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WALL THICKNESS INSPECTION OF TURBINE BLADES

Material degradation in turbine blades can compromise safety and efficiency in aerospace and power generation. Automated MAGNETOSCOP testing reliably evaluates wall thickness before components return to service.



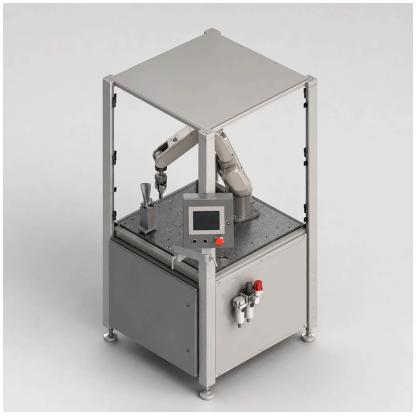
THE CHALLENGE

Hot-side turbine blades in aerospace and energy applications are exposed to erosion and wall loss under extreme thermal conditions. Reliable detection of material degradation is critical during MRO processes. Automating MAGNETOSCOP testing within a robotic environment requires eliminating magnetic interference from robot movement and gripper tooling to ensure accurate measurements.

THE SOLUTION

The system integrates MAGNETOSCOP into a robotic inspection cell for automated wall thickness evaluation. A specially designed, non-magnetic probe holder made from 3D-printed plastics prevents magnetic disturbance near the sensor. The robot guides each blade to defined inspection zones, and measurement data are recorded and linked to the part's serial number for full traceability.





THE RESULT

Inspection performance is adapted to blade size and specification requirements, delivering significantly faster results than manual microscopic analysis. Automation improves repeatability and data consistency while reducing MRO turnaround times. The system enables efficient, traceable and reliable degradation assessment of turbine blades.

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MAGNETOSCOP

Portable Solution For Magnetic Field and Permeability Measurement

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