



M10

Plate heat exchanger

Applications

General heating and cooling duties. Heating by means of steam.

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 fixed frame plate and a movable pressure plate and compressed by tightening bolts. The plates are fitted with a gasket which seals the interplate channel and directs the fluids into alternate channels. 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 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 980 gpm, depending on media, permitted pressure drop and temperature program.

Water heating by steam

0.7 to 3.0 MW

200 tons – 850 tons

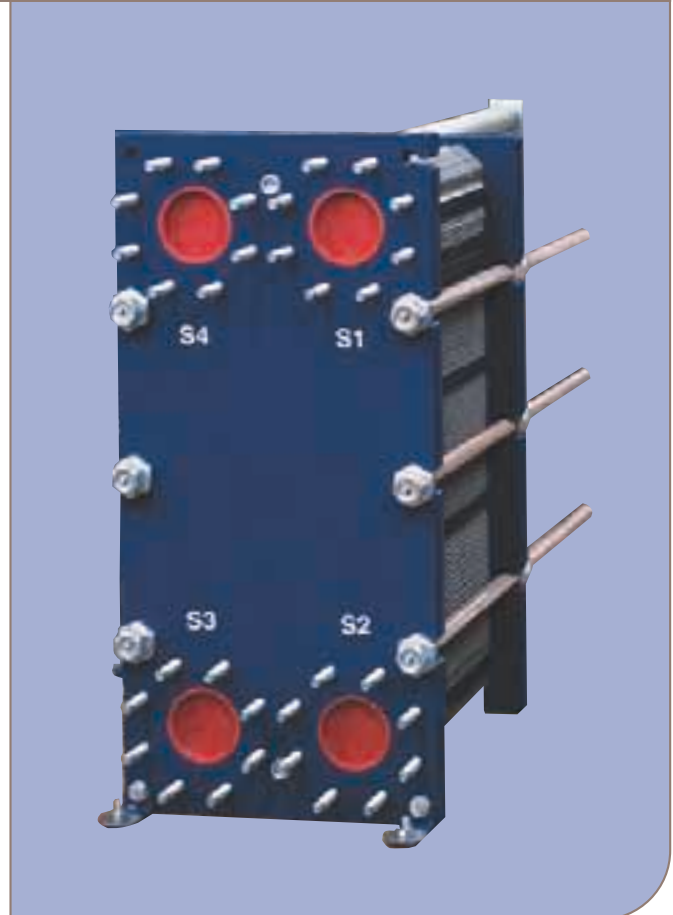
Plate types

M10B, M10M and M10BD

Frame types

FM, FG and FD (ASME design)

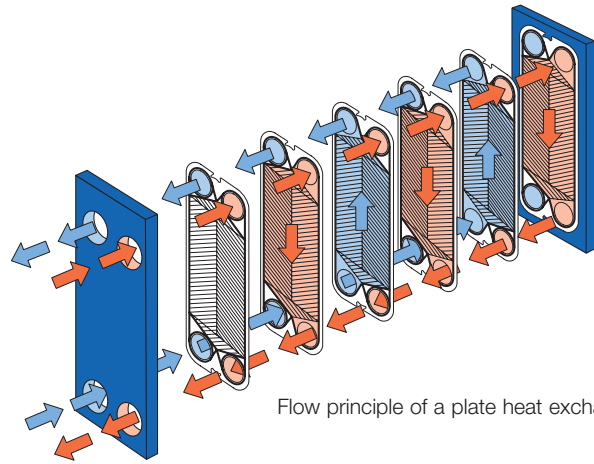
FML (non-ASME)



M10-BFG

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, painted

Nozzles

Carbon steel

Lined: Stainless steel, Titanium

Plates

Stainless steel AISI 304, AISI 316

Titanium, Alloy 20/18/6

Gaskets

M10B Nitrile, EPDM, Viton®G

M10M Nitrile, EPDM, HeatSeal F™
EPDMF-FDA, Viton®G

Connections

FML – Size 4" ANSI 150

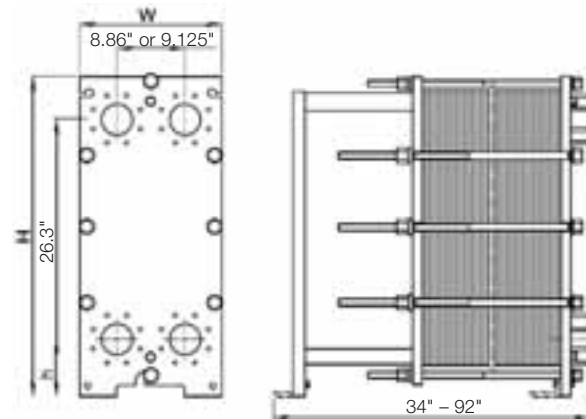
FM – Size 4" ANSI 150

FG – Size 4" ANSI 150

FD – Size 4" ANSI 150

FD – Size 4" ANSI 300

Dimensions



Measurements (mm)

Type	H	W	h
M10-FML	38.62"	18.11"	5.1875"
M10-FM	38.62"	18.11"	5.1875"
M10-FG	38.62"	18.5"	5.1875"
M10-FD	42.70"	18.5"	8.4375"

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

Technical data

Mechanical design pressure (g)/temperature

FML 150 psig/320°F (non-ASME)

FM 100 psig/320°F

FG 150 psig/356°F

FD 360 psig/356°F

Maximum heat transfer surface

M10B 1126 sq. ft

M10M 660 sq. ft

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