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At the heart of dairy

Dairy applications in good hands

Turning potential into profit

Alfa Laval has been at the heart of the dairy industry since the 1800s, when our continuous milk separator and continuous milk pasteurizer laid the foundation for the industry.
Our ongoing mission is to secure hygienic conditions and optimize production. We know the dairy applications, as well as the trends and developments affecting the industry.
We also have the offering to support them.

Our global and local presence, comprehensive offering, and world-class support ensure we can help you capture the opportunities of today and tomorrow.

A world of opportunity

Trends in society are having a major impact on the dairy industry. There are challenges, as well as tremendous opportunities for those who can respond with flexibility and efficiency.

Changing consumer habits have a strong influence. Increasing affluence means greater demand for value-added products such as flavoured milk and drinking yoghurts. There are now more consumers than ever, with greatly differing demands on variety and value.

The busy lifestyles associated with increasing urbanization fuel demand for long-life milk products, while the trend towards healthier eating boosts sales of products such as yoghurt and fortified milk.

Regional trends

Research indicates that the overall global dairy market will be strongly driven by emerging regions, with Asia Pacific, Eastern Europe, Latin America, the Middle East, and Africa accounting for approximately 86% of global market growth in absolute retail value terms in the period 2010-2015. These regions offer both dynamic growth and respectable market sizes. Global growth in liquid dairy products is projected at 30% between 2010 and 2020, with developing countries accounting for more than half of this. Yoghurt products are expected to increase by over 20% in developed markets.*

Variety is key

Growth in emerging and developed markets is driven by different categories. Milk products are driving growth in emerging markets, while in developed markets, yoghurt, cheese, and innovative value-added products present the major opportunities.

The Global Dairy Industry – top 3 key findings

Organic market expansion: *local advantage*	Expanding into new markets with own products requires high levels of local market knowledge. It takes time to become established enough to exploit opportunities.
Geographic market diversification: *central to corporate strategies*	Global dairy players face slow or declining sales in core developed markets due to the recession and market saturation. Geographic expansion provides access to new markets.
Portfolio diversification: *paramount in dairy*	A balanced product portfolio across various price platforms, with strong positions in high-margin growth categories, is a major objective for global dairy players.

Source: Euromonitor 2010.

Capturing the opportunities requires presence in a wider range of categories, as well as a regionally focused strategy. Balanced portfolios with a choice of products at different price levels have also proved resilient during the economic downturn.

Responding to the challenge

Consumer trends lead to some clear implications for dairy processing. Plant efficiency is critical in the long term, with increasing commodity, utility, and labour costs squeezing profits. Product diversity is essential, and food safety has never been more important. Sustainability is becoming a cornerstone of processing operations, driven by consumer and government demands.

** Tetra Pak Dairy Annex. Issue 4, July 2011.*

On the pulse of the industry

Our changing world means enormous potential for the dairy industry in the years to come. The key to capturing the opportunities is a clear understanding of regional and global trends, an awareness of the challenges these opportunities present to dairy processors, and high production efficiency and flexibility.

To ensure our sanitary components support these challenges and provide the leading support for dairy applications, we strive to address these four key industry needs:

- Supplying products to consumers at a competitive price;
- Getting the most from raw materials;
- Reducing waste and emissions;
- Delivering safe and hygienic products.

The focus of our channel network is on being close to our customers and helping them to capitalize on opportunities created by geographical trends. We work with our channels to understand market trends. Combined with in-depth application and process knowledge, this enables us to develop the right solutions.

From raw milk to market share

An offering that helps capture the opportunities

Liquid dairy products
Liquid dairy products is a varied category that includes pasteurized and UHT white milk, as well as formulated flavoured products. Economic growth is putting these products within the reach of millions of new consumers; hygiene is essential to ensure confidence in food safety. Gentle product handling is also important – especially for cream and condensed products, such as sweetened condensed milk – where fat loss must be minimized, while flavour mouth feel must be preserved.

With proven reliability and energy efficiency, our range of valves maximizes flexibility and safety. This helps to achieve the low operating costs and low total cost of ownership required for good margins in competitive markets.

Cheese
Global consumption is increasing steadily and export markets are strong. Successful production demands preservation of milk quality during sensitive processes, as well as elimination of fines, in order to secure high quality and yield.

Alfa Laval's components ensure gentle and effective heat treatment and pumping, essential for achieving optimum quality and yield.
Our membranes offer the opportunity to make a variety of fresh and soft cheeses.

Ice cream mix
Producing ice cream mix requires a high degree of flexibility and efficiency, with the need to handle a variety of dry and liquid ingredients, adapt to seasonal demand fluctuations, and create an innovative and varied product portfolio.

Our wide range of hygienic processing components and tank equipment ensures efficiency and flexibility, helping processors make the most efficient use of raw materials and production capacity.

Whey products
Whey products have a wide range of potential uses, improving the nutritional value and texture of foods and health products. Key to maximizing the opportunities is the ability to effectively separate out and concentrate individual components to capture their specific characteristics. Preserving the quality of the raw whey is essential, while effectively removing fines and fat residues.

Alfa Laval process equipment is tailored to the specific challenges of whey processing. We offer a wide range and scope of membranes for separation and concentration, helping end-product portfolio diversification and energy efficiency.

Milk powder
Milk powder products are a versatile, varied, and fast-growing category, covering both food production ingredients and consumer products. Preserving the quality and functionality of the raw material is of vital importance, especially in products such as infant formula.

The first step in powder processing is liquid handling and concentration. Alfa Laval's membranes, centrifugal pumps, heat exchangers, agitators, mixers, instrumentation and Cleaning-in-Place equipment are all integral components for achieving energy-efficient and profitable processes, contributing to an end product of the highest quality.

Cultured milk and yoghurt
Yoghurt and cultured milk drinks account for approximately 20% of the value of global dairy consumption. This is a product category that places high demands on hygienic processing and heat transfer performance. Furthermore, the base product and ingredients, including large fruit particles, must be effectively handled in order to preserve product ingredient integrity.

These products are typically produced in continuous batch processes, where efficient changeovers are critical. Alfa Laval's range of rotary lobe pumps helps to produce high quality product.

