



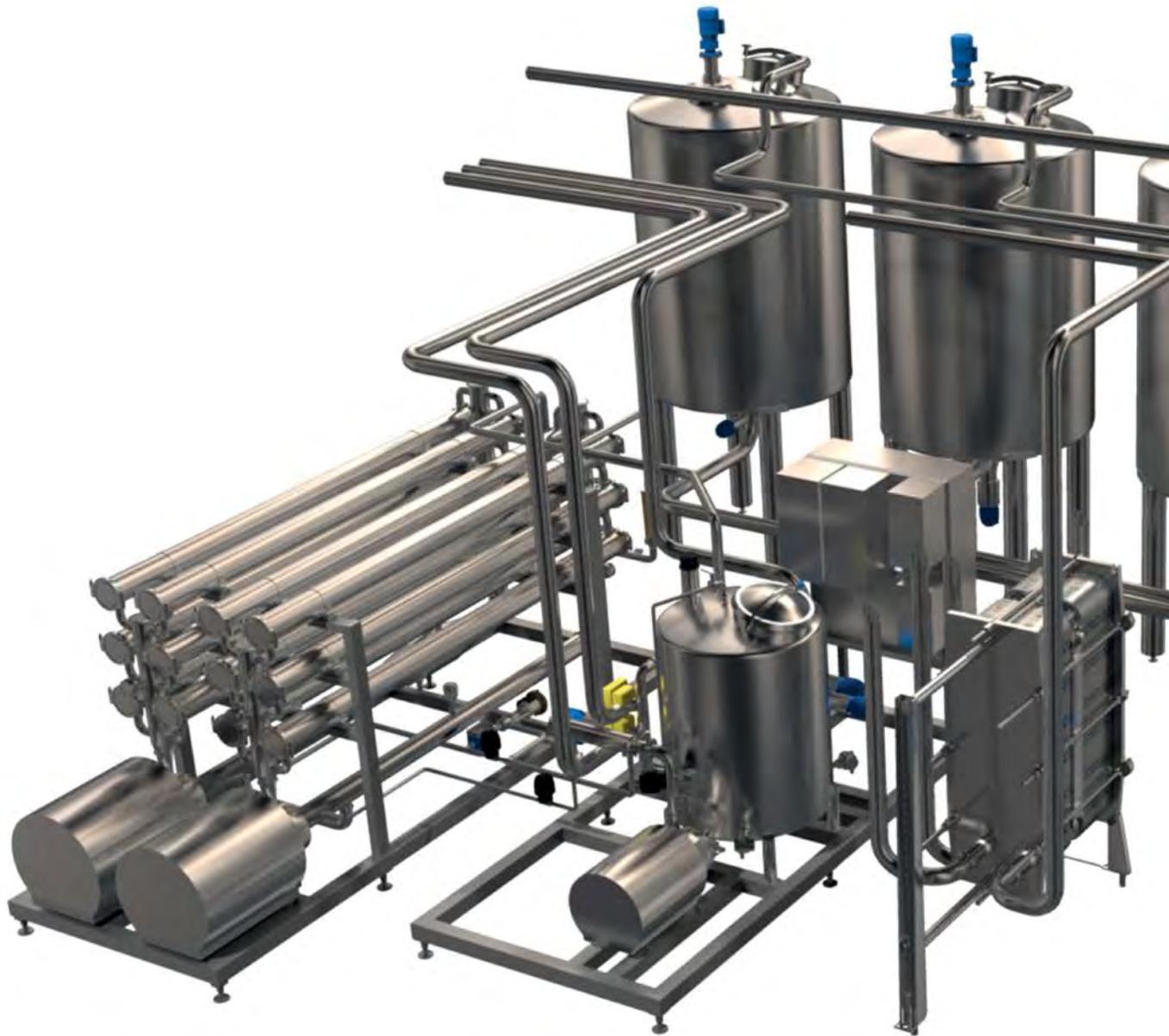
## Valves and automation for hygienic use

The complete line





# Valve matrix –



# customized flow solutions

## **Alfa Laval valve matrix solutions**

Our engineers and manufacturing professionals consider every factor of manifold function over the course of construction, including the effects of thermal cycling, proper alignment of all fluid handling equipment to ensure optimum drainability and pre-plumbed, color-coded pneumatic piping to individual manifold valves for easier maintenance.

Our expertise helps you achieve the most efficient flow management, using as few components as possible to manage all fluid handling valve needs.

Alfa Laval valve matrix solutions can be supplied pre-assembled and pretested as well as fully wired with all the necessary pneumatic tubing, junction boxes and control panels pre-connected.

This means you can bring the most complex installations on-line as quickly as possible, saving time and avoiding lost revenue associated with on-site troubleshooting and downtime.



# 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 sanitary 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 valves and automation, pumps, heat exchangers, tubes and fittings, and separation, filtration and tank equipment. Which is why customers in the food, biopharm and other demanding industries put process performance and hygiene in our capable hands.

Through Alfa Laval's broad range of spare parts, equipment, and services you get the support you need when you need it, performed by skilled and knowledgeable staff. Service kits and top quality spare parts, designed for durability and performance, are always available.

