

# Competence in Heat Transfer – by the Plate Heat Exchanger Specialists





- GEA PHE Systems unifies the specialists for plate heat exchangers: GEA Ecoflex, GEA ViEX, GEA WTT, GEA Ecobraze, GEA PHE Systems NA and GEA EcoServe
- More than 75 years of experience in the field of plate heat exchangers
- Part of the globally active GEA Group

[GEA PHE Systems]

## Keeping your investments even-tempered

Plate heat exchangers used to transfer heat or cold are one of the central components in process engineering. Plate heat exchangers, or PHEs, are essential in the production of foodstuffs, chemicals, medicines or biofuels and for air conditioning in buildings or in generating electricity.

Innovative products and optimised processes – increasingly important also with regard to sustainability – create the need for investments in new plants. We safeguard these investments in numerous ways.

GEA PHE Systems stands for focussed competence in plate heat exchanger technology within the Process Equipment Division of the international GEA Group. Strong individual companies – GEA Ecoflex, GEA ViEX, GEA WTT, GEA Ecobraze and GEA PHE Systems NA – offer tailor-made customer solutions for just about every application. GEA EcoServe – the service organisation of GEA PHE Systems – with customer service centres in a wide range of countries provides a fast and competent maintenance and spare parts service for all PHE brands.

The close cooperation among the companies within GEA PHE Systems releases synergy effects that are used to find specific solutions for each branch of industry. This cooperation by the GEA companies operating in around 50 countries also strengthens our innovative power.

GEA PHE Systems components guarantee highest energy efficiency. An improvement in performance of just one percent can save several hundred thousand euros. Meaning that investments are recovered within a very short period of time.





An important field for plate heat exchangers is in building engineering. Whether in heating, ventilation, air conditioning or cooling: our company's developments provide optimum solutions for all your HVAC tasks.



### At home in all fields of application

- HVAC
- Paper
- Marine
- Power
- Sugar
- Food
- Renewable Energy
- Refrigeration
- Chemical Industry



[Experience and Competence]

## Enjoy a relaxed atmosphere

Competence in plate heat exchanger technology is part of our tradition. GEA Ecoflex is the direct successor to the company founded by Eduard Ahlborn, renowned for his pioneering work in the invention of plate heat exchangers in 1930. With its claim of highest quality and permanent innovation our company has continuously expanded its market position over the past decades.

GEA ViEX , GEA WTT, GEA Ecobraze and GEA PHE Systems NA are renowned companies joining the Group to round off the product range, enabling us to cover the whole range of application fields for plate heat exchangers.

All companies within GEA PHE Systems invest above average in research and development. The organisation and coordination of this knowledge transfer plays a leading role here. In this way the core competence is safeguarded and further expanded. And this is to your direct benefit, as ever more powerful plate types for new applications can only be developed with the help of comprehensive research and development work.

Whatever you are planning in the future: With our support you can lie back and relax.

[Product Diversity]

## One of our best qualities is the diversity of our product range

Depending on the design we differentiate between gasketed, fully welded and brazed plate heat exchangers. GEA PHE Systems delivers the full PHE spectrum. Within the three product groups process-optimised model series make up a range that seeks parallel in its width and depth and that can be individually adapted to the needs of OEMs, plant engineering companies or end customers.

The greatest advantages of **EcoFlex – gasketed plate heat exchangers** are in the easy maintenance and in the flexibility to adapt to changes in production requirements. This strength makes them the plate heat exchanger of choice for a wide range of applications. Depending on the intended use there is a wide choice of gasket materials from NBR through to Viton.

**EcoWeld – fully welded plate heat exchangers** are typified by their small size and comparatively low investment costs. They are particularly sturdy and have only low maintenance requirements. The design advantages come to the fore where both high performance and stability under load are required. Each series of models has its own particular advantages and fields of application.

**EcoBraze – brazed plate heat exchangers** comprise an individually defined number of high-quality embossed special steel plates that are permanently bonded with each other in a special vacuum brazing process using copper or nickel. They are hermetically tight without the need for any gaskets and can therefore withstand high operating pressures and temperatures.



