Tube End Inspection System

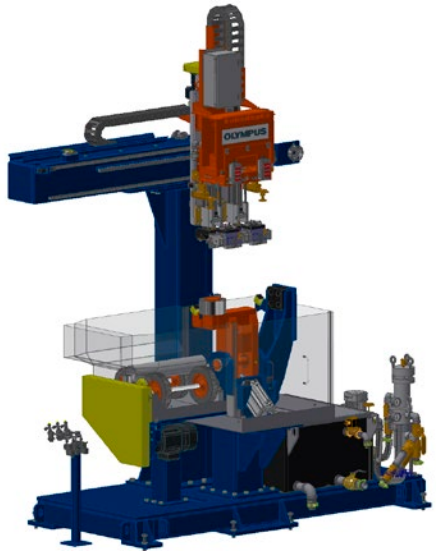
The detection technology of some tube manufacturing inspection systems is limited, leaving substantial untested lengths at both ends of the pipe. Olympus' Tube End Inspection System (TEIS) solves this problem. The TEIS provides a phased array inspection similar to that of our renown RTIS system on the untested lengths of seamless and welded pipes of various diameters and wall thicknesses (WT). A version with conventional UT probes is also available. Its integrated calibration station and water circulation system keep the footprint small, enabling manufacturers to easily install the TEIS in any production line.

Minimize Untested Tube Ends

Olympus' TEIS is built to comply with international standards governing pipe manufacturing inspection requirements. The TEIS inspects pipes ranging in size from 60.3 mm (2.37 in.) to 508 mm (20 in.) OD (a larger diameter range is also available on request). It detects typical defects such as:

- Longitudinal and transverse cracks
- Through-drilled holes
- Lamination defects

The TEIS is a high-quality phased array (PA) or conventional ultrasonic (UT) inspection solution that can be integrated into fully automated testing systems to meet stringent volume-inspection requirements. Designed for straightforward operation, the TEIS helps manufacturers ensure the quality of pipe ends by minimizing the untested lengths left by other inspection systems. Using the end-of-tube (EOT) algorithm, the untested length can be reduced to as little as 5 mm (0.2 in.) from the edge. This solution can be adapted to meet the varying needs of oil country tubular goods (OCTG) manufacturers.



TEIS turnkey solution features:

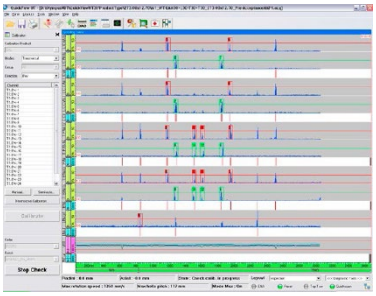
- Fully automated, including calibration and calibration check
- Same inspection quality, reliability, and traceability as our full-body RTIS inspection, including the same software and similar setups
- A mode is available that enables one operator to supervise the inspection of both ends simultaneously
- The EOT algorithm can be applied for PA inspection to detect transverse defects up to 5 mm (0.2 in.) from the edge
- Top turn signal can also be used for 2D mapping views
- Filtration is built into the system for a small footprint

System Performance

Standard Product Range	Diameter	60.3 mm to 508 mm OD (2.37 in. to 20 in. OD)
	Wall Thickness	4 mm to 50.8 mm (0.157 in. to 2 in.)
	Speed	Conventional UT: 4 mm/s to 60 mm/s Phased Array: 10 mm/s to 120 mm/s
	Coverage	100% coverage with untested length starting at 5 mm EOT inspection length can be configured according to requirements
Data Presentation	Real-Time Inspection Results	C-scan, A-scan, B-scan, strip charts, and alarms
Inspection Modes	Typical Inspection Modes	Longitudinal, transverse, and lamination defects
Detection Capabilities for Typical Reference Defects	Repeatability	L, T notches: <2.5 dB, TDH 3.2 mm (0.13 in.) and TDH 1.6 mm (0.06 in.): <3 dB, FBH 6.35 mm (0.25 in.): <4 dB
	Standards	ISO and API
Reporting and Data Storage	Report Types	Inspection, calibration, and calibration-check user-configurable reports
	Storage	Real-time database inspection data storage

This solution is powered by:

QuickScan™ Acquisition Unit



QuickView™ Software

Olympus Phased Array Probes

OLYMPUS SCIENTIFIC SOLUTIONS AMERICAS CORP. is certified to ISO 9001, ISO 14001, and OHSAS 18001.

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FSC® C018505

TEIS_EN_LTR_202002 • Printed in the USA • P/N: 920-584-EN Rev. A