



Handy Search

NJJ-105

Introducing the high-resolution deep-level Handy Search using new radar technology!!

- Producing high-resolution two times better than the previous model!



Introducing next-generation “High-resolution Handy Search”!



In recent years, the density of rebars is increasing to improve the durability of concrete structures, which is driving the demand for search equipment with higher resolution.

We developed improved search resolution in the horizontal direction and better search accuracy for shallow rebars and kept the popular performance (compact and lightweight) of the Handy Search NJJ-95B. The NJJ-105 radiates electromagnetic waves through a concrete surface and catches reflected waves from objects showing their position and depth in easy to understand images. In addition, it is easy to move data to the printer or a computer by using the IrDA or CF memory card.

Main Features

**Producing high-resolution two times better than the previous model
More detailed analysis can be performed than ever before.**

*Actual measurements with standard concrete

- **Higher resolution when searching horizontally**
Possible to determine rebar at 40 mm intervals from 75 and 175 mm deep.
- **Higher definition when searching horizontally**
Search definition improved from 5 mm to 2.5 mm intervals.

● **Compact and weight saving**

The integration of the main-body display with an antenna section makes the device compact. It weighs only 1.2 kg which enables you to operate it with one hand.

● **Search of both metallic and non-metallic objects**

The radar system makes it possible to search for non-metallic items, such as vinyl chloride pipes and cavities, as well as metallic objects, such as reinforcing steel bars (Only skillful operators are able to analyze the image data of non-metallic objects.)

● **Data maintenance and replay**

Up to 15 meters of data can be saved and replayed in a single measurement.

● **Cable-less printing**

Cable-less connectivity makes it easy to print directly to the specialized black-and-white printer (option).

New Functions

■ **Added new imaging process**

Added average wave processing and user surface wave processing to the existing imaging processes (original, fixed, subtraction, manual, and peak).

■ **Expanded depth display**

Added wide-range display function that shows twice the measured depth.

■ **Start-up state selection function**

Added a function to store settings at shut down to save time when starting up for the next job.

■ **Expanded depth calibration value**

Possible to set calibration values at 0.1 steps from 2.0 to 20.0.

Applicable fields

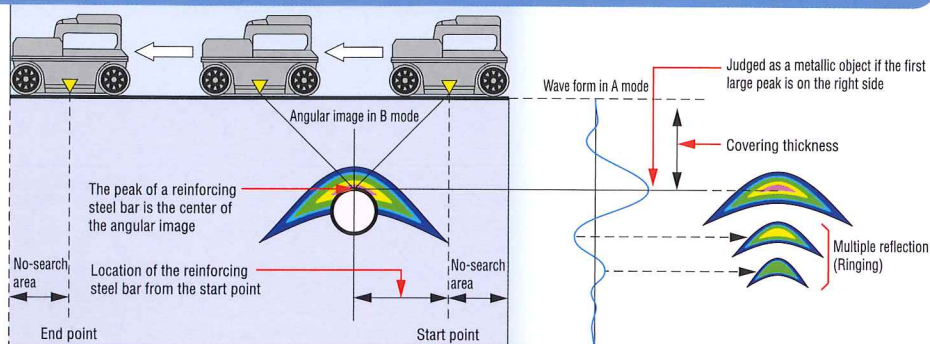
- Concrete anchoring
- Coring
- Electrical facility construction
- Air conditioning facility construction
- Gas construction
- Water supply works
- Restoration of concrete structures
- Concrete building diagnosis
- Concrete bridge completion test, etc.

