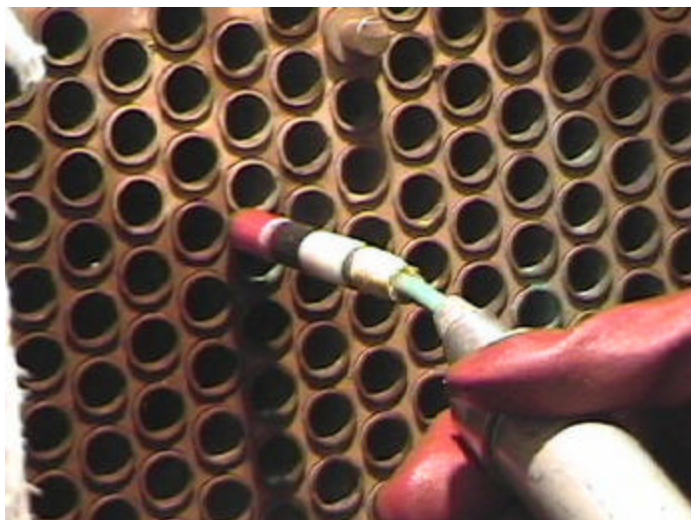


INSPECTION SERVICE FOR CONDENSER AND HEAT EXCHANGER TUBING USING HIGH SPEED AUTOMATED EDDY CURRENT.

From the leaders in RFET (Remote Field Electromagnetic Technique) for ferromagnetic material testing, comes the introduction of our latest service. Testex, Inc. now provides high efficiency automated eddy current testing with the Ultray ND-382 system. Not only do we offer superior flaw detecting capabilities, we also bring the element of speed. With the ability to inspect up to 8 (30ft/10m long) condenser or heat exchanger tubes per minute, this is clearly the fastest turn-key inspection in the world.

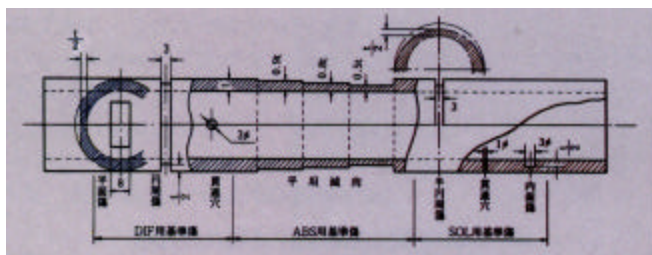


Probe about to be inserted into the next tube with air gun.

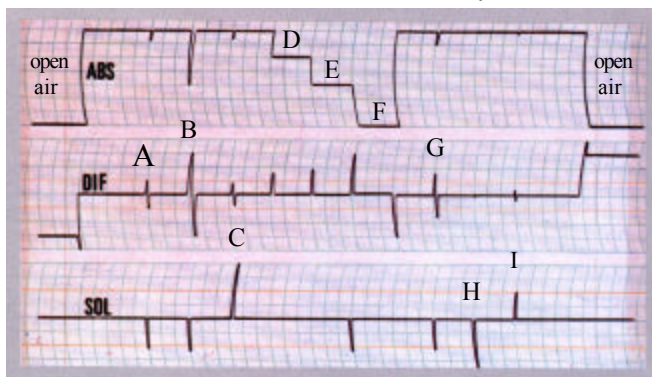


Analysis being done online as tubes are being tested.

FLAW REPRESENTATION



Calibration standard with various defects



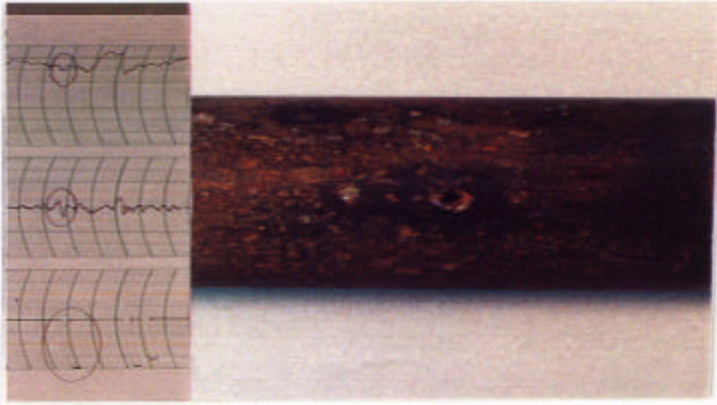
Typical response from the above calibration standard

