M6-MW

Semi-welded plate heat exchanger

Applications
Heating and cooling of aggressive media. Duties in refrigeration installations.

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 semi-welded plates combine the flexibility and service-ability of the gasketed heat exchangers with the assurance against leakage of the welded heat exchangers. In the plate arrangement, every other channel is welded, and every other channel is gasketed. 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 semi-welded plate heat exchanger is provided with gaskets specifically designed to resist aggressive media. The non-aggressive media flows in the gasketed channels. This construction means that it can easily be dismantled, for example for exchanging gaskets or for inspection and cleaning of the gasketed channels.

Corrosion-resistant plate materials, the absence of pressure retaining welds, double gasket seals, and a flexible yet vibration resistant design - to assure long life and trouble free operation.

The frame 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 16 kg/s, depending on media, permitted pressure drop and temperature program.

Refrigeration duties
10-70 RT/35-250 kW

Plate types
M6-MW

Frame types
FG and FD
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

Plates
Stainless steel AISI 316 or Titanium

Gaskets
Field gaskets Nitrile, EPDM
Ring gaskets Chloroprene, EPDM

Connections
| FG PED   | Size 50 mm | DIN PN16 |
| FG ASME  | Size 2"    | ANSI 150 |
| FD PED   | Size 50 mm | DIN PN25 |
| FD ASME  | Size 4"    | ANSI 300 |

Technical data

Mechanical design pressure (g) / temperature
| FG PED   | 1.6 MPa / -40 to 180°C |
| FG ASME  | 150 psig / -40 to 320°F |
| FD PED   | 2.5 MPa / -40 to 180°C  |
| FD ASME  | 300 psig / -40 to 320°F  |

Maximum heat transfer surface
30 m² (330 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
Applications
Heating and cooling of aggressive media. Duties in refrigeration installations.

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 semi-welded plates combine the flexibility and serviceability of the gasketed heat exchangers with the assurance against leakage of the welded heat exchangers. In the plate arrangement, every other channel is welded, and every other channel is gasketed. 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 semi-welded plate heat exchanger is provided with gaskets specifically designed to resist aggressive media. The non-aggressive media flows in the gasketed channels. This construction means that it can easily be dismantled, for example for exchanging gaskets or for inspection and cleaning of the gasketed channels.

Corrosion-resistant plate materials, the absence of pressure retaining welds, double gasket seals, and a flexible yet vibration resistant design - to assure long life and trouble free operation.

The frame 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 50 kg/s, depending on media, permitted pressure drop and temperature program.

Refrigeration duties
50-250 RT/175-875 kW

Plate types
M10-BW

Frame types
FG, FD and REF
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

Plates
Stainless steel AISI 316 or Titanium

Gaskets
Field gaskets Nitrile, EPDM
Ring gaskets Chloroprene, EPDM

Connections
FG PED Size 100 mm DIN PN16
FG ASME Size 4” ANSI 150
FD PED Size 100 mm DIN PN25
FD ASME Size 4” ANSI 300
REF PED Size 100 mm Pipe

Technical data

Mechanical design pressure (g) / temperature
FG PED 1.6 MPa / 180°C
FG ASME 150 psig / 350°F
FD PED 2.5 MPa / -50 to 180°C
FD ASME 300 psig / -40 to 350°F
REF PED 2.5 MPa / -50 to 150°C

Maximum heat transfer surface
75 m² (825 sq. ft)

Dimensions

Measurements (mm)

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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
Applications
Heating and cooling of aggressive media. Duties in refrigeration installations.

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 semi-welded plates combine the flexibility and serviceability of the gasketed heat exchangers with the assurance against leakage of the welded heat exchangers. In the plate arrangement, every other channel is welded, and every other channel is gasketed. 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 semi-welded plate heat exchanger is provided with gaskets specifically designed to resist aggressive media. The non-aggressive media flows in the gasketed channels. This construction means that it can easily be dismantled, for example for exchanging gaskets or for inspection and cleaning of the gasketed channels.

Corrosion-resistant plate materials, the absence of pressure retaining welds, double gasket seals, and a flexible yet vibration resistant design - to assure long life and trouble free operation.

