

**We are solving specific problems of precise measurement, production control and optimal production technology.**

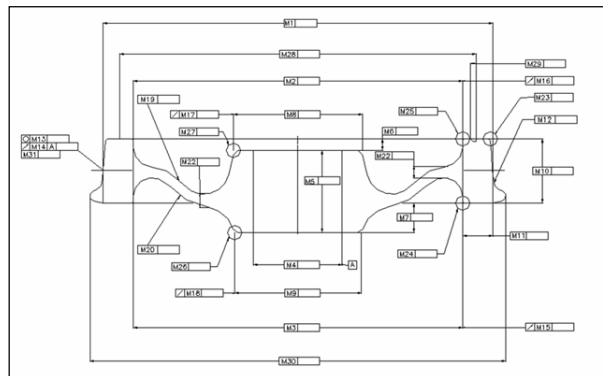
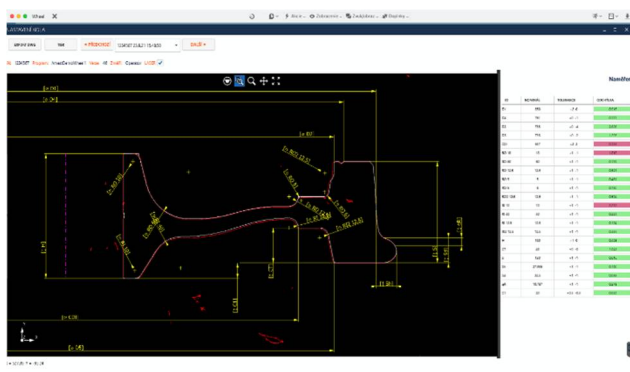
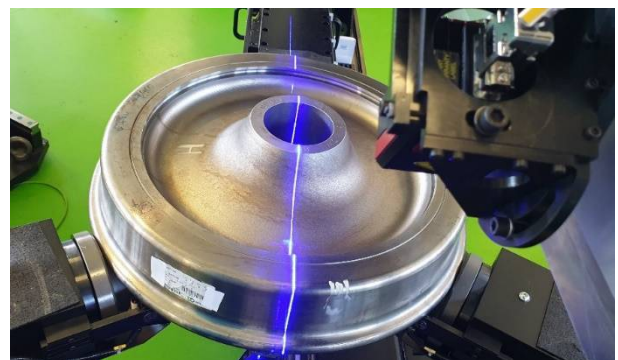
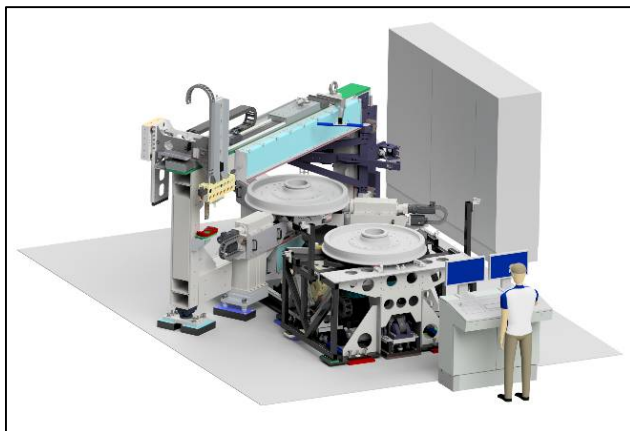
## Railway industry

**Wheels – Axles – Wheelsets**  
dimension measurement

### Wheels

#### Automatic measuring station for wheels geometric parameters checking

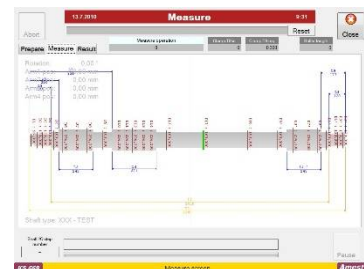
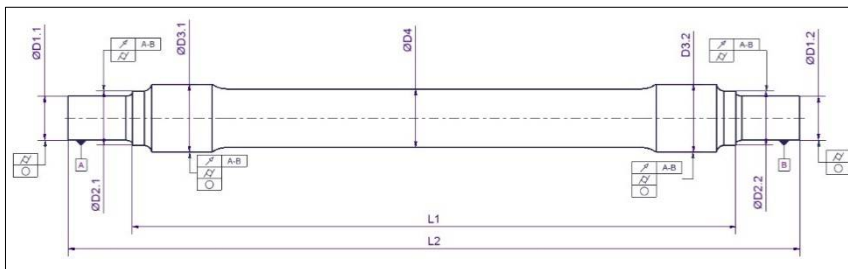
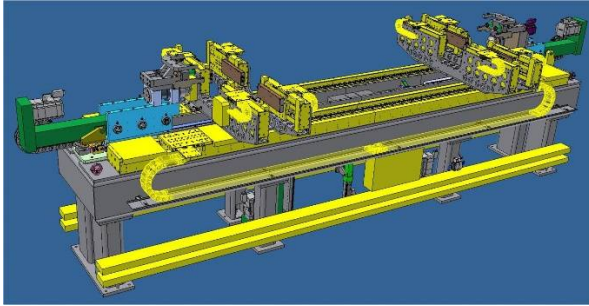
- Fast and complete evaluation of all important geometric parameters including precision hub diameter (diameters, lengths, cylindricity, circularity, cones, axial/radial runouts, radiuses...)
- cycle time 60 seconds
- no any mechanical readjustment for changing from type to type
- easy implementation to production or control line, communication with external manipulator
- ready to statistical evaluation SPC and prepared to any kind of database
- direct input of request measured dimensions in Autocad format (dwg, dxf)
- implemented internal etalon



