



**POLAR**  
REFRIGERATION GMBH

A **tig** HOLDING COMPANY

Engineering Expertise











## ▶ MISSION & ACTIVITY

### MISSION

We are dedicated to serve our customers and earn their loyalty, meet their expanding needs and deliver high quality and reliable products in a competitive environment. In order to realize this vision, we seek to exceed the expectations of our customers by maintaining:

- Transparency
- A clean Environment
- Technological leadership
- Provide fully Integrated solutions

### ACTIVITY

Our primary focus is on the design & packaging of energy efficient refrigeration equipment for the oil & gas, energy and chemical market sectors. Together with our sister companies in the Middle East and Europe, we are able to provide also custom made solutions for varied applications such as ground freezing, entertainment refrigeration, CO2 refrigerant based cooling systems or specific food cooling plants. Mechanical and Electrical design together with drawings, software development and all related tasks are carried out in house. Our assembly shop is furnished with the necessary equipment and facilities to handle most packaging requirements. We employ a team of experienced installation engineers and technicians and are able to attend to difficult job requirements. We are supported by our group's extensive strength in industrial refrigeration with experience dating back to 1969. Our group offers a team of over 350 staff members working exclusively in industrial refrigeration. We offer our services in Europe, East European and Central Asian countries, the Middle East and Africa. Whether your project is in a remote location or has difficult requirements, we are sure we will be able to serve you. Please do contact us.

► Engineering expertise





# MARKETS

## Oil & Gas

Oil and gas production from well to end customer involves many steps of which heat exchange and cooling contributes to several of the key processes. As part of the processes liquids and gases are heated, cooled, compressed or separated using different technologies. With the knowledge base at Polar Refrigeration GmbH and group companies we are in a primary position to provide and support quality custom made skids and solutions to match our customer's expectations.

## Power Generation

Modern power generation relies on sources such as wind, water, oil, gas or nuclear fission to drive turbines and produce electricity. Cooling is an essential part of the power generation process. In order to achieve high efficiency, equipment cooling is essential together with proper treatment for the fuel prior to combustion. Whether the requirement is for air inlet cooling or equipment cooling, gas compression or gas filtration and metering be sure the Polar team of expert engineers will meet your.

## Marine

Marine refrigeration present a challenge for equipment manufacturers due to the aggressive nature of the operating environment. Besides that there are specific approvals for components and plants to be obtained for supply of equipment for off-shore purposes. We offer purpose built refrigeration plants for offshore oil and gas platforms and compact ship cooling systems using sea water as a cooling medium. Special attention is paid to vibration isolation and corrosion protection. Typical application include offshore gas flaring units, gas cooling and condensing skids, ship air conditioning skids and fishing vessel product freezing.

## Chemical & Pharma

Transformation of chemical raw materials into finished products include activities such as heating, mixing, separating, cooling and freezing to name but a few of the processes undertaken in a typical chemical plant. Precise temperature control using custom built cooling equipment is essential to maintain the thermal balance in a chemical process. We design and construct purpose built chillers to match all special requirements including those for explosion proof environments.

## Utilities & Energy

In many industries cooling and refrigeration is among the utilities that ensure a stable operation of process plants and facilities. In the absence of a highly reliable cooling plant stable operation of whole systems are affected. We are active in providing high specifications custom made refrigeration plants for various applications such as combined cooling and heating, ground freezing, ice making and district cooling plants. The major market segments for our activity are heat pumps, concrete cooling, industrial air-conditioning and district cooling plant.

## Food & Leisure

Food processing, storage and distribution is essential for everyday life. It requires high quality plants to produce, deliver and store fresh and frozen products to end users. Entertainment refrigeration creates the environment for people to have fun. Artificial snow in snow domes and ice in ice rings are made with purpose built refrigeration equipment. Polar refrigeration GmbH together with group companies is in a position to provide turnkey solutions for most food and leisure applications.

