



Alfa Laval Compabloc+

When pressure is on, choose a champion

Introduction

The Alfa Laval Compabloc+ is a fully welded compact heat exchanger designed for a wide range of process and utility duties, able to operate up to 60 bar. The Compabloc+ range provides the most efficient, cost-effective, compact and cleanable heat exchanger solution available today for high pressure conditions.

The heart of the Compabloc+ is a stack of corrugated heat transfer plates. The plates are laser welded and form a compact core. This core is then enclosed and supported by four corner girders, top and bottom heads and four side panels which are bolted together and can be quickly taken apart for inspection, service and cleaning.

Applications

Thanks to the Compabloc+'s unique design concept, the possibilities for process optimization and flexibility are limitless. The Compabloc+ can be configured in single or multi-pass arrangements in either co-current or counter-current operation, for liquid-to-liquid or two-phase duties.

For heat recovery duties, a multi-pass configuration allows temperature cross and close temperature approaches (down to 3 °C (5.4 °F)).

The design concept allows a different number of passes on the two circuits thereby enabling large differences in flow rates between the hot side and the cold side. The baffling can easily be re-arranged to suit a new duty should the flow rates or temperatures change.

The Compabloc+ can be mounted vertically, for normal liquid-to-liquid duties, condensation with sub-cooling and gas cooling duties, or horizontally, for most condensation, reboiling or liquid-to-liquid duties where height is restricted.

Benefits

- reduced size, weight and number of heat exchangers thanks to high thermal performance and compact design
- increased energy savings due to crossing temperatures and close temperature approach in a single unit
- safe handling of aggressive media up to 60 bar
- minimized fouling thanks to high wall shear stress
- easy opening of the unit and access to the heat transfer area for facilitating inspection, mechanical cleaning, service and repair



- simplified maintenance thanks to confined gaskets (protection against over-tightening and creeping)
- very cost competitive design with high alloy material
- reduced risk of crevice corrosion due to unique plate-to-plate joints

Working principle

The two media in the Compabloc+ heat exchanger flow in alternately welded channels between the corrugated plates. These corrugated plates promote high turbulence which provides high heat transfer efficiency and help minimize

fouling. The media flows in a cross-flow arrangement within each pass while the overall flow arrangement is counter-current for a multi-pass unit (if required the unit can also be designed with overall co-current operation). Each pass is separated from the adjacent passes by a pressed baffle which forces the fluid to turn between the plate pack and the panel.

Alfa Laval has developed +Seal, a unique sealing concept that allows to reach high design pressure with a fully confined graphite gasket. This revolutionary design prevents over-tightening and reduces creeping of the gasket to avoid external leakage.

Design



C-Weld™

Superior cleaning and extended performance

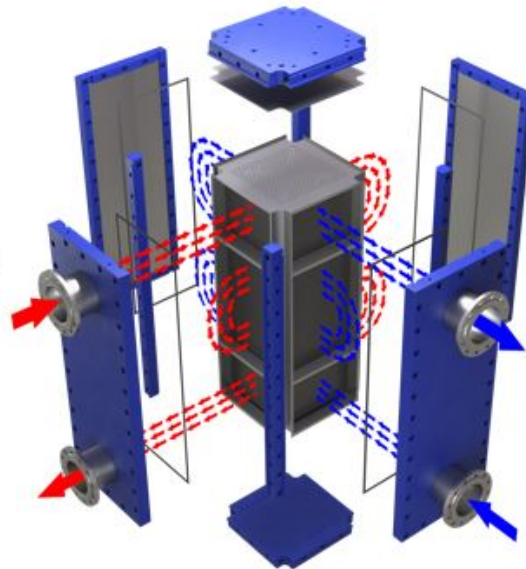
End-to-end laser weld of the plates guarantees accessibility and protects against corrosion.



+Seal™

Confident, long-term performance under pressure

Revolutionary sealing concept for safe operation up to 60 bar.



SmartClean™

Fast and efficient flushing of fouling material

Free-flow channel at plate boundaries secures efficient removal of fouling.



Xcore™

Advanced design for higher pressures

A high-pressure, cleanable plate pattern that increases mechanical strength and improves thermal performance.



ALOnsite™

Qualified support at your facility

True onsite service by skilled engineers, anywhere in the world.

Technical data

Heat transfer plates and panel lining in 316L, 254SMO or HC276 and panels in carbon steel

Design according to ASME VIII div 1 / U-Stamp possible / compliant with PED

Model	Standard design pressure**	Maximum differential pressure between both sides**	Design temperatures	Max width (in vertical position)	Max length (in vertical position)	Max weight	Max heat transfer surface
CP50 +	FV* / 60 bar (870 psi)	38 bar (551 psi)	-46°C (-51°F) / 370°C (698°F)	900 mm (35")	2150 mm (85")	7000 kg (15,432 lbs)	81 m ² (872 ft ²)
CP75 +	FV* / 60 bar (870 psi)	38 bar (551 psi)	-46°C (-51°F) / 370°C (698°F)	1350 mm (53")	3500 mm (138")	27500 kg (60,627 lbs)	320 m ² (3,444 ft ²)
CP120 +	FV* / 60 bar (870 psi)	42 bar (609 psi)	-46°C (-51°F) / 370°C (698°F)	2400 mm (95")	3800 mm (150")	63000 kg (138,891 lbs)	840 m ² (9,042 ft ²)

* FV = Full Vacuum ** Standard maximum design conditions for ASME design

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