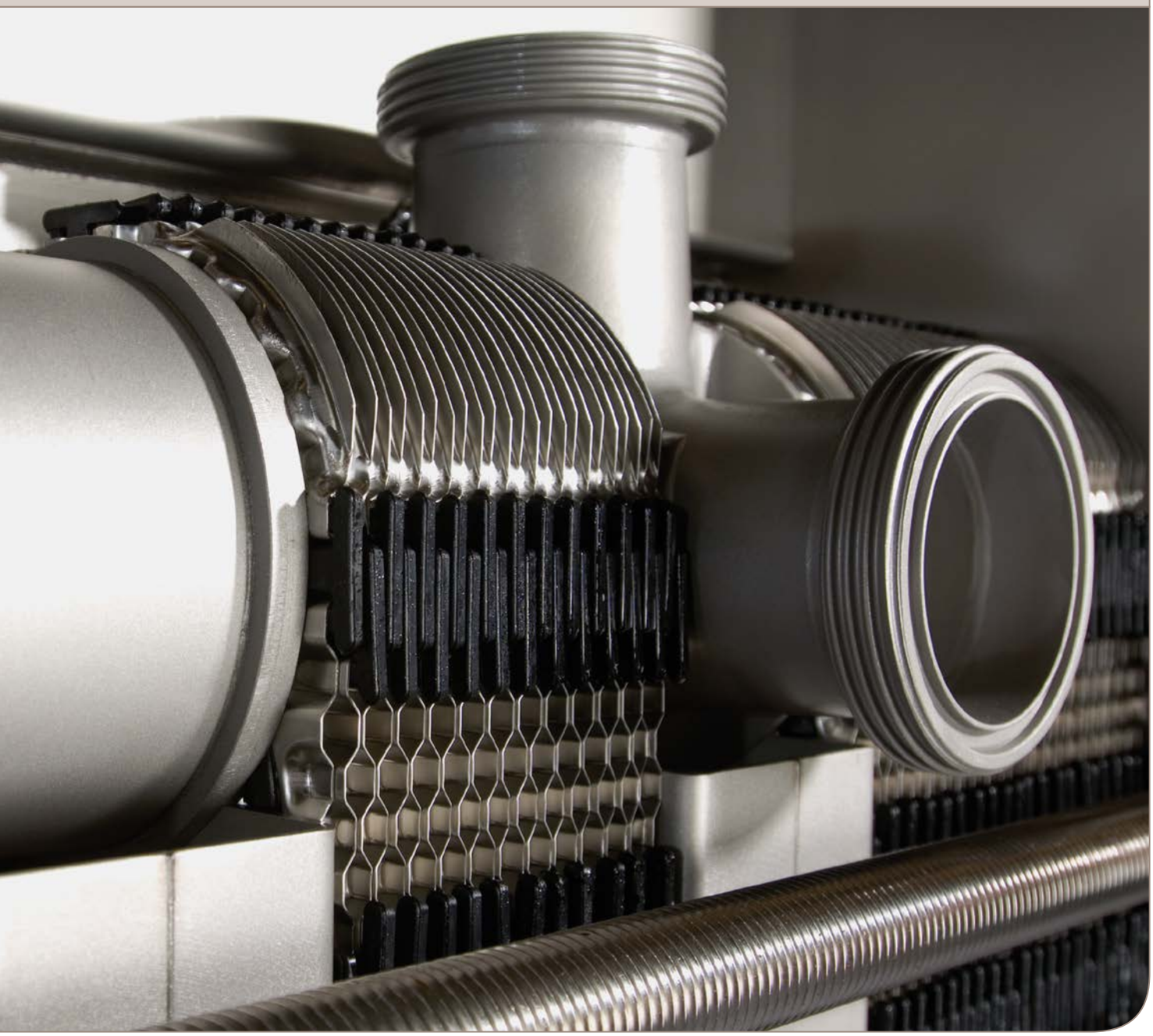
Heat exchangers for hygienic use

The complete line



Performance in good hands

Working with hygienic applications is a question of care, attention to detail and dedication to outstanding performance. Alfa Laval has a proven track record in delivering innovative solutions for hygienic applications based on our core technologies of separation, heat transfer and fluid handling.