**Tailor-made solutions for the widest range of media, demands and production processes**

- **EcoFlex – gasketed plate heat exchangers** are the easy-maintenance all-rounders
- **EcoWeld – fully welded plate heat exchangers** offer highest reliability and provide large heat transfer areas
- **EcoBraze – brazed plate heat exchangers** convince with their compact design and simple installation with individually designed connections



The paper industry uses highly viscous, fibre-loaded raw materials that are difficult in their handling. EcoFlex Free Flow units with wide flow gaps make this process considerably easier.



- Certification to DIN EN ISO 9001 and to Module H/H1 of the European Pressure Vessel Directive 97/23 EG
- Application of engineering standard AD-2000
- Successive performance of prototype tests for pressure vessels of Category IV and introduction of Module B+D
- Manufacturing to ASME Boiler Pressure Code, U-Stamp on request
- Individual acceptance testing by testing authorities and classification societies



In the shipping industry our plate heat exchangers cool ships' engines and machinery, heat up fuels and ensure that the water in the shower is hot. Excellent quality to protect you even on stormy markets.



[Product Quality]

## GEA quality gets your projects on the path to success

State-of-the-art production facilities ensure that the companies within GEA PHE Systems achieve high productivity. But quantity is nothing without quality. High-precision plate heat exchangers are produced here that have proved their worth thousands of times over, particularly with regard to their excellent quality features.

This quality standard begins in the careful selection of the raw materials used in manufacturing the plate heat exchangers. The pronounced awareness of the materials used is a central factor in the extremely high service life of our products. Furthermore aspects such as environmental impact and recycling capability are taken into consideration even at this early stage.

Modern pressing processes and decades of know-how in the use of innovative tools allow high-precision processing of the plates – controlled and monitored by specialists, who are excellently qualified in handling this tried-and-tested technology. The result is plate heat exchangers that set the standard in functional capability, energy efficiency and profitability. Worldwide service and spare parts availability guarantees this significant quality advantage throughout the whole service life. Your profit prospects enjoy lasting benefits.



[Best Solutions and Synergies]

## Our best performances take some beating

The companies in GEA PHE Systems form a cooperative network enabling them to handle challenges jointly and to work together in flexible constellations.

The joint approach to a project can release synergy effects and make choosing the correct solution easier. There is no such thing as a standard solution. What is required is the objectively best solution for your specific requirements – irrespective of which of our companies has lead-management in the project. This process runs in the background. Your contact remains the specific company and you automatically benefit from the international background of GEA.

You can always be certain that specialists are working on your project: Specialists for plate heat exchangers and process engineering with comprehensive local experience. These experts know what is important in your sector – whether you work in a small-sized company or in a large-scale industrial facility.

The know-how of the GEA PHE Systems companies involved is collated centrally, processed and made available to all. The knowledge of the individual therefore becomes the knowledge of all. This means that potential errors can be excluded more quickly and the optimisation potential can be exploited to the full extent.





Top performance is also our common goal in the power sector. And is certainly achieved with our high efficiency plate heat exchangers, e.g. for combined heat and power or turbine cooling.





Our optimised EVAPplus plate evaporator systems are as indispensable in the sugar industry as sugar is for sweetness.



GEA's consulting competence will benefit your processes as well.



[Consulting Competence and Process Orientation]

## We sweeten your production figures

Plate heat exchangers should not be regarded as separate entities. Wherever PHEs are involved, all components have to operate perfectly in sync with each other to guarantee that the overall process runs smoothly and optimum results are achieved. The definition of these processes can be completely different depending on the branch of industry and field of application.

Great emphasis is placed on process-oriented thinking within GEA PHE Systems. The technological leadership of our companies is largely based on precisely this quality. From our numerous projects in the widest range of fields we know the individual process sequences inside out. The result is expert consulting competence.

Customer-specific engineering is the basis for successful processes where technologies and components from A to Z work in harmony. And ultimately this means an increase in efficiency and profitability.

And integration into the GEA Group proves to be a great advantage here as well. Scarcely any other technology group is so comprehensively and diversely organised in the field of process engineering. The process know-how gathered here is transferred via the GEA PHE Systems "hub" to every individual member company and adds an additional quality to our consulting competence.





[Flexibility and Interface Reduction]

## A toast to good teamwork!

Every GEA PHE Systems company has its own core competence and represents state-of-the-art technology in its specialist field. It is not always the case that a project will remain the hands of a single company from beginning to end. In complex processes and technologies it can be sensible or even necessary to have two or more companies involved in a project.

