



## AlfaRex - TM20

### All welded Plate Heat Exchanger

Totally gasket free, the TM20 is well suited for applications involving high temperature and/or high pressure with relatively clean media. The media can also be very corrosive (acids, NaOH, etc.).

The TM20 is particularly recommended for the following applications:

- Solvent recovery processes
- Gas dehydration plants
- Batch reactors
- Refrigeration duties

#### AlfaRex design

The TM20 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 tightening bolts. Extended connectors are located in the frame plate with bellow 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.

#### Laser welding and fatigue resistance

The welding is performed using laser welding techniques. This means low heat input and a small heat affected zone. The highest quality is assured through a completely automated machine and welding control combined with a helium leakage test.

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 ensures retained flexibility of the plate pack allowing for thermal and hydraulic expansions and contractions which will reduce the risk for fatigue cracks.



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### Technical data (Maximum design performance\*)

FB	up to 10 barg
FC	up to 16 barg
FF	up to 25 barg
FK	up to 40 barg
FN	up to 40 barg

Design temperature range	-50 to + 350° C
Maximum flow rate	700 m <sup>3</sup> /h
Maximum heat transfer surface	250 m <sup>2</sup>

\* Depending on design temperature and pressure vessel code

### Standard Materials

#### Frame Plates

Mild steel. High temperature painted

#### Extended Nozzles

Metal bellow linings in channel plate material

#### Channel Plates

Stainless steel AISI 316, AISI 316L, Titanium gr. 1, Nickel 200/201

### Particulars required for quotation

To enable Alfa Laval's representative to make a specific quotation, please make sure your enquiry includes the following particulars:

- Flow rates required
- Temperature program
- Physical properties of media in question
- Desired working pressure
- Maximum permitted pressure drop
- Design pressure and temperature
- Pressure vessel code
- Data on cyclic variations in temperature and pressure

### Working Principle

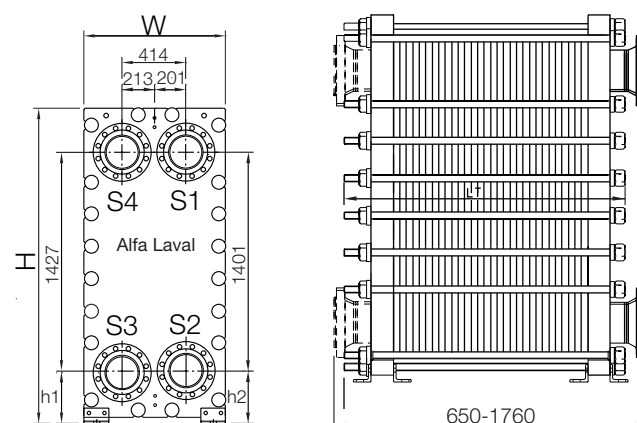
The media in the heat transfer are led into the plate pack through portholes at the corners and are distributed into the passages between the plates by the arrangement of sealing welds.

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. Cleaning is done with CIP (Cleaning in Place).

### Connections

FB – DN200/8"	DIN PN10 or ANSI 150
FC – DN200/8"	DIN PN10, PN16 or ANSI 150, ANSI 300
FF – DN200/8"	DIN PN16, PN25 or ANSI 150, ANSI 300
FK – DN200/8"	DIN PN25, PN40 or ANSI 300, ANSI 400
FN – DN200/8"	DIN PN40 or ANSI 300, ANSI 400

### Dimensions



Type	H	W	h1	h2
TM20-BFB, -BFC	1990	865	301	314
TM20-BFF, -BFK, -BFN	2040	915	327	340

Measures are in millimeters

PPM00095EN 0407

### How to contact Alfa Laval

Contact details for all countries are continually updated on our website. Please visit [www.alfalaval.com](http://www.alfalaval.com) to access the information direct.