CPE SYSTEMS INC

CPE60H-XXD

PLATE HEAT EXCHANGER

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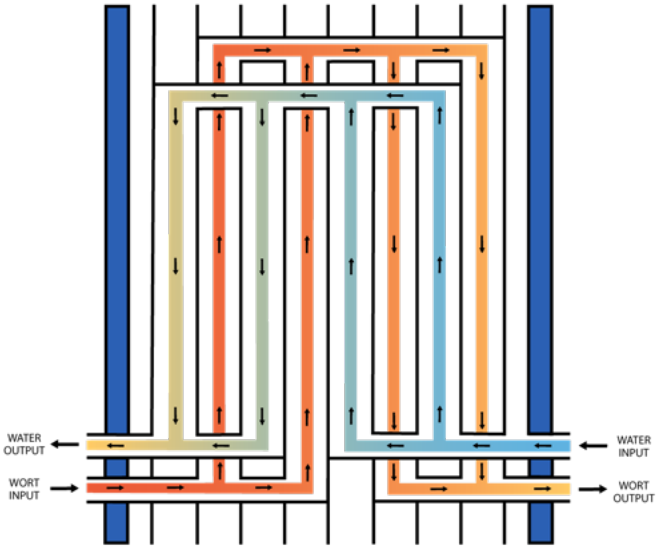
CPE60H Heat Exchanger/Wort Chillers

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.

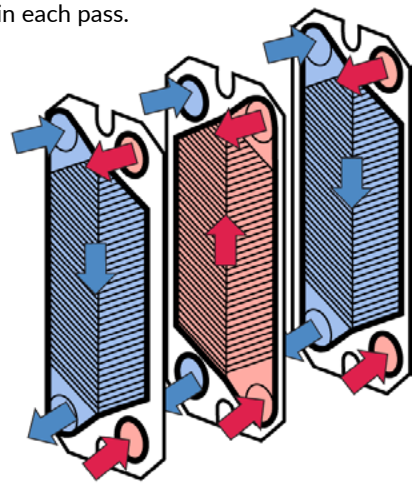
Our preselected models are specifically designed as wort chillers for the craft brewing industry. However, we are able to configure our heat exchangers for a variety of industries and applications upon request, including pasteurization, general cooling/heating of dairy, fruit juices and similar food 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 60H 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 60H 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 60H Models

SKU	Plates	Passes	Barrels
HX/CPE60H-37D	37	3	10 BBL
HX/CPE60H-49D	49	3	15 BBL
HX/CPE60H-61D	61	3	20 BBL
HX/CPE60H-73D	73	3	25 BBL
HX/CPE60H-85D	85	3	30 BBL
HX/CPE60H-109D	109	3	40 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

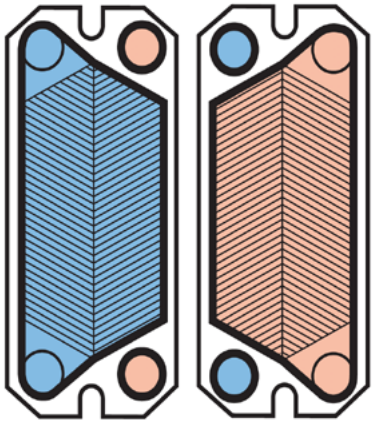
Features

- 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

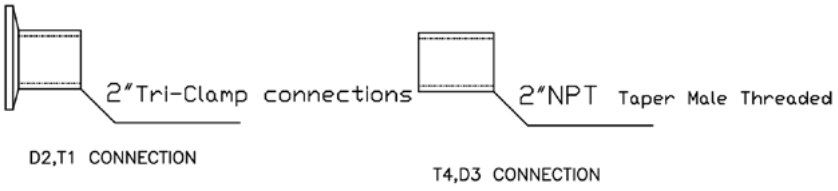
Gaskets

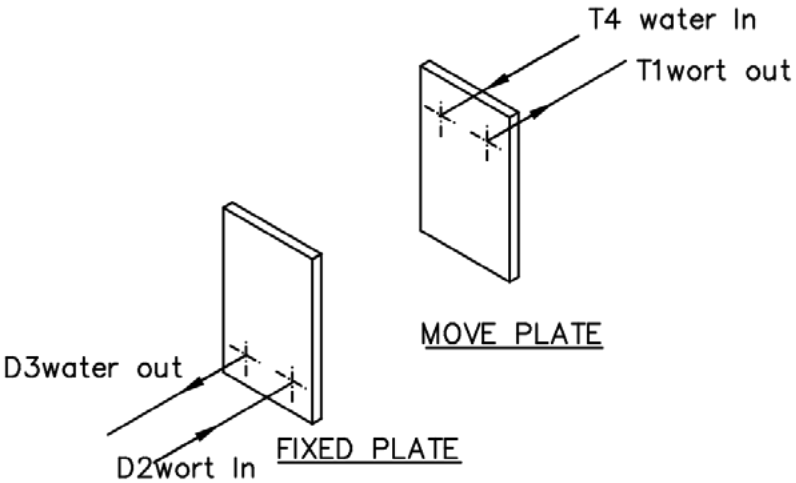
The plates are supplied with glue-free Clip-On gaskets, which are easy to replace and no tools are needed.

