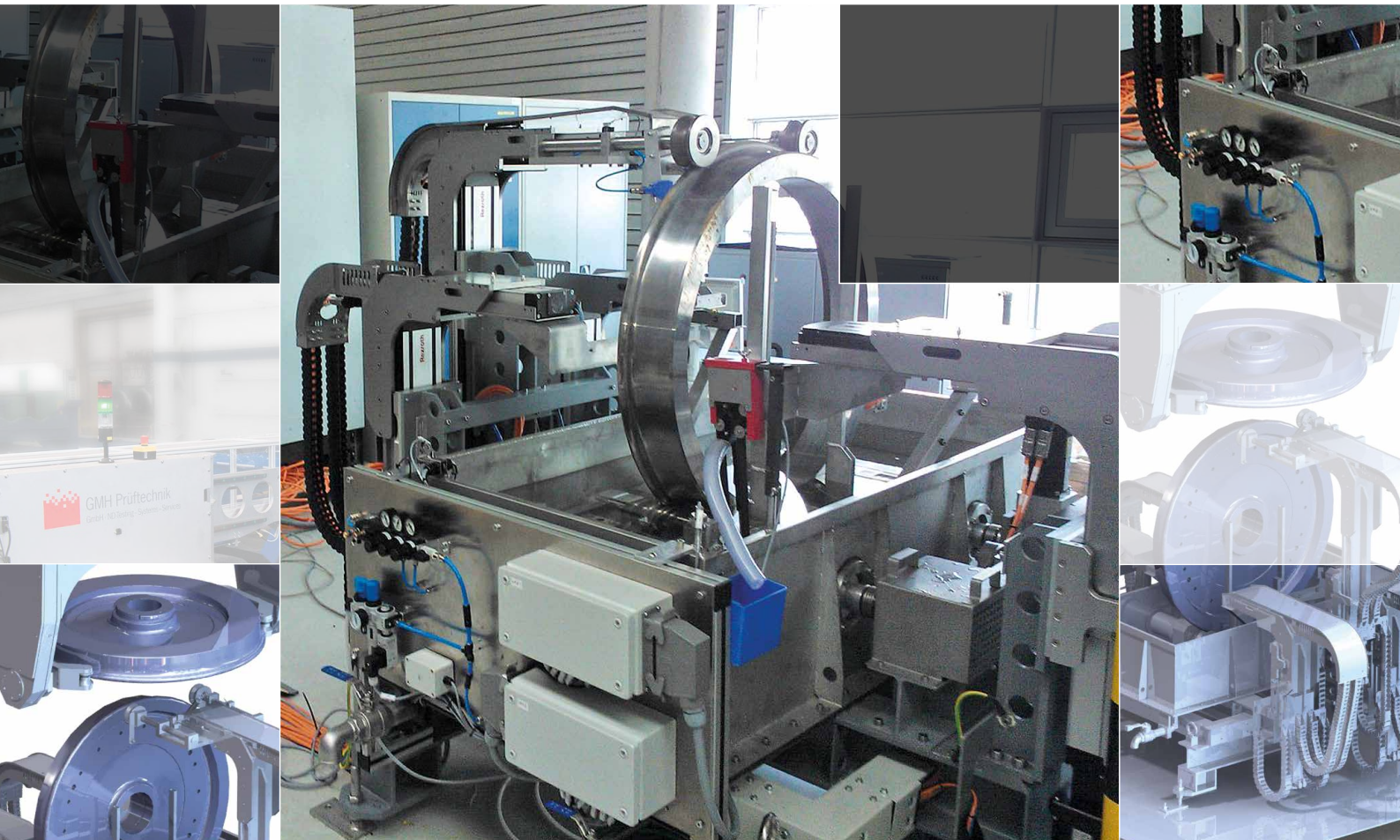




# Ultrasonic Testing System for High-Speed Wheels

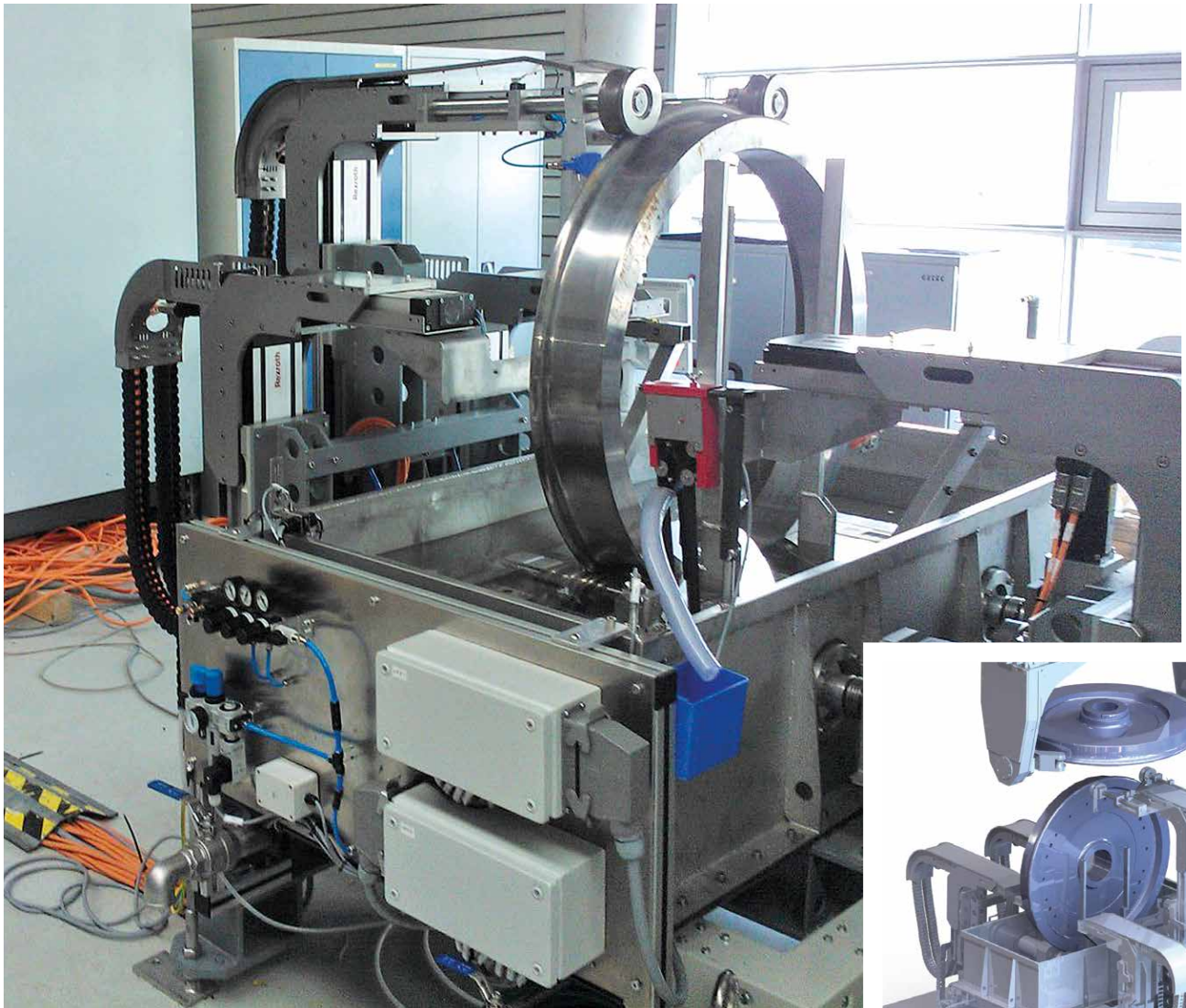
Wheel Testing System RPA-PD 1300

in cooperation with  **Fraunhofer**  
IPA



**GMH Prüftechnik**  
GmbH · ND · Testing · Systems · Services

# Wheel Testing System RPA-PD 1300



## Brief description

The ultrasonic test system presented here supplements the product line for rail industry with a production-based wheel testing system. Our long-term experience with various other testing systems benefits the conception and development of this wheel testing system, significantly shaping the design as an „in-line” testing system.

The testing system’s ability to be loaded and unloaded automatically was just as much in focus as simple parameterability through frequently changing wheel diameters and simple adjustment of the ultrasound technology. The testing system software was

equipped with the 2D CAD interface, already known from other testing systems, as a result enabling easy conversion and adjustment to other wheel dimensions. With a possible wheel diameter of 600 – 1300 mm, users have access to a highly efficient system when it comes to testing wheels in production. Depending on the equipment, you can test – additionally to the rim – of course also the wheel disc and hub either conventionally using individual probes or via a phased array. The testing system obviously complies with all common standards and regulations, and therefore also achieves certification for international high-speed transportation.





## Technical data

### Features

- Immersion tank testing system with precision rolling span mechanism for the wheel
- Suitable for automatic loading and unloading, therefore enabling direct integration in the production line
- Fast testing speed, resulting in short testing times with high resolution
- Optimum support by adjusting new types of wheels
- Testing of wheel rim, flange, hub and disc (optional)
