

# Sanitary Valves

**The Complete Line**





Everything you need,  
everywhere you need it

Alfa Laval is a world-leading supplier of valves for a wide range of sanitary applications within the food, dairy, beverage, bio-pharm and personal care industries. Our products are developed not only to meet your exacting demands for safety, reliability, efficiency and hygiene, but also to ensure the careful handling of your products.

One of the features that distinguishes us from our competitors is our breadth of application. We can supply components for all stages of your process – besides valves, our sanitary range includes pumps, installation material, tank equipment and heat exchangers.

This brochure includes the following Alfa Laval line of high-quality sanitary valves:

- Mixproof Valves
- Single-Seat Valves
- Sanitary Ball Valves
- Regulating Valves
- Sampling Valves
- Butterfly Valves
- Other Valves
- Control & Indication Units

For more detailed technical information and specifications of our products, please refer to the relevant product leaflet provided by your local Alfa Laval supplier, or to our website, [www.alfalaval.us](http://www.alfalaval.us)

## Mixproof Valves

Mixproof valves are an essential part of automated processing, not only separating two different products but also preventing product contamination from other non-sanitary fluids. Mixproof means no mixing of incompatible liquids, but when thinking in terms of processing, the task is to obtain mixproof solutions while at the same time using as few resources as possible.

One double-seat valve can replace two or three single-seat valves, saving you space and installation costs, and providing you with unmatched system flexibility. Alfa Laval offers several Mixproof valves, all with simple and cost-effective maintenance.

*Unique **UltraClean**  
Top of the line in our  
Unique range, meeting  
the highest demands for  
hygienic processing.*



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### *Unique* Mixproof Valves

Alfa Laval's *Unique* mixproof valve concept offers you customized and modular solutions that exactly fit your application or demands. The reliable valve is spillage-free during operation providing optimum hygienic conditions, and the *SpiralClean* system cleans more efficiently and uses less cleaning fluid. The valve requires minimal service and maintenance.

To assist you in your valve selection, you will find outlined below some standard configurations of our *Unique* mixproof valves:

*Unique* **Basic** – for low cost and CIP solutions

*Unique* **SeatClean** – for standard solutions

*Unique* **HighClean** – for high hygienic solutions

*Unique* **UltraClean** – the highest hygienic solution

*Unique* **PMO** – for compliance with Pasteurized Milk Ordinance drainage requirements

### *Unique* PMO – for compliance with Pasteurized Milk Ordinance drainage requirements

The *Unique* PMO valve meets the FDA Pasteurized Milk Ordinance (PMO) criteria for dairy operations. It provides separation of milk products (including cheese curd applications) and cleaning solutions, eliminating the need for manual pipe swing connections.

### **Unique-TO - Tank Outlet**

The Unique-TO is specifically designed for mixproof operation to ensure safe tank outlet operations when cleaning of pipelines is required up to the bottom of each tank. The design offers seat lift cleaning inside the tank. The Unique-TO with external cleaning has aseptic qualities as it's built to handle CIP conditions. In fact, the design of the balanced plug in the pipeline eliminates the risk of pressure shock. The integrated seat lift feature ensures the highest level of cleanability.

*Unique* PMO  
Actuator with  
seat lift interated.



*Unique-TO*  
For mixproof tank outlet  
operations.



# Single-Seat Valves

## Tri-Clover® Unique 7000 Single Seat Valves

The Unique 7000 Series is designed with the latest Tri-Clover innovation and sets a new standard for the most stringent process requirements. They're built on a proven platform from an installed base of more than one million Alfa Laval and Tri-Clover valves.

This entire series is designed with the customer in mind. It's based on a modular design concept that makes parts interchangeable between different models within the range. This makes maintenance easier and reduces the need for carrying a large and diverse inventory of spare parts.

The design also features a minimal number of moveable parts, which makes it extremely reliable and very hygienic for either stopping or diverting product flow in both single and multi-directional systems.

When developing this valve, initial input was given to keep the cost of ownership low. Alfa Laval listened by designing the Tri-Clover Unique 7000 valve so customers can easily maintain the valve now and into the future. Looking at the seat ring, a durable TR2 seat is standard which provides enhanced CIP capabilities. An optional elastomer seat ring with controlled seat compression via metal-to-metal contact is available to reduce seat wear further. The actuator – which features a 5-year warranty – is connected to the valve body by a yoke, and all components are assembled using Tri-Clamps. Alfa Laval even delivers each valve partially assembled for easier installation. Finally, only the Tri-Clover Unique 7000 has a one-piece body with no welds. Having no welds ensures corrosion resistance and minimizes the potential of stress-related valve port and body irregularities.



