



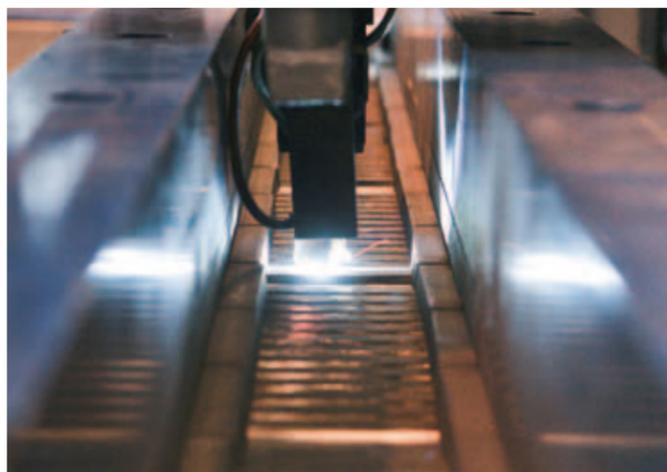
# TANKS, SILOS & HEAT EXCHANGERS

FOOD, CHEMICAL, COSMETIC,  
PHARMACEUTICAL & AEROSPACE INDUSTRY



INNOVATIVE • PERFECT • QUALITY

# THE FACTS BEHIND A **LEAD POSITION**



Our plants are carried out with utmost care using the latest methods and highly developed engineering techniques. This tradition at Ziemex is the basis for our success since the founding of our company in 1957. Our standard of quality was and still is the reason for our company ranking top of the league in the market. This position is backed by the experience gathered from half a century of plant engineering all over the world.

We design, manufacture and install top quality vessels and plants made of stainless steel and aluminum for breweries, the chemical and foodstuff industry and also for the cosmetic, pharmaceutical and aerospace industry.

We advise and support our customers around the world from the very first development stage of a project up to the commissioning and beyond, throughout the entire service life of the plant.

We implement complete turnkey plants. Our customers benefit from the economical advantages of having a single contact partner from the design up to the implementation and commissioning.

Our quality management system is certified in compliance with ISO 9001. Our company also meets the requirements of international standards and approvals such as: PED 97/23/CE: Modules E1, H and H1, AD-Merkblatt HPO/TRD 201/DIN EN ISO 3834-2, U-Stamp, GOST-R, UDT, ISIR, SQL.

## EXPERIENCE & INNOVATION

We can fall back on decades of experience gathered in the manufacturing of equipment for the storage and handling of liquid and solid products as well as in heat exchange processes.

### Manufactured to meet highest demands

At our production plant we manufacture equipment made of stainless steel, Duplex, nickel alloys, Incoloy, Hastelloy® and aluminum in sizes ranging from 100 liters to 600 m<sup>3</sup>. The vessel diameters measure up to 6.8 meters, they are up to 30 meters in height and weigh up to 100 tons. For larger dimensions we manufacture the vessels directly on site using a mobile production plant which has been specially designed and built for such applications.

### We supply every piece of equipment required

For liquids we manufacture fermentation and storage tanks, reactors, condensing units, heat exchangers and the insulation of these units. For solids we produce complete silo plants, homogenization and mixing silos with degassing, drying and cooling silos as well as plate heat exchangers.

### We implement complete plants

The turnkey plant: this is where we take care of everything. Benefit like all customers around the world from our experience in the design and construction of complete plants for processing and storage of liquid and bulk material. We realize your plans in a turnkey project fully equipped with the materials handling equipment, storage possibilities, filtration, automation, load cells and the necessary safety equipment.