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.

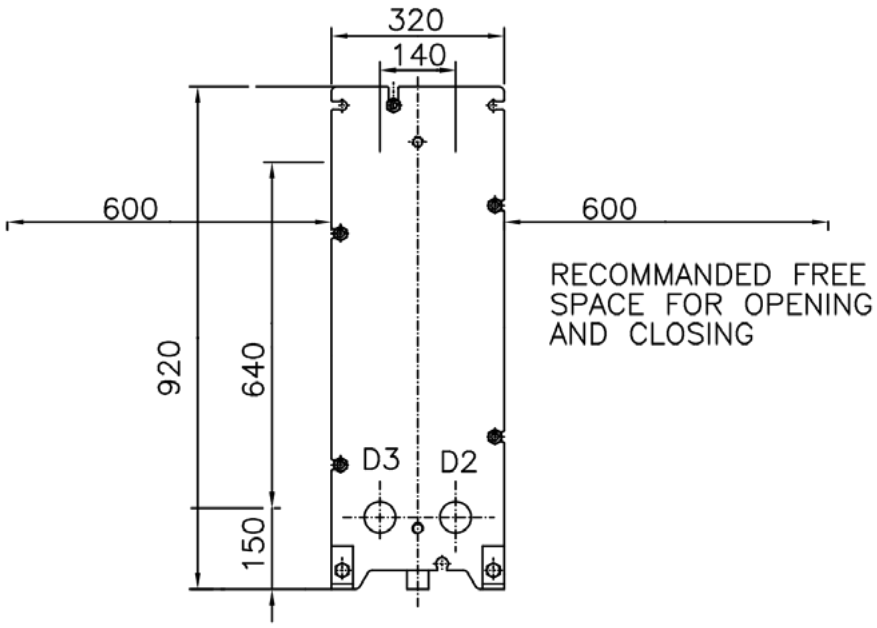
Leak detection grooves in the gasket prevent the liquids from mixing in the event that the plates or gaskets are damaged. Any leakage will be visible and external.

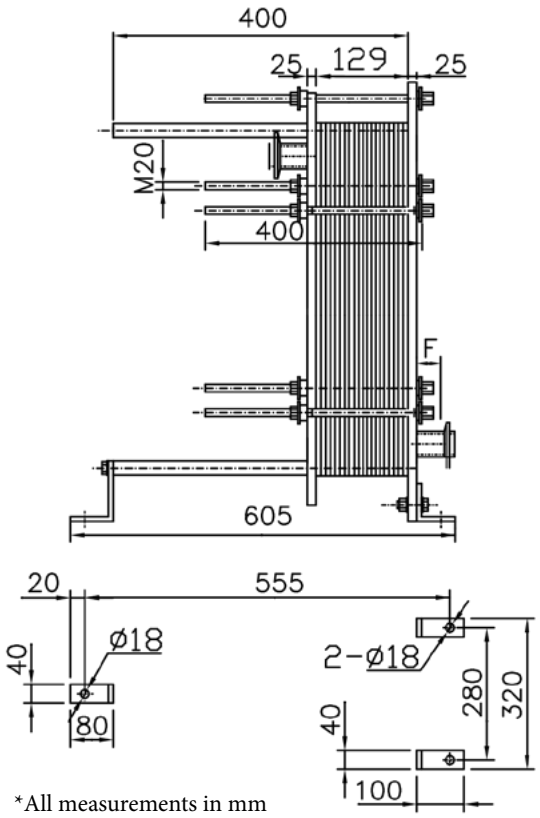
Connections





CPE60H-37D 1 Stage





*All measurements in mm

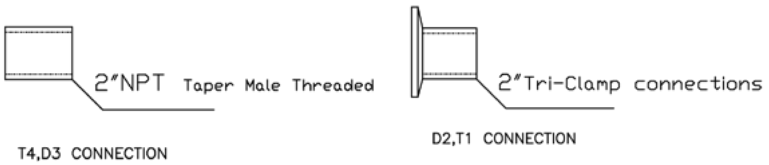
Features

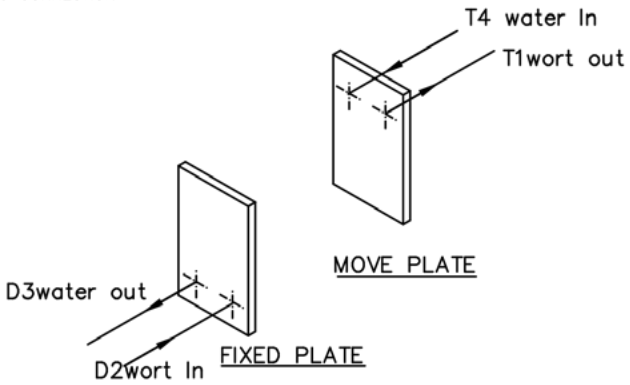
- Fixed frame plate
- Upper carrying bar
- Lower guiding bar
- Support column
- Movable pressure plate
- Clip-On EPDM gaskets
- Tightening bolts and nuts
- Adjustable feet (optional)

