

Bolt-load in-service inspection and monitoring through novel non-destructive testing technologies

BOLT-IN

Bolts and screws are one of the most common joining techniques, but as stress concentrators, they can bring down the whole structure if not properly installed and maintained. Evaluating the load of fasteners is of the utmost importance, but it can also be dangerous, costly and time consuming.

Industry standard for bolt load evaluation, Ultrasonic Bolt Load Verification (UBLV), requires taking a baseline reading of a fastener in its loose state in addition to a loaded measurement. For already existing joints, this procedure makes it necessary to unfasten and replace the bolt. This adds lengthy auxiliary tasks and is unsafe for both facility and operator. On the other hand, bolt ma-

nufacturers can only rely on destructive testing, making full certainty of conformance unachievable and causing losses of production (1 ppm). Manufacturers and operators are demanding a new inspection technology that can tackle these barriers.

BOLT-IN concept is based on a unique dual wave probe, consisting of an EMAT (Electro Magnetic Acoustic Transducer) coil embedded with a dry-coupled piezoelectric (DCUT) transducer. This hybrid approach allows to measure bolt load in just one reading, without joint or fastener disturbance. In addition, BOLT-IN enables remote on-line monitoring and in-line evaluation of full manufacturing batches.



Innerspec Technologies, the world leader in the development and commercialization of high-power ultrasonic instrumentation for NDT applications, together with **BoltPrep**, a local inspection company highly specialized in bolt load assessment, will bring BOLT-IN to the Australian market.

For further information about other Innerspec's R&D projects, visit:
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High-performance NDT solutions
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