



Choose the winning team

Heat transfer technology for industrial cooling and air conditioning





Alfa Laval makes it easy

Buying heat exchange components for industrial cooling and air conditioning projects or systems?

Consult Alfa Laval. We have exactly what you need...the latest heat transfer technology from a single-source supplier – and the global parts and service network to back you up.

The widest on the market today, our range of air and liquid heat exchangers has been carefully designed to fulfil all the needs of the user. Make it easy on yourself...

Choose the winning team.



A team you can rely on

As a consultant specifying components for your end-customer, your reputation depends on the reliability of the products.

As a system builder, your product is only as reliable as its individual components.

Alfa Laval heat exchange components are the most reliable on the market. And it doesn't end there. The products are backed up by service, repairs and full technical assistance on a global basis.

Choose the winning team.



A team that is environmentally aware

The steady change to environmentally friendly refrigerants is a challenge we are meeting – for the sake of the planet, and to stay ahead in a competitive market.

Alfa Laval has the R&D resources and the know-how to help you build energy efficient systems using refrigerants with low environmental impact – systems that provide high C.O.P. and low life-cycle costs.

Choose the winning team.



A team that puts quality first

Alfa Laval plate heat exchangers are performance tested in local refrigerant laboratories and at external institutes. Our air heat exchangers are tested according to Eurovent.

Plate heat exchanger designs comply with local and global refrigeration standards and pressure vessel directives. Manufacturing is certified according to national and international quality systems such as ISO 9001, PED, ASME, SQL, UDT, GOST and others.

Choose the winning team.



A local team near you...

Alfa Laval is represented in 130 countries and our products in more. Our advanced heat exchange components are backed up by flexible production and an efficient global parts and service organization. It all adds up to non-stop performance for your operation.

Choose the winning team.

Wherever it's cool, you'll find Alfa Laval

Alfa Laval air and liquid heat exchangers are installed worldwide as key components in air conditioning systems, and in systems for equipment cooling.

- Manufacturing industries, factories
- Deep mining
- Research laboratories
- Data processing complexes
- Sports arenas
- Ice hockey rinks
- Airports
- Hospitals
- Schools
- Cinemas
- Hotels
- Shopping centres



With the tools for simple selection

Our web-based selection guides and dimensioning tools for heat exchange components make it simple to select the correct types, sizes and capacities for your projects, systems or products.

If you need assistance, we are at your service.

Choose the winning team.

For consultants

A team that understands your business



Whatever your needs, Alfa Laval has the solution. We have the components and the know-how to help ensure that the systems you specify give your end-users peak C.O.P. and reliable, trouble-free operation, year-in, year-out.

Advanced components offering true reliability

The world leader in heat exchange technology, Alfa Laval offers the widest range of air and liquid heat exchangers on the market. They are installed as coolers, evaporators and condensers in cooling and air conditioning systems worldwide.

Alfa Laval has the components and the know-how to help ensure that the systems you specify give end-users peak C.O.P. and reliable, trouble-free operation, year-in, year-out.

One supplier – peace of mind

Let Alfa Laval deliver all heat exchange components for the cooling and heating systems. Using just one supplier means less administration and saves time during the design phase.

The interplay between the heat transfer components can be optimized, ensuring low investment and operating costs.

Tools for simple selection

Alfa Laval's web-based product selection guides and heat exchanger dimensioning tools make it simple to

select units of the correct type, size and capacity for the application.

Environmental know-how

Alfa Laval's know-how and advanced heat exchange equipment enables you to design energy efficient systems using refrigerants with the lowest environmental impact.

Take full advantage of our extensive knowledge bank. It is continuously being expanded with the latest developments in industrial cooling and air conditioning applications.

For lowest life-cycle costs

We help you achieve lowest life-cycle costs for the end-user. The extra investment required to achieve a truly energy efficient solution will pay for itself in a short period. The bottom line is lower life-cycle costs and greater long-term economy for the entire installation.



High energy saving potential



FREE COOLING

During summer, the chiller operates in the full-flow system (Fig. 1). During spring, fall and night operation partially bypassing the chiller provides maximum energy saving (Fig. 2).

Bypassing the chiller and cooling the space by ambient air directly, or via a plate heat exchanger interchanger, can give a major reduction in chiller energy consumption during winter (Fig. 3).

With sea, river or lake water an interchanger can be used to cool liquid cooled air units directly, bypassing the chiller fully and partially (Fig. 4).

Using Alfa Laval software, combinations of refrigerant heat exchangers and coolers can be selected to provide optimum solutions for indirect cooling systems and free cooling.