In large-scale projects such as these the benefit quickly becomes apparent that our companies are accustomed to thinking beyond their own specialist field. Our engineers know each other from other projects and are conversant with all of the relevant technologies, using interdisciplinary cooperation whenever this benefits the overall process.

With this established and tried-and-tested cooperation we are always capable of providing flexible solutions to best meet your exact requirements.



The food sector places great emphasis on perfect hygiene. Our plate heat exchangers are the first choice for unspoilt enjoyment.



Plate heat exchangers from GEA PHE Systems support the production of alternative fuels. To replace fossil fuels and reduce the greenhouse effect – with efficiency and sustainability.





[Sustainability and Environmental Protection]

## Your future is safe in our hands

Energy-saving and eco-friendly production has become a decisive factor for success. Which is why sustainability is also at the top of our agenda.

The companies of GEA PHE Systems make every effort to reduce the impact of our manufacturing on resources and the environment. Our international presence ensures short delivery distances, and that also saves valuable energy.

The most important aspect for you, however, is the sustainability of our systems. We develop plate heat exchangers with which you can reliably protect both your employees and the environment from possible damage. This is an absolute requirement for trouble-free operation particularly in safety-oriented facilities such as power stations or refineries. In addition our products are market leaders, especially with regard to energy efficiency. The heat transfer coefficient, which is clearly superior to conventional heat exchangers, is the best proof of this.

Let us guarantee you a safe future. You will be safeguarding the environment, protecting your employees and saving not only energy, but also the earth's resources.



[Service and Support]

## Our range of services won't leave you in the cold

With GEA EcoServe we have established an independent company that concentrates completely on service. Our spectrum covers service for plate heat exchangers of all brands. Whether you use products from GEA PHE Systems or from other manufacturers – GEA EcoServe provides you with competent service from a single source.

Our Special Support Program offers training for your technicians as required to carry out the maintenance of the systems – including instruction on location, on-the-job training, special tools and practical accessories.


This includes the installation of the units. The complete assembly process is a decisive factor for problem-free functioning. GEA EcoServe also carries out plate heat exchanger assembly, when the system is delivered in dismantled state. A further service is preventative maintenance. Plate heat exchangers are subject to soiling and wear. We offer visual inspection as a preventative service measure and advise you of any necessary cleaning or service works and the costs to be expected. Minor soiling can also be immediately removed mechanically on location. The reliable alternative is however mechanical or chemical treatment of the plates in the specialist workshops at GEA EcoServe.

Our core objective is to ensure that your plate heat exchangers are always available. Trouble-free operation of your plate heat exchangers demands high-quality and perfectly fitting spare parts. In addition to OEM parts we also use certified products from other quality suppliers, where the attractive cost effectiveness is popular with our customers. Plates and gaskets for practically all makes and models are kept in stock or can be obtained at short notice.



The specialists from GEA PHE Systems are cool professionals when it comes to refrigeration. Our plate heat exchangers guarantee refrigeration for the widest range of industrial and commercial applications.



