

USL Ultrasonic testing systems for industry

News September 2014



Recent installations

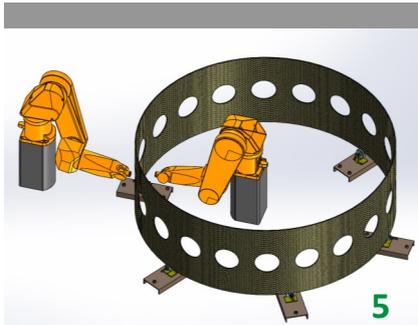
A 4 channel flatbed system has been installed and commissioned at CTRM in Malaysia—pictures 1 and 2. The system has a scan area of 10 x 3 metres and is used for rapid through transmission inspection of flat and slightly curved aerospace composite parts. Parts are positioned on a series of stainless steel wires without the need for special fixtures, so that loading and unloading is quick and easy.

Parts with a wide range of shape and thickness can be scanned in a single set-up because the logarithmic amplifier captures a wide dynamic range—up to 90dB—in a single scan.

Also for an aerospace application, a 3 axis vertical scanner has been installed at Hindustan Aeronautics in India (3). This is used for inspection of flat panels, mainly aluminium alloy skins and aluminium honeycomb, although equally suited to non-metallic composites. This is one of the simplest configurations of scanner made by USL, but it has the same advanced ultrasonic and data acquisition electronics as all other USL machines.

Final acceptance has been completed for 3 “twin-tower” 10 axis systems at customer sites in China. These have the configuration shown on the left (4). A further system which has a combination of horizontal and vertical manipulators has also been completed.

An **upgrade** has been completed on a 10 axis system originally supplied by Midas to Yuksel Composites in Turkey. The system had been left idle after installation and it required new ultrasonics, motion control and software to bring it to a fully operational condition. This follows a similar upgrade completed earlier at Quickstep Technologies in Australia.



Recent new orders

Orders have been received for two systems based on industrial robots. One is a dual robot system for through transmission inspection (picture 5) and the other has a single robot for a pulse echo application. These systems capitalise on our recent developments in robot control which give an order of magnitude increase in positional feedback rate, allowing significantly increased scanning speeds.

The pulse echo system will incorporate phased array electronics and a 64 element roller probe for inspection of a composite product for delaminations, porosity, resin rich areas and other potential defects. The advantage of a roller probe in this application is that it replicates immersion testing without actually immersing the part in water.

Work is in progress on several other systems, including:

1. A 6 axis immersion system for inspection of roto - symmetrical and other forging shapes.
2. Two three axis laboratory immersion units, one for a research application in UK and the other for a composites application in Indonesia.
3. A computer, ultrasonic and software upgrade of a high frequency scanning system (6), originally supplied by us in 1991.
4. A 6 axis immersion system for a research and development laboratory in UK.
5. A unit for inspection of composite filament wound tubes for a customer in Sweden.
6. A 3 axis vertical squirter through transmission system (picture 7) for a UK composites manufacturer.

Other news

USL has gained ISO9001:2008 certification from the British Standards Institute. This covers calibration of ultrasonic testing systems manufactured by USL and by other companies. We can calibrate systems to EN12668-1:2010, EN12668-3:2013, Airbus Specification AITM6-0013 Issue 5 and many others which cover instruments and systems.




Certificate of Registration

QUALITY MANAGEMENT SYSTEM - ISO 9001:2008

This is to certify that:

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Global Assurance Director

Hold Certificate Number: PS 610300

and operates a Quality Management System which complies with the requirements of ISO 9001:2008 for the following scope:

Quality management system for the calibration of ultrasonic testing systems manufactured by Ultrasonic Sciences Limited or other manufacturers.

For and on behalf of BSI: 

Originally registered: 12/06/2014 Latest Issue: 30/07/2014 Expiry Date: 11/06/2017

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