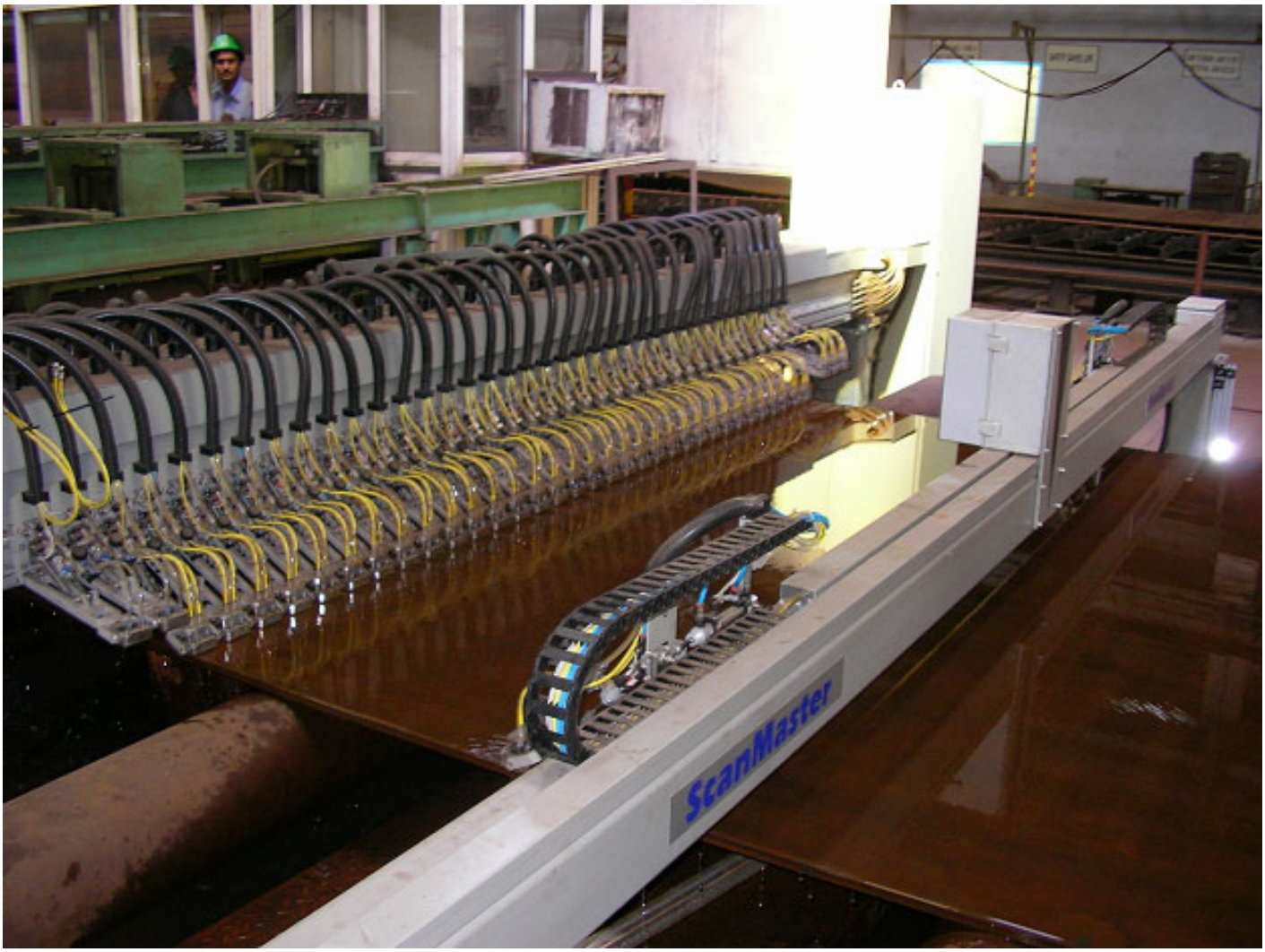
ScanMaster

# Ultrasonic Inspection Systems for Plates and Strips

## *AS–200P* Series Plate Inspector



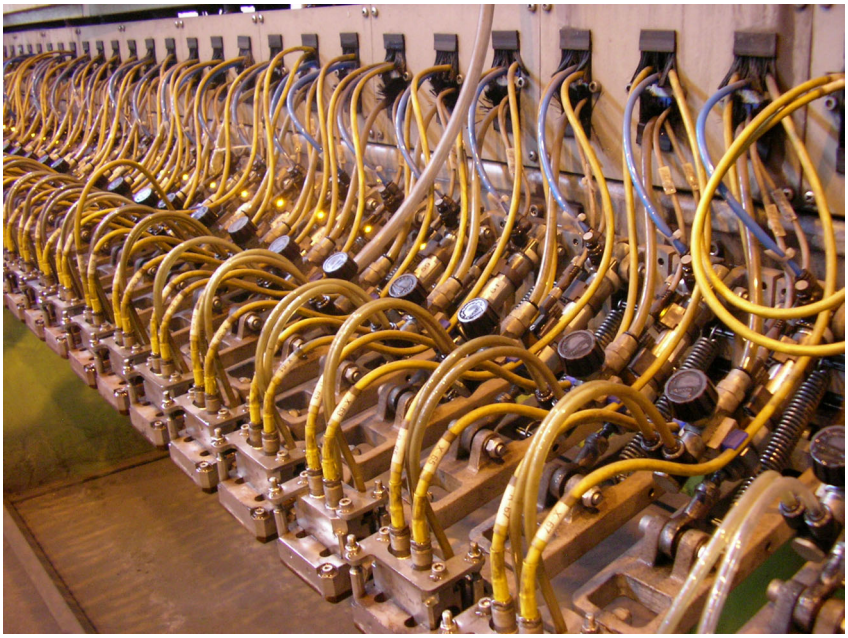

*High-speed, inspection machines for detection, evaluation and documenting of flaws in plates and strips*

# PRODUCT DESCRIPTION

| | |
|---|---|
| ***Introducing the AS-200p Series*** | The ***AS-200p*** Series Plate Inspector are high-speed on-line or off-line ultrasonic inspection systems for plates and strips which are used in pipe and plate mils. |
| ***Inspected parts*** | Continuous strips, cut or uncut, side-trimmed or untrimmed plates as specified by customer. |
| ***Inspection technique*** | Contact inspection with water coupling. |
| ***Mechanics*** | Gantry-supported multi-transducer scanners for full body inspection. Oscillating or fixed type inspection scanner mechanisms are available.<br>Dedicated scanners for inspection of the longitudinal as well as head and tail edges with mechanical edge-following mechanism.<br>Transducers are aligned and fixed in dual gimbals probe holders with built-in water dispensing and gap keeping system maintaining a thin film of coupling water between the probe and part. A normalizing & regulation fixture maintains the perpendicularity of the calibrated probe. |
| | |
| ***Coverage*** | 100% of plate body or as otherwise specified, up to 100mm (4 inch) of side edges and up to 200mm (8 inch) of the plates head and tail. |
| ***Automation and outputs*** | The systems are interfaced to automation and PLC systems for synchronization with part motion and production line inputs. The control system can be based on a selection of high level PLC such as **Siemens S7-200**, **Siemens S7-300, Allen Bradley** and **Keyence** using industrial protocols such as ***Profibus***, and ***MPI.***<br>An HMI can may be defined and tailored for automation interface, full diagnostics and manual operation features on the basis of touch screen panels, or LED indicators and manual activation switches.<br>Outputs, such as paint-guns and alarms are activated according to inspection events evaluated results defined by the operator. |
