



# Testing System for Roller Bearings at Production Line

Roller Testing System ROPA-PD 300/5-1C



GMH Prüftechnik

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## Brief description

The ROPA-PD 300/5-1C is the first testing system for roller bearings offering the capability to be directly integrated into the production line. It can be used to test all conventional roller shapes (cylinder rollers, tapered rollers, spherical rollers) – largely irrespective of whether the rollers have centre holes, through holes or just cups.

The automatic roller feed-in and discharge means the testing system can be integrated into virtually any production line – a fact made significantly easier by the PC/SPS control and an interface specially designated for the integration. Nevertheless the testing system can also be used as a “stand-alone solution”, e.g. in laboratories. The newly developed testing system is based on the “immersion-testing” product line, giving it a com-

parably vast range of services in terms of ultrasound testing technology, analysis software and operating software. Combined with integrated process visualisations, the new generation of testing systems proves itself to be a high-performance tool for manufacturing roller bearings.

The machinery’s high degree of precision ensures the system can detect faults with extreme accuracy even under production conditions. In combination with the high-performance operating software (automatic analysis algorithms, CAD interface, batch statistics etc.), the result is an optimum mix of synergy, flexibility, short testing times, perfect integration capacities and reliable fault detection.



## Technical Data

### Features

- Testing system fully integrable into the production line
- Tests of all conventional roller shapes
- Integrated roller feed-in and discharge
- Automatic sorting of good/bad
- Integrated barricading with access protection
- Easily replaceable tank for fast cleaning
- Easy setup for various roller sizes
- High degree of mechanical precision
- Fully automatic evaluation of test results
- Short testing times with high resolution
- High-performance operating software with process visualisation
- Capacity for extensions based on customer requirements

### Immersion tank testing system

- Fully integrated industrial PC platform
- Windows 10/64 bit operating system
- High-performance operating and analysis software
- Various data-analysis algorithms
- Three access hierarchies (each password-protected)
- Test results displayed on a 24"-TFT monitor
- Fully integrated remote ultrasound testing system
- High-speed USB connection
- Low power consumption
- Short connection to probe
- High signal /noise ratio
- Distance Amplitude Correction (DAC)

Detection sensitivity	0,5 mm (cracks) 1,0 mm (FBH)
Cycle time	Approx. 10s... 60s
Probe frequency	0,5 MHz... 20 MHz
Angle of incidence	Freely configurable

### Control system

- Fully integrated control and drive system
- Automatic controlling of the test process
- Extremely low noise precision servo drives
- Minimal interference on testing technology
- Manual probe start-up via Teachbox

### Automation and mechanics

- Integrated NC/SPS controls for processes and drives
- High-performance, low noise servo drive
- Stainless-steel tank with frame, fixed base and adjustable mounting feet
- Precision clamping device for test specimens
- Roller feed-in and discharge through integrated conveyor belts
- Contour tracing for tapered and spherical rollers
- Safety doors
- Easily replaceable tank for improved cleaning

Roller length	40 mm ... 190 mm
Roller diameter	40 mm ... 110 mm
Hole diameter	8 mm ... 40 mm
Taper angle	15° max.
Roller weight	10 kg max.
Testing matrix	0,1 mm ... 5 mm
Repeat accuracy of probe position	± 0,1 mm
Path resolution	± 0,01 mm min.
Testing Speed	3 U/s max.
Total dimensions (L x W x D)	1,3 m x 1,5 m x 2,3 m
Water filling capacity	Approx. 80 l
Weight (without liquid)	Approx. 500 kg

### Analysis and operating software

- 2D CAD import function
- Manual entry of testing and sampling data
- Various analysis algorithms
- 2D and 3D evaluation
- Parameters of various standards can be entered
- Freely configurable evaluation thresholds
- Individual sample analysis
- Batch analysis and management
- High-performance report generator with various export functions
- Data backup via USB drive or LAN/WLAN
- Integration into the company network
- Remote diagnosis and offline analysis functions



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