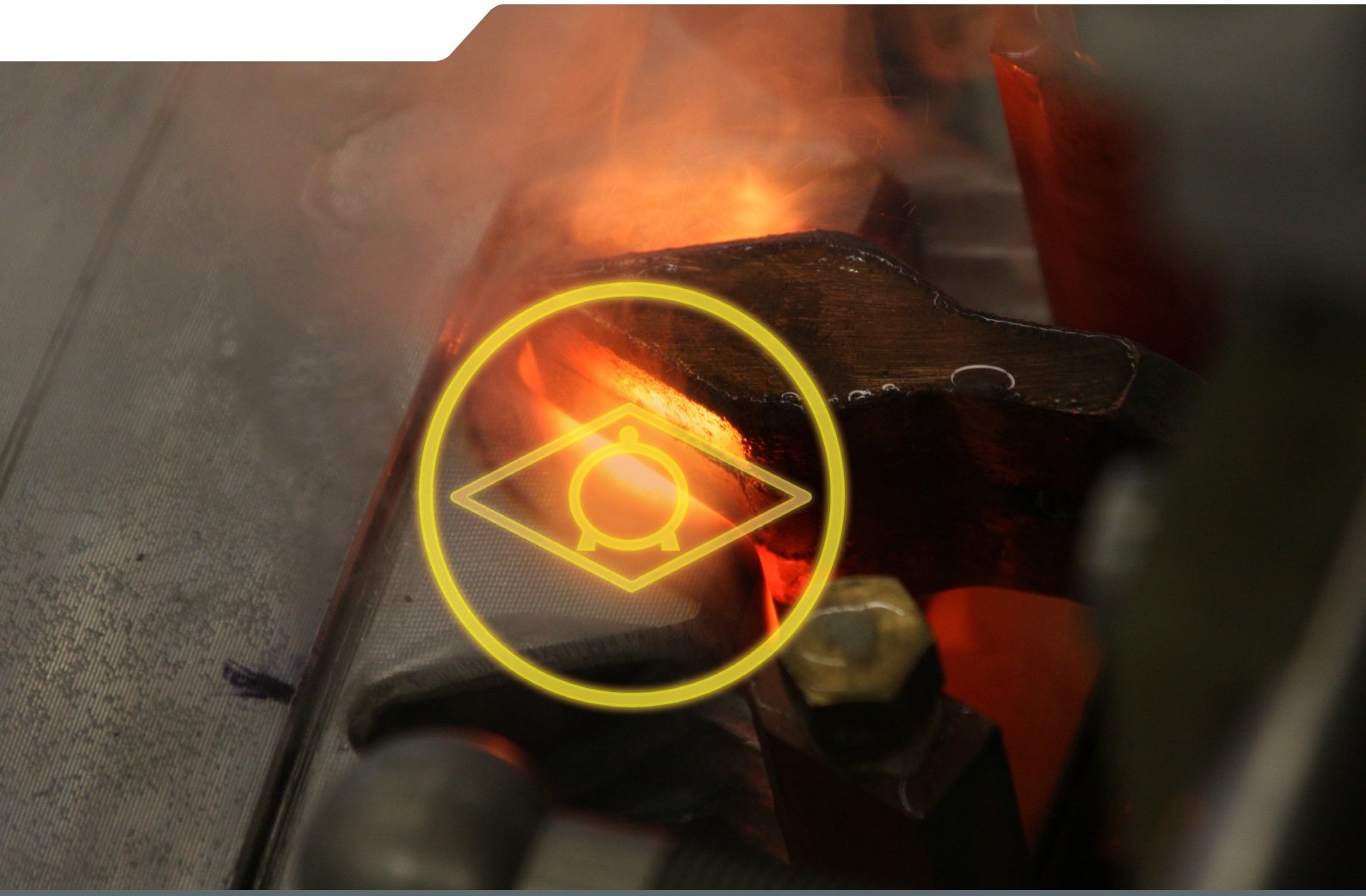
EMA
induction
technology

Hardening Systems for bearing races and gearings

XXL hardening – machines of the Libra range

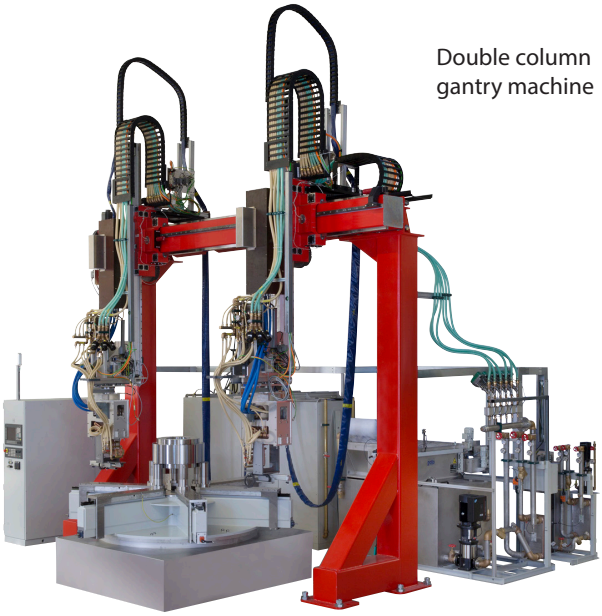


XXL Hardening

Large components and heavy loads – the requirements of the XXL components from areas such as wind energy, shipbuilding, crane building and heavy engineering are extreme. Aggressive environments in the maritime sector, wind and weather, massive weight forces, as well as dust and dirt present major challenges for the components - which are also expected to deliver the longest possible service life.

Components subject to extreme loads and stresses can handle these requirements more effectively when they undergo high-grade heat treatment. The systems offered by EMA Indutec boast the necessary flexibility and quality requirements for workpieces up to eight meters in diameter and one meter in height.

The excellent efficiency of the EMA converters helps to reduce the costs of inductive heat treatment. Various concepts are available for treating the components. For example, it is advantageous to induction-treat toothed components. The quenching medium can then drain off downwards. The same applies to bearing raceways, as they can be treated at an angle in order to save space. To