



**BORSIG**

**Compressor parts**  
BORSIG ZM  
Compression GmbH

**Think.  
Create.  
Change.**

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# **Compressor solutions.**

BORSIG ZM Compression GmbH, a member of the BORSIG Group, offers the design and manufacturing of compressor parts and their reconditioning and modification as well as a comprehensive compressor service.





BORSIG ZM Compression GmbH (BORSIG ZM) in Gladbeck/North-Rhine-Westphalia specializes in the design, manufacture, reconditioning, and modification of high-quality compressor parts and a comprehensive compressor service. Our innovative solutions serve to industries such as oil and gas, chemical and petrochemical, natural gas and offshore, and process gas producers.

Our experienced engineers provide a fast and efficient service, from initial analysis to tailored solutions for each customer. By working closely with our customers, we improve the performance and reliability of their compressor systems, consistently exceeding expectations.

With over 2,500 items in stock, BORSIG ZM offers flexible and immediate solutions. Our extensive stock enables us to respond quick to urgent enquiries, minimizing downtime and ensuring efficient operations for our customers.

Innovation, precision, durability and reliability are our priorities at BORSIG

ZM. Our advanced manufacturing facilities produce components that meet the highest standards of quality and performance. Rigorous reconditioning processes restore used parts to like-new condition, extending their service life and optimising cost efficiency.

BORSIG ZM is a leader in innovation and reliability in the compressor parts industry. Our commitment to precision ensures that every component meets stringent quality standards, while our focus on durability guarantees outstanding performance. Whether you need new parts, reconditioning or modifications, BORSIG ZM is your trusted partner.

Our products and services:

- **valves**
- **piston rod seals**
- **oil scraper packings**
- **engineering & manufacturing**
- **compressor service**





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# Compressor valves for all gases and applications.



Small components with a big impact: Our approach to BORSIG valves and valves from other manufacturers.

## **Plate valves**

The PS valve series from BORSIG ZM offers robust plate valves. They are suitable for universal use in all gases and conditions. Our valve plates are manufactured from a variety of materials, including PEEK, PA, GRP and steel, to suit specific operating environments. In addition to these standard materials, we also offer plate valves made from special materials that are particularly suitable for use in extreme conditions.

In particular, non-metallic valve plates offer superior resistance to liquid hammers, such as those caused by condensates. Experience has shown that non-metallic plates result in significantly less consequential damage to valves, cranks and cylinders in the event of breakage.

## **Ring valves**

Our RI & RC valve series, with high performance non-metallic valve rings, are also suitable for all gases and applications. The unique design allows the valve rings to rotate, promoting even wear and a self-cleaning effect. The independent movement of the rings enhances their resistance to liquid hammers, ensuring reliable operation in demanding conditions.

## **Reconditioning, analysis and optimisation**

In addition to our valve range, BORSIG ZM offers a comprehensive range of services including valve reconditioning, analysis, optimisation and modification. Reconditioning is carried out according to specified maintenance intervals, restoring valves to full efficiency and extending their service life to that of new valves. The cost effectiveness of remanufactured valves compared to new valves is undeniable.

Our robust valves are designed for multiple reconditioning cycles before complete replacement is required.

## **Expertise in compressor analysis**

With over 120 years of experience, BORSIG ZM has conducted thorough analysis of hundreds of reciprocating compressors from various manufacturers. Often compressors do not operate at optimum conditions, but our reliable analyses can identify and solve these problems.

## **Valve modification and optimisation**

For operators experiencing frequent valve damage or seeking improved valve efficiency, we offer modification and optimisation services. High performance plastics can be used to improve valve performance, often during the overhaul process and at no significant additional cost. This approach significantly reduces the need for valve replacement and ensures long-term operational efficiency. BORSIG ZM combines extensive industry experience with innovative solutions to deliver reliable, cost-effective compressor valve solutions that meet the rigorous demands of engineers and operators alike.