**Tri-Clover Unique 7000 - Standard valve**  
The latest Tri-Clover innovation from installations of over one-million Alfa Laval and Tri-Clover valves.

## Tri-Clover Unique 7000 Single Seat Valve – Reverse Acting

The reverse acting version is an air-operated seat valve featuring a versatile, hygienic design, which can be used in a wide range of applications. It can be configured as a shutoff valve with two to four ports or as a change over valve with three to six ports.

It's ideal for use in sanitary applications where divert flow is needed, such as product recirculation. Pasteurizing is another good reverse acting application example. Specifically, reverse acting valves are commonly used in pasteurizing systems to ensure recirculation where a change of the product temperature is required. This reverse acting valve can also be used in both stop and change over valve applications where pressure shock needs to be avoided.

## Tri-Clover Unique 7000 Single Seat Valve – Aseptic

Available as a shut-off or change over valve, this variant is built for aseptic operating conditions such as high sterilization temperatures. It features a one-piece EPDM-backed, PTFE diaphragm, which eliminates the need for a steam barrier. This PTFE constructed diaphragm offers improved cleanability and extended diaphragm life.

This aseptic version best illustrates the modularity and interchangeability of parts available. While the bonnet and stem configurations can vary, the diaphragm, body(s), actuator, clamps, stem guide bushing are all standard and common interchangeable components. As a result, less spare parts are needed which translates into low parts inventory and ultimately lower cost of valve ownership.



**Tri-Clover Unique 7000 - Aseptic valve**  
Built for aseptic operating conditions such as high sterilization temperatures.



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### Tri-Clover Unique 7000 Single Seat Valve – Manually Operated

These manually operated and regulating valves have the same versatility and hygienic qualities as the entire Unique 7000 range. In terms of versatility, both manual valves can be configured as a shut-off valve with two or three ports or as a change over valve with three to five ports. In addition, the manual operated valve can easily be converted to a pneumatic operated valve by replacing the crank mechanism with a Unique 7000 actuator.

Since these valves are not operated by compressed air, they have even fewer moving and spare parts. This reduces the cost of ownership further and simplifies maintenance.

### Tri-Clover Unique 7000 – Long stroke Valve

The Tri-Clover Unique 7000 long stroke valve is designed for applications where suspended solids or highly viscous products are being processed. This is accomplished by increasing the stroke of the valve plug considerably compared to the standard Tri-Clover Unique 7000 valve.

This long stroke valve is designed with the same one-piece annealed valve body without any welds. Given the highly viscous nature of these applications, the “no weld” benefits of no porosities or dead zones where product can be trapped set a new standard and level of valve innovation in long stroke valve design. Long stroke sizes range from 2” to 4” valves.

### Tri-Clover Unique 7000 – Tank Outlet Valve

Whether closing up against a tank or opening into a tank with one or two valve ports, the Unique 7000 Tank Outlet Valve provides the flexibility to match any process. It's flexible design consists of a valve body, seat and tank flange that is clamped together.

Knowing that tank sizes and configurations vary, the body can be turned in any position if the Tri-Clamps are slightly loosened. Valve sizes range from 2” to 4” and are supplied with the tank flange that gets welded directly into the tank.



Tri-Clover Unique 7000 - Manually operated valves  
Manually operated and regulating valves that have the same versatility and hygienic qualities as the entire Unique 7000 range.



Tri-Clover Unique 7000 – Long stroke  
For processing suspended solids or high viscosity products.



Tri-Clover Unique 7000 - Tank Outlet  
Designed as a tank outlet valve solution for a variety of tank sizes and configurations.





## 700 Series Valve

### Tri-Clover Unique 7000 – Small Single Seat Valve

This fractional valve can be used for a wide range of tasks – either as a stop valve with two or three ports or as a change over valve with three to five ports. It's ideal for a variety of applications including the food, beverage, dairy and pharmaceutical Industries.

With a double lip seal, this valve has the durability to perform under extremely high pressures. Despite its small size, this is a reliable valve with the benefit of a limited number of moving parts.

The Small Single Seat Valve is available in both remotely controlled and manually operated versions.



**Tri-Clover Unique 7000 – Small Single Seat Valve**  
A fractional seat valve for a wide range of applications.

The 700 Series valves are designed to deliver years of reliable performance. Rugged and long-lasting 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. The 700 Series features a heavy-duty bonnet and body ferrule design that will stand up to years of pounding from hydraulic shock.

Our 700 Series valves offer more control options. For instance, all 700 Series valves are available with an innovative control top housing option. Easily installed by replacing the standard visual valve position indicator, the versatile housing provides valve position feedback by accommodating mechanical and proximity switches, with no internal modifications necessary to the actuator. The 700 Series also accommodates **ThinkTop** control and indication units.