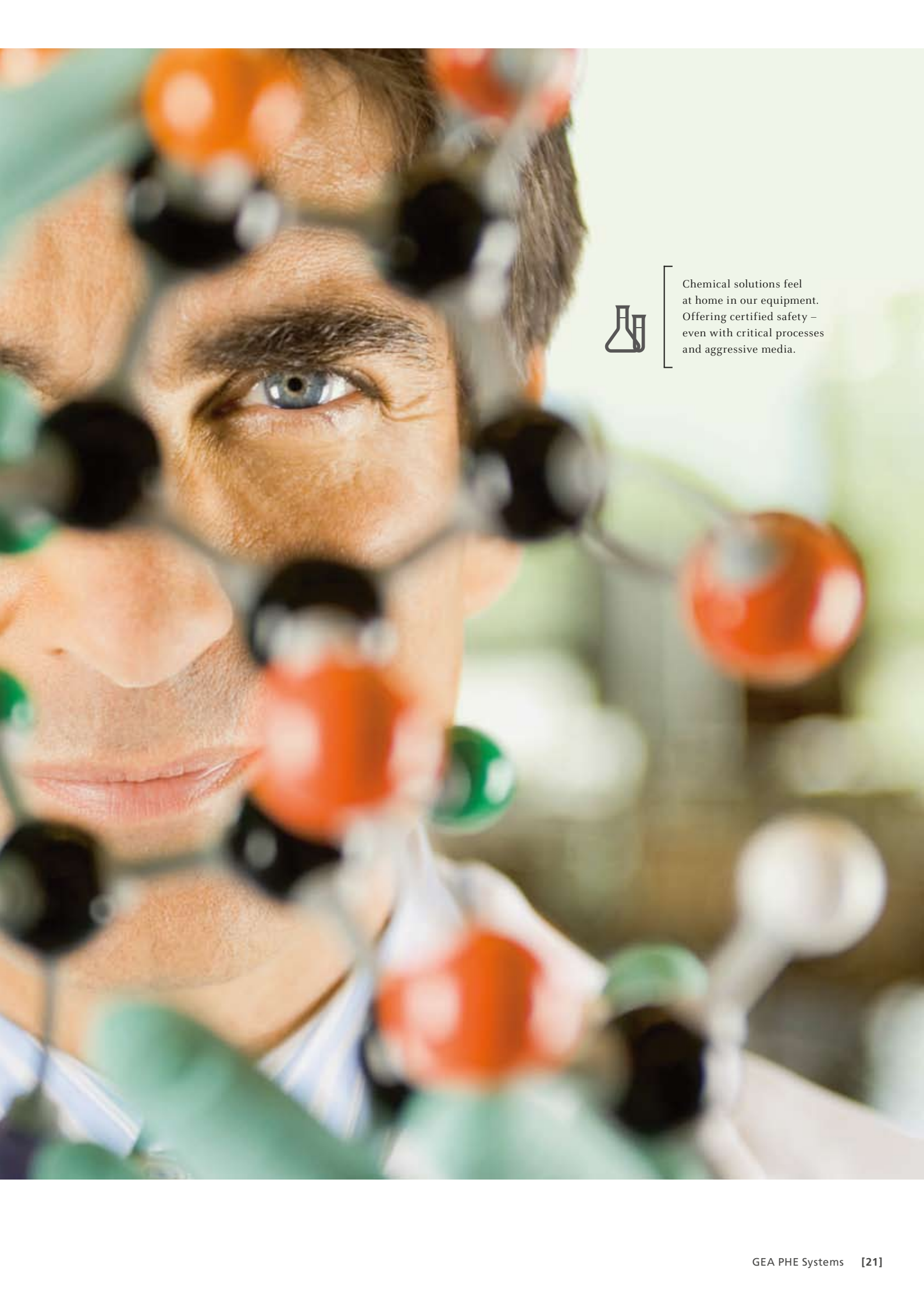


[Global Presence]

## Our formula for customer proximity

GEA PHE Systems has a decentralised structure. The manufacturing companies and the national companies are distributed across five continents with the emphasis on Europe, North America and Asia. In these times of globalisation, where products and services have to be available at all times and at all locations throughout the world, this is the best prerequisite for fast, on-time deliveries and service. Wherever you need us, our companies are close by and can react quickly to all of your requirements.

A further benefit is that the national companies are well versed in regional customs. Although electronic media have turned the world into a global village, there are still considerable differences from country to country and market to market. We know the particularities, the laws, and the local regulations – and we speak your language. The independent companies operating within GEA PHE Systems have entrepreneurial freedom. They have direct responsibility for their activities and can therefore make decisions quickly and flexibly – on the spot and always in your best interests.



Chemical solutions feel at home in our equipment. Offering certified safety – even with critical processes and aggressive media.

**We are there – wherever you need us**

Argentina  
Australia  
Austria  
Brazil  
Bulgaria  
Canada

Chile  
China  
Croatia  
Denmark  
Estonia  
Finland

France  
Germany  
Great Britain  
Greece  
Guatemala  
Hungary

India  
Indonesia  
Iran  
Israel  
Italy  
Korea

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New Zealand  
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**GEA Ecoflex GmbH**

Also the headquarters of GEA PHE Systems, based in Sarstedt/Germany. For over 75 years a synonym for experience in plate heat exchangers.

**Product group:**  
Gasketed and fully welded plate heat exchangers



**GEA ViEX Inc.**

Since 2008 the expertise of this specialist Canadian company for fully welded plate heat exchangers has been available to GEA PHE Systems.