Reduced operating costs
MAJOR DAIRY, CHINA. One of the largest milk producers in China installed 47 new Alfa Laval agitators throughout the plant's raw milk, pasteurized milk, and cream processing and storage tanks, ranging in size from 5,000 to 100,000 litres. By doing so, the dairy increased energy efficiency, enhanced product quality, and reduced operating costs, while realizing full return on investment within three years.
www.alfalaval.com/chinesedairy

Energy savings
HATSUN PRIVATE DAIRY LTD, INDIA. Alfa Laval was the sole supplier for this dairy's new curd plant, which produces 40 kilolitres of curd per day. The scope of delivery was comprehensive. Alfa Laval contributed expertise as well as supplying high-quality equipment such as agitators, valves, centrifugal pumps, plate heat exchangers, tank cleaning machines, and fittings, with the backing of a service and support agreement. As a result, the dairy has increased energy efficiency, hygiene, and uptime at its plants.
www.alfalaval.com/hatsundairy

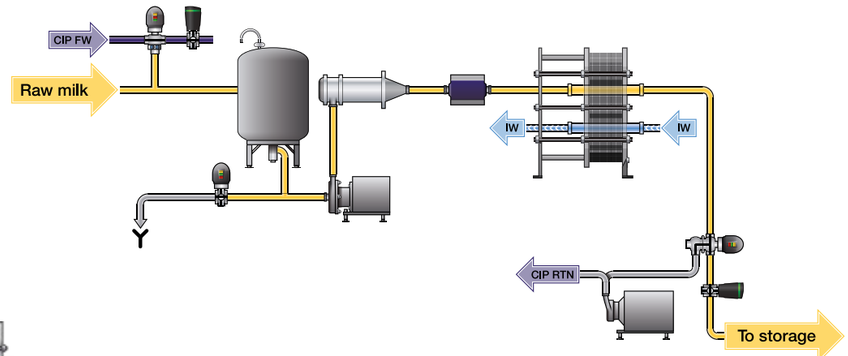
Optimizing every process

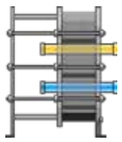
Alfa Laval's comprehensive range of innovative sanitary components are key building blocks in dairy processes. The processes highlighted on these pages are important to dairy applications.

Milk reception and storage

Milk reception and storage demand uptime and efficiency. That means components with high reliability, easy serviceability, and both operational and energy efficiency.

Reception





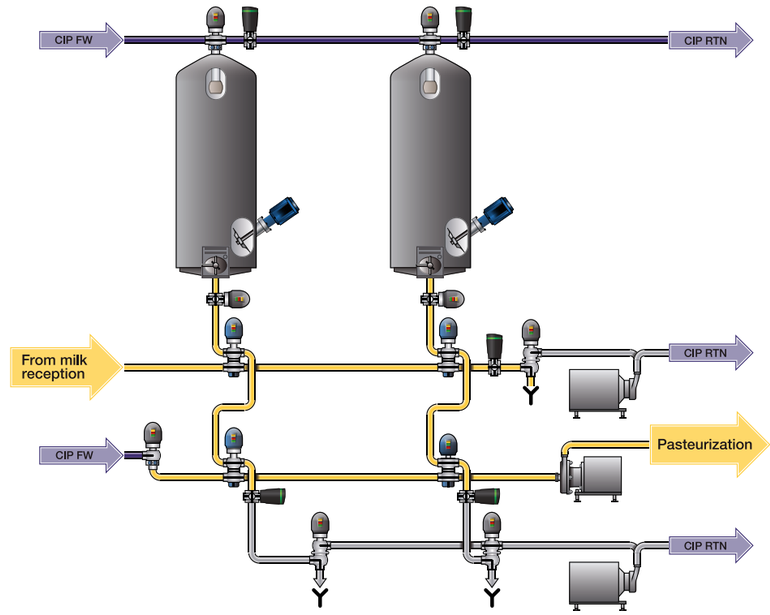
Heat transfer
The right choice of heat exchanger is critical for a successful milk reception process. Alfa Laval BaseLine heat exchangers feature clip-on gaskets, which are easy to re-gasket on site. The same plates can be used in industrial and hygienic frames. Plates with two different pressing depths make it possible to optimize thermal efficiency and reduce investment cost. High legs give easy access to keep the environment clean.
No dead spots means less bacteria growth, saving time and cutting Cleaning-In-Place CIP costs.

Fluid passage
Alfa Laval's hygienic tubes, bends, tees, and reducers feature high-quality welding, with great strength, tight tolerances, precise angles, and outstanding uniformity.

Higher plant capacity
MOLOKO, GORODETS DAIRY, RUSSIA. To increase capacity, improve efficiency, and comply with safety and hygiene requirements, Russian dairy producer Moloko planned to upgrade a 50-year-old dairy plant in the town of Gorodets. Thanks to Alfa Laval Mixproof Valves and many other components, a 50% increase in throughput was achieved. Plant capacity is up 50%. Production of whole milk, sour cream, yoghurt and ryazhenka (a baked cultured milk popular as a breakfast drink) has increased substantially as a result.
www.alfalaval.com/molokodairy

Tank optimization
Alfa Laval's instrumentation portfolio includes dedicated tank and process instrumentation (flow, pressure and conductivity) to provide online input for process control, supporting production management, and quality control.

Storage



Flow management
Optimal and reliable fluid handling can result in substantial savings and efficiency gains. Our valves ensure optimal flow in reception and storage before distribution to pasteurization processes.

Alfa Laval Unique Mixproof Tank Outlet Valves protect the milk in the tank against contamination during CIP of tank emptying line. This enhances plant flexibility and efficiency during production and CIP. The Unique Single Seat Valve range is built on a proven modular platform used in more than a million valves in service worldwide. Pressed from a single stainless steel disc, the valve body is extremely strong and durable, ensuring production safety. The enhanced performance of the actuator makes operation safer and more efficient.