Examples of combinations of air and liquid coolers and their applications in indirect cooling systems:

Indirect cooling, high temperature side

- Air cooled liquid coolers – PHE or S&T condenser.
- PHE water cooler, cooled by raw water – PHE or S&T condenser.

Indirect cooling, low temperature side

- PHE or S&T evaporator cooling brine – brine cooled air coolers.

Free cooling

- Water-cooled air coolers – plate interchanger cooling the water by raw water*.
- Air-cooled glycol/water cooler – plate interchanger cooling the water by the glycol/water.

***Raw water: Foulant and/or corrosive water, e.g. sea, river, lake and cooling tower water.**

HEAT RECOVERY

Indirect systems allow heat to be recovered from the condensers. Hot water from PHE condensers can be used for floor heating, boiler feed preheating, or direct air heating.

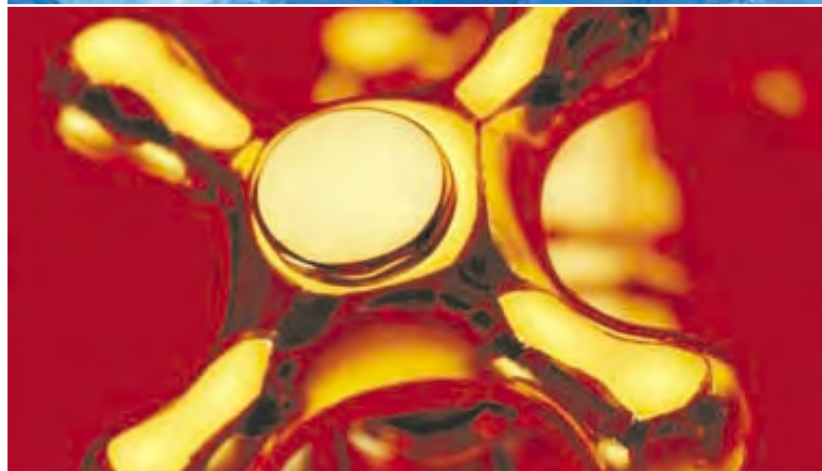
Alfa Laval PHE's and S&T's are utilized for refrigerant de-superheating where recovered heat is accumulated and used as tap water.

De-superheating and condensation can be handled by one heat exchanger with two water circuits – an efficient solution for compact and low charge plant layouts.

Booster compression in a cascade arrangement can provide hot water from a high pressure condenser. Here water can be heated to 72°C by ammonia at 40 bar condensation. In heat pump applications of this type, Alfa Laval all-welded PHE's provide cascade heat transfer and serve as condensers.

We have the tools to assist you

Alfa Laval is happy to supply customized specifications for heat exchangers. We have the tools to help you design environmentally friendly systems with optimum C.O.P.



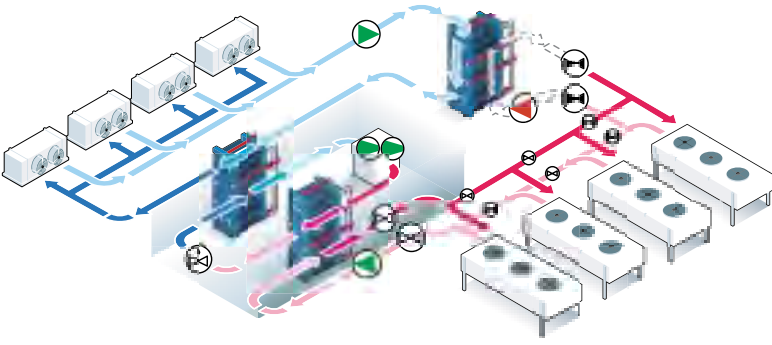


Fig. 1. Summer case: chiller in full-flow system.

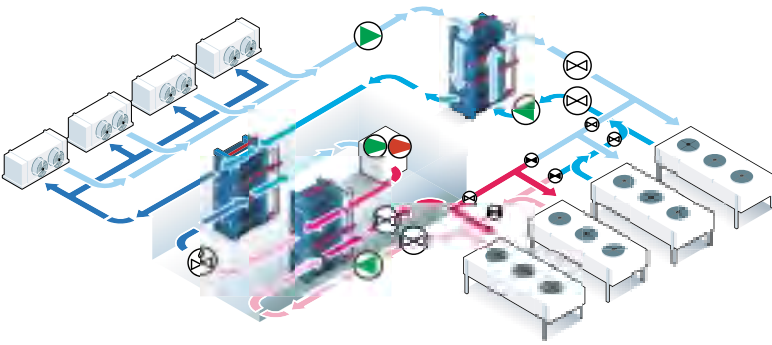


Fig. 2. Spring, fall and night operation: chiller bypassed 50%.

