

# OTrack-NG

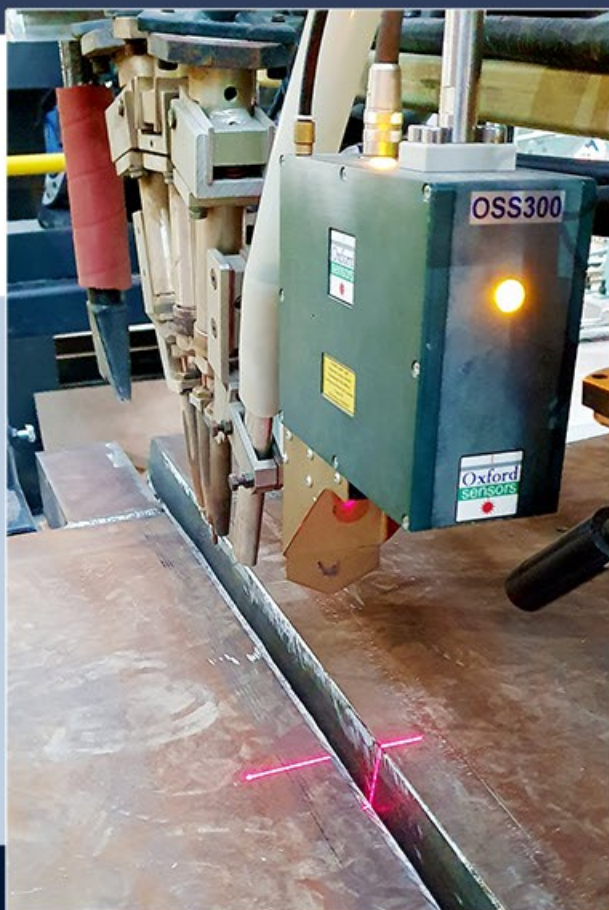
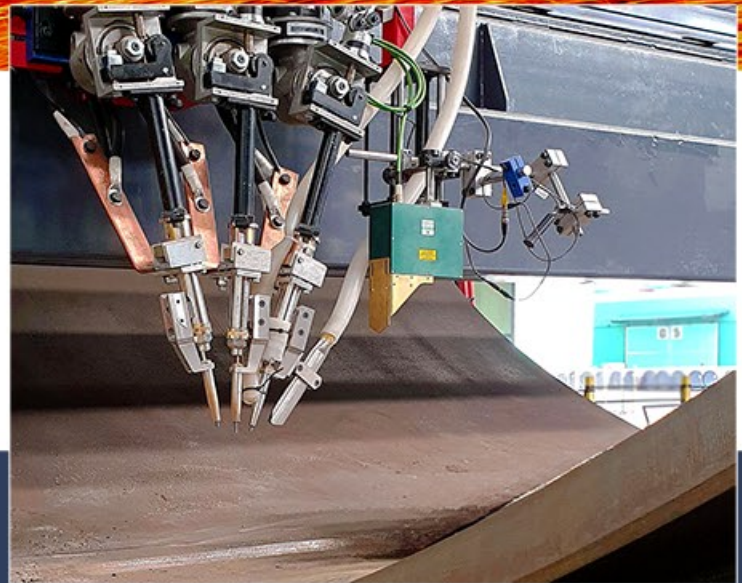
## Laser Seam Tracking System for Narrow Gap and semi Narrow Gap Joints

Oxford Sensor's OTrack-NG combines OSL's unique scanning spot laser sensor and proven multipass vision software to provide the leading system available for seam tracking for monopile production, nuclear vessel welding, fabricating heavy beams and other thick wall welding applications.

OSL's OSS300 laser sensor is based on the scanning spot principle. This has major advantages over the usual laser line method.

OSL's multipass OTrack software represents over twenty years of experience in multipass welding applications.

It exploits the benefits of the OSS300 laser sensor to provide extended functionality and excellent reliability for the long weld cycles typical in NG welding.



### Features

- OSS300 scanning spot sensor provides accurate reliable profiles of all types of weld joints, including narrow gap joints with 0° sidewall angle
- The OSS300 sensor has a large depth of field, over 300mm
- OSL's proven multipass software runs on a PanelPC with colour touchscreen
- OSL's multipass software interfaces with the machine control to memorise actual weld paths

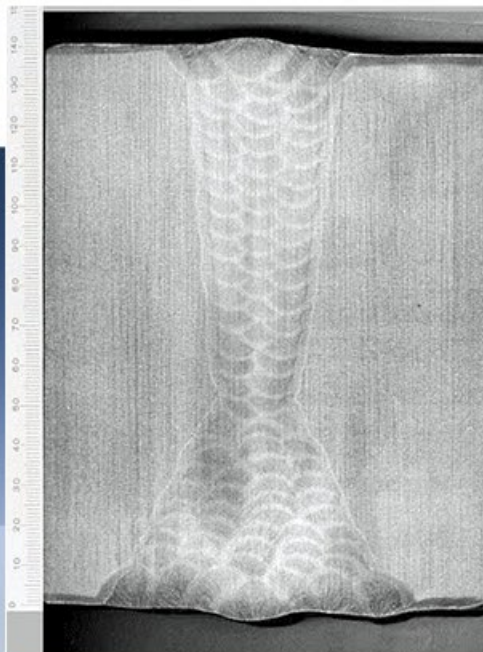
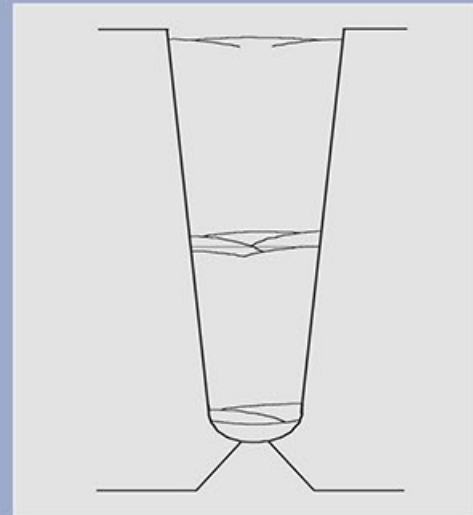


# OSS300 Scanning Spot Laser Sensor

Unlike conventional laser sensors for weld seam tracking which project a laser line, the scanning spot sensor projects a spot which is scanned across the weld joint.

