

USL expansion

We are now operating in our additional factory following the installation of a new gantry crane. This will help in the assembly of large systems, of which we now have 4 complex geometry squirter units in progress, the smallest being 5 x 3 x 2 metres. This is in addition to many other small systems which are in various stages of design and manufacture.

Recent deliveries

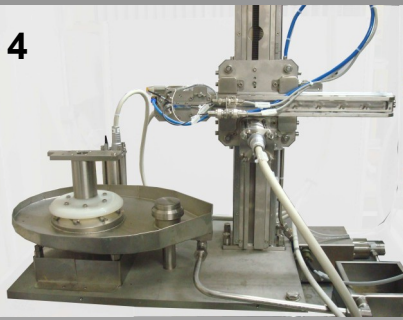
A complex geometry immersion system (1) has been installed at a UK composites manufacturer. It has 12 scanning axes which are synchronously controlled for simultaneous pulse echo and through transmission inspection of complex shaped products. In addition to generation of multiple C scan images the system stores the full waveform data for detailed post processing.

A 5 axis immersion system (2), also for composite inspection, was installed at BAE Systems some months ago. This is used for pulse echo inspection of dual curved parts using a single transducer and also for inspection of flat and single curved composite panels using USL's scanning array electronics.

A unique system (3) has been installed at Agusta Westland to replace manual and semi-automatic inspections. The system was specifically designed to accommodate some widely differing shapes and test techniques, with the result that it incorporates a C scan capability using linear scanning, roller bed, turntable and bore testing, with both pulse echo and through transmission inspection. The versatile system tests bonded metal parts, composite tubes, electron beam welds and forged components.

Another unique system has been supplied to a UK engineering company for inspection of bonds on roto-symmetrical parts such as cones and cylinders, using a bubbler probe with couplant recirculation. (PTO)

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Recent installations (cont)

The unit (4) has two linear axes, a turntable and a probe tip axis which can be programmed to follow contours. It also includes a specially designed collision sensor using an eddy current coil mounted in the front of the probe nozzle. The system generates polar C scan plots based on multi-gate amplitude measurements and thickness data. Before the scanner can be used in earnest, the operator is forced to go through an automated calibration routine to check that all the measurements and the component positioning is valid.

New orders and work in progress

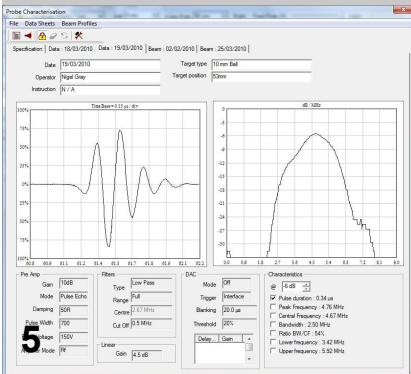
At the time of writing a 10+5 axis complex geometry squirter system is nearing completion, with 3 other similar units at various stages of manufacture. In addition we have orders on hand for a total of 10 immersion systems which are destined for customers in UK, Austria and Singapore.

System upgrades

Having recently upgraded a USL laboratory scanner at Oxford University, we are now carrying out the same task on two different system which we first supplied many years ago. In fact one of them—a scanning acoustic microscope—was the first system that we ever supplied in 1989 to GEC Marconi—a name from the distant past.

The second is a system for inspection of hollow rail axles which was supplied to SNCF in 1993. This has been in regular use in the intervening period for inspecting wheelsets during routine maintenance of the TGV trains.

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New software option

A new probe characterisation software option is now available on most USL scanning systems. This incorporates waveform capture and frequency analysis, plus transverse and longitudinal beam profiling on immersion systems. The software is designed not only for routine probe testing, but also to track deterioration in any aspect of the probes performance.

The illustrations on the left (5 and 6) show representative screen dumps from the software. The software can be specified on new systems and retro-fitted to systems using the "USL scanner" software.

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