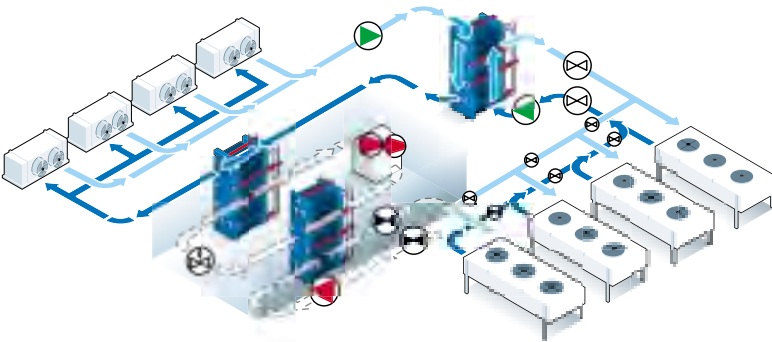


Fig. 3. Winter case: bypassing the chiller provides full free cooling.

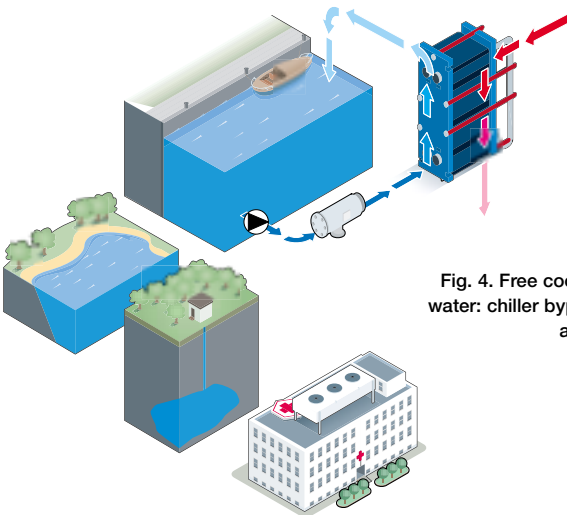


Fig. 4. Free cooling by sea water: chiller bypassed fully and partially.

saving



For contractors and installers

Your local team

Although Alfa Laval is a global company, we are proud of our local presence. We have an office near you and we speak your language. Alfa Laval heat exchangers give reliable operation with very little maintenance. And, due to our local presence, you get them when you need them.



Alfa Laval air and liquid heat exchangers are the most efficient units of their type on the market. Yet this does not mean you need to pay more for them.

The components you need, when you need them

We know that to run a successful business, you must be able to rely 100 per cent on your component suppliers.

The components you need must either be in stock when you need them, or delivered to your door at the specified time.

You can rely on Alfa Laval to meet your needs, time and time again.

Your local partner

As a global company, at Alfa Laval we are proud of our local presence. Our offices are staffed by local people who understand your needs and gain satisfaction from serving you.

At the same time, our international resources, with distribution centres worldwide enable us to live up to our delivery promises.



Alfa Laval is a driving force behind developments in the field of heat exchange technology.

The service provided by Alfa Laval's global distribution centre network helps you live up to your promises.





For system builders and OEM's

The capacity you need

Buying large numbers of heat exchangers every year? You need a partner with the resources to supply you with customized products, a partner who can reserve production capacity for your orders on an annual basis.



Alfa Laval brazed heat exchangers are installed in cooling and air conditioning systems worldwide.

Customized products

To ensure that your systems meet specifications, we supply customized versions of Alfa Laval heat exchangers as required.

Our production is your production

Alfa Laval is pleased to provide the capacity you need. We promise you a high level of availability – and we have the global and local resources to live up to our promises.

Close to the market


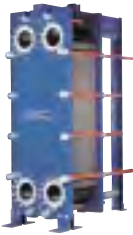


In the industrial cooling and air conditioning sectors, system builders and original equipment manufacturers are constantly exposed to changing market needs and demands.



The BHE comprises a number of stainless steel plates, a frame plate and a pressure plate. The plate pack is brazed together in a vacuum furnace.

Fully equipped R&D laboratories staffed by specialists enable Alfa Laval to work closely with customers to develop innovative products that meet new, increasingly stringent demands.

