Plate Heat Exchangers

Refrigeration

Industrial, commercial and air conditioning

GEA Heat Exchangers

GEA PHE Systems

Life can be tough without refrigeration

For millions of years, the evolution of life has depended on the interaction of heat and cold. In today's industrial society, this interaction is just as important. Cold can have a positive effect on the value chain and enhance commercial performance. Precisely controlled temperatures can have a decisive impact on the efficiency of factories and on the quality of the products they produce. Numerous production processes could not even exist without the targeted removal or application of heat or cold. In the food industry, this includes the production of drinks, meat and fish products, ready meals and dairy products. Maintaining continuity of the cooling chain – from transportation through to storage – is of particular importance. Because freshness makes all the difference! It keeps food safe and retains its flavor. Intensive cooling is necessary in many of the manufacturing processes in the chemical and petrochemical industries, as well as in medicine and science, mining, marine transport – right through to recreational facilities such as ice rinks and theme parks. New areas of application are being developed all the time.

The innovative technology and proprietary system expertise that goes into our products will meet the refrigeration requirements of virtually any industrial or commercial application.

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 Ecobraze 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 worldwide 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.

GEA PHE Systems plays a key role in the refrigeration cycle

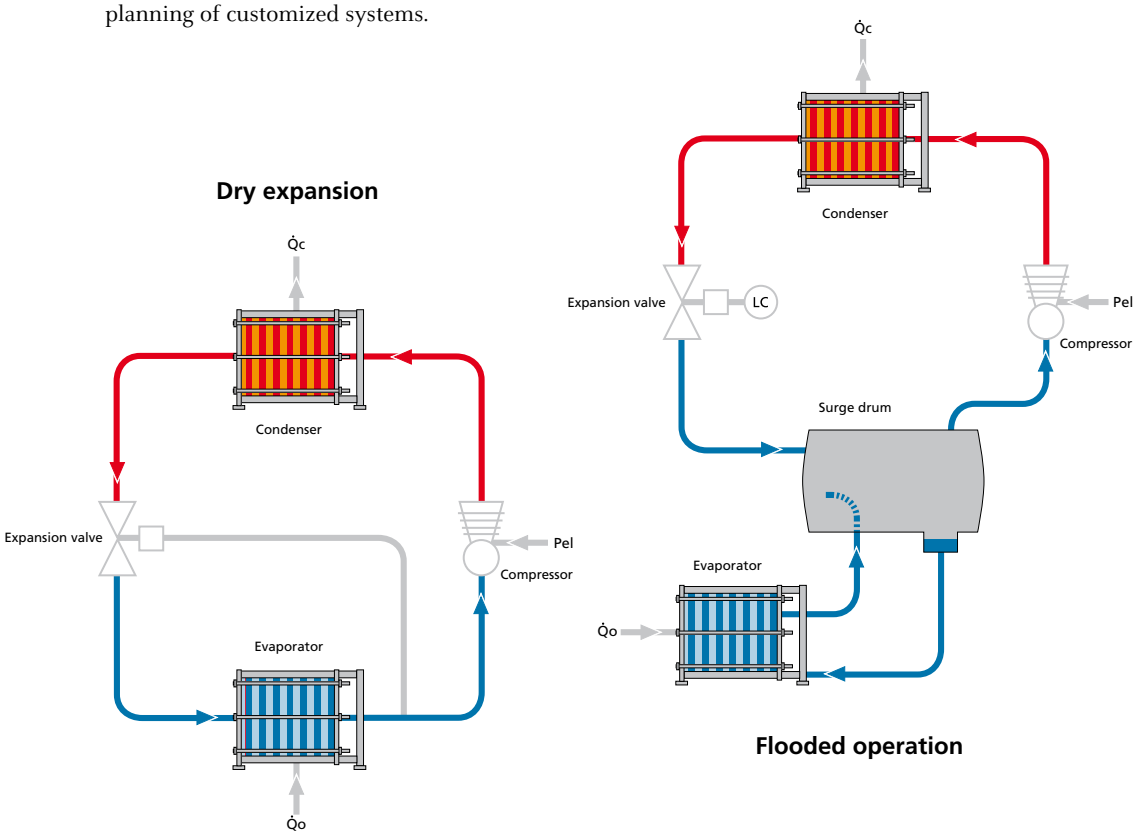
GEA PHE Systems plate heat exchangers are ideal for numerous applications with gaseous or liquid media. At various points of the refrigeration cycle, they can function as:

- Evaporators
- Condensers
- Economisers
- Subcoolers
- Desuperheaters
- Oil coolers
- Cascades

They are effective anywhere that media must be cooled or heated reliably and precisely. The choice of type depends on your performance requirements and preferred medium. The three fundamental product categories are EcoFlex – gasketed plate heat exchangers, for this application especially LWC (Laser-Welded Cassettes), EcoWeld – fully welded plate heat exchangers or EcoBraze – brazed plate heat exchangers.

