

N°1

pro beam

PRO-BEAM GROUP

World-Leading Electron Beam Technology



EB welding using filler wire

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Unique Machine Capability

- 2 large scale machine
- Beam power 40 kW
- Vacuum chamber 600 m³
- Measures 7 m x 7 m x 13 m
- High vacuum at least 10⁻⁴ mbar
- Max 100 t
- Internal mobile beam generator attached to robot and X/Z gantry
- Max travel: X=12 m, Y=3 m, Z=6 m
- Wire feeder



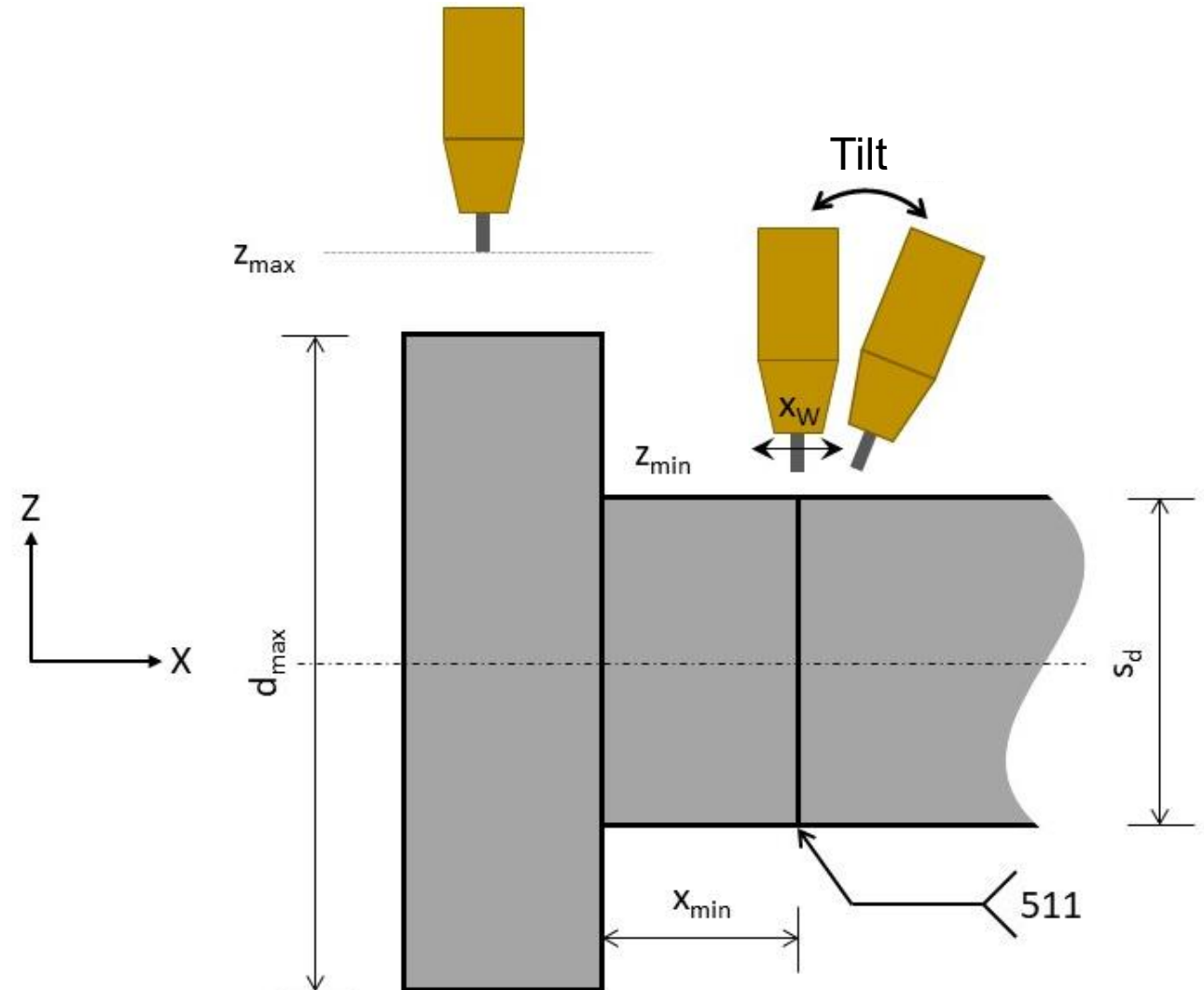
K190 machine

- Beam power 45 kW
- Vacuum chamber 19 m³
- Measures Length 10 m x Ø1 m
- High vacuum at least 10⁻⁴ mbar
- Max 10 t
- 2 beam generators (vertical and horizontal)
- Max travel: X=5 m, Y=0,5 m, Z=0,3 m
- Wire feeder