This has four major advantages:

1. Since only a single point is measured at each moment, the sensor doesn't "look" at the rest of the joint and reflections are largely eliminated.
2. By making a series of single point measurements, a dynamic laser control can compensate for variations in surface reflectivity, unlike a stripe sensor which uses the same laser intensity for the complete profile.
3. The depth range of the sensor is set by optics while the width of the scan is determined by the scan system. This makes it easy to have an adjustable scan width which matches the requirements of narrow gap joints.
4. The overall signal to noise ratio is high because the sensor is making a series of very short measurements. This means that open arc welding arcs don't affect the sensor.



The high quality profile from the OSS300 is analysed by the OTrack-NG software to identify key points within the joint profile.

These are then used for accurate positioning of the current weld pass, which can be on the left side, right side, or somewhere else across the joint as required.





# OTrack-NG Applications



OSL's OTrack-NG system was designed for narrow gap and semi narrow gap welding applications.

These include:

## Monopile and Thick Wall Pipe Welding (SAW)

- Plate to plate welding
- Inside longitudinal welding
- Outside longitudinal welding
- Inside circumferential welding
- Outside circumferential welding

## Nuclear Vessel Fabrication:

- TIG welding of NG joints

## Heavy Beam Production

The OTrack-NG system has been successfully applied on many different types of large welding machines, including column & boom, side beam, gantry & robot welding.





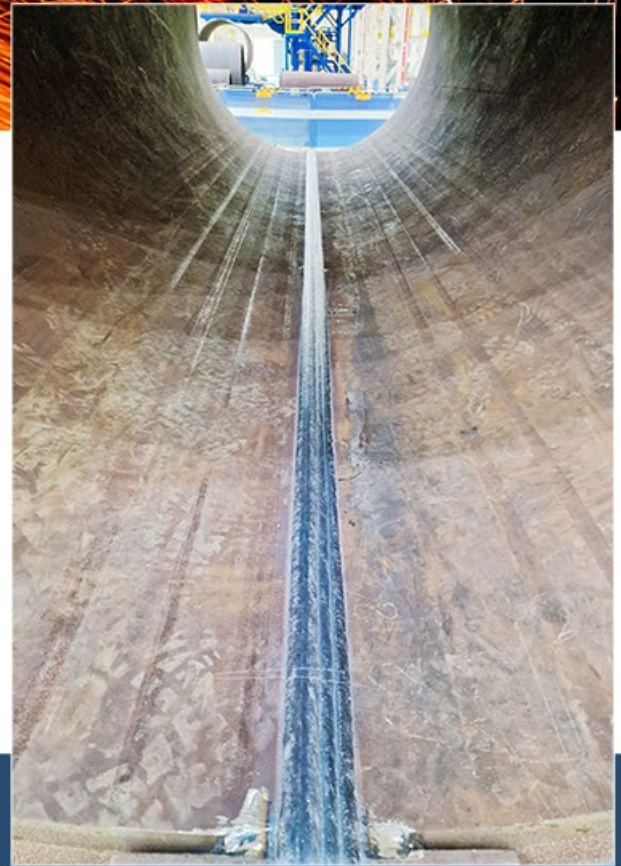
OSL staff worked on the world's first monopile production line over twenty years ago, where the scanning spot sensor technology and multipass software with memorization and replay were first applied together for semi narrow gap welding.

Those machines are still in full scale production today.

The OSS300 scanning spot sensor is the only laser sensor on the market which can provide accurate, reliable joint profiles of freshly machined narrow gap joints.

The combination of the OSS300 scanning spot sensor, the OTrack multipass software and the user-friendly HMI provide the best solution on the market for narrow gap and semi narrow gap welding.

OSL's OTrack-NG system is already in use at several of the most advanced monopile and nuclear production facilities in the world.



## Benefits

- **The high quality profiles from the OSS300 sensor enable:**
  - The unique ability to "see" into narrow gap joints and position electrodes accordingly
  - accurate positioning of each weld pass, critical for good sidewall fusion in NG joints
  - reliable operation over long weld cycles
- **OSL's multipass software combined with the colour touchscreen provide:**
  - A highly informative display showing system operation at all times
  - An easy to use HMI for machine operators
  - Simple switching between different weld passes
- **OSL's multipass software memorises actual weld paths to provide for path replay on capping passes**
- **Fast pass positioning and memory replay functionality provides significant productivity improvements on all multipass longitudinal welds. One ID longitudinal machine operator was moved to say, "This is magnificent technology".**
- **Reliable operation minimizes the chance of defects. Especially in the early stages of multipass circ welds, any defect can be very expensive to repair.**
- **Machine operators can comfortably monitor system operation on the colour touchscreen, reducing their stress level and improving job satisfaction.**



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