

PMT-360 Series Ultrasonic Thickness Gauge

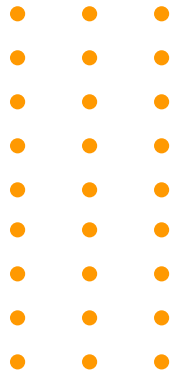
Technical Solutions



BRK provides professional non-destructive testing solutions. Since its founding, the company has been dedicated to delivering high-quality instruments and expert services to meet customer demands in scientific research, industrial production, quality control, and related fields.

BRK's core strength lies in its continuous technological innovation and superior product quality. The BRK team comprises experienced and highly skilled professionals focused on advancing research and development in non-destructive testing. Combining technical expertise with a commitment to innovation, BRK serves clients worldwide with cutting-edge products and solutions.

BRK specializes in solving complex challenges by offering customized non-destructive testing solutions. As an industry pioneer, the company stays ahead of trends and technological developments. Its product portfolio includes ultrasonic flaw detectors, eddy current flaw detectors, coating thickness gauges, ultrasonic thickness gauges, Leeb hardness testers, surface roughness testers, gloss meters, industrial borescopes, and more. With a strong global reputation, BRK maintains an outstanding customer satisfaction rate of 95.7%.





One-Stop Supplier of Non-Destructive Testing Solutions

The factory under the BRK brand possesses complete production processes, sophisticated testing methods, and strong R&D capabilities. As a high-tech enterprise specializing in the development, production, sales, and service of non-destructive testing instruments, all products from portable NDT equipment to large-scale automated systems feature independent intellectual property rights. The company has applied for dozens of invention patents, utility model patents, and software copyrights, obtained the Intellectual Property Management System Certification, and was honored as a National High-Tech Enterprise in 2024.

Quality Testing

We collaborate with authoritative quality supervision institutions and utilize the most advanced high-performance testing equipment. All products undergo rigorous testing procedures to ensure stability and compatibility. Our scientific and meticulous quality inspection processes comply with national industry standards.

Quality Assurance

For any quality-related inquiries, we provide product origin certification. For specific customer requirements, we offer comprehensive laboratory testing services.

Quality Commitment

We guarantee top-tier product quality. Every product we provide is manufactured at our original facility, delivered in original packaging, and strictly adheres to professional quality standards. Our standardized, precise, and scientific management and monitoring processes ensure authenticity and premium quality at every stage.



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BRK Website

Part 1: Product Introduction



Attenuation
material measurement

A/B scan display mode

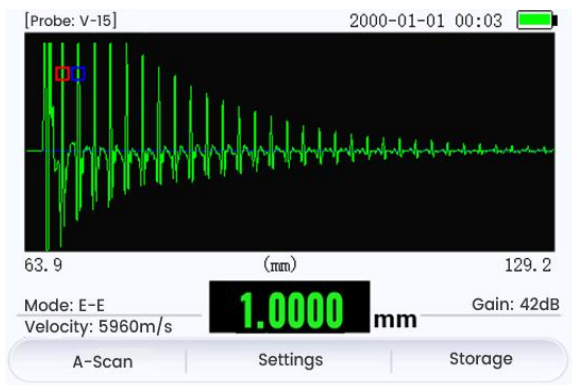
Ultra-thin part measurement/
Capable of measuring
down to 0.05mm

Thickness measurement/
Accuracy up to 0.0001mm

Coating penetration/Maximum
penetration of 30mm

Metal/non-metal
coating measurement

PMT-360 Series Ultrasonic Thickness Gauge



Measurement Interface



The thickness values measured using ultrasonic technology are precise, reliable, and repeatable. A thickness reading can be obtained instantly from one side of the material, eliminating the need for destructive cutting of the workpiece.

