

APPARATUSES, SYSTEMS, AND METHODS FOR DETECTING KISSING BONDS IN BONDED JOINTS

ABSTRACT

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Disclosed herein is a detection assembly for detecting kissing bonds in a bonded joint of a part. The detection assembly comprises an electromagnetic shockwave generator that is configured to generate an electromagnetic shockwave through a target portion of the bonded joint. The electromagnetic shockwave has an intensity sufficient to induce a separation of a kissing bond in the target portion of the bonded joint and insufficient to induce a separation of a healthy bond, adjacent the kissing bond, in the target portion. The detection assembly also comprises an ultrasonic sensor that is configured to generate a transmitted ultrasonic pulse, direct the transmitted ultrasonic pulse into the target portion of the bonded joint, and receive a received ultrasonic pulse from the target portion of the bonded joint in response to the electromagnetic shockwave generator generating the electromagnetic shockwave through the target portion of the bonded joint.

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Fig. 1

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