TS20

Plate Heat Exchanger

TS20-MFG

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, 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.

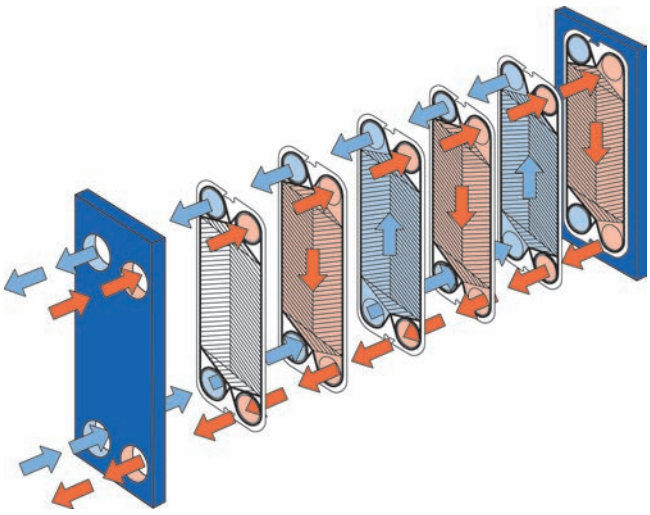
Typical capacities
Liquid flow rate
Up to 190 kg/s (3040 gpm), depending on media, permitted pressue drop and temperature program.

Water heating by steam
2.5-15 MW at a steam condensation temperature of 150°C
2.5-9 MW at a steam condensation temperature of 120°C

Plate types
TS20-M plates

Frame types
FM, FG and FS

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.



STANDARD MATERIALS

Frame plate
Mild steel, Epoxy painted

Nozzles
Carbon steel
Metal lined: Stainless steel, Titanium, Alloy C-276
Rubber lined: Nitrile, EPDM

Plates
Stainless steel Alloy 316 (Alloy 254, Alloy C-276 or Titanium
Other grades and material available on request.

Gaskets
Nitrile, EPDM, Viton or HeatSealF™
Other grades and material available on request.

TECHNICAL DATA

Pressure vessel codes, PED, ASME, pvcALS™

Mechanical design pressure (g) / temperature

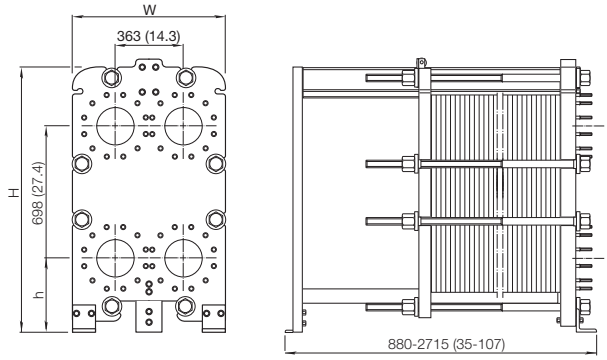
FM	PED	10 MPa / 210°C
FM	pvcALS™	1.0 MPa / 180°C
FG	PED	1.6 MPa / 180°C *)
FG	ASME	150 psig / 350°F
FG	pvcALS™	1.6 MPa / 180°C
FS	PED	3.0 MPa / 160°C
FS	ASME	460 psig / 350°F

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

Connections

		Size:	
FM	PED	200 mm	DIN 2501 PN10, ASME Cl. 150
FM	pvcALS™	200 mm	DIN/GB/GOST PN10, ASME Cl. 150, JIS 10K
FG	PED	200 mm	DIN 2501 PN16, ASME Cl. 150
FG	ASME	8"	ASME Cl. 150
FG	pvcALS™	200 mm	DIN/GB/GOST PN16, ASME Cl. 150, JIS 10K/JIS 16K
FS	PED	200 mm	DIN 2501 PN25/PN40, ASME Cl. 300
FS	ASME	8"	ASME Cl. 150/300

Dimensions



Measurements mm (inch)

Type	H	W	h
TS20-MFM	1405 (55 5/16)	740 (29⅛)	360 (14⅛)
TS20-MFG	1405 (55 5/16)	800 (31½)	360 (14⅛)
TS20-MFS	1435 (56½)	800 (31½)	390 (14⅛)

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

Maximum heat transfer surface
85 m² (910 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