The PMT-360 Series Ultrasonic Precision Thickness Gauge, independently developed by Botech, is a portable ultrasonic thickness gauge specifically designed for industrial applications requiring high-precision and highly reliable thickness measurements. It is particularly suitable for industries such as petrochemical, power generation, pressure vessels, boilers, pipelines, shipbuilding, aerospace, machinery manufacturing, and metallurgy. Key application scenarios include: high-temperature equipment wall thickness monitoring (using high-temperature probes), corrosion detection, measurement of coated workpieces (using dual-element probes), material acceptance, quality control during equipment manufacturing and installation, and safety assessment of in-service equipment. By offering high-precision measurement, exceptional probe performance (especially for high-temperature and coated measurements), robust data management capabilities, and a rugged yet portable design, it provides industrial users with an efficient and accurate solution for critical thickness measurements in various demanding environments, serving as a critical tool for equipment safety operation, preventive maintenance, and quality control.

Part 2: Product Advantage

BRK PMT-360 Series is a high-precision, multi-functional, portable, and durable ultrasonic thickness gauge, particularly excelling at precise thickness measurement on high-temperature surfaces and coated workpieces, making it a reliable choice in the field of industrial non-destructive testing. This instrument can be widely applied for pipe and metal material thickness measurement, corrosion monitoring, as well as thickness measurement of various dense materials such as forgings, castings, plastics, glass, and ceramics in industries including manufacturing, aerospace, shipbuilding, and special equipment. It is also suitable for thickness measurement of non-metallic materials and precise measurement of coating thickness on non-metallic materials.

Main Features & Functions:

- Ultra-thin precision measurement from 0.05mm, covering a range of 0.05–2000mm (different models optimized for thin/thick materials);
- High-precision measurement: Resolution up to 0.0001mm (0.1μm);
- Wide bandwidth adjustment: 0–50MHz continuously adjustable bandwidth combined with 0–120dB ultra-wide gain adjustment, adapting to various complex detection environments (e.g., rough surfaces, high-temperature workpieces);
- Adaptive sound velocity: Continuously adjustable material sound velocity range of 300–30000m/s, supporting calibration for unknown materials (deriving sound velocity via known thickness);
- Supports multi-unit switching (mm/inch/μm) to meet diverse application needs;
- Supports multiple modes including E-E (Echo-Echo), P-E (Pulse-Echo), Thin (for thin materials), and CTM (Coating Thickness Measurement), suitable for metal/non-metal

- materials and coating measurement;
- A-scan (real-time waveform display) + B-scan (cross-sectional thickness imaging), aiding precise echo capture and defect analysis;
- Automatic intelligent echo capture + manual echo capture, allowing manual adjustment of echo position to avoid mis-measurement;
- Supports advanced functions like Blanking (masking interference zones), Locking (limiting echo capture range), and Echo Envelope to enhance measurement accuracy on complex workpieces;
- Base version with 32GB storage (DL PLUS version customizable to 1TB), supporting large-capacity storage for 240,000 sets of image+text data + 10,000 sets of parameter configurations;
- Type-C direct connection to PC for data export, no host computer software required; data includes timestamps and waveform screenshots for traceability analysis;
- Customizable parameter naming + shortcut key storage/recall to simplify repetitive inspection workflows.

Key Functions:



Part 3: Application

Thickness Measurement of Metallic Materials with Internal Corrosion



The PMT-360 Series thickness gauges are primarily used for measuring the remaining thickness of pipes, fittings, tanks, pressure vessels, hulls, and other structures affected by corrosion or erosion. Dual-element probes are most commonly employed for these applications.

- Default high-penetration measurement mode for standard dual-element probes.
- Optimized default gain for dual-element probes during calibration.
- THRU-COAT® (through-coat) and Echo-to-Echo measurement capabilities for surfaces with paint and coatings.
- High-temperature measurement: Temperatures up to 300 °C.



Pen Probe Measurement

The pen probe features a high-precision replaceable delay line with a significantly reduced contact area. This ultra-compact contact design enables stable and reliable thickness measurements in demanding conditions such as miniature components, precision grooves, and complex fillets.

