

Dual Phased Array

Advanced manual corrosion assessment

Dual phased array inspections take full advantage of the high-sensitivity active volumetric beams achievable with phased array ultrasonic testing. As such, defect detection and characterization is significantly improved over conventional ultrasonic methods.

Using a side-by-side dual linear array in a pitch/catch configuration along a 30 mm long aperture, the technique combines the flexibility of manual ultrasonic scanning with enhanced imaging and analysis.

FEATURES

1 mm near surface detection capability

Higher probability of detection of critical defects

Beam coverage width of up to 30 mm



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The pitch/catch inspection mode provides superior near surface resolution for the examination of thinner parts while maintaining the penetrating power required for the interrogation of heavy wall or coarse grained materials.

Applications

Examination of thin walled materials

The pitch/catch configuration of the side-by-side array and the resultant reduction in dead zone over other phased array techniques provides a <1mm near surface detection capability.

High-temperature corrosion detection and quantification

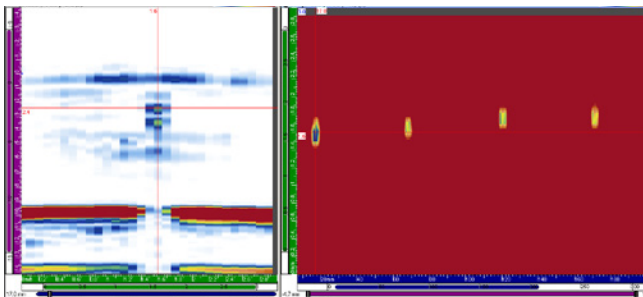
The use of a temperature-tolerant shoe material enables an effective upper operating temperature of 428°F (220°C). This provides improved phased array techniques and their imaging and advanced analysis tools available for inspections typically restricted to conventional ultrasonic inspection.

Inspection of complex parts and restricted areas

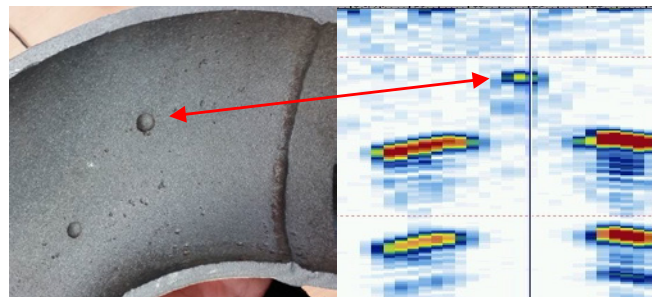
The relatively small footprint of the dual array probe facilitates interrogation of areas typically inaccessible to phased array corrosion/erosion detection techniques. This includes, but is not limited to, pipe/nozzle walls, compensating pads, around brackets/fittings, and contoured valve bodies.

Considerations

- » Material to be inspected must be penetrable by ultrasonic sound waves
- » The outer surface of the asset under inspection should be clean and free from loose impediments such as insulation or other debris. This is a prerequisite for all methods of ultrasonic inspection.



Response from 0.9mm remaining dome shape corrosion pit with dual array probe.



Two dome shaped pits detected with dual array probe - 4.3mm remaining. Previously not reported as flaws when using manual ultrasonic technique.