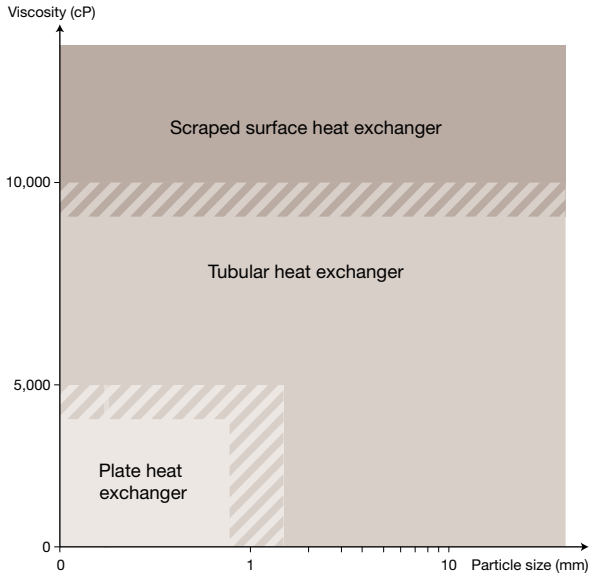
Superior safety, gentle efficiency and uncompromising cleanliness are the hallmarks of our hygienic pumps, heat exchangers, valves and automation, tubes and fittings, and separation, filtration and tank equipment. Which is why so many customers in the food, biopharm and other demanding industries put process performance and hygiene in the capable hands of our experts, sales companies and partners worldwide.

Here you will find an overview of Alfa Laval heat exchangers for hygienic applications. For complete technical details and product specification, contact your local Alfa Laval supplier or visit us at **www.alfalaval.com**

Your choice of technology

As a world leader in heating and cooling technologies, Alfa Laval can offer the right heat exchanger for every type of hygienic application – from food, dairy and beverage applications to biotech, pharmaceutical, home and personal care applications.

Our broad range includes gasketed, brazed and fusion-bonded plate heat exchangers as well as scraped surface, tubular and ohmic heat exchangers. These cover virtually every type of duty – even condensing and evaporation duties.



Alfa Laval offers a broad range of heat exchangers for every type of hygienic duty. Based on viscosity and particle size this image shows an example of how you can choose any technology to fit your application.

Meeting your challenges

The choice of heat exchanger and how it is configured not only has a direct impact on overall production economy. It also ensures achieving desired product characteristics – and meeting consumers' expectations. Thanks to our broad portfolio and process understanding, processors achieve the best production economy and product quality.

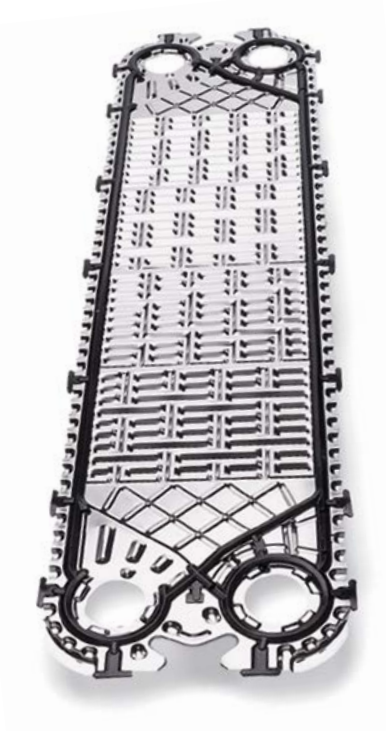
Gasketed plate heat exchangers

Suitable for a wide range of applications in most industries, gasketed plate heat exchangers are a compact and efficient heat transfer solution. Alfa Laval's gasketed models are designed for exceptional control, which makes them ideal for heating and cooling duties in demanding hygienic processes.