SPECIFICATIONS

Rel. direction of fluids	Counter-current
No. of plates	37
No. of effective plates	35
No. of passes	3
Plate pack dimensions	129 mm
A Measure	
Plate material	AISI 316L
Plate thickness	0.50 mm
Sealing material	EPDM
Connection type	2" Tri-Clamp
Heat exchanged	199.5 kW
Heat transfer area	4.9 m^2
O.H.T.C clean conditions	3887 W/(m^2+K)
O.H.T.C service	3366 W/(m^2*K)
Additional excess surface	10%
Mean temperature difference	12.1 K

Connections



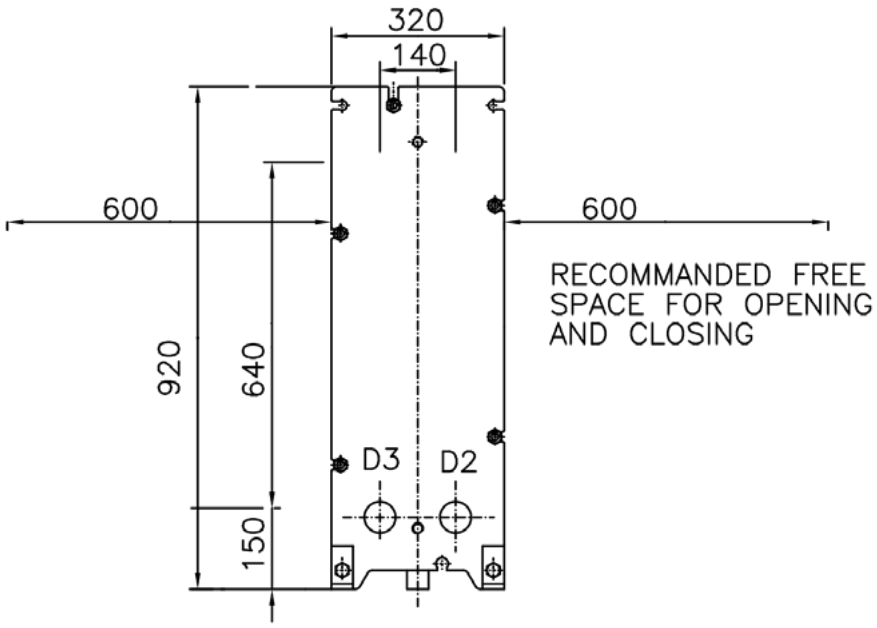


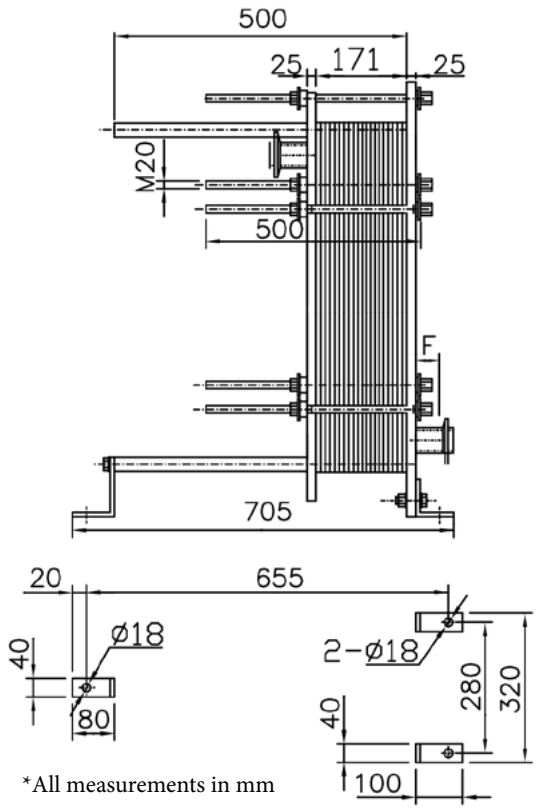
Application

	Beer wort	Water
Mass flow rate	2271 Kg/h	2736 Kg/h
Inlet temperature	100°C (212°F)	12.7°C (54.86°F)
Outlet temperature	20°C (68°F)	75.5°C (167.9°F)
Pressure drop (Perm/Calc)	80.0/21.0 kPa	80.0/30.5 kPa

