

A technical drawing of a mechanical assembly, possibly a piston and crankshaft, rendered in a light gray, semi-transparent style. The drawing shows various components with different hatching patterns to indicate material or cross-sections. The word 'Kolsterising' is overlaid in the center in a dark blue font.

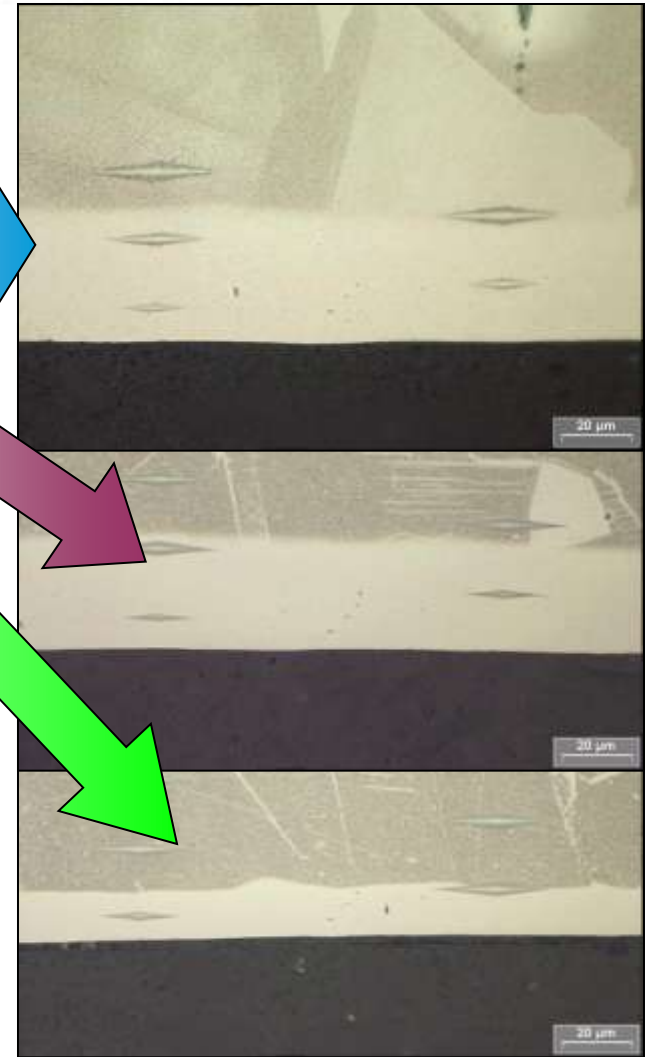
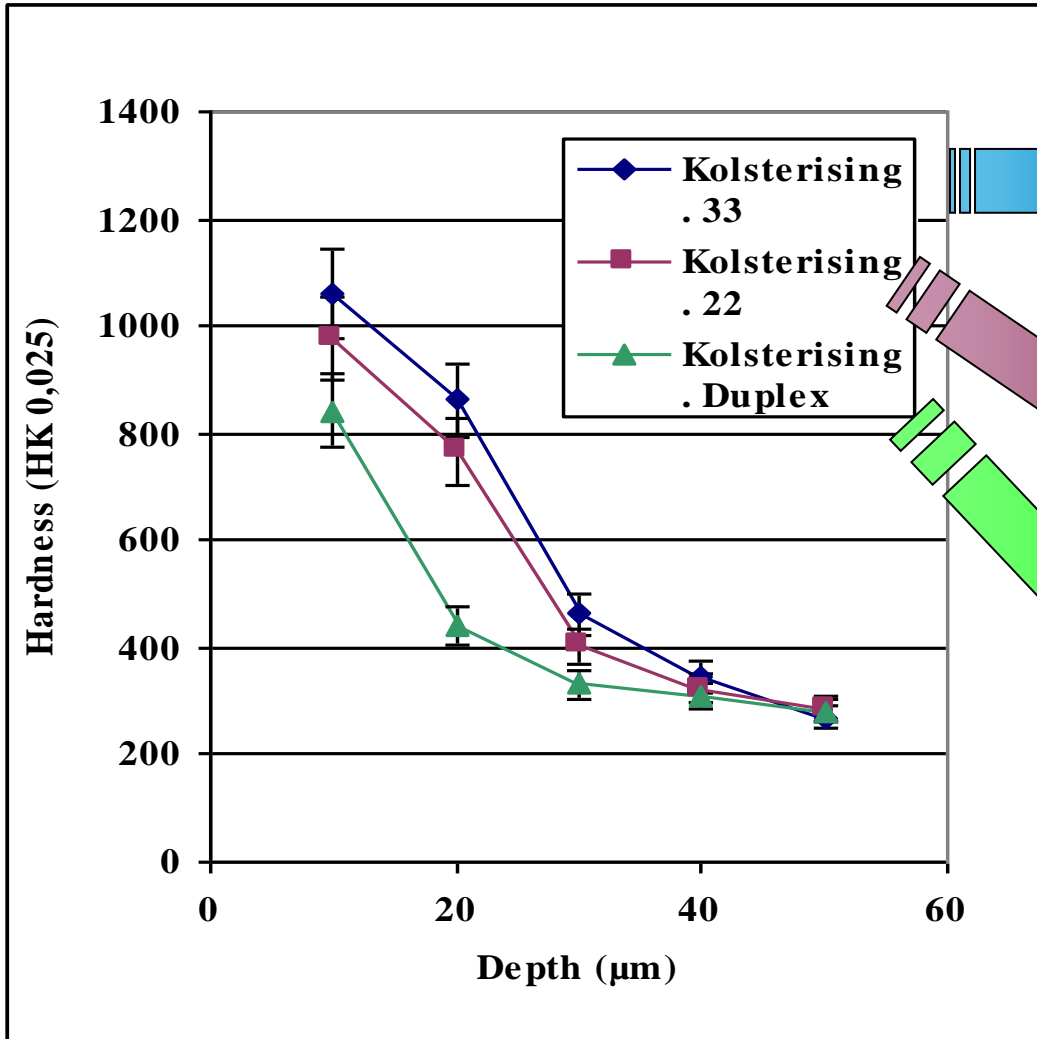
# Kolsterising

