

GEABloc® – Fully Welded Plate Heat Exchangers

Application:

PHE Systems' welded plate heat exchanger for multiple applications. Works across a broad range of liquids, temperatures and pressures. Well-suited for these liquid-liquid, condensation and evaporation applications:

Chemical	Petrochemical (HPI)	Oil/Gas
Pulp & Paper	Power	Vegetable Oil

Benefits:

Versatility and Capability—

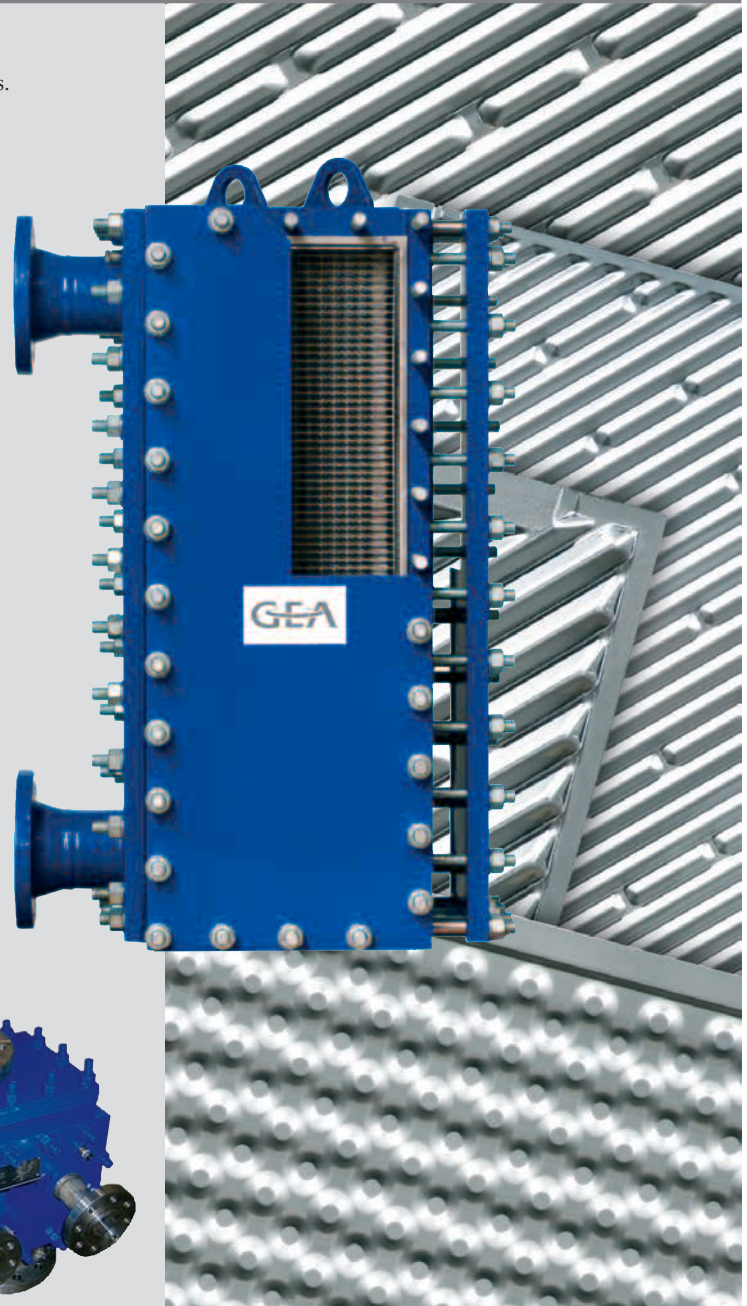
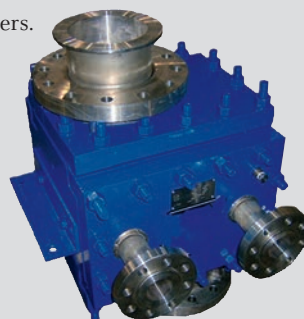
- Two different cross-flow plate designs help you get the right design, not a “good enough” design.
 - Chevron plate design represents the highest efficiency.
 - Double Dimple plate design resists clogging, handling media with particles and providing the greatest cleanability.
- The fully welded core increases its temperature and pressure limits beyond gasketed plate heat exchangers.
- The compact footprint means you can use it in locations that you wouldn't dream of with a shell-and-tube heat exchanger.
- Unique design allows dissimilar flows.

Peace of Mind—

- Over 75 years of experience in designing and crafting high performance plate heat exchangers.
- Our long-established product meets all relevant code requirements.

Convenient Maintenance—

- All sides are completely openable for easy maintenance of the plate pack.