CAUTION: DO NOT TIGHTEN BELOW MINIMUM DIMENSION

CPE60H-49D 1 Stage





*All measurements in mm

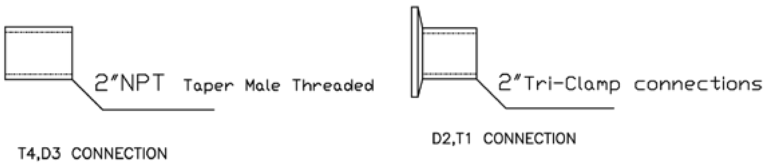
Features

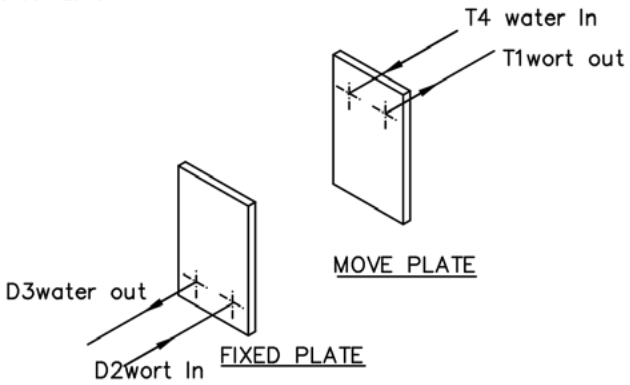
- Fixed frame plate
- Upper carrying bar
- Lower guiding bar
- Support column
- Movable pressure plate
- Clip-On EPDM gaskets
- Tightening bolts and nuts
- Adjustable feet (optional)

SPECIFICATIONS

Rel. direction of fluids	Counter-current
No. of plates	49
No. of effective plates	47
No. of passes	3
Plate pack dimensions	171 mm
A Measure	
Plate material	AISI 316L
Plate thickness	0.50 mm
Sealing material	EPDM
Connection type	2" Tri-Clamp
Heat exchanged	299.2 kW
Heat transfer area	6.6 m^2
O.H.T.C clean conditions	4175 W/(m^2+K)
O.H.T.C service	3625 W/(m^2*K)
Additional excess surface	15%
Mean temperature difference	12.5 K

Connections



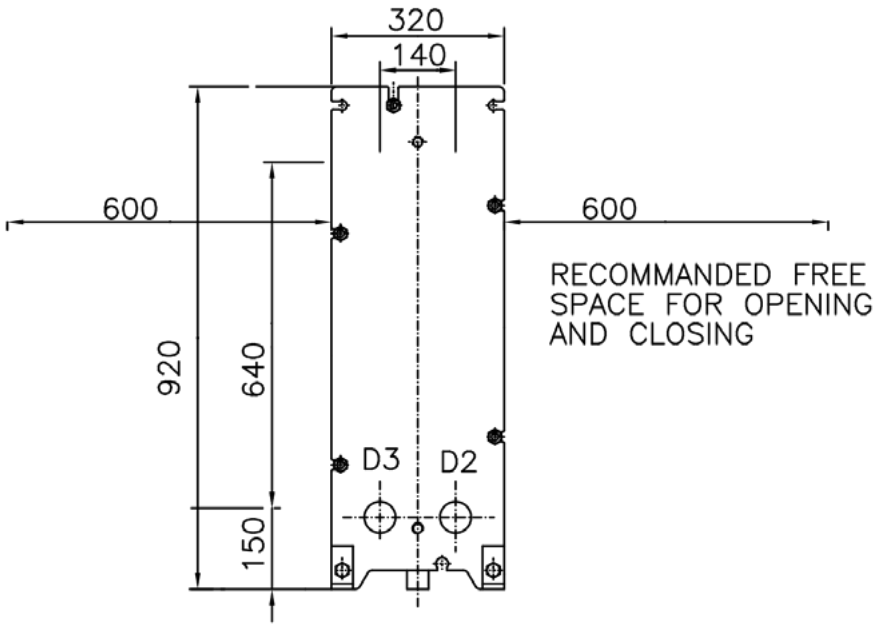


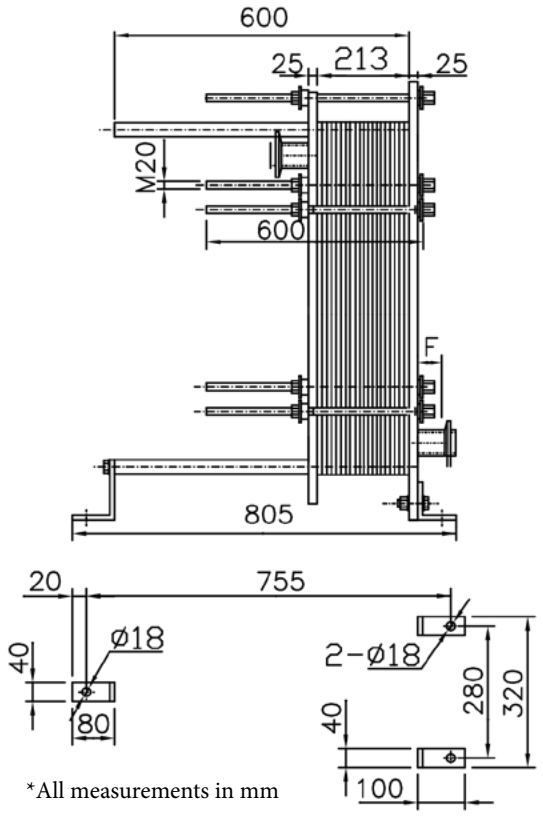
Application

	Beer wort	Water
Mass flow rate	3407 Kg/h	4104 Kg/h
Inlet temperature	100°C (212°F)	12.7°C (54.86°F)
Outlet temperature	20°C (68°F)	75.5°C (167.9°F)
Pressure drop (Perm/Calc)	80.0/26.4 kPa	80.0/38.7 kPa

