



**STAHLHÄRTEREI
HAUPT** HÄRTE IST HAUPT-SACHE

OVERVIEW | STATUS OF 12/2017 | E
**CASE HARDENING
CARBURIZING**

Carburizing
Quenching
Insulating

Dimensions:
max. 1500 mm x 3000 mm

Fully automated Process

HARD EDGE LAYER - TOUGH CORE!

Case-hardening consists of the process operations carburizing and quenching. During carburization, the surface of a lowcarbon case hardened steel enriched with carbon (temperature: 880-940° C).

Subsequent quenching from the hardening temperature in an oil quenching or step hardening bath results in a hardness profile corresponding to the respective carbon content.

Carburization is a diffusion process, and depending on the required case-hardening thickness, it takes several hours.

Following carburization, the materials are quenched, and the martensitic surface zone is created.

Like for conventional hardening, case-hardening must be followed by annealing. The result of the treatment is a combination of hard surface layer and tough core. Another form of case-hardening is carbonitriding.

For carburization, chamber kilns or pot annealing furnace plants and pass through plants are used.

Usually the process is fully automatic and controlled corresponding to the target specifications like case-hardening thickness, surface-C-content etc.

ADVANTAGE:

- Increased wear resistance and fatigue strength
- Tough core

APPLICATIONS:

- Gearbox and drive components
- Stamping parts
- Mechanical parts

MATERIALS:

- Case-hardened steels (C< 0.25%)