Additional flexibility can be achieved by installing a solenoid in the control housing. The solenoid decentralizes valve regulation from a main control panel to individual control modules, significantly improving response time and greatly reducing installation costs.

Two actuators (long and short) fit most 700 Series valves – including a wide selection of shut-off and divert valves. Valves are also available in sizes from 1" to 6" OD so you can build any size valve without increasing inventory requirements. Available normally open or normally closed, actuators can be field-reversed simply by disassembling, repositioning and reassembling.



**Tri-Clover 700 Series**  
Available in a variety of configuration including throttling, tank outlet and reverse acting - flow diversion.



## Regulating Valves

### CPM-2 – Constant Pressure Modulating Valve

The Alfa Laval air-actuated CPM-2 valve series is designed to maintain either constant inlet or constant outlet pressure – important for such applications as pasteurization, separation, filling systems, filters, filtration and heat exchangers.

Inside, a diaphragm/valve plug system reacts immediately to any alteration of product pressure and changes position so that the pre-set pressure is maintained. The valve operates with a pressure-regulating valve for the compressed air and a pressure gauge in the product line.

The optimum body design of the CPM-2 results in several product benefits, such as excellent cleanability. As the inlet is tangential to the bottom of the valve body there is no sump. One special plug allows very low capacities and high CIP flow.

### Tri-Clover 771 Control Valve

The 771 air-operated control valve is ideal for high volume, sanitary liquid processing applications where precision control of flow rate or pressure is required. Its heavy-duty construction and precision-molded bonnet gaskets ensure positive alignment under severe operating conditions. The 771 valve has a sanitary and flexible design allowing it to be used in a wide range of metering, blending, weighing and filling system applications.



**CPM-2**  
When you need to keep your product under even pressure.

## Butterfly Valve

### LKB – Butterfly Valve

Alfa Laval LKB butterfly valves are economical on/off routing valves, available for either automatic or manually operated systems. Due to their large opening areas, these stainless steel valves offer low flow resistance, allow for reversible flow direction and provide gentle treatment of low and medium viscosity product.

### LKBF Flange Connections

The LKB is also available with flange connections. Flange connections in welded systems allow for in-line maintenance.

### Actuators

Available in either normally closed or normally open versions for automatic operation. The LKB can be fitted with vertically mounted LKLA actuators, as well as the *ThinkTop*® control and indication unit.

### Handles

For manual operation, Alfa Laval offers a complete range of handles, including the new multi-position lockable handle and a complete range of multi-position, mechanically locking handles.

### LKB Low Pressure

The LKB is also available in a low pressure version for pressure up to 75 psi. The LKB-LP is only available as a manually operated valve.



**Tri-Clover 771 control valve**  
Pressure control valve for sanitary applications.



**LKB**  
Economical on/off routing valves for low and medium viscosity product.



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## Check Valves

### Air Blow Check Valves

Our 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.

### Ball Check Valves

The 45 BYMP ball check valve is designed for use in sanitary stainless steel pipe systems to prevent reverse product flow. This ball check valve is available in 1-1/2" to 3" sizes with molded Buna-N, Viton or a solid Nylon ball. Body design allows full flow and can be used in conjunction with an air blow check valve.

Air Blow Check Valve



Ball Check Valve

## Other Valves

### LKC-2 – Non-Return Valve

The non-return valve LKC-2 is designed for use in stainless steel pipe installations to prevent reverse product flow. LKC-2 opens when the pressure below the valve plug exceeds the pressure above the plug and the spring force. It closes when pressure equalization has been achieved. A higher counter pressure will press the valve plug against the seat.

### AH – Shutter Valve

The AH is a self-draining valve that allows for multi-directional flow of product. An internal shutter closes ports progressively to help minimize pressure shock and stress. The AH can either be manually or pneumatically operated, and is available with two or three port connections at the same level.

### 650/655 Fractional Valve

With self-draining ports and ease of operation, the 650/655 fractional valves are ideal for processes where an uncompromising sanitary environment is demanded.

### SBV - Sanitary Ball Valve

With limited flow restrictions, the SBV is optimal for viscous or particulate liquid applications. Industries include food and beverage, pharmaceutical, and chemical. The valve can be operated manually or by a pneumatic actuator.



LKC-2  
A non-return valve that prevents reverse flow.

AH  
A shutter valve that allows for multi-directional flow of product.



Fractional Valve

SBV  
Your optimal choice for viscous or particulate liquids.