CAUTION: DO NOT TIGHTEN BELOW MINIMUM DIMENSION

CPE60H-61D 1 Stage





*All measurements in mm

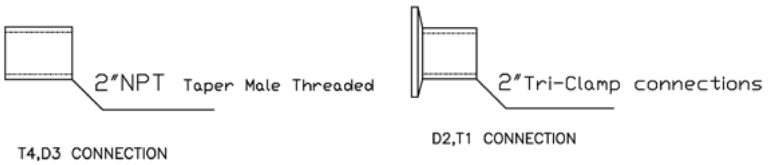
Features

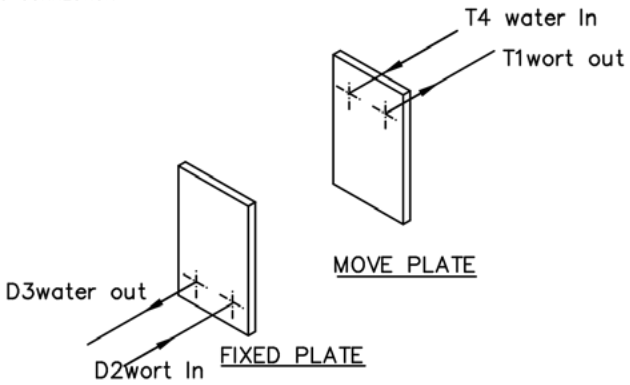
- Fixed frame plate
- Upper carrying bar
- Lower guiding bar
- Support column
- Movable pressure plate
- Clip-On EPDM gaskets
- Tightening bolts and nuts
- Adjustable feet (optional)

SPECIFICATIONS

Rel. direction of fluids	Counter-current
No. of plates	61
No. of effective plates	59
No. of passes	3
Plate pack dimensions	213 mm
A Measure	
Plate material	AISI 316L
Plate thickness	0.50 mm
Sealing material	EPDM
Connection type	2" Tri-Clamp
Heat exchanged	375 kW
Heat transfer area	8.3 m^2
O.H.T.C clean conditions	4340 W/(m^2+K)
O.H.T.C service	3767 W/(m^2*K)
Additional excess surface	15%
Mean temperature difference	12.8 K

