CPE SYSTEMS INC

CPE30H-XXD

PLATE HEAT EXCHANGER

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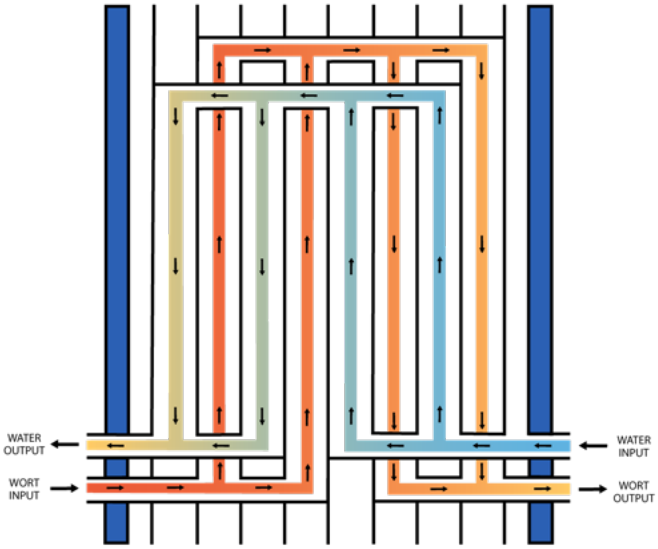
CPE30H Heat Exchanger/Wort Chillers

Our line of plate heat exchangers are designed for heating and cooling service in the food and beverage industries. Plate heat exchangers are the most efficient and sanitary form of cooling and heating. These heat exchangers are top quality, compact and easy to install even in places where space is limited. This line has Clip-on gaskets and is therefore perfect for situations where regular routine service is required.

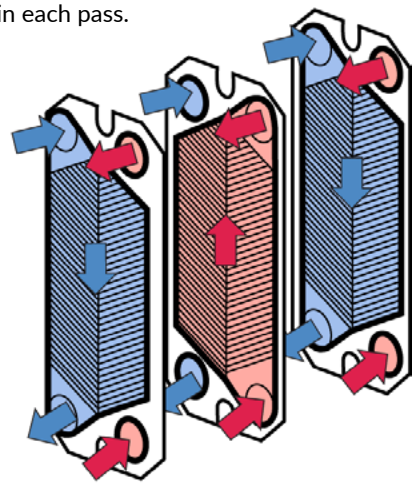
Our preselected models are specifically designed as wort chillers for the craft brewing industry. However, we are able to configure our heat exchangers for a variety of industries and applications upon request, including pasteurization, general cooling/heating of dairy, fruit juices and similar food products, and more. We can discuss the needs of the application and find the correct model and design to fit your needs.



Design

The CPE 30H plate heat exchanger consists of a number of corrugated plates clamped together in a frame and sealed at the edges by means of clip-on gaskets. The frame is comprised of a fixed plate and a pressure plate and are held together by long tie-bolts.

The CPE 30H is a counterflow plate heat exchanger. There are ports at the corners of the plates and gaskets which help direct the flow. The plates are arranged with space in-between them for the liquid to flow through, this is called a channel. The two medias flow in opposite directions through alternating channels so that they pass each other. Heat is transferred through the plates while keeping the medias separate. Each time the medias transfer heat through the plates it is called a “pass”. The heat exchanger can have a single pass or multiple passes and each pass can have multiple channels. The example on the left has two passes with 2 channels in each pass.



