

01 Pipeline



02 Nuclear Plant



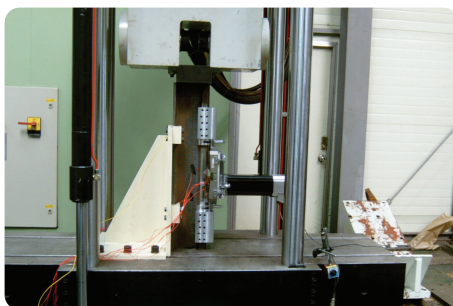
03 Turbine



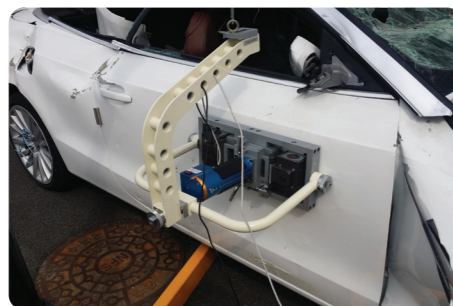
04 Bridge



05 Railroad

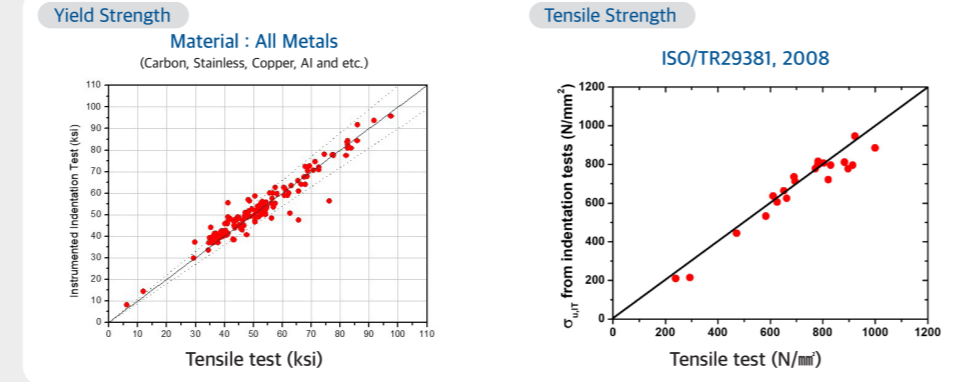


06 Vehicle

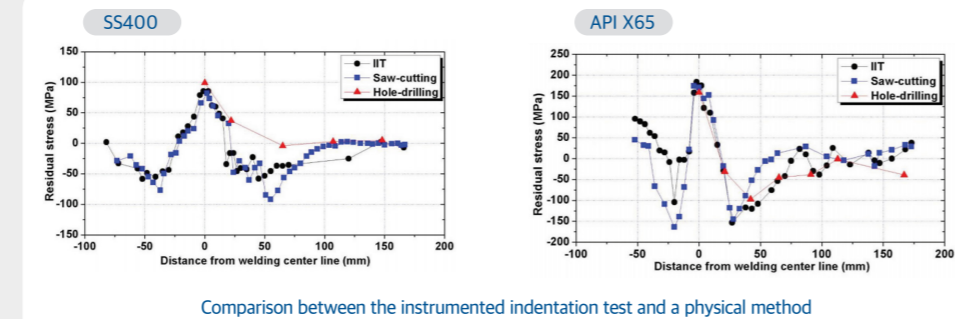


Data Accuracy

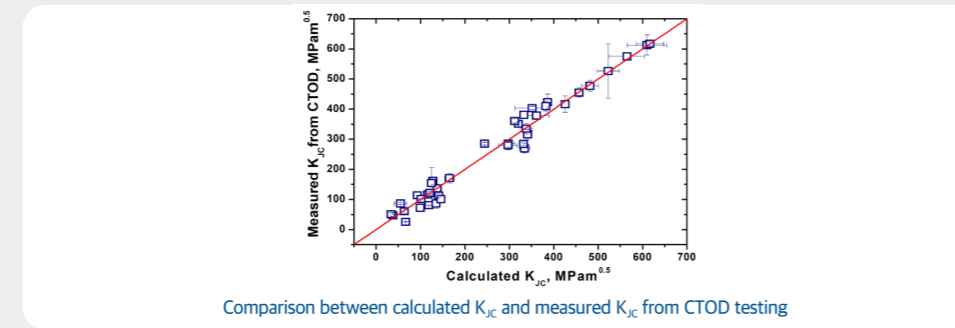
✓ Yield and Tensile Strength Evaluation: 5-10% difference (ISO TR 29381)



✓ Residual Stress Evaluation: Within ±50 MPa (ISO TS 19096)



