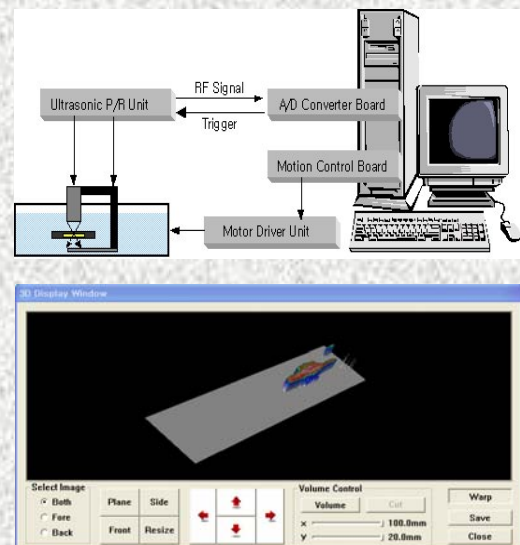


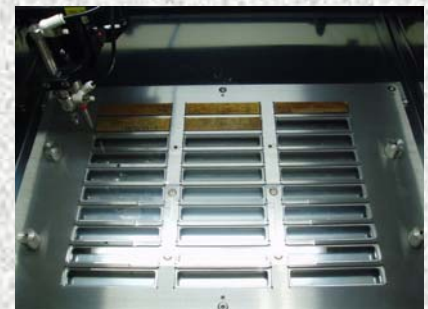
Automatic Ultrasonic System for HIC

AcouLab provides a various customized immersion tank systems (ITS) with high resolution and high speed inspection. One of AcouLab ITS systems for steel manufacture, ITS-HIC is used to detect Hydrogen Induced Crack (HIC) in steel, and calculate CSR, CLR, CTR, ETC and CAR value according to API cord. ITS-HIC with HICScan™, HICAnalysis™ softwares, are designed for user friendly and fully optimized for steel manufacture.

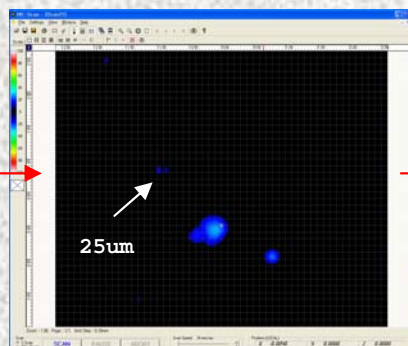
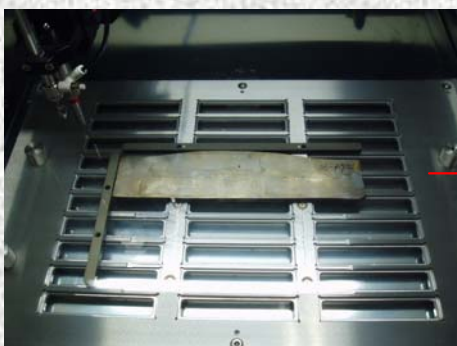


Applications of ITS-HIC

- Detect the Hydrogen Induced Crack and measure Crack Sensitivity Ratio(CSR), Crack Length Ratio(CLR), Crack Thickness Ratio(CTR) Crack Area Ratio(CAR) and Maximun Thickness(ETC) automatically by API code.
- Evaluation purity and homogeneity of steels and detect the very small defects over 20 μ m in slab and measure the automatic size of defect by image processing with clustering and labeling methods.
- Measure the bonding area in spot weld for automobile steel plate.
- Perform normal A, B, C-Scan and Virtual 3D.