| ***Transducers*** | Multi-element paintbrush transducers are available in a variety of crystal sizes, frequencies, and focal depths. The selection can be made according to the inspected part geometry, required flaw-detection sensitivity, inspection resolution and budget. |
| ***Thickness measurement*** | Thickness measurement of the plate in real-time for monitoring of deviation from the nominal value specified by the operator. |
| ***USC-100 ultrasonic hardware*** | Multi-channel ***usc-100*** rack-mount ultrasonic instrument with a RPP programmable square wave pulser & preamplifier for each channel. One to four operator-selected hardware gates per channel, with one or two alarm threshold levels per gate. |
| ***AS-200 application software*** | The ***AS-200 software*** application software for on-line flaw detection, display, analysis and evaluation is the users interface to making programs, running scans and evaluating results.<br>Results are displayed online in A-, B-scan and C-scan representations and then a report is generated with the defect list and C-Scan image. Dedicated tools are provided for automatic and operator conducted analisys. |
| ***Workstation*** | Complete MMI operator workstation including ultrasonic inspection results display, machine automation, operation interface and diagnostics. |
| ***Evaluation*** | Results evaluation according to the acceptance levels defined by applicable international standards (such as ASTM-A578, ASTM-A435, BS-EN-10160 and others). |
| ***Reports*** | A test report documenting inspection and analysis results can be automatically produced at the end of each inspection sequence, listing detecting channel, gate and threshold level, position, signal amplitude and size for each detected flaw. The reports may be tailored to customer's specification and formats. |
| ***Remote communication*** | Remote communication through LAN for remote support through standard applications such as **PC anywhere** and others. |

