



OVERVIEW | STATUS OF 12/2017 | E INDUCTION/SURFACE LAYER HARDENING

Induction hardening HF
Induction hardening MF

Dimensions:
ø max. 2000 mm x 6000 mm

Fully automated /
semi automatic Process

INDUCTION HARDENING IS A THERMAL PROCESS AND IS ONE OF THE SURFACE LAYER PROCESSES.

The process is based on heating the area close to the edge. With this type of hardening, the depth of edge hardening depends primarily on the frequency (HF/MF). In general, the lower the frequency, the greater the depth of hardening. In detail, this means that the edge of the component near to the surface is heated and subsequently quenched. As a result of this controlled sequence, the hardness in this edge zone can be specifically increased. However, both the structure and the hardness at the core of the component remain unaffected.

In the induction hardening process, special inductors which are matched to the component conditions are used to heat the component. A copper coil to which alternating current is applied is used to heat the component. The heating produces a magnetic field which induces eddy currents in the edge zone of the component. The inductive hardening process can be controlled in such a way that the surface of the component is heated until the required hardening temperature is reached. The component is then quenched. This enables even large surfaces to be hardened without difficulty.

A NEW FEATURE OF OUR SERVICES:

THE HIGH-TECH GEAR WHEEL INDUCTION LINE WHICH ENABLES GEAR WHEELS UP TO MODULE 40 AND UP TO A MAXIMUM DIAMETER OF 4000 MM TO BE HARDENED FULLY AUTOMATICALLY.

THE ADVANTAGES OF INDUCTION HARDENING AT A GLANCE:

- Partial hardening to suit requirements
- High ductility thanks to fine hardening structure
- Low distortion thanks to local heating
- Energy efficient, high efficiency
- Wear protection
- Precise control of edge hardening depth
- Improvement of fatigue resistance

APPLICATIONS:

- Rollers
- Large components
- Engine parts
- Gearbox parts
- Machine parts

MATERIALS:

- Treatable steels,
- Bearing steels,
- Special steels,
- Tool steels