- Small tubes, eggshells, workpiece grooves
- Glass bottles, glass containers, glass tubes
- Laboratory glassware, light bulbs, and luminaires

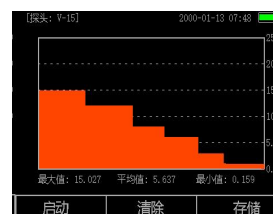
Thru-Coat®

Metal thickness is measured by utilizing a single backwall echo. This eliminates the need to remove surface paint or coatings for thickness measurement.



B-scan Option Function

This capability transforms abstract thickness values into intuitive two-dimensional cross-sectional images, enabling inspectors to rapidly and clearly identify, pinpoint, and quantify material thinning zones (particularly in metals) caused by corrosion, erosion, wear, and their distribution patterns. This significantly enhances inspection intuitiveness, efficiency, and accuracy in equipment condition assessment.



Oxide Layer/deposits Measurement

Advanced algorithms measure the thickness of oxide scale/deposits on the internal walls of boiler tubing. Quantifying oxide scale/deposit thickness enables accurate prediction of the tubing's remaining service life.



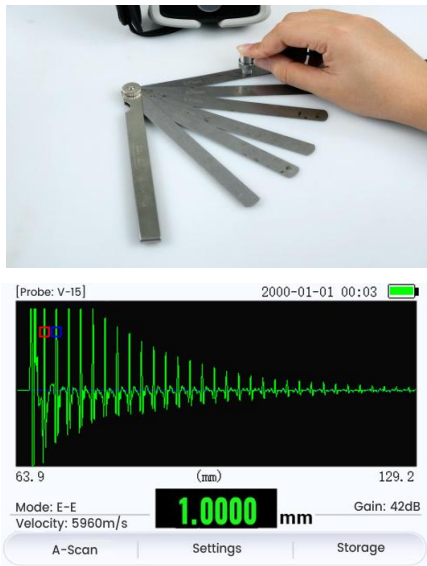
Measurement Parameter Storage Table

Its core value lies in embedding complex probe setup procedures into one-click configurable profiles. This liberates operators from repetitive tasks and potential errors, significantly enhances inspection efficiency and workflow continuity, while assuring measurement data reliability and consistency.



Thickness Measurement of a Variety of Materials (E.g: Plastics, Metals, Composites, Glass, Rubber, and Ceramics)

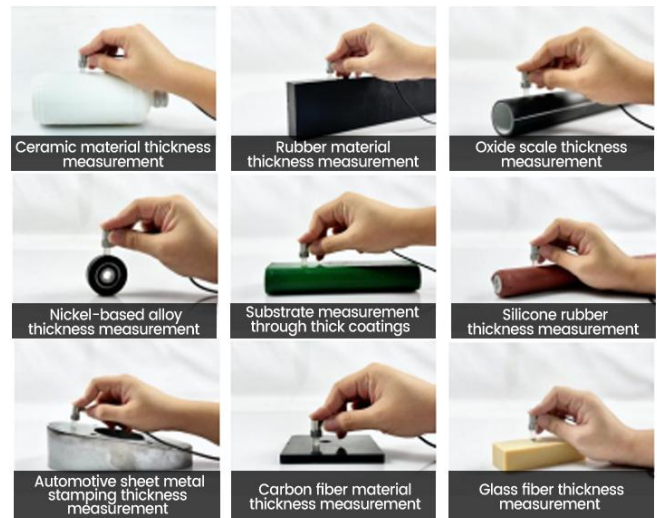
PMT-360A Ultra-thin Parts Precision



A high-resolution software option enables thickness measurements with resolutions as low as 0.001 mm.

Single-element probes enable precise thickness measurements of metals, plastics, composites, glass, ceramics, and other materials. We offer single-element probes in various frequencies, diameters, and connector types, delivering highly accurate measurements with resolutions up to 0.0001mm.

