



Doing more with less

– Get water smart with the new ThinkTop



May 2022



Water scarcity, rocketing water costs and strict regulation of water consumption require the food and beverage industry to look for new ways to improve water efficiency. While water reservoirs are emptying in many parts of the world, industries increasingly recognize water efficiency as a strategic priority on par with energy efficiency and reduced carbon footprint.

Being a water and energy smart company provides several benefits. First of all, it ensures license to operate in today's world and the increasing concern about responsible production and consumption. Secondly, efficiency gains support companies' growth strategies, allowing plants to do more with less to serve a fast-growing world population with sustainable foods. Finally, resource savings go hand in hand with cost savings to create competitive edge in the marketplace.

Following the UN's 2030 Agenda for Sustainable Development, environmental impact and water conservation have become integral in sustainable business strategies for companies.



Optimize™

by Alfa Laval






Becoming water smart the Optimize™ way

Sustainable manufacturing begins with optimized processes. By making every process step as reliable and efficient as possible. By eliminating wasteful handling of water, energy and product. That is why Alfa Laval introduces Optimize™, a proactive and systematic approach to water and energy management.

Optimize™ accelerates sustainability efforts by enhancing existing processes and reducing waste. Optimize™ identifies critical hot spots, supports decisions on the optimum upgrade strategy and paves the way for hassle-free upgrades with no operational risk or costly downtime.

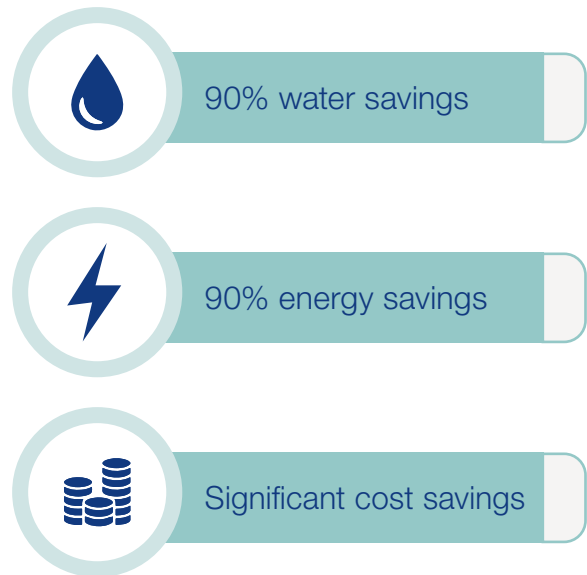
Creating and implementing the optimum upgrade strategy is a win-win for everybody – from production management to finance and sustainability.

 <p>Financial</p> <ul style="list-style-type: none"> • Reduced energy and water costs • Low risk investment and short pay-back time 	 <p>Operational</p> <ul style="list-style-type: none"> • Reliable operations • Roadmap for continuous improvements • Consistent approach and benchmark • Low failure rates • High uptime • Proactive approach to maintenance and upgrades 	 <p>Sustainability</p> <ul style="list-style-type: none"> • Improved water efficiency • Reduced CO₂ emissions • Leadership in sustainable production • Meet consumer expectations
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Optimize™ CIP

When going for optimized water and energy efficiency, Cleaning In Place (CIP) is a good place to start. On average, 60% of the water consumption and 20% of the energy consumption at a food and beverage plant is used for CIP. Hence, the savings potential is big when replacing legacy components with next generation technology.

One example is the new ThinkTop by Alfa Laval. When mounted on mixproof or drain valves, the ingenious ThinkTop cuts water consumption by up to 90%. The savings on water translate directly into equally large savings on energy and costs for water heating and wastewater treatment. A simple and sustainable upgrade that pays back in just 1–2 years and promises a long and reliable service life.





Revolutionize water efficiency

Imagine saving millions of litres of water and reducing the annual cost of energy and cleaning agents used for CIP. Optimze™ helps industries realize these savings without compromising product hygiene or safety.

Over the past decade, many processing plants have optimized the time it takes to perform a cleaning cycle of mixproof and drain valves. Despite the effort, the mixproof cleaning cycle typically takes in average five seconds and uses up to five litres of water per seat lift. For drain valve cleaning cycle it is common to do a fast on/off valve activation which typically takes plus one second and uses up to nine litres of water per main valve lift.

With the pulse and burst seat cleaning function, the Alfa Laval ThinkTop V50 and V70 cuts the cleaning cycle on each unit to less than one second and reduces the amount of water per unit to less than one litre, while achieving the same cleaning quality. Compared to a PLC timer-based seat lift, the burst clean of mixproof valves saves up to 90%. And for the pulse clean of drain valves, the water savings are even bigger, up to 95% of the previous consumption, and with every cleaning cycle.

Let's take an example from the real world
 A European dairy upgraded 66 valves with ThinkTop V70 and achieved the following savings:

- 70,000 kWh PER YEAR SAVED IN LIQUID HEATING
- 1,400 m³ OF WATER SAVINGS EVERY YEAR
- 16 tonnes LOWER ANNUAL CO₂ EMISSIONS
- < 2 years PAYBACK PERIOD

Burst seat cleaning explained

(for mixproof valves)

- Burst seat clean is a genuine and independent valve position-based feature, not using any type of timer.
- In less than a second, high shear force of water flow effectively clean the mixproof valve, removing all residuals from seat surfaces and safeguarding process hygiene.
- ThinkTop V70, equipped with two or three solenoid valves, controls the burst clean function and validates that valve cleaning has been completed with acknowledgment to the PLC system.



