

DINSEARCH 1-00



DINSEARCH 1-00 is an electromagnetic system for rapid, high resolution inspection of carbon steel tubes in heat exchangers, coolers, boilers and similar equipment.

The traces from each tube are displayed on a computer screen, initially showing the whole length of the tube but with the facility to expand and view any section in great detail. The data is stored on hard disc, there is space for several thousand tubes, and can be down-loaded for archival storage.

The controls are simple, no complex adjustments or setting up procedures are needed.

If preferred, a conventional chart recorder can be used alongside the computer as an additional or alternative display.

A winch unit to push and pull the probe is available but is not essential because resolution and signal amplitudes are independent of pull speed.

Tubes from 15mm to 70mm o.d. in the usual range of wall thicknesses.

A probe is pushed and pulled through each tube in turn and signals are displayed that show the state of the tube.

The technique is not conventional eddy-current, remote field eddy-current or magnetic flux leakage. The wall of the tube is partially magnetised. Any loss of metal due to pitting, corrosion, erosion or other factors, results in local variations in the level of magnetisation within the tube wall. Sensors on the probe respond to these changes in the level of magnetisation within the tube wall.

Inspection speeds, typically 50 metres per minute, are similar to those achieved in non-ferrous tubes when using conventional eddy-current systems. This is much faster than IRIS ultrasonic systems and has the additional advantages that the tubes do not need to be perfectly clean or filled with water.

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Specification

Multi-channel display:- 3 channels, for details see **DINSEARCH 1-00 Display** leaflet

Initial display after each scan shows the whole length scanned, the display can be expanded to show any section in greater detail.

Analysis feature allows the operator to classify up to 4 types of feature in the trace.

All information is stored on disc and can be down-loaded.

Sensitivity:- Can detect pits less than 1mm diameter in the best quality steels but the performance depends on the quality of the steel and the type of tube. In most grades of tube, the resolution is more than adequate for the common types of defect.

Power requirements:- AC mains, universal input 90-250 volts, 50/60Hz, 500VA.

Housing:- Lockable, aluminium case

Size and weight:- Not including probes: 460 x 390 x 240mm, 15kg.

Air transportation:- The equipment does not contain or use any hazardous components and does not use permanent magnets.

Applications

Tubular exchangers of all types with carbon steel tubes from 15mm to 70mm o.d. in the common ranges of wall thickness

Many of the tubes in water-tube boilers larger than 35mm o.d. (For furnace wall tubes use DINSEARCH 2-00).

Fin-fan coolers with aluminium fins.

Heat recovery boilers with tubes from 15mm to 70mm o.d. in the common ranges of wall thickness.

Tubular exchangers with alloy tubes where the material is ferro-magnetic, e.g. ferritic stainless steels, many nickel alloys. (If a magnet will hang onto the material, DINSEARCH 1-00 will probably inspect it)

Support services

The Validation Centre Ltd. will be pleased to discuss possible applications of the equipment, write, call, fax or e-mail us.

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