The frame 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 80 kg/s, depending on media, permitted pressure drop and temperature program.

Refrigeration
100-450 RT/350-1575 kW

Plate types
MK15-BW

Frame types
FG and FD
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, Alloy 20/18/6 or Titanium

**Plates**
Stainless steel AISI 316, Alloy 20/18/6 or Titanium

**Gaskets**
Field gaskets  Nitrile, EPDM
Ring gaskets Chloroprene, EPDM and Nitrile

**Connections**
- **FG PED** Size 150 mm DIN PN16
- **FG ASME** Size 6” ANSI 150
- **FD PED** Size 150 mm DIN PN25
- **FD ASME** Size 6” ANSI 300

Technical data

**Mechanical design pressure (g) / temperature**
- **FG PED** 1.6 MPa / -50 to 180°C
- **FG ASME** 150 psig / -40 to 350°F
- **FD PED** 2.5 MPa / -50 to 180°C
- **FD ASME** 300 psig / -40 to 350°F

**Maximum heat transfer surface**
165 m² (1780 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

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Applications
Semi-welded plate heat exchanger for general heating, cooling and heat recovery of aggressive media in one channel.

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 semi-welded plates combine the flexibility and serviceability of the gasketed heat exchangers with the assurance against leakage of the welded heat exchangers. In the plate arrangement, every other channel is welded, and every other channel is gasketed. 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 semi-welded plate heat exchanger is provided with gaskets specifically designed to resist aggressive media. The non-aggressive media flows in the gasketed channels. This construction means that it can easily be dismantled, for example for exchanging gaskets or for inspection and cleaning of the gasketed channels.

The semi welded plate heat exchanger features corrosion-resistant plate material, absence of pressure retaining welds, double gasket seals, and a flexible yet vibration-resistant design all to assure long life and trouble free operation.

The frame 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.

T20MW/BW

Typical capacities
Liquid flow rate
Up to 677 kg/s, depending on media, permitted pressure drop and temperature program.

Plate types
T20MW and T20BW plates

Frame types
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

Plates
Stainless steel AISI 316 or Titanium

Gaskets
Field gaskets Nitrile, EPDM
Ring gaskets Chloroprene, EPDM

Connections
FG PED Size 200 mm DIN PN10/16
FG ASME Size 8” ASME Cl. 100/150
FS PED Size 200 mm DIN PN25/40
FS ASME Size 8” ASME Cl. 300/400

TECHNICAL DATA
Mechanical design pressure (g) / temperature
FG PED 1.6 MPa / 180 °C
FG ASME 150 psig / 350 °F
FS PED 3.0 MPa / 160 °C
FS ASME 400 psig / 320 °F

Maximum heat transfer surface
425 m² (4,550 sq. ft)

Dimensions

Measurements (mm)
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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

THERMAL TRANSFER SYSTEMS, INC.
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Applications
Semi-welded plate heat exchanger for general heating, cooling and heat recovery of aggressive media in one channel.

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.

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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 361 kg/s, depending on media, permitted pressure drop and temperature program.

Plate types
MA30W plates

Frame types
FG, FD 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

**Plates**
Stainless steel AISI 316 or Titanium

**Gaskets**
Field gaskets Nitrile, EPDM
Ring gaskets Chloroprene, EPDM

**Connections**
- FG PED Size 300/350 mm DIN 2501 PN16
- FG ASME Size 12”/14” ANSI 150
- FD PED Size 300/350 mm DIN 2501 PN25
- FD ASME Size 12”/14” ANSI 300
- FS PED Size 300/350 mm DIN 2501 PN25/PN40
- FS ASME Size 12”/14” ANSI 400

**TECHNICAL DATA**

**Mechanical design pressure (g) / temperature**
- FG PED 1.6 MPa / 180 °C
- FG ASME 150 psig / 350 °F
- FD PED 2.5 MPa / 180 °C
- FD ASME 300 psig / 350 °F
- FS PED 3.0 MPa / 160 °C
- FS ASME 400 psig / 320 °F

**Maximum heat transfer surface**
1131 m² (12,107 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

**Dimensions**

**Measurements (mm)**

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