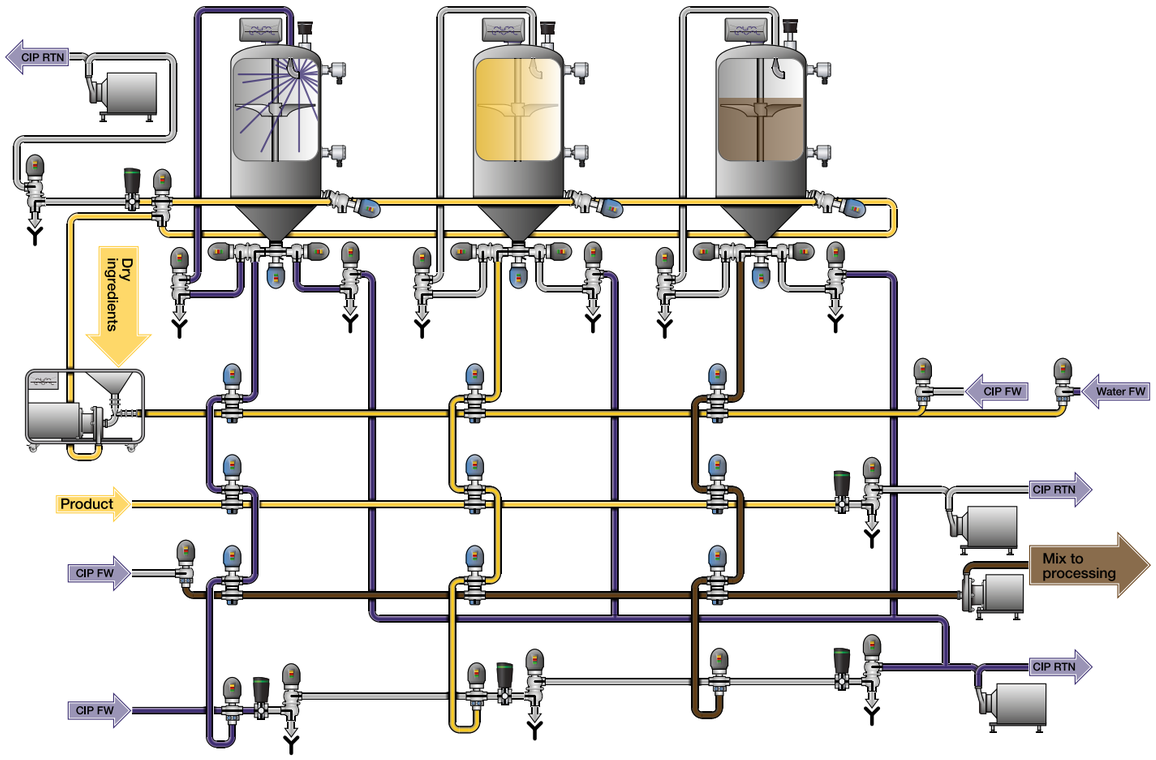
Pumping
Alfa Laval LKH centrifugal pumps feature close tolerances, optimized internal design, and robust construction. They help increase productivity while providing gentle raw milk handling. With 14 models to choose from, finding the optimal size for the most efficient performance in each duty is more likely.

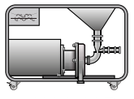
Increased energy efficiency
MAJOR DAIRY, DENMARK. A study was made of energy consumption for agitators in 25 storage and concentrate tanks. Direct drive agitators were compared with Alfa Laval's energy saving agitators featuring the EnSaFoil impeller. Potential savings in electrical power amounted to EUR 21,350 per year, giving a payback time of just 8.2 months. Specially designed for extra-low energy consumption, Alfa Laval agitators can reduce energy costs for agitation by up to 80%.
www.alfalaval.com/dairydk

Mixing and blending

Precise and uniform mixing and blending is essential in many applications, contributing to an effective process and a high-quality end product. Optimal results demand a balance between power, control, and flexibility.

Agitator solution



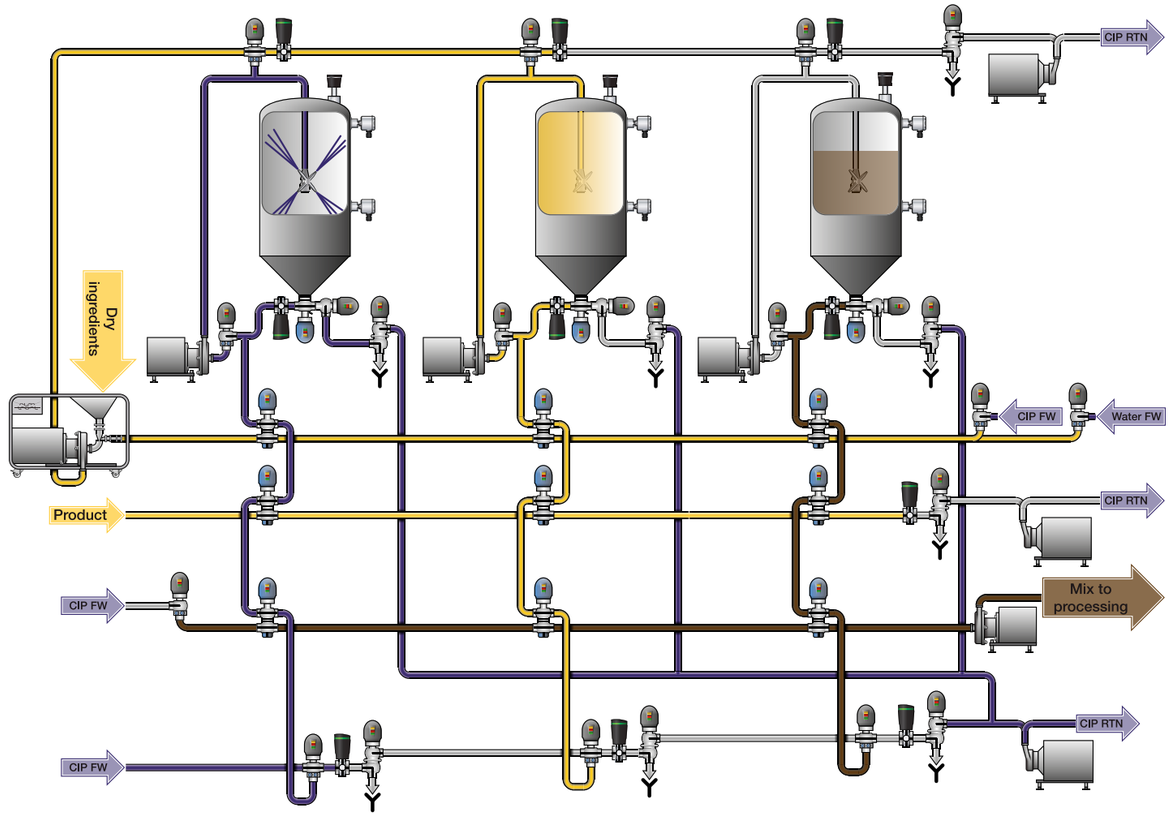


Powder mixing

The patented Alfa Laval Hybrid Powder Mixer is a versatile mobile unit ideal for applications such as fortified, recombined, and flavoured milk. It is designed to dissolve or mix in stabilizers, thickeners, and emulsifiers, and can dissolve recombined milk to more than 50% dry matter. A unique powder wetting and dissolving design assures a uniform end product with no lumps and a minimum of air. The mixer features a two-stage design with only one motor and frequency converter. Outlet pressure of four bar is achieved without a booster pump.

