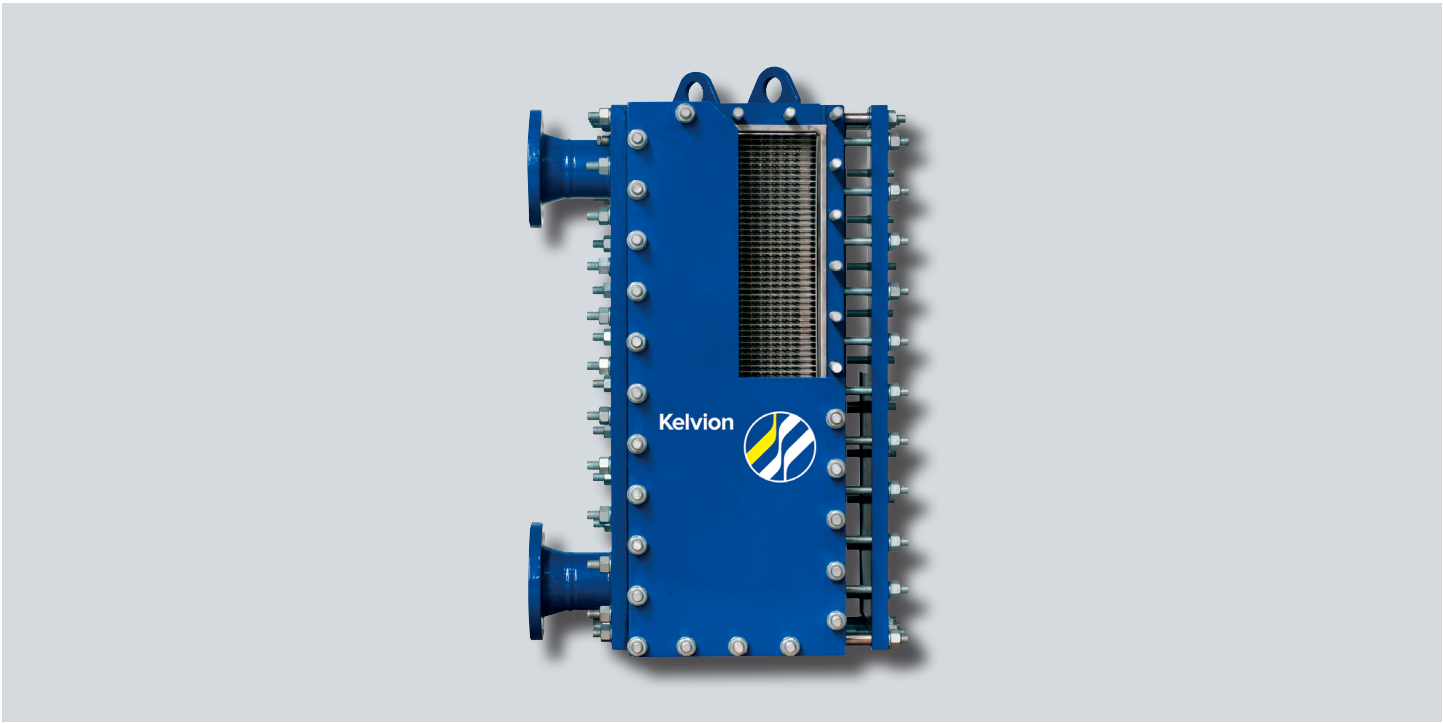
Kelvion

Fully Welded Plate Heat Exchangers

BLOC™



The **Bloc® Fully Welded Plate Heat Exchanger** works across a broad range of liquids, temperatures and pressures.

Bloc units are well-suited for liquid-liquid, condensation and evaporation applications, such as, Chemical, Petrochemical (HPI), Oil/Gas, Pulp & Paper, Power, Vegetable Oil, Refinery, Amines, and other Oil and Gas processes.

Bloc® Versatility

- The fully welded core exceeds temperature and pressure limitations of gasketed plate heat exchangers
- Unique design allows for dissimilar flows
- Compact design
- Four removable sides for easy maintenance
- Double dimple plates accommodate low pressure and vacuum applications
- Shear stress greater than 50 (Pa.)
- Exotic alloys available
- 3D drawings available

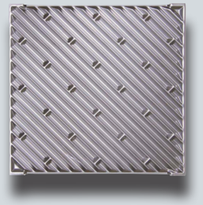
The Right Plate for Your Application

Corrugation
Special media in your process? No problem! Our choices of Chevron or Double Dimple plates allows the unit to handle a broad range of media.

Material
Regardless of your requirements, we have the right plate for your application.
- 304 and 316 Stainless
- SMO 254
- Alloy C22, C276, C2000
- Nickel Alloys
- Titanium Grade One
- Others on request

Maintenance
All four panels can be removed for high pressure spray cleaning. The Double Dimple plate also offers a clear view all the way through the core. The Bloc® Cleaning Wand (sold separately) can be attached to any commercial power washer for precise cleaning of your unit. Kelvion also has an After Sales & Service department to maintain heat exchangers manufactured by Kelvion and most competitors.

