



## Just-in-time service raises profitability

Alfa Laval Performance Audit Plate Heat Exchanger



# Service your plate heat exchangers only when you need to

Fouling of heat exchangers in processing industries is a chronic operating problem. Costs have been estimated as 0.25% of the GNP of industrialized countries.

Source: Heat Exchanger Fouling and Cleaning Conference VIII.

The best time to service your plate heat exchangers is when maintenance is actually required. This way, you avoid fouling-related problems that can eat away at your profits and the expense of performing routine maintenance when it isn't needed.

Alfa Laval Performance Audit Plate Heat Exchanger let you know when service is needed based on the actual internal condition of your plate heat exchangers. By servicing your plate heat exchangers at the right time, you ensure ongoing productivity and profitability.

## Increase profitability

Don't wait for visible signs of disrepair before servicing your plate heat exchangers. Fouling can lower the efficiency of your plate heat exchangers and increase energy losses.

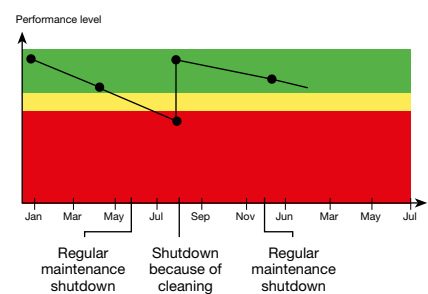
By cleaning before fouling affects plate heat exchanger performance, you can save money on your energy bill, prevent unplanned shutdowns and increase productivity and profitability.

## Reduce maintenance expenses

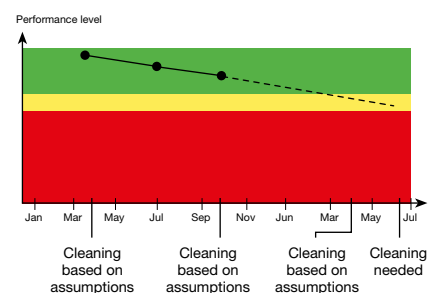
On the other hand, if you clean your plate heat exchangers too often, you may end up lowering productivity. Some plate heat exchangers can operate efficiently for months before cleaning is necessary. So cleaning your plate heat exchangers on a regular basis may waste valuable production time and money.

By cleaning only when required, you can reduce cleaning fluid costs, shrink your environmental footprint and increase profitability.

## Waiting too long between cleanings



## Cleaning too often



## Huge energy savings

Consider the potential energy loss for a large plate heat exchanger\* that operates under fouling conditions where:

Average daily flow = 1000 m<sup>3</sup>/h

Average heat transfer = 25,000 kW

Assumed level of fouling = 15% loss of energy transfer

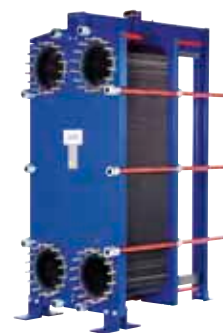
It may take up to two months to remedy the problem. Based on the price of 5 euro cents per kWh and 60 days of operating with energy losses:

$15\% \times 25,000 \text{ kW} = 3750 \text{ kW} \times 24 \text{ h} = 90,000 \text{ kWh /day}$

$0.05 \text{ euro/kWh} \times 90,000 \text{ kWh} \times 60 \text{ days} = \mathbf{270,000 \text{ €}}$

The potential savings amounts to approximately €270,000 for a single heat exchanger. No small sum when these savings are applied to multiple heat exchangers.

\* Based on an Alfa Laval M30 plate heat exchanger with a 300-mm inlet diameter.



Alfa Laval M30 plate heat exchanger

# Performance Audit benefits

- Optimize heat exchanger performance
- Increase uptime
- Increase heat recovery
- Increase production capacity
- Ensure product quality
- Reduce energy consumption and costs



## How Performance Audit works

The Performance Audit measurement equipment consists of a portable logger with four temperature gauges and a flow gauge. By affixing the gauges on the outside of your heat exchanger pipes, an authorized Alfa Laval engineer collects data, including temperature differentials and flow rate, on the actual operating condition of your plate heat exchanger. This usually requires one hour per unit and does not disrupt operations. If you already have this data on hand, simply call us and we can run your data through our program and produce a report for your use.



Back at the office, our engineer runs the data through our proven thermal analysis software program that uses the performance benchmarks for every Alfa Laval plate heat exchanger to derive your heat exchanger's optimal heat load.

The report compares your heat exchanger's performance to benchmark performance and indicates your plate heat exchanger performance using easy-to-read color codes:



Color	Performance level	Action
● Green	High	No action required
● Yellow	Medium	Time to plan cleaning
● Red	Low	Schedule cleaning as soon as possible

With this information, you can decide when to service your plate heat exchangers based on actual service needs.

## Performance Audit Plate Heat Exchanger packages

Alfa Laval's predictive maintenance solutions have been rigorously tested, widely employed and well documented for their ability to reduce risk.

Two convenient packages are available. Whichever one you choose, your needs and application determine the number of plate heat exchanger analyses and the maintenance solutions involved.

We recommend a solution based on our years of experience, but you decide the service options – with no obligation to purchase more.

Our Inside Information package includes:

- A specified number of measurements
- A report on your plate heat exchanger performance
- Free use of data from the report

Our Inside Protection package includes:

- A specified number of measurements
- A choice among the following:
  - Alfa Laval Cleaning Services
  - Alfa Laval Reconditioning
  - Or any combination of the above

Alfa Laval also offers Performance Agreements customized to your needs.

## **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, foodstuffs, 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)