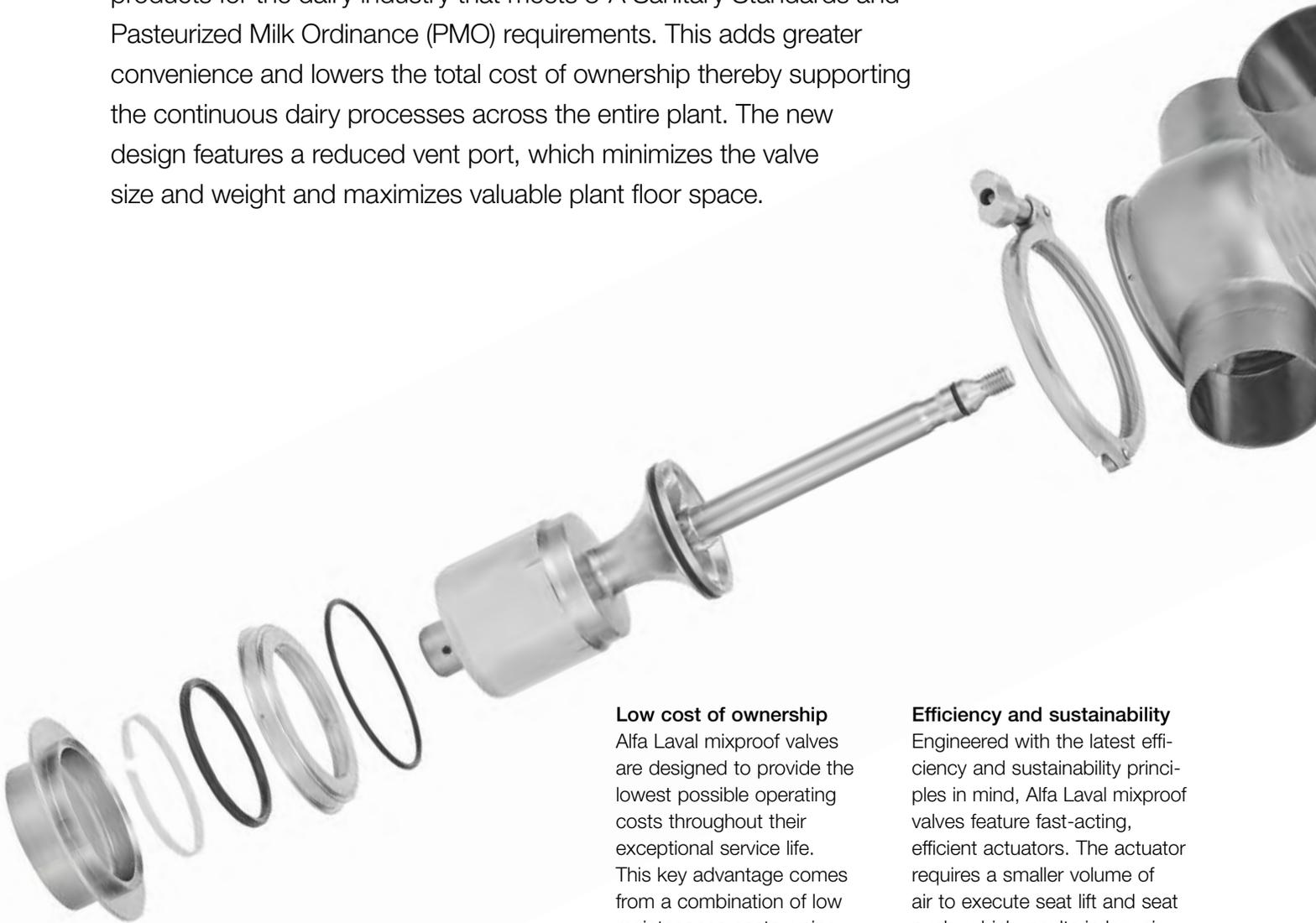
With Alfa Laval service you maximize the reliability and up-time of your equipment. The result is superior performance throughout the equipment life cycle – performance that puts you ahead of competition.

Here you will find an overview of Alfa Laval valves and automation for hygienic applications. For complete technical details and product specification, contact your local Alfa Laval supplier or visit us at [\*\*www.alfalaval.us\*\*](http://www.alfalaval.us)

# Mixproof valves

Alfa Laval supplies several different designs of mixproof valves, all with leakage detection, which helps boost reliability and safety levels.

With its modular design, the new Alfa Laval Unique Mixproof CP-3 Valve delivers optimum hygiene and legendary performance. Capable of being customized to meet various process demands, this valve joins the only complete line of products for the dairy industry that meets 3-A Sanitary Standards and Pasteurized Milk Ordinance (PMO) requirements. This adds greater convenience and lowers the total cost of ownership thereby supporting the continuous dairy processes across the entire plant. The new design features a reduced vent port, which minimizes the valve size and weight and maximizes valuable plant floor space.

