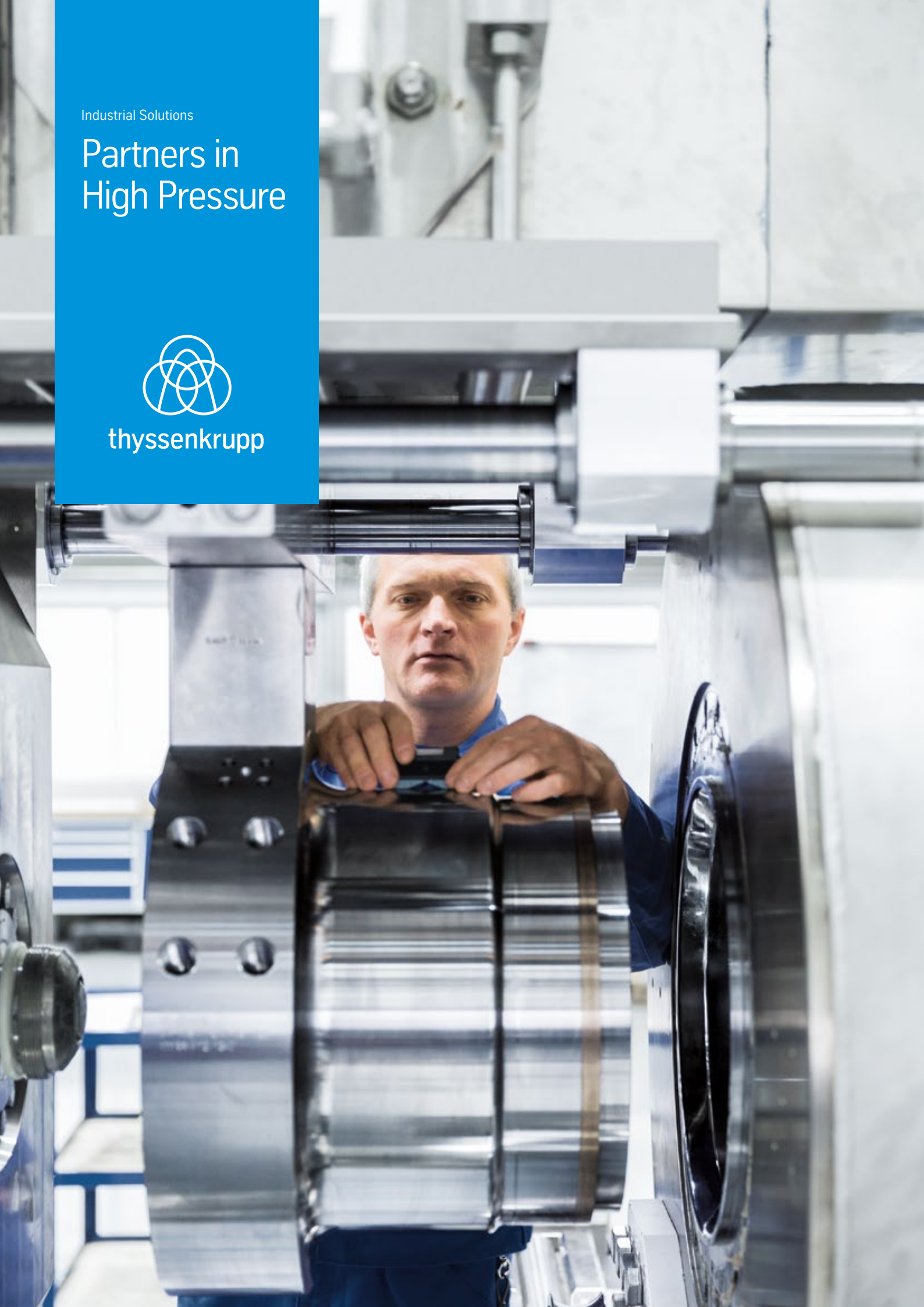


Industrial Solutions

# Partners in High Pressure



thyssenkrupp



Engineering



# partners in high pressure.

Service



Manufacturing



We are strongly committed to our clients' success. With passion and technological expertise, we offer optimum and efficient solutions for high-pressure applications.



