

FREIGHT WAGON WHEEL INSPECTION DURING REPROFILING

Surface cracks on freight wagon wheels can compromise operational safety. Eddy current testing enables reliable inline inspection during reprofiling without additional handling.



THE CHALLENGE

Freight wagon wheels are exposed to high mechanical loads, rolling contact fatigue and thermal stress during braking. Over time, these influences can cause surface cracks and wear that compromise operational safety and reduce wheel lifetime. Conventional methods such as magnetic particle inspection (MT) require several manual handling steps and interrupt the maintenance process. A faster inspection method is needed that reliably detects surface defects while minimizing downtime and preserving wheel material.

THE SOLUTION

FOERSTER's TCM integrates eddy current testing directly into the wheel reprofiling process, so wheels are inspected for cracks without being removed from the machine. Using high-resolution eddy current array (ECA) technology and a wheel-adapted array probe, the system detects surface and near-surface cracks in real time. Defects are visualized and evaluated immediately, allowing maintenance personnel to assess defect depth and determine the minimum material removal required. No consumables are required.



THE RESULT

Integrating eddy current testing into the reprofiling process significantly reduces handling time and shortens inspection cycles while eliminating the need for separate inspection steps. Reliable defect detection supports predictive maintenance, minimizes unnecessary material removal and extends wheel service life. The combination of inline inspection, objective evaluation and reduced downtime improves maintenance efficiency while contributing to safe and reliable railway operation.

THE PRODUCTS

ECA TCM

Eddy current testing with sensor arrays for large-area inspection



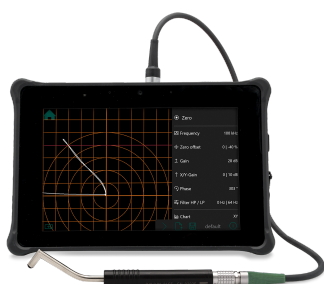
STANDARD TCM ARRAY PROBES

Versatile Eddy Current Array Probes for Efficient Surface Inspection



TCM PRODUCT FAMILY

One mobile device for all eddy current testing tasks



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