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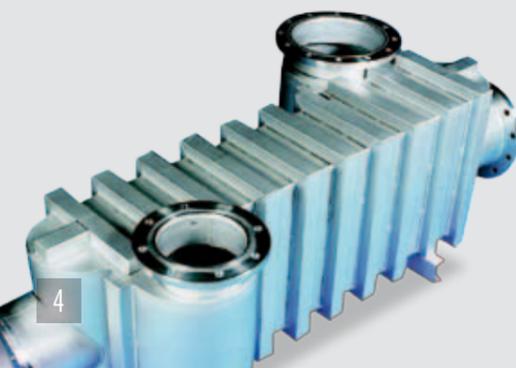
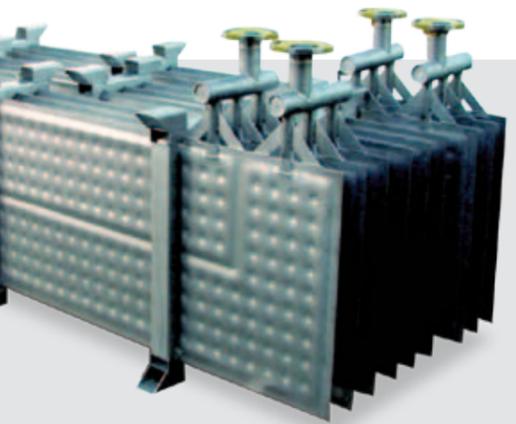
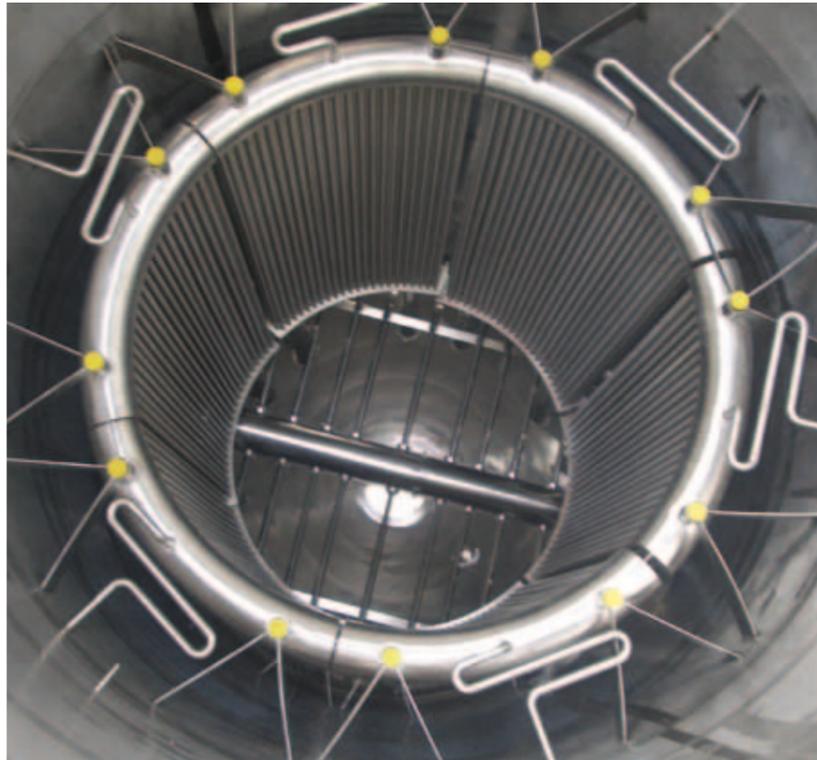
Sophisticated design

# EVERYTHING FOR THE **CHEMICAL AND PETROCHEMICAL** INDUSTRY

The design and construction of equipment for processing chemical materials require specific know-how. Our specialists have command of this know-how and accompany our customers from the concept of the plant up to its commissioning.

All of our equipment is designed right down to the smallest detail in accordance with the valid international regulations and standards, from simple storage possibilities up to the complex reactor. We are also certified to work in chemical industry plants.

We manufacture process and storage vessels, reactors, cooling or heating columns, devices for the chemical industry, heat exchangers, storage and mixing silos, homogenization silos, dryers made of stainless steel and aluminum in all sizes.