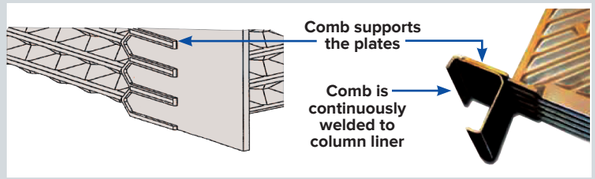
Double Dimple
Works best with low vacuum processes.



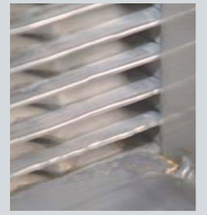
Chevron
Delivers the highest heat transfer efficiency with the fewest plates.

Durability

Comb Technology
We design our plates for durability and heat transfer efficiency. We then use a separate comb to support the weight of the plate pack and link it rigidly to the frame. The resulting design is long lasting and resistant to temperature and pressure stresses. No other manufacturer uses this technology.



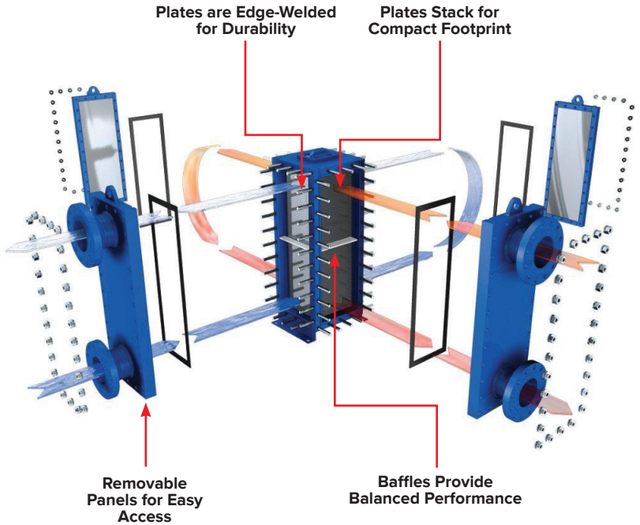
Edge-Welded Plates
Edge-welding allows field repair of the plate pack, lengthening the product life and reducing lost productivity from unplanned downtime. Competitor plates are butt-welded preventing field repairs, if required.



Edge-welding improves durability

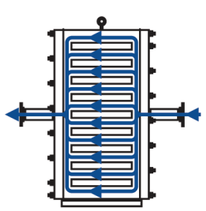
How the Bloc® Works

- Plates are edge-welded in a stack to create the core.
- The media flow at a 90° angle to each other in a crossflow pattern.
- Special baffles allow multipass designs, up to 50 per side (2 passes per side shown at right).
- Because the plates stack, large heat duty heat exchangers are simply taller, with no significant change in footprint. Even the largest size only requires 11.8 ft² (1.1 m²).
- All four panels are removable for easy access from all sides.

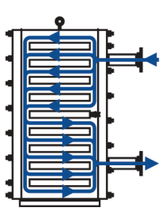


Design Versatility

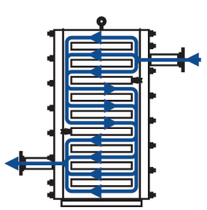
Special baffles are installed to deliver the right number of passes for your specific application. This delivers the correct balance of heat transfer efficiency and pressure drop.



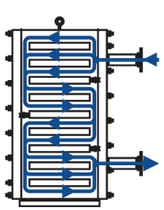
No baffles for a 1-pass design



1 baffle for a 2-pass design



2 baffles for a 3-pass design



3 baffles for a 4-pass design

Application Versatility

The Bloc's temperature and pressure range capabilities combine with our variety of corrugation patterns so it is well suited for many applications. Shown here are the primary ones.

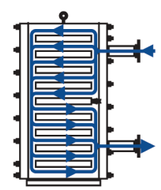
Oil & Gas
- Gas Dehydration
- Sweetening
- Crude Oil Stabilization
- Crude Oil Heater
- Crude Oil Cooler
- HP/LP Suction Cooler
- Produced Gas Cooler
- Lean-Rich Interchanger
- Reboiler

Refinery
- Reboiler
- Condenser
- Heat Recovery
- Heater
- Product Cooler
- Desalter
- AlkylationW
- Feed/Bottom Interchanger

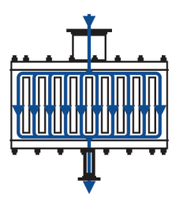
Vegetable Oil Processing
- Refining
- Biodiesel Conversion
  - Heater
  - Heat Recovery
  - Cooler
  - Chiller
  - Methanol Reboiler
- Deodorization