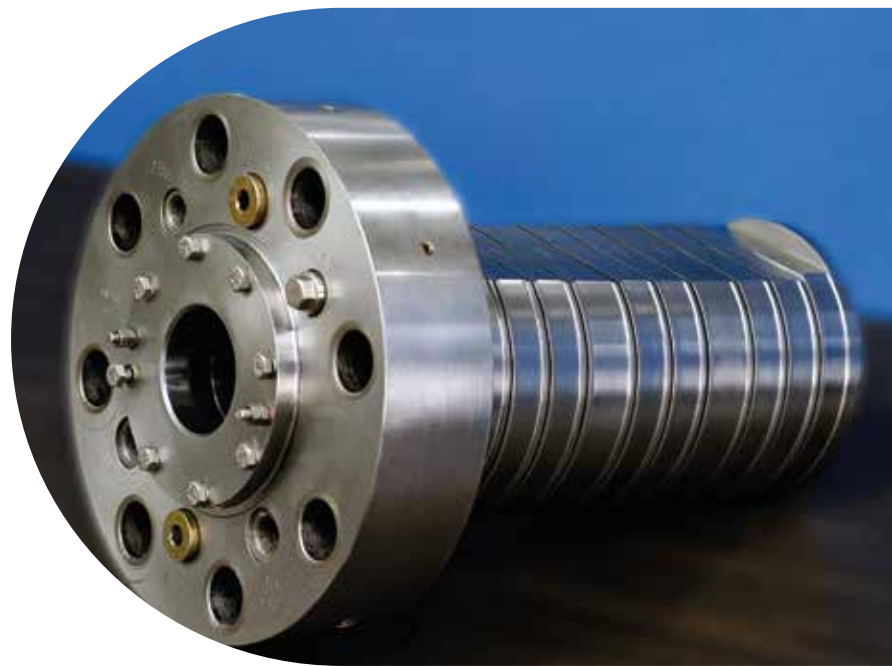


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# **Piston rod seals** for gases and other applications.

New or reconditioned.





### Piston rod seals

Piston rod sealings have the task of sealing the cylinder chamber at the piston rod passage to the atmosphere (crank end). The design and specification of the dimensions is carried out in relation to the parameters of the compressor, e. g. suction and discharge pressure, medium, etc. Decades of experience and the use of state-of-the-art high-performance sealing elements guarantee good service life and low-pressure losses.

If a worn piston rod seal needs to be overhauled, the wear on the sealing elements and internal components should be inspected at the manufacturer's facility. Following this, appropriate measures should be taken to enable the re-use of the overhauled piston rod seal. In our workshop, we can perform the fault analysis and restore the sealing functionality. If an overhaul is not feasible, we are happy to offer replacement piston rods.

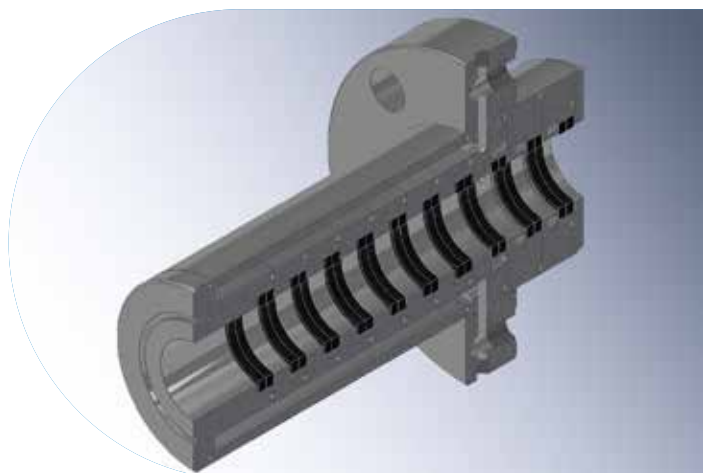
### Components reconditioning

BORSIG ZM has capabilities to recondition components of reciprocating compressors or to manufacture new ones if required:

- **liner press-fit**
- **crosshead refurbishment**
- **new crosshead shoes**
- **new crosshead bolts**
- **new piston as a welded or single item**
- **reconditioning of piston rods according to OEM standard.**

There are several options for manufacturing of new parts. One possibility is that BORSIG ZM has already

an updated manufacturing drawing. Alternatively, the drawing is provided by the customer. Another option is the manufacturing of the part according to a sample.