CPE 30H Models

SKU	Plates	Passes	Barrels
HX/CPE30H-18D	18	4	1 BBL
HX/CPE30H-30D	30	4	2 BBL
HX/CPE30H-43D	43	4	3 BBL
HX/CPE30H-61D (5P)	61	5	5 BBL
HX/CPE30H-81D (5P)	81	5	7-1/2 BBL

Materials

Plates	Stainless steel AISI 316
Frame	Painted carbon steel Stainless steel
Nuts	Chromium plated brass.
Gaskets	EPDM

Options

- Aluminum protection sheet
- Commissioning kit, gaskets
- Test certificates and material certificates
- Portable carts

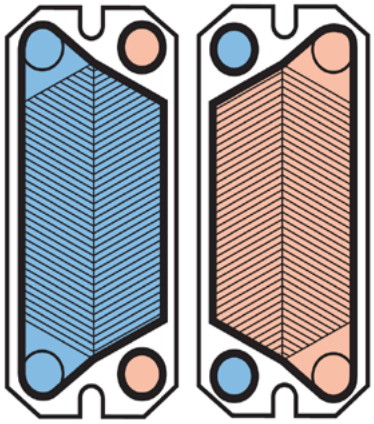
Features

- Fixed frame plate
- Movable pressure plate
- Upper carrying bar
- Lower guiding bar
- Support column
- Tightening bolts with nuts and washers
- Adjustable feet (optional)

Plates

Corrugation of the plates provides passage between the plates, supports each plate against the adjacent one. Plates are made from Stainless steel AISI 316. A chevron pattern is used for maximum strength at high working pressures and enhances the turbulence, resulting in efficient heat transfer. Different chevron designs are available, in order to obtain optimal high heat transfer and low pressure drop for your application.

The plates are reversible and have parallel flow, which means only one type of plate is needed. A unique distribution area provides an even flow over the plate surface.



A-plate B-plate

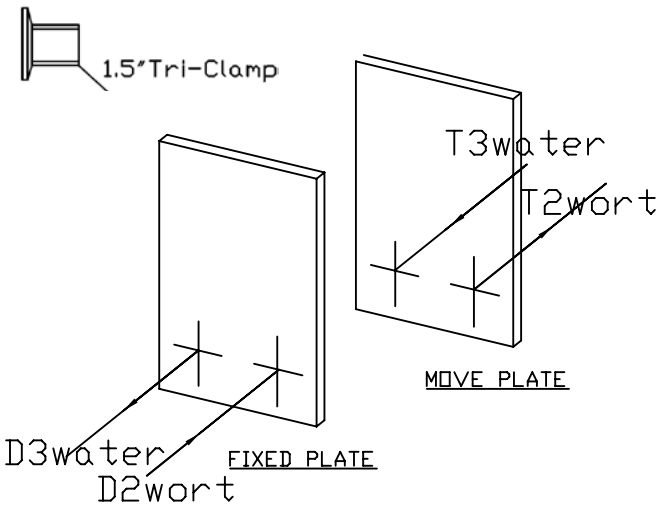
Gaskets

The plates are supplied with glue-free Clip-On gaskets, which are easy to replace and no tools are needed.

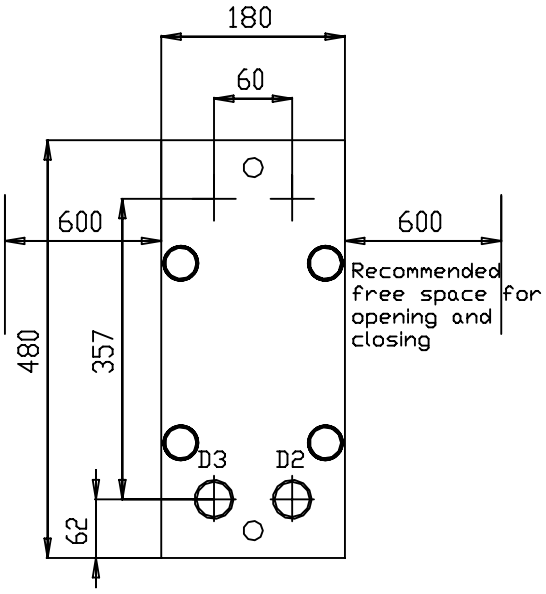
Our heat exchangers gaskets are formed and trimmed with a strong triangular shape peaking in the middle to support the space between the plates for the medium. Poor quality gaskets will have a flatter shape which will result in leakage.