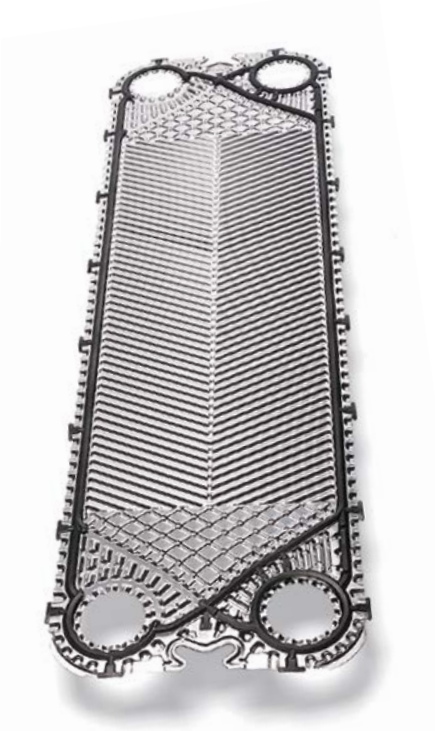
Frame
Holding the plates together are sturdy, pressure-graded frames with hygienic and labour-saving features. These offer great flexibility for expansion or rebuilding. The stainless steel versions are designed according to the most demanding hygienic standards.

Plate type
The plates themselves are available in different geometries and patterns as well as choice of materials. These include Alfa Laval's standard plates, WideStream plates and Gemini plates. Gasket material ranges from nitrile butadiene rubber (NBR) to ethylene propylene diene monomer (EPDM) rubber, which enable a perfect match for the application temperature and characteristics.

Standard: The most commonly used plate types for hygienic applications are the Alfa Laval M, T and Clip plate types. Their ideal press depth and relatively few contact points prolong operating times, while a unique distribution area ensures uniform flow over the entire plate surface. Clip plates on Alfa Laval FrontLine are specifically designed for heat-sensitive food products.



WideStream: Our WideStream plates with clip-on gaskets have very few contact points, which helps prevent blockage and results in longer uninterrupted operating times. Available only for Alfa Laval FrontLine, the plates are specially developed for the pasteurization of fruit juices and other products containing a limited amount of pulp and fibres.



Gemini: With their double walls, our Gemini plates combine excellent heat transfer with increased protection against the mixing of fluids. The plates consist of two sheets that are formed together, which prevent the media from mixing, even in the event of a cracked plate. Gemini plates are available on both Alfa Laval FrontLine and BaseLine models.

Alfa Laval BaseLine

With its cost-effective frame design, the Alfa Laval BaseLine series of plate heat exchangers is a competitive choice for process and utility duties. Working at pressures up to 10 bar, it handles not only heating and cooling, but also pasteurization.

Typical Alfa Laval BaseLine applications include simple pasteurization, raw milk cooling, media heating/cooling and CIP (cleaning-in-place) heating.

Alfa Laval FrontLine

The Alfa Laval FrontLine is a top-of-the-line series of plate heat exchangers. Able to meet the highest demands on hygienic control, it features a superior and flexible design that allows easy handling and modification.

Among the main applications for the Alfa Laval FrontLine are dairy pasteurization, yoghurt cooling, UHT treatment and work with heat-sensitive products. The Alfa Laval FrontLine frames can be supplied in stainless steel and silver-coated versions, and the Clip plates are available in alternative materials for challenging food-processing tasks. In most cases their Clip plates can be cleaned via CIP (cleaning-in-place), using the same flow as in the process itself.

