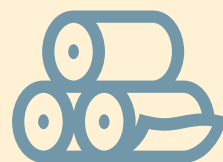


## Plate Heat Exchangers



## Pulp & Paper

Plate Heat Exchangers à la carte



# 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 Ecobraz 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.



## Paper is not ready for the history books

Paperless office, daily newspaper via monitor and electronic novels? Paper is simply irreplaceable! What began thousands of years ago in ancient China remains a fascination today: Paper keeps its promises! Paper is a real, tactile experience which brings us closer to nature. It is little wonder, therefore, that the paper and pulp industry is on an upward curve and enjoying something of a renaissance thanks to innovative products and applications. At the same time, however, demands on productivity, economy and ecology are on the increase. Re-using of water, energy and used paper becomes increasingly important. As a means of transport, cleaning, cooling agent and energy source, water takes on a key role. The more closed the cycles are, the more profitable and ecological production becomes. GEA PHE Systems has specialised in this area, devising flexible and efficient solutions for plate heat exchangers, designed especially for the pulp and paper industry, e.g.:

- Norske Skog, Norway
- Södra Cell, Sweden
- Domsjö Fabriker, Sweden
- Voith Paper, Germany
- M-Real, Austria
- Metso Paper, Finland
- Sappi, Germany
- UPM Kymmene, Germany
- SCA, Austria
- SAICA, Spain
- Papierfabriken Palm, Germany
- Weig Karton, Germany





## Pulp and paper roll on

Billions of tons of paper and pulp are produced every year. This market is continuing to grow thanks to the diversified use of pulp and the many forms of paper. There are countless, part-finished or finished products which are indispensable in modern day life, such as:

- Newspapers, paper for writing, drawing, printing and reading
- Toilet papers, serviettes, kitchen rolls and tissues
- Wallpapers, packaging, padding, corrugated cardboard, boxes
- Technical papers such as sand papers, air filters
- Specialty paper

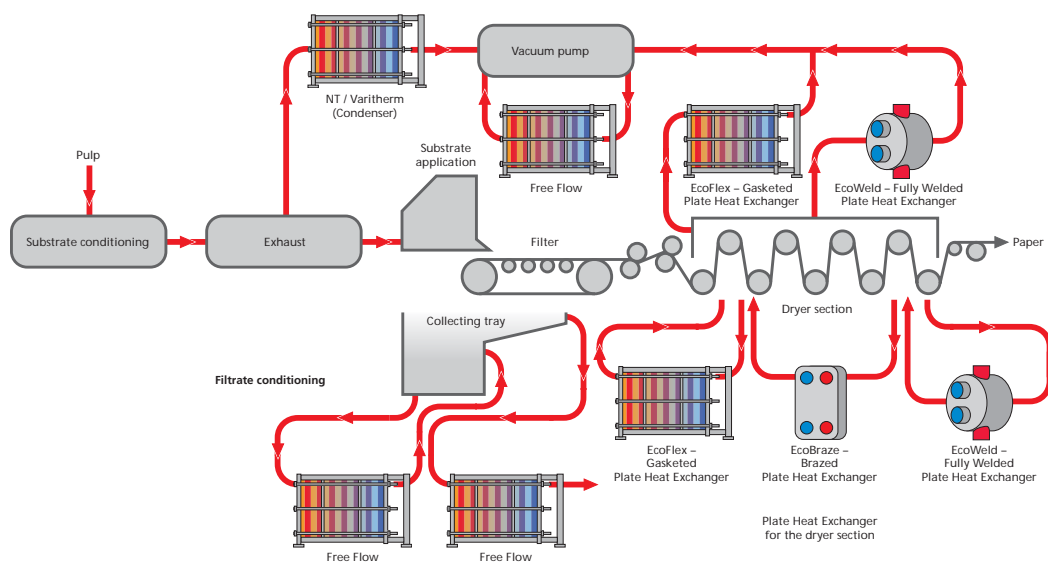


Voith Paper, Paper Technology Center (PTC), Heidenheim, equipped with NT 150 used for fresh water heating and FA 184 for white water heating and waste water cooling



# GEA PHE Systems strengthens your production cycle

Pulp and paper production is a technically demanding process. To produce 1 kg of paper used to require some 500 l of water back in the seventies. Today, it requires 10-15 l. The secret lies in the closing of internal water cycles. The same applies to the use of energy. And this is where GEA PHE Systems plate heat exchangers give a decisive contribution. They are used in all stages of pulp and paper manufacturing processes, contributing to optimum product flow – economical, value-adding and ecological, since they have optimal heat transfer values, clean media separation and closed circulations to make best use of water and energy. Whether in an acidic or alkaline environment, in media containing fibres or solids, or for cooling or heating requirements, GEA PHE Systems offers a full range of suitable products, components and materials, individually tailored to your local requirements.