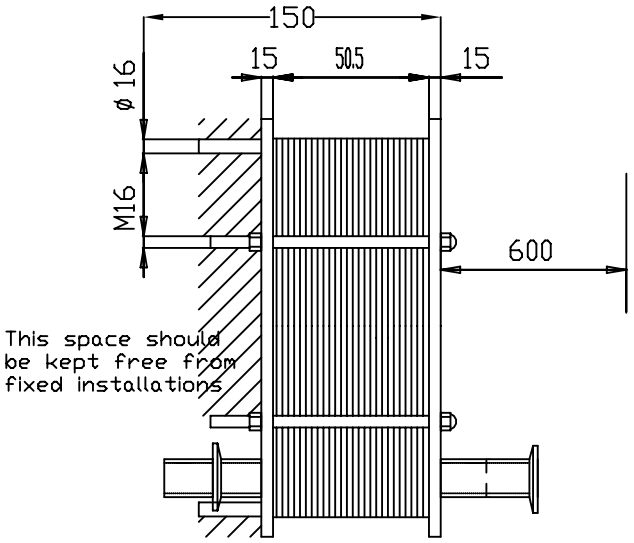
Leak detection grooves in the gasket prevent the liquids from mixing in the event that the plates or gaskets are damaged. Any leakage will be visible and external.

Connections



CPE30H-18D 1 Stage



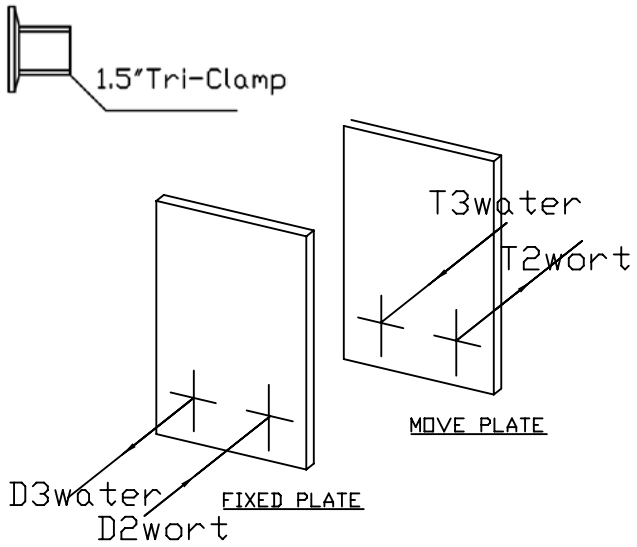


*All measurements in mm

FEATURES

- Fixed frame plate
- Upper carrying bar
- Lower guiding bar
- Support column
- Movable pressure plate
- Clip-On EPDM gaskets
- Tightening bolts and nuts
- Adjustable feet (optional)

CONNECTIONS



SPECIFICATIONS

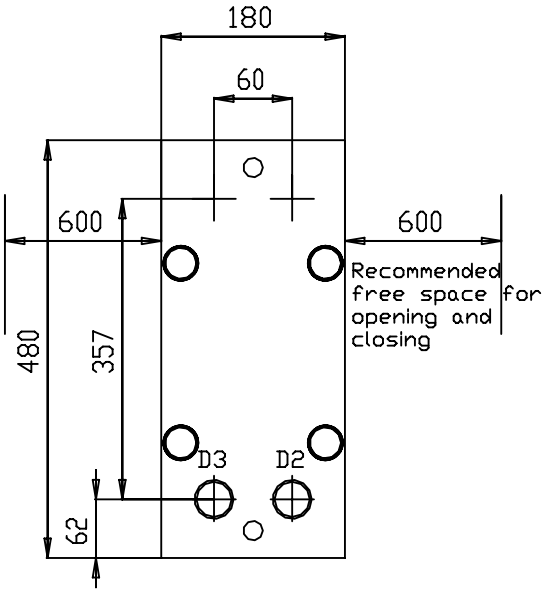
Rel. direction of fluids	Counter-current
No. of plates	18
No. of effective plates	16
No. of passes	4
Plate pack dimensions	50.5 mm
A Measure	
Plate material	AISI 316L
Plate thickness	0.50 mm
Sealing material	EPDM
Connection type	1-½" Tri-Clamp
Heat exchanged	20.22 kW
Heat transfer area	0.63 m^2
O.H.T.C clean conditions	3155 W/(m^2+K)
O.H.T.C service	2875 W/(m^2*K)
Additional excess surface	10%
Mean temperature difference	13.7 K