- Automatic assessment of test results in accordance with applicable standards
- Test results displayed as A-, B- and C-scan
- Potential for expansion according to customer requirements

### Automation and mechanics

- Fixed testing system for use in production
- Integrated rotation drive with position encoder
- Precision guiding of probes along wheel surface

Wheel diameter	600 mm ... 1300 mm
Repeat accuracy of probe position	± 0,5 mm
Displacement resolution	± 0,1 mm min.
Test speed (type)	3,5 min/wheel set
Overall dimensions (w x d x h)	approx. 2500 x 2500 x 1800 mm
Weight (without deposit tables and liquids)	approx. 2500 kg

### Ultrasonic testing system

- Fully integrated 8-channel ultrasonic testing system (conventional) or (optional) 384-channel phased array testing system
- Test results displayed on a 22"-TFT-monitor
- Various access hierarchies always ensured by using passwords
- DAC – dynamic depth compensation

Number of ultrasonic probes	4/5
Incidence direction	3 x 0° (wheel rim), 2 x 0° (hub)
Probe frequency	4/5 MHz (type)

### Evaluation and operating software

- Operating system Windows 7/64 bit
- High-performance operating and analysis software
- Manual input of test and sample data
- Very short viewing and adjustment times through 2D CAD interface
- Manual input of test and sample data
- Clear layout of important information
- Various display types: A-, B-, C-scan
- Freely adjustable assessment thresholds
- Direct displays as C-scan
- Report generator with various export functions
- Data backup using USB-drive or LAN/WLAN
- Integration in company network
- Remote diagnosis and offline analysis functions

### Control system

- Efficient NC/SPS (Bosch-Rexroth) drive and automation control
- Fully-integrated PC-based drive and control system
- Automatic test-process control
- Multiple positioning system with automatic probe feed-in to the wheel
- Minimal interference to test equipment due to EMI reduced servos
- High safety standards



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