

Refrigeration and air-conditioning

Alfa Laval's offering at a glance



At Alfa Laval green is cool



The origin of the company dates back to 1883, when Gustaf de Laval founded Alfa Laval to market his pioneering invention of the centrifugal separator.

A global brand

Today, the Alfa Laval brand stands for technical expertise, reliable products, efficient service and the finest process engineering skills. Our reputation is based on our unique knowledge and experience in the three key technologies, separation, heat transfer and fluid handling, which play major roles in most industrial sectors.

Alfa Laval has nearly 12,000 highly qualified employees worldwide. Their basic mission is to assist industries of almost every kind to refine and improve their products and to optimize the performance of their processes. We thus help to create better living conditions and a cleaner, safer environment for all mankind.

Serving a wide range of industries

Alfa Laval's business covers a wide range of industries. Our products and solutions are used to heat, cool, separate and transport products in industries that produce foods and beverages, chemicals and petrochemicals, pharmaceuticals, starch, sugar and biofuels.

Alfa Laval products are also installed on oil platforms, in power plants, onboard ships, in the mechanical engineering industry, in the mining industry and for wastewater treatment, as well as for comfort climate and refrigeration applications.

Refrigeration and air-conditioning

Alfa Laval refrigeration and air-conditioning are focused on four areas; commercial refrigeration, industrial refrigeration, marine refrigeration, and air-conditioning. Refrigeration and air-conditioning consume a lot of energy. Therefore, it is essential that the technical solutions economize on the use of energy and fulfil their mission at the same time. Alfa Laval's challenge is to create products that have low environmental impact, without compromising quality and efficiency. Our broad portfolio of environmentally conscious solutions economize on the use of energy and fulfil their mission in terms of performance and reliability at the same time.

Partners in performance

Alfa Laval works with a global network of sales offices and distributors who support customers locally with products, aftersales and service. With Alfa Laval you can rely on genuine spare parts and knowledgeable service personnel dedicated to serving your heat transfer needs 24/7.



Alfa Laval has more than 100 sales offices and more than 50 service centres worldwide. Shown here are national and regional headquarters.

Working towards a greener world



Commercial refrigeration

For the food retail business Alfa Laval supplies air heat exchangers – unit coolers, air-cooled condensers and dry coolers for direct-expansion. For indirect brine systems Alfa Laval offers brazed plate heat exchangers and brine air coolers for high energy efficiency and reduced refrigerant volumes.

Switching to green cooling

As supermarkets move to greener cooling systems, synthetic refrigerants are increasingly being replaced with natural, climate-neutral refrigerants. CO₂, with its low global warming potential (GWP), is outstanding. It has the capability to recover heat at high temperature that can be used for tap water and space heating.

Condensers, evaporators and gas coolers from Alfa Laval make transcritical CO₂ systems and cascading systems responsible, efficient, reliable and safe. From an air cooler to a complete transcritical CO₂ solution with heat recovery, Alfa Laval has the products and expertise you need.



Industrial refrigeration

From freezing and cold storage cooling in industrial premises to refrigeration of ice rinks, Alfa Laval has the latest, energy efficient solutions.

For the food industry we offer highly efficient air coolers that can be combined with plate heat exchangers. Applications range from cooling in slaughter houses and fish and meat processing areas, to climate control in storage rooms for fresh food.

A solution for every application

For storage of agricultural produce – vegetables, potatoes and fruit – Alfa Laval air coolers deliver a perfectly balanced capacity/air flow ratio and an optimal climate for every type of produce. For instance, Alfa Laval banana ripening coolers are used to optimize each phase of the sensitive ripening process.

In modern horticulture, flower-growing installations, for instance, use special Alfa Laval air heat exchangers for cooling and heating the air inside the greenhouse. These systems considerably improve both the quantity and the quality of production – while consuming less energy and reducing operating costs.



