



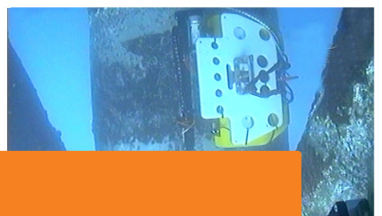
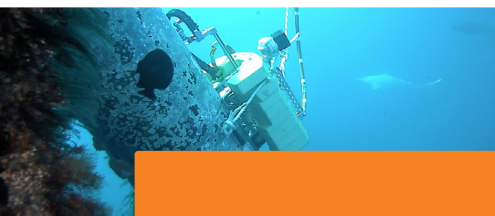
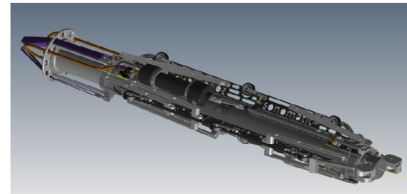
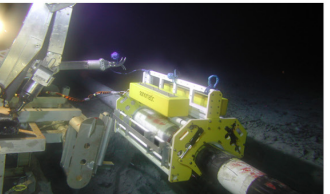
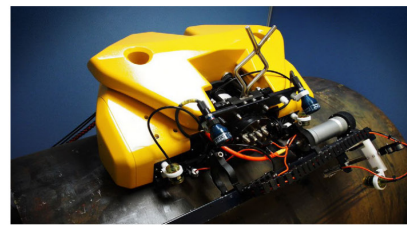
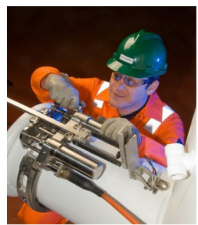
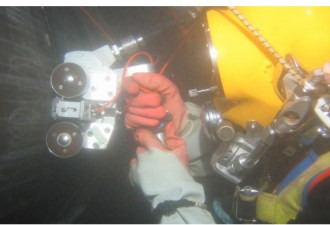
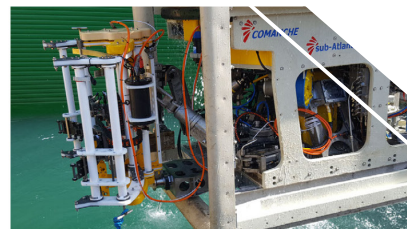
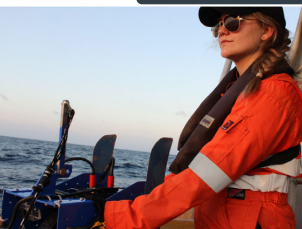
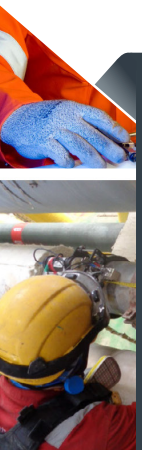
# SONOMATIC

## DATA SHEET

MAG - NAUTILUS  
SUBSEA INSPECTION - ROV DEPLOYED  
(AUTOMATED UT) NAUTILUS SYSTEM

### THE PURPOSE

This document is composed to assist our clients and the supply chain with a high-level understanding of the benefits and services associated with our MAG-Nautilus System.



# MAG-NAUTILUS

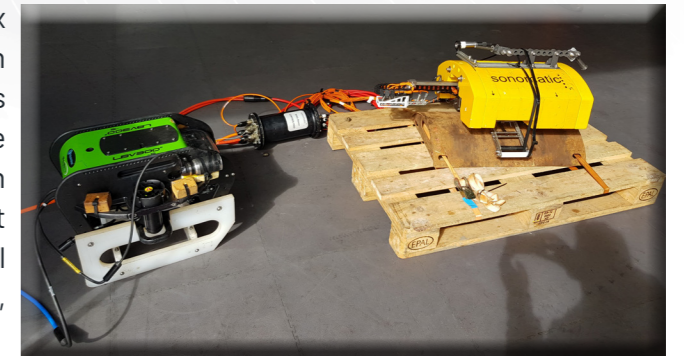
The Nautilus system is a dual or triple axis motorised inspection unit designed for the subsea inspection of pipework and tubulars at water depths down to 250 metres. The unit is ROV deployed, and harnesses its power supply and data communication feeds from the ROV, making it a very versatile system. It is controlled from the surface, where it is interfaced with a Sonomatic Microplus digital ultrasonic imaging system to display the data in various formats. A wide variety of ultrasonic inspections techniques can be deployed, including Corrosion Mapping, Pulse-Echo angle shear wave/Phased Array, Time-of-Flight Diffraction (TOFD) and ACFM.



The unit is very adaptable and can be deployed in various formats to inspect a wide range of components for pipe wall corrosion mapping, pipe weld inspection, flange weld inspection, complex geometry welds (nozzle Hot Tap welds) and Merlin type connectors.

The Nautilus system in air weighs 21KG (with buoyancy), and is neutrally buoyant in water, enabling manipulation of the unit with a very small observation class ROV such as an LBV 300, for manipulation in tight restricted locations.

