

ELO\WHEEL

Precision at the top level – ELOWHEEL 800 RPT18 Wheel rim inspection system



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Efficiency · Precision · Innovation

Rohmann GmbH is setting new standards in the demanding MRO sector: The continuously refined inspection system impresses with its exceptional inspection speed, maximum sensitivity in defect detection and impressive resolution and reliability. Due to its outstanding flexibility, the system adapts effortlessly to changing requirements — ensuring your inspection processes are ready for the future.

By using a dual probe, the new ELOWHEEL 800 RPT18 makes it possible to inspect aircraft wheel rims (up to a diameter of 800 mm) for the detection of cracks on the surface and also defects inside the material at the same time. The user-friendly interface is integrated into the tried and tested ELOWHEEL evaluation software and its arrangement is perfect for inspecting wheel rim halves quickly and safely for different types of defects.



Scope of the inspection

Inspection for the detection of surface cracks (HF inspection)

- ▶ Sliding differential sensor
- ▶ Inspected area up to end of the bead seat radius
- ▶ Reference flaw:
depth 0.76 mm x length 1.52 mm x width 0.1 mm; EDM, tangentially and axially oriented

Inspection for the detection of hidden defects (LF inspection)

- ▶ Sliding absolute sensor
- ▶ Inspected area up to the beginning of the bead seat radius
- ▶ Reference flaw: approx. 25 % damage to the wall from inside (depending on the structure)



Dual probe (HF/LF):

The integrated compensation unit in the large-surface probe lets it slide smoothly over the wheel rim surface and over any holes such as valve apertures. The areas of the bead seat and the rim flange are automatically recognized and passed over with the aid of approach switches.

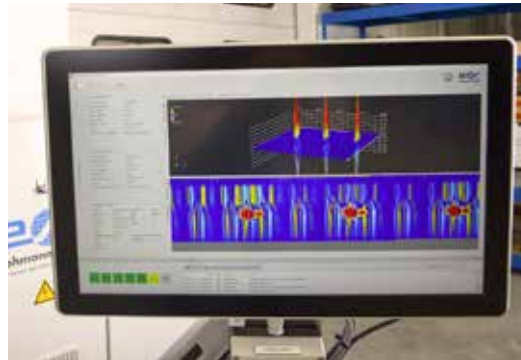
ELOWHEEL 3.0 – „All in one“ Software

The entire system is operated via a 21,5" touchscreen using the specially developed ELOWHEEL software.

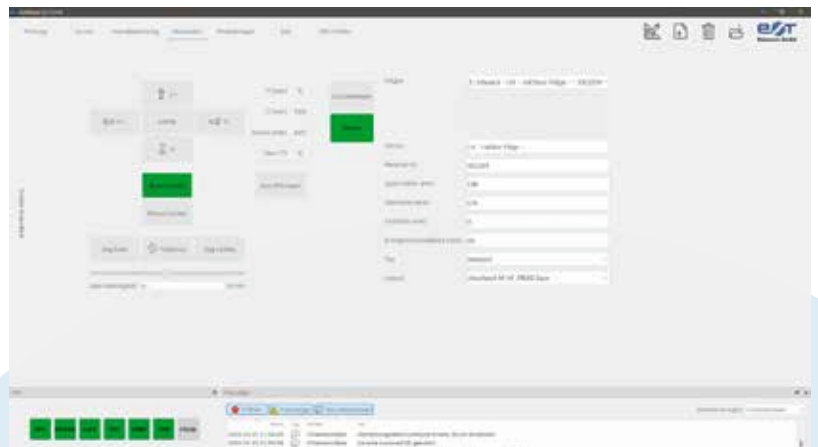
The software provides known functions such as

- ▶ Quick and easy creation of new wheel rim parameter sets
- ▶ Parameterization of the PL650RC test instrument
- ▶ Recording of the inspection as a C-Scan and a waterfall chart
- ▶ Simultaneous recording of two inspections with the dual probe (HF/LF)
- ▶ Analysis and evaluation of the inspection
- ▶ Logging and archiving of the results

The selection and creation of new parameter sets are clearly displayed, enabling users to quickly and reliably select the appropriate wheel. All relevant system status information is visible at all times.