PMT-360B Thick/High Attenuation Material



Thickness measurements can be performed on a wide range of materials,

- Standard resolution of 0.0001mm applies to all probes.
- High-penetration capability enables thickness measurement of highly attenuative materials such as fiberglass, rubber, and thick castings.
- Measurement of thickness, sound velocity, or transit time.
- Automated preset applications with intelligent/manual echo capture simplify thickness measurement operations
- Configurable sampling rates: single measurement, 1Hz, 2Hz, 5Hz, or 10Hz.

PMT-360DL Universal Type for Thin + Thick (A + B)

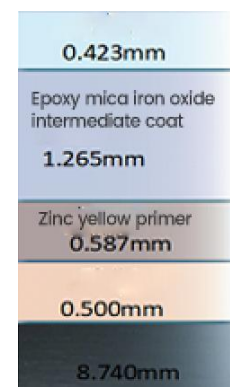


The high penetration software option enables measurements on many cast metal parts and other materials that are very acoustically attenuating.

High penetration function

This capability enables operators to measure thick-section or highly attenuative materials such as rubber, fiberglass, castings, and composites when using low-frequency single-element probes.

PMT-360C Multi-Coating



The PMT-360C can accurately measure the thickness of multiple different layers simultaneously.

Part 4: Technical Specifications

PMT-360 Series Technical Specifications

PMT-360 Series Technical Specifications					
Model	PMT-360A	PMT-360B	PMT-360C	PMT-360 DL	PMT-360 DL PLUS
Type	Thin parts, thin coating type	Thickness gauge, thick coating type	Coating and layering modes	A+B（thin+thick）	A+B+C
★Measurement Range	0.05-600mm	1-2000mm	0.05-30mm	0.05—2000mm	
★Measurement Unit	mm、inch、um				
★Measurement Resolution	0.1mm、0.01mm、0.001mm、0.0001mm（0.1-inch、0.01-inch、0.001-inch、0.0001-inch）				
★Material Sound Velocity Range	300-30000m/s				
★Bandwidth	0-50Mhz, continuously adjustable				
★Gain	0-120dB ultra-wide gain adjustment range enables optimized performance across diverse inspection environments				
★Measurement Mode	e-e/p-e/thin	e-e/p-e	e-e/p-e/ctm	e-e/p-e/thin	e-e/p-e/thin/CTM and more
★Scan Mode	A-scan, B-scan, Thickness Value Display				
★Echo Capture Method	Auto/Manual				
Calibration Mode	Auto/Manual				
★Wave Display	RF wave, POS wave, NEG half wave, FUL wave				
★Echo Envelope	Supported				
★Pulse Width	5-500 continuously adjustable				
★Drive Voltage	50-200v continuously adjustable high-pass filter				
★High-pass Filter	0-20Mhz continuously adjustable				
★Low-pass Filter	0-50Mhz continuously adjustable				
★Sampling Setup	Single, 1hz, 2hz, 5hz, 10hz optional				
Keypress Tone	ON/OFF				

★Auto Storage	ON/OFF
★Auto Shutdown	ON/OFF
★Real-time Display	Yes
★Real-time Timestamping for Stored Data	Yes
★Stored Data with Waveform Display	Yes
★Storage Parameter	Customizable parameter naming + shortcut storage/recall
★RAM	32GB base / DL PLUS 64GB / Up to 1TB customizable storage
★Storage	Supports 240,000 sets of image+text data storage & 10,000 parameter configurations/ DL PLUS version supports up to 8 million image+text datasets & 50,000 parameter configurations
★Data Output	Direct Type-C data export to PC without host software
★Instrument Anti-Slip Wrist Strap	Adjustable left/right wrist strap fixation
★Instrument Dust & Shock Resistance Silicone Protective Case	Optional
★Protection Rating	IP67 compliant design
★Li-ion Battery	Panasonic cells, 10.8V/3450mAh ultra-capacity Li-ion battery: Safe, stable, 18hr continuous operation
★Display Screen	3.5-inch color LCD screen
Dimension	193mm*115mm*54mm
Weight	0.75KG
Packaged Weight	3.2KG
Working Temperature	-10°C – 60°C; RH <90%
Language	Chinese/English, custom languages supported
Power Supply	AC/DC adapter, 15V-3.8A