Principle of Handy Search

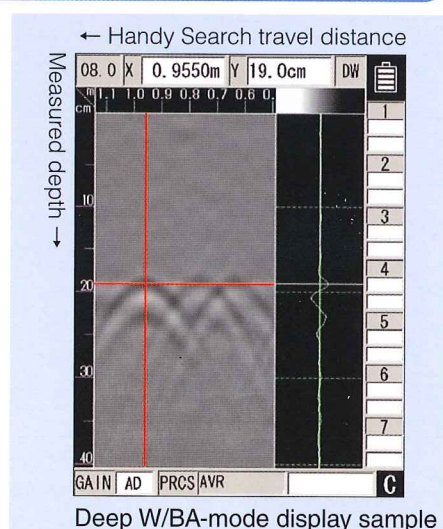
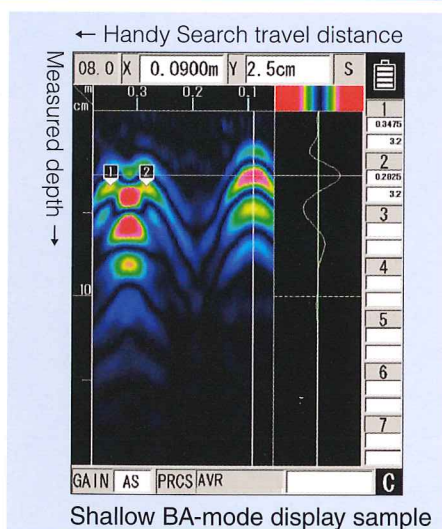
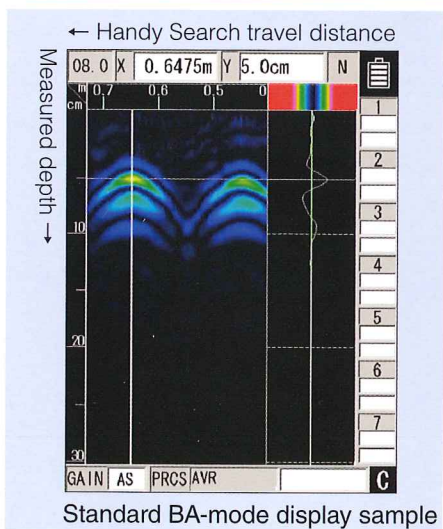
This device radiates electromagnetic waves through a concrete surface and receives reflected signals from objects such as reinforcing steel bars, cavities, or other objects that have different electrical characteristics from concrete.

How to operate Handy Search

Handy Search displays images of the cross section of a concrete structure so it is run in a direction that intersects the search target perpendicularly. The cross section of a rebar is displayed as an angular image.



Measured data display sample



Main specifications

Item	Performance
System	Electromagnetic radar
Search target	Reinforcing steel bars, vinyl chloride pipes, cavities, etc.
Covering thickness	5 to 300 mm (For top reinforcement while the relative dielectric constant of concrete is 6.2 and the reinforcing steel bar diameter is 6 mm or more)
Resolution of covering depth	Shallow mode: About 1 mm, Deep mode: About 2 mm
Resolution in horizontal direction	Search target at a depth below 75 mm: 75 mm or more Search target at a depth of 75 mm or more: Interval equivalent to the depth or more * Actual measurements with standard concrete (Possible to determine rebar at 40 mm intervals from 75 and 175 mm deep)
Resolution in horizontal distance	2.5 mm
Maximum search distance	15 m
Display mode	B mode (vertical sectional view), BA mode (vertical sectional view, reflected waveform display)
Image processing	With search: Automatic real-time surface wave processing, manual real-time subtraction processing, and real-time user surface wave processing Without search: Fixed surface wave processing, user surface wave processing, manual surface wave processing, average wave processing, peak processing, original image replay processing
Display	TFT color LCD (640 x 480 bits)
Depth calibration	2.0 to 20.0 in steps of 0.1
Maximum scanning rate	About 40 cm/s with over-speed alarm buzzer provided
Control function	Cursor mark (up to 42 points), battery capacity display, screen inversion
Output function	Dedicated-printer output function (IrDA)
Search data recording function	Data saved in compact flash memory. Approximately 200 passes
Memory capacity	(15-m search data saved in binary format) when using 1-GB memory
Temperature range	0°C to +50°C
Power supply	Battery pack, AC adapter (optional)
Continuous use time	About 1.5 hours (with the battery pack being fully charged)
Structure	Splash/rain resistant
Dimensions	About 149 (W) x 147 (H) x 216 (D) mm
Weight	About 1.2 kg (battery pack included)

Standard components

Product name	Model	Quantity	Remarks
Handy Search	NJJ-105		With integrated antenna
Accessories	Instruction manual	1	
	Battery for main unit	BP-3007 series	1 Lithium ion battery
	Battery charger for BP-3007	BC-3008 series	1 For the battery pack
	AC cable	CB-JP05	1 For the battery charger
	Hand strap	H-7ZCMD0018	1 To prevent dropping
	Compact flash memory	TS1GCF80	1 1GB (for approx. 3km or 1.9miles data)
Case	H-7ZYMD0027	1 Storage for printer etc.	

Options

Product name	Model	Remarks
Battery pack for Handy Search	BP-3007 series	For Handy Search
Battery charger set for BP-3007	CBK-154	Battery charger and AC cable
Printer set	CMZ-303	Printer and battery pack Recording paper (10 rolls)
Battery pack for printer set	BP-L0720 series	For printer set
Battery charger set for BP-L0720	CBK-254	Battery charger and AC cable
AC adapter set	CBD-2485	AC adapter and AC cable
Recording paper	TP451C	10 rolls per box

Recommended PC editing software

Product name	Remarks
Radar 3D_Light	Surface image synthesis software for PC
RC report maker	Surface image analysis software for PC

Recommended software

Search software for complicated piping!

