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THE OEM SERVICE NEAC Compressor Service COMPANY



We have only one business: RECIPS.

Passion for Details and Procedures

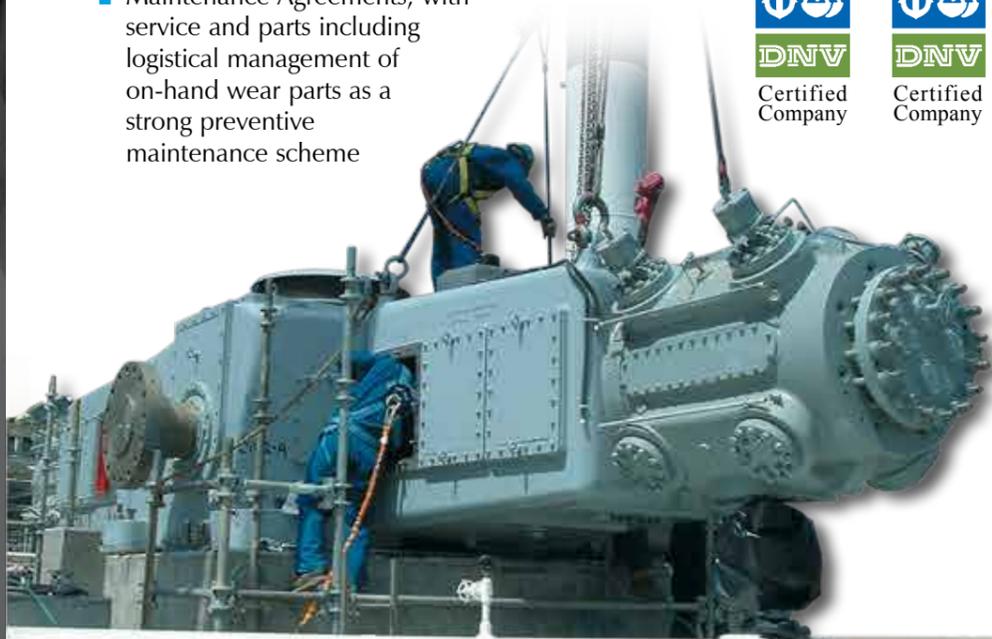
As one of the largest certified service organizations in the world, NEAC supports its customers by providing special services in the installation, commissioning, maintenance, repair and supply of spare parts for process gas compressors and oil-free air compressors. In addition to these traditional services, NEAC offers special support in the fields of conversion, modernization and condition-based machine monitoring.

Within the NEA GROUP, NEAC stands for "Passion for details and procedures" and offers "intelligent services". Besides supporting the NEA business with expert installation, start-up services and providing spare parts, the services include:

- Reactive Service, including repairs in case of emergencies
- Fixed Price Maintenance, offering service, parts, diagnoses or a combination thereof
- Maintenance Agreements, with service and parts including logistical management of on-hand wear parts as a strong preventive maintenance scheme

- Diagnostic and Engineering Services
- Customer Training

NEAC, with its organization of specialists and back-up by the NEA Central Engineering Department, can draw on the state of art recip know-how. It outclasses a lot of other companies who only offer service. NEAC's diagnostic and analytical capabilities offer added value to separate itself off from other parts manufacturers.



The OEM Service Company

NEUMAN & ESSER GROUP owns the licences for the former reciprocating compressor product lines.

