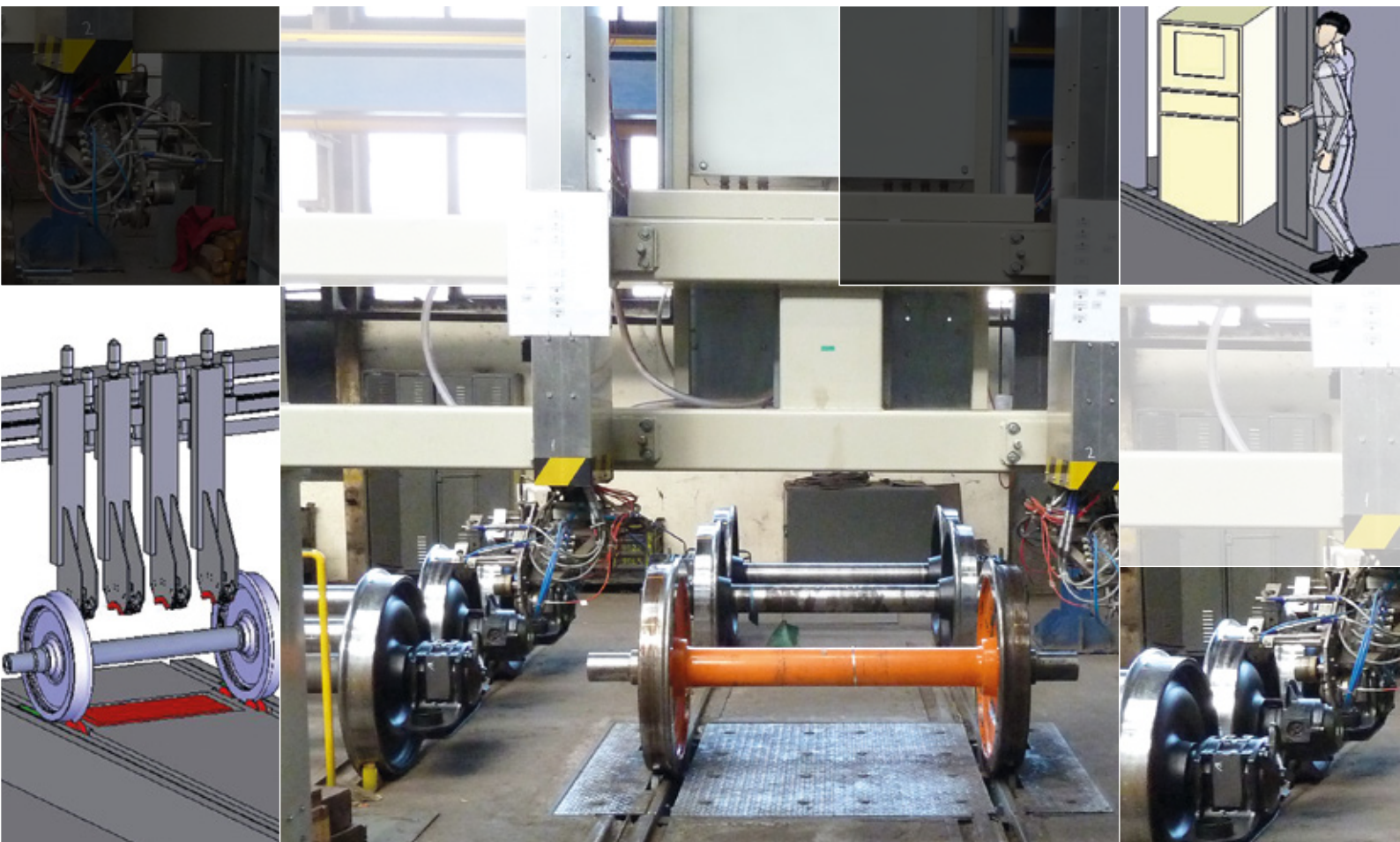




# Ultrasonic Testing System for Wheel Set Axles

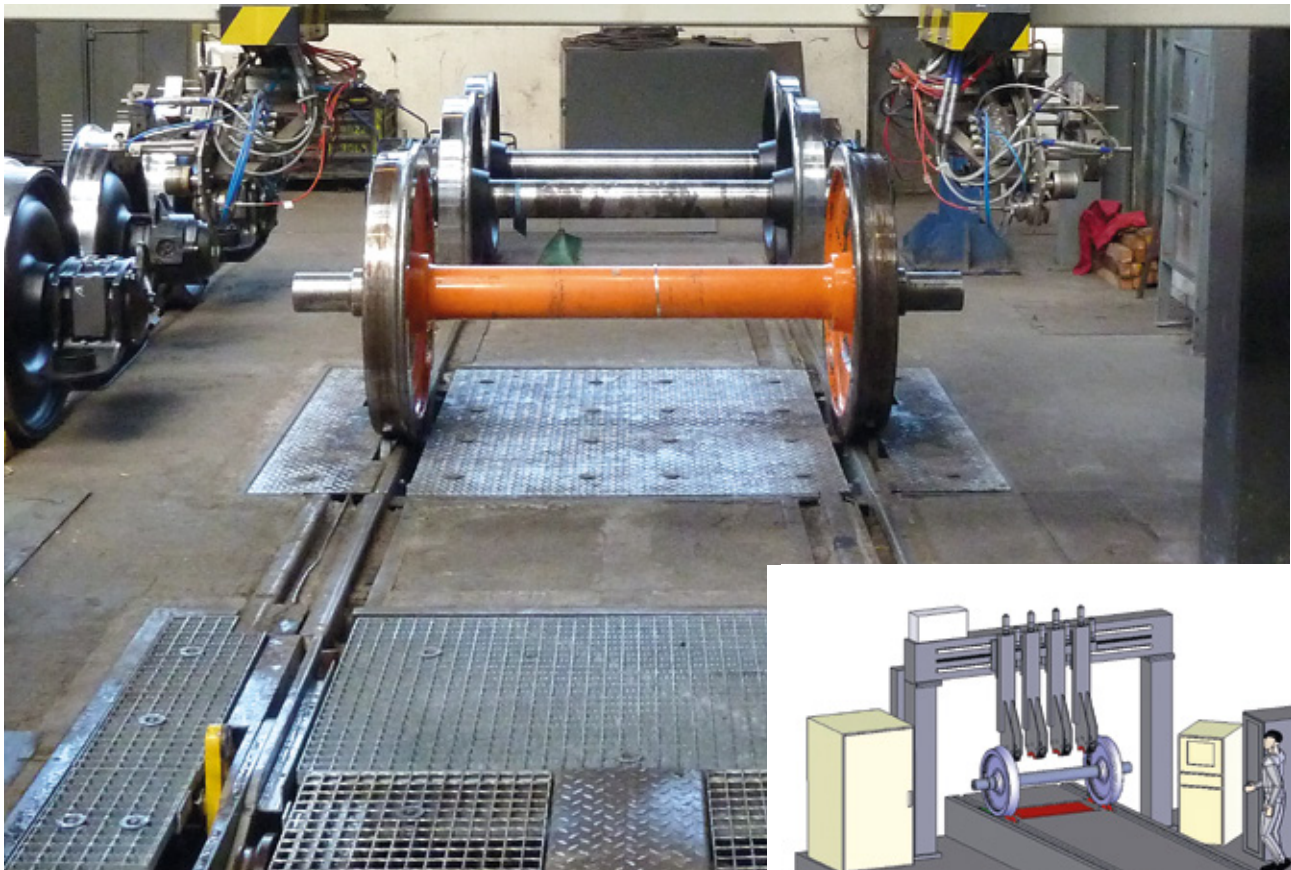
Solid Axle Testing System VWP-I 2500



GMH Prüftechnik

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# Solid Axle Testing System VWP-I 2500



## Brief description

For the so-called heavy maintenance involving the removal of the wheel sets from the railway vehicle, extensive testing procedures are required to evaluate the condition of the axles on the wheel set. This process calls for the complete inspection of the axles over their entire length for operational fatigue. As long as the wheels are not pressed off, this can be performed using ultrasonic testing technology.

The ultrasonic testing system described below optimally combines ultrasonic testing and the requirements for transporting the wheel sets during maintenance, and therefore is designed as a so-called portal testing system. The wheel sets are rolled into the system on tracks embedded in the ground, securely centre-positioned there, and then tested using two (or more) lances containing the ultrasonic probes.

The testing system's ability to be loaded and unloaded manually or semi-automatically was just as much

in focus as simple parameterability through frequently changing wheel diameters and simple adjustment of the ultrasonic technology. The testing system software was given simple input masks for this, enabling easy conversion and adjustment to other wheel dimensions.

Thanks to the wide adjustment range for axle geometries, users have access to a highly efficient system for testing wheel sets during heavy maintenance

Either conventional ultrasonic test technology with individual probes can be employed or phased-array- testing technology with corresponding probes depending on the equipment. The testing system obviously complies with all common standards and regulations, and therefore also achieves certification for international high speed transportation.



## Technical data

### Features

- Portal test system with rollstand fixing of the wheel sets and running water coupling (optional with oil coupling)
- High test speed, for short test times with high resolution