## MAXIMUM PERFORMANCE IN HEAT EXCHANGE

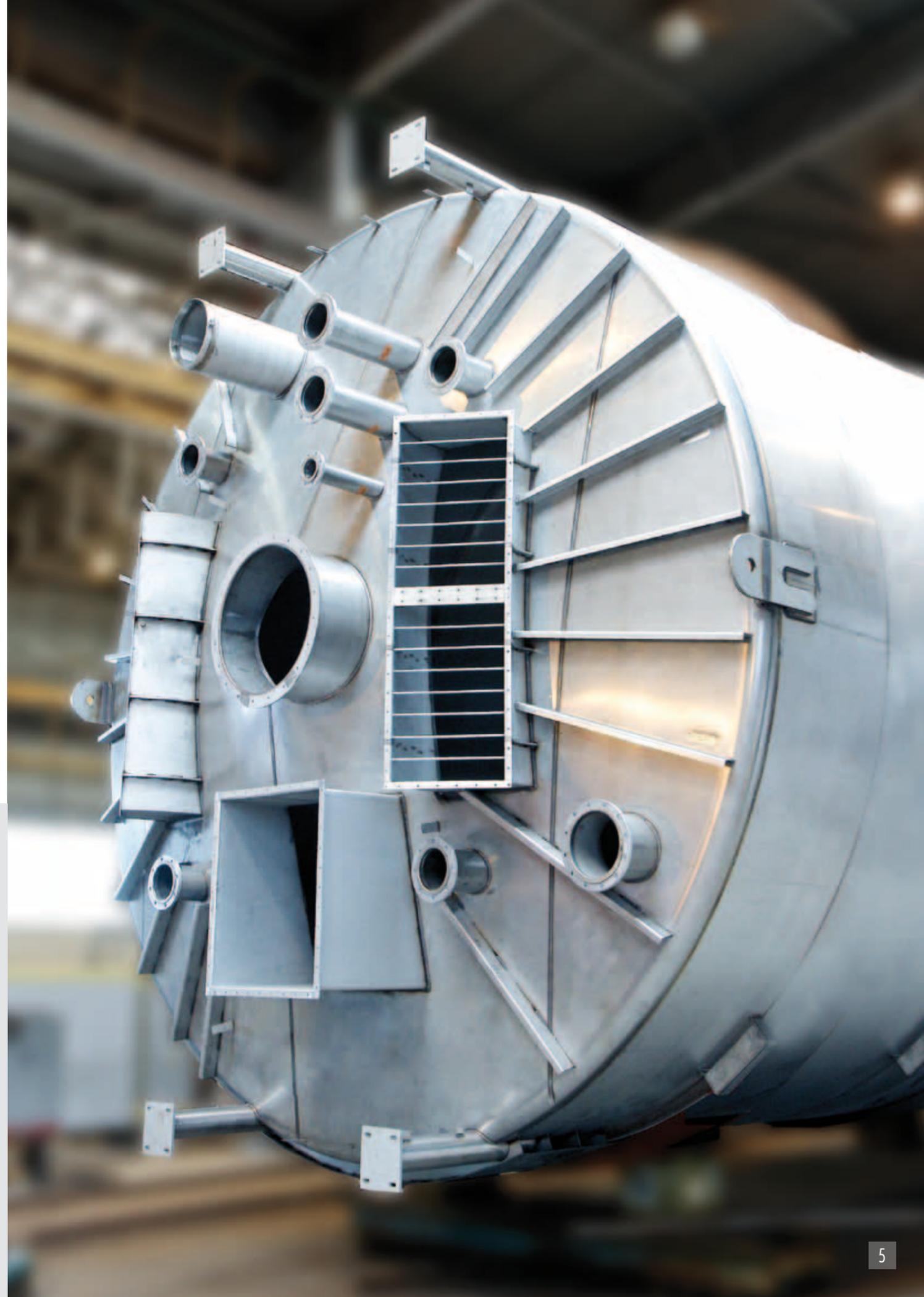
Maximum heat transfer with minimum pressure loss – and within the smallest plot space: these are the advantages offered to our customers by our patented welded plate heat exchangers. They are in a position to achieve up to four times the performance of a shell and tube heat exchanger, requiring the same amount of space.

The design of our plate heat exchanger permits an easy inspection and mechanical cleaning on both sides.

Our heat exchangers are tailored to meet the specific requirements of our customers and are subjected to our well-proven quality assurance requirements. They are, of course, also in compliance with the Pressure Equipment Directive (PED).

Our laser-welded plate heat exchange units are used as batteries in fluid bed dryers, immersed in process baths and as flow breakers in reactors.

Our special plate heat exchangers and quench columns are particularly well adapted to hightemperature processes (up to 1000 °C).



Highest level of precision

# PERFECT HYGIENE FOR **FOODS**



Vessels for the foodstuff industry demand highest production quality to ensure maximum hygiene and sterile conditions at all times. The inside surfaces of the vessels must therefore be processed with utmost care. Our method of grinding the welds and polishing the inner surfaces to values of  $Ra = 0.25 \mu m$ , meet these requirements perfectly.

We produce fermentation and storage tanks of every size all over the world, which are optionally fitted with a CIP system for the foodstuff industries.

