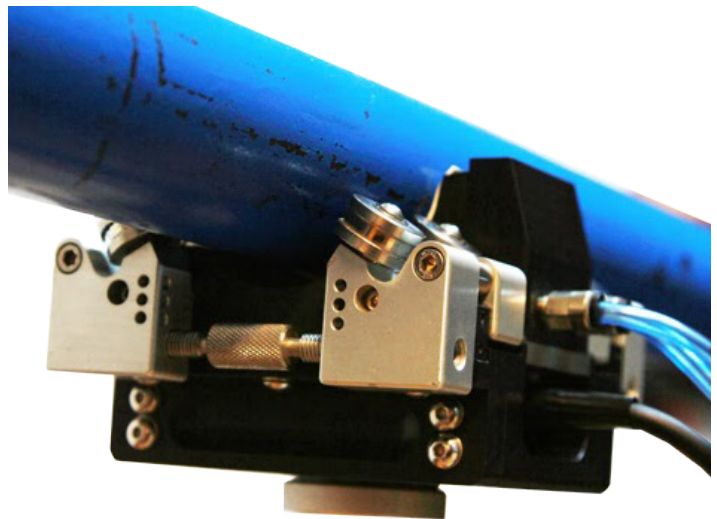


Curved Phased Array

Advanced ultrasonic inspection

We developed the curved phased array system to complete corrosion mapping of small diameter pipes. The system uses a custom built 10 Mhz probe that is designed with a curved configuration to fit pipework from 1 to 4 inches OD.

The scanner includes an axially positioned encoder to enable rapid data collection along the length of a pipe. Due to the speed and coverage of the data acquisition, it is possible to inspect up to 131 ft / 40 m of straight pipe in a single shift.



FEATURES

Rapid quantitative data collection of 1 to 4 in pipework

Higher probability of detection (PoD) of critical defects

Can be used in lieu of tangential radiography

Curved Phased Array

Corrosion Mapping

The system offers the best inspection solution for identifying wall thickness reductions due to corrosion, abrasion, and erosion and eliminates the requirement for onsite radiography to detect internal pitting. The system's high resolution is achieved by using a highly-effective ultrasonic beam that can incorporate up to 70 mm of the pipe circumference.

The high sensitivity of the phased array beam enables detection of deflected and/or diffracted signals which support in-depth defect characterization by imaging the true morphology of the damage mechanisms.

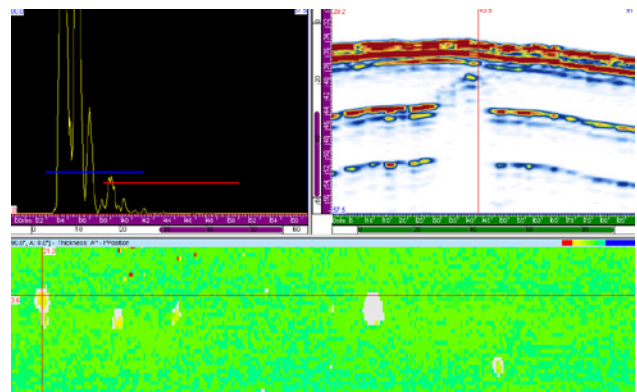
Color-coded C-scan displays enable rapid data interpretation by clearly identify material losses and potential far surface damage.

Applications

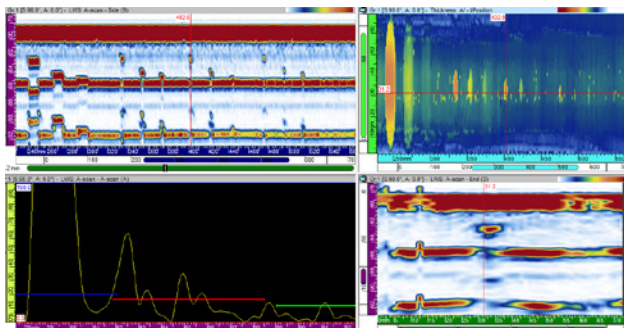
Rapid quantitative data collection of in-service piping in order to detect corrosion damage in the forms of general wall loss, isolated pitting, or microbial influenced corrosion (MIC).

Limitations

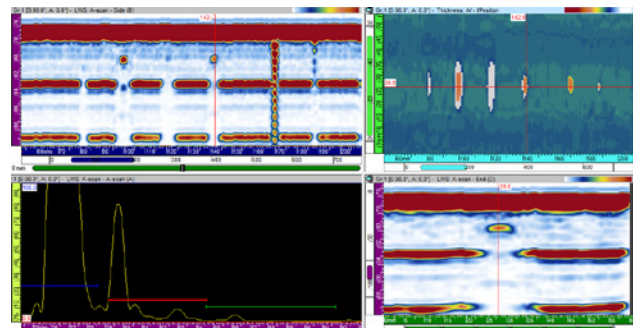
- » Material to be inspected must be penetrable by ultrasonic sound waves
- » The outer surface of the asset under inspection must be clean and free from loose impediments such as insulation or debris. Debris could cause the ultrasonic signal to scatter, preventing it from reaching the inner surface. In this scenario, a back wall echo may not be strong enough to allow credible data to be recorded.
- » Not suitable for non-ferrous material



1m section of 3 inch pipe exhibiting cone shaped pitting



Data representation of 1 inch reference/calibration block



Response from irregular shaped indication (DOME)