

INTEGRATED INSPECTION SYSTEMS



INSPECTIONS

- ② Welds
- ② Surface and Volumetric

MEASUREMENTS

- ② Thickness
- ② Material Properties

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OUR TECHNOLOGY

High-Power Ultrasonic Testing for challenging Non-Destructive Testing applications.

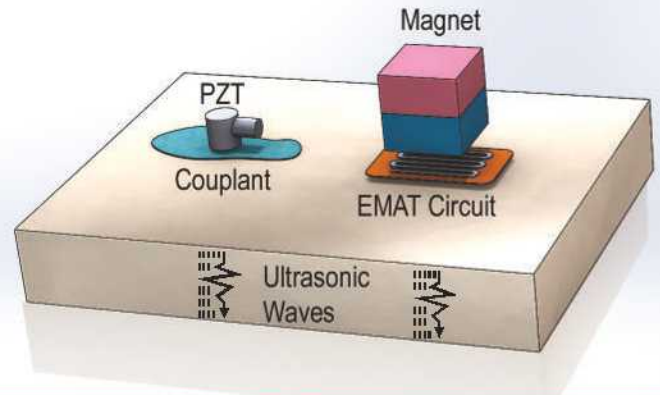
- Guided Waves (Rayleigh, Lamb and Shear Horizontal)
- Up to 20kW per channel
- Easily integrated into industrial environments
- Portable devices for In-service applications

WHAT IS EMAT?

Electro Magnetic Acoustic Transducer (EMAT) is an Ultrasonic Technique that generates the sound directly in the part inspected instead of the transducer.

- Non-Contact
- No Couplant
- Unique Wave Modes
- Volumetric inspection
- Easy one-sided inspection for inaccessible areas

UT Technologies



ADVANTAGES OF EMAT

01

DRY INSPECTION (NO COUPLANT)

Easy to automate and integrate in production

No couplant induced errors

High inspection speeds

Capable of high and sub-zero temperatures



02

IMPERVIOUS TO SURFACE CONDITIONS

Capable of inspecting rough, dirty (oily/wet), painted, oxidized or uneven surfaces



03

EASIER PROBE DEPLOYMENT

No wedges or couplant

Probe angle does not affect direction of propagation

No variations from probe to probe



04

UNIQUE WAVE MODES

Horizontally polarized shear wave energy

Guided Waves





APPLICATIONS FOR INTEGRATED INSPECTION SYSTEMS



WELD INSPECTION

Thin-Welds: Guided Waves offer high sensitivity and tolerance for the variability encountered in production.

- Highly suitable for Tailor Welded Blanks inspections
- Longitudinal and girth weld inspection in tubes
- Real-time diagnosis of forged, laser and mash welds in Coil Joining applications (Pickling/Tandem Lines, Finishing Lines)
- Lap welds in automotive production

Thick-Welds: Inspects materials at high temperature after welding providing near real-time results.

Weld Overlays: Detects surface and near surface cracks in any orientation, even on rough welds.

Multi-pass Welds: Inspection during welding of the last layer deposited (3-5mm).

Austenitic Welds: Generates Shear Horizontal (SH) wave modes for dissimilar metal welds.



SURFACE AND THIN-VOLUMETRIC INSPECTION

- Covers large areas with a limited number of sensors
- Detects surface and near-surface defects
- Surface inspections of slabs, billets
- Volumetric inspection of strip
- De-bond inspection in multi-layer laminated materials (coin stock, metallic bearings)



LARGE VOLUME INSPECTION

- Bulk-wave volumetric Ultrasonic inspection
- Inspect at extreme temperatures (-50°C to 650°C)
- Rough and uneven surfaces
- Inspection of highly attenuative or porous materials

THICKNESS MEASUREMENT

- Accuracy down to 10µm
- Deployed in harsh environments without the health concerns of laser ultrasound or radioactive devices
- Inspects through coatings and corroded surfaces with no surface preparation
- Eccentricity and ovality measurement

PORTABLE SYSTEMS FOR IN-SERVICE SOLUTIONS

Innerspec Technologies offers a wide variety of In-service inspection solutions for Oil & Gas, Energy, Nuclear, Railway, Aerospace, Automotive and Steelmaking industries. Our hand-held device **Innerspec PowerBox H** complemented with our other portable instrumentation and sensors offer unique solutions for:

- High temperature thickness measurement (up to 650 °C)
- Corrosion detection with Medium-Range Guided Waves
- Residual stress measurement
- Weld inspection
- Surface inspection
- Boiler tubes inspection

Off-the-shelf standard EMAT and DCUT sensors and accessories provide a cost-effective solution to the most common In-service and industrial applications.

Visit our website for our latest catalog.



MORE INFO? CONTACT US!

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