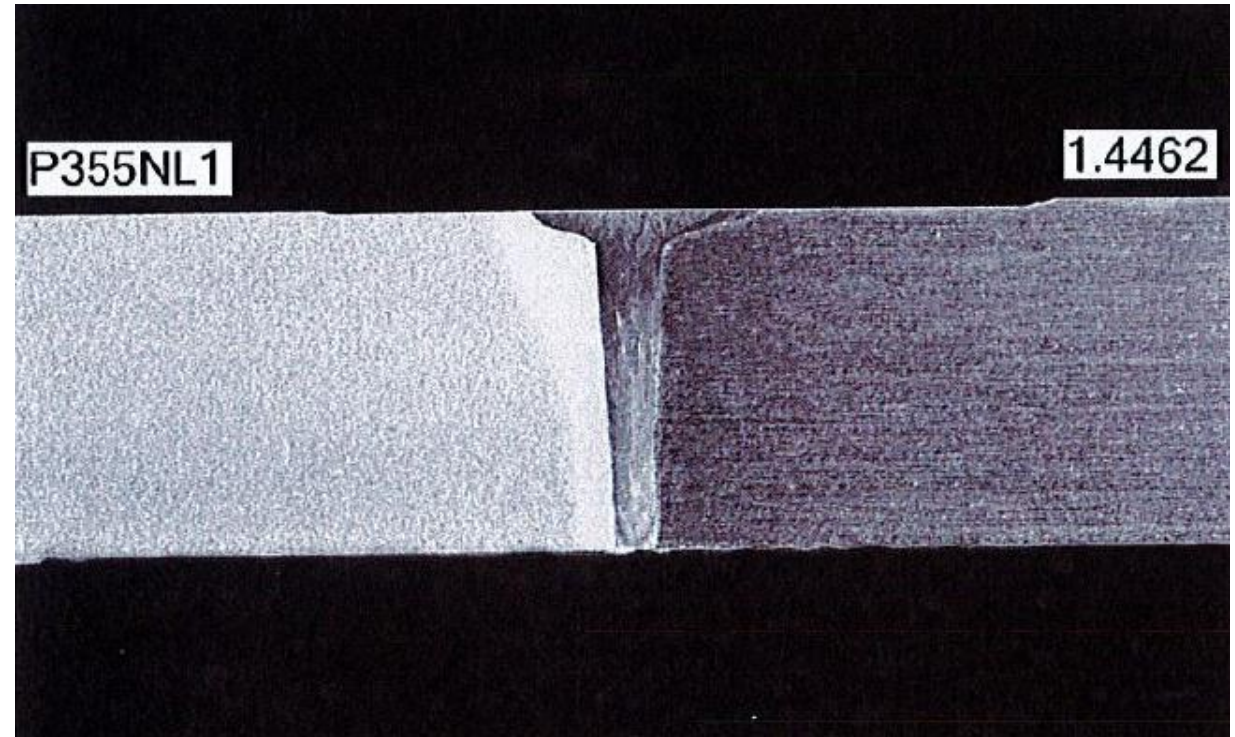
Wire feeder

- Moveable in Z direction
 - Part diameter up to $\varnothing 820$ mm possible
 - Wire head in X-Y adjustable
 - Wire head tiltable to bypass interfering contours
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- Possible applications are radial joints (pipes, profiles) and built-up welding
 - WEBAM (wire electron beam additive manufacturing)



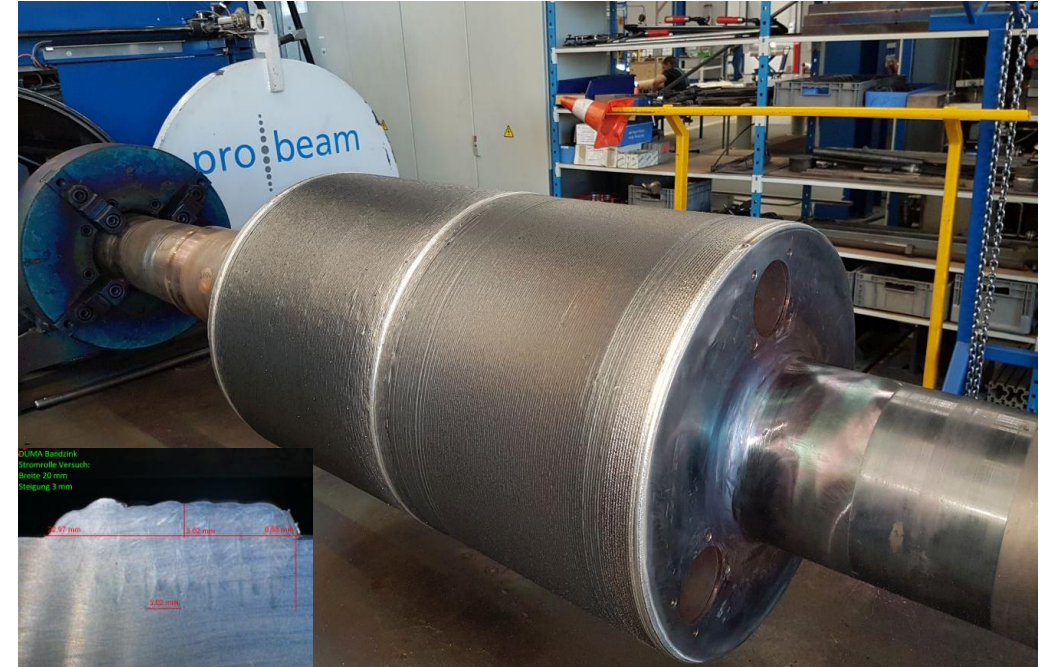
PED tubes

- Food industry, 3 different customers
- Tube diameter 150 to 300 mm
- Tube length 1.000 to 2.500 mm
- Weld depth 10 to 20 mm
- Combination P355 steel with 1.4462 duplex steel (ferritic-austenitic)
- Nickel-based filler wire added during welding
- Nickel increases austenitic grain structures, reduces hardness and increases impact toughness
- Product volume: 100 pcs p. a.



Further Examples / Prototypes

- Corrosion resistant 316L wire welded on a construction steel roller (right image)
- Aluminum 7020 welded with 5183 wire to avoid hot cracking



Thank you for your attention!

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