FLUID COOLING | Shell & Tube EKT Series

COPPER & STEEL CONSTRUCTION

Features
- HPU, In-tank Cooler
- Compact Size
- EK Style & Size
- High Efficiency Finned Bundle Design
- Serviceable
- Removable
- In-tank Design Minimizes Space Requirements and Reduces Plumbing
- Internal Aluminum Fins Dramatically Increase Performance
- Removable End Bonnets Allow Water Passage Servicing
- High Strength Steel Shell

Options
- SAE or BSPP Connections Available
- Internal Oil Flow Bypass Relief (SURGE-CUSHION®)

Materials
- Shell Steel
- Tubes Copper
- Fins Aluminum
- Tubesheets Steel
- Baffles Steel
- End Bonnets Cast Iron
- Gaskets Nitrile Rubber/Cellulose Fiber

Ratings
- Operating Pressure:
  - Shellside 75 psi – Tubesside 150 psi
- Test Pressure:
  - Shellside 75 psi – Tubesside 150 psi
- Maximum Temperature 250° F

Surge-Cushion (Option)
The SURGE-CUSHION® is a protective device (patented) designed to internally bypass a portion of the oil flow during cold start conditions, or when sudden flow surges temporarily exceed the maximum flow allowed for a given cooler. This device may replace an external bypass valve, but it is not intended to bypass the total oil flow.

How to Order

Model Series
- EKT
- EKTS
- EKTM

Model Size Selected

SURGE-CUSHION®
- Blank - No SURGE-CUSHION®
- R - SURGE-CUSHION®

EKT = NPT Connections,
EKTS = SAE Oil Connections,
EKTM = All Metric Connections.
Dimensions

Performance Curves

Selection Procedure

Performance Curves are based on a 40°F approach temperature, a 2:1 oil to water ratio and an average oil viscosity of 100 SSU. Example: oil leaving cooler at 125°F with 85°F cooling water (125°F - 85°F = 40°F). The 2:1 oil to water ratio means that for every GPM of oil circulated, a minimum of 1/2 GPM of water must must be circulated to obtain the curve results.

Step 1  Corrections for approach temperature and oil viscosity.

\[ \text{HP}_{\text{Heat Removed in Cooler}} = \frac{\text{HP}_{\text{Actual}} \times 40^\circ\text{F}}{\text{Oil out and } \circ\text{F} - \text{Water in } \circ\text{F}} \times \text{Correction A} \]

Step 2  Oil Pressure Drop Coding: • = 5 PSI; ■ = 10 PSI. Curves having no pressure drop symbol indicate that the oil pressure drop is less than 5 PSI to the highest oil flow rate for that curve. Multiply curve oil pressure drop by Correction B.

Viscosity Corrections

<table>
<thead>
<tr>
<th>Average Oil SSU</th>
<th>A</th>
<th>B</th>
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<tbody>
<tr>
<td>50</td>
<td>0.84</td>
<td>0.6</td>
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<tr>
<td>100</td>
<td>1.0</td>
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<tr>
<td>200</td>
<td>1.14</td>
<td>2.0</td>
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<tr>
<td>300</td>
<td>1.24</td>
<td>3.1</td>
</tr>
<tr>
<td>400</td>
<td>1.31</td>
<td>4.1</td>
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<tr>
<td>500</td>
<td>1.37</td>
<td>5.1</td>
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Maximum Flow Rates

<table>
<thead>
<tr>
<th>Unit Size</th>
<th>Shell Side GPM</th>
<th>Tube Side (GPM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
<td>20</td>
<td>6</td>
</tr>
<tr>
<td>700</td>
<td>60</td>
<td>12</td>
</tr>
<tr>
<td>1000</td>
<td>80</td>
<td>28</td>
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If maximum allowable flow rates are exceeded, premature failure may occur.