UFPE - Underfloor Testing Device for Wheel Sets

ON-Train Inspection System for High-Speed-Train Wheels

Wheels at Deutsche Bahn AG have to be examined quickly in the as-fitted condition. arxes-tolina developed an innovative solution for mechanized examination of the wheels of an entire train within the space of one shift.

This system cuts scanning time and thus maintenance costs. The results can be viewed in full at any time. This examination essentially makes the disassembly and replacement of sets of wheels superfluous. That is how DB AG describes the examination system in its issue of "bahntechnik" journal. DB AG also regards this system as a further step toward the simplification of maintenance and enhancement of the availability of their trains.

Features

- Examination of all wheel types used on the ICE 3 and ICE-T
- A compact UT search unit system for all wheels
- Carriage with special robots moves beneath the train to examine one set of wheels after the other
- No need to removal from train
- Straightforward, fast examination with maximized results information
- Enhanced QA thanks to clearly described examination sequence
- Simplified logistics thanks to complete measured data acquisition and evaluation for entire trains
- Easy change of search unit systems for the inspection of wheels of different types of railways

Advantages

- No dismantling of component parts needed
- Coupling is defined even with floating probe support at different wheel sizes on running surface and flange
- Compact and robust construction
- Insensitivity to splash water out of the inspection
- High measuring accuracy and data reproduction ability
- High flexibility in the implementation of modular design
- Minimal maintenance and low lost
- Coupling save by high proven gimbaled and spring probe seating
- Shortest testing time
- Simple probehead changing
- Minimal time at the exchange of wearing parts
- Only one typed probe head seating
- Standard probes of General Electric

Audit

<table>
<thead>
<tr>
<th>parameter</th>
<th>value</th>
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</thead>
<tbody>
<tr>
<td>Surface defects</td>
<td>depth &gt; 1-2 mm</td>
</tr>
<tr>
<td></td>
<td>length &gt; 10 mm</td>
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<tr>
<td>Volume error</td>
<td>KSR 2 mm</td>
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<tr>
<td>Frequenz</td>
<td>2-6 Mhz</td>
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<tr>
<td>Test frequency</td>
<td>send-receive probe: 0°; 4 MHz</td>
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<tr>
<td></td>
<td>angle probe: 70°; 2 MHz oder 4 MHz</td>
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References

The first system has been delivered to a maintenance shop of Czech Railway in 2005.

The systems are operating since then without interrupt.