



NOVOTEST

Ultrasonic Testing

# TECNIMETAL

Quality Assurance Technology

## EMAT Thickness Gauge UT-3M-EMA



**EMA**  
ELECTROMAGNETIC-  
ACOUSTIC  
TECHNOLOGY

- MEASUREMENT THROUGH COATING
- CONTACTLESS MEASUREMENT
- HIGH TEMPERATURE PROBES
- VARIOUS TYPES OF SIGNAL DISPLAYING

# EMAT Thickness Gauge UT-3M-EMA

Electromagnetic-acoustic (EMA) technology for measuring thickness is based on the excitation of ultrasonic waves in the material by the generator of the device's probe, and fixing the path time of ultrasonic waves in the material. So, the technology is similar to the most common piezoceramic method, however, the EMAT Thickness Gauge NOVOTEST UT-3M-EMA has some advantages.



## CONTACTLESS MEASUREMENT



The electromagnetic-acoustic thickness gauge allows user to measure the thickness of metal products with one-side access without using couplant through a substantial gap (up to 6 mm). This significantly reduces the material- and laboriousness of the measurement process.



## MEASUREMENT THROUGH PAINTED, OXIDIZED OR OILY SURFACES



EMA technology generates waves directly in the material (ferromagnetic and paramagnetic), thus allowing measurements to be carried out under the coating, with a poorly prepared surface or even air gap, which may not be feasible with traditional methods.



## HIGH TEMPERATURE MEASUREMENTS



EMAT Thickness Gauge NOVOTEST UT-3M-EMA can be equipped with probes for operation on surfaces heated to a temperature of 600°C, which makes this device the best, and in some cases, the only possible solution.



## VARIOUS MEASUREMENT MODES



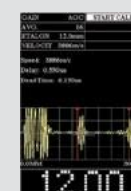
### B-scan mode

The B-scan mode is implemented in the device, which displays a two-dimensional cross-section of tested sample.



### Control mode

This mode set boundary thickness values (minimum and maximum) when measured value crossing the limiting gates - the device will signal through the speaker, and give a visual signal.



### Calibration mode

The device has the auto-calibration function, the user only needs to enter the thickness of the sample, the velocity of ultrasound in the material and the delay line will be calculated automatically.

## Comparison of EMAT thickness gauge technology and classic ultrasonic thickness gauge

	EMAT technology	Classic thickness gauge
One-side access NDT measurements	+	+
Measurement through coating	+	+*
Low temperature of environment	+	+*
Measurement through air gap	+	-
High temperature of object	+	-
Measurements without couplant	+	-
Poorly prepared surface	+	-

\* with special probe or couplant



# EMAT Thickness Gauge **UT-3M-EMA**

## SPECIFICATION

Measuring thicknesses range for steel, mm	0.5...300.0
Unit Type	mm, inch
Resolution, mm	0,01 mm (0.01 in.)
Type of ultrasonic wave	transverse
Manual gain range, dB	30-100
Ultrasound velocity adjustment range, m/s	1000...9999
Signal averaging	1...128
Operating modes	A-scan B-scan Control mode Calibration mode
Measurement methods	Autocorrelation function (ACF) Echo Echo Echo (Dual Echo) Peak peak Front
Display	320*480, 3.5"
Menu Language	Russian, English, Ukrainian
Weight of the electronic unit, not more, kg	0.5
Dimensions (L × W × H)	165×90×50 mm
Power Supply	Built-in Li-ion Battery
Time of continuous work, not less than, h	8
Operating temperature range for the electronic unit, °C	-20 to +50



### STANDARD PACKAGE

- Electronic unit
- EMAT probe
- Cable 2 Lemo - 2 Lemo
- USB cable
- Charger
- Case
- Operation manual

### AVAILABLE OPTIONS

- High temperature probes
- Calibration blocks
- Handle for HT probe



**NOVOTEST**  
QUALITY TESTING DEVICES