Christian Myland,  
CEO



Serving our partners along the entire plant life cycle.

Uhde High Pressure Technologies is a high technology company of thyssenkrupp with approx. 250 employees. With our wide-ranging expertise and more than 80 years of experience we are one of the world's leading companies for industrial high-pressure plants and equipment with an international customer base in several markets. We support our customers along the entire plant life cycle – starting with planning high pressure solutions and in-house engineering through manufacturing of tailor-made equipment up to the operation phase with service and spare parts supply. The combination of local in-house-manufacturing “made in Germany” and a global supplier network enables us to ensure high quality at optimized costs. Our profile is supplemented by qualified supervisors to support installation and commissioning worldwide.

# From single valve to complete plant.

1930

Start engineering and fabrication of high-pressure equipment for ammonia synthesis

**Friedrich Uhde**

Start building & operation of low-density polyethylene plants

1952

First 14,000 bar application

1978

1970s

Reliable high-performance pumps - the core element of waterjet cutting

Comprehensive expertise and extensive experience over 80 years have made us experts for high pressure plants and solutions. Nowadays our range of different market solutions includes LPDE and urea plants, supercritical fluids, high pressure processing and waterjet cutting.

As a specialist in the development of high-pressure process technology, we provide comprehensive in-house capabilities for the optimal design of components, processes and plants. From highly standardized products to tailor-made solutions – we accompany you in process engineering during the early project phase and contribute to the optimization of the entire plant design. With our experienced designers we are able to adopt the design and calculation of key equipment such as tanks, pumps or valves, through to complete plants or systems. In addition, we

conduct research and development of high-pressure process technology. Thanks to thoroughly tested high quality, certified for international standards, codes and regulations, our material definition fulfils even the highest specifications. Therefore, we offer customized software solutions allowing the implementation of individual interfaces, well reflected control programming and process visualization as well as the installation of remote maintenance systems.

today

Tailor-made  
high-pressure systems,  
solutions & services

thyssenkrupp  
Industrial Solutions

1980s

Supercritical  
fluid extraction:  
from first idea  
to final product.

Becoming part of  
a globally leading  
multinational company  
ThyssenKrupp

1990s

1997

Pioneering high-pressure  
processing (HPP) applications  
based on solid experience

# Best performance with continuous quality “Made in Germany”.

From off-the-shelf-products to tailor-made solutions, our clients can expect consistently tested top quality. Uhde High Pressure Technologies possess experience and a wealth of expertise in the manufacture of high-pressure solutions. Our quality “Made in Germany” is based on three pillars: continuity, safety and economic efficiency.

Best performance with continuous quality assurance makes us one of the worldwide pioneers in the production of high-pressure components and complete systems. Well-founded material and manufacturing competence in bending, drilling, fastening and final precision machining, gained in decades of experience, has made us experts in the manufacture of high-pressure reactors, pipes, tanks, vessels, valves and pumps. Thanks to non-destructive, destructive and corrosion tests in independent test labs, our manufactured components meet all requirements for hardness, pressure, tightness, flexibility and precision.

## 1

### **Economic efficiency**

By applying best methods and materials as well as the development of recent technologies we achieve maximum economic efficiency in our clients' interest.





## 2

### **Continuity**

Based on state-of-the-art technology, we offer a long-term perspectives thanks to permanent further development, flexible tailor-made concepts according to customer wishes and personal customer support to be successful in competition.



## 3

### **Safety**

Customers can rely on our implemented high-pressure applications and processes in plant construction, focusing on maximum safety due to reliable and durable performance. Our successful security measures and the reliability of our systems are demonstrated by plants that have been in operation for more than 30 years.



High-pressure equipment up to

**14,000 bar**

# Tailor-made equipment for chemical plants.

Conveying, storing and handling different types of chemicals require tailored equipment such as reactors, pumps, valves or pipes.

Uhde High Pressure Technologies designs and manufactures specialized equipment for high pressure plants.