For the sugar industry and distilleries we manufacture high quality vessels for the storage of reduced juices, ethanol, glucose, and also bulk sugar silos which, of course, all comply with the ATEX explosion protection criteria.



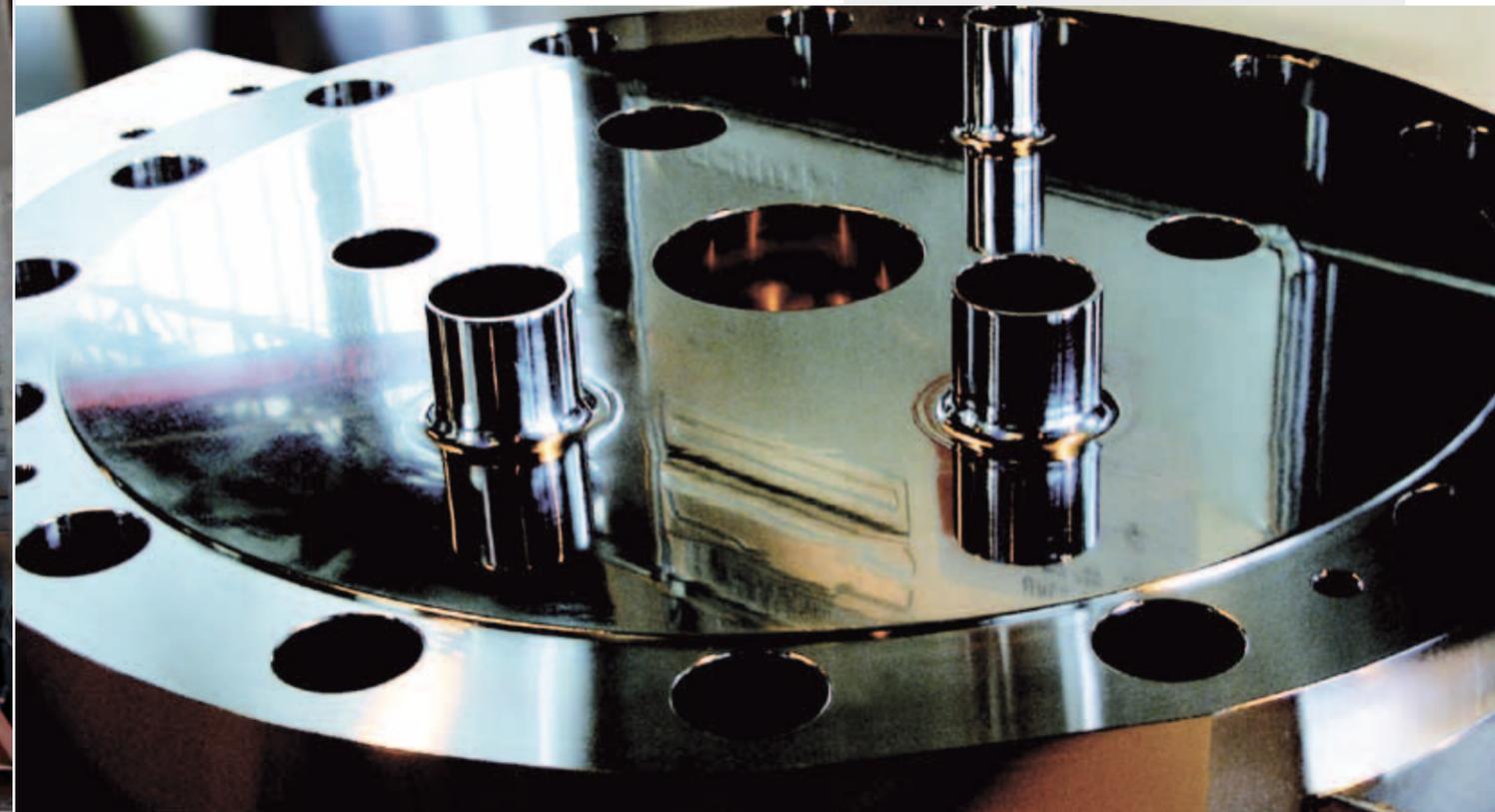
Perfection through know-how

# HIGHEST LEVEL OF PURITY FOR **FINE CHEMICALS** AND THE **PHARMACEUTICAL** INDUSTRY



High-purity vessels and reactors and the meticulous operation of equipment are essential conditions for processes in the pharmaceutical industry. It is here that our engineers excel with the highest level of competence. Beyond this, our polishing and electro-polishing methods guarantee the best surface treatment for highly sensitive products.

