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HARDNESS TESTING OF CV-JOINTS AND TULIPS

Insufficient hardness in CV joints can cause drivetrain failure. Magneto-inductive testing with MAGNATEST D reliably verifies structure and hardness.

THE CHALLENGE

In drivetrain systems, CV joints and tulips are exposed to high mechanical loads and are classified as safety-relevant components. Insufficient hardness or incorrect heat treatment of shafts and fixed outer races can lead to fracture and drivetrain failure. Reliable verification of structure and hardness properties is therefore required during production and incoming goods inspection.

THE SOLUTION

Magneto-inductive hardness testing is carried out using the MAGNATEST D system with encircling coils for shafts and geometry-adapted FIT probes for outer races. Comparative calibration with OK and NOK reference parts defines sorting thresholds. High-performance harmonic analysis compensates for geometric tolerances and temperature effects to ensure reproducible measurements.

THE RESULT

The inspection enables stable verification of hardness and structural properties under production conditions. Automatic sorting into OK and NOK parts follows directly after testing. Extended evaluation of higher harmonics provides additional material information, while integrated documentation functions support continuous quality monitoring of drivetrain components.

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MAGNATEST D

Magneto-inductive testing of metallic components for material properties

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