

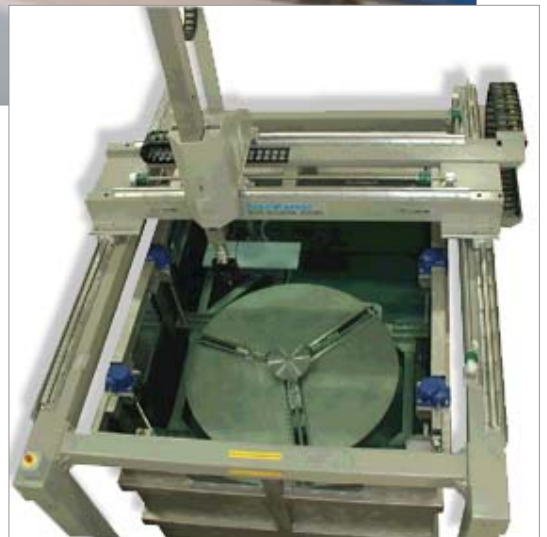
ScanMaster

Industrial Ultrasonic Scanning Systems

DS-200i SERIES



Large-scale, precision immersion inspection machines for high production throughput



DS-200i SERIES

PRODUCT DESCRIPTION

Introducing the DS-200 Series	The <i>DS-200</i> Series of ultrasonic immersion inspection systems complements the <i>LS-200</i> Series of precision industrial scanners with the high-end capacity required for large-scale and heavy parts.
Inspection tank	Stainless steel construction with viewing windows, high-capacity water conditioning system and water skimmer.
Scanning robot	Rugged gantry-mounted bridge and single or dual search tubes provide high-speed inspection within tight tolerance limits for accuracy, repeatability and resolution.
Inspection technique	Immersion inspection in pulse-echo and thru-transmission modes.
Transducer manipulators	Selection of either RESOLVE Series high-resolution dual-gimbal (A,B-axis) or gimbal-swivel (U,V-axis) manipulator, including sealed, direct-drive DC servo motors with low-backlash drive train. Optional C-axis for motorized rotation about the Z-axis.
Parts' turntable	High-resolution RESOLVE Series 900 to 3000mm (36" to 120") diameter, load (dependent on diameter) up to 2 tons (4,400lb), turntables with sealed, servo motor drive train. Oversize, zero-maintenance stainless steel central bearing maintains alignment even in the presence of off-center loads.
Lift platform	Screw-driven lift platform with servo drive. Control from ScanMaster 'virtual' control panel. Variable vertical positioning for scanning at any desired level.
Platform for reference standards	Large 200mm x 600mm (8" x 24") table fixed to the lift platform for locating reference standards. Includes two 90deg reference edges.
Transducers	1-25MHz immersion-type transducers with standard UHF connector.
Ultrasonic hardware	Up to 16 channel usc-100 rack-mount ultrasonic instrument with <i>RPP3</i> (square wave) pulser preamplifier.
Operator control console	Desktop mounted 19" TFT monitor, keyboard and mouse. Complete system control from 'virtual' control panel. Optional remote control pendant.
Motion control	Servo motion control for all axes, with encoder feedback and RF noise suppression circuitry. Hardware housed in environment-protected cabinet.
Part programming	ScanMaster Teach-In Programmer for set-up and execution of multi-segment scans. All ultrasonic and scan parameters can be individually set for each scan segment. Import of part geometry from CAD such Unigraphics and Autocad.
Imaging software	ScanMaster B and C-scan Imaging Software, with up to 132K peak amplitude and TOF measurements/sec and 'SMART' threshold-based A-scan signal capture up to 80Mbytes/sec.
Data analysis and processing	ScanMaster C-scan Data Processing and Analysis Tool Kit. Includes a library of tools for image processing, image projection and measurement of flaw size, depth and signal strength. Automatic advanced flaw evaluation including <i>Search & Identify</i> and <i>Statistics</i> .
System access control	Five levels of programmable authorized access.
Scanning accessories	RESOLVE Series bar rotator for inspection of round bars and tubes, and head-and-tail stock for inspection of thin-walled metallic and composite tubes.