# Oil scraper packings.

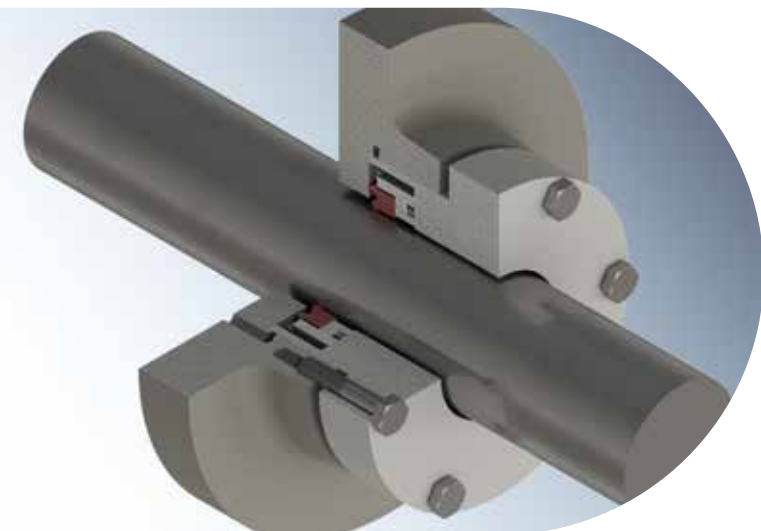


Reliable sealing performance with low friction losses and wear.

BORSIG oil scraper packings are used in double-acting reciprocating compressors to wipe the oil from the piston rod when it emerges from the crankcase.

While metal oil scrapers are positioned on the piston rod due to their spring preload, which causes friction and corresponding wear, BORSIG ZM also provides a customised elastomer solution in addition to the proven plastic and metal oil scrapers, each with hose spring preload.

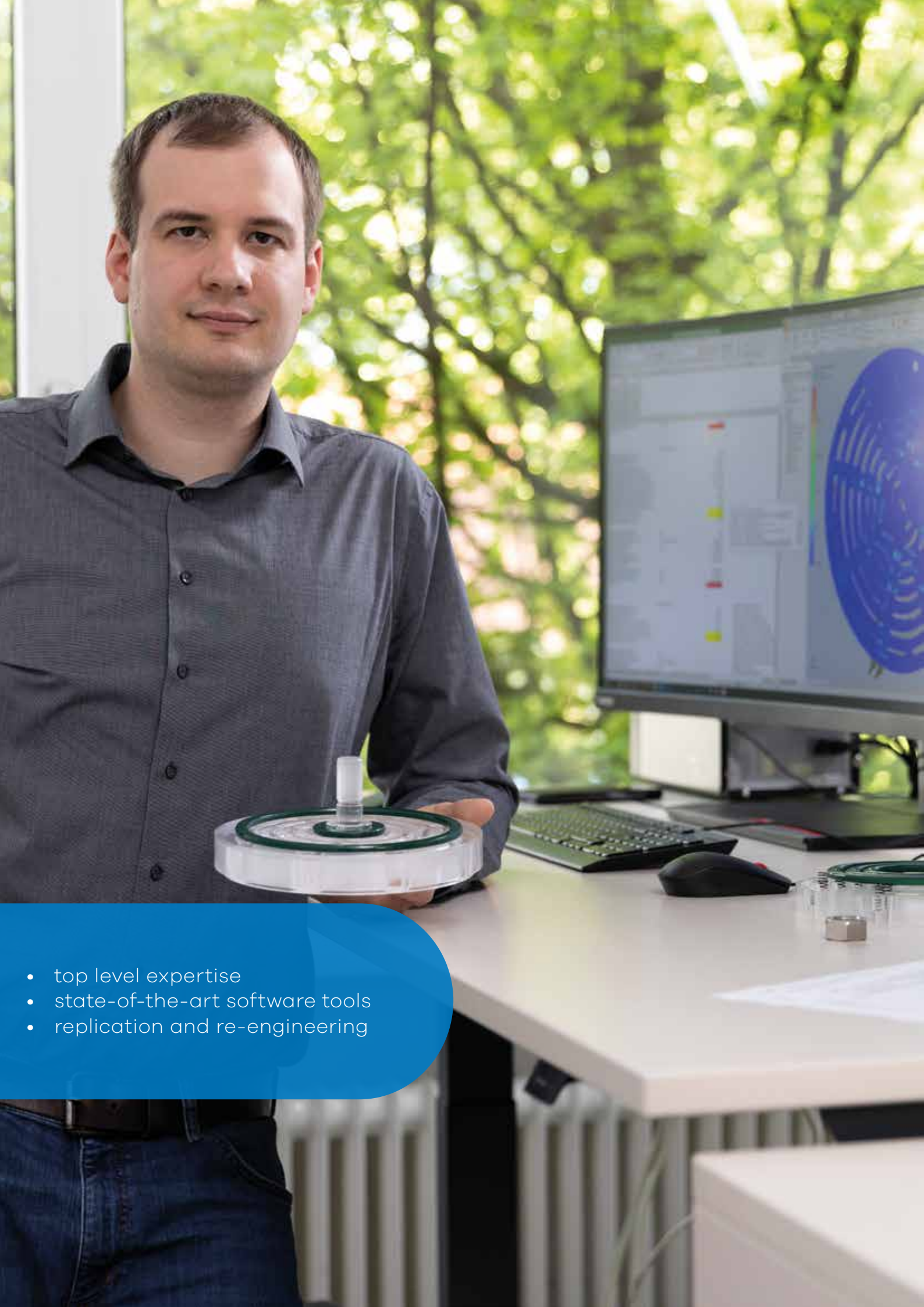
When changing the oil scraper rings the piston rod does not have to be dismantled since the rings are provided with an incision. The repair can be carried out quickly and easily when reaching the wear limit.