Connections



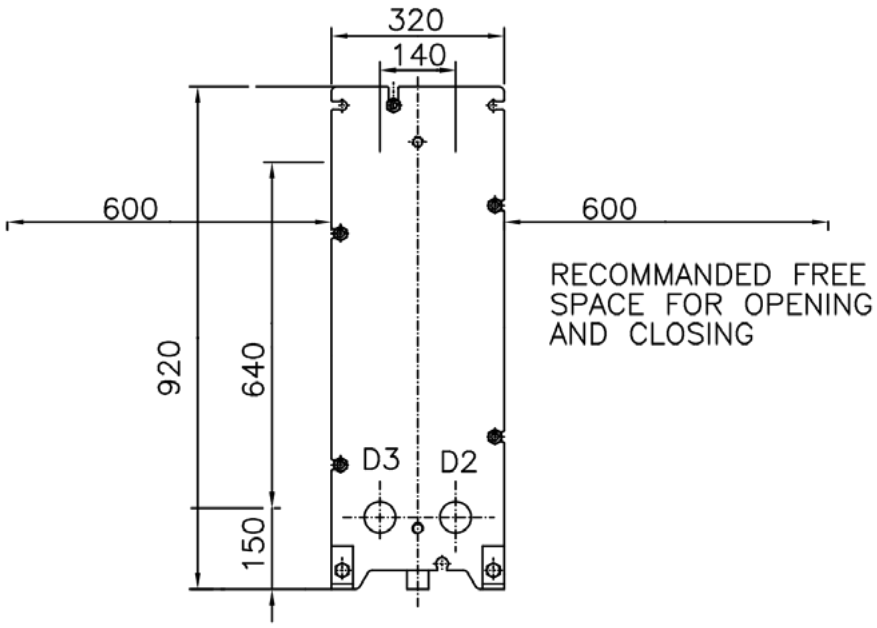


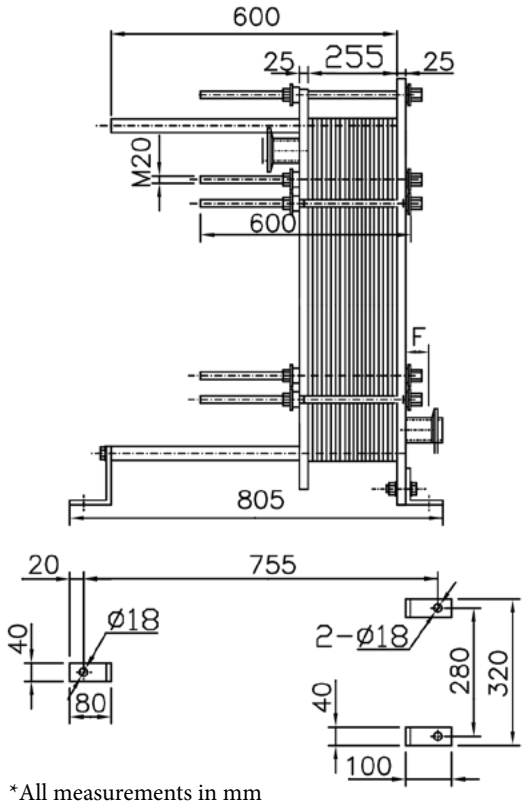
Application

	Beer wort	Water
Mass flow rate	3420 Kg/h	4560 Kg/h
Inlet temperature	121°C (249.8°F)	10°C (50°F)
Outlet temperature	21°C (69.8°F)	85°C (185°F)
Pressure drop (Perm/Calc)	80.0/30.0 kPa	80.0/44.2 kPa

CAUTION: DO NOT TIGHTEN BELOW MINIMUM DIMENSION

CPE60H-73D 1 Stage





*All measurements in mm

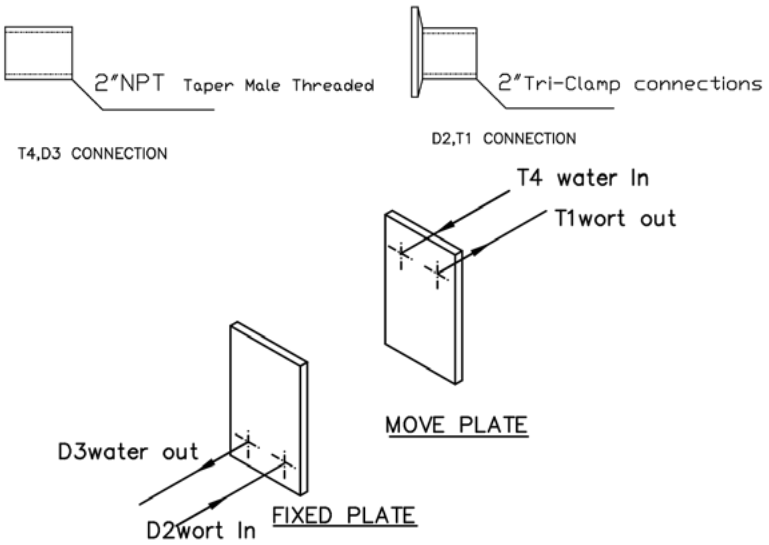
Features

- 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)

SPECIFICATIONS

Rel. direction of fluids	Counter-current
No. of plates	73
No. of effective plates	71
No. of passes	3
Plate pack dimensions	255 mm
A Measure	
Plate material	AISI 316L
Plate thickness	0.50 mm
Sealing material	EPDM
Connection type	2" Tri-Clamp
Heat exchanged	498.7 kW
Heat transfer area	9.9 m^2
O.H.T.C clean conditions	4683 $W/(m^2+K)$
O.H.T.C service	4229 $W/(m^2*K)$
Additional excess surface	10%
Mean temperature difference	13.0 K