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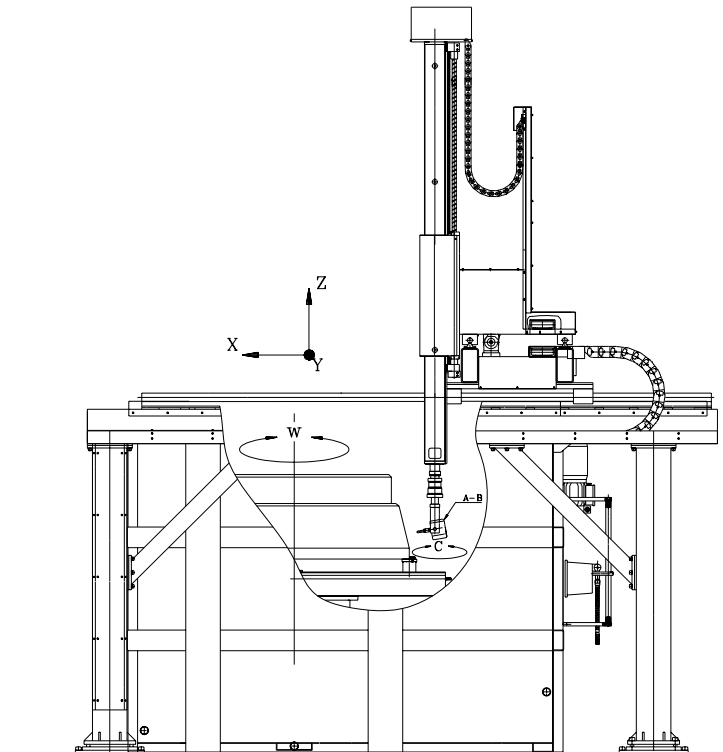
Inspection documentation	Standard documentation tools include: Inspection report; operator annotations; storage and screen dump of any A-scan display; image capture and storage.
Remote data processing	Optional off-line data processing and analysis station connected by LAN to the control console.

PERFORMANCE ENVELOPE

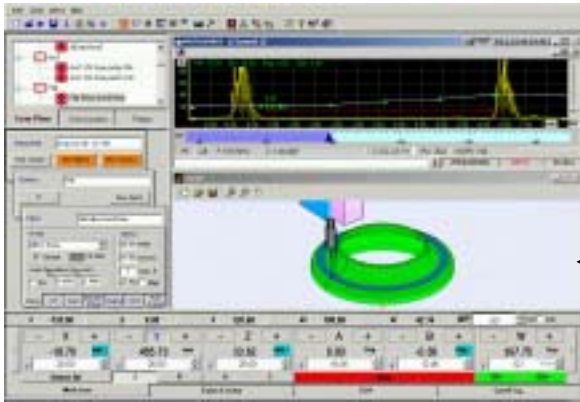
Axis	Motion Envelope	Speed Range	Resolution	Repeatability	Accuracy	Backlash	Min. Motion
	deg		deg	± deg	± deg/45deg	± deg	deg
A^I	± 37.5	0.1-20deg/sec	0.01	≤0.02	0.03	≤0.02	0.02
B^I	± 112	0.1-20deg/sec	0.01	≤0.02	0.03	≤0.02	0.02
C^{II}	± 190	0.1-20deg/sec	0.01	≤0.02	0.03	≤0.02	0.02
U^I	± 190	0.1-20deg/sec	0.01	≤0.02	0.03	≤0.02	0.02
V^I	± 120	0.1-20deg/sec	0.01	≤0.02	0.03	≤0.02	0.02
W	360	0.1-30RPM ^V	0.01	0.03 ^{III}	0.03	≤0.03	0.03

	mm (in)	mm/sec (in/sec)	mm (in)	± mm (in)	± mm/300mm (in/12in)	± mm (in)	mm (in)
X	From 1500 (60)	0.1-500 (0.04-20)	0.01 (0.0004)	≤0.02 (0.002)	0.025 (0.001)	≤0.02 (0.001)	0.03 (0.001)
Y	1500 – 3000 (60-120)	0.1-500 (0.04-20)	0.01 (0.0004)	≤0.02 (0.002)	0.025 (0.001)	≤0.02 (0.001)	0.03 (0.001)
Z	1000 – 2800 (40-110)	0.1-150 (0.04-6)	0.01 (0.0004)	≤0.02 (0.002)	0.025 (0.001)	≤0.02 (0.001)	0.03 (0.001)
Z_p^{IV}	1000 – 2800 (40-110)	0.1-10 (0.04-0.4)	0.05 (0.002)	0.2 (0.01)	0.2 (0.01)	≤0.02 (0.001)	1.0 (0.04)

^I Select A,B or U,V type manipulator • ^{II} Optional C axis may be used in conjunction with A,B manipulator • ^{III} At rated load.
 • ^{IV} Lift platform • ^V Optional 50 RPM, size dependent



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← A-scan display

← 3D system and part display

← Motion

ScanMaster 'virtual' control panel



* Specifications are subject to change without notice.

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