

Magnetic Thickness Tool

The Magnetic Thickness Tool (MTT) is designed to investigate variations of metal thickness within down hole completions.

It is run centralised within the wellbore, combined with a Multi-Finger Imaging Tool (MIT) or with MIT data available. The tool has an array of 12 sensors, with each sensor measuring a magnetic value. MIPS analysis software is available to create and display a 3D representation of recorded data. The tool can pass through tubing to log casing up to 7".

Operating Principle :

The tool generates a magnetic wave, which propagates out of the tool and through the casing. The sensor array is positioned to detect the wave re-entering the wellbore. The velocity and amplitude of the emitted magnetic wave are affected by the thickness of metal, through which it has travelled.

Greater metal thickness results in slower wave propagation and greater attenuation, so a sensor, adjacent to an area of thinner metal will receive a wave of greater amplitude some time before a sensor, adjacent to an area of thicker metal. These differences can be used to locate and quantify variations in metal thickness along the tubular.



Applications:

- Inspection of tubing and casing for internal and external metal loss
- Measures absolute wall thickness
- 3D visualisations using MIPS analysis software
- Detects pitting and gradual wall loss

Interfacing and Tool Combinations:

- Memory or Surface Read Out operations
- Standard 1³/₁₆" (30.2mm) UN 12tpi/GO
- Simultaneous operation with other Ultrawire tools

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Technical Specification:	
Temperature rating	150°C (300°F)
Pressure rating	15,000 psi
Tool body diameter	1 ¹¹ / ₁₆ " (43mm)
Make-up length	86.07" (2186mm)
Weight	30lbs (13.6kg)
Number of sensors	12
Magnetic Generator	1
Maximum pipe size	7" (178mm) ID casing
Minimum pipe size	2" (54mm) ID tubing
Toolbus standard	Ultrawire for memory or SRO
Thickness Accuracy	Depends on size of defect. In undamaged pipe, accuracy is better than 15% of wall thickness
Resolution	Ø 3/8" defect : 50% wall thickness, 35% metal loss Ø 3/4" defect : 30% wall thickness, 20% metal loss
Coverage	100% coverage up to 5" ID casing