# Axles

## Automatic measuring station for axles geometric parameters checking

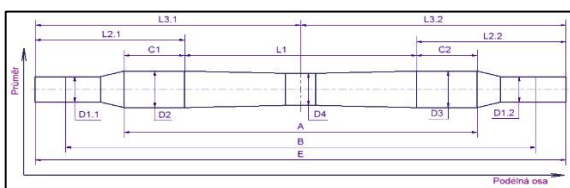
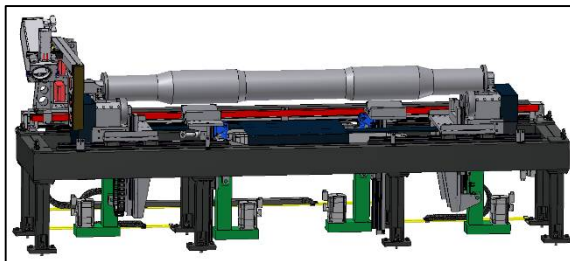
- Fast and complete evaluation of all important geometric parameters (diameters, lengths, cylindricity, circularity, cones, axial/radial runouts, radiuses...)
- cycle time 2 minutes for 20 sections
- no any mechanical readjustment for changing from type to type (only clamping pins)
- easy implementation to production or control line, communication with external manipulator
- ready to statistical evaluation SPC and prepared to any kind of database
- direct input of request measured dimensions in Autocad format (dwg, dxf)
- implemented internal etalon



## Automatic measuring station for forged axles geometric parameters checking

Fast and complete evaluation of all important geometric parameters

- no any mechanical readjustment for changing from type to type (only clamping pins)
- easy implementation to production or control line, communication with external manipulator
- ready to statistical evaluation SPC and prepared to any kind of database
- implemented internal etalon

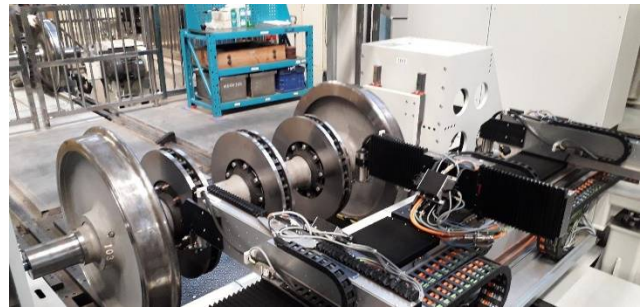
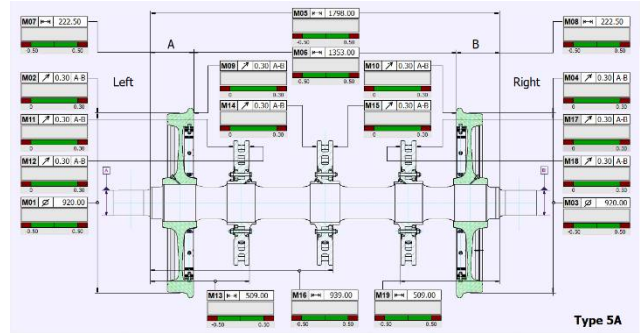




# Wheelsets

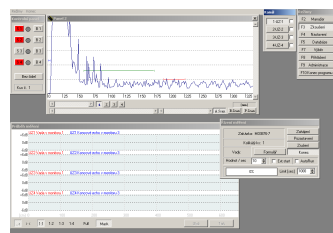
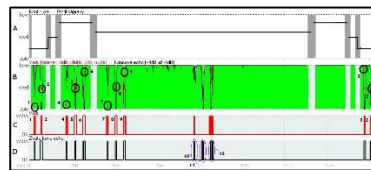
## Automatic measuring station for wheelsets geometric parameters checking

- Fast and complete evaluation of all important geometric parameters including brake disc wearing (diameters, lengths, cylindricity, circularity, cones, axial/radial runouts....)
- no any mechanical readjustment for changing from type to type (only clamping pins)
- easy implementation to production or control line, communication with external manipulator
- ready to statistical evaluation SPC and prepared to any kind of database
- implemented internal etalon



## Axles and wheels NDT Testing – magnetic and ultrasonic testing

- Crack detectors for detecting of occurrence longitudinally and transversely oriented cracks on external surface using magnetic powder testing method
- Fully automated ultrasonic testing of the wheels (rim, disc and hub) and axles (radial and axial direction)



References: GHH-BONATRANS Czech Republic, Lucchini RS Italy, KOLOWAG Bulgaria, INTERPIPE Ukraine, TYHI China, CRRC China, URALVAGONZAVOD Russia, RAIL COACH FACTORY India, RWS WHEELSET Kazakhstan