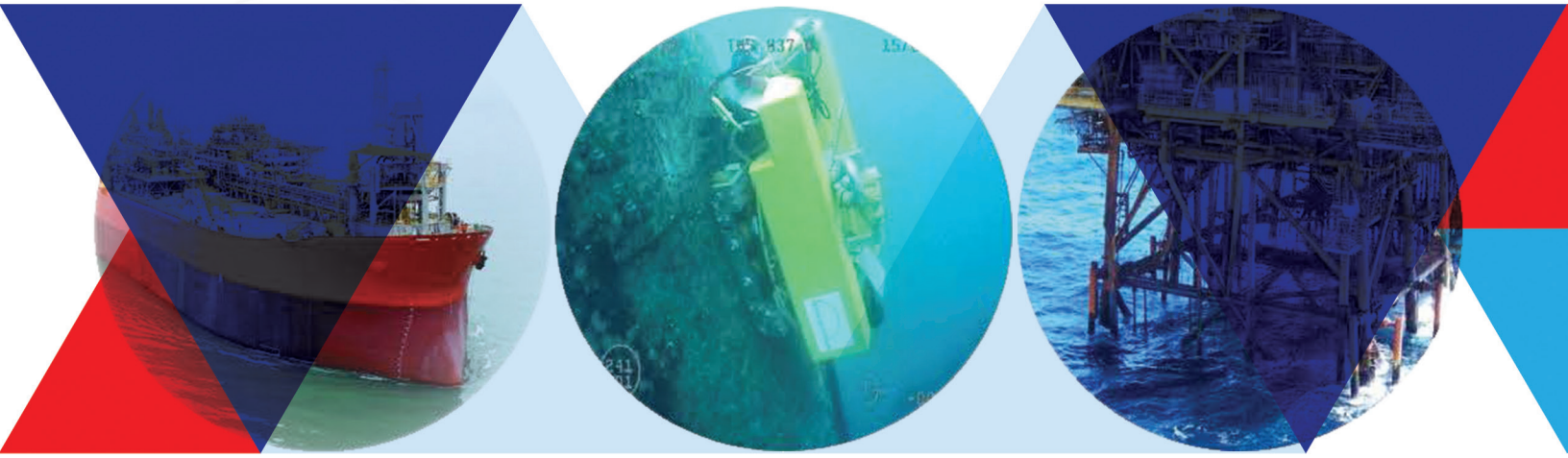
Delta SubSea

MEC-Combi Crawler

Subsea Structure Inspection Tool



The MEC-Combi Crawler is a sophisticated self-crawling inspection system that supports the inspection and lifetime assessment of subsea structures ranging in size and complexity from risers, caissons, pipelines to platform structural legs and flat surfaces like ship hulls. This Magnetic Eddy Current (MEC) inspection system operates on the Saturation Low Frequency Eddy Current technique in combination with direct Ultrasonic wall thickness measurement. A versatile inspection tool, it also enables the incorporation of supporting advanced inspection techniques such as Pulsed Eddy Current, laser triangulation system, camera system, etc to provide comprehensive and high density inspection data within a single deployment.

MEC-Combi Crawler

The MEC-Combi Crawler enables the detection of localized defects and general wall loss in subsea structures while scanning externally. A change out of the curvature adaption allows the MEC-Combi Crawler to be used for the inspection of smaller diameter pipes and flat surfaces like ship hulls. Deployed either vertically or horizontally by ROV or supported from the installation by ROV or divers, the MEC- Combi Crawler moves up from the starting position along the subsea structure to perform the inspection at an average speed of 10m/min. The signal data with encoded position details is transferred in real time via the umbilical to the inspection computer located at the ROV control unit on the support vessel or on the installation to provide instantaneous inspection results. The advanced color condition mapping report provides analysis of the internal and external defects in term of size, severity of wall loss and location of defects and other occurrences.

The capabilities of the MEC-Combi Crawler are:

- High detection sensitivity for external and internal corrosion and defects
- Ability to crawl up the structures and through the splash zone while remaining in stable contact with the inspection surface due to its integral buoyancy, hydraulic wheels and magnetic system
- Ability to inspect through surface coating, clad or paint and at various subsea depths

*Delta SubSea is not the manufacturer of this product.

Technical Specifications

DEPLOYMENT	
External Deployment	Vertical or horizontal Deployable by ROV, diver or from the installation
CAPABILITIES	
Wall Thickness Range	Up to 42mm
Coating Thickness Range	Up to 15mm (current tests up to 30mm)
Diameter Range	6" to flat (smaller diameters on request)
Depth Threshold for Detection	Defects ≥ 10% WT wall loss (external or internal)
Defect Detection	Smallest calibration defect detection setup; From 3 – 5 mm diameter at depth threshold of 20% WT for far side wall defects
Accuracy	5% – 10% of detected defect wall loss
Defect Separation	External from internal defects with separate external / internal mapping
DIMENSIONS	
Depth Rating	400m water depth (deeper rating on request)
Weight	160 kg in air, approx. 20 kg in water (dependent on buoyancy setup)
Sizes (L x W x H)	1100mm x 650mm x 600 mm (dependent on diameter size)
Sensors (SLOFEC)	8 sensors in circumference with 200mm scan width
Sensors (UT)	Selection of single sensor in stop measurement mode (8 sensors in circumference on request)
Magnetisation Unit	Permanent magnet
Camera	2x
Umbilical	Via ROV fibre optic data; transfer length depends on ROV umbilical
Fail Safe	Yes, fully built-in
ACCESS REQUIREMENTS	
Required Clearance	Dependent on the scanner size; from 700mm to 1,000mm of external space
Coating	Coating or clad is not required to be removed for the inspection
Marine Growth	Heavy marine growth is required to be cleaned off

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