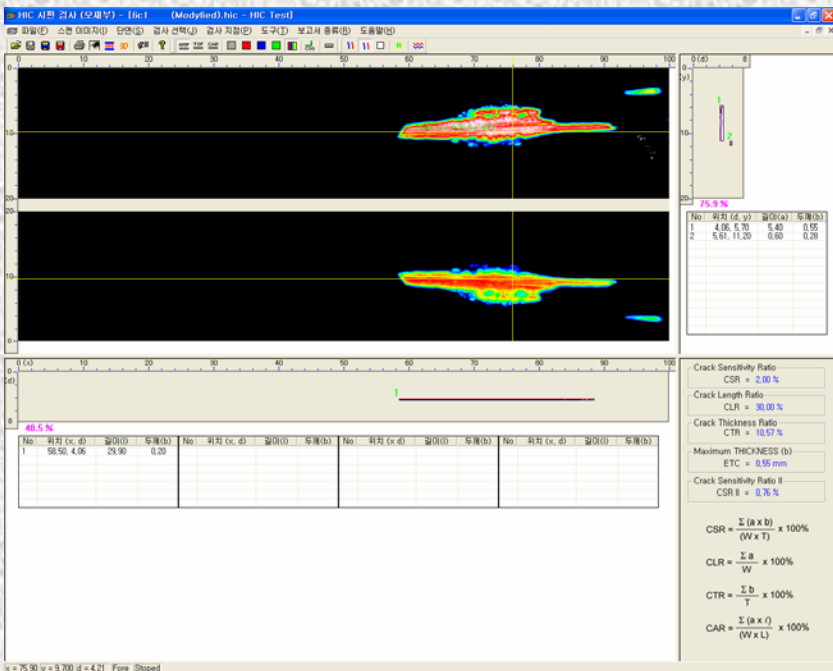
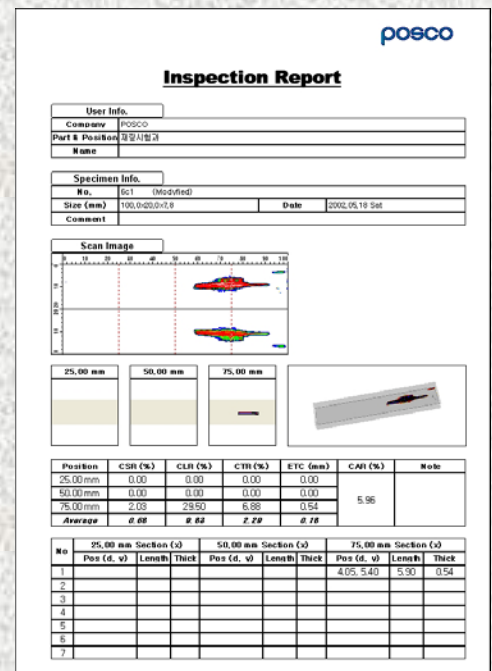
HIC inspection



Slab inspection

Software : HIC-Scan™, HICAnalysis™

AcouLab softwares, HIC-Scan, HICAnalysis are fully customized for steel manufacture company, and provide the high speed and high resolution inspection with user friendly and optimized for the inspection of HIC and Slab. HIC-Scan is used to inspect the hydrogen induced crack and to evaluation purity and homogeneity of steels and detect the very small defects over 20µm in slab with high technology of ultrasonic NDT. HICAnalysis is provide to measure the size of crack, CSR, CLR, CTR, CAR & ETS according to API code.

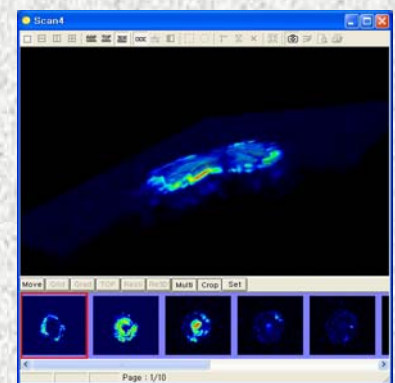



The screenshot shows an 'Inspection Report' form from POSCO. It includes sections for User Info, Specimen Info, Scan Image, and a table of defect measurements. The table has columns for Position, CSR (%), CLR (%), CTR (%), ETC (mm), CAR (%), and Note.

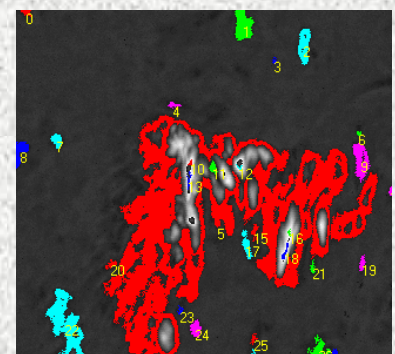
Position	CSR (%)	CLR (%)	CTR (%)	ETC (mm)	CAR (%)	Note
25.00 mm	0.00	0.00	0.00	0.00		
50.00 mm	0.00	0.00	0.00	0.00	5.96	
75.00 mm	2.03	29.50	6.88	0.54		
Average	0.68	0.63	2.29	0.18		

Specification

- Frequency Range : Bandwidth : 1-150MHz
- Sampling rate : 2GHz
- Motion Controller : 3 axis linear servo/stepping motor control
- Industrial PC : Pentium4 3GHz, 1GByte RAM, CD-RW, 24" wide LCD Monitor, Color Printer
- S/W : HIC-Scan, HICAnalysis for steel manufacture
- Real time A, B, C-Scan, FFT-Scan, TOF3D and Virtual 3D
- Imaging Processing by clustering & labeling for measuring size of each defects
- High speed scanning (upto 1000mm/sec) and high resolution C-Scan (Min.2 µm)
- Mutil-Layer Scan (upto 20 layers) and 3 date gates
- Automatic focusing and sizing
- Pulse-echo and thru-transmission modes
- FFT for transducer evaluation
- Customized inspection report
- Automatic loading/unloading system
- Continuous High/low pass filter to eliminate high & low frequency noise, step 1MHz
- Dimension : 930mm x 930mm x 1150mm
- Weight : 300Kg



Virtual 3D with Mutil-Layer Scan



Measuring size of defects