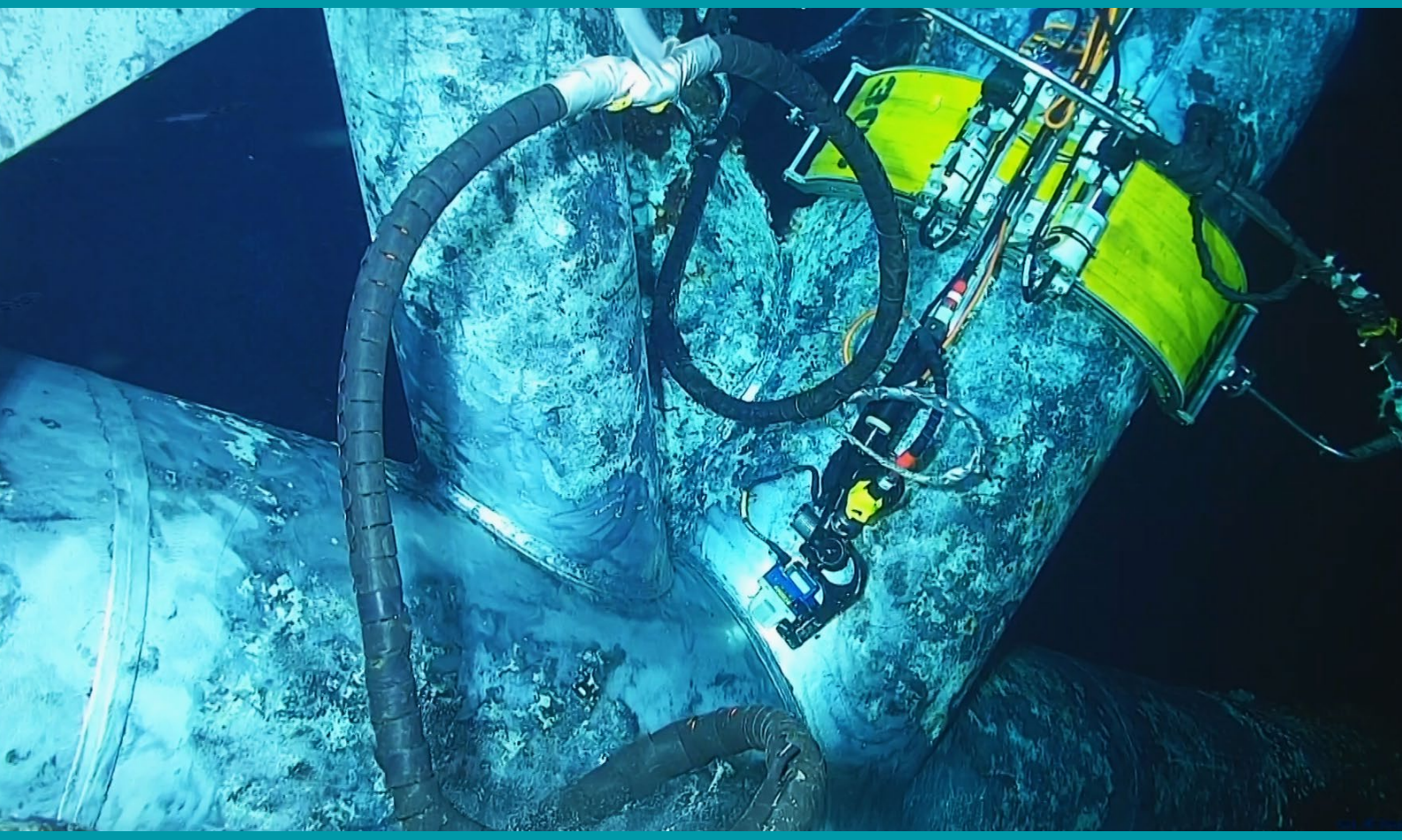
TSC SUBSEA

NodeScanner™

Robotic Diverless Subsea Inspection of Jacket Structural Node Welds.



- Rapid inspection of complex Node welds.
- Multi-technology NDT options to suit most damage mechanisms.
- Automated motorised movement to accurately track the geometry of the weld.