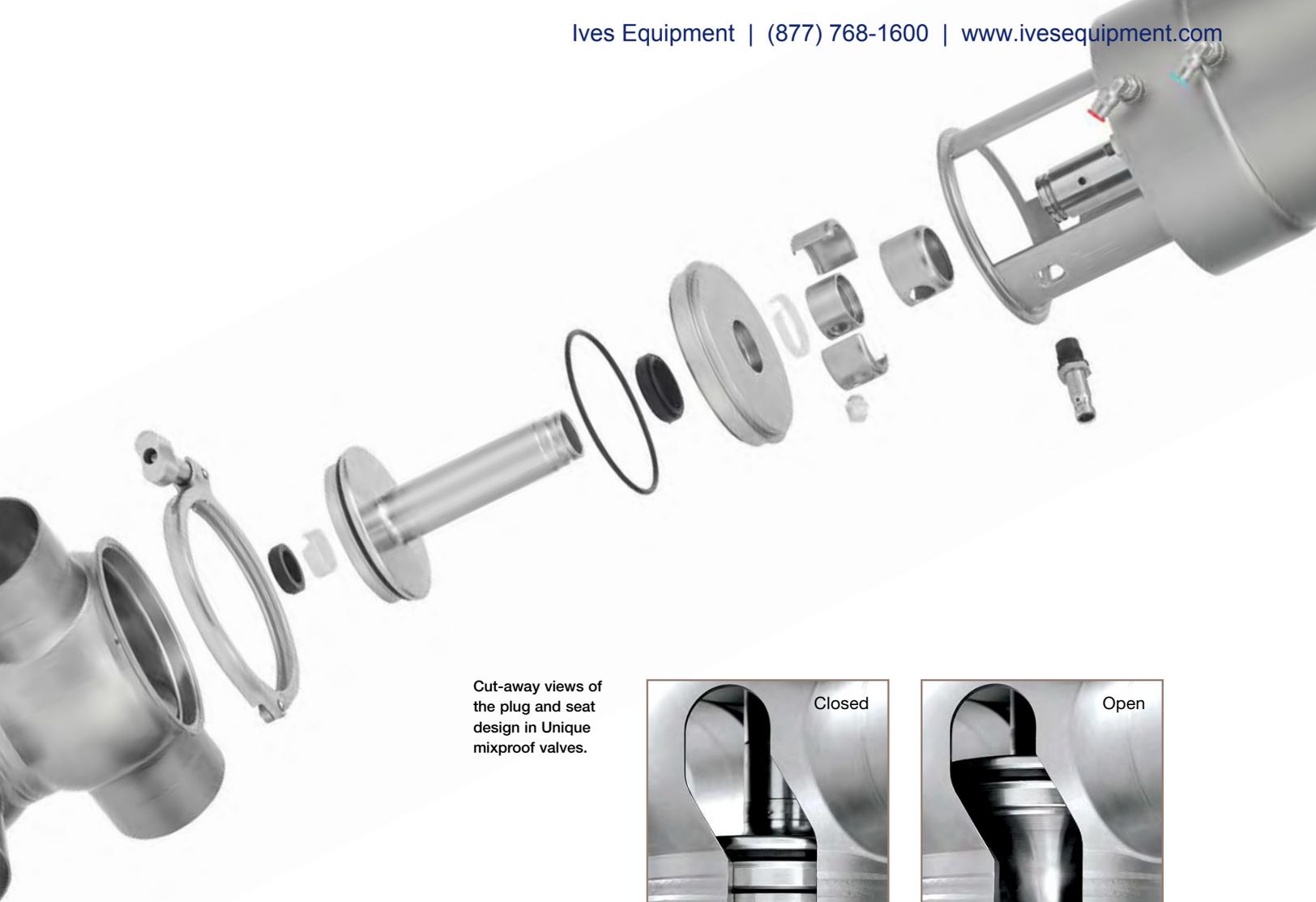


#### **Low cost of ownership**

Alfa Laval mixproof valves are designed to provide the lowest possible operating costs throughout their exceptional service life. This key advantage comes from a combination of low maintenance costs, using fewer utilities, fewer seals in product wetted areas, easy repair and reduced spare parts inventory. It also comes from minimizing downtime and any resultant loss of earnings.

#### **Efficiency and sustainability**

Engineered with the latest efficiency and sustainability principles in mind, Alfa Laval mixproof valves feature fast-acting, efficient actuators. The actuator requires a smaller volume of air to execute seat lift and seat push, which results in low air consumption and minimal loss of Cleaning-in-Place (CIP) fluid. The valve seat, designed with throttling edges during seat lift and seat push, accelerates cleaning fluid to improve CIP efficiency and minimizes the amount of CIP fluid used.



Cut-away views of the plug and seat design in Unique mixproof valves.



### Greater flexibility

The modular concept behind Unique mixproof valves means you only pay for the exact features and capabilities you need. This gives you rapid payback and maximum return on investment. The concept also enables easy upgrades with additional features and functionalities if your needs change. This ensures exceptional flexibility in designing your processing installation.

### Reliable operation

The unique design of these mixproof valves, featuring a guided and protected radial seal, provides long-lasting operation. The double-acting lip seal also minimizes risk of product contamination. Alfa Laval mixproof valves can be fitted with monitoring systems for cost-effective process control.

### Optimized maintenance

These valves are designed for quick, easy maintenance. Cost-saving advantages include the top-loaded, easy-to-dismantle design, parts that don't require adjustment and a standard single unit, maintenance-free actuator that ensures safe repair, due to the caged spring.

### Easy to clean

Alfa Laval mixproof valves feature built-in leak detection for maximum safety. Unique mixproof valves can be fitted with the proven Alfa Laval SpiralClean system for the plugs and leakage chamber. This provides fast, more effective cleaning even under difficult conditions, using less cleaning fluid, utilities and time. A controlled seat lift ensures individual cleaning of the plug seals, with no risk of cleaning liquids mixing with the product.

# One valve for all your process needs

Regardless of your processing needs, Alfa Laval Unique Mixproof CP-3 valves fulfil virtually any requirement, which means you can use this mixproof valve for all your processing needs.

Using this flexible valve platform enables a wide variety of configurations – from the most basic setup to the more complex ones for challenging process needs (A–F below).

Process Demands



Equipped with standard components that provide significant safety and leakage detection. Features an actuator without seat lift and unbalanced upper plug. Typically used in the distillery, home and personal care industries and in Cleaning-in-Place (CIP) systems.



Ideal for standard installations that handle products with solids, where seat lift during the normal cleaning procedure ensures hygienic plugs and seats. Eliminates the risk of mixing products by pressure shock or when the pressure in the pipe is high due to a balanced lower plug. Typically used in various food, beverage and brewery processes.



Great for basic dairy processing needs that must meet 3-A and PMO requirements for single seat lift separation. Enables dairy products and CIP fluid to flow through the valve at the same time. Protects against the effects of high pressure and water hammer thanks to balanced upper and lower plugs. Typically used in fluid milk, cultured products and CIP applications.



Designed for continuous processing and virtual elimination of downtime. Ensures cleaning of the lower chamber and plug during the lower seat lift operation due to the lower flush option. Enables complete valve cleaning in conjunction with the upper seat lift operation without interrupting dairy processing. Widely used for fluid milk, yogurt, cream and cheese applications.



Meets processing needs for handling sticky products or products that are likely to crystallize. The use of the Alfa Laval lower flush option in combination with Alfa Laval SpiralClean ensures thorough cleaning of the spindles on the upper and lower plugs. With balanced upper and lower plugs, this valve configuration protects against the effects of high pressure and water hammer. It is perfect for continuous whey processing, lactose processing, yogurt, or any other dairy applications with abrasive particles.