Alkali Plant
- Sodium Hydroxide (NaOH) Production
  - Condenser
  - Concentrating
- Cooler
- Caustic Evaporation

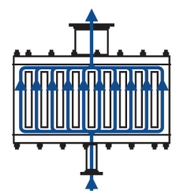
Other
- Urea Cooler
- Nitric Acid Cooler
- Methylene Chloride Heater
- Phenol Interchanger
- Bitumen Interchanger



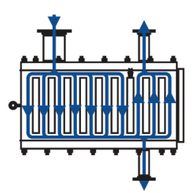
Vertical Installation
For Liquid-Liquid and Multipass Condensers and Evaporators



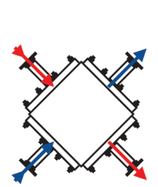
Horizontal Installation
For Condensation



Horizontal Installation
For Evaporation



Horizontal Installation with Two Outlets
For separation or condensation with inert gas



Horizontal, Rotated 45°
For condensation and evaporation in one unit

Media Versatility

Here's a partial list of the media that may be running through a Bloc® right now.

- Fresh Water
- Brine
- Glycol Blends
- Sea Water
- Sodium Hydroxide
- Ammonia/Water Blends
- Sulfuric Acid
- Ethanol
- Steam
- Lean/Rich TEG
- Biodiesel
- Crude Oil
- Rendered Animal Fat
- Lean/Rich Amine

Bloc®: Technical data

MATERIALS AND CONSTRUCTION:

Heat Transfer Plate: 316L Stainless, 304L Stainless, 321 Stainless, SMO 254, Alloy C22, Nickel and Nickel alloys, Titanium, and others on request.

Other Media-Contacting Parts: All other media-contacting parts are made from high-grade alloys, according to the application.

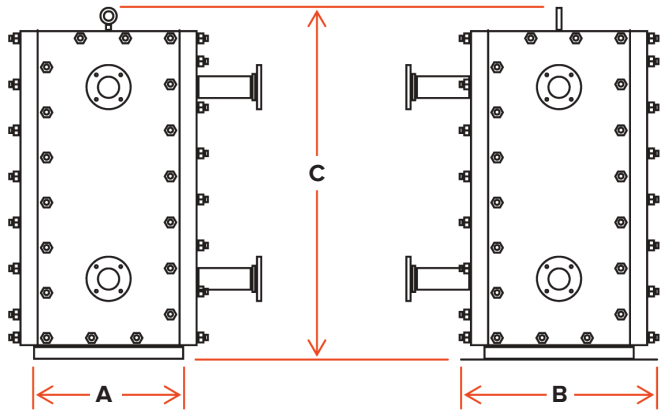
Port Connection: Raised Face Welded Neck Flange as standard. Others available on request.

Pressure Plate: SA516 Grade 60 or 70, depending on code.

PERFORMANCE:

Design Pressure: Maximum standard design pressure is 500 psig (35 barg). Higher pressures are available on request.

Design Temperature: Maximum standard design temperature is 662°F (350°C). Minimum standard design temperature is -20°F (-28°C). Higher temperatures are available on request.



Bloc® Size Chart			
Model	**Connection Size**	**Footprint Dim. (A x B)**	**Maximum Standard Height (Dim. C)**
BT20	Up to 6" nominal and DN 150	12.5" x 17.5" (318 x 444)	31.1" (791)
BT30	Up to 10" nominal and DN 250	15.0" x 19.8" (381 x 504)	56.3" (1429)
BT40	Up to 12" nominal and DN 300	19.5" x 30.0" (496 x 762)	60.4" (1535)
BT50	Up to 14" nominal and DN 350	23.6" x 35.0" (600 x 890)	83.1" (2112)
BT75	Up to 24" nominal and DN 600	36.2" x 46.9" (919 x 1190)	125.5" (3188)
BT120	Up to 36" nominal and DN 900	65" x 65"	135"

*Dimensions are approximate and vary depending on plate count, design pressure and other factors.
*Metric dimensions are in millimeters and are shown in parentheses.

Code Compliance

Special code requirements not an issue. ASME U-Stamp, CRN, PED, GOST R, SELO and others. We've been meeting code standards all over the world for years.

中华人民共和国
特种设备制造许可证
Manufacture License of Special Equipment
People's Republic of China
（压力容器）(Pressure Vessel)

About Kelvion:
Kelvion provides one of the most extensive product portfolios in the heat exchange market worldwide for a wide range of applications. Kelvion manufactures plate, shell and tube, air-cooled heat exchangers, air filter systems, synthetic fillings for numerous areas of application, wet cooling towers and dry cooling systems, as well as air-conditioning facilities. As a result, Kelvion provides reliable and comprehensive coverage of the entire spectrum for heat exchange.

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