# SUMMARY INSPECTION SPECIFICATIONS

| | |
|---|---|
| ***Dimensions*** | Continuous strip rolls, or plates at any length and width. Thickness greater than 4mm (1/4 inch). |
| ***Speed*** | Up to 1000mm/sec (40.0 inch/sec). |
| ***Transducers*** | Frequency range from 2 to 5 MHz, element width up to 52mm (2inch) focal. Sensitivity possible up to 3mm FBH at depth of 2mm from the surface. |
| ***AS-200 inspection software modules*** | ○ ***C-Scan display and analysis*** *– composite C-scan from the multi-probe scanner including defect measurement and statistical evaluation tools*<br>○ ***Search and Identify – result analysis according to*** ASTM A578, ASTM A435, BSEN-10160, SEL072, BS5996 and other standards.<br>○ ***Digital triggering of physical outputs*** *– activation of physical outputs according to result analysis, or on any indication*<br>○ ***Online Gate adjustment –*** *adjustment of the gating scheme at the beginning of scan according to plate thickness allowing consecutive scans of different thickness parts.*<br>○ ***ERP communication –*** *Interface to the plant ERP system for collection of data before the scan and return of the results to the plant HUB, including periodical and concentrated reports.*<br>○ ***Installation under Windows XP / Windows 2000*** |
| ***Thickness measurement*** | Based on single element transducers and measurement by peaks of backwall echoes. |
| ***Report documentation*** | ○ Automatic report generation after with list of indications specifying the position, size and amplitude of each indication as well as the final result after "Search and Identify" evaluation (where applicable).<br>○ Periodical report listing all the scanned parts with final result, filterable according to serial number, inspection time, part type, heat number, etc. |



**Scanner for full body inspection of steel plates**

# *AS–200P* SERIES PLATE INSPECTOR

Research and Control laboratory

Sub: Ultrasonic Test report of plates - Online

Report for: Mother Plate ID From: 0 To: 1000000
Inspection Date From: 17-01-07 To: 17-01-07

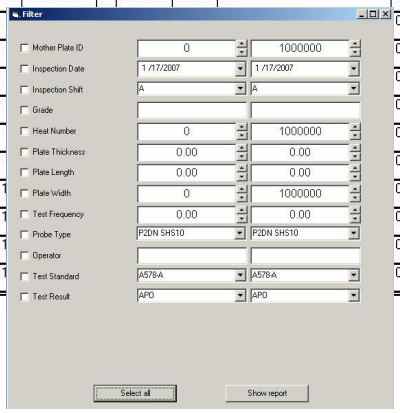
Instrument: SM AS 200; Make: Scan Master, Israel; Model: USC100