Ideal for the most hygienic possible processing of sticky products, products with high solids content, or applications that require close-to-aseptic conditions. Features an actuator with integrated seat lift, balanced upper and lower plugs and Alfa Laval SpiralClean. Excellent for sugar processing or any applications with abrasive particles.

Features

# Unique Mixproof valves

The Alfa Laval Unique Mixproof Valve concept is the ideal solution for any process application where high process safety and flexibility, as well as the lowest total cost of ownership are required.

The Alfa Laval Unique Mixproof Valve concept provides modular solutions that you can easily tailor to your specific requirements. This also means you only pay for the exact features and capabilities you really need.



Alfa Laval Unique Mixproof CP-3 Valve.

	UNIQUE MIXPROOF TANK OUTLET	UNIQUE MIXPROOF CP-3	
READING / CONFIGURATION DIRECTION ↓	CONNECTION		CONTROL
	VALVE BODY		ACTIVATION
	PLUG		CLEANING OPTION
	CLEANING OPTION		PLUG
	ACTIVATION		VALVE BODY
	CONTROL		CLEANING OPTION ↑

The selection guide illustrates the combinations of features and equipment available with the Alfa Laval Unique Mixproof Valve concept. In addition, there are different sizes and standards to comply with the full spectrum of worldwide installation standards. As a result, you can always find a configuration to meet any specific requirement.

**Alfa Laval Unique Mixproof CP-3 Large Particulate (LP) Valve**

The Alfa Laval Unique Mixproof CP-3 LP Valve offers the same basic advantages as the Alfa Laval Unique Mixproof CP-3 Valve but is specially designed for highly viscous fluids or for gentle handling of products containing large particulates up to 1¾" in size. Like the Alfa Laval Unique Mixproof CP-3 Valve, it complies with the PMO paragraph 15p(B). This allows the pasteurized milk product to continue to flow through one of the valve chambers while seat lift using CIP solution takes place in the other chamber. This virtually eliminates CIP downtime. Customers across all industries have taken advantage of this safeguard to protect their products while enjoying an efficient and flexible processing environment. Typical applications include processing cheese curd, spaghetti sauce and soup.

The Alfa Laval Unique Mixproof CP-3 LP Valve is available in 4" and 6" O.D. tubing sizes.



## Unique PMO Mixproof series

As the original dairy mixproof valve, Alfa Laval Unique PMO mixproof valves are fully 3-A compliant, and meet the FDA's Pasteurized Milk Ordinance (PMO). PMO compliance ensures safe and efficient mixproof valve separation, where fluid milk or milk products with curd can be located in one valve chamber and cleaning solution in the other valve chamber.

As a result, dairies across the United States have been producing safe and consistent milk products while saving resources, improving uptime and eliminating the need for manual pipe swing connections.



**Alfa Laval Unique PMO Plus® Mixproof Valve**

Allows seat lift cleaning in one chamber while product is in the other.



**Alfa Laval Unique PMO Plus®-CP Mixproof Valve**

Utilizes features from the Unique PMO-F and Unique PMO Plus to enable for continuous processing.



Exclusive to Alfa Laval is our ease of interchangeability from PMO to PMO-F to PMO Plus® to PMO Plus®-CP to meet all of your processing needs regardless of your dairy size or capacity. If you have a standard Alfa Laval PMO Mixproof Valve installed, it is easy to upgrade your PMO capabilities by exchanging only a few components.

## Unique Mixproof tank valves

These offer the same basic advantages as Alfa Laval Unique Mixproof valves but are specially designed for vertical and horizontal mounting directly onto the tank wall at the inlets and outlets.



**Alfa Laval Unique Mixproof Tank Outlet Valve** is the choice for standard installations. Seat lift during normal cleaning procedures cleans the plugs and seats. A balanced plug protects against water hammer when closing in the direction of product flow.



**Alfa Laval Unique Mixproof Tank Outlet Valve with external cleaning** meets the highest hygienic demands for applications with sticky products, products with high content of solids or applications that require close-to-aseptic conditions. It features Alfa Laval SpiralClean and plugs that lift independently to ensure thorough cleaning of the plugs, seats and corresponding pipe.



**Alfa Laval Unique Mixproof Vertical Tank Valve** is completely drainable in vertical positions for continuous processing right up to the tank port. It meets both 3-A and PMO requirements for single seat separation.



**Alfa Laval Unique Mixproof Horizontal Tank Valve** is completely drainable in horizontal positions for continuous processing right up to the tank port. It meets both 3-A and PMO requirements for single seat separation.

## SMP Mixproof range

The double-seal Alfa Laval SMP Mixproof Valve is a cost-effective alternative to Alfa Laval Unique Mixproof valves yet still provides the advantages of mixproof design. The range is available in both on-off and changeover versions. The SMP Mixproof valves are double-seal, self-draining units with no seat lift. They provide maximum safety with a minimum of moving parts, and are top-loaded to provide easy access for dismantling and service. The Alfa Laval SMP Mixproof Valve is the perfect solution for applications where 3-A compliant valves are not required.



### Alfa Laval SMP-BC Mixproof Valve

Keeps liquids separate by using two seals on the same plug, with a leakage chamber in between. Often used as part of Cleaning-in-Place (CIP) set-ups, with leakage detection for greater safety. In such installations, seat lift is not necessary.



### Alfa Laval SMP-BCA Mixproof Valve

Like the SMP-BC, but fitted with a PTFE/rubber diaphragm, designed for use under aseptic conditions and sterilization involving high temperatures.

## Unique Mixproof manifolds



### Delivered ready to install

Alfa Laval valve manifolds add unprecedented efficiency to your process without taking up valuable floor space. Once configured and installed, the manifolds help your process run more safely and efficiently while reducing downtime and operating costs. With the Alfa Laval Unique Mixproof CP-3 Valve at the heart of your process, the highest level of versatility is added to your manifold – enabling simultaneous processing and CIP. Every Alfa Laval manifold is delivered ready to use and requires minimal connections, thereby significantly reducing installation time and cost.

