Ultrasonic Detection of Cracks

Alex KARPELSON*,
*Inspection & Maintenance, Kinectrics, M8Z6C4 Toronto, Canada
e-mail: alex.karpelson@kinectrics.com, phone: 416-207-6000 x 5963

Abstract:
Results of the ultrasonic inspection of tubes sometimes are not satisfactory due to inability to detect shallow and narrow cracks. It is therefore worthwhile to develop some special and at the same time simple ultrasonic methods for tubes examination, which could significantly improve inspection capabilities. Combined technique, employing two transducers working in parallel, allows “seeing” crack simultaneously at different angles. The large normal beam probe due to various angles and directions of flaw insonification allows detecting the crack and sometimes even “depicting” its shape. Combining obtained data, one can “reproduce” crack shape and orientation, as well as assess its dimensions. Using special software it is possible to generate an isometric (3D) image of a crack.

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