✓ Impact, Fracture Toughness Evaluation: 10-20% difference



Instrumented Indentation Test, IIT

The Instrumented Indentation Test (IIT) is a testing technique that quantitatively evaluates the mechanical properties of materials by applying a load to the material surface using an indenter and precisely analyzing the resulting load-displacement curve. This non-destructive method enables real-time measurement of stress and strain, allowing stable testing under various load and displacement conditions based on the ASTM E2546-15 standard. In particular, it can be applied to curved or microscopic regions where conventional tensile testing is difficult, making it a precise and efficient alternative technology widely utilized across various industrial fields. (ISO TR 29381)

Advanced Indentation

- Instrumented indentation
- Continuous indentation
- Depth-sensing indentation
- Innovative indentation

Indentation load-depth curve
"A unique fingerprint of material- like DNA"

Hardness
Elastic modulus
Tensile Properties
Residual stress

- Large-scale structures and industrial environments requiring non-destructive material evaluation
- Characterization of small and thin materials
- Fast and convenient mechanical testing
- Evaluation of local mechanical properties and residual stress
- Monitoring of material property changes before and after processing
- Data acquisition in hazardous environments

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AIS FS

For measuring tensile properties, useful when examining narrow surfaces such as the lateral surface of a pipe

- Evaluated properties Strength Residual stress(optional) Fracture toughness(optional) Hardness(optional)

Main features and advantages

- Features**
- 50% lighter than the previous model, easy to install and transport
 - Suitable for testing in confined spaces, curved surfaces, and small-bore piping

Specifications

Size	80x80x270mm	Max. stroke	22mm
Resolution	2.0gf/0.1µm	Max. loading force	120kgf
Weight	3.5kg	Loading rate	0.05~20mm/min

- Technological advantages**
- Optimized for mechanical property evaluation such as yield and tensile strength
 - Enhanced field usability through wireless communication support

Offers multiple features



Led Light

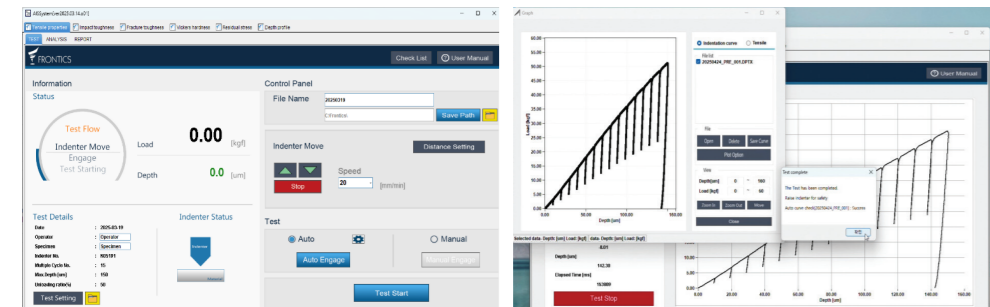
LCD

Wireless connectivity

Software advantages

All-in-One Software

- Easy for Beginners! Intuitive interface Automated test process



AIS3000

Measures the residual stress of various materials directly on-site

- Evaluated properties Strength(optional) Residual stress Fracture toughness(optional) Hardness(optional)

Main features and certification

- Features**
- High capacity load cells: allows testing of various material
- Technological advantages**
- Measures the residual stress of welded zones and small-scale heat-affected areas directly on site
 - Applies 'Pre-Qualification' method to construction sites and facilities
 - Stable data collection via USB transmission

- Hardware advantages**
- Uses a 0.1 µm unit linear scale for precise measurements



Specifications

Size	100x100x430mm	Max. stroke	40mm
Resolution	5.6gf/0.1µm	Max. loading force	300kgf
Weight	7kg	Loading rate	0.05~20mm/min

AIS3000 HD

For use in complex environments (affected by radiation, vibrations, temperature)

- Evaluated properties Strength Residual stress Fracture toughness(optional) Hardness(optional)

Main features and certification

- Features**
- Operable in radiative environments (permissible radiation dose: 1 Gy/hr)
 - Operable in high vibration environments (permissible frequency range: below 80 Hz, acceleration 0.5~0.9 g)
 - Operable in extreme temperatures (permissible temperature range: -30°C~RTP)

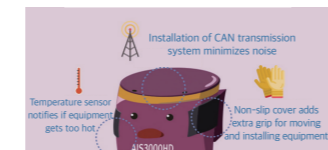
- Technological advantages**
- Measures the thickness of the specimen
 - Minimizes noise and EM waves via CAN communication



Specifications

Size	Φ90x320mm	Max. stroke	30mm
Resolution	2.0gf/0.1µm	Max. loading force	120kgf
Weight	5kg	Loading rate	0.05~20mm/min

Equipment specialization



Ultrasound



Attachments

- In-field · Lab
- MPS Vise & Tilting Jig · Accessories

In-field

<p>V-block System</p> <ul style="list-style-type: none"> Pipe 3/4~2inch Can be installed at various angles 	<p>U-block System</p> <ul style="list-style-type: none"> Pipe 3~6inch 	<p>Chain System</p> <ul style="list-style-type: none"> Pipe 6~24inch 	<p>Double Curvature Magnet System</p> <ul style="list-style-type: none"> Pipe 10~20inch or 20~48inch magnet 	<p>Flat Plate Magnet System</p> <ul style="list-style-type: none"> Plate Max. magnetic force ▶ 150kgf
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Lab