# Single seat valves

Single seat valves feature a single contact surface between the plug and the seat. They are one of the fundamental building blocks in virtually every kind of process installation. This means they must be extremely reliable and versatile in order to maintain uninterrupted production with a high hygiene standard.

The Alfa Laval range of single seat valves is led by the Alfa Laval Tri-Clover® Unique 7000 series, and consists of large numbers of valve variations tailored to provide the flexibility needed to meet your individual processing requirements.



#### **The most for your money**

Benefit from a relatively simple, straightforward design with a minimum of components and few moving parts, which reduces service requirements and keeps inventory costs down. You get the best possible return on investment as a result of enhanced service life and exceptional reliability, combined with reduced product loss, greater product safety and improved hygiene.

#### **Lower engineering costs**

Fully 3-A compliant and EHEDG-certified, the Unique 7000 has a modular design, which provides the possibility for various port and body combinations. This versatility significantly reduces the engineering costs of setting up processing plants around the world.



**Alfa Laval Tri-Clover 700 series valves**

Tri-Clover 700 series provide years of reliable performance. Rugged plastic stem bushings eliminate metal-to-metal galling. The stem is threaded to the actuator shaft, eliminating the coupling between the stem and actuator, thereby ensuring proper alignment. Bushings at each end of the cylinder support stem also ensure perfect alignment. Each valve features a heavy-duty bonnet and body ferrule design that will stand up to years of pounding from hydraulic shock.

**Exceptional hygiene**

The valve body is manufactured from a single disc of stainless steel with a 32 Ra final internal surface finish. The weld-free, ball-shaped body eliminates bacterial traps, and the design of the plug and seal supports more effective cleaning and exceptional hygiene. The double-acting lip seal minimizes any risk of product contamination.

**Low cost of ownership**

The design of these valves makes them easy to clean and keep clean, with fewer spare parts. This saves you time, resources, manpower and inventory. The costs of ownership are reduced further by exceptional durability, reduced product loss and more processing uptime. The actuator design also provides more accurate valve performance.

**Greater durability**

The unique design used in Unique 7000 valves, featuring defined compression of the O-rings and metal-to-metal contact between plug and seat, not only provides better sealing but also extends the service life of Unique 7000 valves.

**Saving on resources**

The reliability of Unique 7000 valves means you have less product loss to deal with. And because they are designed with effective Cleaning-in-Place (CIP) procedures in mind, you use less expensive cleaning fluids, less water and fewer utilities in general, resulting in a reduced environmental impact.

# Tri-Clover Unique 7000 single seat valves

By far the most widely used Alfa Laval single seat valve is the Alfa Laval Tri-Clover® Unique 7000 series, which features a valve body made of a single deep-drawn stainless steel disc, an efficient double-acting lip seal that minimizes any risk of cross-contamination and a valve plug with enhanced CIP capabilities. With its cost-effective modular design, the Tri-Clover Unique 7000 series makes it possible to build either a shutoff valve or a changeover valve in a normally open/normally closed configuration or a reverse-acting configuration to meet virtually any requirement.



### Alfa Laval Tri-Clover Unique 7000 – Standard Valve

An innovative new generation of Tri-Clover single seat valves that are designed to meet the highest process demands of hygiene and safety. They're built on a well-proven, platform from an installed base of more than one million valves.



### Alfa Laval Tri-Clover Unique 7000 – Aseptic Valve

A one-piece diaphragm provides hermetic sealing against intrusion from the atmosphere, ensuring the highest level of hygienic aseptic processing. The special diaphragm can also be used with other Tri-Clover Unique 7000 units – including standard, tangential, two-step and tank outlet valve configurations – where aseptic processing is crucial.

### Alfa Laval Tri-Clover Unique 7000 – Tank Valve

Consists of a valve body with or without a tank flange. Available in two different versions for installations that either open into the tank (Direct-Acting) or close up against the tank (standard version).



### Alfa Laval Tri-Clover Unique 7000 – Long Stroke Valve

Specially suitable for use with media or products that contain particles and/or suspended solids – as well as highly viscous products. In such cases, larger passageways are needed to provide gentler, more effective flow control.



### Alfa Laval Tri-Clover Unique 7000 – Two-step Valve

Stroke height can be adjusted as required to match specific volumes and quantities. This makes it especially suitable for dosing, and for two-stage filling where the focus is on ensuring an exact volume. Can also be used for draining two pipes at the same time.



**Alfa Laval Tri-Clover Unique 7000 – Tangential Valve**

Features an off-center body so that the port connection can still be drained when the valve is positioned horizontally. Particularly suitable for use in tank openings, horizontally mounted drains and a wide range of installations where space restrictions make it difficult to install valves at other angles.



**Alfa Laval Tri-Clover Unique 7000 – Y body Valve**

An ideal solution when unobstructed flow is required for the most demanding viscous products.



**Alfa Laval Unique Tri-Clover 7000 – Flow Diversion Valve**

Perfect for use with high temperature, short time (HTST) systems within the dairy, beverage and food industries. Ideal for applications where product integrity is imperative. Available in a standard configuration and a reverse-acting configuration to eliminate hydraulic shock. To prevent bacterial growth within the valve, the horizontally mounted reverse-acting valve is completely drainable and CIP-able.

**Alfa Laval Tri-Clover Unique 7000 – Reverse Acting Valve**

Provides multiple solutions, for instance, to prevent pressure shocks when the pipework does not permit closing against product flow with the use of standard single seat valves. May be used as an overflow valve after a positive displacement pump or as a multi-port flow diversion valve. Can also be configured as a shut-off valve with two or four ports, or as a changeover valve with three to six ports.



**Alfa Laval Tri-Clover Unique 7000 – Fractional Valve**

A fractional valve with the same Tri-Clover Unique 7000 design and few moving parts. Widely used in processing food, beverages and dairy products, as well as pharmaceuticals and personal care products. Ideal for use in sampling, Cleaning-in-Place (CIP) and other contexts where only lower flow rates are involved.



