

## UZM 1000

# ULTRASONIC IMMERSION SCANNING SYSTEM FOR INSPECTION OF TURBINE DISCS



- **6 axis high precision UT immersion scanning system for inspection critical parts in aerospace**
- **Comply with Rolls-Royce specification RPS 705 and others**
- **CE marking / EMC compatibility**
- **Approved by GE Aerospace, Rolls-Royce, Pratt and Whitney ..**

### Basic specification

<b>Dimensions of workplace :</b>	<ul style="list-style-type: none"> <li>• outer size 4 x 3 x 2m</li> </ul>	<b>Water system:</b>	<ul style="list-style-type: none"> <li>• filters for water cleaning / bubbles removing</li> <li>• thermostatic control</li> </ul>
<b>Inner tank size</b>	<ul style="list-style-type: none"> <li>• 1250x1250x1250 mm</li> </ul>	<b>Controls</b>	<ul style="list-style-type: none"> <li>• automated scanning process of 100 % volume / surface</li> </ul>
<b>Power supply :</b>	<ul style="list-style-type: none"> <li>• 3x400V, 50Hz , 12kW</li> </ul>	<b>Manipulation - upload/ unload:</b>	<ul style="list-style-type: none"> <li>• upload / unload manual - rail hoist system</li> </ul>
<b>Inspection technique</b>	<ul style="list-style-type: none"> <li>• immersion UT scanning / echo start</li> <li>• automated scanning process of 100 % volume / surface</li> </ul>	<b>Structure:</b>	<ul style="list-style-type: none"> <li>• Stainless steel construction with viewing window. and UT calibration reflector</li> </ul>
<b>Tested parts:</b>	<ul style="list-style-type: none"> <li>• forgings - aerospace turbine – high temperature alloys</li> <li>• up to 1000 diam x 600 mm ,</li> <li>• up to 750 kg</li> </ul>		<ul style="list-style-type: none"> <li>• structure optimised for noise suppression to allow inspection at high UT instrument gains</li> </ul>

<b>Place of installation</b>	<b>PCCs.r.o. Plzeň (Czech Rep.)</b>	<b>Contact to the users plant</b>	<b>Mr. Stepan Plant Manag.</b>
<b>Year of installation</b>	<b>2002</b>		

## REFERENCE FILE



### MAIN PARTS OF THE SCANNER:

- immersion tank with support frame
- motorized X,Y,Z scanning bridge (rectangular coordinates)
- motorized turntable W inserted to tank
- motorized dula gimbal transducers holder ( A, B.)
- set of probes / transducers holders
- water system with cleaning and air bubbles removers
- PC based motion control system
- software for motion control ( WINDOWS )

### MOTION AND CONTROL FEATURES :

- selectable automated / manual motion control
- operator console based on industrial PC for complete system control and parameter settings, pushbutton panel for manual motion control
- on-line software based screen display of motion parameter
- closed loop servo motion control hardware with Windows NT /2000operating system.
- Encoder feedback on each motion axis available , including B, W (turntable), X, Y, Z,
- Inspection along surfaces of arbitrary contour shape in the index direction.
- scanning velocity up to 1m /s
- turnable table speed up 45 turn / minutes continuously adjustable
- typical angular resolution 0,02°
- typical angular accuracy +/- 0,1°
- typical positioning resolution 0,04 mm
- typical positioning accuracy +/- 0,1 mm

