



Compabloc increases capacity and heat recovery in US refinery

Oil refinery, USA



An oil refinery in the USA increased capacity and heat recovery in an absorber-stripper system by exchanging a set of shell-and-tube heat exchangers for two Alfa Laval Compabloc compact heat exchangers. In addition, the Compablocs' high resistance to fouling and easy cleaning has resulted in longer uptime and substantially lower maintenance costs.

Moving away from shell-and-tube heat exchangers

In the beginning of the 2010s, the management team at a US refinery decided to increase heat recovery and expand capacity in a Selexol gas-cleaning unit. This would be done by replacing a set of shell-and-tube heat exchangers operating as lean/rich interchangers with welded plate heat exchangers.

Highly fouling duty

The plant's engineering team initially decided to install two heat exchangers from one of Alfa Laval's

competitors. These heat exchangers were not optimized for the duty and had to be bypassed after a short time due to a very high pressure drop.

The gas being cleaned is gasified petcoke, containing both particulate matter and other fouling materials circulating through the system. This causes heavy fouling in heat exchangers that have not been designed to handle difficult media, and was probably the reason for the high pressure drop.

Compabloc proved to be the best solution

The plant's engineering team contacted Alfa Laval to discuss a possible solution to the problem. After analysing the operating conditions and the type of fouling involved, Alfa Laval's engineers concluded that Compabloc would be a perfect choice.

The high turbulence in a Compabloc combats fouling effectively. It also gives the heat exchanger exceptional thermal efficiency and made it possible to increase preheating of the stripper feed and expand plant capacity.

High performance and easy cleaning

Two Compabloc units were quickly delivered, installed and commissioned. Performance, both in terms of pressure drop and output temperature was stable over time and according to design specifications.

A Compabloc is designed for easy service. By opening the side panels, maintenance staff can clean all heat transfer surfaces with a waterjet. After cleaning, performance is fully restored.

Satisfied customer

The customer was very satisfied with the solution, and one year later a third Compabloc was installed to increase heat recovery and capacity even further.

Thanks to good experiences from this project, the refinery has introduced Alfa Laval technology in several other parts of the plant.

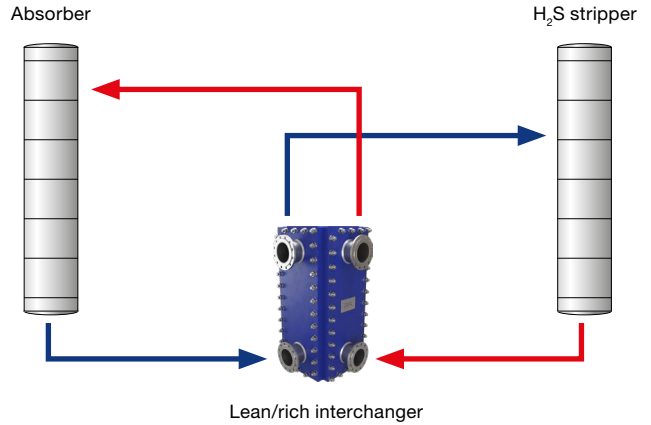
Alfa Laval and Selexol

The Selexol gas-cleaning process is used for removing acid gases from gas streams in oil & gas facilities, power plants, refineries and petrochemical plants.

There are good opportunities for heat recovery in a Selexol process, and Alfa Laval's application experts support customers around the world with solutions that increase capacity and cut operating costs.

Alfa Laval offers heat transfer solutions for Selexol systems of all sizes. Compabloc is the ideal choice for lean/rich heat exchange in small and medium sized systems, and Alfa Laval Packinox heat exchangers are perfect for larger systems.

Learn more about Alfa Laval Compabloc heat exchangers at: www.alfalaval.com/compabloc.



Exchanging a set of shell-and-tube heat exchangers for two Alfa Laval Compablocs allowed a US refinery to increase capacity and heat recovery in a Selexol gas-cleaning unit. The following year, the company installed a third Compabloc to further increase capacity in the plant.

Fast facts

The plant

A refinery in the USA.

The challenge

To recover heat in a Selexol unit used for cleaning gasified petcoke. The gas contains carryover solids and particles that cause fouling problems if the wrong type of heat exchanger is used.

The solution

To install two Alfa Laval Compablocs.

The benefits

- Expanded capacity.
- The heat exchangers are back to 100% performance after mechanical cleaning.



SmartClean

Fast and efficient flushing of fouling material



C-Weld

Superior cleaning and extended performance



XCore

Advanced design for higher pressures



ALOnsite

Qualified support at your facility

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

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