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Insight

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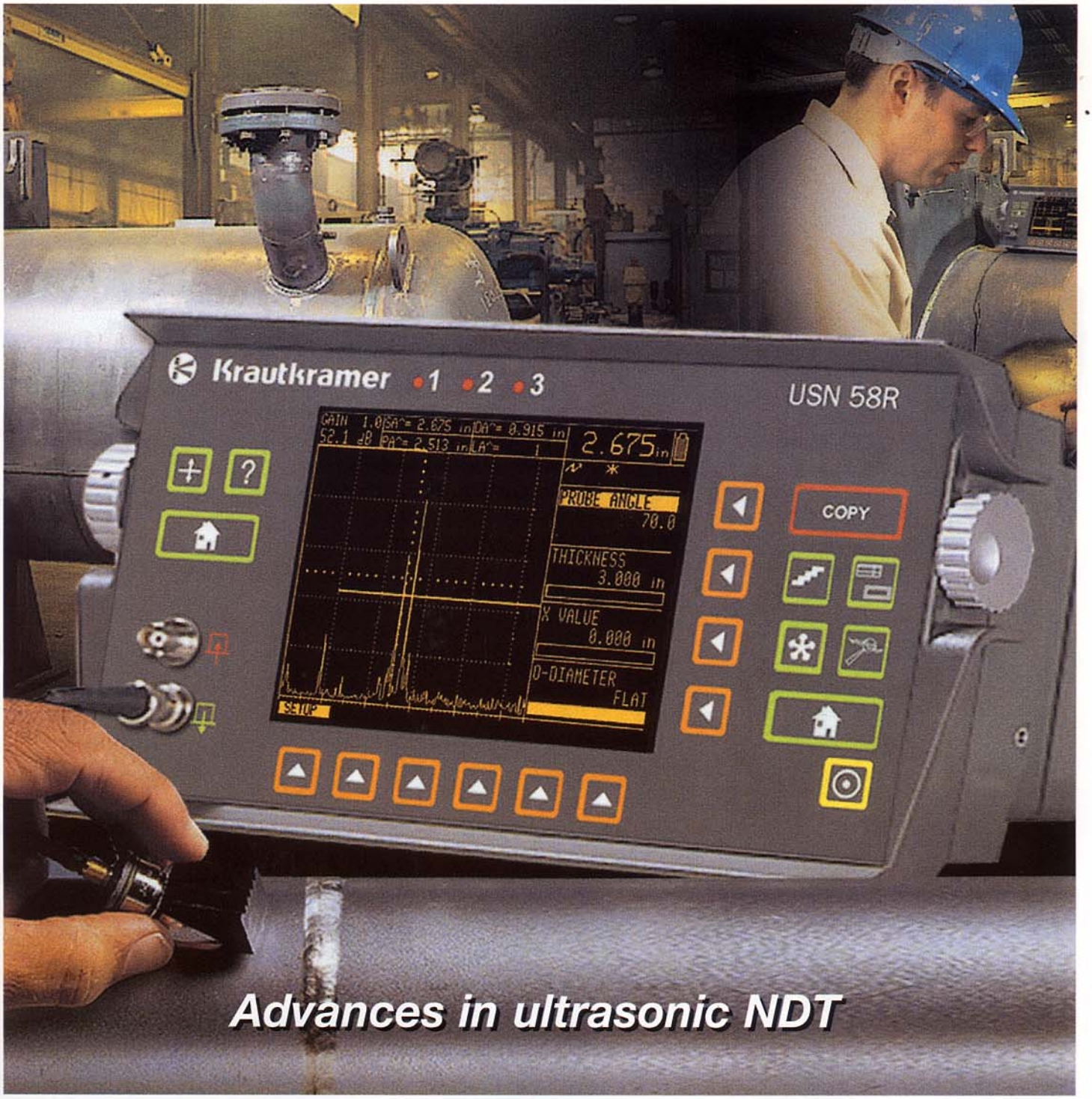


Advances in ultrasonic NDT

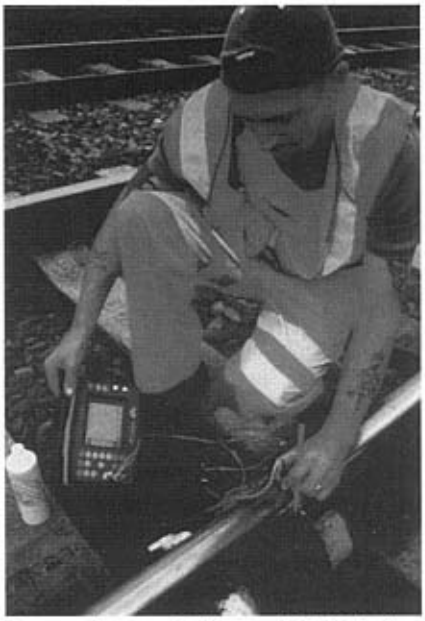
The Journal of The British Institute of Non-Destructive Testing

Railtrack approval for Sonatest's new Railscan 125 LCD

Sonatest has announced that the new Railscan 125 LCD has successfully gained a Certificate of Acceptance from Railtrack. This certification allows and approves the Railscan 125 LCD to be used throughout the Railtrack infrastructure.