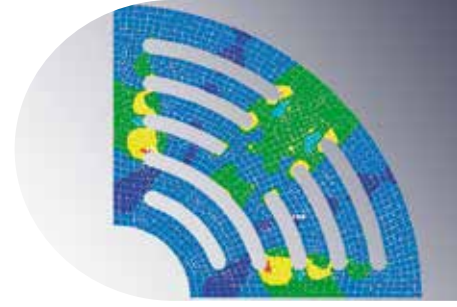




- top level expertise
- state-of-the-art software tools
- replication and re-engineering

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# Engineering of compressor parts.



A top level of expertise, sophisticated technology and flexibility.

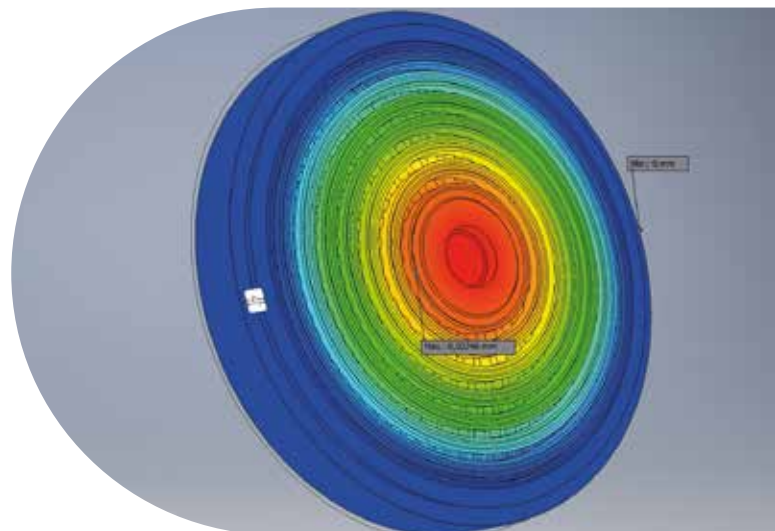
We at BORSIG ZM assist you with resolving particular challenges such as increasing or controlling the capacity of your compressor unit.

Since 1984 our core competence has been comprehensive analysis of existing compressor and valve problems resulting in tailor-made solutions.

About 35 % of compressor failures are caused by insufficient or inadequate design. In addition, other problems such as excessive pressure losses have been detected during the problem analysis. Excessive loads on the compressor frame and on the piston rod are sometimes unintended consequences.

Calculations by BORSIG ZM include design of the compressor parameters, simulation and optimization of valve dynamics as well as the finite element analysis (FEA) of mechanically critical components. Most of the gas- and thermodynamic problems may be analysed by recalculating the compressor, keeping time and effort for problem solving manageable.

In addition to commercially available calculation and analysis programmes, BORSIG ZM uses an in-house software for the reconditioning of compressors and valves.





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# Manufacturing of compressor parts.

Precise remanufacturing and reliable functionality of your components. Rapid response and exceptional quality through cutting-edge technology and expertise.