- Optimal support for the set up of new axle types
- Automatic evaluation of test results in accordance with valid standards
- Presentation of the test results with different scans
- Extendable configuration according to customer requirements

### Ultrasonic testing system

- Fully integrated 8 channel ultrasonic test system (conventional) or (optional) 8 x 16 = 128-channel phased array test system
- Test results displayed on a 27"-TFT-monitor
- Various access hierarchies always ensured by using passwords
- HELIX-scan for optimal test operation
- DAC – dynamic depth compensation
- Adjustable panels for the geometry

Number of ultrasonic probes	10
Incidence directions and angles	35°, 45°, 60°, 70°, 0° coupling control
Probe frequency	2 MHz (type)

### Control system

- SPS (S7/300) assisted motor control switch
- Fully integrated PC based control and drive system
- Automatic control of test operation
- 6-fold lance system with automatic calculation of the test area
- Extremely disturbance-free precision servo drive
- Minimum interference of testing technology
- High safety standard

### Automation and mechanics

- Stationary testing system for production application
- Portal test system with water coupling
- Lances principle for positioning the probes
- Integrated rotation drive with transducer
- Precision guide to the probes on the axle surface

Axle diameter	160 mm ... 250 mm
Axle length (type)	2350 mm
Report accuracy of the probe positions	± 2 mm
Travel resolution	± 0,5 mm min.
Test speed (type)	8 min/axle
Dimensions (w x d x h)	approx. 4000 x 1500 x 2800 mm
Weight (without support table and fluids)	approx. 3000 kg

### Evaluation and operating software

- Operating system Windows 10/64 bit
- Efficient operating and evaluation software
- Manual entry of test and sample data
- Clearly arranged presentation of important information
- Various display type: A-, B-, C-scan
- Freely configurable assessment thresholds (subsequent modification possible)
- Extensive zoom functions
- Efficient report generator with various export functions
- Data back-up with USB device or LAN/WLAN
- Integration in company network
- Remote diagnosis and offline analysis functions



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