

# Plate Heat Exchangers



## HVAC

Heating · Ventilation · Airconditioning · Cooling



Process Equipment Division  
**GEA PHE Systems**

# Concentrating on competence – for your benefit

Within the GEA Process Equipment Division of the international GEA Group, GEA PHE Systems is responsible for plate heat exchanger technology. Strong individual companies: GEA Ecoflex, GEA ViEX, GEA WTT, GEA Ecobrazex and GEA PHE Systems NA with production locations in Germany, Sweden, the USA, Canada and India produce gasketed, fully welded and brazed plate heat exchangers for world-wide distribution for use in almost all industrial applications. GEA EcoServe – the GEA PHE Systems service organisation – operates customer service centres in many countries to provide a rapid and competent maintenance and spare parts service, all around the world.

## HVAC – four letters for a wealth of possibilities

Whether for heating, ventilation, air conditioning or cooling – GEA PHE Systems plate heat exchangers are optimally suited for every application. For example in the heating sector for swimming pools, solar units and underfloor heating. In ventilation and air conditioning and in district cooling systems GEA PHE Systems plate heat exchangers ensure fresh air and a cooling breeze. Our plate heat exchangers are also the equipment of preference in the general mechanical engineering industry.

The experts at GEA can help you to find the optimum solution for every application, whether as gasketed, fully welded or brazed plate heat exchangers. The comprehensive range of brazed plate heat exchangers is the right choice for the performance demanded in HVAC applications. With our tried-and-tested Varitherm and the innovative NT Series our gasketed plate heat exchangers meet industry demands and set economic standards for the future. Maximum reliability even under the most difficult conditions is offered by the fully welded GEAShell: even at temperatures between  $-200^{\circ}\text{C}$  and  $+950^{\circ}\text{C}$  and extreme operating pressures the full performance capacity is permanently available.

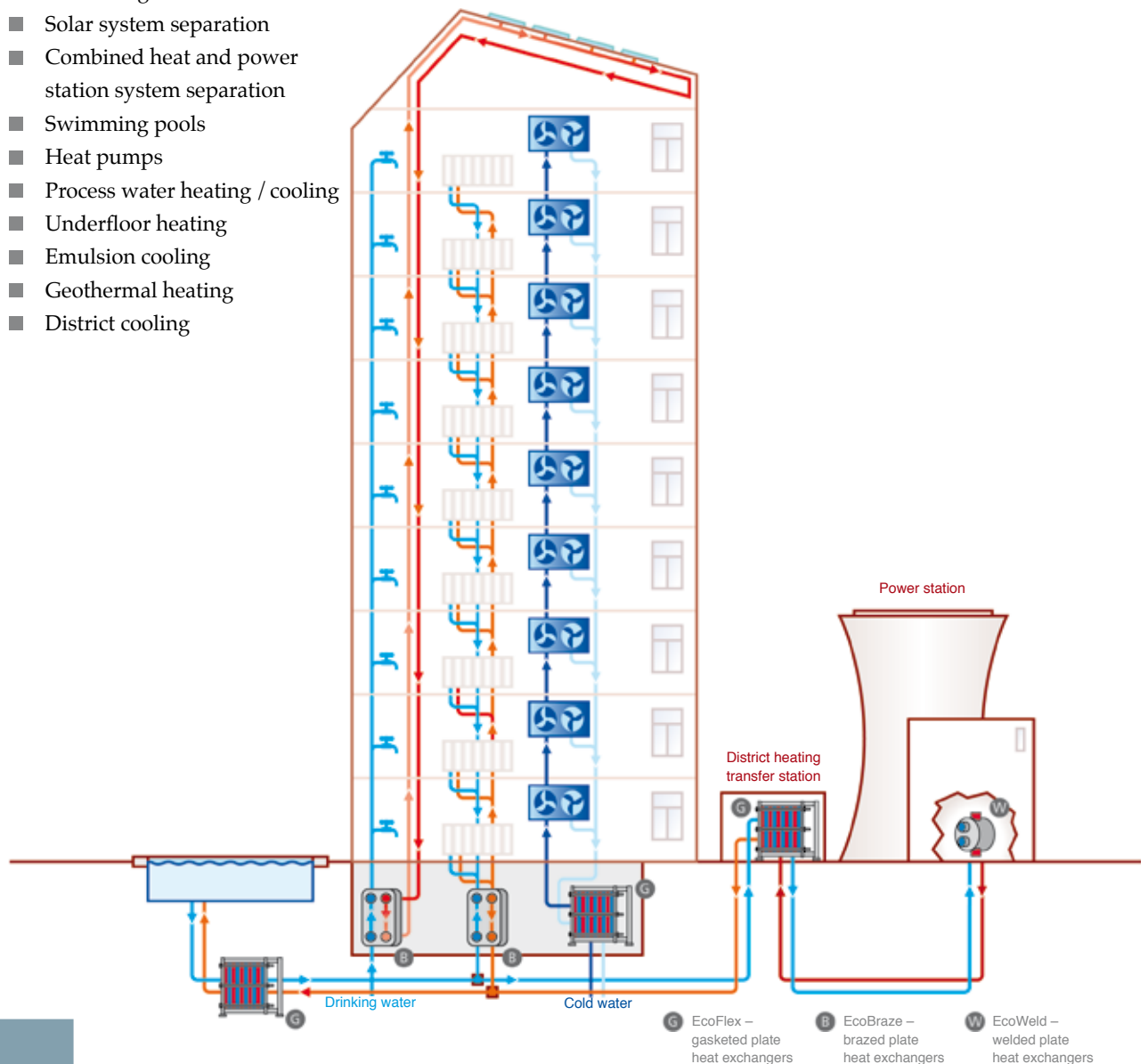
We are certified to DIN EN ISO 9001 and meet the requirements for the scope of gasketed, fully welded and brazed plate heat exchangers. Our manufacturing standard is the 97/23 EG European Pressure Equipment Directive in consideration of the AD-2000 engineering guidelines.



