

Future-proofing cooling systems in a changing climate

As global temperatures continue to rise, industries worldwide are facing increasing challenges in maintaining sufficient cooling of their processes. One of the world's largest oil-producing and exporting companies, based in Saudi Arabia, is no exception. Higher seawater temperatures have led to increased operation cost, reduced production and greater energy consumption .





Searching for a sustainable solution

With 26 Alfa Laval gasketed plate heat exchangers installed in their closed-loop cooling systems, the refinery had maintained efficient operations for years. Regular servicing kept the equipment running smoothly, but as the units neared the end of their lifecycle, the company faced a choice: should they replace ageing equipment with similar models, or was there a more sustainable, future-proof solution?

Unlocking efficiency with the new T-series

To support the refinery's decision-making process, Alfa Laval conducted an in-depth study to explore their options. This coincided with the launch of the new T-series plate heat exchangers – an innovative design that improves performance while using less titanium, reducing environmental impact without compromising quality.

Alfa Laval's new T-series heat exchangers offered significant advantages like improved heat transfer efficiency, improved pressure drop utilization and the use of thinner heat transfer plates reducing the need of titanium. By replacing their existing solution with the T-series, the refinery could remove a substantial amount of heat from the process and reduce water consumption. Maintenance would also be much easier and cheaper to perform.

Trust in proven performance

Having worked closely with Alfa Laval's service team for years, the refinery's management knew they could rely on both the quality of the equipment and the support they would receive throughout the process. Alfa Laval's ability to provide fast, reliable assistance – both during and after the installation – played a key role in their decision to move forward with the new T-series plate heat exchangers.

“We have been looking for the most sustainable way to cope with an increase in both capacity and temperature demands at our site. With Alfa Laval's support, we have found a solution that can make a difference.”

Manager at the refinery

Improved efficiency and long-term savings

By replacing 21 existing heat exchangers with 21 T-series units, the refinery could:

- Remove 41% more heat from the process with the same installation footprint.
- Reduce total cost of ownership due to higher energy efficiency and improved maintenance.
- Save 8.5 tonnes of titanium from being used in production.
- Reduce seawater consumption by 16 % per kWh of heat removed from the process.

With the implementation of the T-series, the refinery has not only secured the efficiency of its cooling system for the future but has also taken a step towards a more sustainable operation. This case clearly illustrates how industries can adapt to climate challenges while improving efficiency and reducing their environmental footprint.



Alfa Laval T-series
gasketed plate heat exchanger



Contact Alfa Laval

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Alfa Laval reserves the right to change specifications without prior notification.

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