All you need for optimum heat transfer

Brazen Plate Heat Exchangers	Gasketed Heat Exchangers	Semi-Welded Heat Exchangers	All Welded Heat Exchangers
			
<p>Capacities: 1 – 500 kW</p>	<p>Capacities: 10 – 20,000 kW</p>	<p>Capacities: 35 – 10,500 kW</p>	<p>Capacities: 175 – 2,700 kW</p>
<p>Available in 10 models, Brazen 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 HCFC, 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. Four nickel-brazed models are available for ammonia duties up to 200 kW. Temperature range: -100°C to 200°C; pressures in excess of 40 bar.</p> <p>Benefits:</p> <ul style="list-style-type: none"> • 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 • Can be optimized with air liquid coolers in indirect cooling systems 	<p>Designed to allow full optimization with the chiller, the Gasketed Plate Heat Exchanger (GPHE) range includes versions to cope with pure, corrosive, foulant and hygienic fluids in combination with chiller evaporators and condensers. Plate designs prevent fouling through even flow distribution, high turbulence and no stagnant areas. GPHE's are available in stainless steel, titanium and high nickel alloy materials. Operating pressure up to 25 bar; operating temperature up to 180°C; flow rates up to 3,000 m³/h.</p> <p>Benefits:</p> <ul style="list-style-type: none"> • Compact, low weight • Efficient with close temperature approach and small loss of chiller efficiency • Low fouling with raw water, no corrosion • Easy to open with advanced bolt closing system • Long-life, glue-free gaskets mean easy on-site replacement • Fatigue resistant • No risk of interleakage 	<p>The Semi-Welded Heat Exchanger (SWPHE) is available in six models. The refrigerant flows in laser-welded, sealed plate channels, and the brine in gasketed channels. The flexible modular design copes with fatigue stresses and ice formation. The SWPHE handles most refrigerants on the welded side and is particularly suitable for ammonia duties. Standard plate materials are stainless steels and titanium. Temperature range: -45°C to 130°C; pressures up to 25 bar.</p> <p>Benefits:</p> <ul style="list-style-type: none"> • Low charge, low weight • Easy to modify heat transfer area for altered capacities, refrigerants • Easy inspection and cleaning of the liquid side • Reliable, with long service life for heavy duties • Plate materials for corrosive fluids, cooling water and brines • Condenser/desuperheater or condenser/oil cooler combined in single unit • Floating condensation with flooded evaporation • Can be optimized with air liquid coolers in indirect cooling systems 	<p>AlfaRex is an all laser-welded, compact plate heat exchanger adapted to handle all refrigerants in the temperature range -60°C to 200°C; pressures up to 45 bar. Specifically constructed, welded and tested for fatigue with predictable lifetimes, AlfaRex units are suitable for use as CO₂/ammonia cascade coolers and CO₂ evaporators for freezing applications. They can also be used as heat regenerators for ammonia condensing at 40 bar/heating water to approx. 75°C. Plates in stainless steel, titanium and other materials allow for the use of corrosive brines and cooling media. Designed for flooded flow evaporation and dry expansion systems.</p> <p>Benefits:</p> <ul style="list-style-type: none"> • Low charge, low weight • Extremely small footprint • Wide operating range for most demanding duties • High reliability, long life
<p>Applications:</p> <p>INDIRECT SYSTEMS</p> <ul style="list-style-type: none"> • Water-glycol cooled condensers • DX evaporators, single and double circuits • Flooded evaporators <p>INDIRECT AND DIRECT SYSTEMS</p> <ul style="list-style-type: none"> • Cascade evaporator/condensers • Condensate coolers • Desuperheater for heat recovery • Oil coolers 	<p>Applications:</p> <p>INDIRECT SYSTEMS</p> <ul style="list-style-type: none"> • Intercoolers isolating chiller condensers from corrosion and fouling • Intercoolers in free cooling or chiller bypass systems with air coolers, cooling towers and sea, river or lake water as heat sink • Interchangers in reversed AC/heat pump applications • District cooling distribution interchangers • Pressure interceptors for tall buildings 	<p>Applications:</p> <p>INDIRECT SYSTEMS</p> <ul style="list-style-type: none"> • Water-glycol cooled condensers • Flooded evaporators • DX evaporators <p>INDIRECT AND DIRECT SYSTEMS</p> <ul style="list-style-type: none"> • Desuperheater for heat recovery • Water-cooled oil coolers 	<p>Applications:</p> <p>INDIRECT SYSTEMS</p> <ul style="list-style-type: none"> • Water-glycol condensers • Flooded evaporators • DX evaporators <p>INDIRECT AND DIRECT SYSTEMS</p> <ul style="list-style-type: none"> • Cascade evaporator/condensers • Desuperheaters

