

# Magnetic Thickness Tool (MTT)

## Surveys variations in pipe metal thickness

### Application

- Pipe inspection for internal and external metal loss
- Surveys wall thickness
- Time lapse monitoring
- Determine the location of perforations
- Determine the location of completions equipment
- Determine the location of the collars of the first barrier

### Features

- Optimized results using MIT data for internal diameter
- Logs casing below tubing due to bow spring design
- Simultaneous operation with other **Sondex™ Ultrawire tools**
- Surface read out or memory logging
- Visualization using WIVA 3D imaging software
- Processing, evaluation, and reporting with WIPER software

The **Magnetic Thickness Tool** surveys variations in pipe metal thickness. Twelve sensors are mounted on the inside of a set of bow springs, allowing the tool to pass through tubing and log pipe sizes up to 7-in. casing.

An alternating magnetic wave is emitted from the tool. This wave permeates through the casing wall and then travels a short distance along the outside before passing back through the wall and being detected by the sensors. The velocity and amplitude of the emitted wave are affected by the metal thickness, with thinner walls resulting in faster wave propagation and less attenuation. These differences are used to detect and quantify variations such as pitting and metal loss.

Reference to the **Multifinger Imaging Tool (MIT)** data determines whether the metal loss found with the MTT is internal or external.

By combining information from the MIT and MTT in **Sondex's™ Well Integrity Visual Analysis (WIVA) software**, images can be created on a computer screen in three dimensions. Color schemes, meshes, arrows, and numerical data can be added to help an engineer understand the structure and condition of the well.

Data from the MIT and MTT can be automatically processed with **Well Integrity Processing, Evaluation, and Reporting (WIPER) software** to identify certain features in the well, most obviously the collars. After setting certain parameters, the software carries out a joint-by-joint statistical analysis and builds a report summarizing the condition of the pipe in the well.



## Specifications

Temperature rating	300°F (150°C)
Pressure rating	15,000 psi (103.4 MPa)
Tool diameter	1 <sup>7</sup> / <sub>16</sub> in. (43 mm)
Tool length	82.3 in. (2.090 m)
Tool weight	30 lb (13.6 kg)
Toolbus	Ultrawire
Current consumption	360 mA
Number of sensors	12
Sensor measure point	36.22 in. (0.92 m)
Pipe range	2 in. tubing to 7 in. casing
Coverage	100% with 12 sensors up to 5 in. ID pipe
Relative bearing accuracy	5°
Relative bearing deviation	5° to 175°
Defect resolution (internal or external)	<sup>3</sup> / <sub>8</sub> in. (9 mm) defect: 50% wall thickness, 35% metal loss <sup>3</sup> / <sub>4</sub> in. (18 mm) defect: 30% wall thickness, 20% metal loss
Materials	Corrosion resistant throughout