



## High speed separators cut operating costs for French engine builder

Française de Mécanique, France

Case story: Separation systems

French car engine producer Française de Mécanique in Northern France makes engines for Peugeot, Citroën and Renault – and soon for BMW as well. Thanks to a new cleaning system incorporating Alfa Laval centrifugal separators, the wash liquids used in the production process last for seven months, compared with 2–10 days using the old cleaning system.

Technical services at Française de Mécanique are dedicated to producing the cleanest possible engine parts for some of the world's biggest players in the automobile industry. "We are one of the most productive motor manufacturers in the world, with production in 2003 reaching over 10,000 engines in just one day," says André Lefebvre, responsible for cleaning and industrial liquids processes at the Française de Mécanique factory based in Douvrin, just outside Lille in northern France.

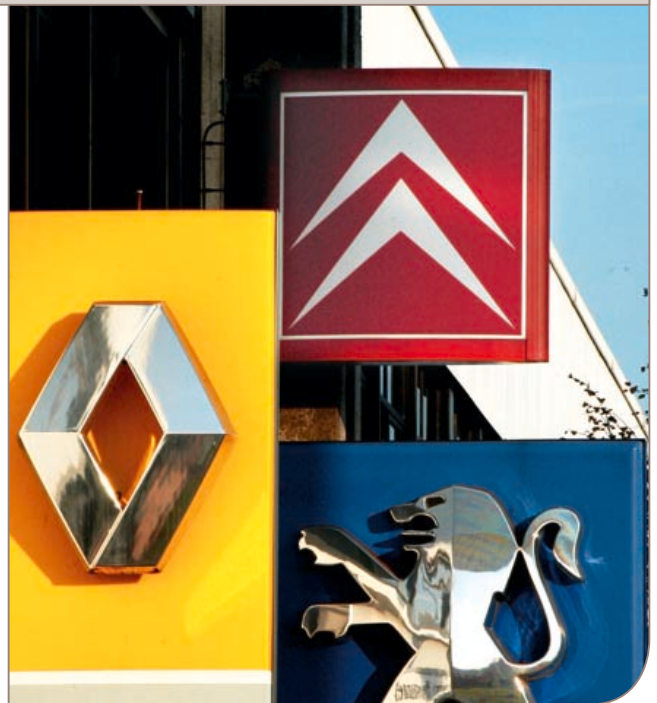
Created in 1969, Française de Mécanique had a turnover of over EUR 2,000 million in 2003. The company employs more than 4,500 people at its 150 hectare site, and the lease on the premises is held jointly by PSA, Peugeot, Citroën and Renault.

### Solution based on centrifugal separation

Française de Mécanique receives moulded aluminium parts which undergo a process of precision machining. Washing is carried out between each stage as well as final washing before assembly. "The wash liquid is contaminated with traces of



André Lefebvre, responsible for cleaning and industrial liquids processes at the Douvrin plant.



Française de Mécanique builds engines for Peugeot, Citroën and Renault at its plant near Lille in northern France.

cutting fluid, tramp oil, hydraulic oil, suspended solids, and mineral salts and chloride. These levels were building up to an unacceptable point," explains Lefebvre.

"The first solution to the problem was to change the water supply," Lefebvre continues. "The team also added a filtration unit, which eliminated the salts and chloride but the parts still had tramp oil on them, and the washing liquid still contained particles of metal smaller than 30 microns.

### Coalescence was not the solution

"We tried to remove the oil by a process of coalescence, but this was not successful. So we decided to look for a solution using a centrifugal separator, and called upon our partner Ecofluide to help us come up with a solution," says Lefebvre.

Valerie Bodin, an Ecofluide engineer responsible for the installation explains that Ecofluide's involvement in the project with Française de Mécanique began in November 2001. "It started



Valerie Bodin, an Ecofluide engineer responsible for the centralised wash liquid cleaning installation.

with the supply of a trial model using an Alfa Laval high speed separator on one buffer tank, and in July 2002, we supplied four trial models connected to four buffer tanks.”

By this time, nearly all the washing process had been centralised, including the water supply via an osmosis process for improved water quality. Accordingly, Eric Dankowski, who runs the Française de Mécanique installation, began to consider centralising the centrifugal separators as well.

### Centralisation means simplified operation

In March 2003, Française de Mécanique together with Alfa Laval and Ecofluide devised a solution to centralise the separators, and the system went on-line in September of that year. Ecofluide installed a centralised unit containing three Alfa Laval separators and space for another, with a tank for continual pretreatment of soluble oils. The separators run 24 hours a day, treating the fluid from five interconnected buffer tanks.

Eric Dankowski is pleased by the results: “Without the Alfa Laval separators the contamination in a buffer tank reaches the critical point after 2–10 days and 30% of the volume has to be changed to decrease contamination.



Eric Dankowski, who runs the installation, is very satisfied with its performance.



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Now we are changing it every seven months and I think we can easily make it to a year,” he says. This has dramatically reduced the consumption of wash liquid and the amount of waste produced, with consequent environmental benefits.

“Before we centralised, we had to do maintenance on each machine every 2,000 hours, the machines were off-line for a whole day and the pollution would increase in the tank. Now, we can do the necessary maintenance without the system going off-line, while maintaining the level of cleanness,” he explains.

### Far-reaching guarantees

“Ecofluide and Alfa Laval have guaranteed two machines will be working permanently at any one time,” explains Dankowski. “Two operational machines is the minimum we must have to handle the liquid that needs treating and the third machine is the additional security for when maintenance needs to be carried out,” he adds.

“We’re very satisfied with the installation, and so far, we haven’t had a single problem,” says Dankowski. “Each part coming out of our factory is clean and that is not just visual, it’s fundamentally important.”

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### 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)