Shell & Tube Condensers	Shell & Tube Evaporators	Unit Coolers	Air Cooled Condensers Liquid Coolers
			
<p>Capacities: 8 – 900 kW</p>	<p>Capacities: 18 – 1,500 kW</p>	<p>Capacities: 0.5 – 140 kW</p>	<p>Capacities: 9 – 2,500 kW</p>
<p>Shell & Tube Condensers are available in five series covering a wide range of applications in water-cooled systems. First-class materials are used in a design that ensures accurate refrigerant distribution. Finned copper tubes. Available in marine version with Cu-Ni tubes and stainless steel condensers. Complying with all important world pressure vessel codes. Desuperheater versions are available and a specific series for the glide refrigerant R407C. A complete range of horizontal and vertical liquid receivers supports the condenser applications.</p> <p>Benefits:</p> <ul style="list-style-type: none"> • Optimized heat exchange • Robust and reliable • Easy inspection and cleaning • Suitable for all HCFC/HFCs 	<p>The “U” tube design of the Shell & Tube Evaporator prevents mechanical tension and allows the tube bundle to be removed for inspection and clean-ing. The units are equipped with special finned copper tubes. Dryplus-2 Evaporators are available in standard versions to –10°C and low temperature versions with variable baffle positions for optimal brine flow. Stainless steel versions available. Compliance with all important world pressure vessel codes.</p> <p>Benefits:</p> <ul style="list-style-type: none"> • Optimized heat exchange • Up to four refrigerant circuits in one heat exchanger • Life-cycle tested • Easy inspection and cleaning • Suitable for all HCFC / HFC refrigerants • Fully compatible with heat pump applications 	<p>Unit Coolers are fitted with copper tubes, aluminium fins, and centrifugal or axial fans. Designed for cold rooms with fresh or frozen goods with room temperatures from +20°C to –35°C. Suitable for direct cooling with refrigerants such as HCFC, HFC; stainless steel coils available for ammonia evaporation; indirect cooling with brine. Available with single or double air flux. Design temperature from –40°C to 60°C.</p> <p>Benefits:</p> <ul style="list-style-type: none"> • High cooling efficiency • Optimal defrost systems • Low power consumption • Low noise levels • Wide range of options (cabling, coil coating, etc.) • Available in different materials as customized products • Performance certified by Eurovent • Can be optimized with PHE and S&T evaporators 	<p>Designed for AC and refrigeration duties, Air Cooled Condensers are fitted with copper tubes, aluminium fins and fans. With compact designs, optimized module fans and high fan efficiency, the condensers are suitable for common refrigerants such as HCFC and HFC. Coils manufactured in stainless steel for direct ammonia evaporation. Design temperature from –30°C to 60°C. With similar features, Liquid Coolers have frames designed for heavy applications and are suitable for cooling of water, water glycol mixtures, and brine. Design temperature from –30°C to 80°C. Both units are available in different materials as customized products.</p> <p>Benefits</p> <ul style="list-style-type: none"> • High cooling efficiency • Low refrigerant charge • Low power consumption • Low noise level • Wide range of options (cabling, fan speed control, coil coating, etc.) • Performance certified by Eurovent • Optimization with liquid cooled PHE condensers and S&T’s (Liquid Coolers)
<p>Applications:</p> <p>INDIRECT SYSTEMS</p> <ul style="list-style-type: none"> • Water-cooled condensers • Desuperheaters • Chilling and heat pump function 	<p>Applications:</p> <p>INDIRECT SYSTEMS</p> <ul style="list-style-type: none"> • HFC DX evaporators for chilling and freezing • Chillers and heat pumps 	<p>Applications:</p> <p>INDIRECT SYSTEMS</p> <ul style="list-style-type: none"> • Air cooling by brines <p>DIRECT SYSTEMS</p> <ul style="list-style-type: none"> • Air cooling by HFC DX • Air cooling by ammonia DX • Air cooling by flooded ammonia 	<p>Applications:</p> <p>DIRECT SYSTEMS</p> <ul style="list-style-type: none"> • Air-cooled condensing <p>INDIRECT SYSTEMS</p> <ul style="list-style-type: none"> • Air-cooled water-glycol cooling

Alfa Laval in brief

Alfa Laval is a leading global provider of specialized products and engineering solutions.

Our equipment, systems and services are dedicated to assisting customers in optimizing the performance of their processes. Time and time again. We help them heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuff, starch and pharmaceuticals.

Our worldwide organization works closely with customers in almost 100 countries to help them stay ahead.

How to contact Alfa Laval

Contact details for all countries are continually updated on our website. Please visit www.alfalaval.com to access the information.