- | | |
|-----------------------------|---------------------------|
| A) Flat O.D. scallop | G) 180 degree O.D. groove |
| B) 360 degree O.D. ring | H) 1mm thru hole |
| C) 3mm thru hole | I) 3mm I.D. pit |
| D, E, F) Long O.D. thinning | |

ADVANTAGES OF OUR SERVICE

- Inspection of up to 8 tubes per minute (30ft/10m long).
- Over 25 years of actual field testing experience.
- I.D./O.D. defects are immediately distinguishable.
- Uniform wall reduction easily detected.
- Sizes and shapes of defects determined instantly.
- Can detect as small as a 0.5mm diameter thru hole.
- Unwanted signals such as support plates can be suppressed.
- Possible to inspect over 2200 tubes (10m long) in a normal working day using a single instrument.
- Analysis of each tube is made on the spot.
- Preliminary report issued shortly after data acquisition.
- Final report including detailed interpretation submitted within two to four weeks after inspection.

NATURAL DEFECTS



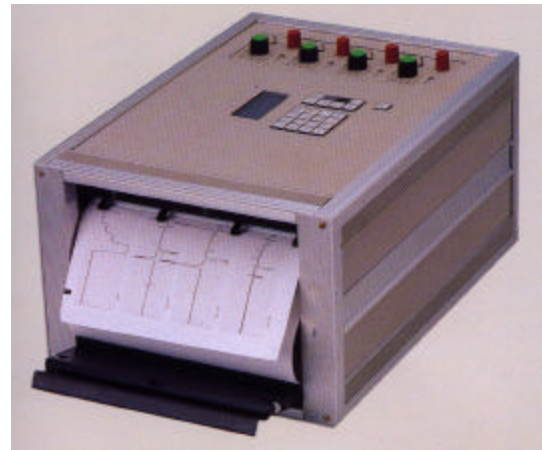
Thru hole from the O.D.



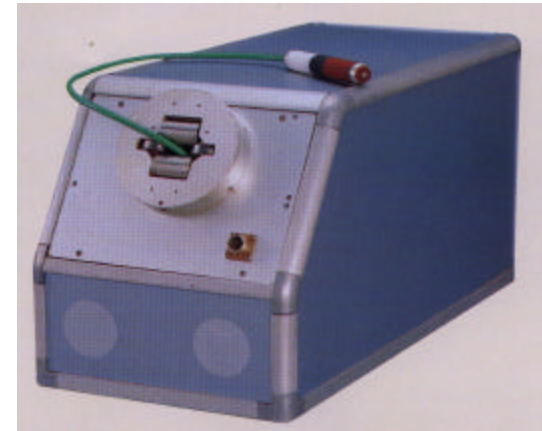
Ammonia attack at the tube support



The ULTRAY ND-382 multifrequency Eddy Current instrument



The three channel, curvilinear, thermal writing strip chart recorder



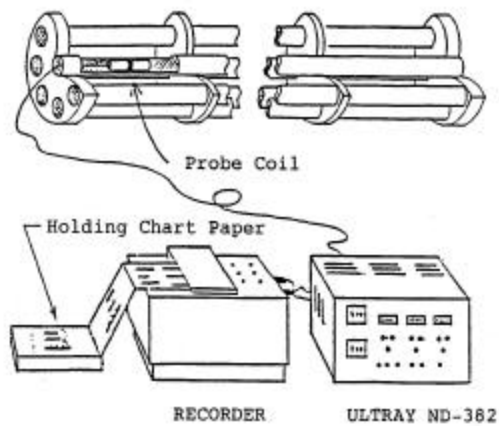
The automated pneumatic probe pusher/puller



The insertion device for the automated probe pusher/puller

COMPLETE SYSTEM

The complete system includes the ULTRAY ND-382 multifrequency Eddy Current instrument, a three channel curvilinear thermal writer strip chart recorder, a pneumatic probe pusher/puller, and communication device for constant contact between analyst and operator. See abbreviated diagram below.



The complete integrated system