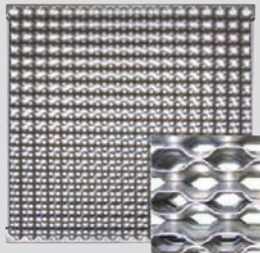
The Right Plate for Your Application

The right corrugation.

Special media for your process? No problem! Our choice of Chevron or Double Dimple plates means an ability to handle a broad range of media.

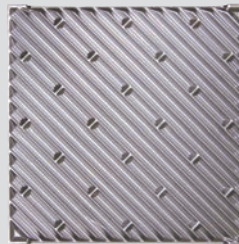
Cleanability.

All four panels can be removed for high pressure spray cleaning, and the Double Dimple plate offers a clear view all the way through the core.



Double Dimple.

Works best for high particle size/count or high viscosity. Combine this with the removability of the panels for maximum cleanability.



Chevron.

Delivers highest heat transfer efficiency with the fewest plates.

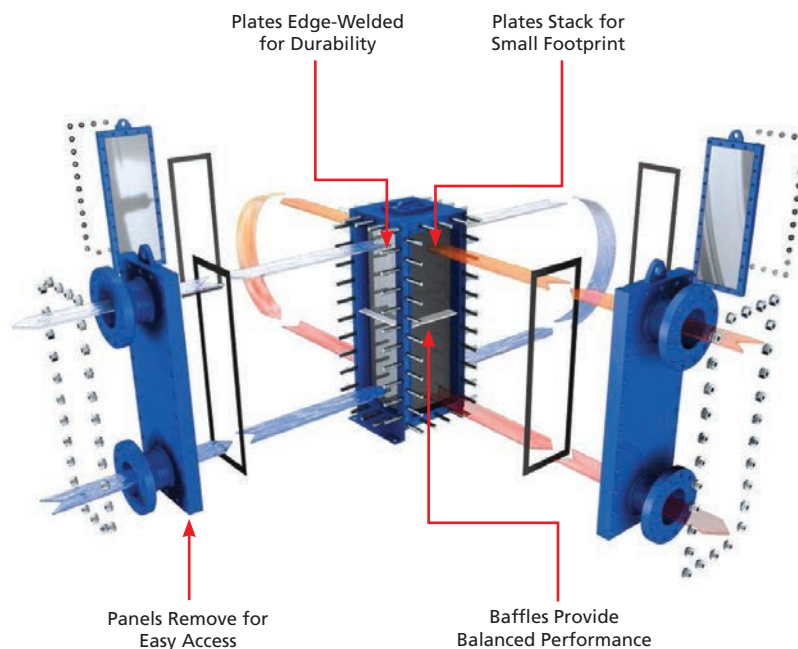
The right material.

Regardless of the requirements, we have the right plate to serve your application.

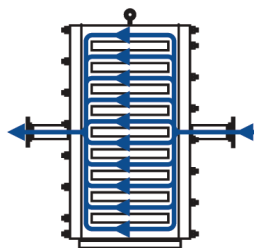
- 304 Stainless
- 316 Stainless
- SMO 254
- Alloy C22, C276, C2000
- Nickel Alloys
- Titanium Grade One
- Others on request.

How the GEABloc® Works

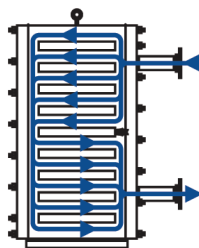
- Plates are fully edge-welded in a stack to make up the core.
- The media flow at a 90° angle to each other in a crossflow pattern.
- Special baffles allow multipass designs, up to 50 per side (2 passes per side shown at right).
- All four panels are removable for easy access from all sides.
- Because 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).



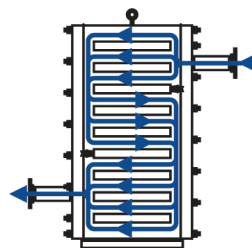
Design Versatility



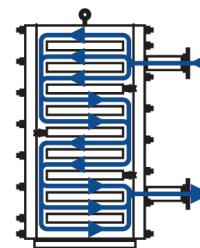
No baffles for a 1-pass design.



1 baffle for a 2-pass design.



2 baffles for a 3-pass design.



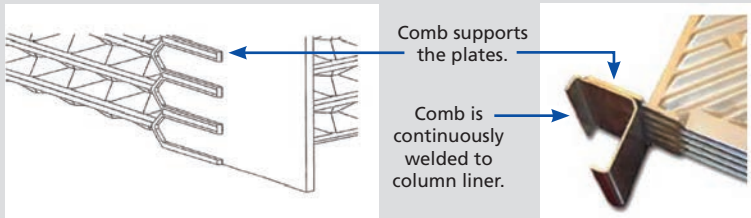
3 baffles for a 4-pass design.

