



## For Your Utility Heating and Cooling

### M - Series of painted Plate Heat Exchangers

#### Applications

For your utility heating and cooling duties the industrial plate heat exchangers of Alfa Laval can be used. These are detailed in the following product sheets.

#### 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 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 fixed between upper bar and lower bar, both of which are fixed to a support column.

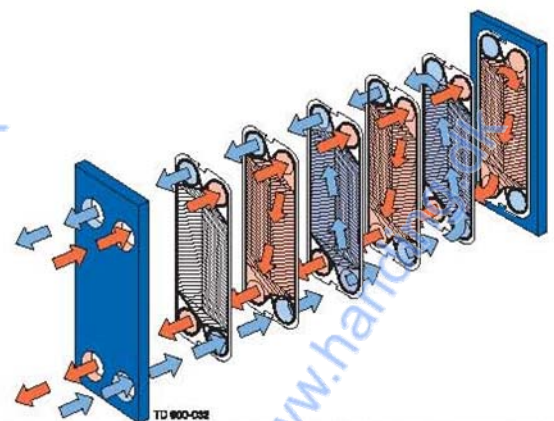
Connections are located in the frame plate or, if either or both fluids make more than a single pass within the unit, in the frame and pressure plates.

#### 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.



M6-FG



Flow principle of an M3, M6, M10 and M15 plate heat exchanger



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### Alfa Laval M10

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 We make reservation for possible errors

Alle mål i mm.  
 Measures in mm

Lager nr. /tn  
**A169**

## M10

### Typical capacities

#### Liquid flow rate

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

#### Water heating by steam

0.7 to 3.0 MW

### Plate Types

M10B, M10M and M10MD

### Frame Types

FM, FG and FD

### Standard Materials

#### Frame plate

Mild steel, Epoxy painted

#### Nozzles

Carbon steel

Lined: Stainless steel, Rubber, Titanium

#### Plates

Stainless steel AISI 316/AISI 304, Titanium, Alloy 20/18/6

#### Gaskets

M10B Nitrile, EPDM

M10M Nitrile, EPDM, HeatSeal F™, HNBR, EPDMF, Viton®G

### Technical data

#### Mechanical design pressure (g) / temperature

FM	1.0 MPa / 160°C
FG	1.6 MPa / 180°C *)
FG ASME	150 psig / 350°F
FD	2.5 MPa / 160°C
FD ASME	300 psig / 320°F

\*) Frame FG also approved for 1.2 MPa / 200°C to allow use in steam systems without safety valves.

#### Maximum heat transfer surface

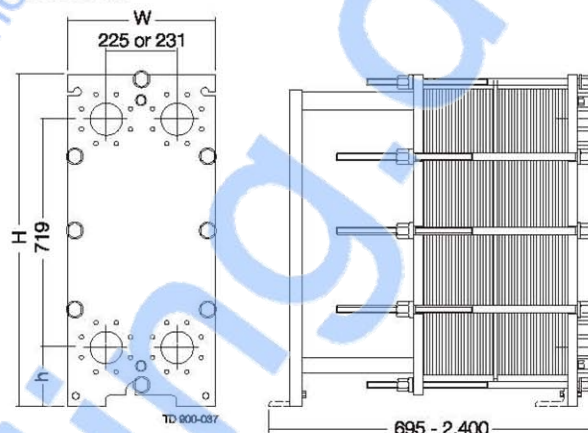
M10B: 90 m<sup>2</sup> (970 sq. ft)

M10M: 60 m<sup>2</sup> (650 sq. ft)

### Connections

FM – Size 100 mm	DIN 2501 PN10 or ANSI 150
FG – Size 100 mm	DIN 2501 PN16 or ANSI 150
FD – Size 100 mm	DIN 2501 PN25 or ANSI 150
FD – Size 100 mm	DIN 2501 PN25 or ANSI 300 (ASME)

### Dimensions



### Measurements (mm)

Type	H	W	h
M10-FM	1,084	470	215
M10-FG	1,084	470	215
M10-FD	981	470	131
M10-FD ASME	1,084	470	215

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



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