**Alfa Laval Tri-Clover Unique 7000 – Manually Operated Valve**

Small, relatively simple valves that are available with many different options and features, including lockable flights, for either regulating or dosing purposes.

# Butterfly valves

Alfa Laval LKB butterfly valves are relatively straightforward on/off routing valves with a substantial opening area and low flow resistance. This makes them the workhorse solution in modern processing technology and ideal for use with low and medium-viscosity liquids.



## Seal technology

With unparalleled technical resources, Alfa Laval is able to provide a comprehensive range of elastomer seals to meet virtually all requirements. Different materials and specifications can provide greater thermal stability, better chemical resistance and improved tensile strength, which contribute to longer, more reliable service.

## Disc benefits

Alfa Laval butterfly valves feature a highly polished stainless steel disc with surface smoothness down to 32 Ra. The disc design has been thoroughly tested. The bearing bushes are clipped onto the disc stems to prevent any metal-to-metal abrasion and ensure smoother disc movement.



#### **Strength under pressure**

Different models are available to handle pressures from full vacuum up to 145 psi. This is one reason why Alfa Laval LKB butterfly valves feature a 0.5 in stem diameter – larger and more solid than the industry norm. This additional strength helps withstand pressure shocks better, resulting in better operating safety and greater reliability.

#### **Wide-spectrum compatibility**

These valves are manufactured for full compatibility with both metric and imperial tubing and virtually all dimension standards, including ISO, DIN, JIS and ASME. Compatibility with multiple standards also provides significant logistics advantages as well as opportunities for participation in advantageous Alfa Laval purchasing plans.

#### **Exceptional hygiene**

These highly reliable valves conform with FDA requirements. Alfa Laval inspection certificates and 3.1 traceability certification are also available upon request. The benefits of Alfa Laval seal technology also play a major role in preventing any kind of contamination.

#### **Matrix advantage**

Alfa Laval LKB butterfly valves can easily be mounted in complex matrix set-ups, side by side with valves of other types. Using Alfa Laval control and monitoring technologies, they can also be integrated into a broad spectrum of electronic control systems for maximum efficiency.

# LKB butterfly valves

The Alfa Laval LKB Butterfly Valve range consists of modular units designed to meet the full spectrum of requirements for effective, reliable butterfly valves at working pressures from full vacuum to 145 psi.



The selection guide illustrates the combinations of features and equipment available with Alfa Laval LKB butterfly valves. In addition, there are different versions to comply with the full spectrum of worldwide installation standards. As a result, you can always find a configuration to meet any specific requirement.

**Alfa Laval LKB Valve with standard handle**

Available with standard handle for straightforward manual operation with a pulling/turning movement. The standard handle has a spring-locking action.



**Alfa Laval LKB-F Valve for flange connections**

Special version that makes it easy to remove the valve body without having to dismantle piping set-ups. This in turn makes it easy to undertake repair, service and replacement with minimal disruption.

**Alfa Laval LKB Valve with actuator**

A selection of different actuators is available. The special actuator design, featuring double springs, makes sure that maximum torque is applied to the valve disc at breakaway and seal positions. This results in efficient, reliable opening and closing. Alfa Laval actuators are renowned for their exceptional reliability, regardless of operating conditions.



# UltraPure valves

Tailored for the challenges of the biopharm industry and other demanding hygienic applications, the Alfa Laval UltraPure Valve range is designed to meet cGMP (current Good Manufacturing Practices). It is supported by the Alfa Laval Q-doc documentation package, which facilitates the validation process.

## Well-documented performance

Alfa Laval Q-doc is a state-of-the-art documentation package for all Alfa Laval UltraPure products and is based on GDP (Good Documentation Practices). Q-doc documents every aspect of manufacturing from raw material to delivered equipment. With full transparency of sourcing, production and supply chains, it is easy to trace the slightest change in material or manufacturing procedures, even when it comes to spare parts. All product contact parts, such as steel and gaskets, are fully traceable to ensure correct design performance and validation right from the start.

Q-doc comprises equipment manuals, quality and manufacturing procedures, relevant material certificates and necessary parts and service information for standard components.

Reliable, high performance products ensure in-batch and batch-to-batch consistency, safeguarding product characteristics and quality.

Learn more at [www.alfalaval.com/biopharm](http://www.alfalaval.com/biopharm)



Alfa Laval Ball Valve UltraPure.



Alfa Laval LKB Valve UltraPure.



Alfa Laval LKC Valve UltraPure.14



Alfa Laval Unique DV-ST Valve UltraPure.



Alfa Laval Unique Diaphragm Valve - Premium UltraPure.

# Aseptic diaphragm valves

Aseptic diaphragm valves are most commonly used in the pharmaceutical industry. However, they are also ideal for use in aseptic, hygienic and utility systems within the dairy, beverage and food industries.



### Alfa Laval Unique Diaphragm Valve – Premium UltraPure

The Alfa Laval Unique Diaphragm Valve Premium UltraPure provides double the flow rate compared to conventional designs, yet with significantly reduced pressure drop. It also has a more linear flow characteristic, which results in a more precise flow regulation.



### Alfa Laval Unique DV-ST UltraPure Diaphragm Valve

Features a light, compact actuator with easy conversion of control function (NC-Air/Air/NO). Has an extensive range of well-proven diaphragms and high quality valve bodies with low delta ferrite and specified sulphur content.

UNIQUE DIAPHRAGM								
							CONTROL	
 Stainless steel	 Composite/ Stainless steel	 Composite	 Stainless steel	 Composite/ Stainless steel	 Composite	 Composite	 Composite	ACTIVATION
 Threaded      Button      Bayonet			 Threaded				DIAPHRAGMS	
 2-way	 T-forged	 T-block	 Multiport	 Tandem	 Tank outlet – forged	 Tank outlet – block	 2-way	VALVE BODY READING / CONFIGURATION DIRECTION ↑

The selection guide illustrates the combinations of features and equipment available with the aseptic diaphragm valve concept. In addition, there are different sizes and standards to comply with the full spectrum of worldwide installation standards. As a result, you can always find a configuration to meet any specific requirement.

