

OmniScan™ X4 PAUT and ToFD Flaw Detector

The OmniScan™ X4, available in South Africa through Techtra Engineering Consultants, is a comprehensive multi-technology inspection toolbox that enables multiple ultrasonic testing techniques to be used to reliably detect and accurately assess flaws and corrosion damage.

Leveraging advanced imaging and measurement capabilities, the new OmniScan™ X4 is ideal for locating and assessing flaws and damage severity before it becomes critical, protecting the integrity of critical assets and infrastructure.

In addition to phased array ultrasonic testing and Time of Flight diffraction (ToFD) technology, all OmniScan X4 models come standard with phase coherence imaging (PCI), the total focusing method (TFM), and plane wave imaging (PWI), with their ease of use makes them more accessible for new users. Using these multiple tools, users can be confident that the information about indications in their assessments is accurate and complete.

Phase coherence imaging (PCI) enables NDT technicians to decisively identify and interpret challenging flaws, such as hook cracks, and clearly represent other hard-to-detect defects. Since phase-based PCI is far less susceptible to attenuation from adjacent flaws than amplitude-based techniques, accurate assessments of fine flaws such as stress corrosion cracking (SCC) become possible. This is because PCI accentuates tip diffractions of SCC, so each crack's depth can be more easily characterised, and the software can be used to quickly isolate the deepest flaws.

Up to 3x faster with TFM: Exploiting TFM's crisp definition and even focus enables significant productivity increases. Depending on the configuration, the OmniScan X4 series' TFM is up to three times faster than its predecessor, the OmniScan X3 64, when using the sparse firing mode.

Dual-Sided Weld Inspection with Twin TFM and PCI offers even greater efficiency. The individual attributes of PCI and TFM can be used to simultaneously and thoroughly investigate weld volume on both sides. Using two probes mounted on a scanner such as the AxSEAM™ long-seam scanner, NDT Inspectors can produce crisp TFM and PCI results in one pass.

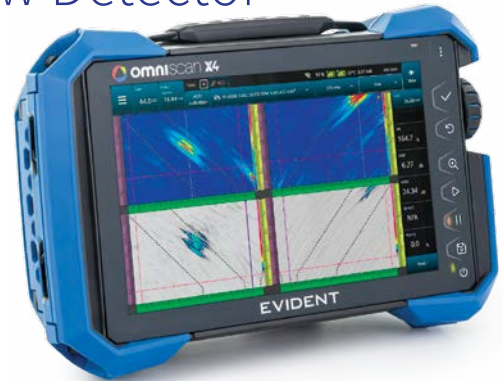
Intuitive Application Presets: For Improved efficiency and consistency, OmniScan X4 application presets for common corrosion and flaw detection applications are available for HydroFORM™, RollerFORM™ or FlexoFORM™ scanners. Each option pro-

vides preprogrammed parameters that can be edited as desired. Even new users can produce and reproduce optimal setups for PA and PCI inspections in minutes.

The unique merged B-scan data view makes it easier to distinguish suspected flaws from geometric echoes. This data view combines all B-scans into a single view, exponentially increasing the efficiency of B-scan screening. Optimised B-scan layouts, including the B-S-A single-group and A-B-S multigroup, further improve an inspector's ability to identify suspect indications clearly.

For pipelines and large assets, the OmniScan X4 software's intuitive step-by-step scan plan and 3D graphics facilitate setup, from basic to complex. During inspection and analysis, real-world references, orientation correction, and a high data volume capacity help save time on scanning, analysing, organising the scan results, and producing the report.

- During setup, the scan axes can be given custom names to help manage scanning data post-inspection. In addition, a reference point on the scan plan relative to the asset's datum can be established to help position the scanning results within the asset schema.
- Thanks to the 1 TB solid-state drive (SSD), bigger parts can be inspected for a longer period of time, without having to pause mid-job to transfer data. All OmniScan X4 models are also equipped with a fast processor and expanded RAM, enabling them to process data rapidly and enhance the software's responsiveness, which is nearly instantaneous for common operations.
- From a reporting perspective, true orientation correction of each raster scan pass constructs an image of the data that accurately depicts the inspected area, making it easy to understand. A wider pulse voltage range



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(5 Vpp–160 Vpp) makes it easier to identify the true signal peak, as low voltages prevent signal saturation and high voltages improve the signal-to-noise ratio (SNR) in attenuative materials, providing clean, high-quality images for better measurement reliability and consistency.

With OmniScan X4 onboard software (MXU 6), new features and enhancements that expand capabilities and improve user-friendliness can be downloaded quarterly, without reinvestment. Communication between an OmniScan X4 unit and external software is available via the free OmniScan Black Box app and the NDT Device API (application programming interface), which uses an open-code protocol developed by Evident.

Integrating an OmniScan X4 unit into your inspection ecosystem unleashes the potential to advance, diversify, and reach peak inspection productivity. Techtra, with over 30 years of experience serving and supporting the NDT Inspection sector across South Africa and its surrounding regions, is the exclusive distributor for EVIDENT OmniScan™ X4 solutions and several other leading brands.

<https://techtra-ndt.co.za>



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