



## Prolonging the life of your coolants

Solutions for cleaning of water based coolants



# Clean coolants save more than you think

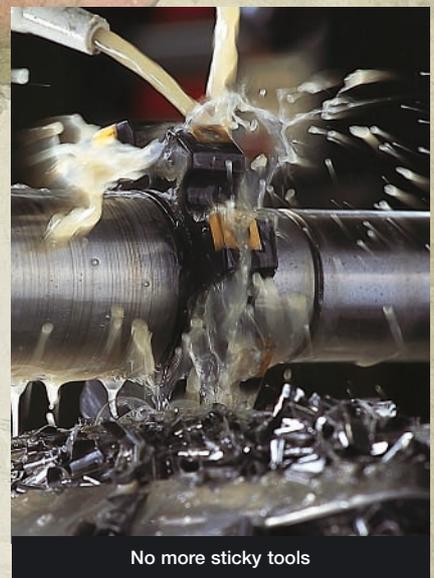
For the metalworking industry, coolants are a major expense.



Better product quality



Less downtime



No more sticky tools



Reduced allergic reactions



Reduced tool wear



Odour elimination



Some are obvious: Replacing them – a messy and time-consuming task. Disposing of them – a continually rising expense in the face of today’s environmental regulations.

But dirty coolants also incur other less obvious but no less expensive costs. For example, tramp oil and solid particles in coolant can cause increased tool wear, quality problems during later processing, and health problems for your personnel.

In short, it’s well worth the effort to take steps to keep your coolants clean. And with Alfa Laval’s centrifugal separators, it’s not that much of an effort to begin with.



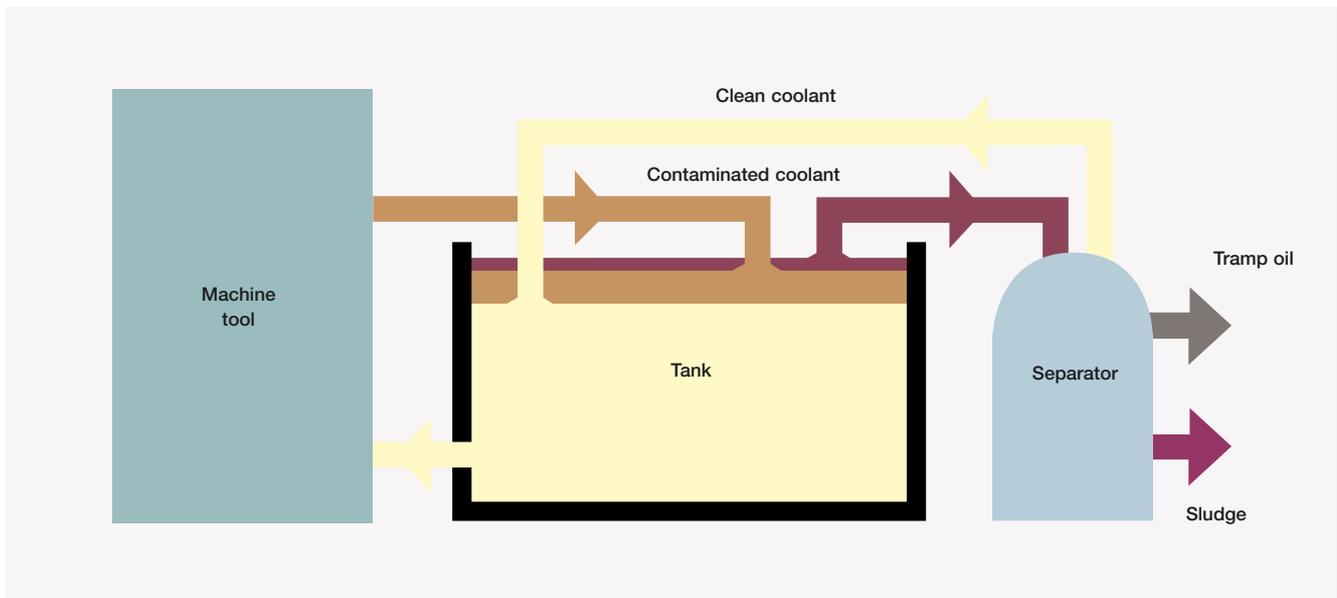
# The centrifugal separator removes both particles and tramp oil – during operation!

The time-tested principles of the centrifugal separator effectively remove contaminants from coolants.

The coolant is pumped up from the tank and centrifuged in the separator bowl at speeds of 6,000–10,000 rpm. Centrifugal force pushes the solid particles out to the periphery of the disc stack. There they become trapped on the inner surface of the separator bowl, while the lighter oil is forced toward the centre, where it can then be drawn off.

