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, data acquisition and processing software
- Multi-channel usc-100C 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 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
# Standard Immersion Scanners – Performance Highlights

<table>
<thead>
<tr>
<th>Product</th>
<th>Motion Envelope Linear Axes</th>
<th>Manipulator</th>
<th>Max. Part Diameter (mm)</th>
<th>Turntable Capacity kg (lbs)</th>
<th>Water Height (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X mm (inch)</td>
<td>Y mm (inch)</td>
<td>Z mm (inch)</td>
<td>A deg</td>
<td>B deg</td>
</tr>
<tr>
<td><strong>LS-50 Series</strong></td>
<td></td>
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<tr>
<td>LS-50⁴</td>
<td>750 (30)</td>
<td>400 (16)</td>
<td>450 (18)</td>
<td>±38</td>
<td>±112</td>
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<tr>
<td><strong>LS-500 Series</strong></td>
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<tr>
<td>LS-500-1000⁵,⁶</td>
<td>1,000 (40)</td>
<td>600 (24)</td>
<td>700 (28)</td>
<td>±38</td>
<td>±112</td>
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<tr>
<td><strong>LS-200 Series</strong></td>
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<tr>
<td>LS-200s</td>
<td>1,200 (48)</td>
<td>600 (24)</td>
<td>600 (24)</td>
<td>±38</td>
<td>±112</td>
</tr>
<tr>
<td>LS-200L-1200</td>
<td>1,770 (69)</td>
<td>920 (36)</td>
<td>1,000 (40)</td>
<td>±38</td>
<td>±112</td>
</tr>
<tr>
<td>LS-200LP-1200⁷</td>
<td>1,400 (55)</td>
<td>920 (36)</td>
<td>1,000 (40)</td>
<td>±38</td>
<td>±112</td>
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<tr>
<td>LS-200LP-1500⁷</td>
<td>1,680 (66)</td>
<td>1,100 (43)</td>
<td>1,000 (40)</td>
<td>±38</td>
<td>±112</td>
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<td><strong>DS-200 Series</strong></td>
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<tr>
<td>DS-200i-1800⁷</td>
<td>2,000 (78)</td>
<td>1,500 (59)</td>
<td>1,300 (51)</td>
<td>±38</td>
<td>±112</td>
</tr>
</tbody>
</table>

1. Please consult ScanMaster Systems for complete information
2. Custom tank size and turntable capacity available upon request
3. Additional optional swivel axis (U) is available, motion range ± 185°
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
8. For bar rotator configuration please refer to the LS-50 brochure

## Options

- 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)