

# eThick-4000

## Pen-Style EMAT Thickness Gauge and Crawler System



## Contact us

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## Feature and Application

The pen-style electromagnetic acoustic transducer (EMAT) high-temperature corrosion thickness gauge is an ultra-compact, couplant-free, non-contact thickness measurement instrument. It features a straight-beam probe for flaw detection and enables thickness measurement of metallic or ferromagnetic materials. Utilizing EMAT technology, this instrument requires no surface preparation and no couplant during inspection, making it suitable for corrosion detection and thickness measurement in various complex industrial environments.

### Product Feature

- Compact and Portable: Pen-style design for easy handheld operation and on-site portability
- Wireless Connectivity: The main unit connects wirelessly to tablets or smartwatches;
- Low Surface Preparation Requirements: Non-contact measurement on rough surfaces without grinding or polishing;
- Coating-Insensitive: Measures through surface coatings without removal;
- No Couplant Required: Enables high-temperature thickness measurement with temperature compensation;
- Interchangeable Probes: Supports quick swapping between ambient-temperature and high-temperature probes;
- Multi-Function Integration: Features both A-scan and B-scan modes, combining flaw detection and thickness measurement capabilities.

### Product Application

- Corrosion detection and wall thickness monitoring for petrochemical pipelines;
- Wall thickness inspection of special equipment including boilers, pressure vessels, and storage tanks;
- Metal thickness measurement under high-temperature operating conditions;
- Precision thickness measurement of components in machinery and automotive manufacturing;
- Precision inspection in aerospace manufacturing;
- Thickness monitoring during metal smelting and rolling processes;
- Corrosion inspection for offshore platforms and marine vessels.



## Product Details



**1. Display Screen**  
**4. Up Button**

**2. Power Button**

**3. Settings Button**

## Product Details

### APP Operation Instructions



- In wireless measurement mode, waveforms can be viewed on a tablet or smartwatch, with corresponding parameters adjustable remotely.
- A-Scan Function is primarily used for waveform observation, adjustment of common parameters, display of measured thickness, pause/start measurement, and data saving. Common parameters include:
  - Gain: Supports both auto gain and manual gain modes
  - Gate: Three modes available—no gate, single gate, and dual gate
  - Averaging Level, Material Type, Detection Mode, Range Extension, Operating Temperature, Sound Velocity

## Tri-Wheel Magnetic Stress Robot (Crawler)

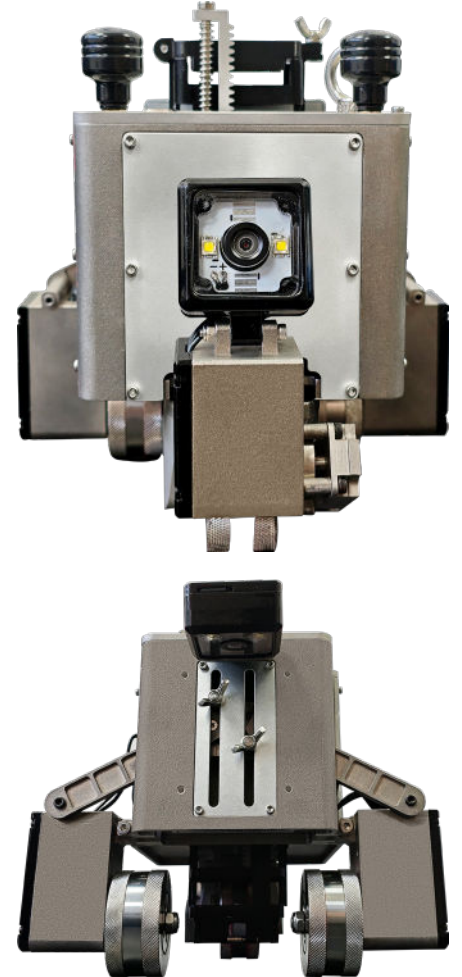


- The tri-wheel magnetic stress robot is an ultra-portable intelligent inspection crawler, specifically designed for automated inspection of pipelines, vessels, and other industrial facilities. This robot features wireless remote operation capability and can carry multiple inspection main units, enabling continuous automated measurement while significantly improving inspection efficiency and safety.

