



# Reliable solutions in refrigeration

GEA Refrigeration





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Worldwide engineering excellence



*On board of modern cruise ships airconditioning, provision cooling systems and water chillers are not only indispensable but they also require enormous capacity and turnkey installations.*

ongoing innovation

continuous investment



## GEA Refrigeration



### Reliable solutions in refrigeration

GEA Refrigeration, the refrigeration division of GEA Group, is the worldwide market leader in industrial refrigeration. We offer our customers high-quality refrigeration systems and components to help facilitate their industrial operations. This is largely thanks to the robust organization at GEA Refrigeration. A worldwide network of component manufacturers, installation and service companies and sales offices guarantee that the customer's solution is always within reach.

Our customers operate in markets such as the food industry, oil & gas and petrochemical industries, storage and distribution as well as the maritime, public utili-

ties and recreational sectors. The services offered by GEA Refrigeration cover the entire spectrum of refrigeration engineering:

- system design
- component manufacturing
- installation
- service & maintenance
- commissioning

Whichever refrigeration engineering solutions you require, GEA Refrigeration has the proven expertise, technologies and personnel for you. Whether it concerns a mega cheese warehouse in Spain, freezing shrimps in North Africa, keeping gases in liquid form during ocean transport, controlling the temperature in clean rooms,

cooling freshly poured concrete or building a skiing hall in Dubai. All services are the result of a thorough understanding of the customer's needs and are based on continuous innovation in refrigeration engineering solutions. All this is made possible by a company with a history of 150 years and based on a worldwide network of 45 companies and around 3,800 employees.

## Mission



### Building on long-term customer relationships

GEA Refrigeration's market leadership in industrial refrigeration is the result of continuous investment in long-term and mutually beneficial partnerships with customers in all regions of the world.

GEA Refrigeration wishes to extend these customer relations to build on high-quality components and services, highly motivated employees and a culture of innovation, sustainability and social responsibility.

Refrigeration systems also serve the sports and leisure industry. More and more ice rinks and ski resorts make full use of these. Indirect cooling, with CO<sub>2</sub> as a relatively safe refrigerant, is the heart of the modern cooling technique of GEA Refrigeration in these modern leisure centers.



## Reliable solutions, anywhere in the world

GEA Refrigeration has been able to maintain a healthy growth. This is made possible by expanding the product portfolio and by investing in new technologies. Geographically, our expansion is realized in rapidly growing economies - such as Brazil, China, India and Russia - having ever increasing needs for technological solutions, in which refrigeration plays a major role. We also have a solid base in our European and American markets. The recipe for success is always based on consideration for people. In order to constitute an attractive employment opportunity, GEA Refrigeration strives to offer an environment in which professional people are able and are motivated to work toward personal and mutual growth.

## Strategy

# improving time and time again

### The key to a healthy future...

Innovation is not just a trendy word at GEA Refrigeration. It is the key to a sound future. The markets we serve undergo continuous change. To stay ahead, a market leader has to continuously develop new and sustainable technological solutions. So we remain an attractive proposition for our customers and we can continue improving our systems and components time and time again.

### ...for a sustainable future

Innovation also offers the solutions for a sustainable future in a healthy living environment. That is not only socially responsible, but also beneficial for our customers. From the design phase through to maintenance activities, energy efficient solutions can yield significant savings. Furthermore, new applications of natural refrigerants such as ammonia (NH<sub>3</sub>) and carbon dioxide (CO<sub>2</sub>) help minimize any negative effects on our environment.



## Innovation

During the off-season months in the northern hemisphere when apples, for example, start to go soft and mealy, increasing amounts of fresh fruit are imported from the southern hemisphere. Carefully sorted and packaged fruit is transported in refrigerator trucks to refrigerated warehouses where it is stored in a controlled atmosphere. The temperature is reduced to slightly below freezing point and the oxygen concentration in the air is decreased. To keep the apples fresh, the CO<sub>2</sub> they produce is removed from the surrounding air with lime water scrubbers.



Long service lifetime

### Quality through and through

GEA Refrigeration produces a wide range of components for industrial refrigeration systems in factories worldwide and with certified quality systems. The various products can be sub-divided into the following core groups: compressors, coolers, condensers, (tunnel)freezers, valves and ice-machines.

Our production systems are based on quality through and through. The GEA Refrigeration component brands are a hallmark for quality in the component market, guaranteeing long service lifetime, high reliability, low energy consumption and sustainability, for instance by opting for the application of natural refrigerants.

## Component Manufacturing



The Gasless Greenhouse is an extraordinary initiative that is enjoying a huge amount of interest in glasshouse horticulture. An ammonia heat pump conditions the atmosphere in an orchid nursery greenhouse all year round and keeps the temperature between 20 and 28 degrees Celsius. The use of compression heat and cold instead of a system that burns fossil fuel has reduced energy consumption by 45% and lowered CO<sub>2</sub> emissions by 620 tons.



GEA Refrigeration's components are cost-efficient due to their long service lifetime and low consumption. As a guarantee for pure quality and the added value of customer confidence over the years, GEA Refrigeration strives for continuous improvement. Innovation is the key to striving for technological excellence. An ambitious R&D program fits in with this concept, not only in seeking solutions to today's technical problems - but also those of tomorrow.