# Ball valves

With a full-bore design, ball valves ensure that the product passes through the valve with minimal pressure drop and no flow restrictions. Ideal for use with viscous liquids and liquids containing solid or semi-solid particles, ball valves make cleaning and product recovery using pigging systems possible. Alfa Laval ball valves for hygienic use bear the SBV and Tri-Clover® designations.



**Alfa Laval SBV Sanitary Ball Valve** is designed for use as a product valve either with a pneumatic actuator or a manually-operated handle. Ideal for applications that involve high operating pressure and temperatures as well as where the use of pigging systems is required.

**Alfa Laval Tri-Clover Ball Valve** is ideal for applications that require a full-flow body design to minimize line turbulence and pressure drop. An encapsulated seat option is available for applications where it is important to reduce potential product entrapment as much as possible.



# Unique Control

With its integrated automation, Alfa Laval Unique Control with its all-in-one hygienic design consistently ensures an optimal interface between the actuator and the automaton.

## Reliable simplicity

This innovative actuator, combined with the intelligent capabilities of the sensing and control unit, ensures more system uptime. It is controlled by an air spring instead of a conventional mechanical spring. Tested to over a million strokes without service, it is the most durable, reliable actuator available today. The hygienically designed casing withstands harsh environments without weakening, corroding or discoloring.

## One size fits all

The Alfa Laval Unique Control LKB fits all valve sizes from 1" to 4" (DN 50 to DN 100). With the option to switch from normally open (NO) to normally closed (NC) on site, a single actuator covers the majority of all possible valve solutions. Existing installations are easy to upgrade to Unique Control; all that is required is a new bracket.

## Intelligent performance

By pressing a single button, Alfa Laval Unique Control LKB detects the valve positions and monitors the air pressure in the system to support self-configuration to the best possible mode of operation. It is not sensitive to pressure shocks or temperature variations, thereby eliminating false alarms that may result in shutdown.



Alfa Laval Unique Control LKB provides a 360-degree view of the valve operation mode.

# Regulating valves

Regulating valves are the right choice when flow volumes and flow directions must be adjusted or monitored. Specially designed for use in a broad range of metering, blending, weighing and filling system applications, they are the ideal solutions for precision control of flow rate or pressure.



## Alfa Laval CPM-2 Valve

Designed to maintain a constant pressure at the valve inlet or outlet, using different plug sizes and different Cv values. These react effectively to any changes in product pressure by shifting position against a constant air pressure. Often used upstream of filling and bottling machines, as well as on the discharge of separators.



## Alfa Laval Unique RV-P Regulating Valve

Built on the Alfa Laval Unique 7000 platform, this electro-pneumatic regulating valve features an IP converter as an integrated part of the actuator. Available in a range of plug designs with different Cv values. Used for accurate control of pressure, flow, temperature or liquid levels in tanks. Also available in aseptic configurations.



## Alfa Laval Unique RV-ST Regulating Valve

Push-and-play regulating valve with integrated IP converter, as well as position indication, built on the Alfa Laval Unique 7000 platform. Available in sizes 1"–4" with multiple plug designs with different Cv values (0.25–289), to handle all of your processing needs. Widely used as a regulating valve in metering, blending, weighing and filling duties.

# Special valves

Alfa Laval provides a comprehensive selection of valves that are designed for particular purposes and to meet special requirements.



## Alfa Laval LKUV-2 Air-relief Valve

Double-seat automatic air-relief valve with a freely moving ball that closes against the upper or lower seat, depending on pressure conditions. Designed for use when it is important to remove any air present. Examples include vertical mounting on top of a pipe run or container, or upstream from a pump inlet.



## Alfa Laval Unique Sampling Valve

Special valves designed to help ensure effective sterilization before and after taking each sample. Different versions are available for high-viscosity and low-viscosity products.



**Alfa Laval Ball Check Valve**

The 45 BYMP valve is designed for use in hygienic applications to prevent reverse product flow. Available in 1-1/2" to 3" sizes, it's designed with molded Buna-N, Viton or a solid Nylon ball. The body design allows full flow and can be used in conjunction with an air blow check valve.



**Alfa Laval LKC 2 Non-return Valve**

Non-return valve that opens when the pressure below the valve plug exceeds the combination of the pressure above the plug and the spring compression force. The valve closes when pressure equalization is reached. Any higher pressure above the valve plug forces it to close against the seat, preventing any reverse flow.

**Alfa Laval Air Blow Check Valve**

Each air blow check valve is designed to evacuate lines of product or CIP solution and for air agitation of product in tanks and other vessels. The disposable air filter media, designed for use with the air blow valve, will filter out the impurities in the air placed under pressure for drying out process tubing after it has been cleaned and rinsed. It also serves as a filter for air used in the air agitation of products in tanks and vessels.



**Alfa Laval AH Shutter Valve**

Self-draining valves that can allow product to flow in different directions. An internal shutter closes the valve ports progressively to help minimize pressure shock and stress on both the valve and the liquids passing through. Available in manually and single or double-acting pneumatically operated versions, and normally used in systems where it is important to contend with pressure shocks.



**Alfa Laval Tri-Clover Unique 7000 Vacuum Breaker Valve**

This 3-A compliant design eliminates vacuum on the downstream side of a pasteurizer in an high temperature, short time (HTST) system.



**Alfa Laval Plug Valve**

Each valve is designed for low pressure and temperature applications in less than 25 psig, maximum 100°F. Pasteurizer leak detect types are available for tank pasteurizer valves.

# Valve control and monitoring

One of the most effective ways to reap full benefit from high-quality hygienic valves is to control and monitor their action as accurately, reliably and economically as possible. Alfa Laval provides a full range of easy-to-install, easy-to-use valve-top control and monitoring indicator units for use with hygienic valves.