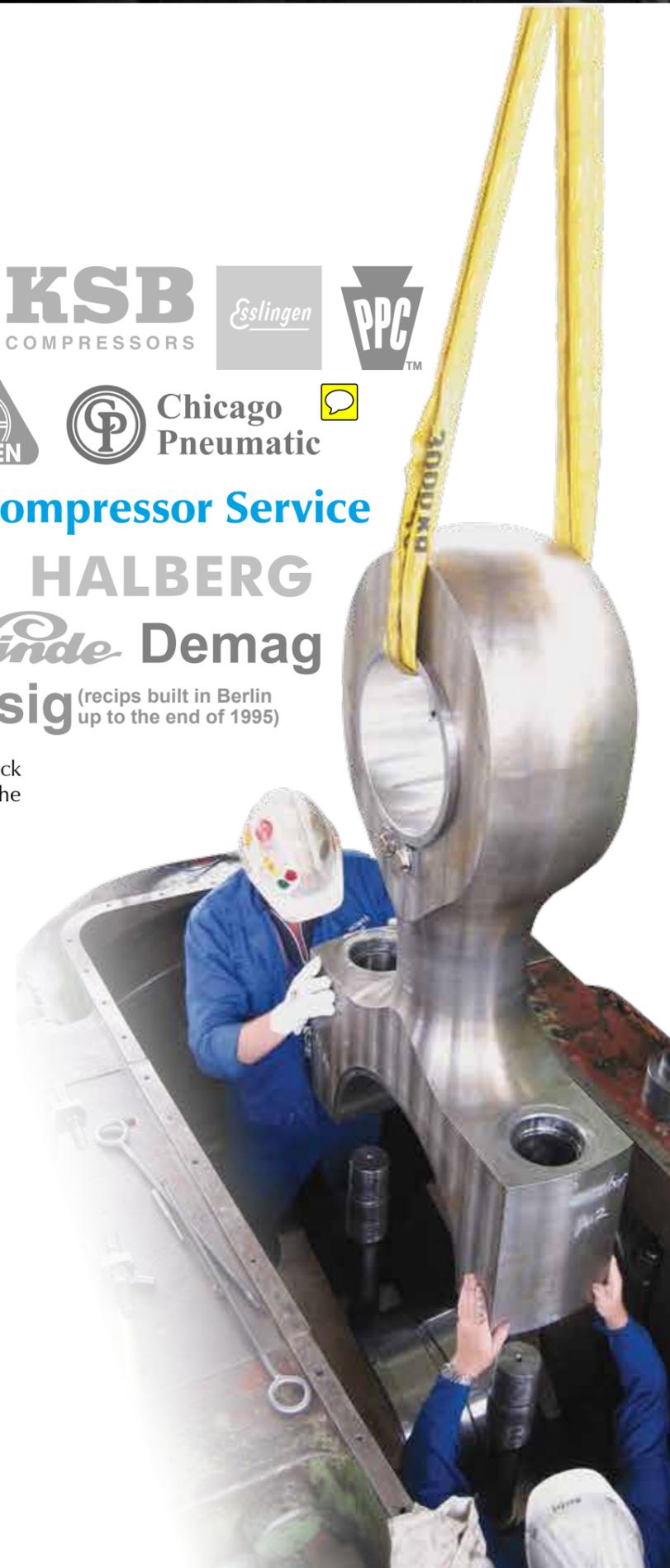
This means NEAC has access to:

- original manufacturing drawings
- updated Bills of Materials
- technical and logistic know-how based on these manufacturing drawings.

When necessary, experienced NEAC supervisors quickly evaluate the most economical choice between repair and replacement of a component. In order to avoid extensive downtime, the NEAC staff is available round-the-clock and can repair or provide the right components at the right time.

NEAC guarantees rapid processing of components, to a consistently high quality, by means of:

- modern processing centers in the three NEA production facilities
 - use of original data and drawings
 - perfect coordination of components and correct choice of materials
 - 24-hour call desk 365 days a year (+49 (0) 171 425 85 95).
- Experience shows that only the correct replacement part produced from the original drawing to the highest quality and precision guarantees high availability of the equipment.





Intelligent Services

NEAC, with its strong link to the OEM (original equipment manufacturer), has an engineering crew which specializes in:

- Engineering Studies
- Mobile Condition Monitoring
- Diagnostics
- Start-ups
- Trouble Shooting

One key product is the predictive maintenance as part of the preventive maintenance scheme.

Customers require flexibility in their maintenance schedules or want to prolong time between maintenance.

Mobile condition monitoring diagnoses carried out by the NEAC engineer on demand or on a scheduled basis provides information on the best time for maintenance.

Reduction in overall maintenance cost is the benefit the customer will gain.

Valve Service: The New OEM Element

NEAC Valve Service reduces maintenance expenses as well as machine down-time by achieving higher valve reliability.

Therefore incoming valves are inspected, cleaned, mechanically refurbished and equipped with new high quality internals.

If necessary a re-engineering of valve parameters occurs. Finally the valves pass a leakage test. On demand each step is documented and certificated.

Advantages

- Standard OEM repair warranty for all valves refurbished by NEAC
- Extensive experience and service-know-how as a result of large population of NEA and OEM licensed products

Consignment Stock and Predictive Maintenance

NEAC offers a diverse range of services, all directed toward the primary objectives of **high availability, high reliability and highly economic operation** of equipment. Modular client-specific maintenance and consignment stock contracts can be created by using the entire spectrum of services offered.

When clients choose the comprehensive *Maintenance Contract*, all machine servicing tasks relating to timely maintenance and supply of replacement parts are managed by NEAC. In combination with a Telemonitoring System, NEAC service contracts offer a wide variety of advantages:

- reduced periods of downtime due to targeted maintenance
- reduced replacement parts costs and maintenance costs
- avoidance of damage by early recognition of wear limits, and much more.

The particular advantage of the customized service package lies in the transparency of operation costs because of fixed service and replacement parts costs and guaranteed availability.