Highly modern production methods and machinery, perfect surface treatment and a comprehensive customer service make our plants unmatched in cost-efficiency, also in the long term.



THERMIPACK®, process tank/reactor, skids

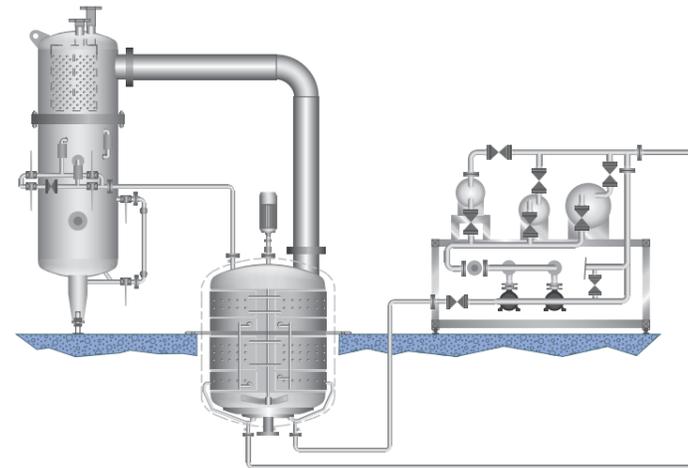
# A GLOBAL CONCEPT FOR THE PHARMACEUTICAL INDUSTRY

Ziemex, offers a turnkey concept for the pharmaceutical industry comprising THERMIPACK®, the compact condensing and separating unit, a process tank/reactor and SKID MONOFLUIDE for optimal temperature control:

## THERMIPACK®, an innovative multitalent

THERMIPACK® is a modular tower of compact design which combines the different process steps of condensing, first and second stage, decanting/separating and solvent storage all in one piece of equipment. In this way THERMIPACK® only requires a quarter of the space needed for a conventional design.

THERMIPACK® is also the perfect technical/engineering solution for retrofitting of existing plants.



THERMIPACK® reactor skid

### Process tanks/reactors

High-tech laser-welded process tanks/reactors are designed and manufactured according to the most stringent international standards.

We deliver vessels designed for cooling or for heating, with agitator and insulation, as pressure tanks in compliance with GMP, FDA and PED 97/23/CE.

### SKID MONOFLUIDE for optimized temperature control

Our SKID MONOFLUIDE temperature regulating units control the temperature of the reactor with a single circulating thermal fluid (water containing glycol or organic fluid) which is regulated on its part by exchange with the main fluids (liquid nitrogen, water containing glycol, water, steam) or using an electrical heating device. The SKID MONOFLUIDE complies with the regulations of the Pressure Equipment Directive (PED) and ATEX.



Advancement based on experience

# QUALITY VESSELS FOR THE **PAPER INDUSTRY**



We produce high quality vessels of all sizes for production processes in the paper industry. Using our technology of dimpled jacket, welded by laser, these vessels are cooled or heated as required to meet the specific customer requirements. For black liquor vessels we use DUPLEX steel.

This is where our customers benefit from our many years of experience in vessel manufacturing using a variety of different materials.