No plant is like the other – that's the reason why we focus on different customer wishes and find individual solutions for long-term operations.

## Low-density polyethylene plants

### Specialized equipment for LDPE plants since 1952

As a specialist in design, development and fabrication of high-pressure components in LDPE and EVA plants from 300 up to 3,600 bar Uhde High Pressure Technologies is one of the market leaders. Our long-term experience is consistently used to the benefit of our clients and makes us an approved supplier for all licensors: on the one hand, plants remaining in operation for decades show the reliability and durability of our work. On the other hand, we use the experience from long-term operation data for optimizing our products. We provide reactors, pumps, valves, piping, vessels, heat exchangers and hydraulic oil systems in LDPE plants with our high-pressure technologies.

## Urea plants

### Tailor-made equipment for the world's biggest fertilizer plants

With our comprehensive competence, we have always advanced technological developments for the design of plants, especially in the area of urea. While specific conditions for high-pressure valves in urea services require individual solutions, our design and flexible construction enable us to meet many customer wishes such as closing times, types of actuators and attachments as well as extremely reliable and robust equipment up to 16". Moreover, we provide safety for the design and ensure the quality of the entire plant equipment.

## Supercritical fluids

### From first idea to process design and complete plant

With comprehensive knowledge in the development of CO<sub>2</sub> plants, we are able to handle maximum requirements regarding process engineering, design, materials and components. Combining an eye for the bigger picture with the know-how for every detail of CO<sub>2</sub> plants we recommend ourselves as a highly specialized supplier for vessels, heat exchangers, valves, pipes through to completely pre-installed plants in fields of application such as extraction, cleaning, impregnation, coating or drying processes.

### What our partners can expect:

- Solutions tailored to specific customer wishes
- Reliable and durable plants remaining in operation for decades
- Highest safety and quality standards

A close-up photograph of a glass filled with a thick, purple smoothie. The smoothie is topped with several fresh blueberries and a sprig of green mint leaves. The glass is clear, and the smoothie has a vibrant purple hue. The background is blurred, showing more blueberries.

Food & beverages –  
Fresher and better products.

High pressure for

**100%**

pure extracts & freshness

Is it possible to improve the shelf life of food and beverages while respecting the environment and increasing sustainability? High purity and extracts from plants are the keys for high-quality food to be transported and stored longer as well as more ecologically.

## Supercritical fluids

### **Extract, upgrade, purify using supercritical fluids**

Supercritical CO<sub>2</sub> is easily available, inexpensive, non-toxic and non-explosive and plays a key role in manufacturing high-quality products from raw materials such as herbs or spices. Extraction with supercritical fluids has a wide range of practical applications for the food, cosmetics and the pharmaceutical industries. Using the technology upgrades raw materials – e.g. the decaffeination of coffee or tea – and enables high-purity extracts as well as cleaning processes such as removing binder residues from structural components.

