



Alfa Laval Packinox for pyrolysis gasoline hydrogenation

Standard combined feed/effluent heat exchanger

Alfa Laval Packinox's Standard Combined Feed/Effluent Heat Exchanger for cracked gasoline hydrogenation units has proved to be a financially – and environmentally – advantageous solution for this application.

The example below shows how an aromatic gasoline hydrogenation unit (fig. 1) retrofitted with a single Alfa Laval Packinox Standard Combined Feed/Effluent Heat Exchanger in 1995 (fig. 2) was able to replace three tubular heat exchangers used to pre-heat the feed and H₂.

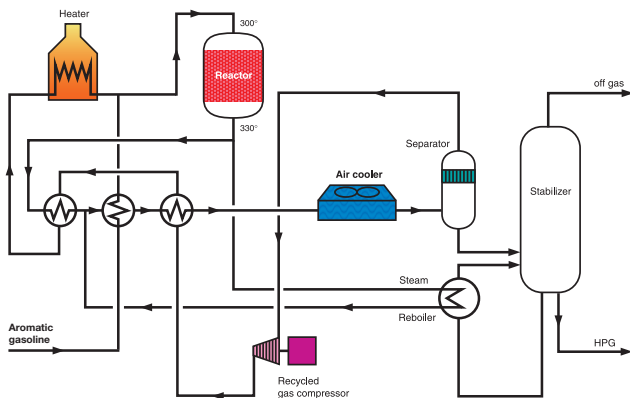


fig. 1

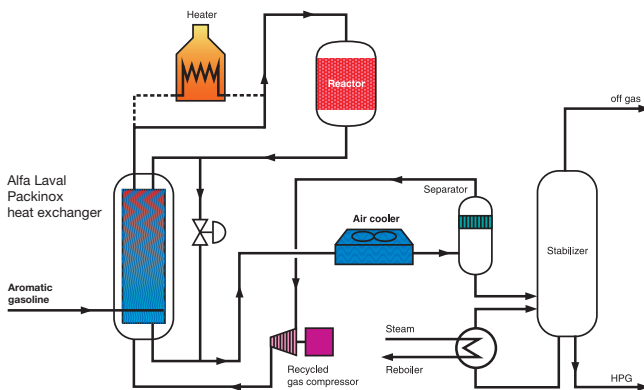
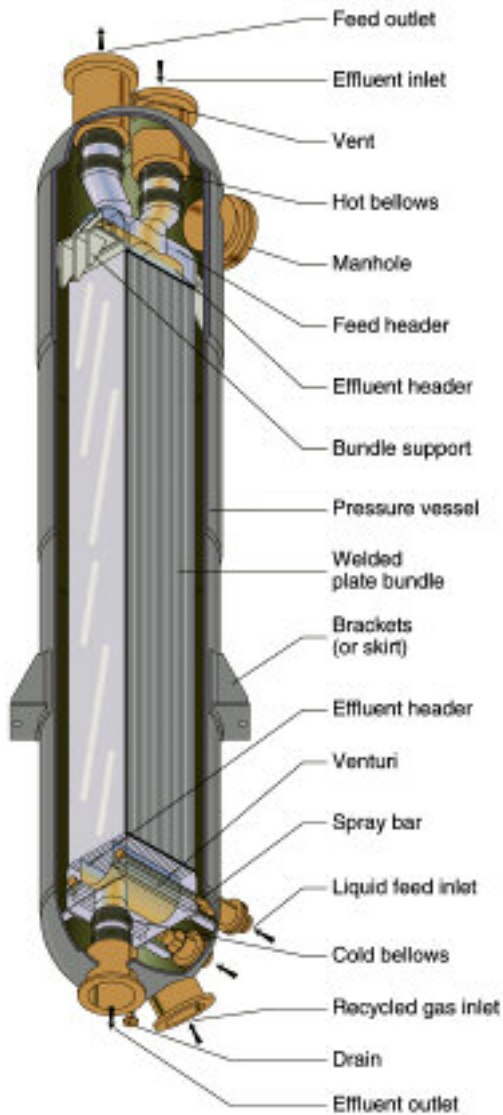


fig. 2



Better heat recovery from reactor effluent enables the unit to run iso-thermally on its own exothermic reaction heat. The revamp has resulted in significantly lower operating costs on associated equipment fuel consumption and has improved environmental conditions.

With Alfa Laval Packinox, the existing H₂ heater is bypassed during normal operation. This represents a savings of *8.3 MW on fuel and also cuts plant flue gas emissions. In addition, recycle compressor power demand is down by *100kW as the new control scheme reduces H₂ flow.

Conversely, the new configuration requires a *0.9 MW increase in steam boiler firing, and *1.7 MW of steam is also needed to heat the stabilizer reboiler. These new requirements are largely offset by the MW savings resulting from the replacement of S&Ts.

Overall net energy savings is some 6 MW, which means a *US\$ 0.4 million reduction in annual plant fuel costs.

* Data courtesy of Mitsui Chemicals / Mitsui Sekka Engineering

How to contact Alfa Laval

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