# GEA PHE Systems Plate Heat Exchangers – always there where they're needed

Wherever heat or cold are transferred in building services engineering – we offer the optimum plate heat exchangers for your application.

- District heating stations
- Cooling water system separation
- Oil cooling
- Solar system separation
- Combined heat and power station system separation
- Swimming pools
- Heat pumps
- Process water heating / cooling
- Underfloor heating
- Emulsion cooling
- Geothermal heating
- District cooling



# EcoFlex – gasketed plate heat exchangers – full system range of applications

## NT Series

More performance and more possibilities, but with lower investment costs: The new, versatile NT Series meets the demands of industry and sets economic standards for the plate heat exchangers of the future. More performance – an optimised plate design helps you to achieve your goals using a reduced heat transfer surface. Meaning lower investment costs. More possibilities – a universal range of plates provides flexibility, meaning that your planned applications can be implemented with even greater precision. Reduced maintenance times – new gasket and fitting technologies

simplify service operations and ensure a perfect and stable fit of gasket and plate packs. The NT Series offers every plate type in a variety of lengths and plate profiles to ensure that performance is exactly matched to requirements in every case.

## Your benefits

- Highest heat transfer rates
- Reduced investment and maintenance costs
- Optimum medium distribution
- High pressure resistance
- Simplified assembly
- Fast and reliable gasket replacement
- Flexible solutions for special demands
- Special materials available for plates and gaskets



## OptiWave-Design

The optimised corrugation leads to a good fluid distribution across the whole plate width. This leads to the highest heat exchange rates being achieved with the lowest pressure drop.



## PosLoc-Montage

With the new NT Series, we have introduced a self-centering plate system. The result being a stable, perfectly aligned plate pack, with the gaskets lying directly above each other leading to a longer lifetime.



## EcoLoc-gasket system

The new, glue-free EcoLoc gasket ensures a quick and uncomplicated exchange of gaskets.



# EcoBraze – gasket free and strong – for all applications!

Brazed plate heat exchangers are made up of an individually defined number of corrugated stainless steel plates that are permanently bonded using copper or nickel in a special vacuum brazing process. They are then hermetically sealed without using any gaskets, thus allowing the highest operating pressures and temperatures. During joining every other plate is rotated by 180 degrees in the plane to produce two separate flow channels in which the products involved in heat transfer flow in opposite directions. The plate contours generate a highly turbulent flow allowing efficient heat transfer even at low volumetric flows. This prevents soiling of the heat exchanger, and in consequence avoids poor distribution behaviour. As almost the whole material functions as the heat transfer surface, brazed plate heat exchangers are extremely space-saving and reasonably priced.

Thanks to their versatility and flexibility the fields of application for our equipment is expanding continuously: From building service engineering and refrigeration technology, marine engineering and the foodstuffs industry right up to power station technology – you'll find plate heat exchangers by GEA PHE Systems in service in all of these sectors!

## Your benefits

- Practically maintenance-free due to absence of gaskets
- Simple assembly with individual connection design
- Highest operational reliability thanks to comprehensive quality checks
- High resistance to pressure and temperature
- Compact design with low weight
- Short delivery times

To keep your planning flexible we provide the widest product range of brazed plate heat exchangers meeting the performance required of modern heating, cooling and air conditioning engineering and covering an impressive variety of connection variants and applications.

