

# Scanning Acoustic Tomograph

## LINE SERIES



**HITACHI**

# Hitachi LINE Series Demonstrates Its Most E

## AT LINE

Excellent imaging and judging abilities simplify factory-line inspections of various specimens including component parts and electronic materials.

- The AT LINE offers internal information on specimens in the form of 240-color plane images so that flaws and dis-bonding can be precisely observed. Data on test results can be saved and registered in the system together with their file names.
- Since the setting parameter in the flaw detector for every specimen can be registered in the system, individual measuring results can be easily identified, even if different specimen data are randomly mixed.
- Use of a high-frequency, high-gain flaw detector makes it possible to precisely measure thick workpieces or materials with a large ultrasonic attenuation coefficient.
- The system (scanning acoustic tomograph) can be easily combined with production and processing lines. It will greatly expand the range of inspection applications.

### ● Ultrasonic unit

Frequency range	0.4~25 MHz
Gain	0~80 dB

### ● Image data

Number of dots	800×600 dots
Color	240 colors
CRT size	15 inch

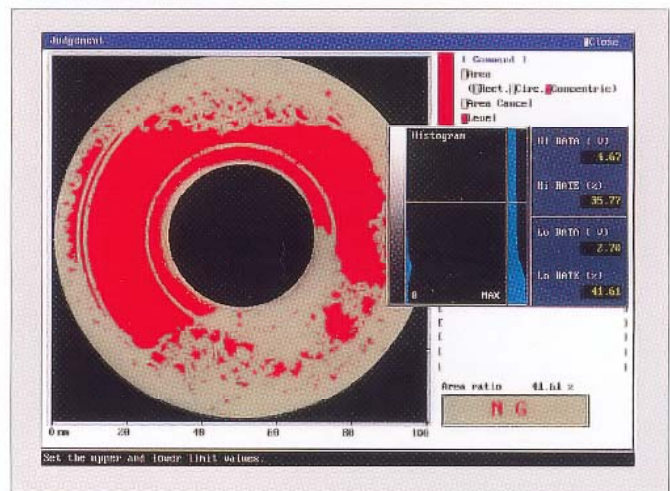
### ● Scanner (standard type)

Scanning range	750(X)×800(Y)×230(Z) mm
Scanning speed	300 mm/s
Scanning pitch	Min 0.01 mm

### ● Operational Menu screen



### ● Scanning result



## ■ Operational Menu and Functions

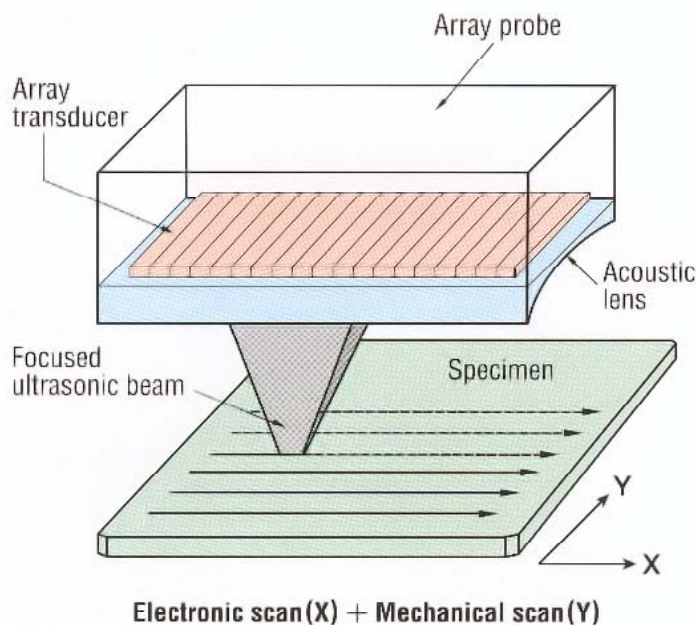
- **AUTO SET :**  
Performs automatic scan, consecutive scan, and judgement according to scanning process.
- **END :**  
Completes system operation.
- **SCAN :**  
Sets scanning parameters and scans (manual scan).
- **JUDGEMENT :**  
Sets judging parameters and judges scanning results (manual judgement).
- **SAVE/LOAD :**  
Saves and loads image data.
- **SCANNER OPERATION :**  
Controls the scanner.
- **DISPLAY :**  
Analyse image data.
- **SYSTEM ADJUSTMENT :**  
Adjusts setting parameters of the system.

# Effective Capabilities in Factory-line Inspections.

## ES LINE Next-generation Ultrasonic Inspection System for Various-specimen and Mass Inspections.

● The ES LINE is quite different from conventional ultrasonic systems, capable of precisely inspecting the interiors of such items/materials as materials attachment, molding condition, voids and cracks in specimens. The newly-developed electronic scanning method makes it possible to enhance scanning speed to about ten times that of the conventional systems, while retaining the detail of ultrasonic scanning.

### ● Electronic scanning method



### ● High-speed scanning (10 times that of AT LINE)

100 mm × 100 mm area : 25 seconds at 0.2 mm pitch  
6 inches wafer : 28 seconds at 0.4 mm pitch

Suitable for calculating flaw ratio in Multi-item, mass-production Lines.

### ● High-resolution image

In-water beam diameter : 0.2 mm (25 MHz, 15 mm focal point)

The ES LINE provides both ultra high-speed inspections and very high-resolotional images.

### ● Array probe

Frequency (MHz)	25	10	5
Number of array elements	96	96	96
Element pitch (mm)	0.2	0.4	1.0
Electronic scan width (mm)	14.6	32.5	85.0

### ● Ultrasonic Unit

Frequency (MHz)	5~25
Number of channels (ch)	96
Pulse-repetition frequency (kHz)	1~20
Number of concurrently selectable elements (ch)	1~24
Flaw detection method	Immersion method



