



# Reduce your water consumption for tank cleaning by up to 70%

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# Reduce your water consumption for tank cleaning by up to 70%

The saying “Less is more” rings true for efficient tank cleaning. Using less water and less energy can result in more available production time. This is good news for dairy producers around the globe dealing with tighter regulations for energy-efficient production. Alfa Laval has devoted substantial R&D resources to energy efficiency, offering a wide range of tank cleaning solutions to help dairy producers meet tougher requirements while optimizing the cost per litre of finished product.

Here are three steps to help you get more out of your tank cleaning technology.

## Step 1: Modernize your tank cleaning technology

Most tanks in the dairy industry today are cleaned using a simple static spray ball (Image 1), which uses the flow of media and time as primary cleaning parameters. But switching to a rotary jet head (Image 2) – especially in tanks that process viscous products such as cream or yoghurt – can save time and money. Cleaning time can be reduced on average by more than 30% and water consumption by up to 70%. All told, cleaning costs can be cut by 60% (Table 1).

Modernizing your tank cleaning equipment minimizes Cleaning-In-Place (CIP) time, costs and staffing requirements. Government subsidies that encourage the use of more resource-efficient technologies may be available to help finance plant modernization. Modernization also maximizes productivity and optimizes manufacturing costs, which can contribute to the bottom line or be reinvested in further modernization, making it a self-sustaining program that optimizes operations.

Table 1. Comparison of running costs

Parameters	Water consumption	Average time for CIP cycle	Average cost for CIP cycle
Static spray ball*	11 m <sup>3</sup> /CIP	33 minutes	7 €
Rotary jet head	3.5 m <sup>3</sup> /CIP	23 minutes	3 €
Total saving	7,5 m <sup>3</sup> /CIP	10 minutes	4 €

\* Based on the use of the Alfa Laval LKRK Static Spray Ball and the Alfa Laval TJ20G Rotary Jet Head (4 × 4.6), and return on investment calculated based on the use of a 50-m<sup>3</sup> cream tank.

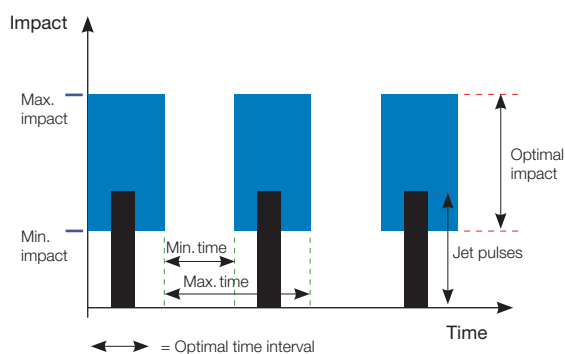
## Step 2: Optimize production costs and safeguard quality and reliability

Unlike a static spray ball, a rotary jet head moves in three-dimensional patterns and uses impingement as the primary cleaning parameter. To ensure reliable and effective cleaning performance, an Alfa Laval Rotacheck+ sensor (Image 3) can be used to monitor this three-dimensional rotation by measuring the impact force from the jet and the time in between impacts.

By monitoring the movement of the jet head, the Alfa Laval Rotacheck+ sensor ensures that the jets hit the tank wall with the right amount of applied force or impact and within the acceptable interval of time (Figure 1).

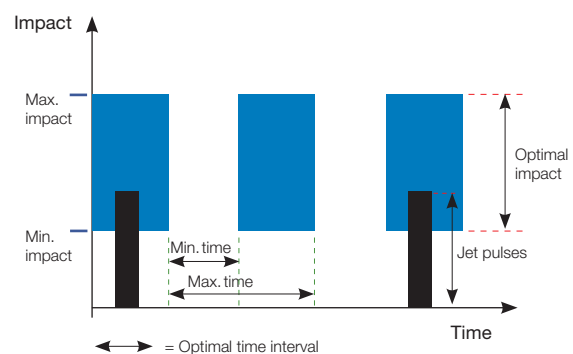
Using patented Alfa Laval teach-in technology, the sensor automatically determines the acceptable limits for these criteria during the initial cleaning run using the installed tank cleaning machine. In contrast, when the rotary jet head is not operating properly, the Alfa Laval Rotacheck+ recognizes that the impact, or interval of time, or both, do not fall within the acceptable limits. It then immediately alerts the operator to remedy the situation (Figure 2).

Figure 1 & 2. Alfa Laval Rotacheck+ working principle



**Figure 1.**

Alfa Laval Rotacheck+ measurements indicate that the jet impact pulse falls within the optimal range and hit the tank wall within the optimal time intervals.



**Figure 2.**

Here the Alfa Laval Rotacheck+ shows that the frequency of the jet impact pulse falls outside the acceptable maximum time interval, alerting the operator that attention is required.

Monitoring tank cleaning performance with an intelligent Alfa Laval Rotacheck+ sensor (Image 3) enables reproducible results for Cleaning-in-Place (CIP). Connecting the digital outputs from the Alfa Laval Rotacheck+ sensor

to the process control system makes it possible to automate the CIP process completely. No manual interference, such as conducting a visual inspection after completion of each cleaning cycle, is required.

## Step 3: Be prepared for increasingly volatile and competitive markets

Dairy producers who continually work on making their businesses more efficient stand to gain competitive advantage. Introducing rotary jet head technology and an intelligent sensor to monitor cleaning performance helps minimize CIP costs and maximize production time. With a cost-effective, fully automated cleaning process readily available, dairy producers can be assured that CIP operations are clean and lean. In an increasingly competitive business environment, tank cleaning modernization proves to be less costly way to deliver more quality product to market.

Image 2. Alfa Laval TJ20G Rotary Jet Head



Rotary jet head use the high impact and low flow of cleaning media to clean the tank.

Image 1. Alfa Laval LKPK Static Spray Balls



Static spray ball the low impact and high flow of cleaning media combined with the force of gravity to clean the tank.

Image 3. Alfa Laval Rotacheck+



Alfa Laval Rotacheck+ validate the Cleaning-in-Place (CIP) process of virtually any rotary jet heads machine.

For more information, contact your Alfa Laval representative or visit [www.alfalaval.com](http://www.alfalaval.com)

## About Alfa Laval

Alfa Laval is a leading global provider of specialized products and engineered solutions that help customers heat, cool, separate and transport products such as oil, water, chemicals, beverages, foodstuffs, starch and pharmaceuticals.

Alfa Laval's worldwide organization of 16,300 employees works closely with customers in 100 countries. Listed on the NASDAQ OMX Nordic Exchange, Alfa Laval posted annual sales of approximately 3,45 BEUR in 2013.

### Claus Brandt Global Portfolio Manager, Tank Equipment



Claus Brandt is global responsible for the Alfa Laval tank equipment portfolio. Claus has a technical background with 10 years of experience from the sanitary process industry holding positions as specialist, team manager and technical project manager. Through his background Claus today has an in-depth technical knowledge which he has used as a foundation in Alfa Laval to further develop a world leading portfolio within tank equipment ranging from, cleaning equipment, agitators & mixers, as well as instrumentation, covers, and accessories needed in or around a hygienic tank. Contact: [claus.brandt@alfalaval.com](mailto:claus.brandt@alfalaval.com)

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