Unlike filters, skimmers, and lamella separators, a centrifugal separator efficiently removes both tramp oil and particles. Due to its high rotation speed, the centrifugal separator cleans up to 10,000 times more effectively than equipment based on gravity alone.

Since the centrifugal separator is installed in a bypass flow, cleaning can proceed both during production and when the equipment is idle.



The separator operates continuously and requires no alterations to the existing installation.



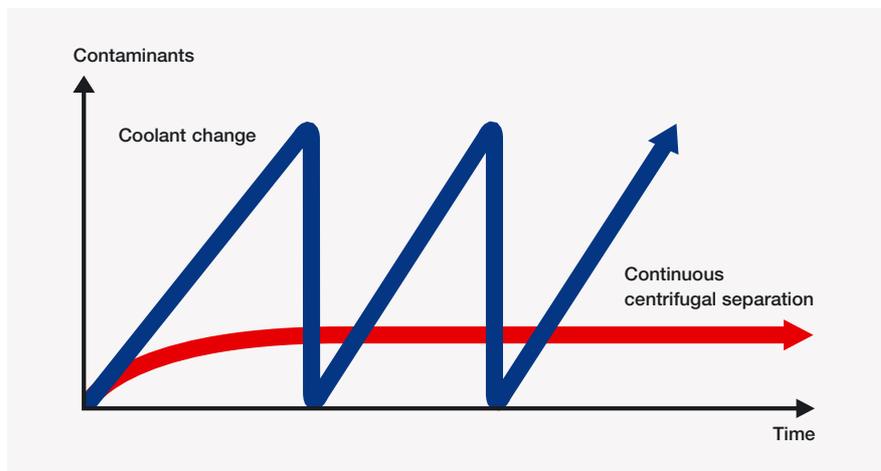
The choice of separator is governed mainly by the volume of the tank and the type of machining being performed. Alfa Laval's product range includes some ten separators, from the compact and mobile Alfie model to stationary models with a larger capacity.

# Reducing costs by extending coolant life

Some of our clients who have installed a centrifugal separator no longer need to change coolants at all, or find they need only replace coolant every other year.

They need only top off the tank with fresh coolant to compensate for evaporation and normal carry out on the end product.

Under normal circumstances, you can assume that a centrifugal separator will extend your coolant's working life by at least three to five times. And you save money not only because you need to buy less coolant, but you need to dispose of less, too.



The blue sawtooth line shows how coolant that is not cleaned becomes progressively more contaminated to the point where total replacement becomes necessary. This will occur not once, but repeatedly. The red curve shows how a centrifugal separator maintains a constant low level of contaminants.



# Reduces tool wear and improves processing quality

The centrifugal separator effectively removes even fine metal shavings and particles (down to 1  $\mu\text{m}$ ) from the coolant, resulting in reduced tool wear, fewer rejects, and an overall improvement in quality.

Tramp oil on tools and the components being processed usually decreases processing precision and can also cause problems in later stages of production, such as painting.

This problem simply disappears if a centrifugal separator is used. Since the coolant is kept clean, tramp oil and particles cannot adhere to surfaces. This simplifies clean-up and, more importantly, produces better quality results.



# An end to unpleasant odours and health problems

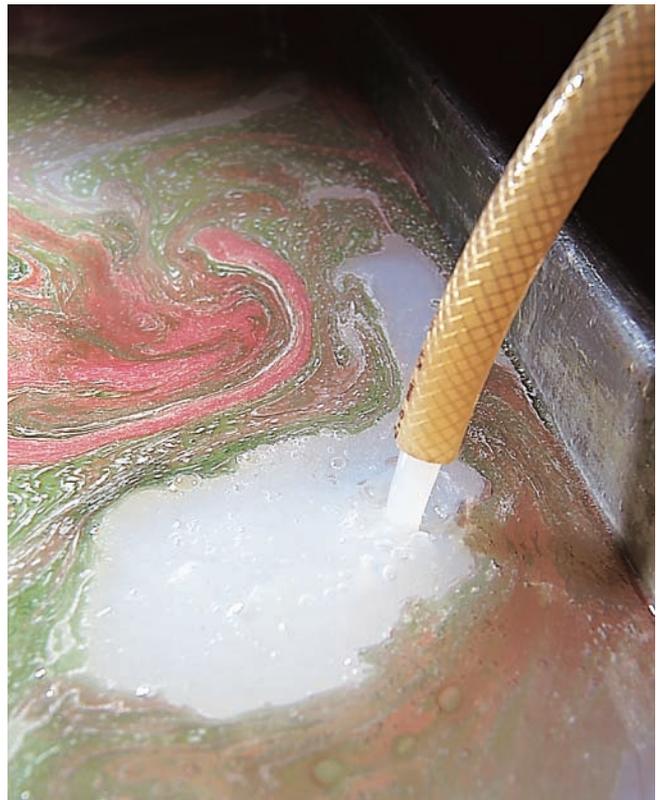
The oil that leaks out during machining is flushed away by the coolant and ends up in the tank. There it sits like a lid on the surface of the coolant, creating ideal conditions for the growth of anaerobic bacteria – bacteria that do not require oxygen.