The advantages of consignment stock contracts are not only the exclusive, immediate availability of spare parts but also spare parts storage having no immediate effect on the customer's assets.

Foundation & Machine Reconstruction

Piston compressors can get very old. Some have been in operation for more than 50 years. So piston compressor foundations and crankcases suffer long term deterioration from:

- unbalanced mass loads
- oil penetration into the concrete
- unfavourable ambient conditions e.g. ice formation, corrosion, aggressive product
- loose or cracked foundation bolts

Frame twisting and rocking movement may cause deformation, misalignment and consequently increase material stress possibly reaching or even exceeding yield limits.

This can lead to:

- deteriorating foundations that allow the frame to rock
- deformation of the frame base





Customer Training

NEAC offers reciprocating compressor training seminars for NEA compressors and other brands. The training sessions can be held either in the NEAC Training Center located at the NEUMAN & ESSER factory in Übach Palenberg, Germany or at the customer's location. During the open courses held at the Training Center, the participants can interact and network with other customers to exchange experiences.

The training seminars are well suited for Mechanical and Chemical Engineers, Maintenance and Operations Supervision, and for Mechanics and Operators.

During the general two-day seminar the customer is guided through a theoretical training in the functionality and operation of compressors, as well as the function of most important components. Basic thermodynamic data, general operation and maintenance instructions, troubleshooting, and diagnosis options (jobsite and remote monitoring) are given. At the end of each session held at the NEAC Training Center, participants will tour the NEA factory where they will be able to observe the machining of compressor components and the assembly of new NEA compressors. The seminars are scheduled for April and September each year in German and English language. Time tables and registration forms for the seminars can be downloaded from the website www.neac.de or www.neacusa.com.

NEAC can also provide customer-specific/project-oriented training sessions. In addition to the basic training, the customer will get an introduction to the maintenance and function of their own compressor unit(s). This training can be held either in the NEAC Training Center or at customer's location. If desired, a practical hands-on training can be added to the theoretical part. The Training Center offers a variety of real compressor assemblies and components for the participants to disassemble, inspect, and reassemble to gain hands-on experience for compressor maintenance. The duration of this training will vary depending on the customer's requirements.

Engineering Studies, Reconstruction and Modernization

Reciprocating compressors often operate for 50 years and longer, so requirements for the equipment can change over the years. Reconstruction and modernization work is carried out in response to economic needs to:

- increase performance
- improve machine efficiency
- adapt to changed process parameters
- improve vibration performance of the equipment
- reduce use of resources by switching from lubricated to dry operation.

Modernization brings considerable cost advantages in comparison with a new installation, since NEAC replaces only parts which are unsuitable for the new process. Mostly this arises from detailed engineering studies that first check and specify the possibilities of reconstruction and modernization. NEAC introduces structural improvements, such as threadless piston rods including crossheads, new bearings and alternative piston ring materials to extend the working life of the machine by a considerable factor.

In all reconstruction and modernization operations, customers value NEAC's expertise in regard to planning, construction and implementation of special client-specific solutions. The guarantees for delivery, output and operating periods of the old equipment meet those of new machines by NEUMAN & ESSER.





NEAC Service Centers Worldwide:

North/West/Central Europe, Baltic States, CIS (without Russia), Israel, Morocco, Central and South Africa ■ **NEAC Compressor Service GmbH & Co. KG**
Übach-Palenberg, Germany

South Europe, Turkey, Cyprus, Albania, Algeria, Tunisia ■ **NEAC Compressor Service S.r.l.**
Milan, Italy

North and Central America and the Caribbean ■ **NEAC Compressor Service USA, Inc.**
Katy, TX

South America, Cuba ■ **NEAC Compressor Service Ltda**
Belo Horizonte, Brazil

ASEAN States, Korea, Taiwan, Australia, New Zealand ■ **NEAC Compressor Service Ltd.**
Rayong, Thailand

China ■ **NEUMAN & ESSER (Beijing) Co., Ltd.**
Beijing, China

India, Bangladesh, Sri Lanka ■ **NEUMAN & ESSER Eng. (India) Pvt. Ltd.**
Pune, India

GCC, Iran, Iraq, Jordan, Lebanon, Syria ■ **NEUMAN & ESSER Gulf FZE**
Dubai, UAE

Egypt, Libya, Sudan ■ **NEUMAN & ESSER Egypt Ltd.**
Cairo, Egypt

Russia ■ **NEUMAN & ESSER Rus Ltd.**
Moscow, Russia

Website ■ www.neac.de
www.neac.it
www.neacusa.com
www.neac.net
www.neac.co.th

certified members:



NEAC Compressor Service Centers in Germany, Italy, USA, Brazil and Thailand
NEUMAN & ESSER companies in China, India and UAE



NEAC Compressor Service in Germany