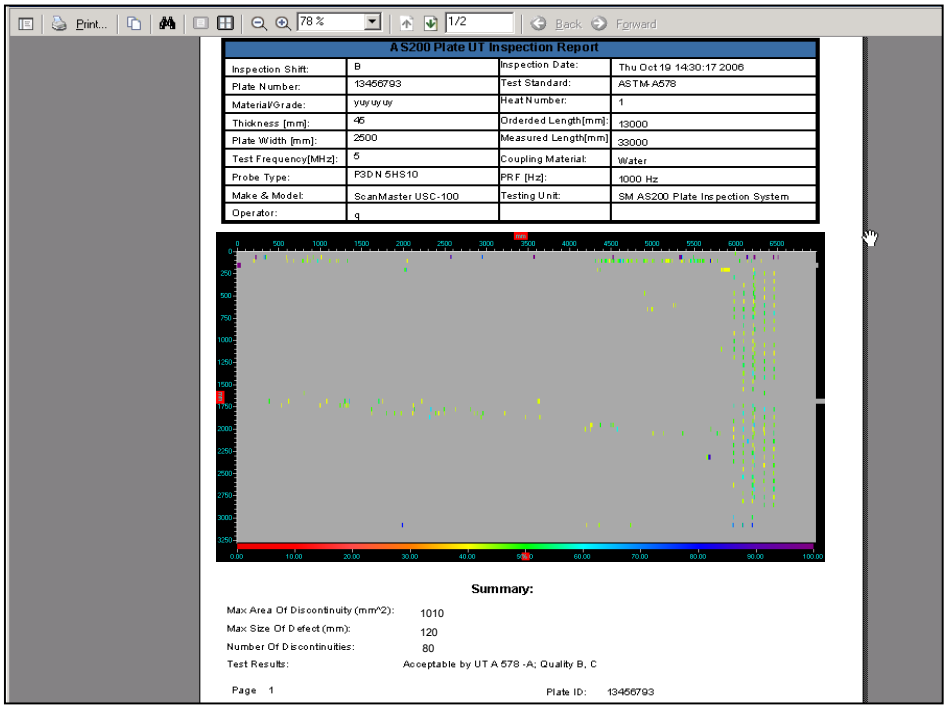
Probe: P3DN 5HS10 Frequency: 5 MHz

Couplant: Water Surface Condition: As rolled

## General Report

| S/N | Mother Plate ID | S P | Date | Time | Grade | Heat No. | Th. mm | Approx Length [mm] | Approx Width [mm] | Opr | Test Std. | Result NCO /APO | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 31313 | 1 | 17/01/07 | 11:12 | 0 | 0 | 0 | 0 | 0 | q | A578-A | NCO | |
| 2 | 312667 | 1 | 17/01/07 | 10:42 | 0 | 0 | 0 | 0 | 0 | q | A578-A | APO | |
| 3 | 312880 | 1 | 17/01/07 | 12:34 | 0 | 0 | 0 | 0 | 0 | q | A578-A | NCO | |
| | | | | | | 0 | 0 | 0 | 0 | q | A578-A | APO | |
| | | | | | | 0 | 0 | 0 | 0 | q | A578-A | APO | |
| | | | | | | 0 | 0 | 0 | 0 | q | A578-A | APO | |
| | | | | | | 0 | 0 | 0 | 0 | q | A578-A | APO | |
| | | | | | | 0 | 0 | 0 | 0 | q | A578-A | NCO | |
| | | | | | | 0 | 0 | 0 | 0 | q | A578-A | APO | |
| | | | | | | 0 | 0 | 0 | 0 | q | A578-A | NCO | |
| | | | | | | 0 | 0 | 0 | 0 | q | A578-A | APO | |
| | | | | | | 0 | 0 | 0 | 0 | q | A578-A | APO | |




* Specifications are subject to change without notice.

## Corporate Offices


**ScanMaster Systems (IRT), Ltd.**
P.O. Box 5030
60920 Qadima, Israel
Phone: 972-9-8661600
Fax: 972-9-8661700
e-mail: sales@scanmaster-irt.com
Web site: www.scanmaster-irt.com

**IRT•ScanMaster Systems, Inc.**
319 Garlington Road, Suite B4
Greenville, SC 29615, USA
Phone: (864) 288-9813
Fax: (864) 288-9799
e-mail: irtinc@irtscanmaster.com


The Standards Institution of Israel SI ISO 9001 Quality Assured Firm