▶ Taylor-made systems design



# PRODUCTS

## Engineering & Design

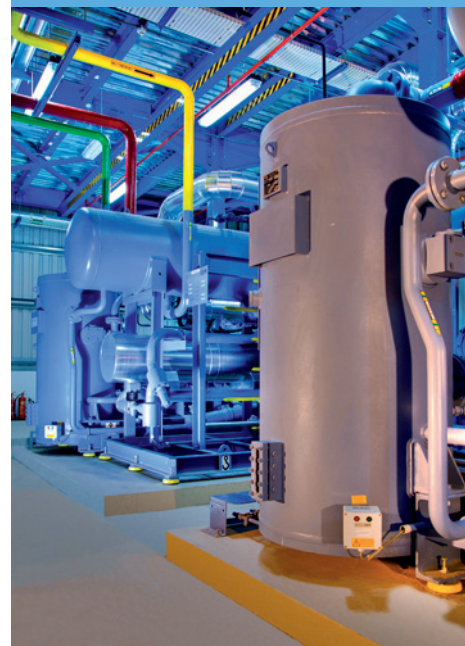
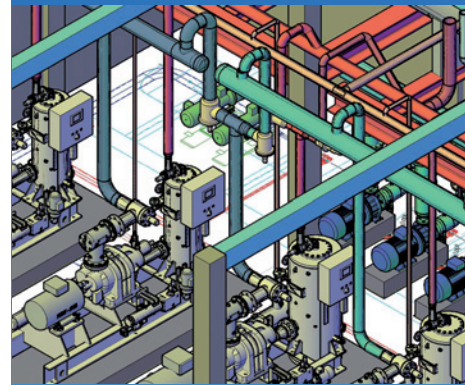
Mechanical, electrical and software design work is carried out to engineer packages and job requirements cost effectively and in line with project specifications. Typically the work proceeds in a sequential manner:

- Definition of the terms of reference
- Selection of major plant components
- Construction drawings for pressure vessels in line with project specifications
- Base frame calculations and drawings
- General arrangement and isometric drawings
- P&ID drawings
- Electrical drawings, PLC functional description and programming
- Internal reviews and internal approvals before releasing to construct

When a project includes EPC scope the project manager will be involved in reviewing and monitoring all engineering design activities to ensure compliance with project specifications.

## Systems & Solutions

In addition to offering packaged solutions we can also provide complete systems to meet stringent job requirements in the markets we operate in. Typically different approaches are available to meet the objectives of any plant. Our engineers are well experienced at analyzing the various options available and adopting a holistic view to select the optimum solution for the requirement. Such an approach guarantees a perfect fit for the system with the total process plant. We are fully responsible to our customers for our engineering work as well as for the correct operation of the selected equipment and machinery.





▶ Industrial plants construction





## Manufacturing & Packaging

All types of equipment are packaged at our facilities according to project specific requirements. Our expertise is not limited to engineering but in packaging purpose built systems to international standards or to client specific standards. Together with our group companies we have packaged for a large number of reputable clients. Typically, we produce the below mentioned products, however, please do contact us with your requirements for any special skid mounted equipment.

- Customized refrigeration skids
- Pressure vessel skids
- Chillers and heat pumps
- Specialized compressor packages including containerized solutions
- Filtration stations for liquids and gases
- Two-phase and three-phase separation skids
- Pump stations
- Condensing units
- Power and control cabinets and skids

## EPC Services (Engineering, Procurement, Contracting)

Polar Refrigeration GmbH, together with group companies, is well positioned to execute projects on turnkey basis to match our customers' expectations. Being part of a larger group, we draw on the resources of our group companies to construct all projects requiring systems mentioned in our product portfolio. Having the activities of Engineering, Procurement and Construction in house and staff with experience in the region of the Middle East, Eastern Europe and Central Asia provides us with an added advantage over others to project manage and execute all types of projects requiring custom made solutions on turnkey basis.



## QUALITY & STANDARDS

In many instances our products are installed as utility in a production facility where reliability of operation is paramount. In other instances our products are installed in chemical or gas hazardous areas where attention to quality and standard are of highest importance. Quality level requirements are considered and evaluated at tender stage to ensure the product to be manufactured is in line with the intended use. Significant attention to the quality of design, production and construction is paid at Polar to ensure the delivered products are in line with the specified regulations. Our engineers are familiar with the different applicable standards in the various markets and operate in line with a strict internal Quality Test Inspection Plan (QTIP). Our standard products are built in line with DIN/EN, PED, AD2000 standards. We have also sufficient experiences with GOST-R, GOST-K and DSTU regulations.

## SERVICE & SUPPORT

A center piece of our business philosophy includes ensuring that our customers are well served after project handed over. We achieve this by ensuring that our customer staff are sufficiently trained to operate the plant, that all operation and maintenance manuals are handed over and well understood and by ensuring that our customers know where and how to report to us their plant queries and malfunctions. We maintain a service presence in most regions. However, Polar refrigeration GmbH provides customers with a variety of service agreements for plant maintenance. We further assure our customers that they will properly supported with spare parts and consumables from our basic stock at short notice.







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