AUTOMATED TESTING OF CYLINDER BORES WITH THE EDDY CURRENT METHOD

Cracks, pores or coating defects in cylinder bores can cause engine damage. Eddy current testing reliably detects defects during production.

THE CHALLENGE

Coated cylinder bores and linings ensure optimal piston movement in engine blocks. Surface cracks, pores or subsurface imperfections can impair engine performance and damage adjacent components. To guarantee long-term reliability, non-destructive and automated inspection of cylinder bores is required directly in production, including verification of coating integrity and material bonding.

THE SOLUTION

FOERSTER performs automated eddy current inspection using the STATOGRAPH system with a rotating, longitudinally guided sensor. The inner bore surface is scanned for cracks, pores and subsurface defects. Customized handling systems enable inline testing of engine blocks and coated linings such as Nikasil®. The method provides high-resolution detection and automated OK/NOK classification.

THE RESULT

The system achieves inspection rates of approximately 120 bores per hour while reliably detecting open and subsurface imperfections. It verifies coating adhesion in 60 to 80 µm thick cylinder linings and identifies discontinuities with position-specific signal mapping. Integrated evaluation software supports precise documentation and continuous quality assurance.

FOERSTER

STATOGRAPH CM+ / CM

Crack testing of complex workpieces with eddy current

STATOVISION CM

High-Resolution C-Scan Visualization for STATOGRAPH CM

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