www.tscsubsea.com

NodeScanner™

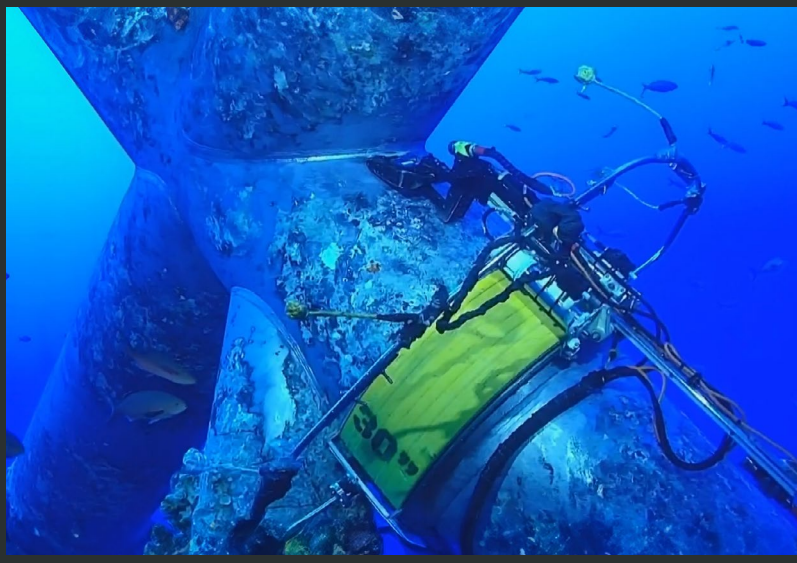
Robotic Diverless Subsea Inspection of Jacket Structural Node Welds.

The NodeScanner system is designed for weld inspection of difficult-to-reach areas and complex geometries such as tubular welded nodal joints.

Working in tandem with ROVs the NodScanner can accommodate TSC Subsea's Alternating Current Field Measurement (ACFM®) array probes for surface-breaking crack detection and Advanced Ultrasonic (AUT) such as Subsea Phased Array (SPA™) and Time of Flight Diffraction (ToFD) probes for volumetric weld inspection.

Strong magnets enable the scanner to be independently fixed in position without slipping offering a fixed and stable platform. Once delivered to the brace, the ROV detaches from the scanner and stands off, therefore avoiding the need to accurately hold station. The NodeScanner™ is tolerant of swell and can be used near the splash zone.

Brace diameters in the range of 150 - 3,000mm (6 - 118in) can be accommodated, and the scanner can also be configured to successfully tackle tight access areas around conductor guides and gusset/stiffener plates.



BENEFITS

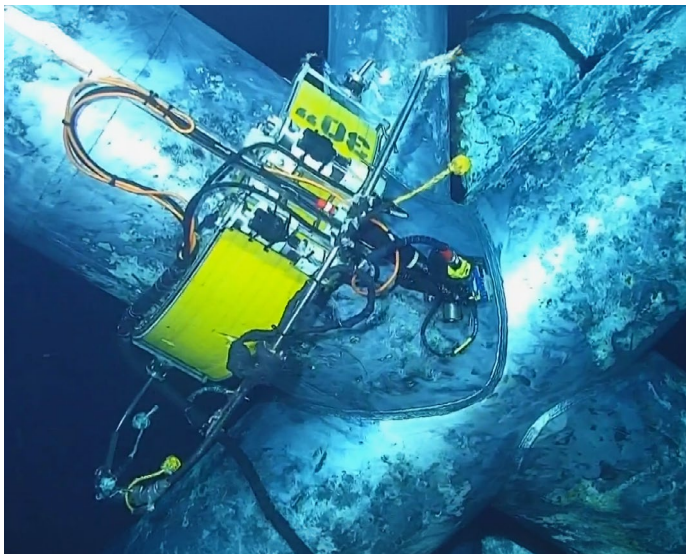
- Rapid inspection of complex Node welds.
- Accurate sizing of both surface breaking and internal weld defects.
- Trusted solution for aiding life extension campaigns.
- Multi-technology NDT options to suit most damage mechanisms.
- Automated precise, motorised movement to accurately track the geometry of the weld.
- Offers buoyancy that reduces its weight, reducing drag on the ROV.
- Tolerant of swell and can be used near the splash zone.

PRECISION WELD TRACKING

The NodeScanner operates with three axes of movement and features an advanced teach-and-learn system. The operator simply defines the start, middle, and end points of the scan, after which the system autonomously follows the weld path, requiring no additional input.

This automated process provides the precision and control necessary for accurate and efficient inspection.

The probe remains in contact with the inspection surface through passive compliance, ensuring proper alignment throughout the inspection process.



NDT TECHNOLOGIES

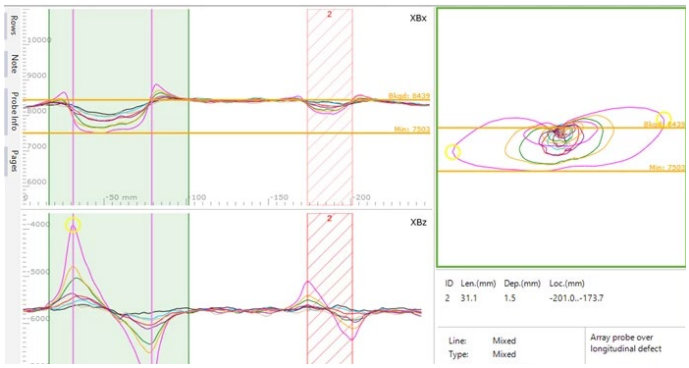
ACFM®

> Surface-breaking crack detection and sizing.

