

Subsea Pipe / Structure Inspection

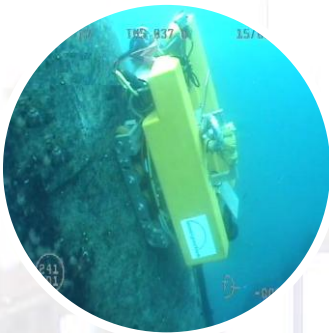
MEC-Combi Crawler



Overview

The MEC-Combi Crawler is a sophisticated self-crawling inspection system that supports the inspection and lifetime assessment of subsea structures such as risers, caissons, platform structural legs and flat surfaces like ship hulls.

It is based on the Magnetic Eddy Current (MEC) technique which is the next generation and a further development of the high performance fast corrosion screening SLOFEC technique. With the use of magnetic field controlled high frequency Eddy Current, the MEC technique offers enhanced inspection capabilities.



MEC-Combi Crawler is a versatile inspection tool and enables the incorporation of supporting advanced inspection techniques such as high resolution Ultrasonic mapping, Pulsed Eddy Current, laser triangulation system, camera system, etc to provide comprehensive inspection data within a single deployment.

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



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The MEC-Combi Crawler enables the detection of localised defects and general wall loss in subsea structures while scanning externally. A change out of the curvature adaptation allows the MEC-Combi Crawler to be used for the inspection of smaller diameter pipes and flat surfaces like ship hulls.

Deployed vertically or horizontally by ROV or 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 colour 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.

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Technical Specifications

DEPLOYMENT	
External Deployment	Vertical or horizontal Deployable by ROV, diver or from the installation
CAPABILITIES	
Wall Thickness Range	Up to 42 mm
Coating Thickness Range	Up to 15 mm (current tests up to 30 mm)
Diameter Range	6" to flat (smaller diameters on request)
Depth Threshold for Detection	Defects \geq 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 report
DIMENSIONS	
Depth Rating	400 metre 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)	1,100 mm x 650 mm x 600 mm (dependent on diameter size)
Sensors (MEC)	8 sensors in circumference with 200 mm scan width
Sensors (UT)	Selection of single sensor in stop measurement mode (8 sensors in circumference available 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 700 mm to 1,000 mm of external space is required to allow for axial scanning
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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