



Make “destructive”
inspection a thing of
the past.

Magnetic “seeing” — non-destructive
inspection, a step ahead.

Spot-Weld Non-Destructive Inspection Device
— Nugget Profiler

NUGGET PROFILER

Nugget Profiler defines a new form of non-destructive inspection — quality control through magnetics

Because the magnetic method captures the change in metallic microstructure before and after welding, it requires no couplant (gel) application and no cleaning or wiping step. It also eliminates the hazardous chisel test, curbing the cracking risk in high-tensile steel and the cost of scrapped parts to support more advanced quality control.

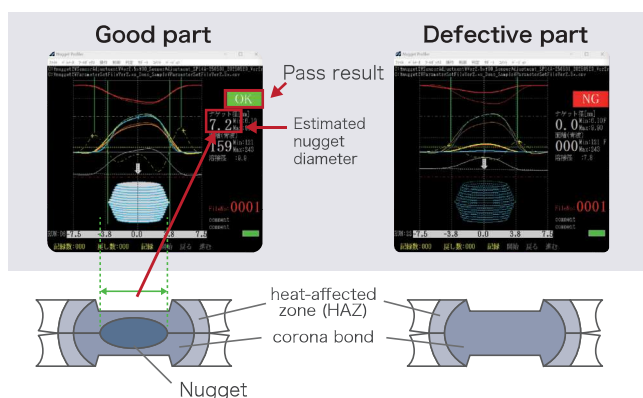
Inspection completes with a simple 4-second touch

Just place the sensor on the weld, and the reading and inspection waveform will appear on screen. Operating in Navigation mode is straightforward, leaving no uncertainty about the step procedures or the judgment. Inspection results can be recorded automatically and fit naturally into shop-floor operation, from daily checks to in-process inspection. Because it can also be powered by battery, this allows it to be used anywhere along the line.



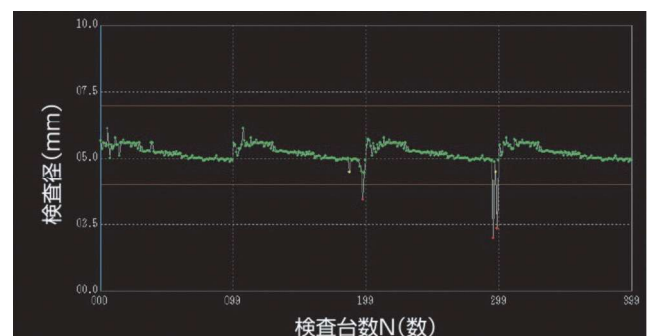
Distinguishing a nugget from a cold weld

Nugget Profiler visualizes — as an inspection waveform — the difference between a nugget and a cold weld that is hard to tell apart when viewed from the surface. It also clearly displays Pass/Fail results against your configured criteria, supporting on-site verification.



Manages variation in weld quality

This supports quality-control work such as finished-vehicle assembly lines, parts shipping inspection, and acceptance inspection.



Widely adopted by OEMs and Tier-1 manufacturers in Japan and abroad

Are your inspection "time" and "cost" truly optimized?

The conventional "chisel test (driver check)" has long carried many challenges: scrapped product loss, physical strain on operators, and uncertain judgment. Nugget Profiler is an innovative inspection system that uses a proprietary electromagnetic-induction evaluation technique to quantify a weld's internal nugget diameter — without destroying the part.

From sampling-based checks with the handheld unit to fully automated 100% inspection through robot integration, it gives powerful support to more efficient and more sophisticated quality-assurance work on the shop floor.

Feature Highlights

- 01** Quantifies nugget diameter in a non-destructive manner. Clearly identifies cold welds as well, dramatically reducing destructive-test scrap loss.
- 02** From mild steel to hot-stamped steel, it avoids hazardous work and inspects with high precision.
- 03** Uses no water or gel, making wiping and cleaning steps unnecessary.
- 04** Results are saved automatically as CSV data, with data management that advances quality assurance and DX.
- 05** Visually confirms inspection spots in Navigation mode to standardize the work procedure for consistent inspection.
- 06** Improved sensors make robotic automation a reality.

We propose a third option that is neither a chisel test nor an ultrasonic inspection.



Makes optimized on-site work possible

Navigation mode further assists the entire inspection sequence smoothly

Feature 01 Photo Navigation

Capable of preventing inspection procedure errors

The Navigation feature that displays a photo or drawing of the workpiece to guide the inspection sequence visually. It indicates each spot location and the direction in which to apply the sensor, supporting stable inspection.

Feature 02 Fully Automated Workflow

Reduces idle time in inspection

Simply apply the sensor to the spot specified in Navigation mode to switch the display to the inspection screen automatically where inspection will begin. Additionally, results are exported to a file automatically. By reducing the number of operator actions, it helps cut idle time across the entire inspection process.

