



M10-BW

Semi-welded plate heat exchanger

Applications

Heating and cooling of aggressive media. Duties in refrigeration installations.

Standard design

The plate heat exchanger consists of a pack of corrugated metal plates with portholes for the passage of the two fluids between which heat transfer will take place.

The plate pack is assembled between a fix frame plate and a movable pressure plate and compressed by tightening bolts. The semi-welded plates combine the flexibility and serviceability of the gasketed heat exchangers with the assurance against leakage of the welded heat exchangers. In the plate arrangement, every other channel is welded, and every other channel is gasketed. The number of plates is determined by the flow rate, physical properties of the fluids, pressure drop and temperature program. The plate corrugations promote fluid turbulence and support the plates against differential pressure.

The semi-welded plate heat exchanger is provided with gaskets specifically designed to resist aggressive media. The non-aggressive media flows in the gasketed channels. This construction means that it can easily be dismantled, for example for exchanging gaskets or for inspection and cleaning of the gasketed channels.

Corrosion-resistant plate materials, the absence of pressure retaining welds, double gasket seals, and a flexible yet vibration resistant design - to assure long life and trouble free operation.

The frame plate and the pressure plate are suspended from an upper carrying bar and located by a lower guiding bar, both of which are fixed to a support column. Connections are located in the frame plate or, if either or both fluids make more than a single pass within the unit, in the frame and pressure plates.

Typical capacities

Liquid flow rate

Up to 50 kg/s, depending on media, permitted pressure drop and temperature program.

Refrigeration duties

50-250 RT/175-875 kW

Plate types

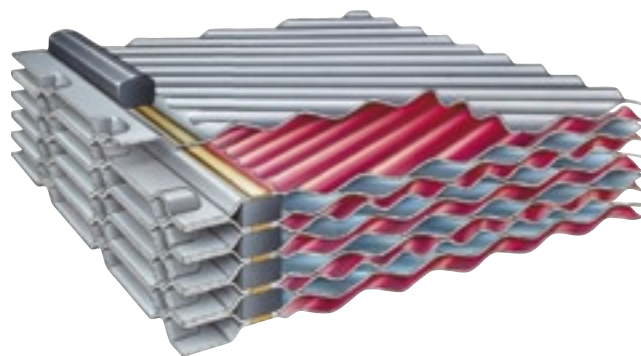
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Frame types

FG, FD and REF



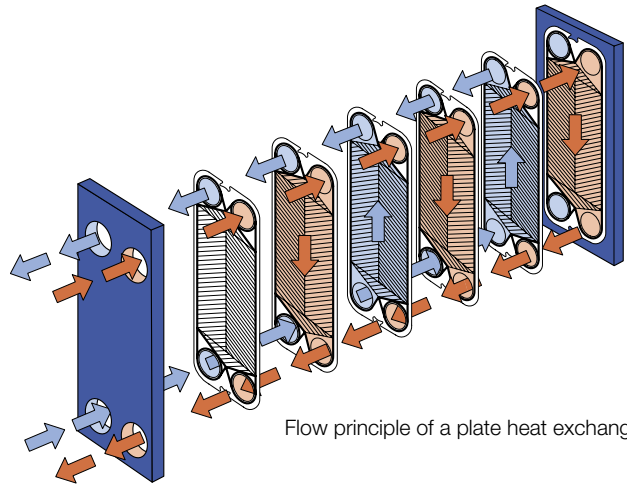
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Cross section of a semi-welded plate heat exchanger

Working principle

Channels are formed between the plates and the corner ports are arranged so that the two media flow through alternate channels. The heat is transferred through the plate between the channels, and complete counter-current flow is created for highest possible efficiency. The corrugation of the plates provides the passage between the plates, supports each plate against the adjacent one and enhances the turbulence, resulting in efficient heat transfer.



Flow principle of a plate heat exchanger

Standard materials

Frame plate

Mild steel, Epoxy painted

Nozzles

Carbon steel

Metal lined; Stainless steel, Titanium

Plates

Stainless steel AISI 316 or Titanium

Gaskets

Field gaskets Nitrile, EPDM

Ring gaskets Chloroprene, EPDM

Connections

FG PED Size 100 mm DIN PN16

FG ASME Size 4" ANSI 150

FD PED Size 100 mm DIN PN25

FD ASME Size 4" ANSI 300

REF PED Size 100 mm Pipe

Technical data

Mechanical design pressure (g) / temperature

FG PED 1.6 MPa / 180°C

FG ASME 150 psig / 350°F

FD PED 2.5 MPa / -50 to 180°C

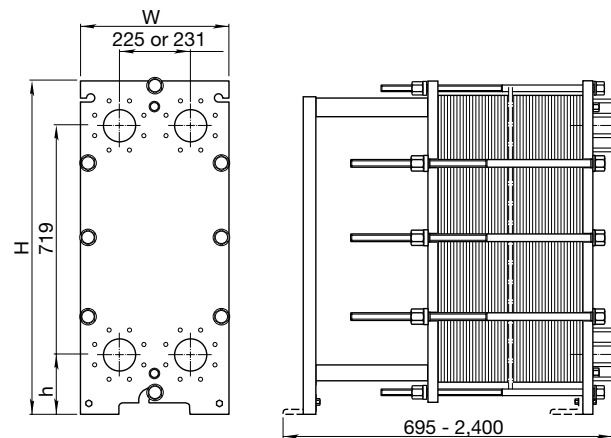
FD ASME 300 psig / -40 to 350°F

REF PED 2.5 MPa / -50 to 150°C

Maximum heat transfer surface

75 m² (825 sq. ft)

Dimensions



Measurements (mm)

Type	H	W	h
M10-FG	1084	470	215
M10-FD	981	470	131
M10-FD ASME	1084	470	215
M10-BW REF	1110	470	163

The number of tightening bolts may vary depending on pressure rating.

Particulars required for quotation

- Flow rates or heat load
- Temperature program
- Physical properties of liquids in question (if not water)
- Desired working pressure
- Maximum permitted pressure drop
- Available steam pressure

How to contact Alfa Laval

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