




A dry vacuum pump for an exceptional juice

Did you know that vacuum technology is used for degassing/defoaming purposes in the manufacture of fruit juices?

If you've ever squeezed fresh fruit at home in order to make your own juice, you've probably noticed that some fruits, like strawberries or raspberries, generate more "foam" than liquid. On an industrial scale, the juices must be "degassed" (an operation that's actually more akin to defoaming) in order to allow for bottling.

In 2019, at a French food industry trade fair, we met with some representative from the Alain Milliat Company. This company, located in the Drôme, produces "exceptional fruit juices"; an operation on a human scale, which, in the past, was supplied with fruit from the family farm and eventually from local markets. Alain Milliat has successfully positioned itself in the niche market for high-end juices. Distributed in France and booming internationally (particularly in Japan, where its biggest seller is grape juice), the company

relies on a network of delicatessens, wine merchants and Relais & Châteaux hotels and gourmet restaurants.

The production workshop, built in 2013 and highly automated, is where all processing of the juices takes place: from washing the fruit to bottling the finished product. Gilles Eparvier, the company's maintenance manager, with whom we spoke at the show, told us that he's very satisfied with the production process which meets the high standards of quality and hygiene required for their juices. Aware of environmental issues, the Alain Milliat company was looking for a less water-intensive vacuum solution for the juice deaerator.

The degassing step takes place between the first and second pasteurization stages. A liquid ring pump was used for this operation.



Gilles Eparvier (Maintenance Manager - Alain Milliat) and Pierre Lantheaume (BDM - Leybold)

This type of pump is inexpensive to purchase, but has a very high cost of ownership in terms of electrical power and water, requiring approximately 1,500m³ of water per year, plus the cost of discharge and reprocessing or several thousand euros spent each year on a single vacuum pump.

Leybold proposed the CLAWVAC to Mr. Eparvier, which is an oil free air-cooled dry vacuum pump. The rotating Claw mechanism completely eliminates water consumption, and avoids any risk of contaminating the process. The Stainless Steel claws are highly resistant to the corrosion created by high levels of humidity, in addition to the acidity from the fruit.

After several months of use, regular monitoring by Leybold teams and complete dismantling for inspection, the pump is working as expected and shows no signs of wear.

It's built to last!



CLAWVAC installed on pasteurization system - Alain Milliat

Q&A with Gilles Eparvier

Why use a liquid ring pump in this application?

We didn't really choose to do so; it was already integrated directly into the pasteurization line.

Were you thinking of replacing this pump when you went to the show in 2018?

I had come with some ideas, and replacing this pump was one of them. I was looking for a pump that uses less energy and water, but I never thought I'd be able to completely eliminate the need for water.

Why Leybold?

First of all, for the support and professionalism of Leybold's staff: they understood our needs and were able to respond to them as quickly as possible. After installing the pump, we were not left on our own, there has been a regular and close follow-up from Leybold people to make sure the pump was performing as expected.

Have you done your calculations? Was it a good investment?

It was indeed an investment, but it'll pay for itself in less than a year. More importantly, we've drastically reduced our water consumption, and we now only use it in operations where it's really necessary, such as washing the fruit, for example.



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