

Ultrasonic Immersion Scanners

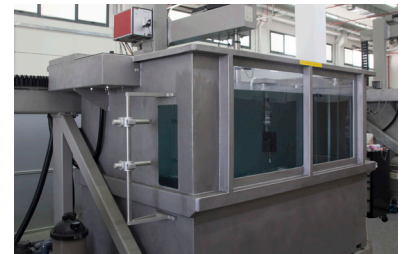
A wide range of high precision, high productivity immersion scanners incorporating conventional and phased arrays technology to provide solutions for a variety of applications

Features

- Fully integrated imaging systems, including ultrasonic electronics, scanning mechanics, axes motion control and data acquisition and processing software
- Multi-channel usc-100b programmable ultrasonic instrument with excellent near surface resolution. Approved by all major manufacturers for C-scan inspection of forged jet engine discs and other applications
- Full integration of phased array capability for multi-zone and multi-angle inspection using annular, linear and matrix phased array transducers
- Powerful teach-in and scanning software allowing for inspection of complex 3D parts
- Off-line part programming by importing of part model from CAD file
- B- and C-scan data processing and analysis tool kit. Includes a reach library of tools for analysis and evaluation of scan results
- Advanced algorithms for automatic immersion evaluation of jet engine discs
- Comprehensive inspection report, standard and customized versions
- High-precision, high-speed, cantilever- or bridge-based mechanics, with closed loop servo motor control, including encoder feedback
- High-resolution, gimbal-gimbal motorized manipulator with protective electro-mechanical breakaway, which prevents damage to manipulator, transducers and part under inspection in case of collision
- High-performance turntable with self-centering manual or motorized chucks
- Continuous motion or two-position lifting device for easy loading and unloading of parts
- Provisions for robot-based automatic loading and unloading of parts



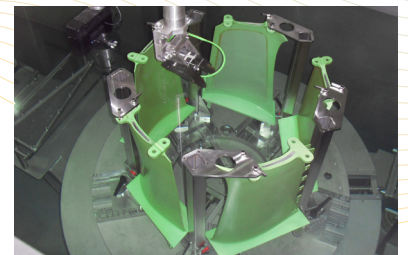
Jet Engine Discs



Phased Array Disc Inspection



Composites



Blades and Vanes



Bars and Billets



Non-ferrous Plates



Bearings

Standard Immersion Scanners – Performance Highlights^{1,2}

Product	Motion Envelope Linear Axes			Manipulator ³		Max. Part Diameter mm (inch)	Turntable Capacity kg (lbs)	Water Height ⁴ mm (inch)
	X mm (inch)	Y mm (inch)	Z mm (inch)	A deg	B deg			
LS-50 Series								
LS-50	750 (30)	400 (16)	450 (18)	±38	±112	400 (16)	80 (176)	300 (12)
LS-500 Series								
LS-500-1000 ^{5,6}	1,000 (40)	600 (24)	700 (28)	±38	±112	600 (24)	200 (440)	430 (17)
LS-200 Series								
LS-200s	1,200 (48)	600 (24)	600 (24)	±38	±112	600 (24)	200 (400)	450 (18)
LS-200L-1200 ⁵	1,770 (69)	920 (36)	1,000 (40)	±38	±112	1,200 (48)	1,000 (2,200)	820 (32)
LS-200LP-1200 ⁷	1,400 (55)	920 (36)	1,000 (40)	±38	±112	1,200 (48)	1,000 (2,200)	780 (30)
LS-200L-1500 ⁵	1,800 (70)	1,100 (43)	1,000 (40)	±38	±112	1,500 (59)	1,000 (2,200)	780 (30)
LS-200LP-1500 ⁷	1,680 (66)	1,100 (43)	1,000 (40)	±38	±112	1,500 (59)	1,000 (2,200)	740 (29)
DS-200 Series								
DS-200i-1500 ⁷	1,700 (66)	1,500 (59)	1,000 (40)	±38	±112	1,500 (59)	2,000 (4,400)	1,000 (40)
DS-200i-1800 ⁷	1,700 (66)	1,500 (59)	1,000 (40)	±38	±112	1,800 (70)	2,000 (4,400)	1,000 (40)

¹ Please consult product data sheet for complete information

² Custom tank size and turntable capacity available upon request

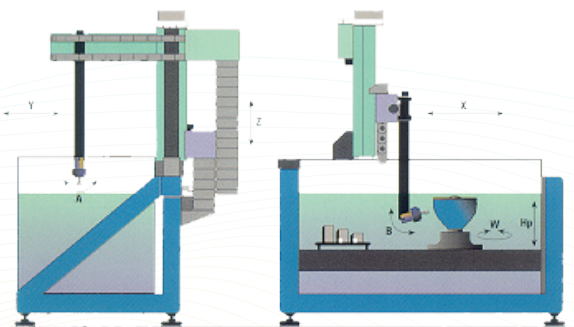
³ Additional optional swivel axis (U) is available, motion range $\pm 185^\circ$

⁴ Measured from turntable chuck raisers

⁵ Optional motorized two-position lift platform

⁶ Length expandable to 1,500mm (59inch); 2,000mm (79inch) and higher

⁷ Includes motorized continuous motion lift platform



Options

- Full integration of phased array capability
- 3D contour following for scanning parts of complex geometry
- Motorized lifting device (lift platform), two-position or continuous motion
- Motorized chucking for quick part clamping
- Bar rotator for inspection of bars, tubes and billets
- Application-tailored multi-transducer probe holder
- Mechanical or ultrasonic surface tracking device
- Interface to loading/unloading robot for automation of inspection
- Transportable version with quick installation and ready for operation (SKAN200, SKAN500 Series)

CORPORATE OFFICES

ScanMaster Systems (IRT) Ltd.

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Squirter based Inspection systems

The extensive use of composite materials structures is dictating an increasing need for adequate, reliable, high throughput inspection systems.

Structural parts can be scanned using various configurations of squirter systems, in both pulse-echo and thru transmission modes. ScanMaster squirter systems are designed to inspect a wide range of aerospace structures, from flat panels to complex curvature parts. Both conventional, high penetration UT and phased array technologies are available.



Supported Scanner Configurations

- Travelling bridge type scanners are suitable for inspection of single curvature parts (one bridge systems) or double curvature parts (two bridge systems). This configuration requires minimal floor space and permits use of a turntable for high throughput inspection of round structures. A removable immersion tank can be provided as required.
- Dual tower scanners are appropriate for scanning complex double curvature parts. A removable immersion system can also be provided in this configuration.
- Flatbed systems are used for inspection of flat parts or parts of moderate curvature. These scanners are usually equipped with multiple squirters for productivity enhancement.



Travelling bridges scanner



Dual tower scanner

ScanMaster

Ultrasonic Inspection Solutions

Features and Benefits

Fully integrated systems: All system components are designed, manufactured and tested by ScanMaster, ensuring smooth, reliable operation of the system as a whole

- Scanning speeds of up to 1,000 mm/second
- Simultaneous inspection in through transmission and pulse echo modes
- Simultaneous inspection with linear and logarithmic amplifiers
- Dual squirter, dual frequency features for high throughput
- Easy part programming through intuitive Teach In tools, including import of CAD files such as CATIA
- Advanced image analysis and processing tools
- Adherence to Airbus and Boeing requirements
- Packaged water systems with active flaw control, including storage, filtration and UV treatment
- Optional turntable and part fixtures
- Optional removable immersion tank (gantry and dual tower configurations)



Flatbed scanner



Dual tower scanner with mobile immersion tank



Dual bridge scanner

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