



Z-Scan: Dry-Coupled, Dual Axis, Scanning System

Z-Scan is a dry-coupled (rolling dual-element transducer) scanner, not much bigger than a computer mouse, that uses a unique encoder design to produce an accurate raster-type C-Scan image. The scanner is coupled with a Pocket UT system or a conventional portable PC-based system, such as our MicroSonic (with notebook PC), to provide full C-Scan (with B-Scan) data acquisition capabilities. With minimum attainable resolutions as small as .010 inches (.25 mm), the Z-Scan operates with various surface geometries such as:

Plates • Larger Diameter Pipe • Difficult to Reach Areas

Using two independent encoders that provide a computed position, a true measured area can be inspected. The encoders produce in-phase and out-of-phase signals that are converted into an X-Y type C-Scan.

With no cumbersome guides, frames or other scanner structural elements to get in the way, and no need for liquid or gel couplant, the scanner sets up very quickly in the field. It obtains full C-Scan data that can be used either on a stand-alone basis or fully integrated (using UTIA software) into other C-Scan data sets.

The unique low-interference rolling sensor employs a dual-element transducer that is tuned to obtain reliable thickness data from plate thicknesses ranging from approximately 0.10 inch (2.5 mm) through 1.5 inches (37 mm). A typical A-Scan is shown on Figure 2, with thickness measurements taken using peak-to-peak signals, paint thickness is effectively eliminated from the measurement data.

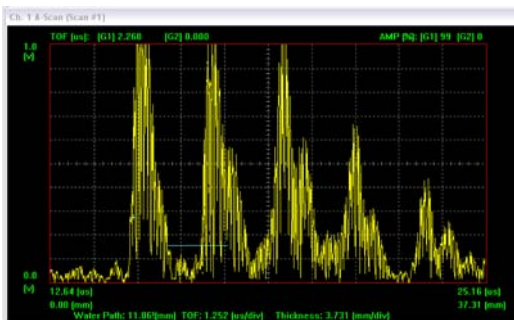


Figure 2: Typical A-Scan obtained using the Z-Scan rolling sensor.



Figure 1: Z-Scan scanning head assembly.

In addition to the basic Z-Scan design shown in Figure 1, custom modifications can be provided to enable the use of the scanner on smaller tubing through complex curved surfaces.

System Features:

- Provides full C-Scan (with B-Scan) data acquisition capabilities
- Operates with various surface geometries, such as plates, larger diameter pipe and difficult to access areas
- Obtains reliable thickness data from plate thicknesses ranging from approximately 0.10 inch (2.5 mm) through 1.5 inches (37 mm).