Customer-specific solutions without restriction with a wide standard range available: With this array of possibilities to choose from, you will always find the right connection to exactly meet your needs.



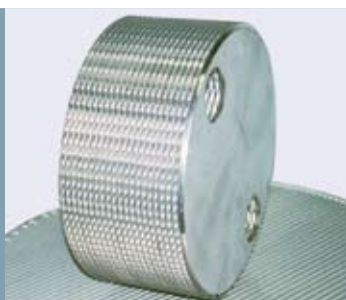
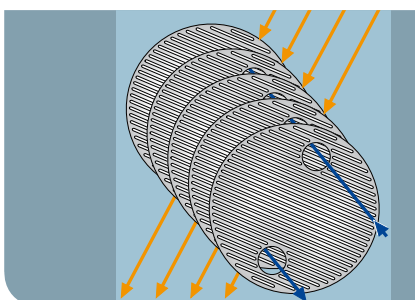
# EcoWeld – fully welded plate heat exchangers

GEAShell – an extremely reliable, fully welded plate heat exchanger of our product category EcoWeld demonstrates its qualities where other heat exchangers have to pass: At temperatures between  $-200^{\circ}\text{C}$  and  $+950^{\circ}\text{C}$  and at extreme operating pressures. The heat transfer surface of a GEAShell is made up of profiled stainless steel plates. These are welded together to form a plate pack and fixed in an exact position in a shell tube. After fitting the connections the shell tube is completely welded. Each GEAShell is manufactured and optimised according to the wishes of the customer. The selection of the material and the position of the connections on the shell side are variable.

The welding of the plates in the outer and inner sections creates gastight channels separate from each other. Fitted with end tubes the channels are led out of the shell tube at the end of the plate pack. Both shell side and plate side can be designed as multipass channels. The complete welding results in a gastight unit with no possibility of leaks.

## Your benefits

- High operational reliability up to 100 bars
- No gaskets or nonferrous metals
- Operating temperature between  $-200$  and  $+950^{\circ}\text{C}$
- Compact design
- Low operating and maintenance costs



Flow behavior through the heat exchanger plates

# GEA EcoServe: for a long life

GEA EcoServe – the service organisation of GEA PHE Systems – offers you an extensive international service network. Whether you use products by GEA PHE Systems or by another manufacturer – at GEA EcoServe you receive complete service from a single source, whenever and wherever you need us. For maintenance and repair we use high-quality spare parts exclusively for all makes. This guarantees reliable seating, optimum function and a long service life.

## Assembly

Correct assembly is indispensable for problem-free operation. Our qualified staff perform this task for you on location, or we carry out the assembly in advance at our own facilities.

## Service

As a preventative service we offer visual inspections. We advise you of any necessary cleaning and repair works and provide you with a cost estimate.

## Maintenance

We carry out all necessary repairs at short notice to ensure the quick restart of your production operations. By prior agreement this can also be combined with the scheduled service.

## Spare parts

Only original spare parts guarantee a reliable, optimum functioning and a long service life. As a manufacturer we keep all spare parts in stock for you or manufacture these at short notice where required.

## References

Satisfied customers are always the best reference. Here is a small selection from our list of clients:

- |            |                   |
|------------|-------------------|
| ■ SAP      | ■ British Sugar   |
| ■ BMW      | ■ Ferrostaal      |
| ■ Audi     | ■ AMD             |
| ■ IKEA     | ■ Messe Stuttgart |
| ■ CICAB    | ■ and many others |
| ■ Infineon |                   |



## GEA PHE Systems Competence in Heat Transfer

With emphasis on the highest quality standards and constant innovations, GEA PHE Systems continues to expand its market position: Within the GEA Process Equipment Division, GEA Ecoflex together with GEA ViEX, GEA WTT, GEA Ecobraz, GEA PHE Systems NA and GEA EcoServe forms GEA PHE Systems, the Center of Competence and Service Center for gasketed, fully welded and brazed plate heat exchangers of GEA Group:



- HVAC
- refrigeration
- sugar
- chemical
- paper
- food
- life science
- marine
- power
- renewable energy



Contact details at:

[www.gea-phe.com](http://www.gea-phe.com)

The specifications contained in this printing unit are intended only to serve the nonbinding description of our products and services and 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.

Your contact:



Process Equipment Division

**GEA Ecoflex GmbH**

Karl-Schiller-Straße 1-3, 31157 Sarstedt · Germany  
Phone: +49 5066 601-0, Fax: +49 5066 601-104  
[info@gea-ecoflex.com](mailto:info@gea-ecoflex.com) · [www.gea-ecoflex.com](http://www.gea-ecoflex.com)