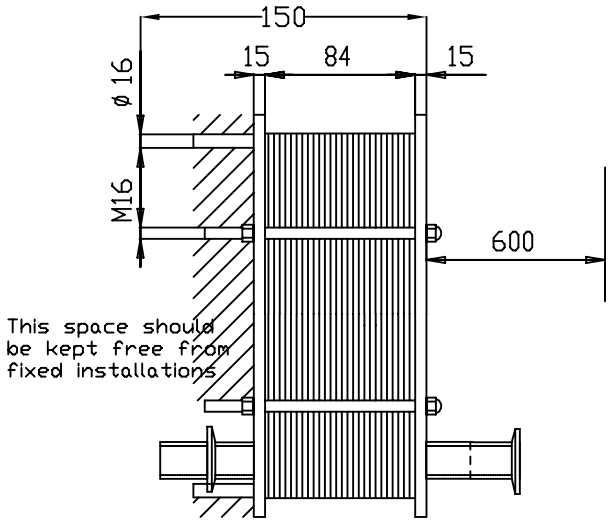
APPLICATION

	Beer wort	Water
Mass flow rate	228 Kg/h	205 Kg/h
Inlet temperature	93.3°C (212°F)	10°C (54.9°F)
Outlet temperature	21°C (70°F)	76.6°C (169.9°F)
Pressure drop (Perm/Calc)	80.0/19.1 kPa	80.0/17.5 kPa

CAUTION: DO NOT TIGHTEN BELOW MINIMUM DIMENSION

CPE30H-30D 1 Stage



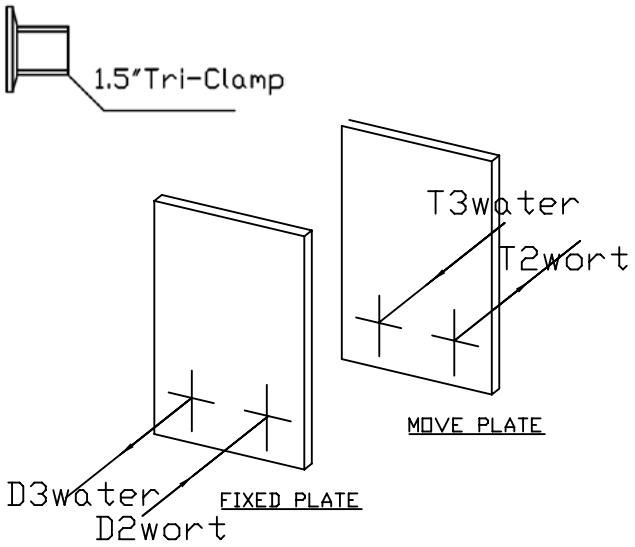


*All measurements in mm

FEATURES

- Fixed frame plate
- Upper carrying bar
- Lower guiding bar
- Support column
- Movable pressure plate
- Clip-On EPDM gaskets
- Tightening bolts and nuts
- Adjustable feet (optional)