compensate for the deformation that occurs during heating of the components and to ensure true-tolerance processes, the systems from EMA Indutec are equipped with a sensor-based or mechanical inductor tracking system.



Double column gantry machine

XXL hardening systems – horizontal

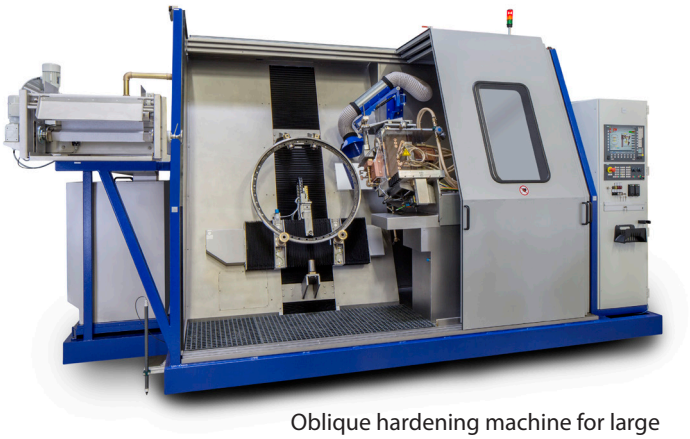
Many XXL components are induction-hardened in particular at highly mechanically stressed points, such as gears / raceways on ball bearings or roller bearings. Since the applications are generally based on special customer specifications and they are often produced in small numbers, the primary focus is on flexibility and the cost effectiveness of the system. The systems in the Libra range have been designed specifically to meet these requirements. Their extremely rigid portal also enables them to process a very wide range of workpiece dimensions. To simplify the workpiece definition when setting up the machine, EMA Indutec has developed an easy-to-use parameter input mask for the control system. Only the dimensions of the workpiece and the tool are defined here. The treatment program is then generated by the control system itself, thus no programming skills are required. During gear hardening, two teeth can be treated at the same time, which halves the overall processing time.

