

CRACK DETECTION OF RING MAGNET FOR MOTOR ROTOR BY EDDY CURRENT TESTING

Cracks in ring magnets can cause imbalance, vibration and motor failure. Eddy current testing detects defects reliably before magnetization.



THE CHALLENGE

Ring magnets used in brushless motor rotors are critical for torque stability and precise speed control. Cracks generated during powder forming or sintering can create unintended magnetic poles, leading to imbalance, vibration or motor malfunction. Even small defects not visible to the eye may impair performance, making reliable pre-magnetization inspection essential.

THE SOLUTION

Eddy current inspection is performed using STATOGRAPH systems with specially adapted probes for inner and outer ring surfaces. The contactless method induces eddy currents in the sintered magnet material, and disturbances caused by cracks are detected as electrical signals. The process allows automated testing and digital storage of inspection data.



THE RESULT

The system enables precise detection of longitudinal and surface cracks before magnetization and assembly. Early identification of structural defects prevents complex pole formation and ensures stable rotor operation. Automated, traceable inspection improves production efficiency and guarantees consistent motor performance in demanding applications.

THE PRODUCTS

STATOGRAPH CM+ / CM

Crack testing of complex workpieces with eddy current



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Headquarters

Institut Dr. Foerster GmbH & Co. KG

In Laisen 70
72766 Reutlingen
Germany

+49 7121 140 0
info@foerstergroup.com