## More reliable, cost-effective control

Traditional indicators are rarely capable of maintaining pre-set parameters for valve operation. Alfa Laval units solve this by using a state-of-the-art, no-touch sensor system, pre-configured with a tolerance band. This does away with adjustments during the unit's service life, providing you with a time-saving, set-and-forget solution that also keeps production downtime to a minimum.

Cost-effective combinations of Alfa Laval ThinkTop® top-mounted automated control head for pneumatic valves and Alfa Laval IndiTop valve position indicators give you full control over fluid handling processes – with the exact degree of automation you require.

## Alfa Laval valve-top control and indicator units benefit your operations by ensuring:

- Better control and monitoring of processing operations
- Full insight and documentation about actual events
- Greater safety and reliability
- Low cost of ownership due to savings on time and manpower and elimination of downtime and errors
- Easy upgrading, expansion and reconfiguration of existing installations, with no adaptors required.

## Easy to install

These units fit onto all Alfa Laval hygienic valves fitted with actuator valve-tops in an easy, straightforward procedure that requires no special expertise or costly adaptors. This makes them ideal for retrofitting and updating your existing processing plant and for increasing flexibility. Once fitted, the initial set-up is done manually using a fast and foolproof "five-push setup".



**Low cost of ownership**

Alfa Laval control and indicator units give you a remarkably low cost of ownership via savings on time, manpower and installation costs, as well as by boosting production uptime throughout the service life of the unit.

ThinkTop and IndiTop units feature modular, fully encapsulated (potted) designs that are extremely robust and have only a small number of components. This saves on spare parts inventory and maintenance costs throughout their service life.

**Built to last**

Alfa Laval control and indicator units are built for maximum durability, providing long-term service both indoors and outdoors. They comply with the stringent NEMA 4/4X, IP66 and IP67 standards for protecting electronic equipment against penetration by dust particles or liquids.

ThinkTop automated control heads for pneumatic valves are completely watertight and suitable for use in any known operating environment. They are also fitted with GORE™ protective venting technology that gets rid of any accumulated moisture.

All the materials used help protect against the effects of physical impact, UV radiation and working environments in which grease, oil and chemicals may be present.

Data about the settings for each valve are automatically stored in the unit's own memory. This important information is therefore fully protected against the effects of any power failure.

**Safe and rugged**

Alfa Laval control and indicator units have well-proven features designed to ensure maximum safety during production by making sure that each valve is doing exactly what it is supposed to – regardless of conditions.

The “no touch” sensor system is less sensitive to the effects of temperature



Alfa Laval Unique Control LKB Valve.



Alfa Laval LKB Butterfly Valve with Alfa Laval ThinkTop D30.



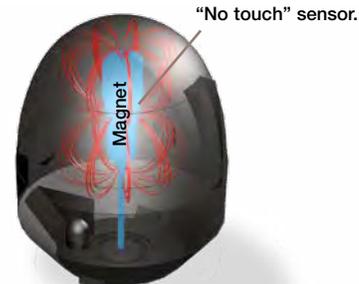
Alfa Laval Unique 7000 Single Seat Valve with Alfa Laval ThinkTop Basic.



Alfa Laval Unique Mixproof CP-3 Valve with Alfa Laval ThinkTop.

and vibration because it is moulded directly into the valve-top units.

The sensor detects valve stem movement with extremely high accuracy. This means these units can be set up with individual tolerance bands for detecting any deviation in the opening/closing of the valve plug. This helps prevent any operating errors that may result in wasted production.



**Broad interface compatibility**  
Alfa Laval control and indicator units can also provide digital electronic feedback by relaying sensor data about the exact valve position to a programmable logic controller (PLC) via a range of different industry-standard configurations. These include traditional digital interfaces, the relatively simple AS-Interface system and the more advanced DeviceNet™ fieldbus interface.

By combining bus systems and digital technologies, Alfa Laval equipment is compatible with all major PLC digital input/output cards and gateways for communication via other fieldbus systems. This makes it easy to combine different types of control and indication units and data communication interfaces to meet your particular valve control needs at any given time.

### Alfa Laval ThinkTop

This premium top-mounted automated control head for pneumatic valves gives you access to the full range of electronic interfaces available for operating solenoid valves, transmitting feedback signals and ensuring the operator full benefit of Alfa Laval hygienic valves.

The Alfa Laval ThinkTop meets the 3-A Sanitary Standards and Pasteurized Milk Ordinance (PMO) requirements.

ThinkTop units make it possible to fulfil all the requirements for automated valve monitoring and control – minimizing waste and maximizing the traceability during production.



Alfa Laval ThinkTop.



**Alfa Laval ThinkTop Basic. Intrinsicly safe for ATEX environments.**

### Alfa Laval ThinkTop Basic

This standard top-mounted automated control head for pneumatic valves fulfils requirements for the automated sensing and control of hygienic valves, with a reduced number of digital inputs and outputs.

Installing the Alfa Laval ThinkTop Basic units is both quick and easy, and helps provide a cost-effective degree of flexibility in controlling an automated production.

### Alfa Laval ThinkTop D30

This basic top-mounted automated control head for pneumatic valves provides basic automated sensing and control of hygienic valves, designed with inputs and outputs, and as an alternative solution to external solenoid valve and for use on non-critical valve actuators.

The plug-and-play setup makes it quick and easy to install, which eliminates fault handling during commissioning and production. It is designed and meet the market challenges for even more usability and hassle-free control of automated valves.



Alfa Laval ThinkTop D30.



### Alfa Laval IndiTop

The Alfa Laval IndiTop top-mounted indicator units are designed to transmit feedback about the current position of any hygienic valve. No solenoids are used, eliminating the need for feedback adjustment over time and, making this a true set-and-forget system.



### Side indicator brackets

Certain Alfa Laval valve types are available with special side indicators and brackets for mounting a range of different sensors.

### 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.us](http://www.alfalaval.us)

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