Alfa Laval M-series and T-series

The Alfa Laval M- and T-series can handle the same applications as the Alfa Laval BaseLine series. The difference is that the M- and T-series have epoxy-painted mild steel frames instead of the stainless steel frames used for the BaseLine series and can handle design pressures that exceed 10 bar. Perfect for general product heating and cooling duties, these plate heat exchangers can also be used for pharmaceutical water systems and CIP heating.

Alfa Laval TS6-M

Thanks to its unique plate geometry, Alfa Laval TS6-M series of plate heat exchangers is thermally optimized for steam condensation duties. This makes it useful not only for heating water, but also for heating CIP (cleaning-in-place) solution by means of steam.

Alfa Laval TS6-M plate heat exchangers are available with either stainless steel or epoxy-painted frames.

Alfa Laval AlfaCond and AlfaVap

A smart alternative to bulky and expensive falling film condensers and evaporators, these compact solutions feature deep channels, large ports and laser welding to enable vacuum and low-pressure evaporation and condensation for aqueous and organic systems.

The Alfa Laval AlfaCond plate condenser is designed for condensing vapours into liquids at low pressure. The Alfa Laval AlfaVap plate evaporator optimizes evaporation processes and provides a much higher thermal efficiency than conventional units.

Fusion-bonded plate heat exchangers

Alfa Laval AlfaNova

The Alfa Laval AlfaNova plate heat exchangers are the first in the world to be manufactured from 100% stainless steel. Thanks to AlfaFusion – Alfa Laval's revolutionary technology for bonding stainless steel components – they can withstand even extreme temperatures and pressure fatigue conditions.

The exceptional performance of the Alfa Laval AlfaNova plate heat exchangers suits demanding duties in a broad range of industrial applications and utilities. Often employed to heat water or CIP (cleaning-in-place) solution by means of water and steam, they can also be used for general heating and cooling duties.

Brazed plate heat exchangers

Alfa Laval CB-series

The Alfa Laval brazed plate heat exchangers are extremely compact – a result of high heat transfer coefficients, small hold-up volumes and the use of thin materials. The stainless steel plates are brazed into a package without the use of gaskets, with copper serving as the brazing material.

Operating costs are reduced by the heat exchangers' high thermal efficiency, while the rectangular shape and front-positioned connections make for easy installation. Resistant to heat, pressure, vibration, and above all corrosion, brazed heat exchangers are perfect in utilities such as heating water with steam.

Welded heat exchangers

Alfa Laval Compabloc condenser

Alfa Laval Compabloc plate condensers offer a compact and cost-efficient alternative to traditional shell-and-tube or graphite block condensers. The corrugation on the plates causes high turbulence, which results in substantially higher heat transfer efficiency. This means Compabloc only requires a fraction of the heat transfer area compared to shell-and-tube or graphite block condensers.

Available in a broad range of plate material as well as a hygienic free-flow version for optimized cleanability and drainability, Compabloc fully complies with the requirements for installation in stringent cGMP processes. Typical applications include reactor condensation and solvent recovery for the pharmaceutical and specialty chemical industries.

Spiral heat exchangers

Alfa Laval spiral heat exchangers

Exceptional compactness and self-cleaning design make Alfa Laval spiral heat exchangers extremely versatile. Ideal for everything from fouling fluids to vapour condensation, these are truly all-around heat transfer solutions. The wrapped cylindrical arrangement of a minimized heat transfer surface results in a very compact unit, ensuring low capital investment and installation costs. Typical applications include condensation/solvent recovery, continuous sterilization and heat recovery in the biotech and pharmaceutical industries.

Scraped surface and tubular heat exchangers

Alfa Laval Contherm

The Alfa Laval Contherm scraped surface heat exchanger (SSHE) handles any viscous, sticky and/or heat-sensitive process fluids as long as they are pumpable. It is widely used within the food and personal care industries.

Available in different versions, the Alfa Laval Contherm can handle products with low to extremely high viscosities or those containing particulates as well as special application and process requirements, such as evaporation.

