
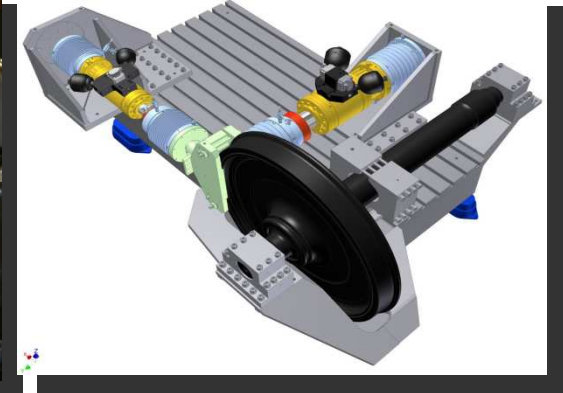
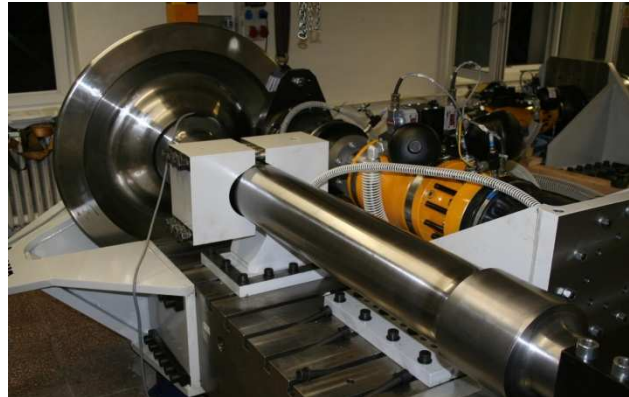
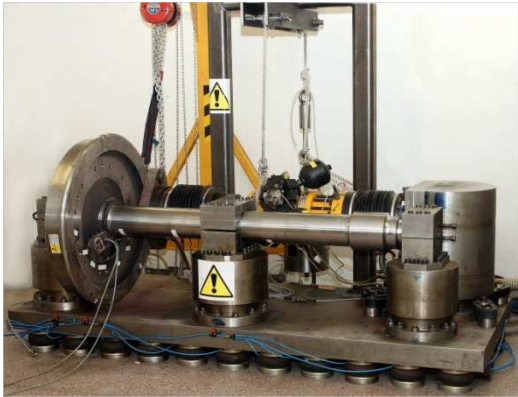


# BONATRANS fatigue testing laboratory

- Designs and materials with increased fatigue resistance :
    - railway safety
    - reduction of life cycle costs
  - Laboratory testing is essential for verification and determination of fatigue properties of wheelset materials and designs
- 
- BONATRANS has a fully accredited fatigue testing laboratory for
    - Fatigue testing of railway wheels in accordance with EN13262
    - Fatigue testing of railway axles in accordance with EN13261
    - Fatigue testing of railway wheelsets in accordance with EN13260
  - Laboratory is accredited by ILAC member accreditation body as an independent fatigue testing laboratory in accordance with EN ISO 17025
  - Accreditation of testing in accordance with GOST standards is in process

# Fatigue testing of railway wheels

## Servo hydraulic testing equipment



### Parameters of the servo-hydraulic testing equipment:

Maximal diameter of the tested wheel:	1250 mm
Axial static force:	250 kN
Axial dynamic force:	200 kN
Radial static force:	160 kN
Radial dynamic force:	128 kN

# Fatigue testing of railway axles

## Resonance equipment for testing of wheels and axles



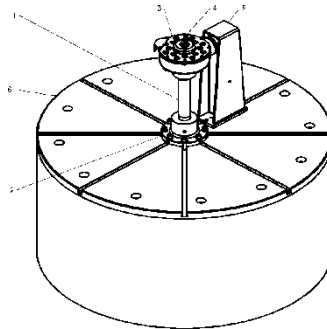
### Parameters of the resonance equipment:

Maximal bending moment: 500 kNm

Testing frequency: 15-23 Hz

# Fatigue testing of railway axles

Resonance equipment for model testing of axle material in the scale of 1:3

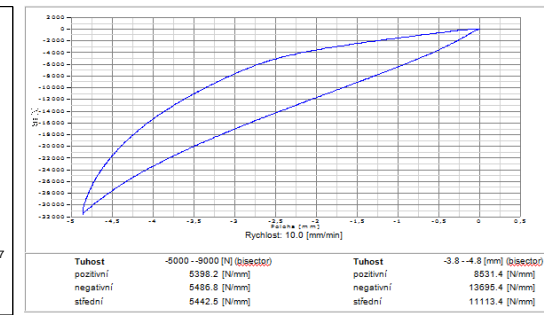
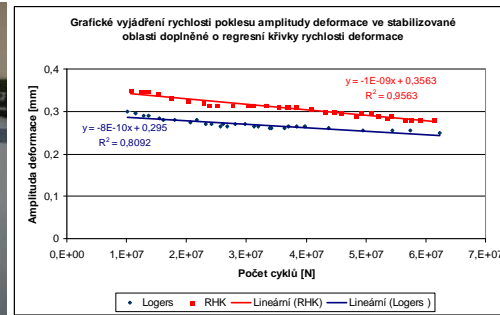


Axle fatigue tests through bending in rotation on samples with 10 mm diameter of the active part



# Fatigue testing of resilient wheels

## Loading frame for testing of rubber characteristics



## Servo- hydraulic testing equipment for testing of static stiffness of resilient wheels



Parameters of the equipment:

Axial, radial static loading 90 kN

# Tests of coating systems:

- Assessment of coating resistance to cyclic mechanical load, in accordance with EN 13261 Annex F
- Assessment of coating resistance to impact, in accordance with EN 13261 Annex C
- Assessment of coating resistance to gritting, in accordance with EN 13261 Annex C

