



## M3

### 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 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 suspended from an upper carrying bar and located by a lower guiding bar.

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 4 kg/s (60 gpm), depending on media, permitted pressure drop and temperature program.

##### Plate types

M3 and M3-X, where M3 provides parallel and M3-X diagonal flow (see figures on the next page).

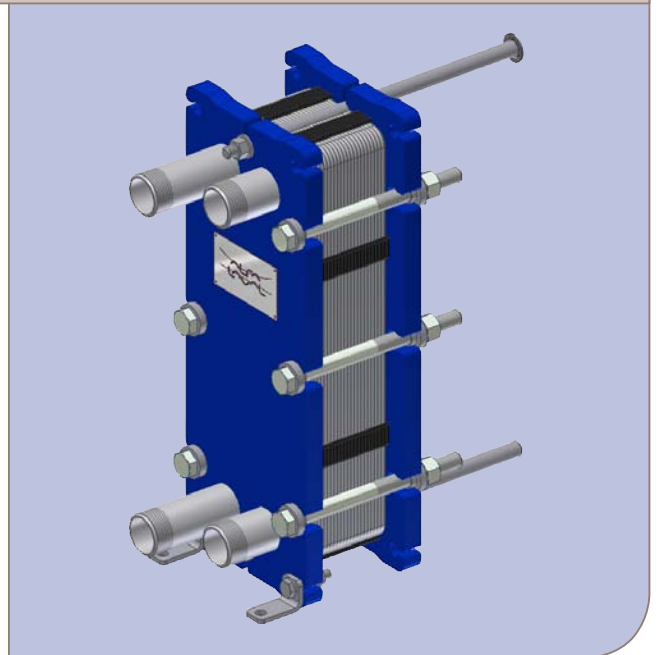
M3D, double wall plates.

##### Frame types

FG

##### Water heating by steam

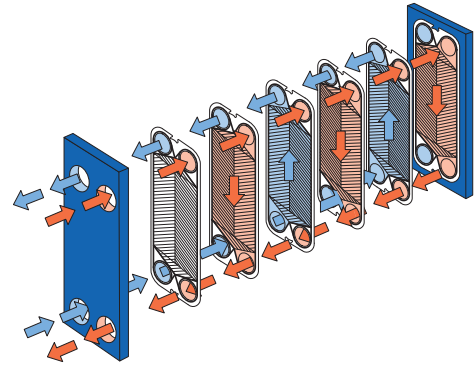
50 to 250 kw



M3-FG

**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 an M3 plate heat exchanger

**STANDARD MATERIALS**

**Frame plate**

Mild steel, Epoxy painted

**Nozzles**

Carbon steel

Pipe: Stainless steel, Titanium

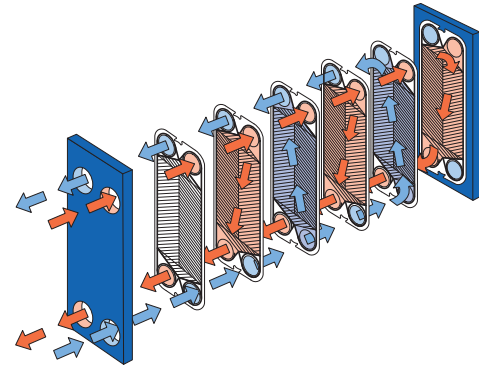
**Plates**

Stainless steel Alloy 316, Titanium

**Gaskets (Clip-on)**

Nitrile, EPDM, Viton®

Other grades and material available on request.



Flow principle of an M3X plate heat exchanger

**TECHNICAL DATA**

Pressure vessel codes PED, ASME, pvcALS™

Mechanical design pressure (g) / temperature

FG PED, pvcALS™ 1.6 MPa / 180°C

FG ASME 150 psig / 350°F

**Maximum heat transfer surface**

3.9 m<sup>2</sup> (40 sq. ft)

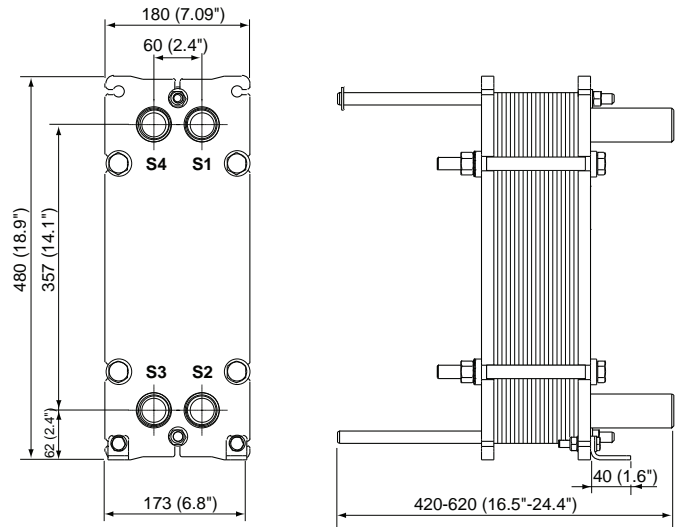
**Connections**

FG	PED	Size 1¼"	Pipe, thread ISO-R 1¼"
FG	pvcALS™	Size 1¼"	Pipe, thread ISO-R 1¼"
FG	pvcALS™	Size 1¼"	Internal thread ISO-G 1¼", carbon steel
FG	ASME	Size 1¼"	Pipe, thread NPT 1¼"

**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

**Dimensions**



**Measurements mm (inch)**

The number of bolts may vary depending on pressure rating.

**How to contact Alfa Laval**

Up-to-date AlfaLaval contact details for all countries are always available on our website on [www.alfalaval.com](http://www.alfalaval.com)