CONNECTIONS



SPECIFICATIONS

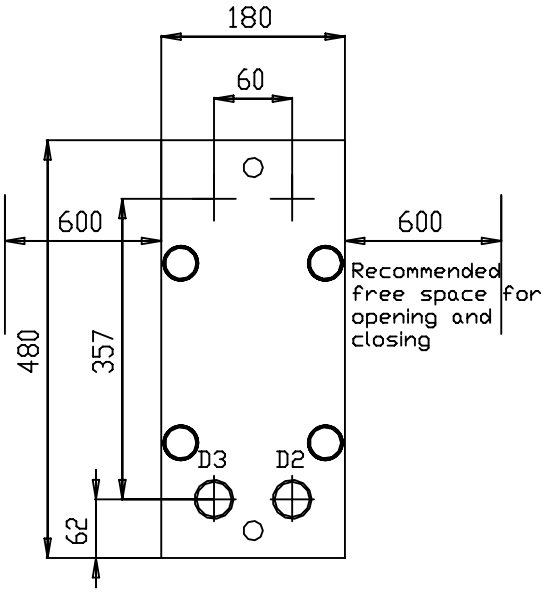
Rel. direction of fluids	Counter-current
No. of plates	30
No. of effective plates	28
No. of passes	4
Plate pack dimensions	84 mm
A Measure	
Plate material	AISI 316L
Plate thickness	0.50 mm
Sealing material	EPDM
Connection type	1-½" Tri-Clamp
Heat exchanged	40.46 kW
Heat transfer area	1.05 m^2
O.H.T.C clean conditions	3613 W/(m^2+K)
O.H.T.C service	3293 W/(m^2*K)
Additional excess surface	10%
Mean temperature difference	13.7 K

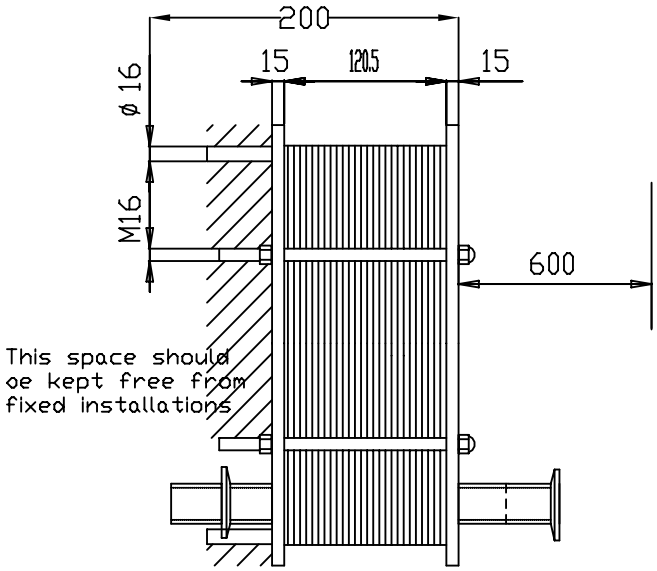
APPLICATION

	Beer wort	Water
Mass flow rate	456 Kg/h	410 Kg/h
Inlet temperature	93.3°C (212°F)	10°C (54.9°F)
Outlet temperature	21°C (70°F)	76.6°C (169.9°F)
Pressure drop (Perm/Calc)	80.0/26.3 kPa	80.0/24.1 kPa

