Task
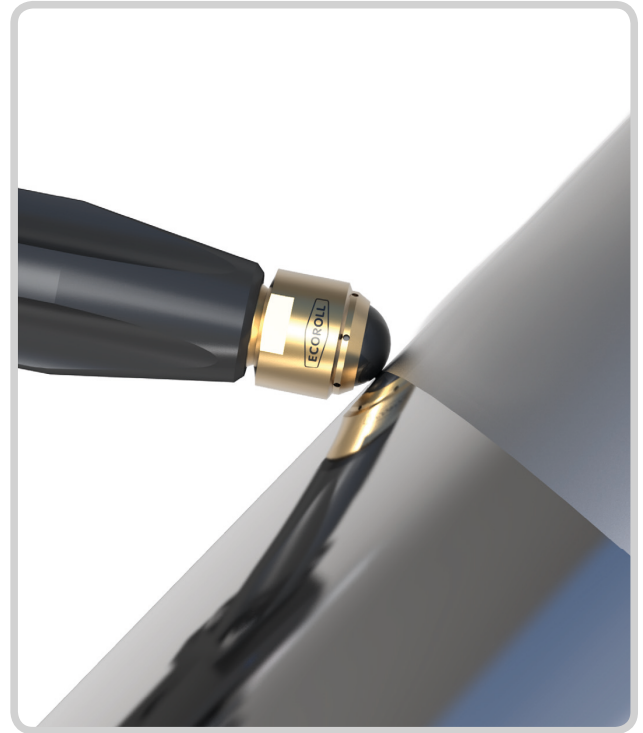
Fatigue strengthening of railway axle
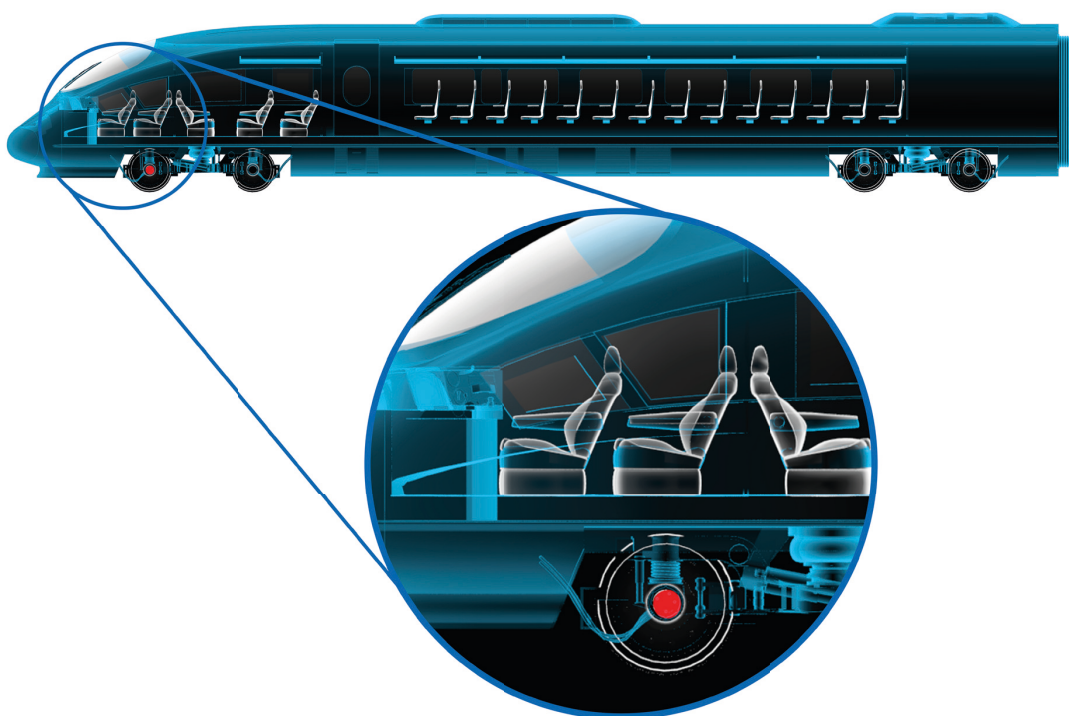
Solution

Indusing residual compressive stress by Deep Rolling with HG13 tool

User benefits

- Achieved demanded surface quality of **R_a = 0,8 µm**
- Achieved demanded **fatigue strength**
- Reduce costs by about **90%**

Details

- Workpiece .... Railway axle
- Part of .... Wheel set
- Material .... Heat-treated steel
- Tensile strength .... 550 - 650 MPa
- Hardness .... 170 HB

Parameter

- Tool .... HG13-9E270°
- Circumferential speed .... 100 m/min
- Feed rate .... 0,1 mm/rev.
- Rolling force .... 80 bar