Instrument Standard Configuration					
Model	PMT-360A	PMT-360B	PMT-360C	PMT-360 DL	PMT-360 DL PLUS
Key Function Highlight	Thin-Specialized	Thick/High-Attenuation Expert	Multi-Layer Coating Specialist (Metal + coating layer display)	A+B Fusion	Premium All-in-One
High Resolution	Measurement Resolution: 0.0001mm, 0.1μm, 0.00001in, 0.01mils				
Coating Mode	Features Pulse-Echo (P-E) mode supporting coating measurement & delay-line probe functionality. Suitable for thin-coating thickness measurement on wood, concrete, composites, metals, etc.				
Internal Oxide Scale Measurement	Measures oxide scale thickness on boiler tubing internal walls, simultaneously displaying base metal thickness and oxide layer thickness				
(THRU-COAT)	Conducts measurements without removing paint, plastic, rubber, ceramic, or other non-conductive protective coatings				
High-Penetration (Low-Freq) Measurement	Detects base metal defects or measures thickness through thick non-conductive coatings/materials. Utilizes low-frequency EM fields or acoustic waves for deep penetration				
B Scan	Displays measured object's thickness distribution as intuitive cross-sectional images				
Wave Display	Enables visual analysis of internal material structures, defect identification, and measurement reliability verification with RF wave				
Temperature Compensation	Material sound velocity changes with temperature, affecting thickness measurement accuracy. Automatically calculates sound velocity variation and compensates by inputting calibration block and actual workpiece temperatures, displaying temperature-corrected thickness values				
High-Capacity Battery	High-capacity 3450mAh battery cell				
RAM	32GB base / DL PLUS 64GB / Up to 1TB customizable storage				
Directional Capture	Selectable auto/manual display of captured waveforms and thickness values				
Param List	Custom parameter naming + shortcut save/recall				
Instrument Optional Configuration					
Model	PMT-360C			PMT-360 DL PLUS	
Multi-layer coating measurement	Through non-destructive testing technology, complete thickness distribution data from the substrate to the outermost coating can be accurately acquired. This enables measurement of individual thicknesses for the substrate and up to four surface coating layers , with automatic calculation of the total cumulative thickness after stacking all layers.				
Customization	/			All modules and function customization are included	

Part 5: Optional Probes and Parameter

Probe Parameter Table

Probe Parameter Table			
Series Name	Probe No.	Measurement Range	Temperature Range
V Series	V-50	0.05–5mm (requires dedicated calibration shims and ultrasonic couplant)	
	V-15	0.11-30mm	
	V-15H Hight Temperature	0.15-30mm	-5～300 degrees Celsius
	V-10	0.25-30mm	
BV Series	BV-15(0 degree)	0.25-15mm	
	BV-15(45degree)	0.25-15mm	
	BV-15(90degree)	0.25-15mm	
S Series	S-509	1-600mm	
	S-509H High Temperature	1-600mm	-10～500 degrees Celsius
D Series	D-510	1-1200mm	
	D-220	4-2000mm	
THRU-COAT® Measurement Range Chart			
Model	S-509 Probe		v15 Probe
PMT-360A	For substrate thickness ≥1mm: THRU-COAT® measurement through coatings ≤30mm		For substrate thickness <1mm: THRU-COAT® measurement through coatings ≤5mm

