Alfa Laval ACE Model V
A modular air cooled heat exchanger for the oil, gas and power industries

Introduction
The Alfa Laval ACE Model V is a modular concept air cooled heat exchanger with compact footprint benefiting from the pressure vessels (bundles) being installed in a V pattern. This configuration essentially reduces the overall width of an equivalent Alfa Laval ACE Model E air cooled exchanger by 40%, which ultimately saves substantial fabrication, transportation and site civil and real estate costs. The configuration also allows multiple Model V’s to be positioned next to each other for simultaneous, parallel cooling of extremely large process flows.

Applications
The Alfa Laval ACE Model V, given the angled orientation of pressure vessels, is perfectly suited for cooling single phase gas or liquid fluids in the upstream and midstream industries, as well as downstream power applications.

Benefits
- Lower operating costs achievable with optimization of motor/fan power consumption.
- Reduced plot space relative to conventional, horizontal bundle air cooled heat exchangers due to angled orientation of the bundles.
- High reliability due to robust, ASME coded pressure vessels and standardized fan assemblies.
- Lower site installation costs due to available motor control module and potential elimination of costly plant motor control center.
- Lower perimeter noise due to induced draft design and vertical air ejection.
- Increased safety relative to conventional solutions, as needed for confined space entry is inherently eliminated by design.
- Low transportation costs due to compact design. Designed to fit within standard shipping container for international applications.

Working principle
The three primary components of the Alfa Laval ACE Model V are the bundles, fan/mechanical sections and the structure. The angled bundles, which are the pressure vessels, direct the process liquid or vapor to flow through the inside of the finned tubes. The finned tubes transfer heat from the process fluid to the air passing through and around the tube’s fins. The fans used to move the air sit on top of the heat exchanger and induce, or pull, the air uniformly across the bundles. The structure directs the airflow between the bundles and fans and supports the weight of the entire, self-contained unit.

Design configuration
- Bundles are angled with horizontal fans and induced draft, vertical air ejection.
- Fans are powered by electrical motors only.
- Modular, induced draft fan cells allow for bundle lengths up to 18.3 m (60 ft).
- The special design reduces transportation and plot space costs as compared to horizontal section designs, for example the Alfa Laval ACE Model E.

Unique features
- Vspeed
  Automatic fan speed adjustment for minimal power consumption.
- HyperFin
  Slitted fin design maximizes heat transfer.
- HybridCool
  Combined wet and dry bulb cooling for minimized water consumption.
- ALOnsite
  Global, on-site service by skilled engineers.

Learn more at www.alfalaval.com/ace
### Dimensional drawing

![Dimensional drawing](image)

<table>
<thead>
<tr>
<th>No. of Fans</th>
<th>Dimensions, feet (m)</th>
<th>Width (W)</th>
<th>Height (H)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Tube Length (L)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>6’ – 8’ (1.8 – 2.4)</td>
<td>7.7’ (2.3)</td>
<td>8.9’ (2.7)</td>
</tr>
<tr>
<td>2</td>
<td>12’ – 16’ (3.7 – 4.9)</td>
<td>7.7’ (2.3)</td>
<td>8.9’ (2.7)</td>
</tr>
<tr>
<td>3</td>
<td>18’ – 24’ (5.5 – 7.3)</td>
<td>7.7’ (2.3)</td>
<td>8.9’ (2.7)</td>
</tr>
<tr>
<td>4*</td>
<td>24’ – 32’ (7.3 – 9.8)</td>
<td>7.7’ (2.3)</td>
<td>8.9’ (2.7)</td>
</tr>
<tr>
<td>5</td>
<td>30’ – 40’ (9.1 – 12.2)</td>
<td>7.7’ (2.3)</td>
<td>8.9’ (2.7)</td>
</tr>
<tr>
<td>6</td>
<td>36’ – 48’ (11 – 14.6)</td>
<td>7.7’ (2.3)</td>
<td>8.9’ (2.7)</td>
</tr>
<tr>
<td>7</td>
<td>42’ – 56’ (12.8 – 17.1)</td>
<td>7.7’ (2.3)</td>
<td>8.9’ (2.7)</td>
</tr>
<tr>
<td>8</td>
<td>48’ – 56’ (14.6 – 17.1)</td>
<td>7.7’ (2.3)</td>
<td>8.9’ (2.7)</td>
</tr>
<tr>
<td>9</td>
<td>54’ (16.5)</td>
<td>7.7’ (2.3)</td>
<td>8.9’ (2.7)</td>
</tr>
<tr>
<td>10</td>
<td>60’ (18.3)</td>
<td>7.7’ (2.3)</td>
<td>8.9’ (2.7)</td>
</tr>
</tbody>
</table>

* Representative unit shown in dimensional drawing

### Technical data

#### Pressure vessel (bundle) options
- **Tube bundles**: Straight tube, crossflow or counterflow design
- **Code designs**: Non-code, ASME VIII Div 1, NACE and PED available
- **Header options**: Tubing headers
- **Header material options**: Carbon steel
  - 300 series stainless steel optional
- **Tube options**: 0.625” to 1.5” tube OD available
- **Tube material options**: Carbon steel
  - Stainless steel and high alloy optional
- **Fin options**: HyperFin L-footed
  - Smooth L-footed, embedded or extruded fins optional

#### Fan/mechanical options
- **Fans**: Direct drive 5 ft (1.524 m) diameter
- **Motors**: Totally enclosed fan cooled (TEFC)
- **Speed control**: Alfa Laval ACE Vspeed optional

#### Structure options
- **Metal**: Bolted steel with hot-dipped galvanized construction
  - Painted construction optional
- **Perimeter bug screens**: Metal or fabric screens optional
- **Louvers**: Automatic or manual louvers optional
- **Access package**: Ladders, walkways, platforms and piperacks optional

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