## High-pressure processing

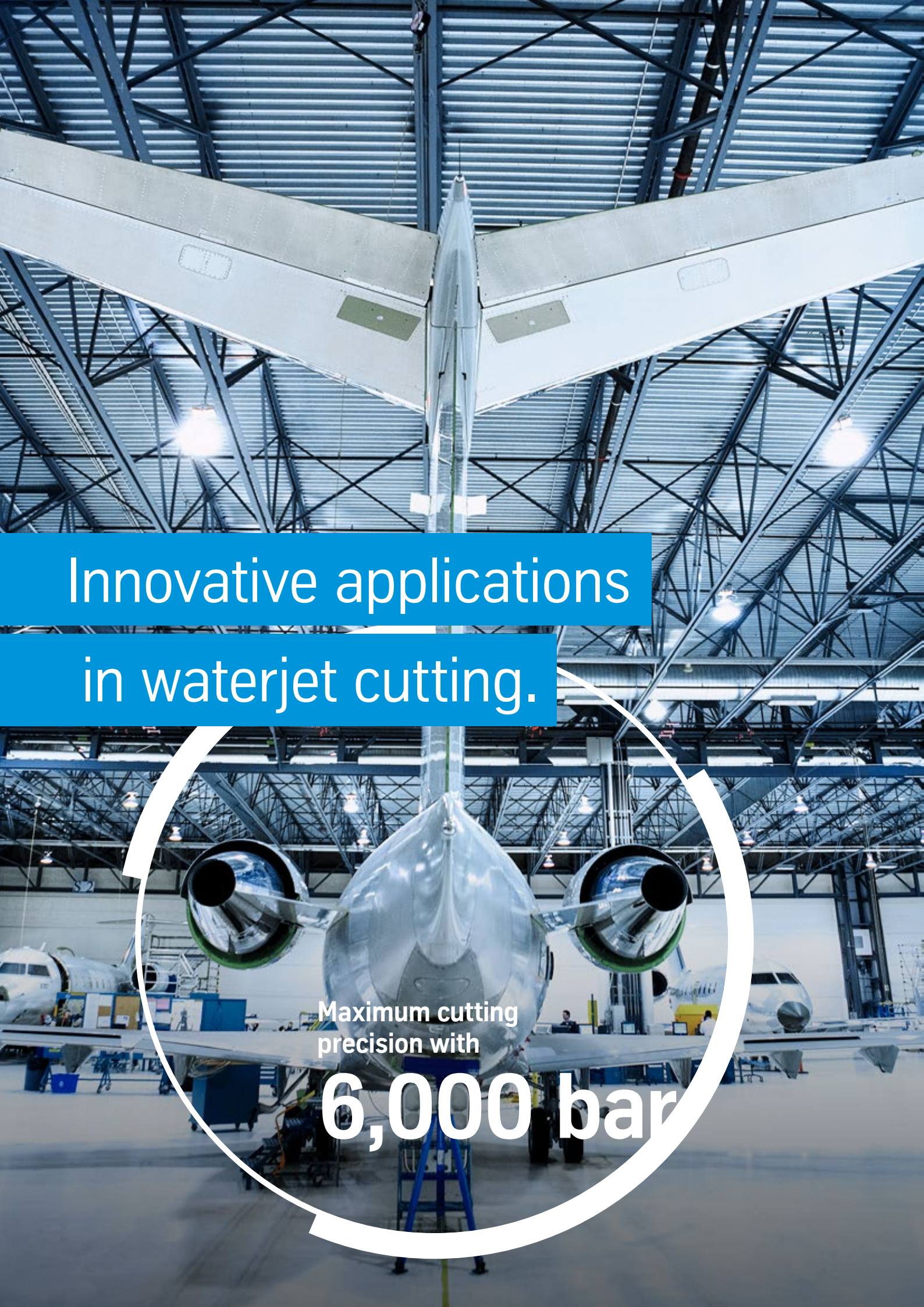
### **High-pressure processing: food preservation 2.0**

High-pressure processing pasteurizes fruit, vegetables and meats gently at 6,000 bar – and with no need for chemicals. Uhde HPP enables maximum safety for products processed in their final packaging without subsequent contamination, longer shelf life without heating or additives and ecological and sustainable preservation without waste. The consistent product quality implies higher efficiency, quality and safety as well as increased yield.



### **What our partners can expect:**

- High product safety without subsequent contamination
- Longer shelf life with gentle, heat-free preservation
- Inexpensive, non-toxic extraction or purification



Innovative applications  
in waterjet cutting.



Maximum cutting  
precision with

**6,000 bar**

We experience the power of water daily. It has been creating new shapes by erosion for millions of years. Uhde High Pressure Technologies reduces this time to mere seconds by increasing the pressure of the water – for cutting-edge results.



## Waterjet cutting pumps

### **24/7 reliable with maximum precision**

Uhde High Pressure Technologies has been designs and manufactures ultrahigh-pressure pumps for industrial use. The reliable high-pressure pumps work steplessly up to 6,000 bar cutting almost any kind of material without thermal effects and are implemented in all relevant industrial sectors, from the food industry to glass and stone to aerospace. Regardless of the material composition, water cuts with maximum precision and flexibility while being environmental and user friendly.