The dimensions of the Hybrid Powder Mixer are H 750 mm x W 826 mm x D 1340 mm. The weight of the complete unit is approximately 280 kg, mounted on wheels for easy handling. The motor is equipped with a VSD (18.5 kW) as standard. The maximum flow generated is 26 m^3/h. Maximum powder capacity is approximately 3000 kg/h, and the funnel powder volume is 50 l. Media wetted steel parts are in SS 316L (1.4404) and Duplex steel. Funnel, table and frame are in SS 304 (1.4301).

Rotary Jet Mixer solution



Rotary Jet Mixing

The Alfa Laval Rotary Jet Mixer radically increases efficiency in applications such as flavoured, fortified, and recombined milk, whipped cream based on vegetable oil, dairy powders, and emulsifiers. These applications include large pre-batch blending tanks prior to spray dryers where milk powders, nutrients, and vitamins are mixed in, and where uniformity must be maintained from bottom to top, with as little energy input as possible. The mixer is positioned under the liquid surface.

The Rotary Jet Mixer is easy to install and scale up, and is highly flexible. It can mix liquids, powders, and gases into liquids, and perform impeccable Cleaning-in-Place (CIP).

Low maintenance costs

THE SERIOUS FOOD COMPANY, UK. This British producer of smoothies and desserts faced the challenge of quickly achieving a stable and homogeneous mixture of high-viscosity fruit purées and fresh-pressed high-fibre juice. By equipping three 15 m^3 tanks with two Alfa Laval Rotary Jet Mixers each, they quickly achieved stable, homogeneous mixtures. This cost-effective design with low maintenance costs resulted in savings of EUR 12,000 per tank in investment costs.
www.alfalaval.com/seriousfoods

Pasteurization

Pasteurization processes demand high levels of safety, hygiene, and process control. Pasteurization of milk is a vital process, and compliance to relevant regulations and standards is essential. Following UHT treatment, aseptic conditions must be maintained. The quality of components is key, with good flow control and reliable and efficient heat exchangers playing important roles.

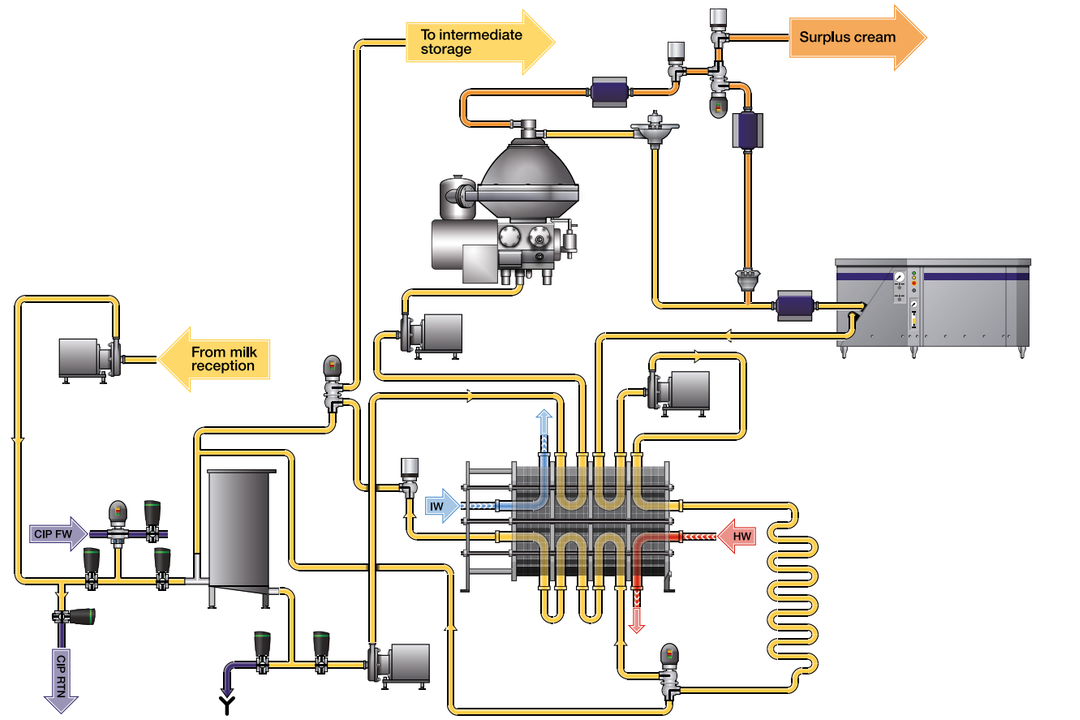
Alfa Laval FrontLine heat exchangers reduce maintenance and increase uptime, with features such as hanging plates, interchangeable corners, and tightening bolts with ball bearings. There is only one gasket size, and re-gasketing can be done without removing the plates.

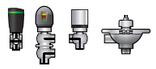
Heat transfer
Alfa Laval Clip Plate is designed for easy mounting, packing, and gasket replacement. Heat transfer is gentle, reducing burn risk to protect product quality and enabling longer running hours. Highly resistant to fatigue, it offers an extended lifetime and reduced risk of cracks. The deep channels reduce fouling and extend running time before Cleaning-in-Place (CIP).

Performance day in, day out
OLEŠNICE DAIRY, CZECH REPUBLIC. Established in 1937, the dairy processes 100,000 litres of milk per day. The dairy's products include milk, butter, cottage cheese, and Akawi – a salty Middle Eastern cheese for which the dairy is internationally renowned. Pasteurizers are at the heart of the business, and the dairy replaced its existing heat exchanger equipment with the Alfa Laval FrontLine heat exchanger with Gemini plates. Reliability is key as they run 365 days a year. Another critical factor is to ensure no mixing of pasteurized and unpasteurized product. Alfa Laval FrontLine heat exchanger with Gemini double wall plates prevent contamination without the need for additional procedures or equipment.
www.alfalaval.com/dairyczech

Pumping
Alfa Laval LKH centrifugal pumps feature an exceptional hygienic design, featuring optimized internal geometry and profiled o-rings that are well suited to cleaning in place. LKH pumps are EHEDG certified and compliant with 3A standards. Rigid construction and close tolerances deliver high efficiency pumping, resulting in reduced product degradation. When product degradation is of the highest concern, Alfa Laval SRU rotary lobe pumps give the ultimate in gentle product treatment.

