



M15-BGPMC

Plate heat exchanger with Gemini double wall plates

Applications

Pasteurisation and general cooling/heating of dairy, brewery and beverage food products, when a mix proof design is required. Also applicable for pharmaceutical cooling/heating.

The Gemini plates

The Gemini plates consist of two sheets formed together in order to minimize the inter-sheet air gap reducing the heat transfer. In order not to trap any liquid between the two sheets, contact to the atmosphere is safeguarded around the whole periphery of the plate. The Gemini double wall plates will increase the production safety, as a crack in a plate will not result in mixing of the two media.

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, both of which are fixed to a support column. Connections may be located in the frame plate and/or in the pressure plate. One unit may contain several heat exchangers, separated by connection plates. The tightening bolts are equipped with ball bearing washers in order to facilitate opening and closing of the unit. The frame and support column have adjustable feet.

Plate types

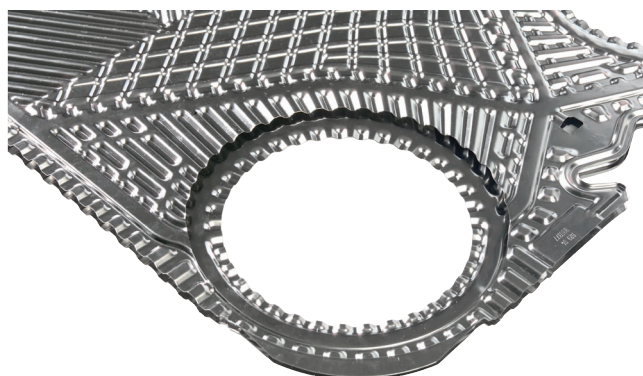
M15BG. Other plates of the M15 family are the standard M15B and M15M plates.

Frame types

FMC



M15-BGPMC



Single plate sheet in port means use of standard gasket. Gap open to atmosphere and not covered by any gasket.

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.

The gasket

The M15B Gemini plates are supplied with glue-free ClipOn gaskets, which are easy to replace even with the plates still hanging in the frame. The plates are reversible and have parallel flow, which means that only one type of gasket is needed. The materials of the gaskets are selected for safe use in connection with food products.

Standard materials

Frame

Mild steel clad with stainless steel. All wetted parts in acid proof stainless steel. Other surfaces in various grades of stainless steel. Movable nuts on tightening bolts in chromium plated brass.

Plates

Stainless steel AISI 316

Gaskets

Nitrile, EPDMF

Connections

DIN or SMS male parts, other union standards on request.

Union size 101 mm.

Flanges: In frame plate/pressure plate DIN 100 or 125, ANSI 4" or 5". At connection plates DIN 100, ANSI 4".

Technical data

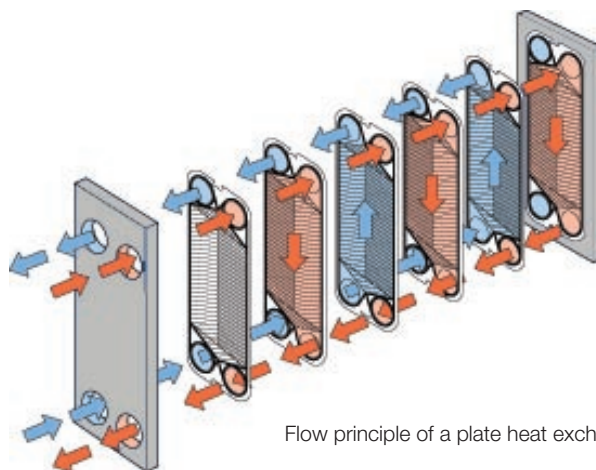
Mechanical design pressure (g) / temperature

FMC - 10 bar / 150°C

Complies with the European Pressure Equipment Directive (PED), may carry the CE mark depending on the design conditions.

Maximum heat transfer surface

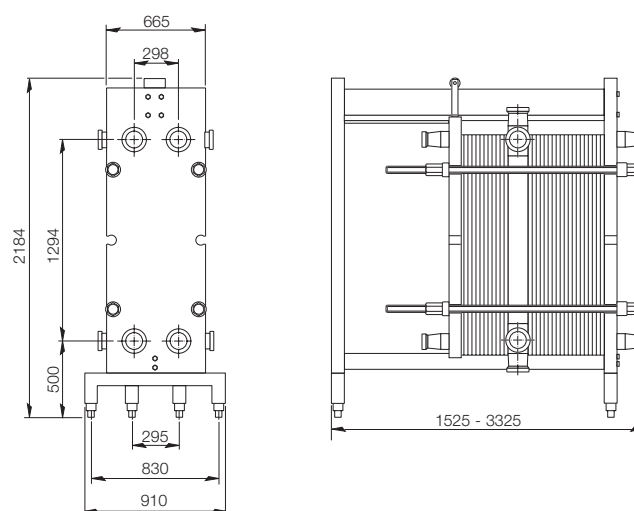
390 m² (4,200 sq. ft)



Flow principle of a plate heat exchanger

Dimensions

Measurements in mm



Optional

Protection sheet

Bolt protections of stainless steel

Extra standard wrench

Commissioning kit

Test certificates and material certificates

Testing by authorized inspection companies

Notice

Although the Gemini plates are designed to give an external indication in case of crack in one of the sheets, it may not be the case in some applications. External indication depends on product composition and viscosity, temperature and pressure. If a plate is indicating a crack it must be replaced as soon as possible.

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com