Mixproof valve with ThinkTop® V70

 Watch video to see how it works

Pulse seat cleaning explained

(for drain valves)

- Burst seat clean is a genuine and independent valve position-based feature, not using any type of timer.
- In less than a second, an intensive water pulse through the gap between the valve house and valve seat, creating maximum turbulent flow and leaving the valve spotless.
- ThinkTop V70 and V50, equipped with one solenoid valve, control the pulse clean function and validates that valve cleaning has been completed with acknowledgment to the PLC system.



Drain valve with ThinkTop® V50

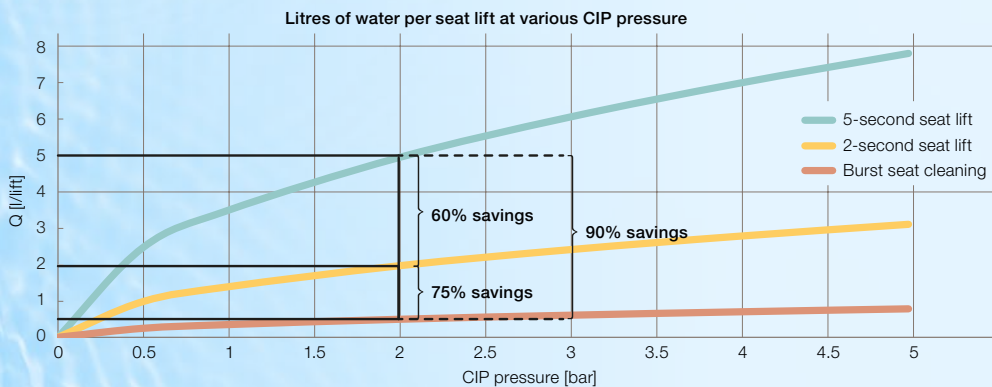
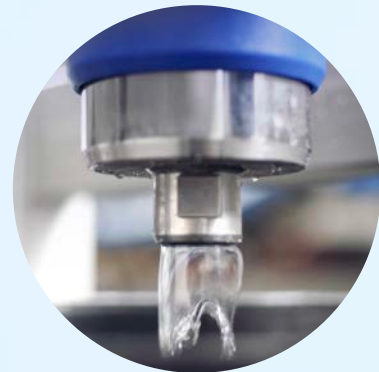
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First time ever:

Significant savings on CIP water for drain valves

Drain valves comprise up to 20% of all valves in a typical processing plant. Cleaning them is costly, difficult to commission and time-consuming to clean and increases the risk of pressure shock.

The new ThinkTop V50 and V70 are compensating and enabling pulse seat cleaning addresses all these issues without compromising hygiene. It quickly and effectively leaves the drain valves spotless while delivering water savings of up to 95%.



Burst seat cleaning reduces CIP liquid costs by up to 90%. A single burst, or one seat lift, takes less than a second, but is sufficient to clean low fat content product from the valve.

Optimize™ roadmap for easy and risk-free upgrades

With the Optimize™ upgrade strategy in hand, a step-by-step implementation plan for the upgrades makes the implementation easy and with no operational risk.

In the case of ThinkTop upgrades from classic to V70 or V50, the upgrade can be completed within just 45 minutes per top. The new ThinkTop is directly interchangeable with the previous ThinkTop and fits all Alfa Laval valves.

1.5 million THINKTOP CLASSIC
OPERATING WORLDWIDE

18 years OF LEARNING AND
CONTINUOUS UPGRADES

Close dialogue WITH OUR
INDUSTRY PARTNERS

Sustainable, reliable,
unbeatable





In conclusion

Significant savings in water, energy and cleaning agents have a positive impact on the climate and resource footprint of the plant and on plant profitability. Using less water to achieve the same high, hygienic standard translates into big savings on electricity consumption, CO₂ emissions and cleaning agents. It also means less effluent for treatment, reducing life cycle costs significantly.

Optimize™ enables the industry to become water smart. With the new ThinkTop that revolutionizes CIP cleaning, the journey has started. More will follow with upgrade possibilities for tank cleaning, pumps, flow management and agitators as well as new technology for condition-based maintenance.



For more information about Optimize™



For more information about the new ThinkTop visit the ThinkTop site

This is Alfa Laval

Alfa Laval is active in the areas of Energy, Marine, and Food & Water, offering its expertise, products, and service to a wide range of industries in some 100 countries. The company is committed to optimizing processes, creating responsible growth, and driving progress – always going the extra mile to support customers in achieving their business goals and sustainability targets.

Alfa Laval's innovative technologies are dedicated to purifying, refining, and reusing materials, promoting more responsible use of natural resources. They contribute to improved energy efficiency and heat recovery, better water treatment, and reduced emissions. Thereby, Alfa Laval is not only accelerating success for its customers, but also for people and the planet. Making the world better, every day. It's all about Advancing better™.

How to contact Alfa Laval

Contact details for all countries are continually updated on our web site. Please visit www.alfalaval.com to access the information.