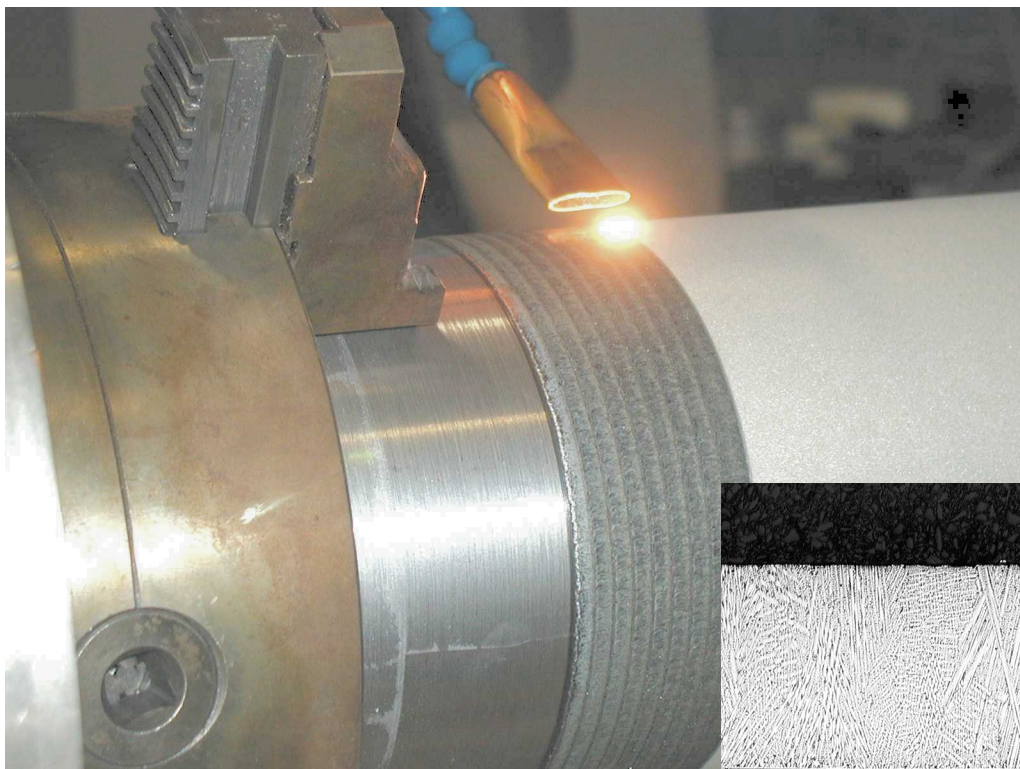


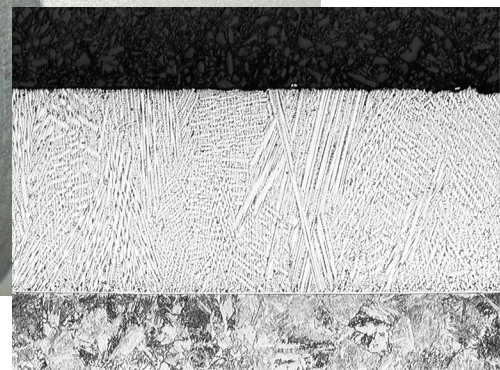
Laser surface treatment,
new process options



Laser Surface Treatment



Laser fusing of component in steel



*Example of structure of laser-fused layer,
layer thickness about 0.5 mm*

One can:

- Temper
- Harden
- Weld on hardwearing and corrosion resistant surfaces, e.g. laser fusing
- Alloy surfaces
- Nitrate
- Treat many different materials.

Many benefits:

- Surface treatment of hard-to-get-at surfaces
- Treatment of narrowly defined areas of a surface
- Suitable for repair work
- Uniform high quality, little need for finishing treatment
- Minimal heat impact and deformation
- Accurate control of treatment depth.

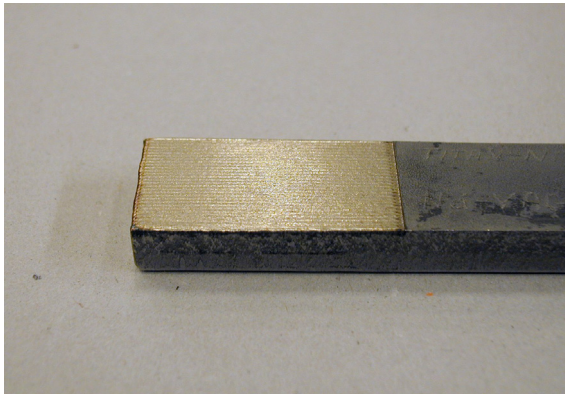
Precision components



Laser welded valve seat reinforcement

- Welding-on with Nd-YAG laser
- Thin layer, typically 0.05 to 0.5 mm
- Controlled dilution with parent metal
- Minimal heat impact.

Titanium nitriding



Titanium nitrided surface

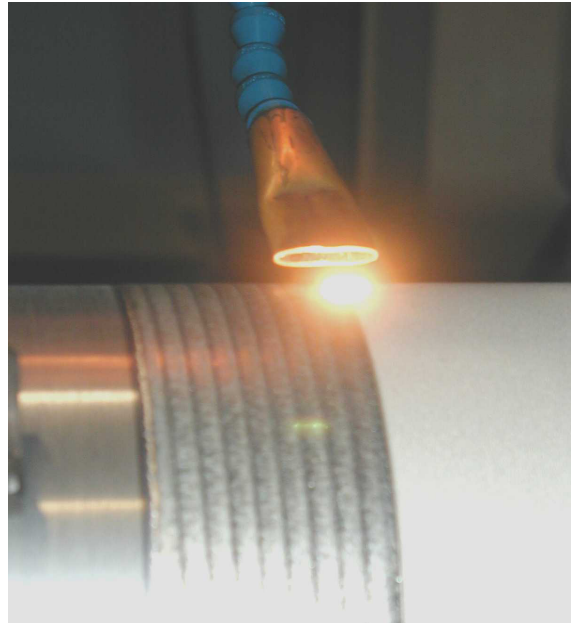
Special hardening process for titanium

- The part of the surface to be hardened is heated by laser
- Simultaneously nitrogen is blown over the surface thus forming titanium nitride on the surface
- This increases the surface hardness many times compared to the parent metal
- The surface takes on a characteristic gilt finish.

Large components

– up to several tons can be treated

- Welding-on with CO₂ laser
- Broad tracks
- Controlled dilution with parent metal
- Welding of large surfaces.



Laser fusing of large shaft



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