Alfa Laval ViscoLine

The Alfa Laval ViscoLine range is a series of highly efficient tubular heat exchangers designed for gentle handling of low to medium viscosity products or products containing particulates. Widely used in the food and beverage industries, it is suitable for heating, cooling, pasteurization, UHT treatment, heat regeneration and other heat transfer duties.

Tubular heat exchangers for pharmaceutical use

The pharmaceutical industry requires exceptional certainty, not only when it comes to product hygiene, but also when it comes to isolating products and media. To meet the industry's rigorous demands, Alfa Laval offers specially developed, high-quality tubular heat exchangers with superior hygienic design, securing full microbial control and eliminating the risk of cross-contamination. Moreover, these heat exchangers come backed by comprehensive documentation packages.

Alfa Laval Pharma-X

The Alfa Laval Pharma-X tube-in-tube heat exchanger is a compact heat exchanger module for point-of-use cooling in the pharmaceutical water system, mainly for water for injection (WFI) and purified water (PW). Its unique design with no internal welds eliminates the risk of contamination between the product and cooling media.

Full drainability on the product side together with high shear force and high turbulence minimize the risk of bio-film build-up and contribute to optimal heat transfer efficiency. Fast and efficient, the Alfa Laval Pharma-X makes cold water available within seconds thereby minimizing waste and reducing costs.

Alfa Laval Pharma-line

The Alfa Laval Pharma-line range is a double tube sheet (DTS) shell-and-tube heat exchanger that provides full drainability and prevents the risk of cross-contamination. Its bundle of seamless tubes handles the flow of product media, with service media running outside the tubes in a crossflow. Its flexibility in design, size and material make the Alfa Laval Pharma-line an ideal and cost-efficient choice for demanding hygienic applications. Typical uses include water systems, water for injection (WFI), purified water (PW) and Cleaning-in-Place (CIP) systems, as well as general product heating and cooling duties.

Everything you need

Having your heat exchangers serviced is more than just practical – it makes good business sense. Alfa Laval's service providers know your industry and its needs, and are part of a global network of service and support.

Drawing on our many years of thermal transfer experience, Alfa Laval service providers are experts on heat exchangers, chemicals and cleaning methods. As a result, they can service not only our own heat exchangers, but also plate heat exchangers from other manufacturers.

Expertise in every detail
We handle all aspects of heat exchanger maintenance. By restoring heat transfer and pressure drop, we ensure quality, productivity and energy efficiency. And by finding and stopping leakage, we reduce production losses and protect your equipment and the environment.

We work with specialized tools and chemicals, as well as brand-quality spares and the best glues and mounting procedures. Many of our services are available in standardized packages, so that you can choose the level that meets your needs.

AllBrands service
Through Alfa Laval's unique AllBrands service, we can restore any plate heat exchanger to optimal working condition. This gives you a single, reliable speaking partner, regardless of the models or brands that you use.

Our service providers, decades of experience and extensive database of solutions make Alfa Laval the simple path to top-notch performance.