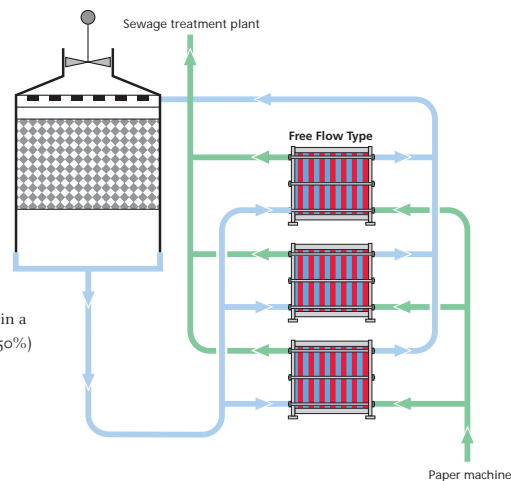


Exemplary: plate heat exchangers in the periphery of the paper machine



Waste water cooling at Papierfabrik Palm, plant Eltmann

Exemplary: waste water cooling in a waste water treatment plant (3x50%)



## The right solution for every stage of the process

The classic production sequence in the pulp and paper industry is characterised by defined production steps. However, production in pulp and paper is becoming increasingly specialised. Most facilities, therefore, work using individual end product related materials and have different production depths. This then results in very different process structures and specific tasks for the GEA PHE Systems plate heat exchangers involved:

### Pulp manufacturing process:

- in the steam/vapour cycle and treatment of the condensate
- in the cooking process
- in acid/alkaline treatment
- in intermediate cycles
- in the bleaching process

### Paper manufacturing process:

- cooling the rollers of the paper machine
- warming the adhesive
- cooling the waste water
- in intermediate cycles
- exhaust air heat recovery





# Let it flow with plate heat exchangers from GEA PHE Systems

The right equipment for every process section: EcoFlex, EcoWeld and EcoBraze plate heat exchangers. The product range stands for high quality standards and economic efficiency. Every unit is manufactured from high-quality materials (acid- and alkaline-resistant), has flow-optimized channel geometry for precise heat transfer and ensures smooth media passage. Strict quality controls provide reliable function and a long life-time. Compact design, small volume and weight facilitate installation and subsequent maintenance.

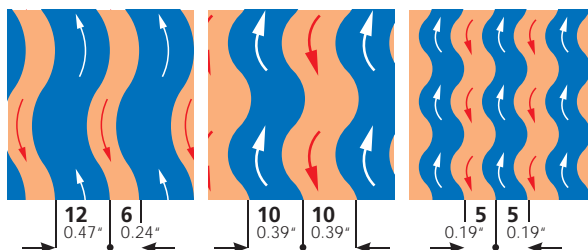
## EcoFlex – Gasketed Plate Heat Exchangers

### Free Flow – A smooth passage for all media

- Suitable for media containing fibres and solids
- Flow channels from 5 to 12 mm (also on both sides)
- Blockage-free operation due to constant-width gaps

### NF 350 – The giant among Free Flow units

- THE alternative to shell-and-tube and spiral heat exchangers
- lower investment and operating costs
- reduced downtimes and high process reliability
- 10 mm wide flow channels



Free Flow

NT

Varitherm

### NT Series – The new generation

- Optimized for maximum performance and economic efficiency
- Maximum performance values due to variable lengths and profiles
- Innovative flow geometry, installation and gaskets
- From 0.06 m<sup>2</sup> up to 2.30 m<sup>2</sup> of heat transfer surface per plate
- Also available as Laser-Welded Cassettes (LWC)

### Varitherm – Proven master of adaption

- Extremely variable performance, profile and material
- From 0.05 m<sup>2</sup> up to 2.50 m<sup>2</sup> of heat transfer surface per plate

# EcoWeld - Fully Welded Plate Heat Exchangers

In addition to gasketed EcoFlex and brazed EcoBrazed product categories we also offer individually designed fully welded plate heat exchangers EcoWeld of various types that can be used wherever critical media or extreme operating temperatures and pressures place particularly high demands.

# EcoBrazed – Brazed Plate Heat Exchangers

Our brazed plate heat exchangers of the product category EcoBrazed are made of stainless steel for normal and aggressive media, brazed with copper or nickel and our decades of experience have shown that they are extremely resistant to pressure and temperature. Comprehensive quality checks ensure the highest operational reliability. Compact design, low weight and an individual connection layout with a wide range of connection possibilities make assembly and operation particularly simple.

# 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.



EcoWeld - Fully Welded Plate Heat Exchangers



EcoBrazed – Brazed Plate Heat Exchangers



## 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
- Power
- Marine
- General Industry
- Renewable Energy



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