

Newsletter Tube 2022



Welcome to Oxford Sensors Newsletter
for Tube 2022

Here at Oxford Sensors, we chose to focus on R&D during the pandemic and have several new developments to report.

We extended our range of standard laser sensors to cover fields of view from 10mm all the way up to 150mm.

We have solutions for all of the usual Tube and Pipe laser tracking applications, including laser and TIG tube mills, and all of the various spiral and longitudinal pipe mill configurations and applications.

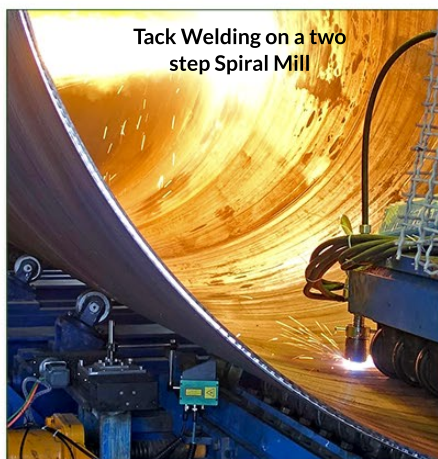
As well as all of the standard applications, we've been working on a few special tube & pipe applications as you can see below, including: an innovative low-cost laser vision module to go inside ERW pipes as they are made for ID Scarf inspection; a brand new Robot Pipe End Measurement System; an all-new scanning spot laser sensor for use in welding thick wall pipes.



Our standard Laser Sensors have a green laser cross for easy setup.



OSL has a new solution for robotic tube to tube welding.



Tack Welding on a two step Spiral Mill



Simultaneous ID/OD Offline Welding

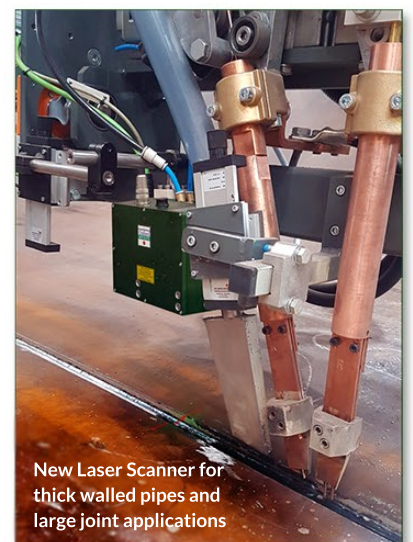
Laser Vision is now well established for tube & pipe mill applications. Ranging from super-accurate positioning of a laser welding head on a tube mill to control of multipass welding in thick wall pipe production, Oxford Sensors personnel have the experience to provide the best solution at a competitive price.

Quality Improvements

- Accurate weld placement every time
- Reduced defect rates
- More consistent penetration
- Better ID/OD interpenetration
- Better bead appearance
- Less reliance on individual operators

Productivity Improvements

- Higher efficiencies from reduced manpower
- Less repair and rework
- Enables higher welding speeds
- Enables more advanced weld profiles and smaller welds
- Frees operator for other tasks



New Laser Scanner for thick walled pipes and large joint applications



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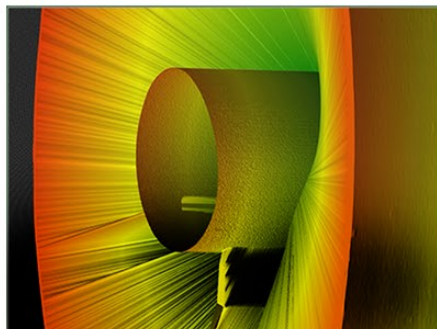
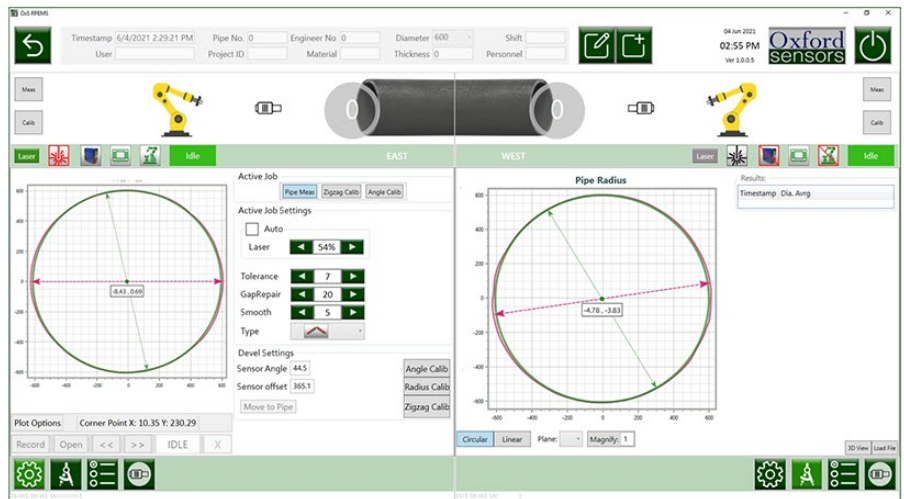
ROBOT PIPE END MEASUREMENT: RPEMS

OSL's new Robot Pipe End Measurement System is suitable for various pipe end measurement applications. It has recently been used for measuring and verifying the performance of pipe end expansion on a leading spiral mill.

Use of a standard industrial robot minimises floorspace requirements and maximises system flexibility. For example, the same system can measure both ends of each pipe.

The robot also allows for the head to be positioned in a safe place when not measuring and gives easy access to a nearby calibration stand.

All the usual measurements are available automatically in true pipe end coordinates.



Dimensionally accurate, high resolution 3D model generated for each pipe end.



Robot Pipe End Measurement System installed on robot in pipe production

ID SCARF SYSTEM:

OSL Introduces New ID Scarf Monitoring Module

Scarfing the ID weld to remove the weld bead is a requirement for many ERW welded pipes. Scarfing performance is difficult to monitor because of the hot fluid-filled environment inside the pipe. Previous attempts to solve this problem by using laser sensors inside the pipe failed because of the very high cost of the laser sensors combined with the risk of sensor damage.

OSL has solved this problem by introducing a new vision system with a low-cost sensor head. The sensor incorporates a laser stripe generator and a digital camera in a robust sealed compact housing.

The sensor is connected by a single high temperature small diameter coax cable.

The sensor provides high-quality video of the scarf area profile so that mill operators can continuously see the state of scarfing. Although fully digital, the basic system doesn't need a computer.

A more advanced system with automatic scarf monitoring is also available.



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