Your components are initially measured with advanced 3D measurement techniques to ensure precise data capture. Depending on the intended application and the specific requirements of the component, our experienced technicians then perform a "reverse engineering" process. This involves systematically analysing the component and creating a detailed 3D model based on the findings, which serves as the basis for remanufacturing.

Thanks to our state-of-the-art machinery and a comprehensive and versatile raw material inventory, we can respond flexibly and quickly to your requirements. This allows us to manufacture components in the shortest possible time, without compromising on quality. With direct access to a wide range of material types, we ensure that the newly manufactured component meets the required material properties and processing standards precisely.

In addition to rapid and precise remanufacturing, we also ensure that the functionality of the component is fully maintained. Our experts check all relevant parameters and conduct tests to ensure that the remanufactured part performs at the same level as the original and withstands the operating conditions. In this way, we provide you with a solution that is not only fast but also reliable and capable of delivering long-term performance.







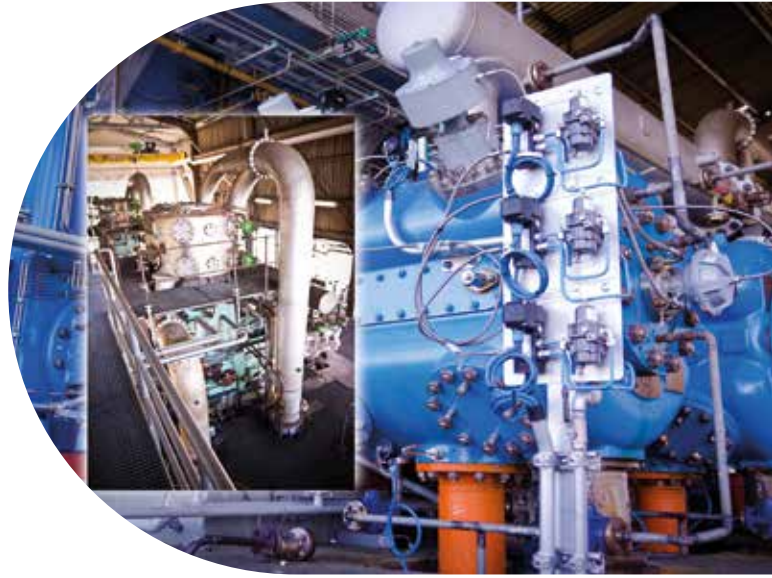
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# **Compressor services, after-sales service**

for BORSIG compressors  
and other brands.

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- A photograph of two male technicians working on a large industrial compressor. The technician in the foreground is wearing a white hard hat with the BORSIG logo, safety glasses, and a high-visibility orange jacket with reflective white stripes. He is holding a clipboard and a pen, looking down at it. The second technician, partially visible on the right, is also wearing a white hard hat with the BORSIG logo and safety glasses. They are standing next to a large, blue and silver industrial compressor unit. The background shows an industrial setting with various pipes and structures.
- spare parts
  - maintenance services
  - revamp and modernization
  - reverse engineering
  - replication and re-engineering of parts
  - valve service





As a leading manufacturer of compressor systems worldwide, BORSIG ZM offers a comprehensive service package from a single source. Our flexible and efficient after-sales service provides comprehensive care of your compressor regardless of the make.

In addition to the competence and long-standing experience of our experts in compressor manufacturing, a particular strength is outstanding quality of our services in accordance with our excellent OEM quality standards.

#### Service portfolio

- **installation and commissioning of compressor units**
- **spare part management**
- **revamp and modernisation**
- **maintenance and overhauling**
- **troubleshooting**
- **in-house and on-site training**
- **compressor valve service**

With over 2,500 compressor part items in stock, BORSIG ZM offers flexible and immediate spare part solutions. We respond quick to urgent enquiries, minimizing downtime and ensuring efficient operations for our customers.

BORSIG ZM's engineering competence provides support with the installation and commissioning of compressor units as well as their revamp, modification and modernisation. We provide a comprehensive maintenance service to keep systems available and running at an optimal level.

Emergencies demand short reaction times. The BORSIG ZM service hotline is available worldwide 24 hours a day.

#### 24-h Service Hotline

phone: +49 (0) 3754 5390 5120

e-mail: [service.bzm@borsig.de](mailto:service.bzm@borsig.de)

# BORSIG



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