

Choose the right aseptic mixproof valve for higher productivity, more uptime and lower operating costs

Boosting product safety, quality and shelf life with aseptic double-seat mixproof valves

Global demand for aseptic processing and packaging is increasing, spurred by changing consumer preferences. Increasingly, consumers are more aware of and concerned about what they are putting into their bodies. They want to be sure that the products they use are of high quality, safe and convenient to use, and free of harmful microorganisms.



How global demand for healthy convenience products is boosting the aseptic processing market

Moving from batch production to continuous processing will help manufacturers engaged in aseptic processing meet rising demand. Aseptic double-seat mixproof valves are essential components to meet demand in the dairy, food and beverage industries. The new Alfa Laval Aseptic Valve will help manufacturers ensure sterile processing, gain greater flexibility, increased product safety and lower total cost of ownership.



Safety first

Product safety, convenience and longer shelf life are driving global consumer demand for dairy, food and beverage products that use aseptic processing and packaging techniques.

Consumers are now demanding healthier dairy products, foods and beverages that have great taste, texture, appeal and are safe to eat. They also want clean labels that are simple and easy to understand and natural ingredients without added chemicals or preservatives. This is especially true of dairy products, fruit juices, baby foods, soups, sauces, fruit purees and nutrient-rich foods.

Choosing the right aseptic mixproof valve is critical to optimal process efficiency. On the one hand, manufacturers must ensure full protection against the intrusion of harmful microorganisms while ensuring product quality and safety. On the other, they must build greater flexibility into processing lines to be able to produce more commercially sterile products at less cost.

Best value for money

Alfa Laval has introduced the new Alfa Laval Aseptic Mixproof Valve to its range of Alfa Laval mixproof valves. This aseptic double-seat mixproof valve provides manufacturers the best value for aseptic processing in the long run due to:

- Better flow characteristics in the leakage chamber
- Easier cleanability
- The ability to withstand pressure peaks
- More cost-effective parts replacement than other aseptic double-seat mixproof valves
- No risk of clogging due to product particles or seeds

Initially, the Alfa Laval Aseptic Mixproof Valve range will include these valve sizes: ISO 51 mm (2"), 63.5 mm (2½") and 76.1 mm (3").

The Alfa Laval Aseptic Mixproof Valve provides manufacturers with best-in-class valve flow characteristics during processing, cleaning and sterilization.

Engineered to reduce total cost of ownership

Compared to other aseptic double-seat mixproof valves, the Alfa Laval Aseptic Mixproof Valve reduces the overall total cost of ownership by up to 45%. Estimated savings are based on a comparison of the capital expenses and maintenance costs of an Alfa Laval Aseptic Mixproof Valve (2½") and an aseptic mixproof valve (DN65) from another manufacturer over a five-year period.

Costs for parts replacement to ensure hermetic sealing is a good example of how the Alfa Laval Aseptic Mixproof Valve can deliver tangible savings. During the first year of operation, parts replacement, including labour, on the 2½" Alfa Laval valve cost about 70% less than parts replacement on the DN65 valve with steel bellow from another manufacturer. Savings like these make the Alfa Laval Aseptic Mixproof Valve the better investment in the long term.

Flexible, modular design

Modularity makes it easy to configure the Alfa Laval Aseptic Mixproof Valve for use in any sterile processing application. It also gives manufacturers with greater flexibility to meet changing requirements. Choose a standard valve body and a tangential valve body or use two standard valve body types. It is also easy to mount in either a horizontal or vertical position. There are one- and two-step actuators, three seat-lift versions, five steam valve types and a range of options for steam temperature monitoring.

Proven diaphragm technology

Moreover, this aseptic double seat valve shares the same platform as the well-proven Alfa Laval Unique Single Seat Valve (SSV). Those familiar with the Alfa Laval SSV Aseptic Valve will find many of the same features on the Alfa Laval Aseptic Mixproof Valve. Most genuine parts for the Alfa Laval Aseptic Mixproof Valve are interchangeable with those used for the SSV Aseptic Valve. This means that maintenance procedures are also largely the same, which saves time and money as well as helps streamline spare parts inventories.

Why use diaphragms for outstanding product safety

The reasons for selecting Alfa Laval Aseptic Mixproof Valves with diaphragms over conventional aseptic valves with steel bellows are both compelling and substantiated. The Alfa Laval valves safeguard sterile processing lines against the risk of microbial intrusion but do so far much more cost-effectively than the bellows-type valves according to recent analyses. The Alfa Laval valve body is not welded but pressed from a single stainless steel disc with a highly cleanable surface finish. This extremely strong and durable valve body helps ensure production safety. The enhanced performance of the sealing mechanism also contributes to a secure seal and tight closure, even at product pressures spikes.

Instead of using a steel bellow to create the hermetic seal, the Alfa Laval Aseptic Mixproof Valve uses a diaphragm with a PTFE face and reinforced EPDM backing. This hybrid PTFE-EPDM diaphragm has been well-proven in the Alfa Laval Unique SSV Aseptic Valve. Replacing these diaphragms costs only one-tenth the cost of replacing steel bellows on other aseptic double-seat mixproof valves based on calculations over a five-year period.