CAUTION: DO NOT TIGHTEN BELOW MINIMUM DIMENSION

CPE30H-43D 1 Stage



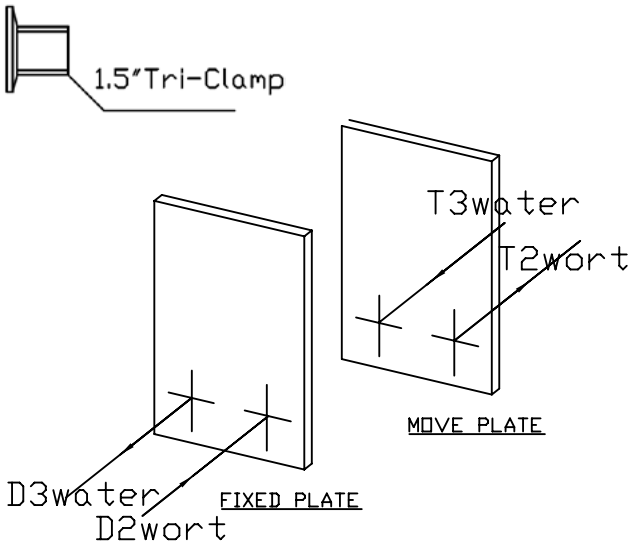


*All measurements in mm

FEATURES

- Fixed frame plate
- Upper carrying bar
- Lower guiding bar
- Support column
- Movable pressure plate
- Clip-On EPDM gaskets
- Tightening bolts and nuts
- Adjustable feet (optional)

CONNECTIONS



SPECIFICATIONS

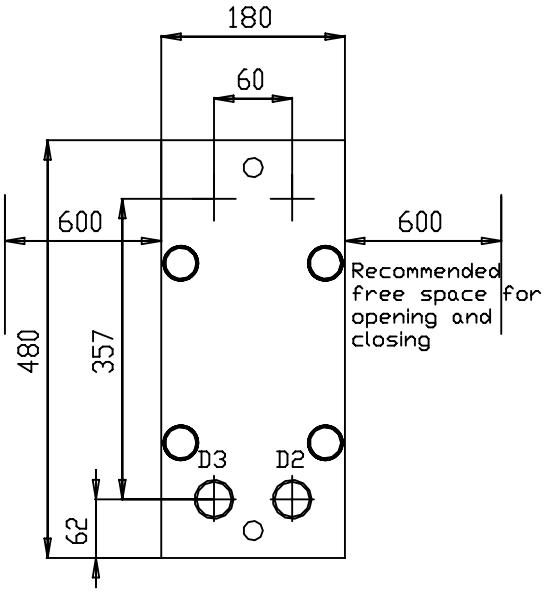
Rel. direction of fluids	Counter-current
No. of plates	43
No. of effective plates	41
No. of passes	4
Plate pack dimensions	120.5 mm
A Measure	
Plate material	AISI 316L
Plate thickness	0.50 mm
Sealing material	EPDM
Connection type	1-½" Tri-Clamp
Heat exchanged	60.70 kW
Heat transfer area	1.505 m^2
O.H.T.C clean conditions	3718 W/(m^2+K)
O.H.T.C service	3358 W/(m^2*K)
Additional excess surface	10%
Mean temperature difference	13.7 K

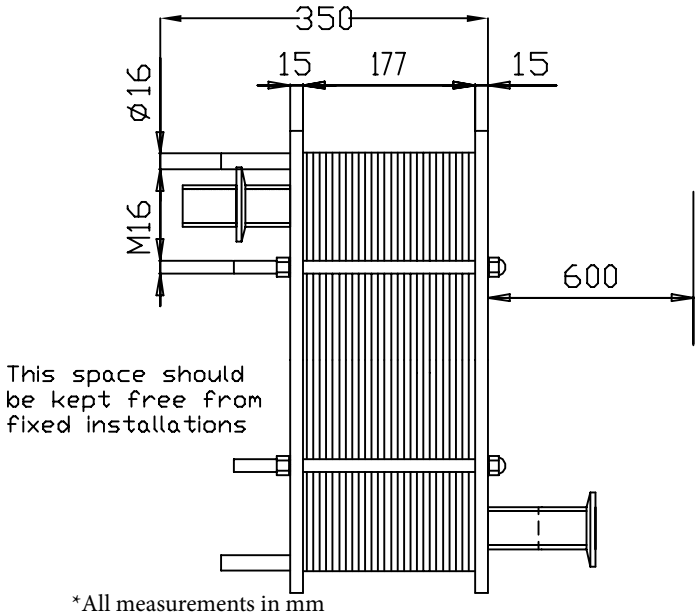
APPLICATION

	Beer wort	Water
Mass flow rate	684 Kg/h	615 Kg/h
Inlet temperature	93.3°C (29.9°F)	10°C (50°F)
Outlet temperature	21°C (70°F)	76.6°C (169.9°F)
Pressure drop (Perm/Calc)	80.0/25.2 kPa	80.0/26.8 kPa