Part 6: Instrument Model/ Probe Reference Table

Instrument Model/ Probe Reference Table						
Host Model Optional Probe		PMT-360A	PMT-360B	PMT-360C	PMT-360 DL	PMT-360 DL PLUS
V Series Probe	【V-50】 Measurement Range: 0.05-5 mm (Requires dedicated calibration block and couplant)	√	×	√	√	√
	【V-15】 Measurement Range 0.11-30mm	√	×	√	√	√
	【V-15H High Temperature Probe】 Measurement Range 0.15-30mm -5~300 degrees Celsius	√	×	√	√	√
	【V-10】 Measure-ment Range 0.25-30mm	√	×	√	√	√
BV Series Probe	【BV-15(0 degrees Celsius)】Measurement Range 0.25-15mm	√	×	√	√	√
	【BV-15(45degrees Celsius)】 Measurement Range 0.25-15mm	√	×	√	√	√
	【BV-15(90degrees Celsius)】 Measurement Range 0.25-15mm	√	×	√	√	√
S Series Probe	【S-509】 Measurement Range 1-600mm	√	√	×	√	√
	【S-509H High Temperature Probe】	√	√	×	√	√

	Measurement Range 1-600mm, Temperature Range: -10~500 degrees Celsius					
D Series Probe	【D-510】 Measurement Range 1-1200mm	×	√	×	√	√
	【D-220】 Measurement Range 4-2000mm	×	√	×	√	√
Multi-coating measure-ment mode		×	×	√	×	√
Other customized probes and host parameter customization		×	×	×	×	√

Part 7: Packing List

Standard Accessories:

PMT-360 Series Ultrasonic Thickness Gauge		
Number	Name	Qty
1	PMT-360 host	1
2	Lithium battery	1
3	Test piece	1
4	Manual	1
5	PMT-360 Charging Adapter	1
6	Shockproof Carrying Case	1
7	Warranty Card / Certificate of Conformity	1
8	Wrist Strap	1
9	Portable Integrated Stand	1
10	Hex Key for Battery Cover	1

Optional Accessories:

Number	Name	Remark
1	Probe	See Appendix 3 for specifications
2	Probe Cable	selected based on probes
3	Lithium Battery Charging Dock + AC Adapter	1 set
4	Multi-interface Waterproof Silicone Cover	/
5	Waterproof & Shockproof Protective Case	/
6	Customized Test Block	customized based on probes
7	Couplant (High/Low-Temperature)	selected based on probes
8	Couplant(Normal Temperature)	selected based on probes

Part 8: Instrument Maintenance

1. Electromagnetic Interference Prevention

Install the instrument in environments free from strong electromagnetic interference.

When necessary, install certified grounding devices and enhance shielding facilities to suppress signal interference and ensure stable operation.

2. Power Connection Requirements

Connect only to specified power supplies with peripheral devices.

Prohibit opening the housing or inserting hands/tools during operation to prevent personal injury or equipment damage.

3. Post-Operation Maintenance

Cover with dust-proof cover after use.

During humid seasons, power on for 1-2 hours weekly to dissipate internal moisture

In the event of abnormal instrument operation, users should first thoroughly review the user manual to verify correct operating procedures, and may consult experienced personnel or the manufacturer for guidance. Under no circumstances should unauthorized disassembly or repair attempts be made, as this may lead to unnecessary complications. Should any inquiries or assistance requirements arise during usage, please contact us via written correspondence or telephone communication. We guarantee prompt response to all service requests.

Part 9: Quality Assurance

1. Quality Assurance

The quality assurance period is one (1) year from the date of final acceptance and signing.

2. After-Sales Service

- (1) Under normal circumstances, the seller guarantees to respond within 24 hours upon receiving the user's after-sales service request (including a fault description) via phone, fax, or email, providing troubleshooting and fault resolution.
- (2) During the warranty period, the manufacturer shall provide free after-sales service and respond to user notifications within 8 hours.

Part 10: Supplementary Provisions

The seller warrants that the buyer shall not face any third-party claims of patent, trademark, or industrial design infringement while using the purchased testing equipment or any part thereof. If any third party raises an infringement claim, the seller shall handle the dispute and bear all legal liabilities and costs.

This agreement is an integral part of the sales contract. In case of any conflict, the terms of the sales contract shall prevail.

Matters not covered herein shall be resolved through amicable negotiation between both parties.

This agreement becomes effective upon signing by both parties. It is executed in duplicate, with each party holding one copy of equal legal validity. Faxed or scanned copies are equally binding.

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