

AlfaRex – Gasket – free plate heat exchanger

TM10–B



AlfaRex design

TM10–B is a totally gasket–free all–welded plate heat exchanger. The plate heat exchanger consists of a laser welded pack of corrugated metal plates with portholes for the passage of the two fluids between which heat transfer takes place.

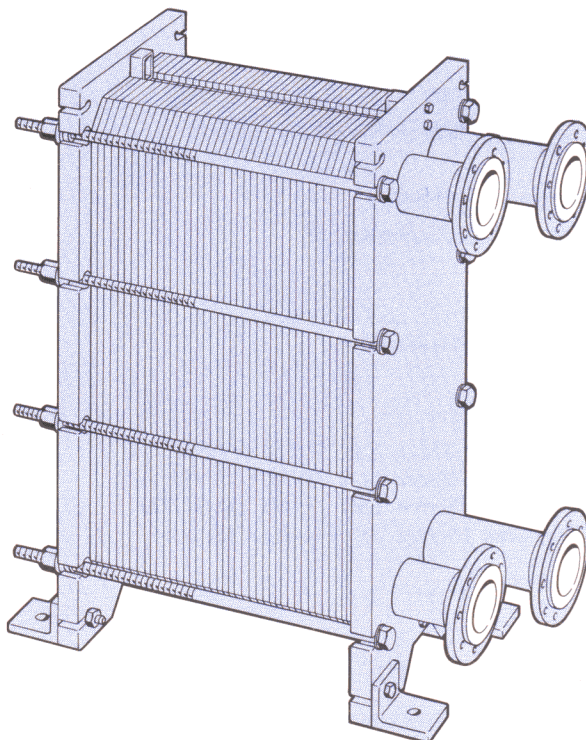
The design has been achieved by laser welding the plates together one by one in alternate grooves to form a plate pack. The plate pack is installed in a frame consisting of a frame plate and a pressure plate compressed by lateral tightening bolts. Extended connections are located in the frame cover with linings welded to the plate pack.

The plate corrugations create high turbulence which results in very high thermal efficiency. This in turn leads to compactness and cost efficiency. The corrugations also support the plates against differential pressure and allow utilization of more expensive corrosion–resistant materials.

Working principle

The media are led into the plate pack through headers formed by portholes at the corners and are distributed into the passages between the plates by the arrangement of sealing welds.

The two media flow in alternate channels in full countercurrent flow, thereby making the exchanger equally suited for liquids as well as gas and two phase duties.



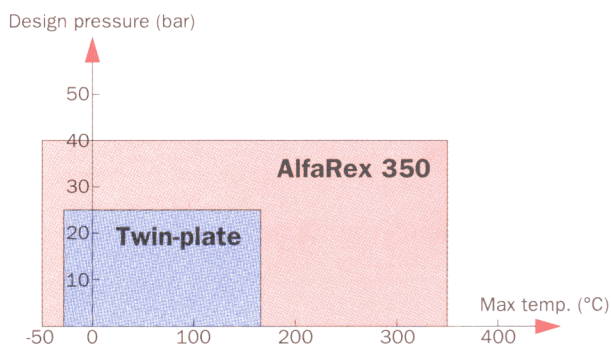
Laser welding and fatigue resistance

The welding is performed using of laser welding techniques which for this purpose is superior to other welding methods owing to the low heat involved, which results in a small heat affected zone. Completely automated machine and welding control combined with a Helium leakage test to assure the highest quality.

The construction only utilizes welding in the plane of the plate i.e. in two directions thereby avoiding welds in a third direction. This design assures retained flexibility of the plate pack allowing for thermal and hydraulic expansions and contractions which will eliminate the risk for fatigue cracks.

Examples of suitable applications for AlfaRex

- solvent recovery processes
- gas dehydration plants
- batch reactors



Parameter \ Process	Laser	Plasma	TIG
Travel speed (mm/s)	16	7	2
Heat input (J/mm)	250	570	1000

AlfaRex – Gasket – free plate heat exchanger

TM10–B

Frame plates

FM,FG,FD and FT

Standard materials

Frame plates

Mild steel. High Temperature painted.

Extended nozzles

Metal lined: Stainless steel

Plates

Stainless steel AISI 316

Connections

FM – Size 100mm DIN PN16 or ANSI 150

FG – Size 100mm DIN PN25 or ANSI 150

FD – Size 100mm DIN PN40, ANSI 300

FT – Size 100mm DIN PN40, ANSI 400

Technical data

Design temperature range

–10 to +350 °C

Maximum Design pressure

FM – 10 bar over pressure

FG – 16 bar over pressure

FD – 25 bar over pressure

FT – 40 bar over pressure

Max. flow rate

160m³/h

Max. heat transfer surface

42m²

Particulars required for quotation

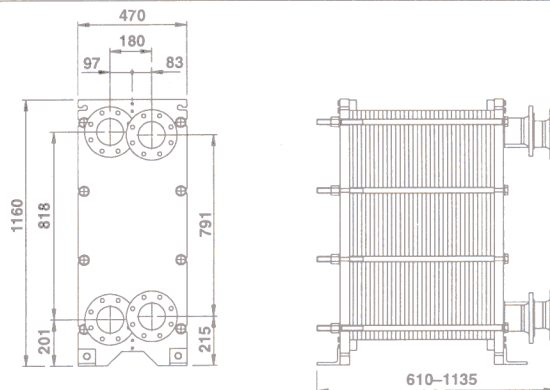
To enable Alfa Laval's representative to make a specific quotation, enquiries should include the following particulars:

- flow rates required.
- temperature program.
- physical properties of liquids in question.
- desired working pressure.
- maximum permitted pressure drop.
- design pressure and temperature.
- pressure vessel code.

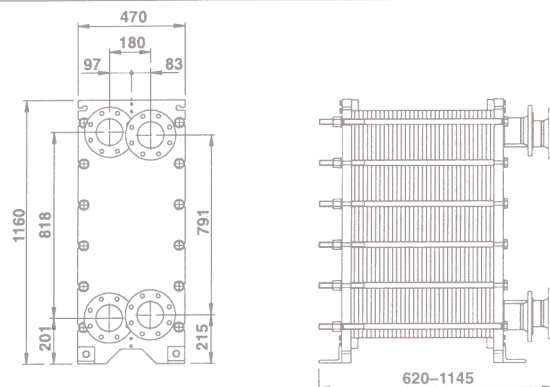
Dimensions

Measurements in mm

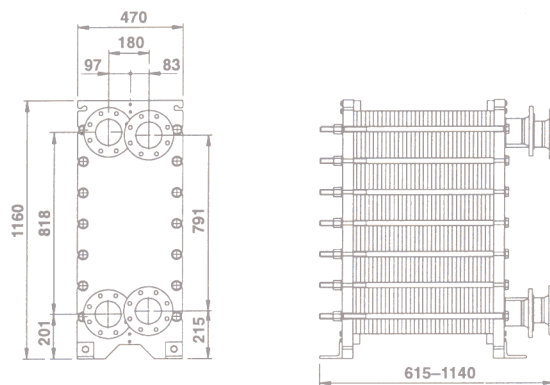
FM



FG



FD



FT

