



COMPABLOC Compact Heat Exchanger Range

High-performance Fully Welded Heat Exchanger for Process Industries

Application

The Alfa Laval Compabloc is a fully welded compact heat exchanger designed for the complete range of process and utility duties. The Compabloc range provides the most efficient, cost-effective, compact and cleanable heat exchanger solution available today. After 20 years on the market, the Compabloc has shown itself to be the market leader in terms of life-cycle costs and energy savings.

Design

Alfa Laval designed the Compabloc range of welded heat exchangers with a focus on performance, compactness, and serviceability.

The heart of the Compabloc is a stack of corrugated heat transfer plates in 316L stainless steel, or other high-grade material. The plates are laser welded (models CP30 and above) and form a compact core. This core is then enclosed and supported by four corner girders, top and bottom heads and four side panels (see Sectional view of Compabloc). These components are bolted together and can be quickly taken apart for inspection, service and cleaning.

The design 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.

Operating Principles

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 (see figure below) 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.

Compabloc's flexible pass arrangements make it suitable for liquid-to-liquid duties with dissimilar flow rates, or two phase condensation or reboiler applications.

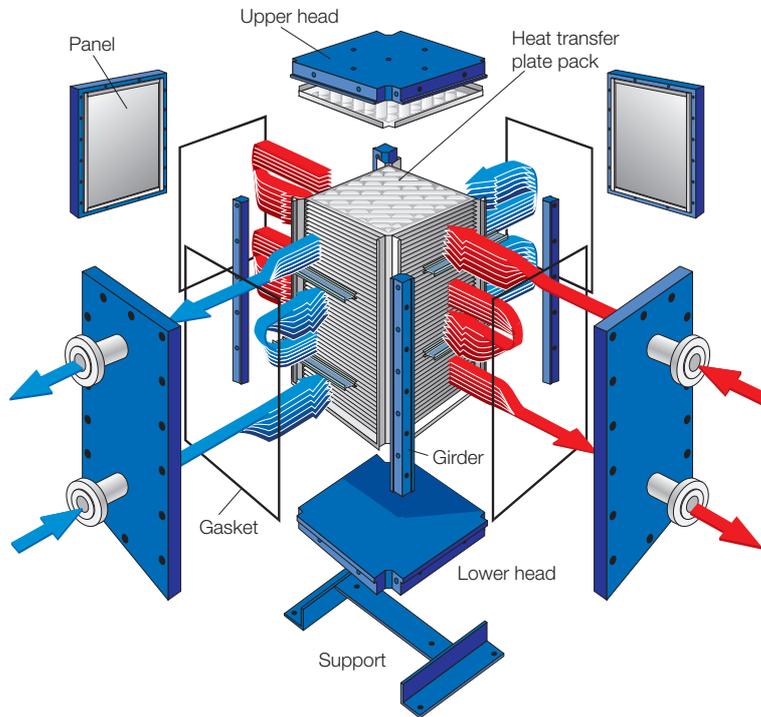


Options

The Compabloc is available in virtually any material that can be pressed and welded, including:

- 316L SST
- 254 SMO
- Titanium
- Alloy C-276
- 904L SST (UB6)
- Alloy B-2
- Alloy C-22
- Incoloy 825
- Inconel 600
- Tantalum

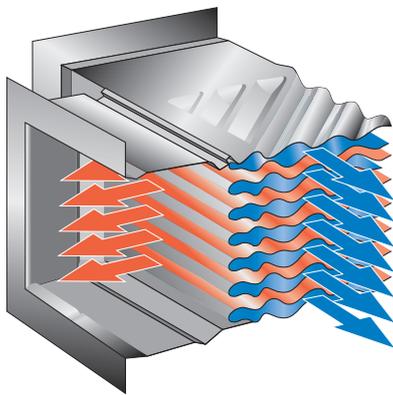
The panels and nozzles can be un-lined or lined using the same materials as the plate pack. The nozzle size is variable and can be selected independently for each side.



Sectional view of Compabloc

Process Optimization

Because of the Compabloc's unique design concept the possibilities for process optimization and flexibility are limitless. The Compabloc can be designed with both single-pass or multi-pass configurations. For condensation, reboiling and liquid-to-liquid duties without temperature cross, the singlepass configuration is suitable with its total cross-flow. The large cross flow area and short flow path fit low-pressure condensing duties and allow very low pressure drops. A multi-pass configuration is suitable for duties with temperature cross and close temperature approaches.



The two media flow in cross-flow in alternately welded channels.

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. Close temperature approaches down to 3°C (5.4°F) can be achieved.

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 duties, reboiling or liquid-to-liquid duties where height is restricted.

There are currently seven plate family models with heat transfer areas ranging from 0.7 to 840 m² per unit and each model is modularized with different numbers of plates to allow the best fits for any duty.

Special applications



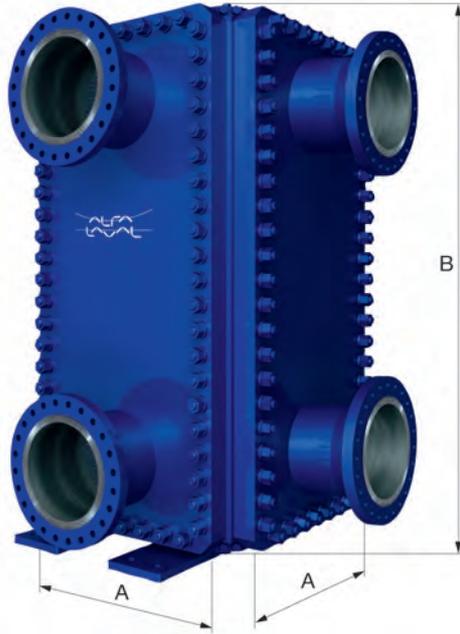
Special applications

For special applications, the Compabloc 2 cooling medium range is available which offers a two-section condenser with two different cooling medias.

Pressure vessel codes

The Compabloc is available as standard in accordance with international pressure vessel codes such as ASME (with or without U stamp) or ADM (code for PED and CE marking).

Dimensions



Technical Data

Model	Standard Pressure Range (bar) *	Standard Temp. Range (°C)	*Code	Max. Dimensions (mm) *** A x A x B	Max. Weight (kg) ****
CP 15	FV - 32	-40 - 300	PED	280 x 280 x 540	250
CP 20	FV - 32	-40 - 300	PED	430 x 430 x 730	550
CP 30	FV - 32	-40 - 300	PED	500 x 500 x 1070	1160
CP 40	FV - 32	-40 - 300	PED	600 x 600 x 1400	2330
CP 50	FV - 32	-40 - 300	PED	840 x 840 x 2050	5940
CP 75	FV - 32	-40 - 300	PED	1240 x 1240 x 3600	17780
CP 120	FV - 42	-50 - 400	PED	2190 x 2190 x 3500	50000

* other pressures and temperatures may be available on request.

** ASME is also available

*** does not include nozzle length.

**** weight is determined by maximum number of plates and highest pressure rating.

Note: both vertical and horizontal configurations are available.

How to contact Alfa Laval

Up-to-date AlfaLaval contact details for all countries are always available on our website on www.alfalaval.com