All GEA PHE Sytems plate heat exchangers use only the highest quality materials and perform to a uniformly high standard. The OptiWave design ensures optimum flow characteristics with optimum turbulence and high heat transfer capability. Loss of pressure to connected components is minimal, which means savings in energy.

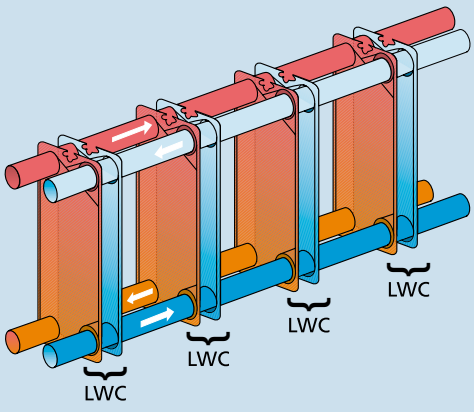
As a result of their compact design and their moderate volume and weight, they are both easy to handle and affordable. A wide product range ensures optimum flexibility in the planning of customized systems.



LWC plate heat exchangers for industrial refrigeration

Maximum performance, even with critical media

Industrial applications frequently demand extreme performance. However, the industrial application of critical media such as ammonia is limited by the sealing capability of the heat exchanger. That is why GEA PHE Systems has added a semi-welded LWC (Laser-Welded Cassettes) of the product category EcoFlex to its range. Two plates are laser-welded together to create a hermetically sealed flow path. In comparison with a fully welded construction, LWC plate heat exchangers offer easier cleaning and higher resistance to thermal tension.



EcoWeld – fully welded plate heat exchangers for highest demands

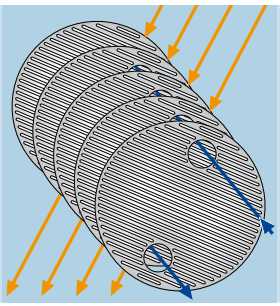
GEAShell, an extremely reliable, fully welded plate heat exchanger of our product category EcoWeld demonstrates its qualities where other heat exchangers have to pass: At temperatures between -200°C and +950°C and at extreme operating pressures. The heat transfer surface of a GEAShell is made up of profiled 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.

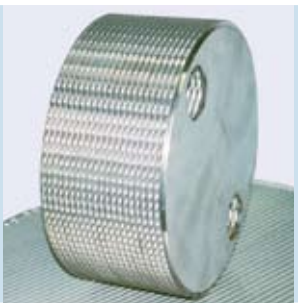
The welding of the plates in the outer and inner sections creates gastight channels separate from each other. Fitted with end tubes the channels are led out of the shell tube at the end of the plate pack. Both shell side and plate side can be designed as multipass channels. The complete welding results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

Your benefits

- High operational reliability up to 100 bars
- No gaskets or non-ferrous metals
- Operating temperature between -200 and +950°C
- Compact design
- Low operating and maintenance costs

Flow behavior through the heat exchanger plates





EcoBraze – brazed plate heat exchangers for commercial refrigeration

Completely hermetically-sealed solution for moderate performance requirements

Commercial refrigeration and air conditioning does not normally require the extreme performance capabilities demanded by industry. Brazed plate heat exchangers from GEA PHE Systems are ideal for this market sector, preferably in combination with freon as the refrigerant.

They are fully hard soldered, and provide a hermetically sealed solution that offers a number of important benefits – compact design, efficient heat transmission and low cost. A range of types and sizes is available.

Proprietary know-how guarantees excellence in refrigeration

GEA PHE Systems has an extensive corporate body of experience in the research, development and production of plate heat exchangers. In the field of refrigeration engineering, we are also able to draw upon the specialist experience of the engineers working in the various GEA group companies. These include:

- GEA Grasso
- GEA Matal
- GEA Technofrigo
- GEA Grenco
- GEA FES Systems

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.

References

- **Humana Milchunion,** Germany
- **Interbrew,** Czech Republic
- **Netto,** Germany
- **Coca Cola,** Angola
- **Daimler Chrysler,** Germany
- **O2-Arena,** Germany
- **Kraft Foods,** USA
- **Italpizza,** Italy
- **Poras Dairy,** India

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 Ecobraze, 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

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Austria
Brazil
Bulgaria
Chile
China
Croatia
Czech Republic
Denmark
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Hungary
Iceland
India
Indonesia
Iran
Italy
Japan
Korea
Malaysia
Netherlands
New Zealand
Pakistan
Philippines
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