Pasteurization





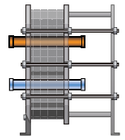
Flow management
Pasteurized products
Alfa Laval Unique Control LKB is an automation unit with a built-in valve actuator. Its reliable integrated sensing and control eliminates costly process interruptions. Unique Control LKB delivers stable operation at air pressures from three to eight bar. Alfa Laval's range of regulating valves includes the CMP constant pressure-valve, as well as the Unique RV-ST and SPC flow-regulating valves.

UHT products
Alfa Laval's complete range of aseptic valves combine simplicity in construction with reliable performance.

Unique Control LKB

Fermentation

Getting the most from raw materials is essential in production of cultured products and fresh and cured cheeses. Important issues include achieving maximum efficiency in continuous batching and maintaining hygienic processing conditions.

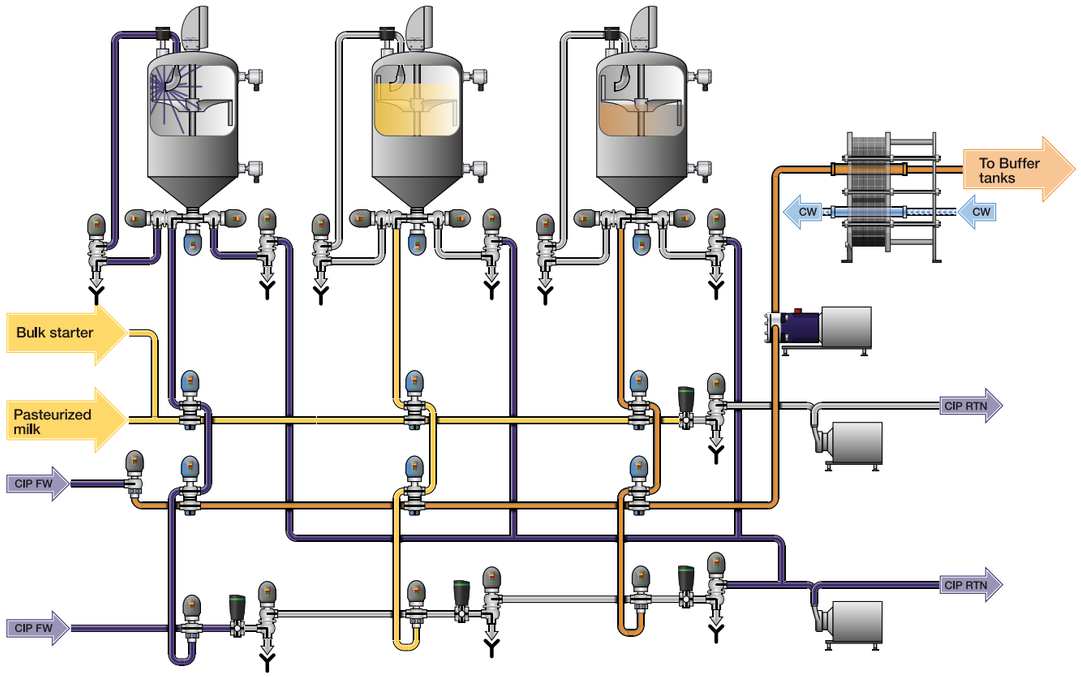


Heat transfer

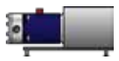
The Alfa Laval FrontLine heat exchanger has been developed specifically for food applications. The flow pattern ensures full cleanability even for viscous products such as yoghurt.

Product texture is maintained without compromising heat-transfer efficiency. The footprint is small, and the design facilitates inspection for food quality compliance.

Fermentation



The SRU core rotary lobe pump´s low-shear pumping action maintains product integrity.



Pumping

The low-maintenance Alfa Laval SRU rotary lobe pump features a non-contact design. It offers good hygiene and can be cleaned in place. The low-shear pumping action maintains product integrity. SRU configuration options enable optimized selection for pumps for base products and fruit additives with large particles.

Filtration separation

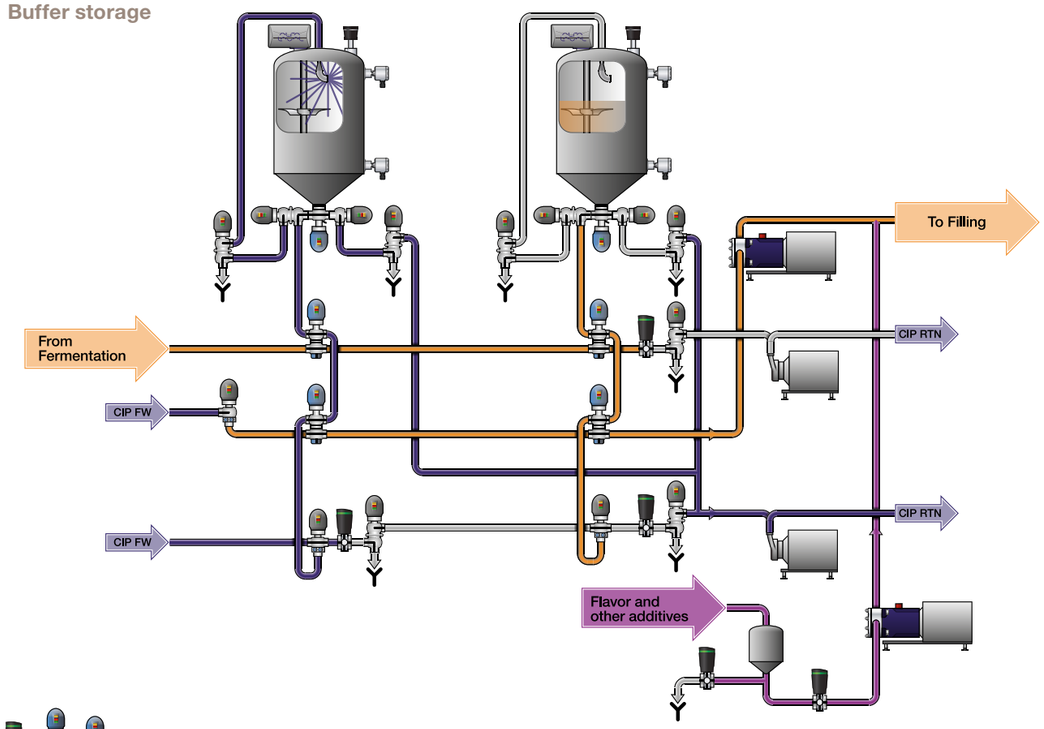
Alfa Laval membrane equipment enables solids standardization for yoghurt, cheese, and milk, simplifying processing and creating a more uniform final product. Soft cheese products can be concentrated to final product composition. Substituting whey drainage with an ultrafiltration step increases yield and shortens processing time.