Services that extend performance

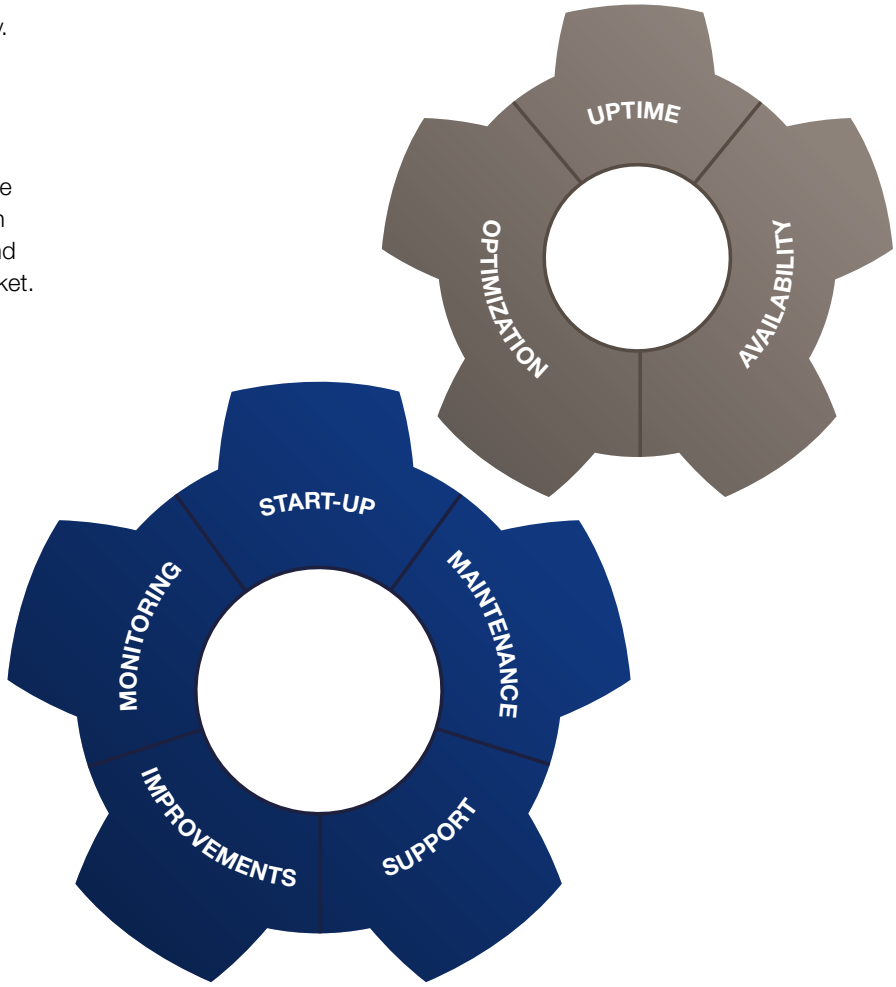
Alfa Laval's expert service is always on hand through our global network. Alfa Laval also offers a wide range of time-saving tools and resources to secure your performance, making it easy to configure, size, and optimize your equipment.

360° Service Portfolio

Alfa Laval Service offers a broad range of parts, equipment, and services covering the entire product lifecycle from start-up, support and maintenance to improvements and monitoring. We are committed to ensuring maximum uptime, continuous optimization of your processes, and high availability.

Alfa Laval service kits and top quality spare parts, designed for durability and performance, are always available. We secure that your equipment remains in compliance with certificates and legal requirements in your market.

Together with our global service network Alfa Laval Service maximizes the reliability and uptime of your equipment. The result is superior performance throughout the equipment life cycle to give you a competitive edge.



Handling your hygienic processing needs

Optimizing the performance of hygienic processes is a challenge best met with expertise. Alfa Laval expertise is the result of years of accumulated knowledge and a comprehensive research and development programme.

With this foundation, we work closely with our channel partners to help companies extract the most value from raw materials, minimize waste and emissions, and deliver safe and hygienic products. Ultimately, our ambition is to help companies supply quality products to consumers at competitive prices.

Alfa Laval has served as the standard bearer for the production of hygienic products since Gustaf de Laval invented the centrifugal separator to separate cream from milk more than a century ago. That same ingenuity is applied to all our hygienic components and solutions that safeguard the flavour, texture and appearance of food, dairy products and beverages.

For the pharmaceutical, biopharm and personal care industries, our contributions not only entail hygienic design and superior performance but comprehensive documentation and solutions that are easy to validate. Which in turn raise the quality, cleanliness and uniformity of the final products.

Safeguarding hygienic applications requires entrusting your processes to the safe, competent care of a reliable partner. With Alfa Laval you are in good hands.