## Feature and Application

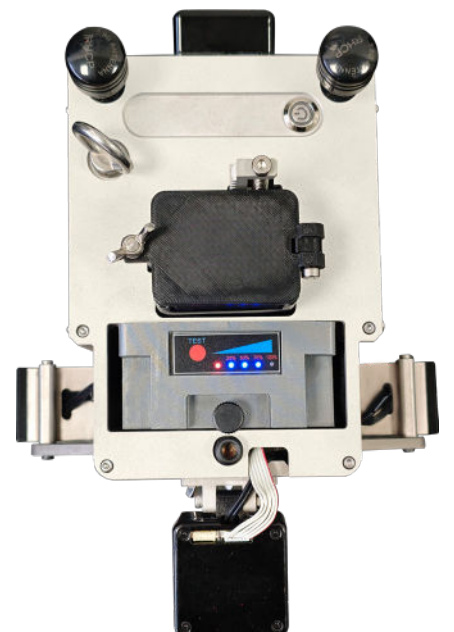
### Product Feature

- Ultra-Portable Design: Easy to operate, transport, and store.
- High-Brightness Display: 7-inch display with maximum brightness up to 1000 nits.
- Wireless Remote Operation: Effective remote control range of 0–24 km, supporting long-distance operations.
- Multi-Camera Observation: 2 cameras with multi-channel composite auxiliary lighting.
- Small Pipe Diameter Compatibility: Minimum crawling pipe diameter of 50 mm.
- Built-in High-Capacity Battery: No external power supply required; up to 3 hours of continuous operation.
- Real-Time Data Transmission: Real-time feedback of robot travel distance.
- Dual-Mode Operation: Full-screen touch plus physical button dual-mode control.



### Product Application

- Internal and external wall corrosion inspection of petrochemical pipelines.
- Automated internal inspection of storage tanks and pressure vessels.
- Structural inspection of offshore platforms and marine vessels.
- Pipeline and boiler inspection in the power industry.
- Safety inspection of nuclear industry facilities.
- NDT inspection of bridges and steel structures.
- Remote inspection in confined spaces and hazardous environments.



## Product Details



**1.Wheel**

**2.Antenna**

**3.Front Camera**

**4.Rear Camera**

**5.Battery Compartment**

**6.Main Unit Compartment**

## Product Details

### Remote Controller Button Definitions



- Controls robot forward/backward movement. Swing up and down; the greater the amplitude, the faster the speed.
- Controls robot steering. Swing left and right; the greater the amplitude, the larger the turning angle.
- Controls main unit elevation. Swing upward to the highest position, downward to the lowest position.
- Adjusts the lowest descent position of the main unit. Turn counterclockwise to lower, clockwise to raise.
- Lighting control. Used in conjunction with the SA joystick.

## Product Details

### Integrated Inspection System Solution







- The pen-style EMAT thickness gauge and the second-generation tri-wheel magnetic stress robot can be combined into a complete automated inspection system, enabling:
- Continuous multi-point automated measurement with the robot carrying the thickness gauge.
- Ultra-long-distance remote operation up to 24 km, eliminating the need for personnel to enter hazardous areas.
- High-temperature operation up to 800°C with couplant-free, non-contact measurement.

# Technical Specification

Robot Body	Dimensions	(200×230×210)mm
	Travel Speed	(0-3)m/min
	Net Weight	Approx. 3.6KG
	Main Material	Aluminum Alloy 6061 / ABS
Power System	Power Input	12.6V, 2A
	Battery Type	Li-ion Battery
	Operating Endurance	3hours
Camera	Quantity	2pcs
	Physical Pixel	2 MP
	Video Resolution	1080P/720P
Remote Controller	Display Screen	7-inch High-Brightness Display, 1920 × 1200 pixels
	System Configuration	Android 9.0
	Storage	4 GB RAM, 64 GB Storage
	Charging Time	3.5h(30 W Fast Charge)
	Operating Endurance	10hours
	Waterproof Rating	IP4X
	Effective Remote Control Range	(0-24)KM
Operating Temperature		-10°C~50°C

## Standard Delivery

Name	Qty	Photo
Thickness Gauge	1pc	
Crawler	1pc	
Tablet	1pc	
Remote Controller	1pc	
Li-ion Battery	2pcs	
Charging Cable	1pc	
Demagnetization Plate	1pc	
WiFi Antenna	2pcs	