Tank optimization

Verification of the actual performance of the rotary jet heads can be done using the newest sensor technology, which measures the actual jet impact. The new EHEDG-certified and 3A-compliant Alfa Laval Rotacheck Basic and Rotacheck+ provide this feature.

Alfa Laval Level Switch TE67O eliminates false signals from the sensor, giving more accurate and reliable measurement. It provides unsurpassed reliability in feedback regardless of product viscosity. Features include an easy teach-in function for difficult media. Our tank cleaning equipment, including spray heads and rotary jet heads, provides repeatable, fast and effective cleaning in fermentation tanks with agitators.

Buffer storage



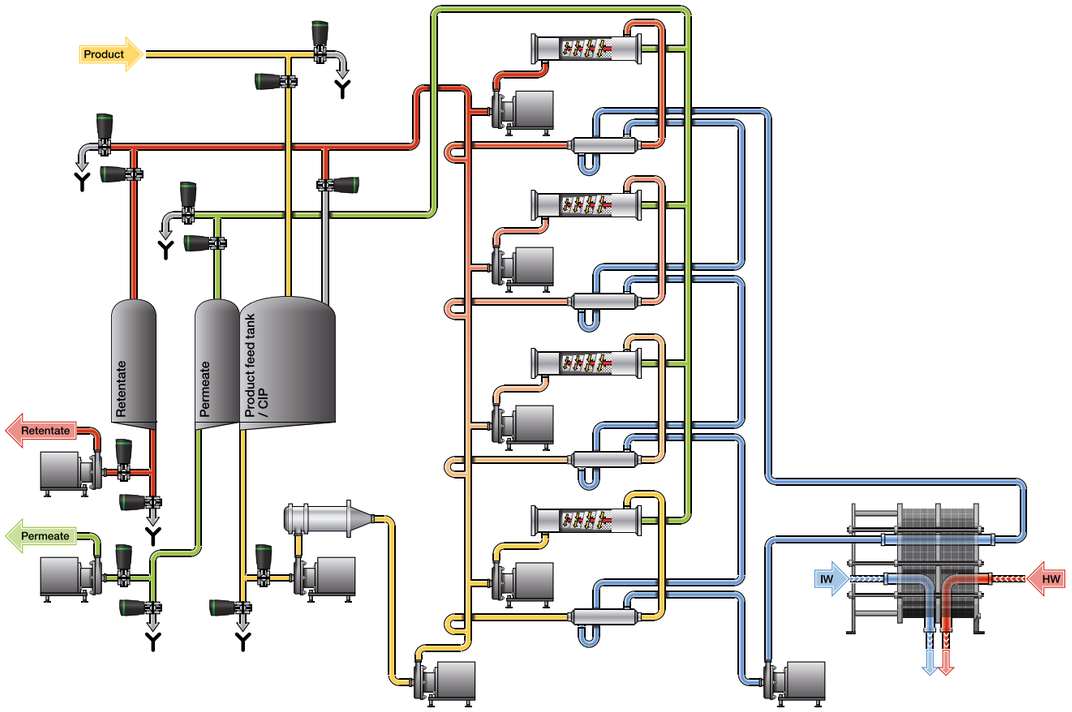
Flow management

Alfa Laval Unique Mixproof valves enable the simultaneous flow of two different products or fluids through the same valve without risk of cross-contamination. The range and scope covers most requirements. The Unique Mixproof Horizontal Tank Valve can clean itself through the seat lift or the tank connection, optimizing the process and space requirements when mounted at the bottom or side of a tank.

Separation and concentration

Reducing waste and emissions is an essential aspect of concentration processes. Achieving a good operating economy requires control over components' energy consumption.

Separation



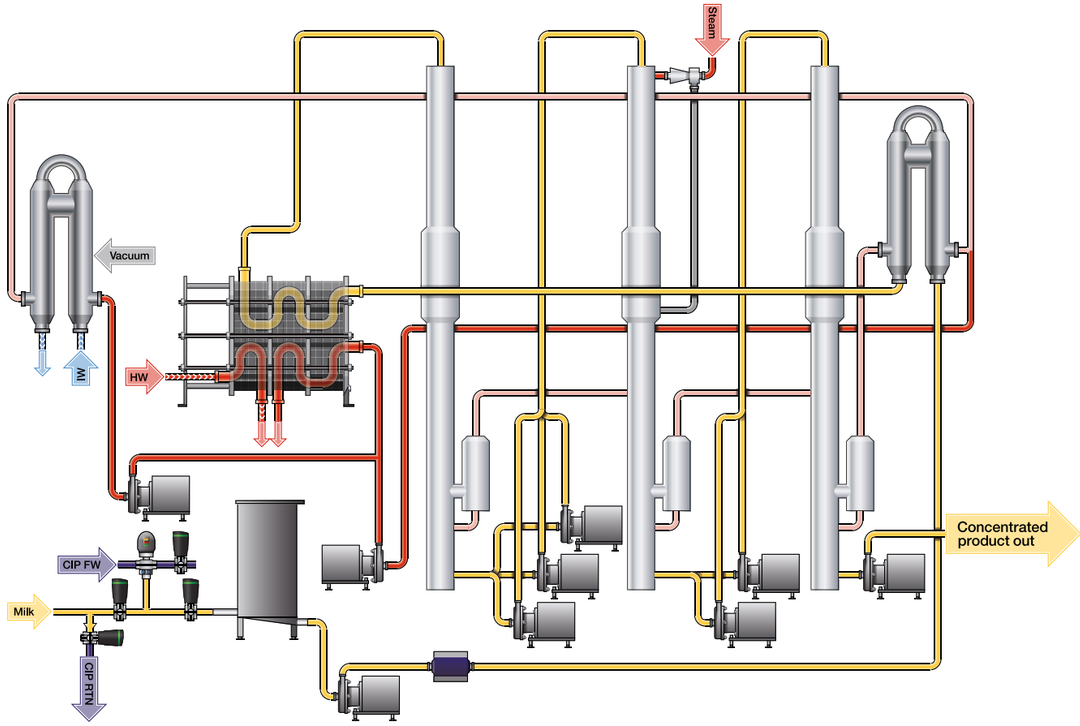
Flow pattern in a spiral-wound membrane element. Red is feed/retentate; yellow is permeate. The unique design of Alfa Laval spiral-wound membrane elements ensures the feed stream passes through the element under the best possible flow conditions. This secures the most efficient separation, superior flux, extended service life, and ease of cleaning.