<p>Micro Positioning System</p> <ul style="list-style-type: none"> Flat specimen 2-Axis Stage Stroke 25mm (1mm/rev) MPS Block (7t, 20t, 30t) MPS Vise (Basic) Swivel Mount (Optional) 	<p>MPS Vise & Tilting Jig</p> <p>Tilting Jig</p> <ul style="list-style-type: none"> Size: 100x190x60mm Weight: approximately 5kg Working load: below 300kgf Features: ±15° tilting Manual control via worm&worm wheel gear 	<p>Vise Jig</p> <ul style="list-style-type: none"> Size: 180x80x55mm Weight: approximately 3.6kg Working load: below 300kgf Features: bar - Φ17~Φ54x100mm plate - 82x55x100mm
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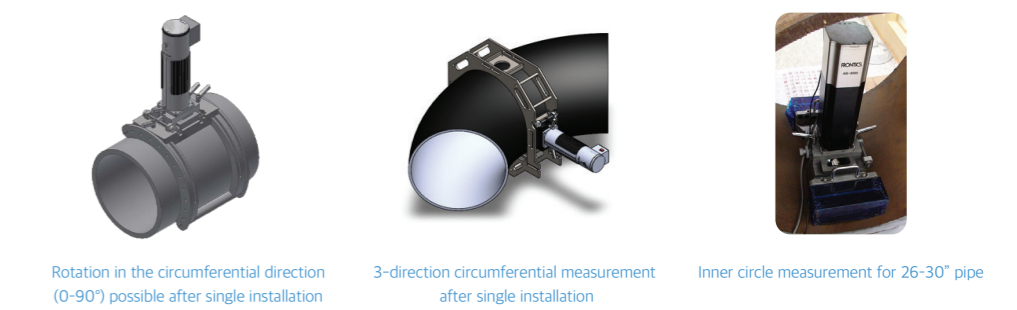
Accessories

<p>Portable battery</p> <ul style="list-style-type: none"> Rechargeable system Operational time: 5 hours Portable power system Primary cell system 	<p>Portable grinder</p> <ul style="list-style-type: none"> Rechargeable system Operational time: 4 hours Adjustable speed and rotation Sand Paper (Basic-#Gr100-#Gr1500)
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In-field Customized Attachments

- Oil & Gas pipeline · Thermal & Nuclear power plant
- Chemical industry · Steel industry
- Railroad & Vehicle & Aerospace · Bridge

Oil & Gas pipeline

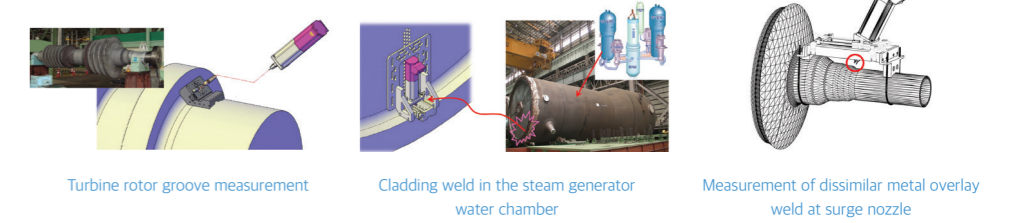


Rotation in the circumferential direction (0-90°) possible after single installation

3-direction circumferential measurement after single installation

Inner circle measurement for 26-30" pipe

Thermal & Nuclear power plant

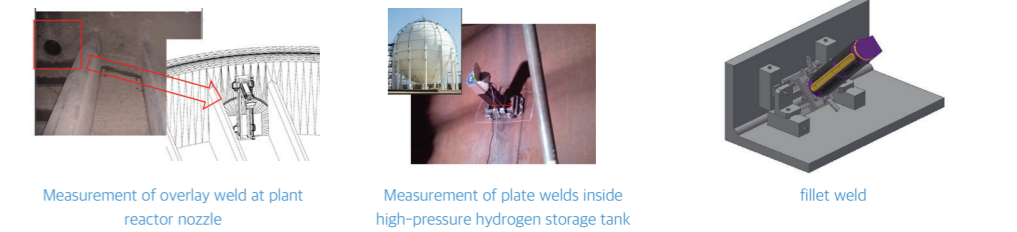


Turbine rotor groove measurement

Cladding weld in the steam generator water chamber

Measurement of dissimilar metal overlay weld at surge nozzle

Chemical industry



Measurement of overlay weld at plant reactor nozzle

Measurement of plate welds inside high-pressure hydrogen storage tank

fillet weld

Steel industry

Railroad & Vehicle & Aerospace



Rail side of highway

Vehicle wheel measurement

Aerospace Ti-alloy shell measurement

Dissimilar metal weld at plate-to-pipe joint in large bridge