CAUTION: DO NOT TIGHTEN BELOW MINIMUM DIMENSION

CPE30H-61D 1 Stage



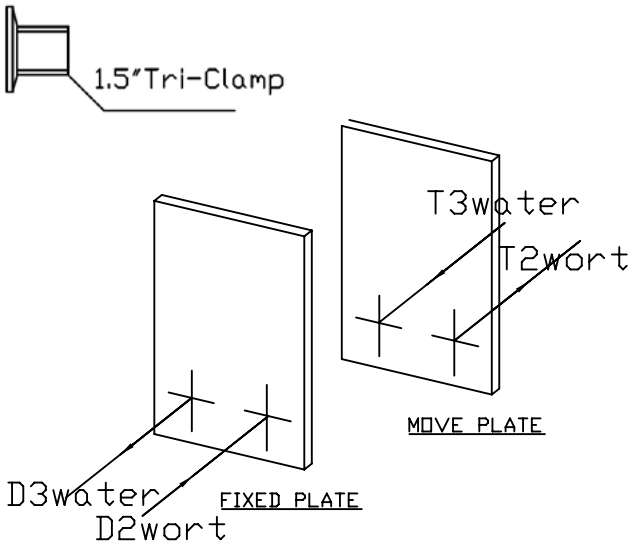


*All measurements in mm

FEATURES

- Fixed frame plate
- Upper carrying bar
- Lower guiding bar
- Support column
- Movable pressure plate
- Clip-On EPDM gaskets
- Tightening bolts and nuts
- Adjustable feet (optional)

CONNECTIONS



SPECIFICATIONS

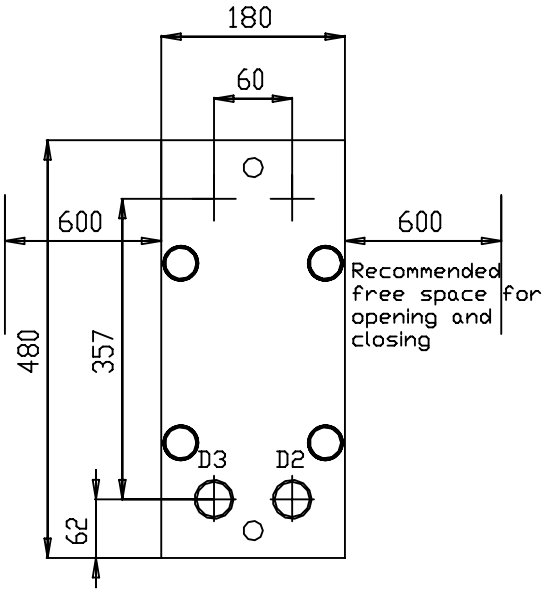
Rel. direction of fluids	Counter-current
No. of plates	61
No. of effective plates	59
No. of passes	5
Plate pack dimensions	177 mm
A Measure	
Plate material	AISI 316L
Plate thickness	0.50 mm
Sealing material	EPDM
Connection type	1-½" Tri-Clamp
Heat exchanged	99.79 kW
Heat transfer area	1.9 m^2
O.H.T.C clean conditions	4788 W/(m^2+K)
O.H.T.C service	4098 W/(m^2*K)
Additional excess surface	17%
Mean temperature difference	12.9 K