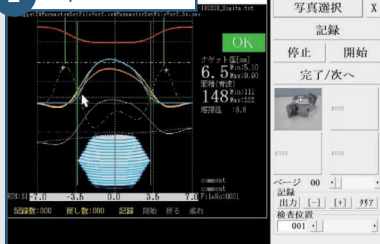
Navigation mode screen

1 Show the first spot.



Displays the next spot to inspect as well as the sensor orientation

2 Inspection screen



Switches to the inspection screen automatically

3 Shows the second spot to inspect



Recording the data brings up the Navigation screen for the next spot to inspect



It doesn't end at "inspection" and instead provides thorough support through to established operation

We provide comprehensive support so you can keep using the system with confidence after introduction.

01 Before introduction

- On-site or web demos are available both in Japan and overseas
- Free sample evaluation
- Free two-week demo-unit rental



02 At start-up

- Free initial operation training
- Parameter setup service (on a contract basis)



03 After introduction

- Inspection accuracy maintenance through periodic checks
- Annual warranty service partnership that even covers breakdown repair
- A range of on-site dispatch services



*Travel expenses are borne by the customer.

A blue-tinted photograph of a car body on an assembly line. A robotic arm is positioned above the car, and the background shows industrial structures. The image has a monochromatic blue color scheme.

With robot arm integration, unattended overnight inspection and a 100% guarantee become possible

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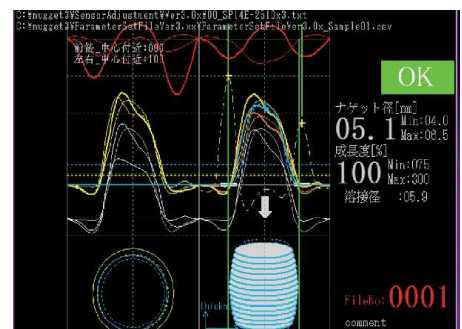
A new sensor designed to inspect while tolerating positional misalignment. It accommodates placement error in the workpiece, raising the feasibility of automation.



Automatically absorbs tilt of up to $\pm 2^\circ$

A proprietary, patent-pending mechanism stabilizes the sensor's attitude, absorbing the inspection-surface angle variation that challenges robotic inspection and supporting consistent sensor contact.

See the proven automated inspection setup running on real equipment in our lab. Feel free to contact us to arrange a tour or demo.



Product Specifications sheet

Equipment Type		Portable	Stationary / benchtop
Model		NPH03B	NPF02
External dimensions		285 (W) × 205 (D) × 70 (H) mm (excl. protrusions)	350 (W) × 255 (D) × 100 (H) mm (excl. protrusions)
Weight		2.32 kg	3.36 kg (main unit only)
Display unit		10-inch	Optional (user-specified)
Workpiece	Inspected weld diameter (standard sensor)	[SP14] 3–7 mm (indentation diameter ≤ 8 mm); [SP18] 4–10 mm (indentation diameter ≤ 12 mm). Ranges outside the above may be possible — please consult us.	
	Workpiece sheet thickness (per inspected face)	0.7–2.3 mm (Ranges outside the above may be possible. Please inquire for more details.)	
	Material quality	Ultra-high-tensile steel, high-tensile steel, mild steel (thin mild-steel-to-mild-steel handled case by case); dissimilar-material joints (e.g., aluminum × carbon steel handled case by case)	
	Workpiece sheet surface treatment	Untreated, electrogalvanizing, hot-dip galvanizing (aluminization handled on a case by case)	
	Number of stacked workpiece sheets	2 or 3 sheets (inspection from both sides recommended)	
PC	Data storage	CSV format	
	Inspection conditions settings	Configured on the inspection screen (settings can be saved to a file)	
	Judgment method	Pass/Fail judgment, estimated nugget diameter, nugget growth ratio	
	Optional	Navigation mode, inspection-record management	
	OS	Windows 11 (languages other than Japanese supported via language pack) *The software supports Japanese, English, and Chinese.	
Sensor-tip material quality		FR	
Operating temperature range		5°C–40°C	
Operating humidity range		Approx. 80% RH (non-condensing)	
Power supply		Switchable between the following two patterns: (1) AC 85–240 V, 0.5 A (2) Battery (8 × AA Ni-MH rechargeable)	AC 85–240 V, 0.5 A

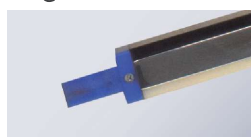
System Configuration

- ① Main unit — hardware control and excitation-voltage pattern generation feature
- ② Windows PC — runs the application software
- ③ Sensor probe — magnetic-flux generation and data acquisition
- ④ Hand switch (optional) — records inspection data

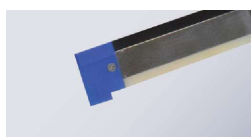
Sensor Probe Lineup

We offer a range of sensor probes matched to the inspection target and application — standard, L-shaped, large-diameter, and more — selected according to interference with surrounding/peripheral parts and the expected nugget diameter.

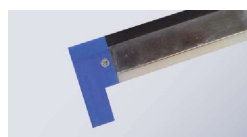
Single coil



Standard model: SP14A



L-shape: SP14C



L-shape, long: SP14CL



Offset: SP14S

Distributors wanted

We are seeking domestic and overseas sales distributors to grow sales and technical support with us.

*Our products are shipped to designated locations within Japan.

*Distributors are asked to handle overseas transport, customs clearance, etc.

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