CASE STORY

Optimizing bioethanol production with gasketed plate heat exchangers

Ethanol Energy, Czech Republic

When operation and maintenance costs of its distillation column heat exchangers began to skyrocket, bioethanol producer Ethanol Energy turned to Alfa Laval. An equipment audit revealed the heat exchanger channels were too narrow, unable to handle the fibrous liquid with high content of dried distiller grain with solubles. Replacing the old units with three Alfa Laval WideGap gasketed plate-and-frame heat exchangers enabled Ethanol Energy to maximize uptime, minimize cleaning frequency intervals and costs, and increase productivity, product quality and yield.

Ethanol Energy, the sole producer of *distillers' dried grains with solubles (DDGS) in the Czech Republic,* produces bioethanol from starch-rich corn grain. A critical process in the separation process of bioethanol production, the distillation column must deliver reliable, cost-effective performance.

No more unplanned breakdowns

Due to frequent clogging in its distillation column heat exchangers supplied by another manufacturer, Ethanol Energy asked Alfa Laval for assistance. The heat exchangers with 4.5 mm channels provided by another manufacturer were ill-equipped to handle liquids with high fibrous content. Based on extensive experience transforming agricultural by-products into bioethanol, Alfa Laval experts recommended replacing the malfunctioning units with three WideGap 200 heat exchangers. This ensures easy passage of process liquids to the distillation column – and no compromises on performance.

"Replacing the old units with Alfa Laval WideGap gasketed plate heat exchangers meant fewer service interventions, fewer unplanned breakdowns and less stress," says Ethanol Energy's technical manager. "This made it possible for us to focus on increasing productivity, product quality and yield."

More than 80% in maintenance savings

Using Alfa Laval's WideGap heat exchangers for distillation column heat transfer, Ethanol Energy reduced maintenance costs by more than 80%. Instead of pulling three heat exchangers offline for cleaning every two weeks, the bioethanol producer only needs to clean the WideGap units once every three months. This translates into 80% fewer production stops, increased uptime, and significant savings. Moreover, because the WideGap units do not require frequent opening, the gaskets are less prone to damage and therefore last longer.

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Ethanol Energy's technical manager

Rely on sound engineering and application expertise

More uptime and higher yield for its bioethanol production processes are what Ethanol Energy has gained by teaming up once again with Alfa Laval. Greater flexibility is also a big advantage, considering the bioethanol plant's mass flow rate – 12,260 kg/h (hot side) and 488,200 (cold side) with fluid condensed/vapourized at 12,260 kg/h (hot side) and zero kg/h (cold side). Versatile and highly efficient, Alfa Laval WideGap plate heat exchangers easily adapt to changing process requirements simply by adding plates to increase capacity. Dedicated to close customer collaboration, Alfa Laval is committed to supporting customers in achieving their business goals and sustainability targets through innovative solutions.

Alfa Laval WideGap

Alfa Laval WideGap gasketed plate-and-frame heat exchangers are suitable for fibrous fluids and for fluids containing coarse particles. Typical applications for Alfa Laval WideGap heat exchangers are sugar, bioethanol and pulp and paper processes. Depending on the duty, WideGap heat exchangers can be configured either with wide-wide or wide-narrow channels. This makes the units suitable for heating, cooling and interchanging duties.

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

100004828-1-EN 2111