FOERSTER

BOTTOM BRACKET SHAFT TEST FOR E-BIKE TORQUE SENSORS

Defective bottom bracket shafts can impair the measurement accuracy of e-bike torque sensors. Magneto-inductive structure and crack testing with MAGNATEST D reliably inspects the shafts.



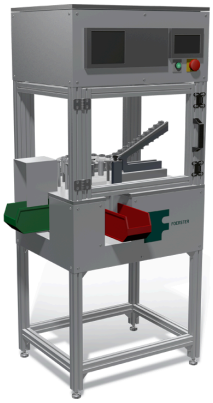
THE CHALLENGE

In magnetostrictive torque sensor applications, the bottom bracket shaft becomes both mechanical force transmitter and functional sensor. Its magnetic properties directly influence measurement accuracy. Alloy composition, hardening depth, residual magnetism and structural defects such as microcracks or inhomogeneities can impair sensitivity. High-volume production therefore requires comprehensive verification of mechanical and magnetic properties.

THE SOLUTION

FOERSTER has developed a multi-stage test cell for production environments. The process includes component identification, demagnetization with EMAG, residual field C-scan, magneto-inductive microstructure testing using MAGNATEST D with dual fork probe, surface scanning for defects, and optical inspection. The modular setup can be integrated inline or operated as a stand-alone system.





THE RESULT

The solution ensures early detection of material mix-ups, incorrect hardening depth, residual magnetic fields and structural defects. Automated OK/NOK sorting guarantees traceable quality control in serial production. Flexible configuration allows adaptation to specific customer requirements and supports reliable performance of torque sensor shafts in e-bike applications.

MAGNATEST D

Magneto-inductive testing of metallic components for material properties



STATOVISION CM

High-Resolution C-Scan Visualization for STATOGRAPH CM



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