Applicable to NJJ-95A, NJJ-95B, and NJJ-105 (Version 6 or later)

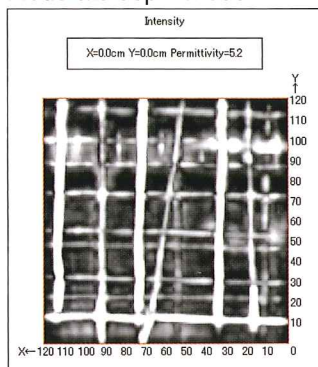
Radar 3D_Light 3D rendering software

Produced by Osaka Gas Engineering Co., Ltd.

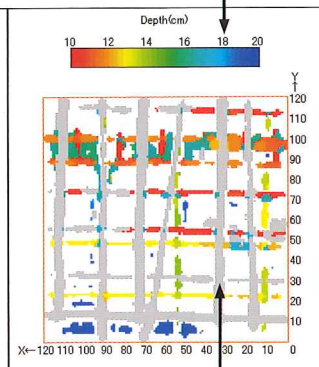
- Easy to determine depths with multi-colored depth display
- Easy to determine complicated piping conditions
- Possible to display the image of any location in B mode

Continuous color display, and gray display outside the depth range (samples)

Moderate depth mode

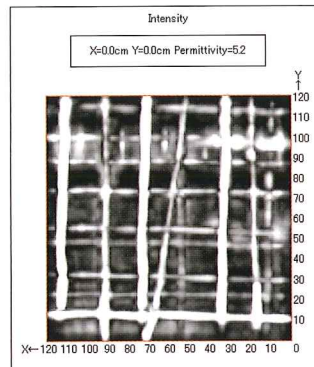


Multi-colored depth display

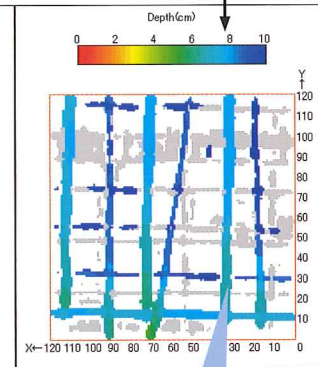


Gray display indicates the depth is outside the specified range

Shallow mode



Multi-colored depth display



- Covering thickness can be obtained by simply adjusting the focus of an image.
- Three level depth range display for shallow, moderate, and deep (only depth within range is shown in color).

Significant decrease in time for creating a report! Clear and easy data attachment!

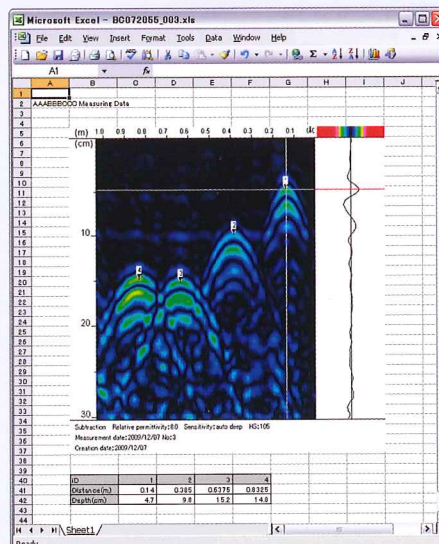
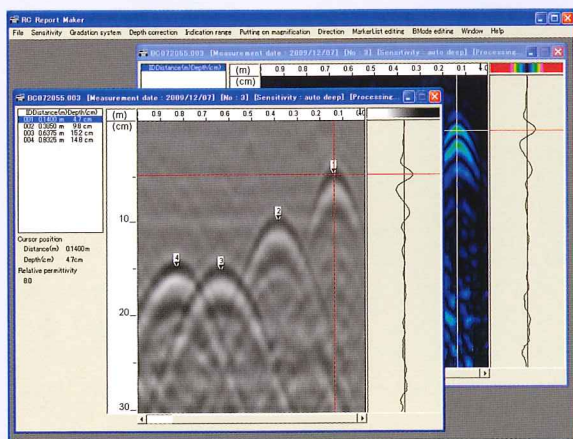
Applicable to NJJ-85A, NJJ-95A, NJJ-95B, and NJJ-105 (Version 6 or later)

RC report maker Report making support software HS2PC

Produced by KGS Inc.

- Measurement results can be viewed on a personal computer.
- Image processing and marking can be performed efficiently on a personal computer.
- The results of editing data after image processing and marking can be saved intact.
- Editing results are saved in JPEG format. Marker information is automatically listed.

Increased Efficiency for Report Making



For details or inquiries, access the KGS website below. Sample data can be downloaded.

URL <http://www.kgs-inc.co.jp>

- Specifications may be subject to change without notice.

For further information, contact:



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Since 1915

URL <http://www.jrc.co.jp/eng/>

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