Connections

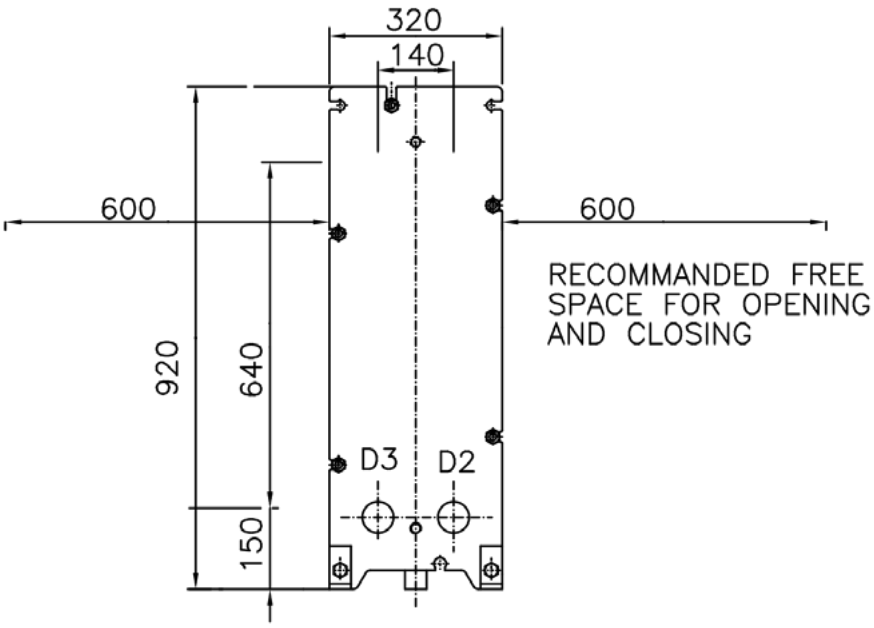


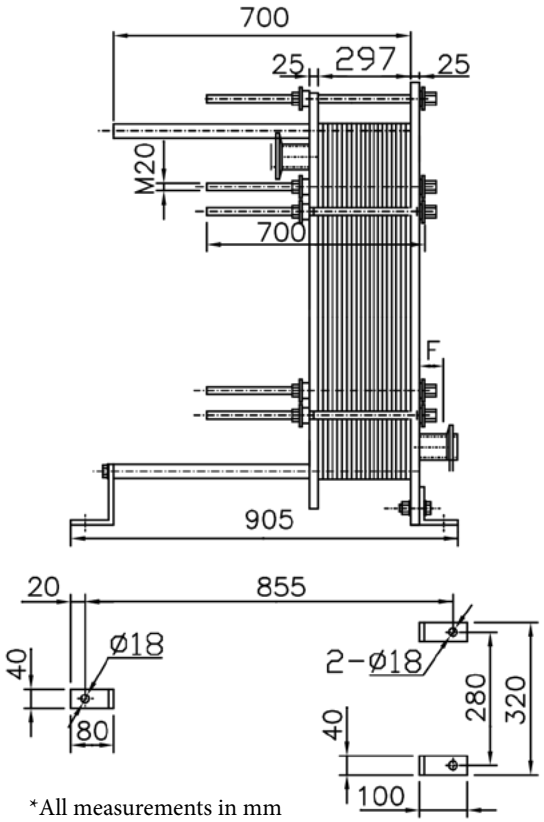
Application

	Beer wort	Water
Mass flow rate	6813 Kg/h	8207 Kg/h
Inlet temperature	80°C (176°F)	12.7°C (54.86°F)
Outlet temperature	25°C (77°F)	60.0°C (140°F)
Pressure drop (Perm/Calc)	80.0/38.5 kPa	80.0/57.2 kPa

CAUTION: DO NOT TIGHTEN BELOW MINIMUM DIMENSION

CPE60H-85D 1 Stage





*All measurements in mm

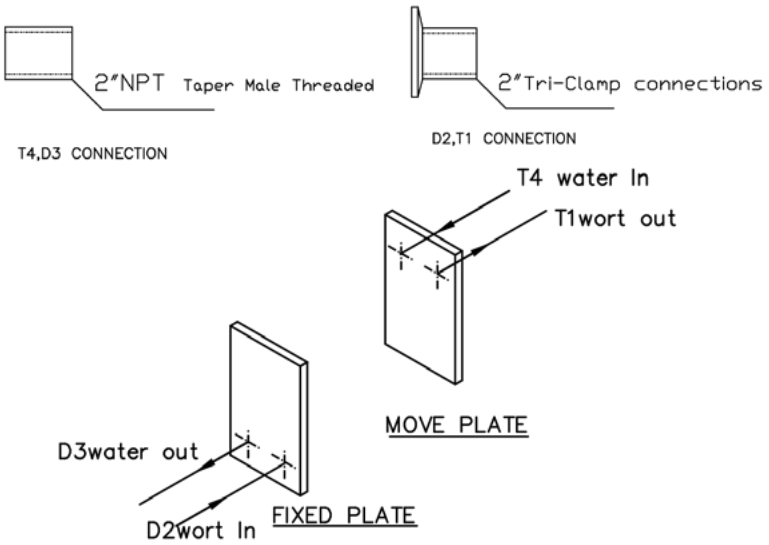
Features

- 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)

SPECIFICATIONS

Rel. direction of fluids	Counter-current
No. of plates	85
No. of effective plates	83
No. of passes	3
Plate pack dimensions	297 mm
A Measure	
Plate material	AISI 316L
Plate thickness	0.50 mm
Sealing material	EPDM
Connection type	2" Tri-Clamp
Heat exchanged	598.5 kW
Heat transfer area	11.6 m^2
O.H.T.C clean conditions	4725 $W/(m^2+K)$
O.H.T.C service	4236 $W/(m^2*K)$
Additional excess surface	10%
Mean temperature difference	13.1 K