## Kolsterising: Thermo-chemical diffusion process for Carburizing Austenitic Stainless Steel

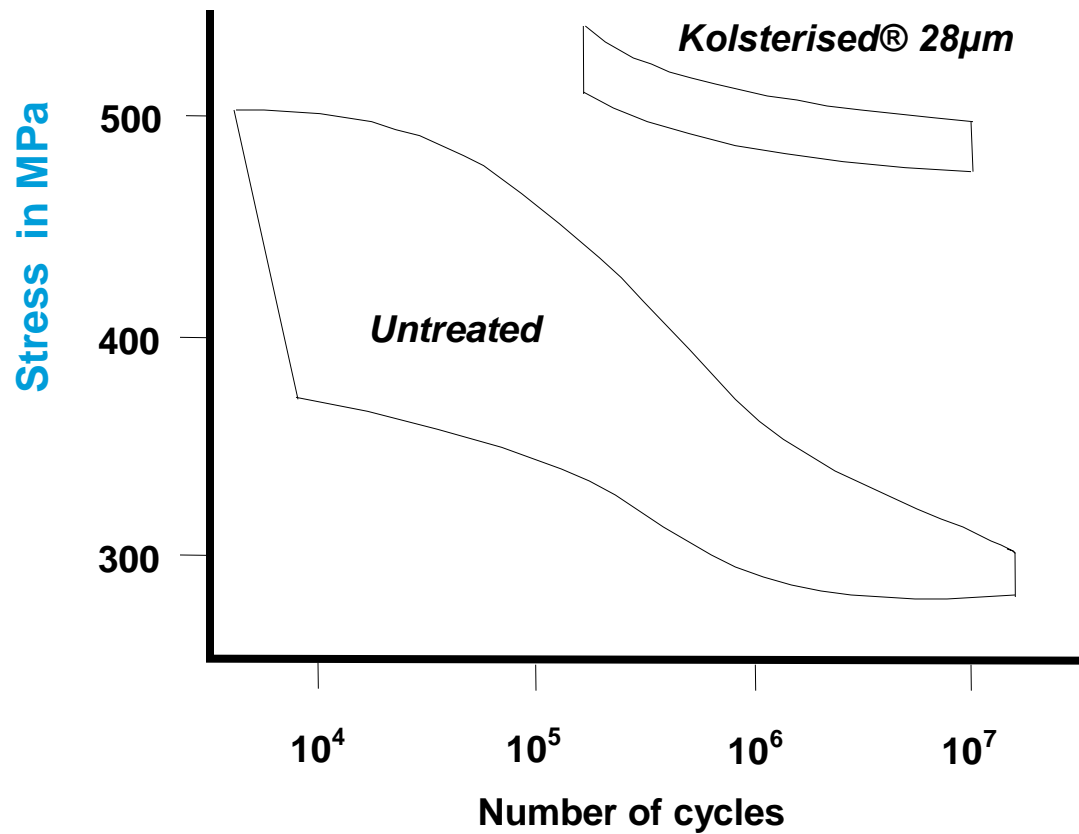
- Carbon dissolved interstitially in the FCC matrix, causing residual stresses
- Expanded austenite (S-phase)
- No formation of carbides
- Increase in hardness and anti-galling
- No change in corrosion resistance



# Hardness Depth



# Reversed bending fatigue test



Fatigue strength is increased by 10 to 100%

## Handling during Kolsterising®



# Advantages of Kolsterising

Improves the mechanical properties of austenitic stainless steel:

- High compressive stresses due to interstitial solution of carbon atoms
- Surface hardness: 1,000 to 1,200 HV<sub>0.05</sub>, (70 to 74 HRc)
- No loss of corrosion resistance (in ferrite-free 316/316L)
- Prevents galling
- Increases fatigue strength
- No change in shape, size or color
- Uniform hardening (sharp edges/ inside bores/ gaps)
- Excellent resistance to microscopic impact wear (cavitation)