



Ultrasonic Testing of Tubes for Detecting differently oriented Flaws

Ultrasonic Application Solutions

Application

In the field of tube manufacturing it is very often the case that flaws are found in various angles to each other. This is what makes normal testing with standard probes impossible.

The European Solutions Center provides the answer to this problem with the application of probe clusters which includes several probes for the inspection of different kind of flaws. .

Solution

A probe cluster is recommended for detecting the differently oriented flaws. The cluster used here contains five probes which have an inclined arrangement. This is how transverse waves at an angle of 45° each are generated in the steel tube wall.

Holding device for 5 ultrasonic probes for the detection of longitudinal and transverse flaws and for wall thickness measurement on tubes as well as delamination.

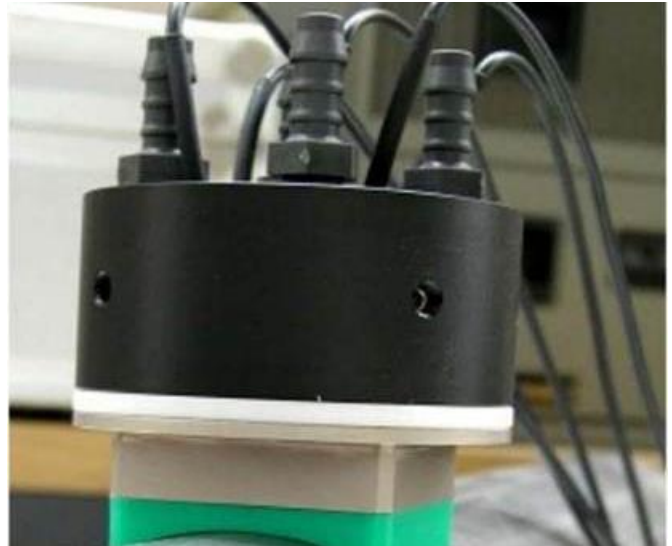


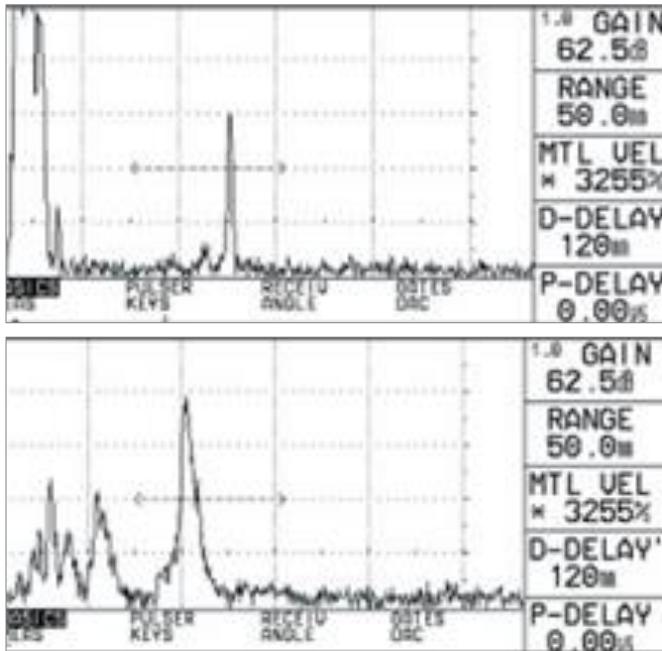
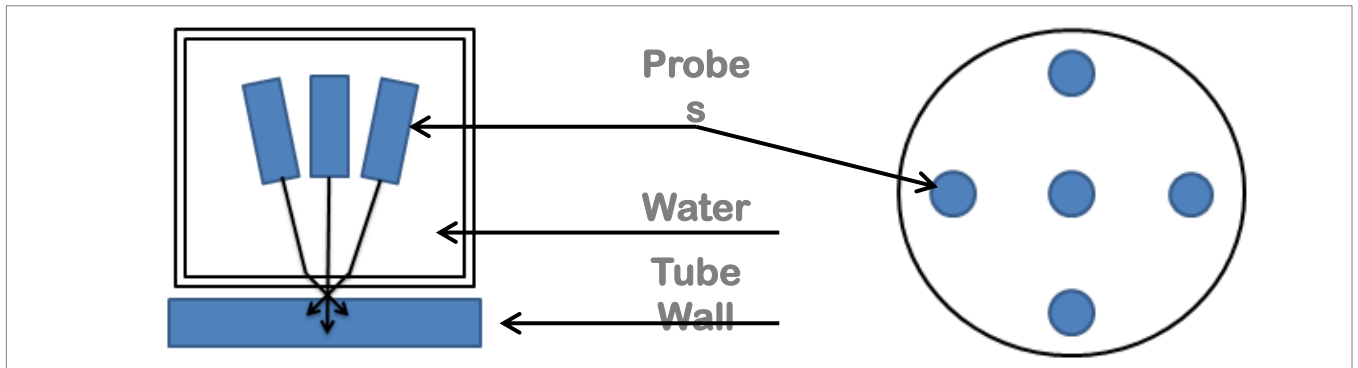
Figure 1: Probe holder for the inspection of tubes

All flaws can be detected with a good signal-to-noise ratio by means of the equipment which consists an ultrasound flaw detector (e.g. USM 36 or USM Go+), a multiplexer MUX D and the „cluster“.

The cluster (probe holder) is filled with water and is used with immersion probes of type H M, e.g. H 10 M. The cluster is built for the inspection of tube diameter between 50mm and 300mm (acc. to customer's request)



Results



The upper picture demonstrates the probe arrangement in the probe holder. The left part presents the side view of the probe cluster, the picture on the right shows the top view. In the pictures on the left, an echo of a longitudinal flaw can be seen in the upper A-scan. The A-Scan on the bottom illustrates an example of a transverse flaw.

General solution information

- Flaw detector: USM 36
- Cluster M
- Immersion Probes type H M

Your benefits

- Find differently orientated flaws within one inspection
- Save money by improving time
- Ensure a high quality rating
- Reduce field failures and potential liability

Part numbers			
USM 36	0037400	MUX D	0034784
H 10 M	0066406	Cluster M	0068687

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