Alfa Laval ACE Model J

A flexible yet economical air cooled heat exchanger for medium applications

Introduction

The Alfa Laval ACE Model J is an engineered-to-order air cooled heat exchanger with compact footprint benefiting from the pressure vessels (bundles) and fan being installed in a vertical orientation. This configuration reduces the overall depth of the unit and enables the hot air to exit vertically, away from critical surrounding components.

Applications

The Alfa Laval ACE Model J, given the vertical orientation of pressure vessels and fan, is perfectly suited for small to medium size cooling applications in the upstream and midstream industries, as well as downstream power applications. The most common application for the ACE Model J is acting as a radiator for modular power installations from drilling rigs to mobile, commercial based power units.

Benefits

- Reduced plot space relative to conventional, horizontal bundle air cooled heat exchangers due to vertical orientation of the bundles.
- High reliability due to robust, ASME coded pressure vessels and proven fan assembly.
- Lower capex (separate motor control/VFD center) costs and lower opex (excess parasitic horsepower) costs possible due to available, self-contained fan VFD solution.
- Lower perimeter noise due to induced draft design and vertical air ejection.
- Low transportation costs due to compact design. Can easily be designed to fit within standard shipping container for international or mobile power applications.

Working principle

The three primary components of the Alfa Laval ACE Model J are the bundles, fan/speed reducer sub-assembly and the structure. The vertical bundles, which are the pressure vessels, direct the process liquid or vapor to flow through the inside the finned tubes. The finned tubes transfer heat from the process fluid to the air passing through and around the tube's fins. The fan used to move the air sits behind the heat exchanger bundles and induces, or pulls, the air across the bundles. The structure directs the airflow between the bundles and fan and supports the weight of the entire, self-contained unit.

Design configuration

- Vertical bundles and fan with horizontal air intake and vertical air ejection.
- Vertical bundles provide easy inspection access and a lowered center of gravity for safer loading, transport and reduced costs.
- Structure available in bolted galvanized or welded painted construction.
- Optional ACE Vspeed explosion proof variable fan speed control to reduce parasitic horsepower consumption and liquid fallout from overcooled process fluids.
- Additional structure available, such as warm air recirculation, manual or automatic louvers, hail/bug screens, service platforms, walkways and ladders.
- Additional accessories available, such as surge tanks and low noise fans.
- Multiple or single process cooling.

Unique features

Vspeed
Automatic fan speed adjustment for minimal power consumption.

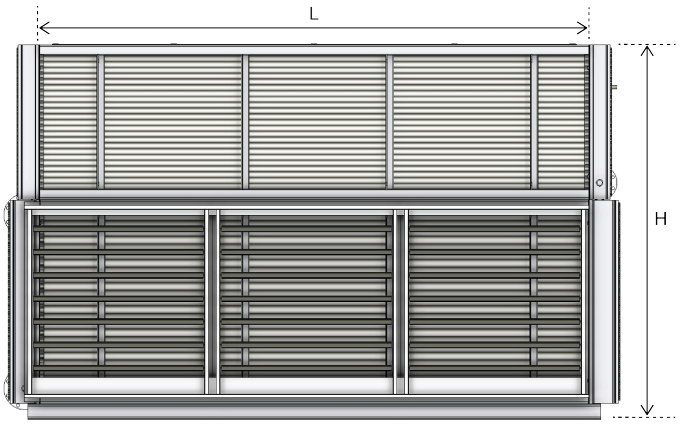
HybridCool
Combined wet and dry bulb cooling for minimized water consumption.

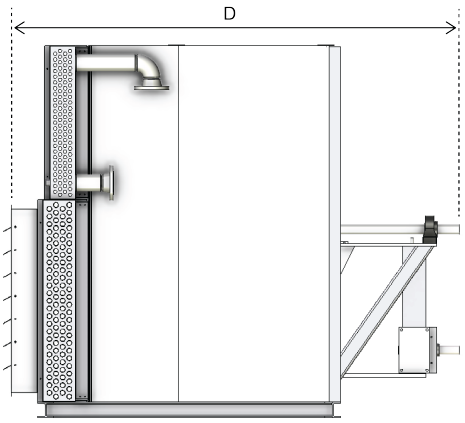
HyperFin
Slitted fin design maximizes heat transfer.

ALOnsite
Global, onsite service by skilled engineers.

Learn more at **www.alfalaval.com/ace**

Dimensional drawing





No. of Fans	Dimensions, feet (m)		
	Tube Length (L)	Depth (D)	Height (H)
1 only*	4' – 28' (1.2 – 8.5)	As required	4' - 17' (1.2 – 5.2)
* 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
	Plug box ASME code headers optional
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
Bundle accessories	Surge tanks per bundle optional

Fan/mechanical options	
Fan	Diameters available from 2' to 15'
Fan driver	Fan driven by engine
	Totally enclosed fan cooled (TEFC), explosion proof or IEC motor optional
Speed control	Alfa Laval ACE Vspeed optional

Structure options	
Metal	Welded and painted construction
	Bolted steel with hot-dipped galvanized construction optional
Air recirculation	Recirculation over front (bundle side) optional
Hail/bug screens	Metal or fabric screens optional
Louvers	Automatic or manual louvers optional
Access package	Ladders, walkways, and platforms optional