GEA Refrigeration's components form part of the production systems and so they have to contribute to the customer's success. It is therefore essential to really work together with the customer toward their total cost of ownership. High reliability, low downtime and energy efficiency of components can reduce the costs in the overall chain.

### Quick, compact and advanced

In some sectors compactness and speed are of major importance for systems delivered for the installation of industrial refrigeration systems. At the customer's request we can supply standard, semi-standard or custom-built packaged systems for many diverse applications. This may involve combinations of various types of coolers and compressors for installation in airconditioning, industrial process, cold store, (petro)chemical and pharmaceutical facilities, oil & gas production platforms. All packaged systems meet the highest international standards for application under the most extreme conditions. Complete with all necessary, advanced control and monitoring equipment.

## Packaged Systems

meeting the highest standards



## Contracting & Service

### Contracting

For high-quality contracting it is essential that GEA Refrigeration understands the customer's requirements. A broad knowledge of products, installations, systems and efficient methodology and technology helps to resolve any requests. In particular the consideration of energy saving solutions and the phasing out of synthetic refrigerants in favour of environmentally-friendly natural refrigerants. The specialist personnel are equally significant - with knowledge of local regulations and conditions so that any problems can be resolved in situ. Also assisted by a worldwide network of engineering and contracting specialists. All under the management of experienced GEA Refrigeration site supervisors.

### Service

All industrial refrigeration applications benefit economically from a minimum of defects, a maximum of service lifetime and low operating costs. Therefore, GEA Refrigeration does not stop at considering only the supply of an installation to the customer. That is just the start. From that moment onward, excellent service and maintenance can contribute to optimum performance and can prevent or reduce downtime and increase service lifetime. Our specifically trained specialist personnel are available 24 hours a day, on call and/or according to customized service contracts.



worldwide network

### Worldwide network for total solutions

GEA Refrigeration's customers are just as diverse as their various needs. That makes the integral resolution of special refrigeration system requirements as intriguing as it is challenging. Irrespective of whether you want to build an ice-cream factory in China, a coffee freeze-drying plant in Columbia, a brewery in India, a slaughterhouse in Russia or a cold-store for fruit in South Africa. GEA Refrigeration's experts handle the entire project, from design and engineering to construction, mechanical and electrical installation, automation and maintenance.



# GEA Refrigeration Components

## Your local partner

A third cluster, alongside Manufacturing and Contracting & Service, is GEA Refrigeration Components. We have an international network of sales offices offering the supply of components to installation contractors. GEA Refrigeration Components are authorised dealers for the leading brands: AWP, Aerofreeze, Geneglacé, Grasso, Goedhart, Küba, Raffel and Searle and we act as local agents for the manufacturers.

By operating in close co-ordination with the customer, the local sales branches are not hindered by cultural differences as they are familiar with their markets and they speak the same language. GEA Refrigeration Components handles the entire order-processing and after-sales service as well

as keeping the installers informed of recent developments in the range of components on offer. If necessary GEA Refrigeration's in-house product specialists are available for consultation.

GEA Refrigeration Components' network of branches is widespread, from the European Union to Eastern Europe, Africa, Asia and Australia, and therefore provides for worldwide availability.



close to the customer



## Always within reach

In order to complete the concept of total solutions for industrial refrigeration systems, GEA Refrigeration has a flexible and efficient organization for the supply of spare parts. Since the refrigeration installations often form a critical component of the customer's industrial systems, they need to be able to rely on the components always being readily available. GEA Refrigeration has a worldwide, extensive and ever expanding distribution network. So all necessary spare parts can be delivered worldwide within 24 hours.



Spare parts

## Worldwide engineering excellence

With about 250 companies and 20,000 employees in 50 countries, GEA Group AG is a technology leader on a worldwide scale. In 2007 the group achieved a turnover of 5.2 billion euros. As a global enterprise group, GEA focuses on mechanical engineering in two fundamental sectors, namely heat transfer (heating, cooling, freezing) and mass exchange (separating, drying, distilling, pumping, dosing and stacking). GEA manufactures components, systems and complete production lines. For the customer this largely involves customized solutions.

*GEA Refrigeration focuses on a continuous development of innovative and sustainable technological solutions. Always with a close eye for the environment, like the development of energy efficient solutions and increasing application of natural refrigerants such as NH<sub>3</sub> and CO<sub>2</sub>.*



premium quality and efficiency

In order to meet the customer's needs to the optimum, GEA has organized the group into nine customer-specific sectors:

- Air Treatment
- Emission Control
- Farm Systems
- Mechanical Separation
- Refrigeration
- Thermal Engineering
- Pharma Systems
- Process Engineering
- Process Equipment

The highly innovative culture within the GEA results in all these units taking up a prominent position with their core technologies in their own markets. Thanks to the optimum, added value on which our customers can count when managing the total cost of ownership for their installations and processes. The technological expertise offered by GEA guarantees a combination of premium quality and efficiency from the planning and engineering stage through to service and upgrading.



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