The industrial multi-touch monitor, which is mounted on the system so that it can be swiveled, allows for convenient control of all parameters. It can be operated easily even while wearing gloves.



Important features in the ELOWHEEL software

HMI INTEGRATED

No additional control field is required to operate the PLC. All functions for automatic and manual operation of the system are integrated in the user interface of the ELOWHEEL software. Important current status information of the system is displayed as colored icons.

DB ARCHIVE

The inspection is archived in a local database, including the information on the inspected rim and the inspection results. The time of the inspection and the name of the inspector are stored accordingly. The inspection results, including the Eddy Current raw data of the C-Scans, can be loaded at any time via a search function.

PDF EXPORT

Inspection logs can be directly printed out on a connected printer (not part of the scope of delivery) or stored as PDF files. Up to two customer logos can be embedded in the log layout.



Compact & universal

The structure of the system is space-saving and the system can be integrated directly into a roller table. The rollers arranged around the rotary unit make it easy to load and unload the rims.

All operating units and safety devices are easily accessible and ensure the easy operation of the system.

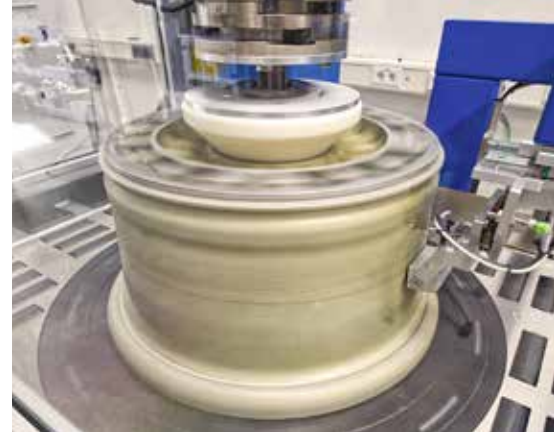
Accessible & clear

Once the lateral stainless steel casings have been removed, the areas for the maintenance and inspection of the system components are easily accessible. The high-quality linear axes have a permanent lubrication. The documentation includes a maintenance plan for the entire system. The maintenance unit for the pneumatic system and the operating units are clearly arranged directly on the system. The set pressure ranges can be quickly checked through an observation window.



Robust & flexible

The structure of the system is based on a stable welded steel construction that makes a vibration-free and continuous operation of the rim inspection system possible. The switch cabinet is connected with the components of the system via high-quality connectors. This enables the customer to reposition the switch cabinet at a later time.



Innovative & safe

A compensation unit is used during the rotation of the rim halves, in order to counteract any mechanical strain. During the clamping process, this unit is pneumatically secured so that the rim half can be centered on the rotary table. When a safe clamping pressure is reached, the unit is released for rotation.

The querying of the clamping height acts as an additional verification to ensure that the selected set of parameters matches the clamped rim half.

Technical Data

GENERAL

- ▷ Ambient air temperature 10 °C - 40 °C
- ▷ Relative humidity: 5 % - 80 %
- ▷ Electrical connection: 400V AC, 16 A
- ▷ Compressed air: 6 bar min., clean and dry
- ▷ Space requirements:
- ▷ 1560 mm x 1515 mm x 3000 mm (L x W x H)

RIM HALVES

- ▷ Diameter: 800 mm max.
- ▷ Height: 500 mm max.
- ▷ Weight: 250 kg max.

INSPECTION

- ▷ Creation of new parameter sets: 3 min max.
- ▷ Inspection cycle of rim halves: 2 min max.
- ▷ Rotational speed: max. 120 rpm