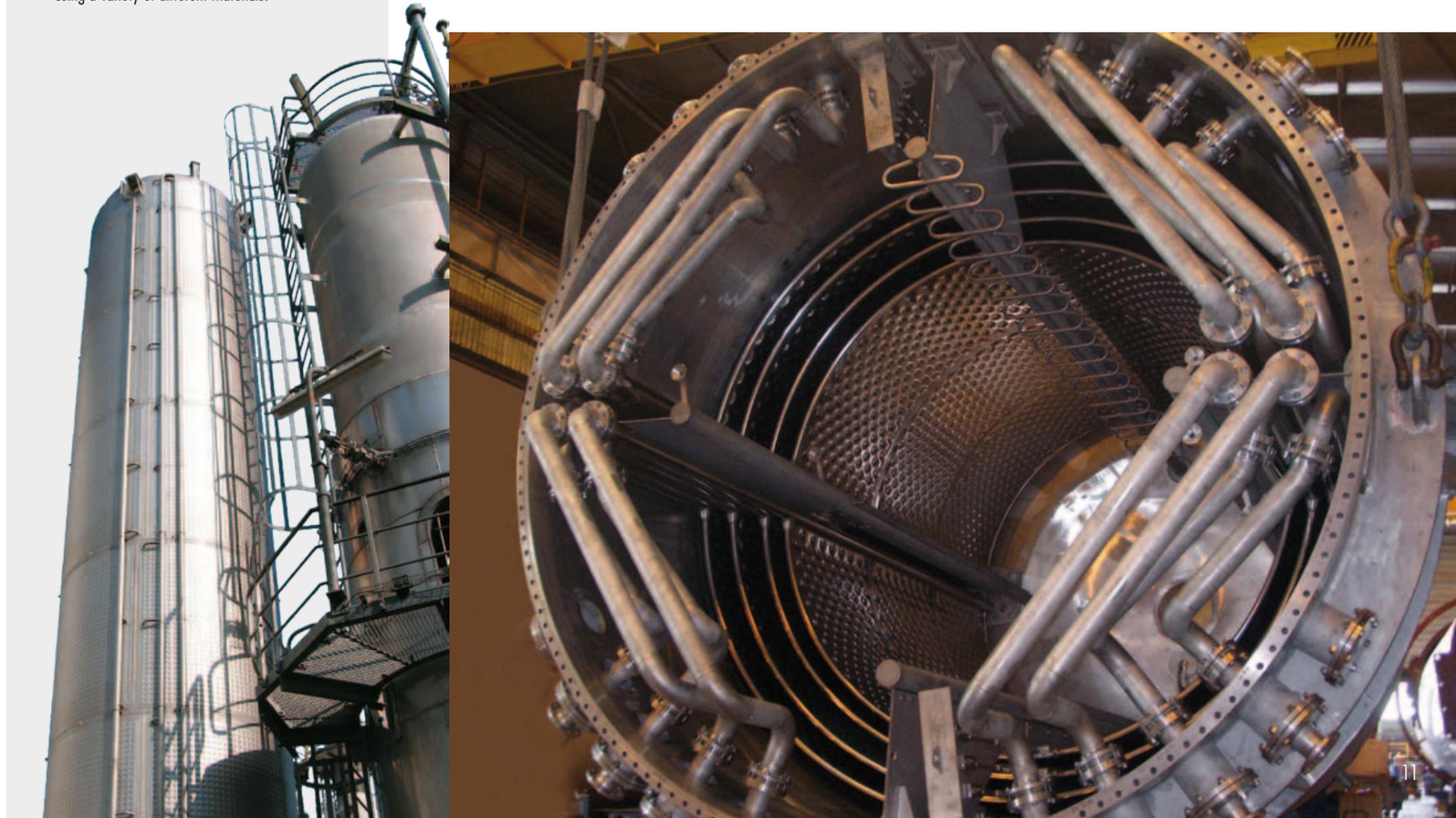


Simple and effective

# DIMPLED JACKET, RADIATING PANELS FOR **HIGH-TECH** APPLICATIONS AND **AEROSPACE**

We offer the right solution for all processes in which certain temperatures have to be maintained for a defined amount of time: laserwelded dimpled jackets, which cover the entire surface and every curve of the equipment to guarantee an optimal heat transfer.

Our radiating panels, cryogenic panels, Radiaplaques® and cooling or heating jackets for retrofitting satisfy the highest quality requirements, even those of the aerospace industry.



Always up to date

# THE CENTER FOR ENHANCED QUALITY

Our spaciouly designed production plant is situated on a site covering more than 16,500 m<sup>2</sup>. In production halls which are fitted with state-of-the-art technology for metal processing we manufacture vessels and components of the highest quality for plants all over the world.

With top level engineering techniques such as the high-energy explosion process we can also satisfy the specific requirements of demanding customers and are independent of technical limitations existing in other forming processes.