Benefits of all XXL systems

- Excellent accessibility
- Short set-up times
- Simplified program creation due to the parameter input mask
- Multi-station solution to reduce processing time
- Remote Service via network or modem
- Possibility to work in an inert gas atmosphere
- Individual customer solutions

XXL hardening systems – inclined

In terms of hardening of bearing rings inductive treatment at an inclined position has proven itself. The motion of the quenching medium running down the component creates an after-cooling, thus no additional sprayers are required.
The system's footprint can also be reduced by aligning the workpieces upright.
The Libra hardening system offers you precisely these advantages, which it combines in a cost-effective and flexible overall concept for hardening bearing tracks or roller raceways.
To minimize set-up times, the tried and tested parameter input mask is used to define the component and tool.



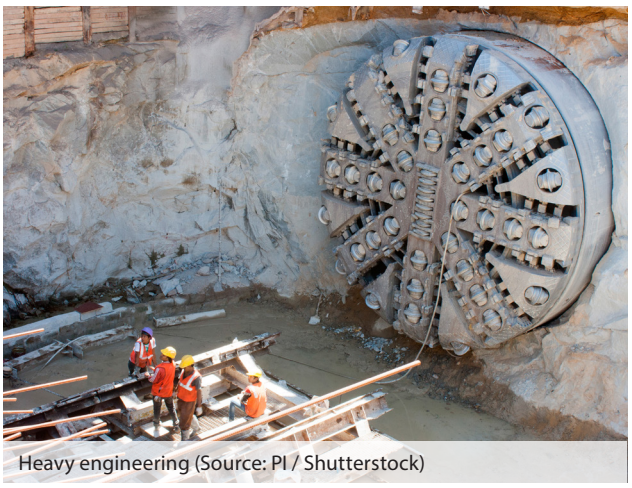
Oblique hardening machine for large bearing races

BASIC TECHNICAL DATA	
Work piece diameter	300 to 8.000 mm
Work piece height	30 to 1.000 mm
Work piece weight	5 to 30.000 kg

Wind power industry (Source: Istockphoto)

Shipbuilding industry (Source: PI / Shutterstock)

Machine construction (Source: PI / Shutterstock)



Heavy engineering (Source: PI / Shutterstock)

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Ideal Solutions for Heat Treatment

Induction heating and hardening systems

- Economical and highly reliable systems
- Low energy consumption per workpiece
- Accurately reproducible hardening results
- High throughputs
- Heating zones and times can be determined precisely
- Heat treatment processes with low distortion
- Scale-free hardness zones due to heat treatment with protective gas
- Simple to integrate into production lines
- Lower expenses for production parts
- Tailor-made induction systems from a single source
- User-friendly adjustment, retrofitting and maintenance
- Modern engineering supported by FEM simulation
- Areas of application: surface hardening, annealing and tempering, heat shrinking, fixture hardening

IGBT converters

- Digital converter control
- Power range from 10 kW up to several Megawatt
- Frequencies from 5 Hz to 400 kHz
- Heating and melting
- Hardening, annealing and tempering
- Forging and forming
- High energy efficiency
- Easy integration into production lines
- Customized solutions and special systems
- Replacement of old and external devices

After Sales Service

- Qualified and knowledgeable Service Centre
- Service hotline for troubleshooting
- Preventive maintenance
- Smart remote control solutions
- Efficient spare part concepts
- Customized plant-retrofit
- Inductor development, construction and repair service
- Training for operators, maintenance personnel and induction experts (also on site)

Top quality from one source

- More than 80 years of experience in heat treatment
- Over 10,000 induction systems in long-term operation worldwide
- Development and manufacture from a single source
- DIN EN ISO 9001:2015 certified
- Efficient project and quality management from the first question to subsequent service

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