AUTOMATED EDDY CURRENT CRACK DETECTION ON PRESSURE VESSELS

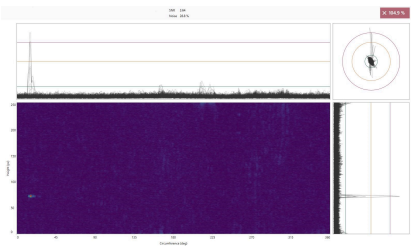
Thinner walls in pressure vessels increase crack risk and failure danger. STATOGRAPH CM+ enables automated, reliable inline crack detection.

THE CHALLENGE

Pressure vessels operate above atmospheric pressure and are used in applications such as fire extinguishers and avalanche airbags. To reduce weight, wall thicknesses are continuously minimized, increasing susceptibility to cracks. Even small surface defects may lead to catastrophic failure, making reliable in-line inspection a critical safety requirement.

THE SOLUTION

The STATOGRAPH CM+ system, combined with a high-resolution eddy current probe, enables automated crack detection directly in production. The vessel is rotated while the stationary probe scans the cylindrical surface. Disturbances in eddy current flow caused by cracks are detected as electrical signals and visualized using STATOVISION surface scan software.



THE RESULT

Cracks as small as 0.2 mm in length and 0.1 mm in depth are reliably identified with a signal-to-noise ratio of 4:1. The automated system ensures standardized 100% inspection, full documentation and traceability. This guarantees consistent product quality and maximum safety for lightweight pressure vessels.

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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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