Uhde 4037 is the newest generation of waterjet cutting pumps. We have made the pump more robust in core components, assembly and operation have become simpler and our customers can rely on our qualified 24/7 service for quick support.

### What our customers can expect:

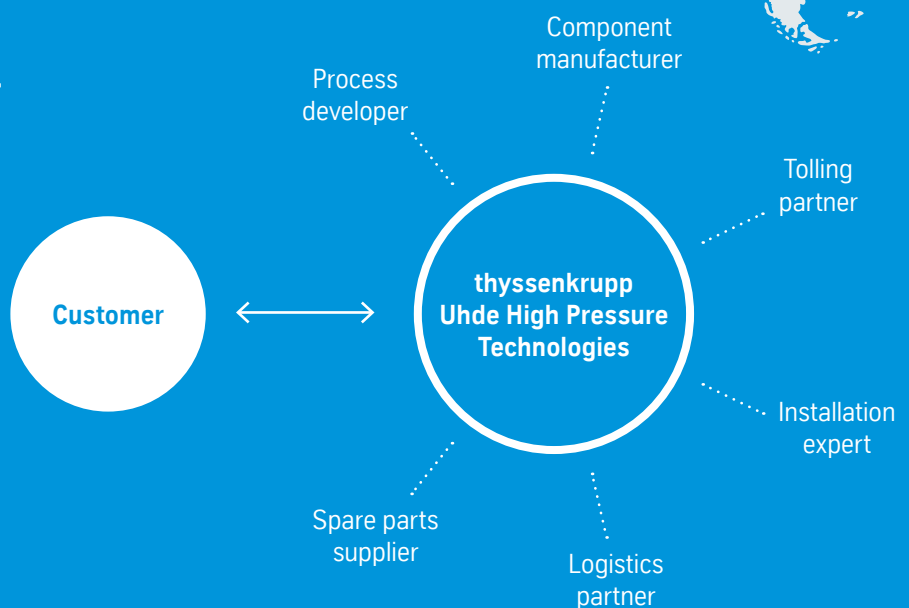
- Cutting almost any kind of material without thermal effects
- Maximum precision regardless of the material
- Environmental and user friendly solution

# Global services – your lifecycle partner.

The complexity of high-pressure plants and tailor-made equipment calls for professional service including trouble shooting, maintenance, repair and reconditioning. For this reason, Uhde High Pressure Technologies provides a 360° service wherever in the world your plant may be located. Thanks to decades of experience and more than 500 installed facilities we are a reliable, world-leading partner in high pressure technologies. Our goal is to establish a long-term customer relationship – as your lifecycle partner.

## Comprehensive service – high efficiency, minimizing downtimes

The challenge of plant maintenance is to reduce downtime to a minimum. We achieve this, thanks to our experience, know-how and our highly qualified service technicians, offering tailored service packages for your needs. This is how we ensure high service quality.



**Global network**

Thanks to our global network infrastructure, we ensure fastest possible delivery of spare parts and efficient, worldwide maintenance and repair service. Our partners can trust our well-trained personnel at local service centers offering immediate assistance in all cases. Furthermore, we work closely with our customers to adapt automation technology to their specific requirements. That's how we understand service to be the right partner for your high pressure plant.

**Asset Management****Spare Parts Supply  
& Management****Revamps****Service Center  
& Field Services****360° service**

As your partner, we support you during the whole lifecycle of your high-pressure plant and offer a 24/7 worldwide service. From detailed project planning to maintenance and repair service onsite or in our workshop, you can rely on our expertise and decades of experience to ensure the successful erection of the most complex plants and efficient support.

Industrial Solutions  
Electrolysis & Polymers Technologies

Uhde High Pressure Technologies GmbH  
Buschmühlenstrasse 20  
58093 Hagen  
P: +49 2331 967- 0  
F: +49 2331 967- 370  
[www.uhde-hpt.de](http://www.uhde-hpt.de)

engineering.tomorrow.together.