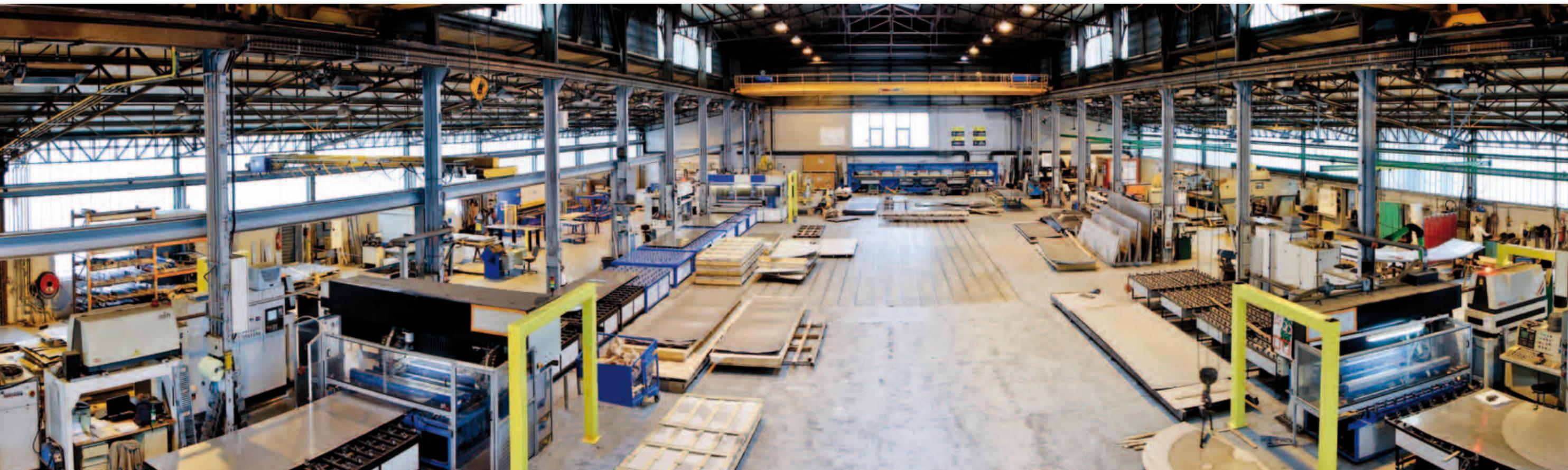
For perfect welding of our double jacket sheets we mostly apply the CNC laser welding method.

Our facilities include a highly efficient underwater plasma-arc cutting installation.

Our automatic grinding machines can reach roughness values of  $Ra = 0.4 \mu\text{m}$  and with additional electro-polishing values of  $Ra = 0.25 \mu\text{m}$ .

For new products or methods we perform process and material tests in our factory, which are carried out in close cooperation with our customers.

We possess extensive know-how and competence from five decades of plant engineering and vessel production.

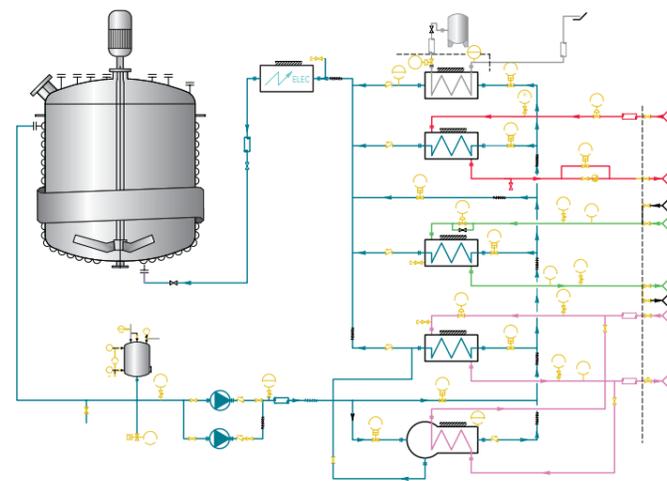


Design and engineering

# A NETWORK FOR INNOVATION

Everything we design and develop is aimed to make our customers' production processes more economical, more efficient and more safe.

In our design and engineering department we consequently optimize the production methods for our plants and equipment on an ongoing basis. In this process we are supported by state-of-the-art computing and design software and a networked CAPM system.



A clear-cut case

# ASSEMBLY, SERVICE AND CONSULTANCY

The assembly of our plants is implemented by us, all over the world. For the assembly of large vessels that cannot be transported in one piece we have developed mobile production plants which allow the vessels to be produced on site without any risk of the quality differing from that of vessels produced in the company works. After production and commissioning the plant is looked after by our customer service.

We also offer our services and consultation for existing plants in order to optimize the processes of our customers and to secure operation in the long term.

We are certified to operate in production plants of the chemical industry, which have to comply with very stringent safety regulations.





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