



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 21.3 m (70 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



HyperFin
Slitted fin design maximizes heat transfer.



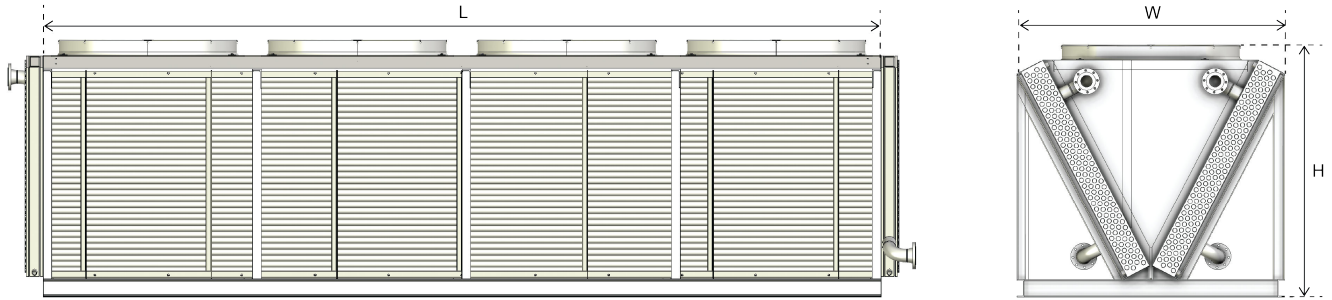
HybridCool
Combined wet and dry bulb cooling for minimized water consumption.



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Dimensional drawing



No. of Fans	Dimensions, feet (m)		
	Tube Length (L)	Width (W)	Height (H)
1	6' – 8' (1.8 – 2.4)	7.7' (2.3)	8.9' (2.7)
2	12' – 16' (3.7 – 4.9)	7.7' (2.3)	8.9' (2.7)
3	18' – 24' (5.5 – 7.3)	7.7' (2.3)	8.9' (2.7)
4*	24' – 32' (7.3 – 9.8)	7.7' (2.3)	8.9' (2.7)
5	30' – 40' (9.1 – 12.2)	7.7' (2.3)	8.9' (2.7)
6	36' – 48' (11 – 14.6)	7.7' (2.3)	8.9' (2.7)
7	42' – 56' (12.8 – 17.1)	7.7' (2.3)	8.9' (2.7)
8	48' – 56' (14.6 – 17.1)	7.7' (2.3)	8.9' (2.7)
9	54' (16.5)	7.7' (2.3)	8.9' (2.7)
10	70' (21.3)	7.7' (2.3)	8.9' (2.7)

* 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 API 661 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

Fan/mechanical options

Fans	Direct drive Totally enclosed fan cooled (TEFC)
Motors	Explosion proof or IEC motors optional EC motors 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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