CONDENSER - Design
Heat Exchanger : B25Tx40

Fluid Side 1 : R410A
Fluid Side 2 : Water
Flow Type : Counter-Current

DUTY REQUIREMENTS

<table>
<thead>
<tr>
<th></th>
<th>Side 1</th>
<th>Side 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heat load</td>
<td>7,200</td>
<td>30,00</td>
</tr>
<tr>
<td>Inlet temperature</td>
<td>74,00</td>
<td>30,00</td>
</tr>
<tr>
<td>Condensation temperature (dew)</td>
<td>35,00</td>
<td>35,00</td>
</tr>
<tr>
<td>Subcooling</td>
<td>2,00</td>
<td></td>
</tr>
<tr>
<td>Outlet temperature</td>
<td>32,90</td>
<td>35,00</td>
</tr>
<tr>
<td>Flow rate</td>
<td>0,03274</td>
<td>0,3446</td>
</tr>
<tr>
<td>Fluid condensed</td>
<td>0,03274</td>
<td>50,0</td>
</tr>
</tbody>
</table>

PLATE HEAT EXCHANGER

<table>
<thead>
<tr>
<th></th>
<th>Side 1</th>
<th>Side 2</th>
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</thead>
<tbody>
<tr>
<td>Total heat transfer area</td>
<td>2,39</td>
<td>3,01</td>
</tr>
<tr>
<td>Heat flux</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean temperature difference</td>
<td>4,22</td>
<td></td>
</tr>
<tr>
<td>O.H.T.C. (available/required)</td>
<td>829/713</td>
<td></td>
</tr>
<tr>
<td>Pressure drop -total*</td>
<td>0,250</td>
<td>3,35</td>
</tr>
<tr>
<td>- in ports</td>
<td>-0,0153</td>
<td>0,277</td>
</tr>
<tr>
<td>Operating pressure - outlet</td>
<td>2130</td>
<td></td>
</tr>
<tr>
<td>Number of channels</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>Number of plates</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>Oversurfacing</td>
<td>16</td>
<td></td>
</tr>
<tr>
<td>Fouling factor</td>
<td>0,196</td>
<td></td>
</tr>
<tr>
<td>Port diameter</td>
<td>24,0</td>
<td>24,0</td>
</tr>
<tr>
<td>Recommended inlet connection diameter</td>
<td>From 4,53 to 10,1</td>
<td></td>
</tr>
<tr>
<td>Recommended outlet connection diameter</td>
<td>From 2,03 to 6,43</td>
<td></td>
</tr>
<tr>
<td>Reynolds number</td>
<td>403</td>
<td></td>
</tr>
<tr>
<td>Inlet port velocity</td>
<td>0,890</td>
<td>0,766</td>
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</tbody>
</table>

PHYSICAL PROPERTIES

<table>
<thead>
<tr>
<th></th>
<th>Side 1</th>
<th>Side 2</th>
</tr>
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<tbody>
<tr>
<td>Reference temperature</td>
<td>34,95</td>
<td>32,50</td>
</tr>
<tr>
<td>Liquid - Dynamic viscosity</td>
<td>0,106</td>
<td>0,757</td>
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<tr>
<td>Density</td>
<td>1009</td>
<td>994,9</td>
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<tr>
<td>Heat capacity</td>
<td>1,783</td>
<td>4,178</td>
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<tr>
<td>Thermal conductivity</td>
<td>0,09122</td>
<td>0,6194</td>
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<tr>
<td>Vapor - Dynamic viscosity</td>
<td>0,0138</td>
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</tr>
<tr>
<td>Density</td>
<td>81,38</td>
<td></td>
</tr>
<tr>
<td>Heat capacity</td>
<td>1,309</td>
<td></td>
</tr>
<tr>
<td>Thermal conductivity</td>
<td>0,01298</td>
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<tr>
<td>Latent heat</td>
<td>169,9</td>
<td></td>
</tr>
<tr>
<td>Film coefficient</td>
<td>2060</td>
<td>5920</td>
</tr>
<tr>
<td>Minimum wall temperature</td>
<td>36,70</td>
<td>36,56</td>
</tr>
<tr>
<td>Channel velocity</td>
<td>0,0937</td>
<td>0,0766</td>
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### Totals

<table>
<thead>
<tr>
<th>Description</th>
<th>Side 1</th>
<th>Side 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total weight (no connections)</td>
<td>kg</td>
<td>8.19 - 55.2</td>
</tr>
<tr>
<td>Hold-up volume, inner circuit</td>
<td>dm³</td>
<td>2.11 - 2.17</td>
</tr>
<tr>
<td>Hold-up volume, outer circuit</td>
<td>dm³</td>
<td>2.22 - 2.28</td>
</tr>
<tr>
<td>PortSize F1/P1</td>
<td>mm</td>
<td>24.0</td>
</tr>
<tr>
<td>PortSize F2/P2</td>
<td>mm</td>
<td>24.0</td>
</tr>
<tr>
<td>PortSize F3/P3</td>
<td>mm</td>
<td>24.0</td>
</tr>
<tr>
<td>PortSize F4/P4</td>
<td>mm</td>
<td>24.0</td>
</tr>
<tr>
<td>NND F1/P1</td>
<td>mm</td>
<td>27.0 and/or 18.0</td>
</tr>
<tr>
<td>NND F2/P2</td>
<td>mm</td>
<td>18.0 and/or 27.0</td>
</tr>
<tr>
<td>NND F3/P3</td>
<td>mm</td>
<td>27.0 and/or 18.0</td>
</tr>
<tr>
<td>NND F4/P4</td>
<td>mm</td>
<td>18.0 and/or 27.0</td>
</tr>
<tr>
<td>Carbon Footprint</td>
<td>kg</td>
<td>65.0</td>
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### DIMENSIONS

<table>
<thead>
<tr>
<th>Description</th>
<th>Front</th>
<th>Back</th>
<th>Side</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>mm</td>
<td>524 to 566 +/- 2</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>mm</td>
<td>117 to 159 +/- 1</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>mm</td>
<td>479 +/- 1</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>mm</td>
<td>72 +/- 1</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>mm</td>
<td>20 to 54 (opt. 45) +/- 1</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>mm</td>
<td>91.60 to 162.00 +/- 3%</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>mm</td>
<td>0.0 to 7 +/- 1</td>
<td></td>
</tr>
<tr>
<td>R</td>
<td>mm</td>
<td>22 to 23</td>
<td></td>
</tr>
</tbody>
</table>

Disclaimer: Data used in this calculation is subject to change without notice. Calculation is intended to show thermal and hydraulic performance, no consideration has been taken to mechanical strength of the product. Product restrictions - such as pressure, temperatures and corrosion resistance - can be found in SWEP product sheets and other technical documentation. SWEP may have patents, trademarks, copyrights or other intellectual property rights covering subject matter in this document. Except as expressly provided in any written license agreement from SWEP, the furnishing of this document does not give you any license to these patents, trademarks, copyrights, or other intellectual property.

*Excluding pressure drop in connections.*