Filtration separation

Our ultrafiltration, nanofiltration, and reverse osmosis membranes give excellent yields in pre-concentration and protein purification prior to evaporation and drying. Ultrafiltration membranes make it possible to turn what was once regarded as waste into a highly refined food ingredient. Increasing the number of membrane filtration steps along with the use of increasingly specialized membrane filtration enables the dairy to continuously optimize the value generated by processing and fractionating whey. Whey protein concentrate production reduces the volume for spray drying, leading to a significant reduction in power consumption.

Nanofiltration and reverse osmosis membranes remove water and minerals, reducing the volume before further concentration in evaporators and driers. This saves energy and enables the production of reuse water.

Concentration



Pumping

Alfa Laval LKHPF centrifugal pump features a heavy-duty pump casing and back-plate, high-pressure internal seals, and multiple heavy-duty studs. These pumps are capable of handling high inlet pressures up to 40 bar (600 PSI), and are ideal for demanding nano-filtration and reverse osmosis filtration installations.

The LKH Evap is a dedicated evaporator pump, available with a full package of vacuum curves. It offers the option of a ClearFlow scraper impeller, which solves the product build-up problem in high solids applications. This can considerably extend production time between cleaning.

LKH Centrifugal Pump

Efficient pumping

MAJOR DAIRY, DENMARK. In a recent system audit, Alfa Laval proposed the replacement of two pumps, each with a 100 kW motor, with Alfa Laval LKH pumps equipped with variable-speed drives and a rated power of 75 kW per pump. The new pumps will pay for themselves in less than a year through EUR 36,000+ in annual energy savings, and will also reduce annual carbon emissions reductions by 100,000 kg.

Cleaning-in-Place

Quality in Cleaning-In-Place (CIP) is essential in the dairy industry. Efficiency is the key, both in terms of cleaning result and economy. CIP economy is dictated by cost and time. Reducing waste is critical; correctly configured and efficient cleaning, pumping, and heating equipment is needed to disperse the cleaning fluid properly to work on the surfaces.

The all-stainless-steel AlfaNova heat exchanger can withstand extreme temperatures and pressure fatigue conditions. Uptime and excellent heat transfer coefficients ensure low cost of ownership.

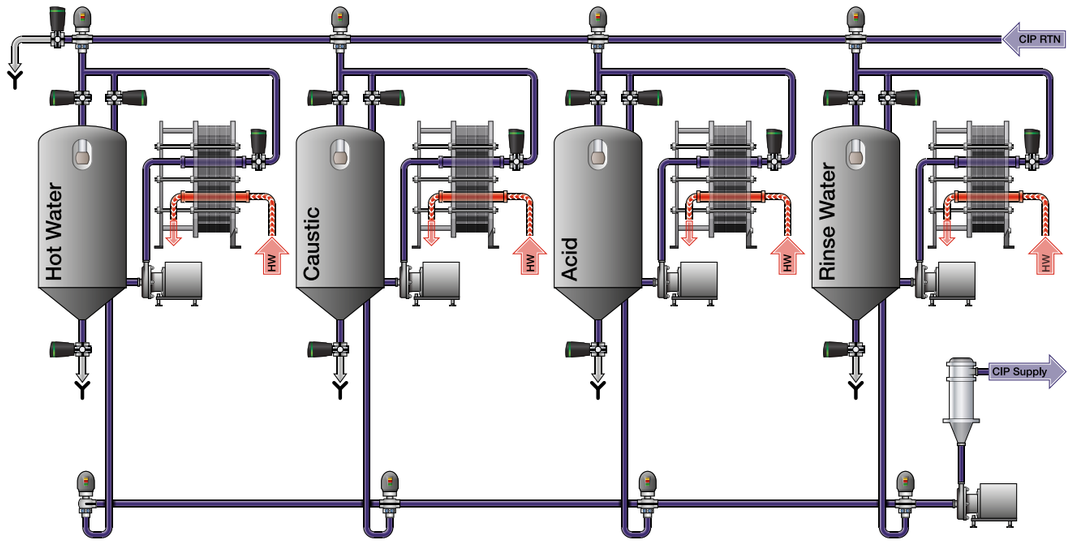
Heat transfer
Alfa Laval AlfaNova is a fusion-brazed, all-stainless-steel plate heat exchanger with superior mechanical strength. Corrosion resistant, it withstands extreme thermal and pressure fatigue, as well as aggressive CIP. Our FMC gasketed plate heat exchanger is specially designed for applications where steam is used – usually to heat water or CIP liquids.

Superior cleaning
LLANDYRNOG CREAMERY, UK. One of the UK's largest hard cheese processors increased the efficiency of its raw milk tank cleaning operations by 35% while reducing water usage by 30%. Static spray balls in six raw milk storage silos were replaced with Alfa Laval Toftejorg Sani-Mega rotary spray heads. Cleaning times have been slashed from an average of 43 minutes to 28 minutes per silo, and standards of cleanliness have significantly improved. Tank heat-up time prior to CIP was maintained.
www.alfalaval.com/llandyrnogdairy

Rotacheck+

Alfa Laval Rotacheck+ validates the Cleaning-in-Place (CIP) process of virtually any rotary jet head machine. Its built-in intelligence and advanced analog sensing technology ensure unprecedented levels of accuracy and reliability.

Cleaning-in-Place



Tank optimization
The Alfa Laval Rotary Spray Head cleans impeccably time and time again. Featuring a unique one-clip hygienic assembly, the spray head is easy to install and inspect, self-cleaning and features a drainable slide bearing. It is the first full dairy rotary spray head product range to be EHEDG certified and compliant with 3A standards.

For cleaning jobs where more impact is required, the Toftejorg rotary jet head offers the highest standards of efficiency, reliability, and hygiene. It provides 360° high-impact coverage over a defined time period.

Verification of the actual performance of the rotary jet heads can be done using the newest sensor technology, which measures the actual jet impact. The new EHEDG-certified and 3A-compliant Alfa Laval Rotacheck Basic and Rotacheck+ provide this feature.

The Alfa Laval Toftejorg SaniJet 25 rotary jet head provides 3D indexed impact cleaning over a defined time period. It is automatic and represents a guaranteed means of achieving quality assurance in tank cleaning.