Connections

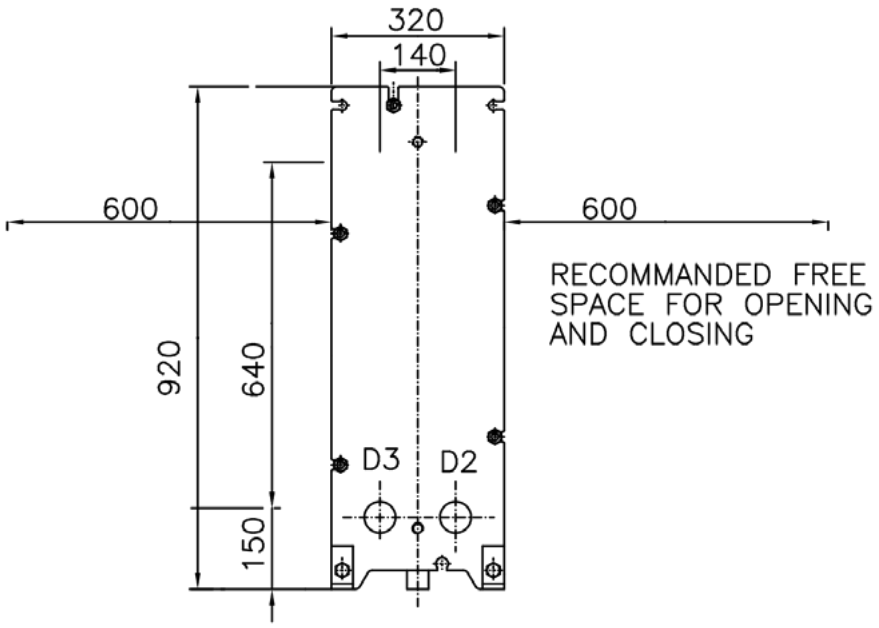


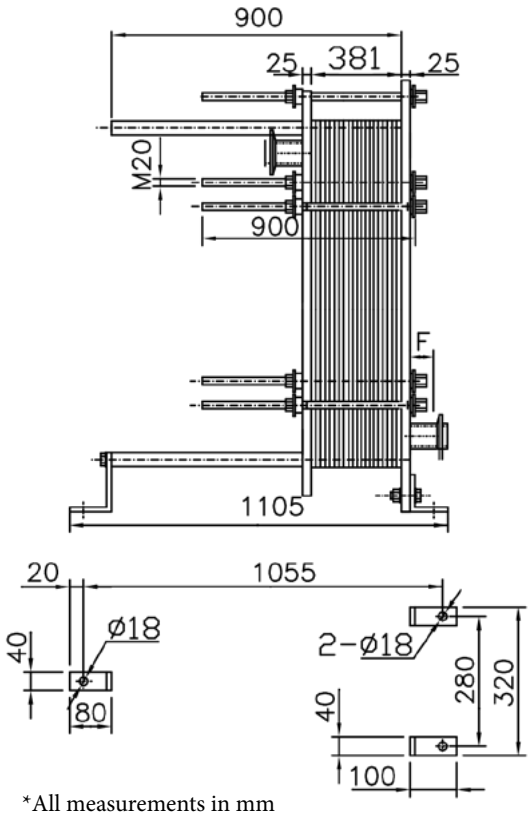
Application

	Beer wort	Water
Mass flow rate	6813 Kg/h	8207 Kg/h
Inlet temperature	100°C (212°F)	12.7°C (54.86°F)
Outlet temperature	20°C (68°F)	75.5°C (167.9°F)
Pressure drop (Perm/Calc)	80.0/39.9 kPa	80.0/59.4 kPa

CAUTION: DO NOT TIGHTEN BELOW MINIMUM DIMENSION

CPE60H-109D 1 Stage





*All measurements in mm

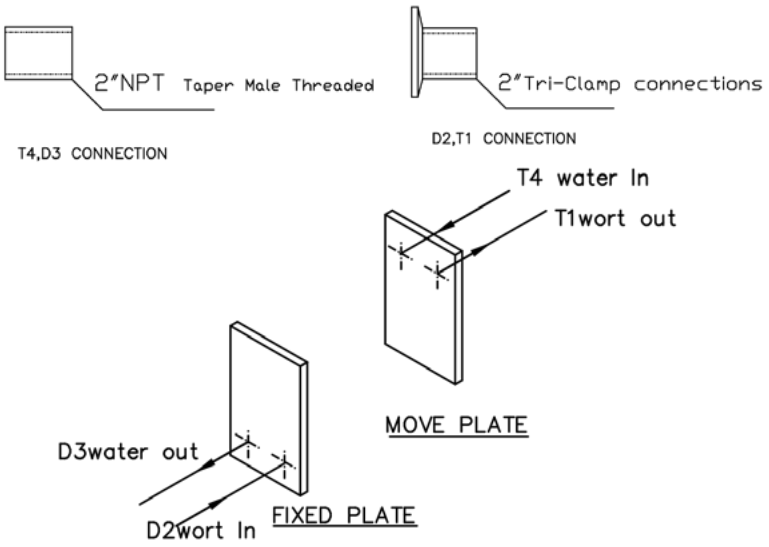
Features

- 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)

SPECIFICATIONS

Rel. direction of fluids	Counter-current
No. of plates	109
No. of effective plates	107
No. of passes	3
Plate pack dimensions	381 mm
A Measure	
Plate material	AISI 316L
Plate thickness	0.50 mm
Sealing material	EPDM
Connection type	2" Tri-Clamp
Heat exchanged	797.9 kW
Heat transfer area	14.9 m^2
O.H.T.C clean conditions	4780 $W/(m^2+K)$
O.H.T.C service	4244 $W/(m^2*K)$
Additional excess surface	13%
Mean temperature difference	13.3 K

Connections



Application

	Beer wort	Water
Mass flow rate	9084 Kg/h	10940 Kg/h
Inlet temperature	100°C (212°F)	12.7°C (54.86°F)
Outlet temperature	20°C (68°F)	75.5°C (167.9°F)
Pressure drop (Perm/Calc)	80.0/42.0 kPa	80.0/62.7 kPa

CAUTION: DO NOT TIGHTEN BELOW MINIMUM DIMENSION