Highly flushable design

Enhanced cleanability ensures true aseptic conditions during operation. Based on the same high cleanability and hygiene level as the company's Unique SSV platform, the Alfa Laval Aseptic Mixproof Valve complies with the strict requirements of 3-A Sanitary Standards. This contributes to more uptime.

With a highly flushable design and no domes in the product and steam areas, the Alfa Laval Aseptic Mixproof Valve has better cleaning capabilities – especially when processing products that contain seeds or particles – than other double-seat aseptic mixproof valves.

In addition, the valve has built-in leakage detection, which enables operators to inspect the valve at any time without having to disassemble it. Operators can then act right away should any seal or diaphragm need replacement.



Figure 1. The Alfa Laval Aseptic Mixproof Valve.

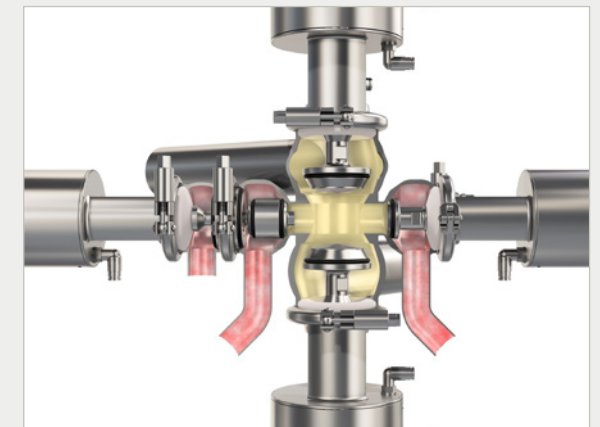


Figure 2. Alfa Laval Aseptic Mixproof Valve in operation.

Enhanced flow patterns

To enhance flow patterns through the processing lines, the Alfa Laval Aseptic Mixproof Valve has a standard pipe connection instead of a conical connection to maintain the flow velocity during Cleaning-in-Place (CIP) and Sterilization in Place (SIP). Maintaining flow velocity during CIP and SIP enables more production uptime while using less CIP fluid and steam. To validate sterile conditions, Alfa Laval conducted flow simulations of the leakage chamber to verify proper heat and steam distribution.

Minimized product loss

Most manufacturers account for some product loss during processing. To minimize product loss during operation, the Alfa Laval Aseptic Mixproof Valve features a much smaller leakage chamber compared to that of other aseptic double-seat mixproof valves. Instead of one actuator that lifts a double plug individually as on aseptic valves with steel bellows, the Alfa Laval Aseptic Mixproof Valve has a more compact leakage chamber due to the design with two actuators, that lift the two plugs independently.

Aseptic double-seat mixproof valves are essential components to meet demand in the **dairy, food and beverage industries.**

Strong aseptic growth, big opportunities

Demand for aseptically processed products with natural ingredients and no additives is expected to continue to rise, according to market research. This is especially true in emerging economies, such as China and India, where increased demand for food and beverage products – and dairy products, in particular. By 2050, milk consumption in China is expected to be three times the current levels. Strong growth in the aseptic processing arena calls for safe, efficient and cost-effective solutions for managing fluid flow through production lines.

Saving up to 45% on the overall total cost of ownership makes the Alfa Laval Aseptic Mixproof Valve an attractive choice of technology compared to aseptic bellows-type valves – without compromising on product safety. This makes it easy for manufacturers to capitalize on the strong and steady growth in the aseptic processing.

To help manufacturers stay competitive, the Alfa Laval Aseptic Mixproof Valve features:

- A hermetic seal with enhanced sealing mechanism
- Optimized flow pattern verified for improved performance
- A hybrid PTFE-EPDM diaphragm instead of the more costly steel bellows
- Built-in leakage detection
- Increased product safety for commercially sterile products
- The ability to withstand pressures up to 8 bar
- No risk of mixing the two fluids in the event of a pressure shock

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Anders M Lyhne is responsible for the Alfa Laval Unique Mixproof, Unique Single Seat Valves and Safety Valves and automation solutions. Anders coordinates cross-functional collaboration to ensure the commercial readiness and successful launch of new valves, focusing on total cost of ownership and on optimizing comprehensive valve solutions to meet customer demands. With more than a decade of experience in fluid handling, pumps and valves, Anders brings with him extensive technical knowledge about system integration and optimization. He holds a university degree in Mechanical Engineering and a EBA.



Figure 3. Demand for aseptically processed products is on the rise.

Interested in learning more?

The Alfa Laval Aseptic Mixproof Valve is the newest addition to the company's comprehensive range of valves for virtually any hygienic and aseptic processing requirement. To learn more about the Alfa Laval Unique Mixproof Aseptic Valve, visit www.alfalaval.com/products/fluid-handling/valves/Double-seat-valves/aseptic-mixproof



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