> Recognised and approved by many certification bodies, including DNV, ABS, BV and Lloyds.

> Computerised auditable data, unlike MPI.

> Reliable results despite surface imperfections.



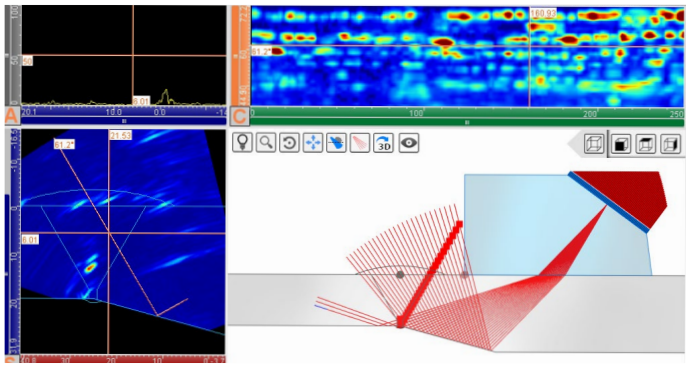
SPA™

> High-resolution corrosion mapping and volumetric weld assessment.

> Advanced techniques including TFM.

> Improved defect detection with a high probability of detection from a single probe position.

> Suitable for ferrous and non-ferrous assets.



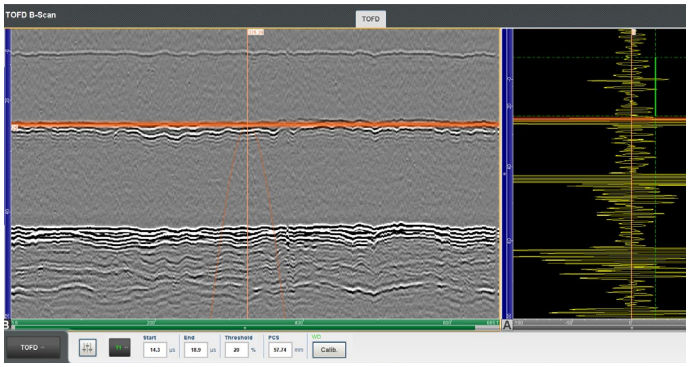
TOFD

> Detects Weld Root Erosion/Corrosion beneath weld caps.

> Accurately sizes through-wall defects and is less sensitive to defect orientation, like lack of fusion or crack types.

> Inspection data comparable to Radiography without radiation hazards.

> Suitable for ferrous and non-ferrous assets.



NODESCANNER™ SPECIFICATIONS

Unit Mass	35.0kg (77lbs)	Cameras & other tooling excluded
Unit Weight in Water	16.0kg (35lbs)	Adjustments to buoyancy can be made
Unit Length	950mm (37.5in)	Other sizes available at approx. 4 week lead time
Unit Width	1.29m (4.1ft)	Other lengths available at approx. 4 week lead time.
Unit Height	270mm (10.6in)	Excludes buoyancy
Minimum Brace Angle	40-degrees	
Brace Diameter Range	Range 150mm (6in) upwards (to flat surface)	Nodes with a wide range brace and legs diameters can be accommodated. Scope of work specification is required. Some sizes require non stock components, typical 4 week lead time.
Pull Force	500N	
Surface Travel Speed	0-150mm/s (0-6in/s)	Intelligent controller assists the operator following complex welds geometries.
Communications	Ethernet 100Mb/s, RS232, 115k Baud	TCP-IP protocol. Other variations available on request.
Power Requirement	24V at 5A	Supplied via the ROV umbilical
Operating Temperature	0° to 45°C (32° to 113°C)	
Cleaning Requirements	SA1 standard in the scanner landing zone. SA2 on the weld to be inspected.	
Environment Protection	IP68 depth rated to 500m (1640ft) sea water	Deeper version available on request

UK
Unit 31
Cwmdu Industrial Estate
Swansea SA5 8JF
UNITED KINGDOM

T: +44 (0)1908 317444

NORWAY
Glasskaret 1
5106 Øvre Ervik
Hordaland,
NORWAY

BRAZIL
Campo de São Cristóvão, 58
Rio de Janeiro
RJ - 20921-440
BRAZIL

US
c/o NDT Global LLC
15500 International Plaza Dr,
Houston, TX 77032,
USA

AUSTRALIA
Unit 7, 1 President St
Welshpool WA
Australia 6106,
AUSTRALIA

sales@tscsubsea.com | www.tscsubsea.com

/TSCSubsea /tsc-subsea