

Press release

Alfa Laval launches innovative once through steam generator for modular thermal energy storage systems

Heat exchanger manufacturer Alfa Laval recently launched its once through steam generator, developed specifically for use in compact, molten salt energy storage applications. It combines the functionality of an economizer, evaporator, superheater, and steam drum in a single, fully integrated shell – delivering high thermal performance, excellent reliability, and a minimal installation footprint.

Lund, Sweden, November 3 2025

Steam generation in modular power-to-heat systems

Power-to-heat systems have the potential to significantly reduce CO₂ emissions from process industries. It enables the use of renewable solar and wind energy for heating purposes instead of burning fossil fuels. When available, renewable energy is used to generate heat, which is stored in molten salt and later converted into steam when needed in the production process.

Small-scale, modular power-to-heat systems that can be installed locally at plant sites are particularly promising, as they require minimal CAPEX and installation work. Alfa Laval's new once through steam generators are tailored to this type of system. The highly compact design enables system builders to fit a complete, highly efficient steam generator in a very small space and ensures reliable steam generation even at loads as low as 5%.

High operational reliability

"Efficient, compact steam generation is essential for the viability of small-scale power-to-heat storage," says Gregory Derderian, Energy Storage Business Developer at Alfa Laval. "Our once through steam generators offer a highly compact, all-in-one solution with high performance and outstanding reliability under cyclic operating conditions. The spiral-wound design not only maximizes the heat transfer surface, but also absorbs thermal expansion, thereby minimizing mechanical stress."

Low-load operation

The Alfa Laval once through steam generator also features a unique, integrated water separation and recirculation system that enables stable operation at loads as low as 5%. It also helps minimize the hold-up volume, which in turn reduces response times and enhances system flexibility.

To learn more about Alfa Laval once through steam generators, please visit:

[Once through steam generators | Alfa Laval](#)

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Alfa Laval once through steam generator

This is Alfa Laval

The ability to make the most of what we have is more important than ever. Together with our customers, we're innovating the industries that society depends on and creating lasting positive impact. We're set on helping billions of people to get the energy, food, and clean water they need. And, at the same time, we're decarbonizing the marine fleet that's the backbone of global trade.

We pioneer technologies and solutions that free our customers to unlock the true potential of resources. As our customers' businesses grow stronger, the goal of a truly sustainable world edges closer. The company is committed to optimizing processes, creating responsible growth, and driving progress to support customers in achieving their business goals and sustainability targets. Together, we're pioneering positive impact.

Alfa Laval was founded 140 years ago, has customers in 100 countries, employs more than 22,300 people, and annual sales were SEK 66.9 billion (5.8 BEUR) in 2024. The company is listed on Nasdaq Stockholm.

www.alfalaval.com

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