Special baffles are placed to deliver the right number of passes for your specific application. The result? The right balance of heat transfer efficiency and pressure drop.

Durability

Comb Technology.

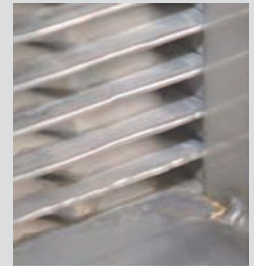
We design our plates for durability and heat transfer efficiency. Then we use a separate comb to support the weight of the plate pack and link it rigidly to the frame. The resulting design is long lasting and resistant to temperature and pressure stresses.



Edge-Welded Plates.

Edge-welding allows field repair of the plate pack, lengthening product life and reducing lost productivity from unplanned downtime.

Edge-welding improves durability.



Application Versatility

GEABloc's range of temperature and pressure range capabilities combines with our variety of corrugation patterns to let you use it for many applications. Shown here are the primary ones. Let us show you how we can help with your application.

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
- Alkylation

Vegetable Oil Processing

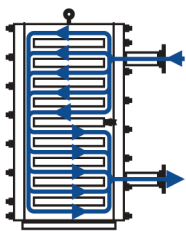
- Refining
- Biodiesel Conversion
 - Heater
 - Heat Recovery
 - Cooler
 - Chiller
 - Methanol Reboiler
- Deodorization

Alkali Plant

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

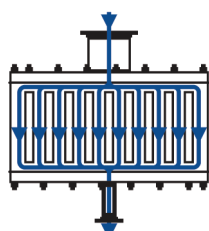
Other

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



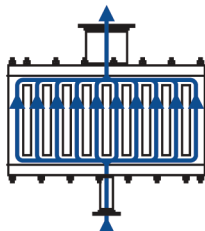
Vertical Installation

For Liquid-Liquid and Multipass Condensers and Evaporators:



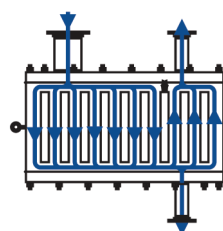
Horizontal Installation

For Condensation



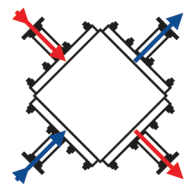
Horizontal Installation

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 GEABloc® somewhere right now.

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

GEABloc®: Construction data

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.

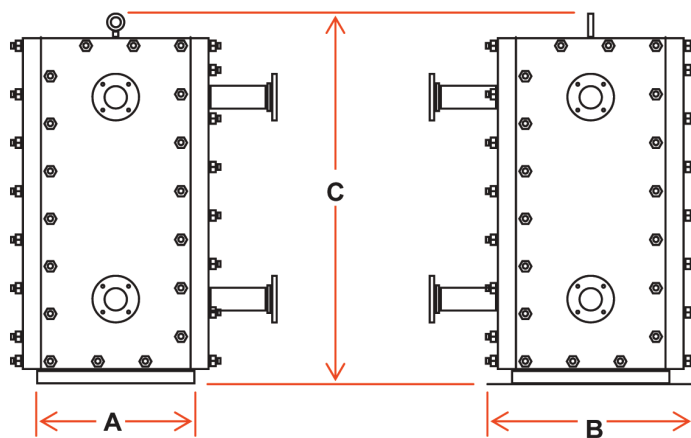
Pressure Plate: SA516 Grade 60 or 70, depending on code.

Gasket Material: Grafoil, Gore PTFE and Klingsil as standard. Other materials available on request.

GEABloc®: Technical performance data

Design Pressure: Maximum standard design pressure is 450 psig (32 barg). Higher pressures are available on request.

Design Temperature: Maximum standard design temperature is 550°F (288°C). Minimum standard design temperature is -20°F (-28°C). Higher temperatures are available on request.



Model	Connection Size	Footprint. Dim. (A x B)	Maximum Height (Dim. C)
BT20	2" - 6" nominal and DN 50 - 150	12.5" x 17.5" (318 x 444)	31.1" (791)
BT30	2" - 10" nominal and DN 50 - 250	15.0" x 19.8" (381 x 504)	56.3" (1429)
BT40	2" - 12" nominal and DN 50 - 300	19.5" x 30.0" (496 x 762)	60.4" (1535)
BT50	2" - 14" nominal and DN 50 - 350	23.6" x 35.0" (600 x 890)	83.1" (2112)
BT75	2" - 24" nominal and DN 50 - 600	36.2" x 46.9" (919 x 1190)	125.5" (3188)

- 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)



The specifications contained in this printing are intended only to serve the nonbinding description of our products and services are not subject to guarantee. Binding specifications, especially pertaining to performance data and suitability for specific operating purposes, are dependent upon the individual circumstances at the operation location and can, therefore, only be made in terms of precise requests.

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