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## Other Valves (continued)



Ball Valve

### Ball Valves

The full-flow design of ball valves minimizes line turbulence and pressure drop. An optional encapsulated seat reduces the threat of product entrapment on critical process applications. With a reputation for rugged dependability, wetted parts are wrought AISI type 316L stainless steel. Compatible with Tri-Clamp connections, ball valve sizes range from 1/2" to 4". Ball valves are available as manual valves (as shown) or with pneumatic actuators.



Vacuum Breaker

### Vacuum Breakers

The GHVB air-operated vacuum breaker is used to eliminate vacuum on the downstream side of the pasteurizer in an HTST system. It is truly CIP-able, needing only one air connection for CIP control.

### Plug Valves

Plug valves are designed for low pressure and temperature applications (less than 25 psig, maximum 100°F). Sizes range from 1-1/2" to 3" and are offered in Tri-Clamp, butt-weld or bevel seat ends in either 304 or 316L stainless steel. Pasteurizer Leak Detect types are available for tank pasteurizer valves.



Plug Valve

### Keofitt Aseptic Sampling Valve

The Keofitt aseptic sampling valve is designed for sterilization before and after each sampling. The valve is comprised of a body, head, and rubber membrane. Produced in two sizes for different viscosities, the high viscosity version is available with micro ports to enable sampling by hypodermic needle.

Keofitt Aseptic Sampling Valve  
When sterilization between  
sampling is necessary.



## Control & Indication Units

In the past year, both channels and customers have asked Alfa Laval to provide more “basic” and easier to use control and indication units. In response, Alfa Laval has added the ThinkTop Basic and IndiTop to this portfolio. For customers still looking for the most advanced automation, the ThinkTop continues to lead this category. As a result, Alfa Laval offers the most diverse portfolio to match all of our customers control and automation needs.

### ThinkTop®

**ThinkTop** offers the most advanced automated control unit for all air-operated Alfa Laval and Tri-Clover® valves. Whether you are modifying an existing plant or planning a new installation, **ThinkTop** is right for your process. Using a combination of patented sensor systems and preset tolerance bands, it is self-adjusting, eliminating the need for adjustment over time.

Key **ThinkTop** features and benefits include:

- Self-adjusting when installed
- Can be set up without dismantling or readjusting
- Wide range of interface modules: Digital, ASI and DeviceNet
- Integrated indication of seat lift
- Offers the ability to integrate external signals in the top
- Includes maintenance indication integrated in the top
- External signals included
- Saves set-up parameters until re-programmed, even in the event of power failure

### ThinkTop® Basic

The **ThinkTop Basic** is designed to handle your basic needs for valve control. This control top includes a sensor unit and up to three solenoid valves to control processing valves. Used to both control and supervise pneumatic valves, it's easy to install and mounts on all Alfa Laval and Tri-Clover valves.

The **ThinkTop Basic** has a “no touch” sensor system and “set and forget” programming feature that's based on our **ThinkTop** technology. It's also compatible with all major PLC systems having a digital PNP/NPN interface. In addition, indication is easy to read. The LEDs are constantly indicating the status of the unit: Valve position, solenoids activated, setup and local fault indication.



ThinkTop Basic®



IndiTop



ThinkTop®



GreenTop

### IndiTop

The **IndiTop** indication unit is designed to be a simple and easy to use electrical feedback unit for Alfa Laval and Tri-Clover sanitary valves. Compatible with all major PLC (Programmable Logic Controller) digital input cards, it's ideal for use in food, dairy and brewery installations as well as biopharmaceutical applications.

The unit is mounted while its target is threaded onto the valve actuator “mushrooms” with two Allen screws on the valve stem. Once setup either by the quick and easy “5 push setup” or remotely from the PLC, the unit will be able to send feedback about the valve position through a fixed cable.

The **IndiTop** has a “no touch” sensor system and “set and forget” programming feature that's based on our ThinkTop technology. It's also compatible with all major PLC systems having a digital PNP/NPN interface. In addition, indication is easy to read. LEDs constantly display the current valve position and power status (ON/OFF).

**IndiTop** is easy-to-install and you can mount **IndiTop** onto virtually all Alfa Laval valves with actuator “mushrooms”.

### GreenTop

Constructed from durable, glass-reinforced Nylon 12, each GreenTop is manufactured to stand up to the most punishing environments. In addition, specially molded gaskets guard against leakage and breakdown, so the housing can be installed in any position.

The control module has a versatile design for fast assembly and disassembly. It can be mounted at either end of the actuator to accommodate normally open or normally closed valves - with no internal modifications to the actuator assembly needed.

Additional GreenTop features and benefits include:

- Available in a variety of switch options including proximity and mechanical
- Optional LEDs available
- Can be converted into a 3-way or 4-way solenoid
- Multi-pin connector ensures proper positive connection

