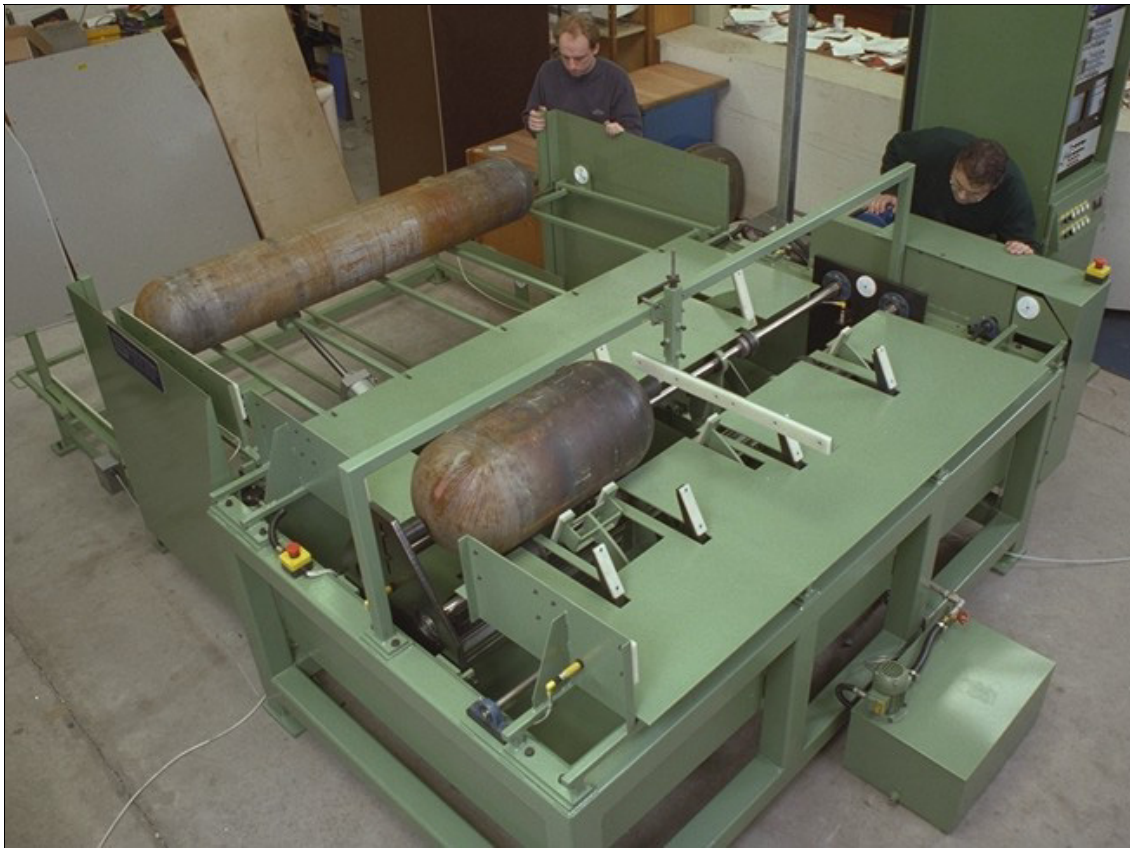


ULTRASONIC INSPECTION SYSTEM FOR SEAMLESS GAS CYLINDERS



This equipment is for the ultrasonic inspection of seamless gas cylinders. The ultrasonic inspection is achieved using a single fixed **Water Column Coupled Probe (WCCP)** unit for both the longitudinal and circumferential shear wave flaw detection in addition to the compression wave thickness monitoring. See the reverse of this brochure.

**Cylinder sizes 140mm to 400mm diameter
with a maximum length of 2500mm.**

WCCP ultrasonic probe unit.

**Longitudinal, oblique and transverse
ultrasonic shear wave testing.**

Compression wave testing.

Fully automatic or Manual load system.



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The Gas Cylinder to be inspected is placed on to the rolls that rotate the part during the inspection. This can be done automatically or manually depending of the system specified.

The loaded the cylinder starts to rotate; once it is up to speed the single **WCCP** unit will scan along the parallel side of the bottle.

At the end of the scan, the bottle will stop rotating and the **WCCP** unit retracted. The test results, including whether the cylinder is acceptable or not will be displayed and can be stored if required. These results can also be printed.

WCCP Ultrasonic Probe Units

The **WCCP** unit has been developed to replace existing water jet type probe units and to obtain an inspection signal to noise ratio similar to immersion systems. Units have been supplied for longitudinal shear wave and compression wave inspection

The units are very compact and permit multi-probe heads to be made using a simple modular construction. The latest **WCCP** twin units can configure ten probes in a 100mm length. The index between probes is selected to ensure full interlacing of probe scans. Standard multiple probe configurations have been defined such that full interleaving of probe scans is achieved for detection of a specific minimum flaw length or full ultrasonic coverage.

The **WCCP** units offer the following advantages:

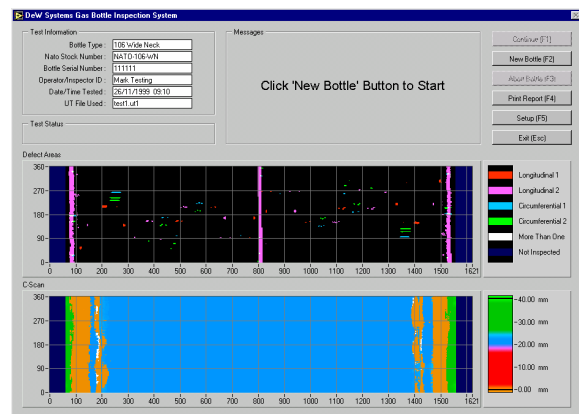
- Units applied to product top surface to give easy access for setting up
- Good signal to noise ratio with performance similar to that of immersion systems
- Minimal adjustment when changing tube diameters
- No immersion tank required
- Inspect within 20mm of the product ends, with instantaneous coupling
- Incorporate end detection facilities using small receiver probes to monitor product position.

Gas Cylinder Inspection Software

The gas cylinder inspection software is designed to perform several functions critical to the integrity of the overall inspection system.

These functions include:

- Test information, and messages, where feedback is given to the operator, about the state of the system together with messages.
- The defect areas graphics showing the defects detected by the all of the shear wave transducers in the system. These are displayed in different colours as per the key shown to the side of the graph.
- The C-Scan graph displaying the thickness readings from the compression wave inspection. The thickness is displayed in different colours. The thickness range covered by each colour is user adjustable, using a simple set-up dialog.



The Main Screen of the gas cylinder inspection software is shown above.

Mechanical Handling Systems

Two different gas cylinder inspection systems are available;

A Fully Automatic System that is designed to interface to an inlet and outlet conveyor on the cylinder production line, as shown on the front of this brochure.

A manual system that requires the operator to load the cylinder onto the system and then initiate the inspection sequence.

Each of these systems can be configured for varying cylinder diameters, lengths and weights.