At your service

Our global channel network consists of our Global Alliance Partner, Tetra Pak, and multiple channels to assure optimal market coverage. Whatever you need, wherever you are, Alfa Laval's components and expertise are always on hand.

We combine the offering and advantages of a global brand with the individual attention of local sales and partners, creating a one-stop shop with the world's largest accumulation of process expertise. In addition, we provide effective, time-saving tools that help you easily configure, size, and optimize your process components.

Trustworthy service
Guaranteed performance, reliability, and hygiene are standard with Alfa Laval components. Each one is backed by the service and support from our global organization and local network of distributors, system builders, and contractors.

Unsurpassed reliability
An investment in quality is an investment in reliability. Alfa Laval hygienic components and solutions are designed and sized right from the start. When supported by maintenance programmes and Alfa Laval parts, they deliver low cost of ownership and true peace of mind over the long term.

Strength and security
Our partners' ability to act independently, combined with Alfa Laval's broad portfolio and organizational resources, creates a one-stop shop with world-class distribution strengths. Alfa Laval logistics ensure reliable and accurate delivery. And with the trouble-shooting guidance of Alfa Laval's competence centres as a complement to our partners' own skills, even the most stubborn issues can easily be resolved.

All the right tools
At our partners' fingertips are advanced resources and documentation built on Alfa Laval's unique understanding of hygienic components and processes. Using our sizing, design, and optimization tools, our partners can select optimal components, taking into account such factors as product composition, viscosity, and thermal conductivity.

Computer-Aided Selection software
Alfa Laval Computer-Aided Selection software (CAS) helps to quickly and easily identify the pump, heat exchanger, valve, and tank cleaning configuration best suited to each particular process. CAS includes drawings, article numbers, and spare parts lists, quickly and easily compiling ordering lists as well as streamlining maintenance and service procedures.

Computer-Aided Design (CAD)
Our CAD portal offers dimensional drawings of many Alfa Laval components. Any user can download 2D and 3D CAD drawings in both neutral and native formats.

Dairy documentation
Detailed product data sheets are available for all Alfa Laval components. Standard Alfa Laval documentation comprises equipment instruction manual, including declaration of conformity to required EU directives, safety, installation, operation and maintenance instructions, as well as technical data and lists of parts and service kits. Alfa Laval components have EHEDG certification or comply with hygienic design guidelines. Many key components also comply with 3A standards.

Rheology laboratory
Our laboratory provides a thorough understanding of individual fluid behaviour, contributing to correct sizing of pumps and heat exchangers, and precise seal specifications, as well as optimizing system design. This ensures the selection of the right component the first time, potentially reducing both capital investment and lifecycle costs.

Test and training facility
Customers have access to Alfa Laval's world-class component demonstration, test, and training facilities. The facility has two full-scale production tanks and valve matrices connected to a CIP unit. Tests using product can be carried out for pumping, flow management, fluid passage, heating and cooling, and tank optimization.

Dairy component innovation

A selection of Alfa Laval innovations

Pumping

Alfa Laval SX Rotary Lobe Pump
Designed for use in sensitive and ultraclean applications. With optimized pump head geometry and multilobe rotors, SX pumps ensure low-shear operation with minimum pulsation.

Alfa Laval LKHPF High Pressure
Featuring a reinforced pump casing and back plate, high-pressure internal seals, and multiple heavy-duty studs, these pumps can handle inlet pressures as high as 40 bar. Their seals can be removed in a matter of seconds.

Alfa Laval ClearFlow Impeller
The ClearFlow impeller reduces build-up of solids on the backplate, shortening time between CIP cycles. The scraper design minimizes friction and thus power consumption.

Flow management

Alfa Laval Unique Control
A valve automation and control system featuring an integrated automation unit and actuator. Flow control is easy and dependable, with one-button 'push and play' setup in one-fifth of the time it takes with other solutions.

Alfa Laval Unique Mixproof Horizontal Tank Valve
This valve handles large particles and can clean itself through seat lift and the tank connection, allowing users to optimize the process and space requirements when mounted at the bottom or side of a tank.

Alfa Laval Unique Mixproof Large Particle Valve
Ideal for cheese curd, quark, and yoghurt with fruit particles. This valve is capable handling of viscous products and large particles, eliminating the risk of product blocking and degradation.

Fluid passage

Quality assurance measures
Total quality management. Preshipment inspection ensures dimensions and tolerances are to norm, with no batch variations. Raw materials and packing materials are certified. Alfa Laval offers all standards of tubes and fittings.

Delivery options
Single pieces: Full product range readily available from one to nine pieces.

Box of 10: Robust and labelled packaging secures the products.

Pallet: Consolidate your order and get delivery directly from factory stock.

Container: Made to order and delivered directly from the factory.

Heating and cooling

Alfa Laval FrontLine
The stainless steel frame is available in four sizes, making the design flexible in relation to volume and footprint. Frames enable operation at pressure up to 21 bar (290 psi).

Alfa Laval Standard Clip plate
Well-proven and extremely heat efficient, our Standard Clip plates meet the toughest requirements in dairy processing.

Alfa Laval Gemini plate
Protects against contamination, giving efficiency and simplicity in heat transfer duties.

Tank optimization

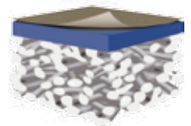
Alfa Laval Hybrid Powder Mixer
Versatile and mobile, the Alfa Laval Hybrid Powder Mixer features a two-stage design with one motor and frequency converter. It achieves four bar of outlet pressure without a booster pump.

Alfa Laval Rotacheck sensor
Verifies the cleaning process inside any hygienic tank cleaned by a rotary jet head. The patented teach-in and monitoring system ensures precise and reliable online monitoring of the cleaning head, minimizing downtime.

Alfa Laval EnSaFerm
EnSaFerm provides an efficient alternative to traditional frame agitators, reducing processing time by a factor of eight.

Filtration and separation

Alfa Laval Reverse osmosis and ultrafiltration membranes
Alfa Laval has the capability to customize spiral sizes and membrane types for specified applications and performances.



Alfa Laval Ultrafiltration pHt membranes
Polysulphone/polyethersulphone on polypropylene. Tolerant of high temperatures and pH values.

Alfa Laval Ultrafiltration GR73PE and GR82PE membranes
Significant improvement in capacity compared to the GR61 and GR70 membranes from Alfa Laval.

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 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, food-stuffs, starch, and pharmaceuticals.

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

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