The unpleasant odour that sometimes develops in engineering workshops results from the hydrogen sulfide gas that's formed when these bacteria have been allowed to multiply freely in the tank. This problem is eliminated by a centrifugal separator, since the tramp oil is drawn off and pumped into a collection tank.

Some people develop allergies or skin problems when they come into contact with various types of oils, which means that the separator's ability to remove tramp oil can lead to significantly improved health for machine operators.



The contaminated coolant is skimmed from the surface.



After cleaning, the coolant is returned to the tank.

# A solution to stricter environmental legislation

Environmental legislation is continuously becoming more stringent and the costs for disposing of contaminated coolants will only increase in the future.

Beyond saving on disposal costs, many companies are gaining a competitive edge by voluntarily introducing treatment programs aimed at minimizing the environmental impact of their own production.

Installation of a centrifugal separator is an excellent example of such a proactive environmental measure, since it dramatically reduces the volume of waste coolant that must be sent to a disposal facility.

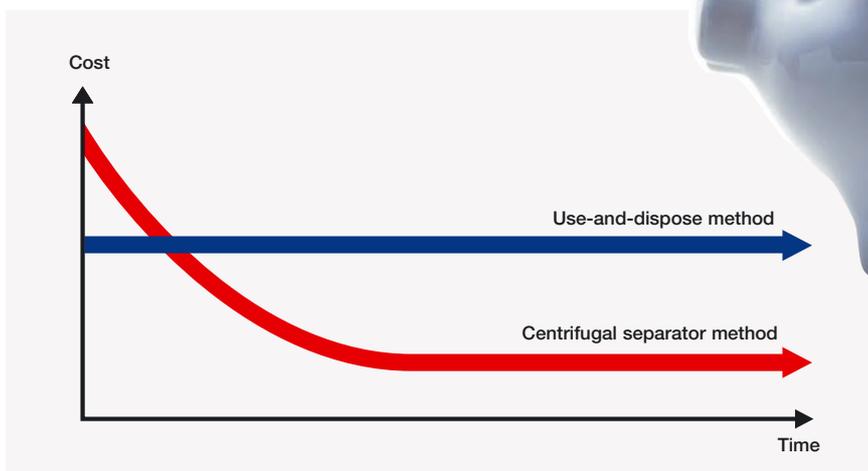


# A centrifugal separator can pay for itself in just one year

A centrifugal separator is invariably a profitable investment. In addition to lower costs for the purchase and disposal of coolants, tool wear is reduced, the number of rejects decreases and components are cleaner. And that eliminates the need to remove tramp oil during later processing stages.

The number of production stop-pages required for replacing coolant and for cleaning tanks is also dramatically reduced.

In most cases, the return on investment is less than one year.



The centrifugal separator quickly becomes profitable, by reducing the costs of purchasing and disposal of coolants, and as a result of less tool wear and a lower production rejects rate.

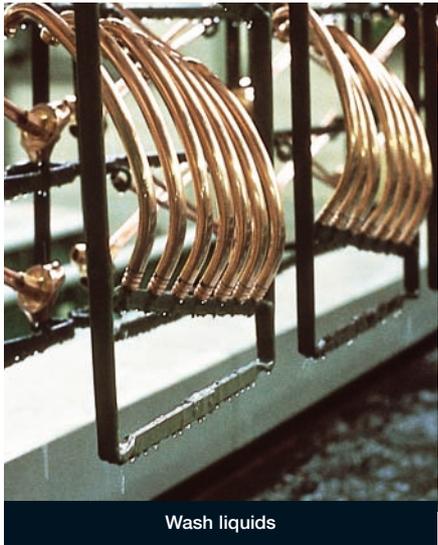
# We supply separators for most industrial fluids

The centrifugal separator was invented more than 100 years ago by Gustaf de Laval, one of the founders of Alfa Laval.

The separator was initially used exclusively in the food processing industry, but the technology soon became an essential part of many other industrial applications.

Today, Alfa Laval offers an extensive range of separators for cleaning industrial fluids, everything from coolants and wash liquids to oils, other emulsions and paint waste.

If you would like to know more about our products and how we as a supplier can help you keep your processes in operation, please do not hesitate to call or write us today.



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

