

Ultrasonic systems for inspection of seamless tube, welded tube and bar



- From upgrades and retrofits, to complete systems
- Multi-channel, multi-gate instrumentation
- Integrated eddy-current, laser gauge and marking modules
- Real time displays and high speed data acquisition
- Fully automated handling and sorting
- Production hardened PC based ultrasonics - low noise
- Fully automated, repeatable set-ups from stored data

Manufacture of high quality tube, pipe and bar material demands continuous monitoring for freedom from defects and dimensional tolerances. Production applications for ultrasonic inspection require precise high reliability instrumentation. This must be unaffected by the typical factory environment, which can be hot, electrically noisy and dirty.

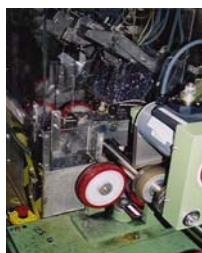
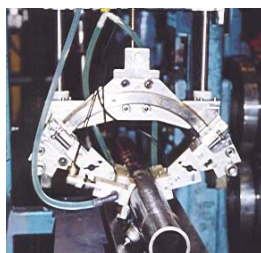
USL's range of PC-based ultrasonic equipment is specifically designed to meet these needs. In conjunction with automated material handling units from USL or other specialist suppliers, you can be sure that the quality of your product can be assured to meet the required standards.

Ultrasonic and control instrumentation is housed in air conditioned 19" rack assemblies, which ensures that the electronics is adequately protected. The system is operated using an external sealed keyboard. This installation includes a separate PC for on-line display of statistical data.



The systems can range in complexity from single probe units for continuous thickness monitoring, to multi probe assemblies for full wall inspection of rotating tube. The operation of test heads and the data acquisition sequence are controlled by sensors located in the handling unit and the test head itself.

In the case of welded tube and pipe, test heads can be provided for manual or automated weld following.



Test heads for ERW welded tube (left) and seamless tube in a rotating tube handling system (right)

Because many customers have special requirements, we are always willing to modify or design systems to suit your particular needs.

System features

Mechanical

- Systems for batch type testing or in-line
- Multi-probe test heads with raise/lower mechanisms
- Probe configurations for circumferential, longitudinal and mid wall defects. Also for thickness verification and couplant monitoring.
- Complete material handling systems with input and outlet racks
- Integration with encoders, position sensors, optical devices and limit switches
- Automatic defect marking by paint spray or ink jet
- Automatic defect sorting
- Couplant recirculation and conditioning

Ultrasonics / Electronics

- Sealed and air conditioned housings for severe factory environments
- Multi channel, multi gate systems
- Very high data acquisition rates (up to 10kHz per channel with 4 simultaneous gates)
- Fully production hardened for noise immunity, with exceptional S/N ratio
- Automated, repeatable set-up for each product from stored parameters
- Continuous defect and thickness monitoring and display
- PC control of material handling and sorting units, with PLC integration when required
- Couplant monitoring and control
- On board status monitoring and calibration options
- Optional eddy current and laser gauge units
- Optional second A scan display near test head
- Frequency from <0.5MHz to 25MHz

Software

- Windows menu based operation - easy to run
- Real time display of status of each gate
- Storage, recall and automatic setup for all test parameters
- Password protected access levels for operators and supervisors when required
- Interfaces to factory network and mainframe computers
- On line statistical monitoring and display
- Optional "chart recorder" type display, with recording and playback
- Custom software for special user requirements

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