Marine refrigeration

Alfa Laval refrigeration systems are used onboard fishing vessels, gas/LPG carriers, cruisers and ferries, food transportation ships and cargo vessels. Onboard fishing vessels, our systems are used for quick freezing of fish products.

Energy efficient solutions

Ideal as evaporators and condensers for onboard refrigeration systems, Alfa Laval semi-welded plate heat exchangers are the smallest, lightest, most efficient cooling units on the market.

Our brazed plate heat exchangers are designed and fully optimized for onboard air-conditioning and refrigeration duties. When seawater is utilized, our range of marine shell-and-tube condensers are the ideal solution.

Alfa Laval brine air unit coolers are the energy efficient choice for cargo refrigeration systems onboard reefers and other vessels.



Air-conditioning

Shopping malls, public buildings, hotels, office complexes, sports arenas, skating rinks, even indoor ski slopes around the world are cooled by Alfa Laval's HVAC solutions. Each solution could involve different types of refrigerants, configurations and air-conditioning equipment. Minimizing environmental impact is an increasingly important factor.

Alfa Laval offers a broad portfolio of dry coolers, condensers, brazed heat exchangers and gasketed units for indoor cooling.

Maintaining an optimal indoor climate

In the air-conditioning chiller itself, various system manufacturers incorporate Alfa Laval brazed plate or shell-and-tube heat exchangers as liquid evaporators and/or condensers.

In bigger buildings, additional Alfa Laval heat exchangers are installed. Plate heat exchangers with very close temperature approach are used in the heating or cooling system for various intermediate duties. Air liquid coolers or condensers are installed in the roof to remove excess heat.

Green solutions from the heat transfer specialist



Brazed plate heat exchangers

Brazed plate heat exchangers (BHE's) have stainless steel plates, copper brazed for high thermal efficiency and strength. Designed for refrigeration and AC duties, BHE's handle H(C)FC, HFC, HC and CO₂ refrigerants. As dry expansion evaporators they feature integrated flow equalization for maximum cooling performance. Three models are equipped with double refrigerant circuits. Temperature range: -100°C to 200°C; pressure ratings up to 130 bar.

Benefits:

- Extremely compact, low weight, easy to install
- Low refrigerant charge
- Even flow distribution, with stable superheat capability
- Safe oil return, even with low loads
- Safe capacity control, due to double refrigerant circuits
- Floating condensation temperature with flooded evaporation systems
- High pressure versions for cascade and transcritical duties
- Can be optimized with air liquid coolers in indirect cooling systems

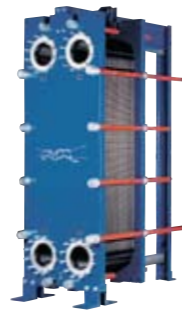


Fusion-bonded plate heat exchangers

AlfaNova is a plate heat exchanger made of 100% stainless steel. It is based on Alfa Laval's new, revolutionary technology, AlfaFusion, the art of joining stainless steel components together. AlfaNova heat exchangers are well suited to applications which put high demands on cleanliness, applications where ammonia is used or applications where copper or nickel contamination is unacceptable. Particularly suitable as an NH₃ chiller compressor oil cooler.

Benefits:

- Extremely compact, low weight, easy to install
- Low refrigerant charge
- High resistance to corrosion
- 100% AISI316 stainless steel



Gasketed and semi-welded heat exchangers

The gasketed plate heat exchanger (GPHE) range includes versions to cope with heat transfer between pure, corrosive, fouling or hygienic fluids.

In the Semi-welded heat exchanger (SWPHE) the refrigerant flows in laser-welded, sealed plate channels, and in the opposite channel the liquid brine flows in gasketed channels.