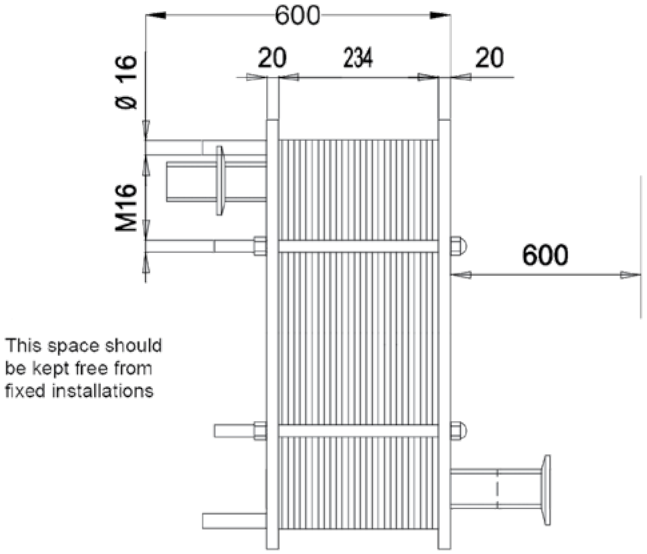
APPLICATION

	Beer wort	Water
Mass flow rate	1136 Kg/h	1368 Kg/h
Inlet temperature	100°C (212°F)	12.7°C (54.9°F)
Outlet temperature	20°C (68°F)	75.5°C (167.9°F)
Pressure drop (Perm/Calc)	80.0/51.6 kPa	80.0/73.9 kPa

CAUTION: DO NOT TIGHTEN BELOW MINIMUM DIMENSION

CPE30H-81D 1 Stage



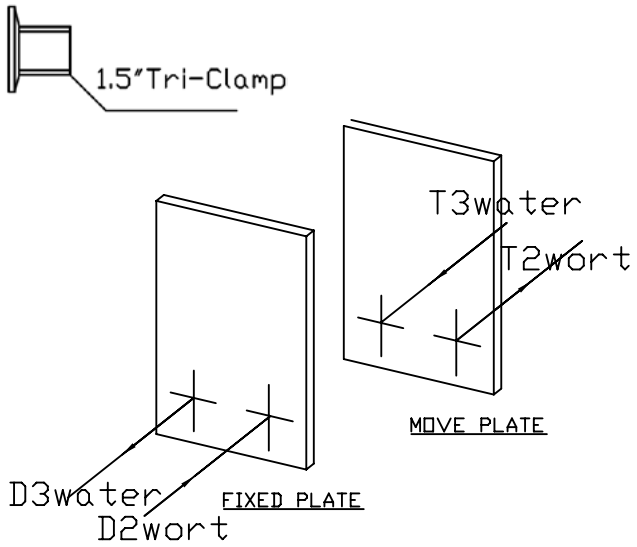


*All measurements in mm

FEATURES

- Fixed frame plate
- Upper carrying bar
- Lower guiding bar
- Support column
- Movable pressure plate
- Clip-On EPDM gaskets
- Tightening bolts and nuts
- Adjustable feet (optional)

CONNECTIONS



SPECIFICATIONS

Rel. direction of fluids	Counter-current
No. of plates	81
No. of effective plates	79
No. of passes	5
Plate pack dimensions	234 mm
A Measure	
Plate material	AISI 316L
Plate thickness	0.50 mm
Sealing material	EPDM
Connection type	1-½" Tri-Clamp
Heat exchanged	139.70 kW
Heat transfer area	2.66 m^2
O.H.T.C clean conditions	3149 W/(m^2+K)
O.H.T.C service	2603 W/(m^2*K)
Additional excess surface	21%
Mean temperature difference	6.8 K

APPLICATION

	Beer wort	Water
Mass flow rate	1590 Kg/h	1915 Kg/h
Inlet temperature	100°C (212°F)	12.70°C (54.86°F)
Outlet temperature	20°C (68°F)	75°C (167°F)
Pressure drop (Perm/Calc)	80.0/34.6 kPa	80.0/78.3 kPa

CAUTION: DO NOT TIGHTEN BELOW MINIMUM DIMENSION