**Product group:**  
Fully welded plate heat exchangers



**GEA WTT GmbH**

This company was formed from Wilchwitzer Thermo-Technik and has been a member of the Group since 2004. The headquarters are in Nobitz-Wilchwitz, near Leipzig/Germany.

**Product group:**  
Braze plate heat exchangers



**GEA Ecobraise AB**

Based in Landskrona/Sweden GEA Ecobraise AB resulted from the acquisition of TAU Energy Products by GEA in 1999.

**Product group:**  
Braze plate heat exchangers



**GEA PHE Systems NA, Inc.**

GEA PHE Systems NA, Inc. was launched in 2007 with the world's most modern facility for plate heat exchangers, producing both brazed and gasketed models.

**Product group:**  
Braze and gasketed plate heat exchangers



**GEA EcoServe  
Deutschland GmbH**

The service organisation of GEA PHE Systems – offers fast and competent maintenance and spare parts service with customer service centers in many countries.

**After-sales service and support for plate heat exchangers of all makes**

[Centers of Excellence]

## We look forward to facing your challenges

Getting in touch with a GEA PHE Systems company is always a decision for efficiency and reliability. Each member company is a Center of Excellence that provides you with the complete spectrum of competence offered by GEA PHE Systems.

Wherever you are based in the world and wherever your future markets lie, GEA is always close at hand as your point of contact. The optimum solution specific to your field and application is found using our networking system.

Talk to us. We look forward to your challenge!



### HVAC Sector

Heating, ventilation, air conditioning and cooling: Our plate heat exchangers are the first choice for all of these applications in building engineering and the mechanical industry.



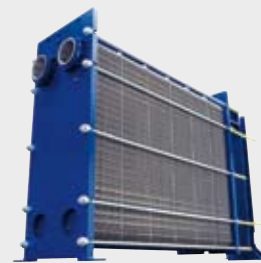
### Paper Sector

We support the paper and cellulose industry in all of their processes – from steam circuits to roller cooling and from whitening to waste water disposal.



### Marine Sector

The wide range of materials, the small volumes and the resulting low weight make our units seaworthy. Perfect for use in ship-building and engine building and for onshore and offshore applications.



**EcoFlex – Gasketed plate heat exchangers** are flexible and our economic all-rounders. They can be used for every production demand. A range of gasket materials are available to match the specific demand.

- GEA Ecoflex
- GEA PHE Systems NA



### Power Sector

We have been supplying plate heat exchangers for many years for the cooling of diesel engines and gas turbines. Our systems lead off the waste heat from diesel engines for heating purposes or to generate cold.



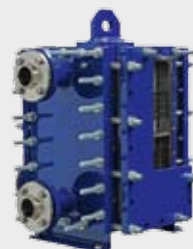
### Sugar Sector

The sugar industry is also keen to achieve optimum energy utilization, optimise heat transfer processes and integrate heat transfer components as efficiently as possible. Our plate heat exchangers ensure that cane and beet sugar are processed as economically as possible and that energy can be recycled back to the process.



### Food Sector

The wide range of treatment processes for liquid foodstuffs require a great number of heating and cooling stages. Our plate heat exchangers meet the high demands placed by the foodstuffs industry with a wide range of plates available.



**EcoWeld – Fully welded plate heat exchangers** are distinguished by their small size, excellent heat transfer coefficients and comparatively low investment costs. They are especially robust, suitable even for critical media and require only low maintenance and cleaning.

- GEA Ecoflex
- GEA ViEX



### Renewable Energy Sector

Our plate heat exchangers have proved to be excellently suited in all biofuel generation processes. Their quality and unrivalled long operating times ensure that the correct temperature is maintained at every single production stage.



### Refrigeration Sector

Our plate heat exchangers have proved their worth in refrigeration systems. They are space-saving in installation, especially easy to maintain and flexible in application, e.g. as economisers, desuperheaters, condensers or evaporators.



### Chemicals Sector

Whether in the chemical industry, textiles or in petrochemicals: our plate heat exchangers quickly and reliably bring all media to the right temperature at all locations.



**EcoBraze – Braze plate heat exchangers** made of high-quality, embossed stainless steel plates that are permanently joined in a special vacuum-brazing process. They are hermetically sealed without gaskets and can therefore handle the highest operating pressure and temperatures.

- GEA Ecobraze
- GEA PHE Systems NA
- GEA WTT



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