The improvements that have been made on the predecessor the Railscan 125 are mostly cosmetic or software-oriented, making the unit more user-friendly and more adaptable to the working environment.

A new passive LCD replaces the colour screen, which also has a backlight and contrast control; all of these elements yield better viewing conditions in sunlight.



Sonatest's new Railscan 125 LCD has gained a Certificate of Acceptance from Railtrack

The previous aluminium case is replaced by Xenoy and the unit's dimensions are more compact at 255 x 145 x 145 mm, compared to 237 x 135 x 200 mm. Additionally, the Railscan 125 LCD is now lighter than before - weighing in at 2.9 kg instead of 5 kg - making the unit more portable and easy to handle whilst out in the field. Further improvements include a new lithium ion battery replacing the nickel cadmium power source and front fascia output sockets have been added for charge, auxiliary and TX/RX sockets.

The A-scan memory of the Railscan 125 LCD has been increased to 100 A-scans and the PRF has been fixed to 1000 Hz in order to maintain the 0.6 s delay on Gate 2.

A completely new feature is a key lock facility in the software, which is triggered by the freeze/peak button. This locks all the function keys to prevent any accidental changes to the set after calibration and set up. When in use a warning is displayed on the screen advising the operator it is in this mode - a time-saving feature which improves the accuracy and reliability of readings out in the working field.

The new Railscan 125 LCD ultrasonic flaw detector has made use of new technology that has come available to enhance its efficiency and reliability for ultrasonic testing in the rail industry. The Railscan 125 LCD is covered by a comprehensive two-year warranty and manufactured under a quality system approved by British Standards Institute to ISO 9002. **Enquiry No 111-18**

New optical targets extend applications and accuracy of portable CMM laser trackers

Two new optical targets that enhance the capabilities of laser trackers - portable coordinate measuring machines used in automotive, aerospace, and general manufacturing industries - have been introduced by US company SMX Corporation. Both the spherically mounted retroreflectors (SMRs) and deep access retroprobes are completely compatible with CMM laser trackers from any manufacturer.

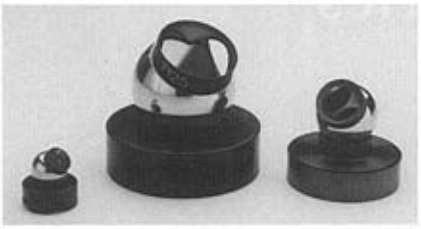


Figure 1. New spherically mounted retroreflectors from SMX Corporation improve the accuracy of laser trackers for measuring large objects

The new spherically mounted retroreflectors (Figure 1) feature an advanced seam design that provides greater stability over time and temperature than other SMRs. The new seam design is based on technology developed by NASA. The design improves the integrity of the fit between mirror panels within the ball-shaped target, resulting in the smallest gap width in the industry, the company reports. The tighter fit protects against the potentially destabilising effects of temperature variations and extends target life. The small gap width and flatter mirrors increase the power of the laser beam that is reflected back to the tracker, improving measurement accuracy.

Each SMR is made of highly magnetic chrome carbon steel with a hardened steel collar to protect against damage. Three sizes are available: 12.7 mm, 22.2 mm, 38.1 mm ($^1/_2$", $^7/_8$", $1^1/_2$").

The new deep access 'RetroProbe400' (Figure 2) measures recessed features up to 101.6 mm (4") deep. It can quickly measure small pockets, holes, corners, punch marks, contours, crosshairs, scribed lines and other

Figure 2. The new deep access 'Retroprobe400' makes it easier to measure recessed features of large objects with a laser tracker

hard-to-reach features with high accuracy and repeatability. Spheres and centre points can be determined with one measurement instead of the multiple steps required with standard probes.

Two interchangeable tips are provided: a zero offset point tip and a 3-mm ruby ball tip.

Other ball tip sizes are also available.

Laser trackers can be up to 10 times more productive than other portable CMMs, the company reports. Unlike large, stationary CMMs, SMX laser trackers can be used on the factory floor, outdoors, or wherever needed. They can also be embedded into automated processes. Applications include inspection, alignment, development of templates for layout and fabrication, reverse engineering of large parts or objects, CAD interfacing, large-scale paraboloid measurement, and others.

SMX offers two models, the Tracker 4000 and the Tracker 4500. The 4500 includes absolute distance measurement (ADM), which eliminates the need to return the target to a starting point when the beam is broken. This 'point-and-shoot' capability makes the 4500 ideal for use in congested areas and for measuring hard-to-reach features.

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Enquiry No 111-19