Alfa Laval in brief

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

Our equipment, systems and services are dedicated to helping customers to optimize the performance of their processes. Time and time again.

We help our customers to 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

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com

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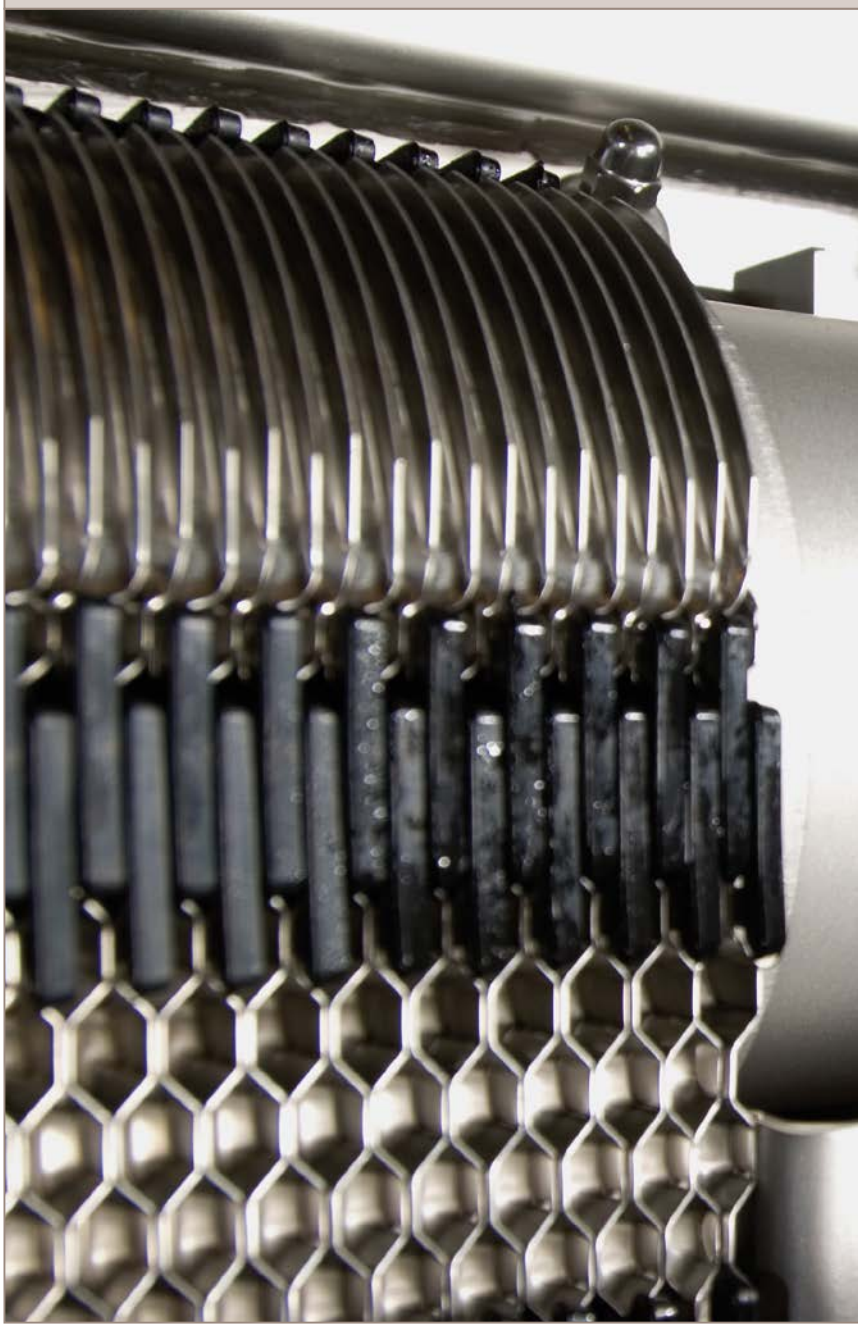

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