

# USL Ultrasonic testing systems for industry

## News *October 2012*



### Recent deliveries and installations

Following successful pre-delivery acceptance testing at the USL factory, two complex geometry squirter inspection systems similar to that in Fig 1 are now in transit to customers in China. These are 10 axis machines, with a scan volume of 6 x 1.5 x 3 and 8 x 2 x 3 metres. They will be installed at two separate customers in the city of Shenyang. A further 6 similar systems are currently in manufacture at the USL factories, destined for China, Japan, UK and The Netherlands.



Following our first robotic installation earlier in the year at a GE Aerospace site (Fig 2), a further USL ultrasonic system has now been added to a robot for a different application (Fig 3). This will be used for thickness measurements on critical fabricated components as part of a precision manufacturing cell.

A small immersion system for inspection of electronic components has been installed at a UK semiconductor manufacturer. This will be used for bond inspection on encapsulated power devices. The first system ever made by USL was installed at the same factory in 1987, when the site was part of the GEC group. That original system is still in use about 1km away from its original location.



A 4 axis immersion scanner originally manufactured by MicroControle has been upgraded with USL's latest data acquisition and control software at Southampton University.

### New orders

Since the recession started, order intake at USL has been increasing year-on-year. In recent months orders for two more multi-axis complex geometry systems have been received, both from existing users of similar equipment. One will be installed at a composites manufacturer in UK, joining four existing USL complex geometry systems and several older machines from other suppliers which have been upgraded by USL.



## New orders (continued)

Two immersion systems have been ordered, one for composite inspection and another for titanium alloy plate material. Again, these orders have been placed by existing users of USL equipment, proving once more the level of satisfaction we provide.

The first system will be used for double through transmission testing of special composite tubes. This is a relatively simple 3 axis system, but incorporating a complex fabricated stainless steel reflector plate.

The second system is virtually identical to the system pictured on the left (Fig 4). This is effectively two systems in one, because it has two scanning bridges and two completely independent control and data acquisition systems. The 8 metre long tank has a removable divider with the ability to pump water out of each section into an external holding tank so that plates can be loaded using a vacuum hoist system. When long plates have to be tested, the divider is removed and one bridge is parked, so that the other bridge can scan over the full extended length of the tank.

Both bridges have a manipulator with 8 probes (Fig 5) connected to a multi-channel USL ultrasonic and data acquisition system. The software is designed to automatically adjust the angle of the manipulator to follow any deviations from flatness.

Finally, ultrasonic and data acquisition upgrades to existing USL immersion systems have been supplied to customers in UK and Russia.

## OEM orders

For many years we have supplied our multi-channel ultrasonic units and software to system integrators in different countries. The USL equipment is installed by these companies into new machines or as part of an upgrading process on old third party scanners. Over the years, we have supplied more than 50 sets of equipment for this purpose.

Orders for four such multi-channel electronic units have been placed recently, with three of these destined for installation at aerospace manufacturing companies in the USA. The supply extends also to the USL scanner control and data acquisition software, which is configurable for many different scanner types.

## Investment at USL

We have invested in a Faro Ion laser tracking system (Fig 6) to assist in the manufacture of large systems and to guarantee machine accuracy to levels previously unobtainable.

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