AUTOMATED CRACK AND STRUCTURE TESTING OF BALL PINS

Cracks or incorrect heat treatments in ball pins can compromise steering and suspension safety. Eddy current testing reliably detects surface defects and varifies material properties during production.

THE CHALLENGE

Ball pins are safety-critical components of ball joints used in vehicle suspension and steering systems. They are produced in multiple forming steps and may feature standard or customer-specific geometries. Surface defects such as longitudinal, transverse or point cracks can compromise structural integrity. In addition, the ball pins require precise heat treatment to withstand high mechanical loads in the steering. Reliable non-destructive testing during production is therefore essential to ensure defect-free material surfaces.

THE SOLUTION

FOERSTER provides automated crack and structure testing using STATOGRAPH for surface crack detection combined with MAGNATEST modules for hardness verification. One or multiple probes inspect critical zones of the ball pin and pressure rod for longitudinal, transverse and point defects. Multi-channel configurations increase inspection speed, enabling testing of up to 600 parts per hour with geometry-adapted probes.

THE RESULT

The system enables reliable surface defect detection with high throughput and reproducible results. Individually adapted probes increase sensitivity for complex geometries. After inspection, automatic sorting into OK and NOK parts is performed. Integrated documentation functions support continuous quality assurance and stable production processes for safety-relevant ball pins.

FOERSTER

STATOGRAPH CM+ / CM

Crack testing of complex workpieces with eddy current

STATOGRAPH PROBES

Probes for non-destructive crack detection of complex components using eddy current testing

MAGNATEST TCL

Magneto-inductive testing of components critical for safety

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