

# Trident System

## Diver-deployed automated ultrasonic testing

Trident is a diver-deployed, high-resolution, subsea automated ultrasonic testing (AUT) scanner. The scanner was developed in-house and is designed to inspect pipelines, risers, jumpers, and other tubular structures at depths down to 984 ft (300 m).

Trident's UT technology enables high-resolution, real-time inspection via a fiber-optic umbilical. Inspection using the Trident scanner provides cost-savings through reduced time on site by using phased array transducers for corrosion mapping and weld inspection.



### FEATURES

**Multiple advanced UT techniques available**

**Rapid and cost-effective scanning capability**

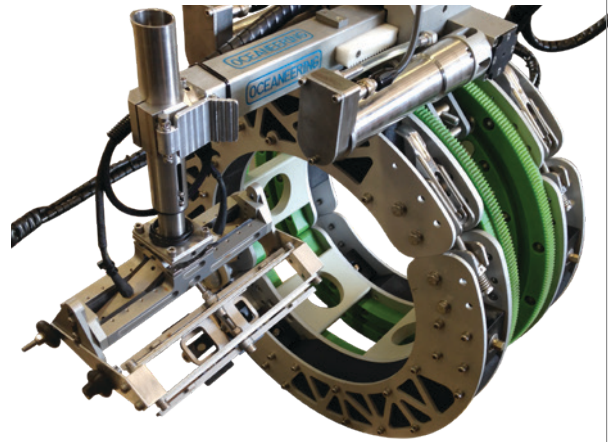
**Real-time data acquisition**

# Trident

## Diver-deployed ultrasonic imaging tool

Trident can be deployed with pulse echo, time of flight diffraction (ToFD), or phased array UT (PAUT) transducers, as the customer's application dictates. The depth-rated transducers deliver high-resolution wall thickness mapping and weld inspection. This high-quality, automated inspection data enables customers to perform fracture mechanic analysis and remaining-life assessments on their assets.

Trident performs a full 360° inspection along a 20-in (508-mm) axial length per location in either the horizontal or vertical position. The diver can quickly unlatch Trident from the pipe for redeployment to a new inspection location. The system is mobilized with the scanner, subsea electronics pod, umbilical, 100% spares, and topside control laptop.



## Applications

- » Inspection of flexible pipes for flooded/non-flooded annulus condition
- » Determining the remaining tensile armor wire thickness of flooded flexible pipes
- » Corrosion mapping of pipelines, flowlines, jumpers, and risers
- » In-line inspection (ILI) verification
- » Weld inspection
- » Crack detection

## Technical Data

Item	Capability
Design depth	984 ft / 300 m
Surface transfer	Fiber optic / ethernet
Weight in air	66 lb / 30 kg
Umbilical	984 ft / 300 m
Inspection area	360° Y axis / (19.7-in) 500-mm X axis
Inspection resolution mapping	.04-in (1-mm) step on both axes
Weld inspection	Weld inspection using ToFD, PAUT, and combined ToFD/PAUT
Launching	From offshore installation or vessel
Inspection diameters	6-42 in (152-1067 mm)
Thickness of item being inspected	No limitations

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