Benefits GPHE:

- Compact, low weight
- Close temperature approach and small loss of chiller efficiency
- Low fouling with raw water

Benefits SWPHE:

- Easy to modify heat transfer area for altered capacities, refrigerants
- Condenser/desuperheater or condenser/oil cooler combined in single unit
- Special high pressure version available for CO₂ cascade duties
- Special fitted Surge drum available for flooded NH₃ evaporator application
- Can be optimized with air liquid coolers in indirect cooling systems



Commercial air coolers

Highly standardized commercial air cooler ranges in a variety of configurations and designs, including single, dual and multi-discharge models. A wide range of models is available from stock. Dedicated ranges for indirect systems (brines) and CO₂ applications. Designed for small to medium-sized cold rooms with fresh or frozen goods, with room temperatures from 20°C to -35°C.

Benefits:

- High cooling efficiency
- Highly efficient defrost systems
- Low power consumption
- Low noise levels
- Wide range of options (cabling, coil coating, etc.)
- Advanced product selection software available
- Reliable performance, Eurovent certified
- Easy to install
- Short delivery times
- Wide choice of stock ranges



Industrial air coolers

Exceptionally wide and deep air cooler ranges in a variety of material combinations, such as copper tubing for H(C)FC refrigerants and stainless steel tubing, or fully galvanized coils for ammonia applications. Dedicated ranges for indirect systems (brines) and CO₂ applications. Industrial air coolers are available in standardized modular ranges (single/dual air discharge) or fully customized for the application. Designed for cold rooms with fresh or frozen goods with room temperatures from 20°C to -40°C.

Benefits:

- Application-based air cooler design to secure product quality
- Advanced product selection software available
- Reliable performance, Eurovent certified
- Energy efficient
- Both standard ranges and fully customized products



Air cooled condensers, liquid coolers, gas coolers

The products are available for both horizontal and vertical air direction, either in single or dual coil execution. Also available in V-design. Suitable for applications in HVAC, refrigeration, process and power industries.

An innovative coil design provides excellent heat transfer at minimal refrigerant charge. Depending on the application, heat exchangers are fitted with cross-fin copper or smooth stainless steel tubing. Available with different Alu-fin types. Design temperatures from -30°C to 80°C.

Benefits

- High cooling efficiency
- Low refrigerant charge
- Low power consumption and noise level
- Wide range of options (spray water device, cabling, fan speed control, coil coating, etc.)
- Performance certified by Eurovent
- Optimization with liquid cooled PHE condensers and S&T's (Liquid coolers)
- Optimization with liquid cooled PHE in free cooling systems



Shell-and-tube condensers and evaporators

Alfa Laval Shell-and-tube condensers and evaporators cover a wide range of refrigeration applications. First-class materials ensure accurate refrigerant distribution. Condensers are available in a marine version with Cu-Ni tubes and tube sheets in stainless steel and also as desuperheaters. A special condenser version is available for glide refrigerant R407C.

High performance evaporators are available in an R134a flooded version for use with an oil-free compressor as well as in R134a DX versions. A complete range of liquid receivers supports the heat exchangers.

Benefits:

- Optimized heat exchange
- Robust and reliable
- Easy inspection and cleaning
- Suitable for all HCFC/HFCs/HFOs
- Up to four refrigerant circuits in one heat exchanger (evaporators)
- Life-cycle tested



All-welded plate heat exchanger AlfaDisc

AlfaDisc is adapted to handle all refrigerants and single-phase fluids with pressures of up to 100 bar and temperatures from -60°C to 200°C. AlfaDisc is designed for use as an ammonia-flooded evaporator and condenser. It can also be used as a high-pressure CO₂ condenser, cooled by the evaporating refrigerant – a so-called cascade heat exchanger. It can be further adapted to perform tasks such as oil cooling using natural refrigerants and condensate subcooling using refrigerants or cooling water.

Benefits:

- Low charge, lightweight
- Small footprint
- Wide operating range for most demanding applications
- Adaptable to all refrigeration tasks
- Freeze resistant
- Self-supporting, easy to install

Distributor:



www.alfalaval.com/refrigeration