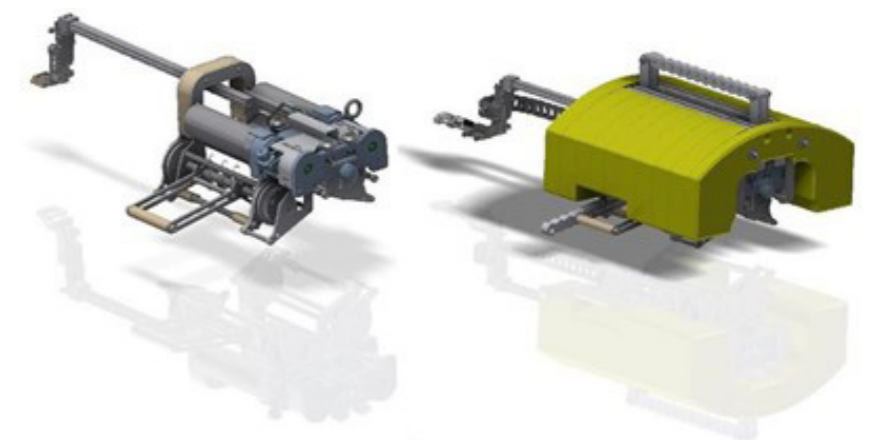
The unit adheres to the inspection surface via 4 x magnetic wheels, attraction Force  $\approx$  40Kg. Once on the component, it can inspect 360 degrees (access restrictions dependent). The transducers can be moved in increments down to 1mm (or smaller) both circumferentially and axially around the component taking measurements at every location. The axial stroke is dependent on the application and access, but stroke lengths of 500 mm are typically applied.



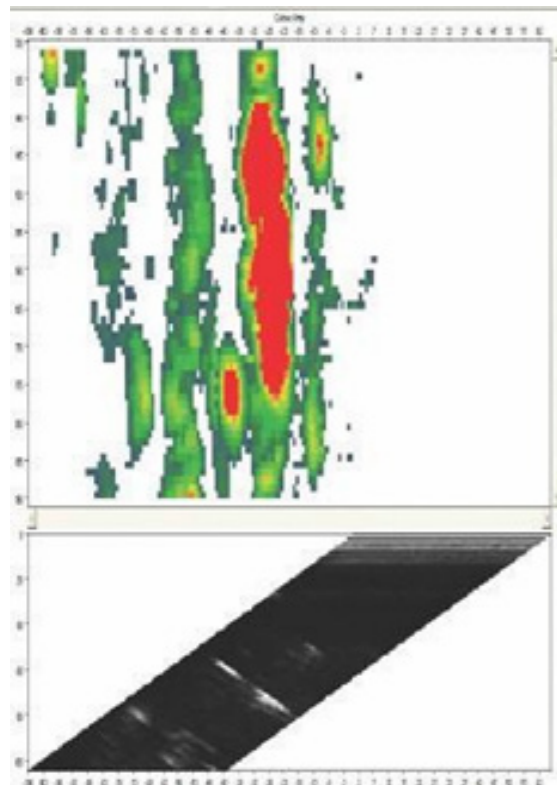
The unit has an auto release mechanism when working with smaller ROV's to enable minimum effort for removal. The unit has an ultrasonic probe head garaging mechanism, for protection during deployment/recovery.

In its standard configuration, it can be applied from diameters 10" and above, including flat plate, and can cover a wide range of component geometries. The Nautilus system can deliver many inspection heads/techniques to perform various inspections including:

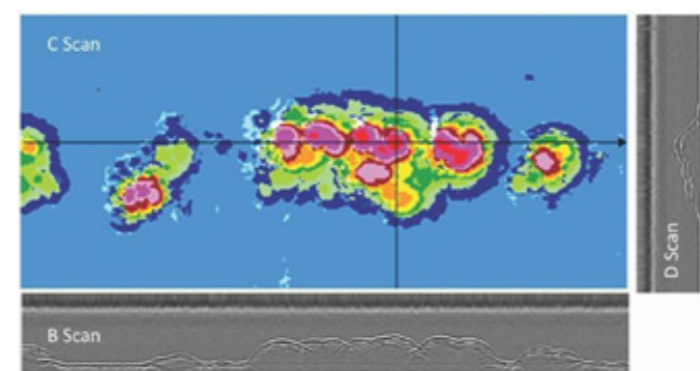
- ✔ Hot Tap nozzle weld inspections
- ✔ Pipeline IP Verification using corrosion mapping and TOFD
- ✔ Structural weld inspection
- ✔ Localised dent measurement



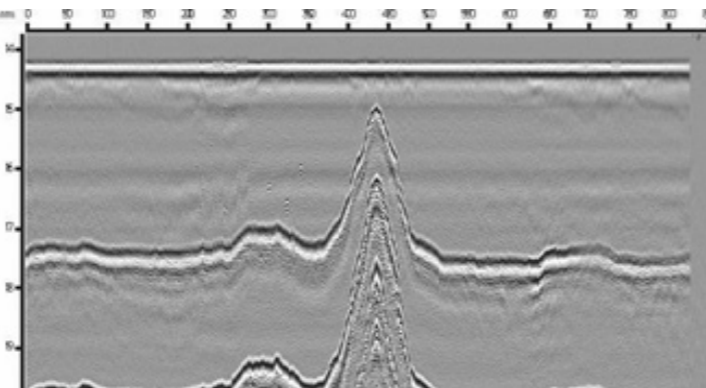
## ANGLE SHEARWAVE



## CORROSION MAPPING



## TOFD



## QA AND HS&E

Sonomatic operate under an integrated QHSE management system and are committed to the highest quality and safety of service provision.

ISO9001: 2015: 00007140

ISO17020: 2012: 4276

Achilles FPAL Verified: 076712

British Safety Council Member: S0388440



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