/hr) = 0.092 x flow(LPM) x ∆T (°C)

Example: 200 GPM x 50°F temperature rise x 0.43 = 4,300 lb/hr of steam. You would require a 6X50-3 which has a maximum rated steam capacity of 5,000 lb/hr, and a maximum water flow rate of 230 GPM with threaded connections (500 GPM with welded flanged connections).

- Use wherever a constant flow of hot water or liquid is needed
- Handles liquid flow rates up to 5,500 GPM
- Handles steam flow rates from 700 to 50,000 lbs/hr
- Ideal for heating liquids above normal boiling point

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