DATA SHEET

ROV-iT:
SUBSEA INSPECTION

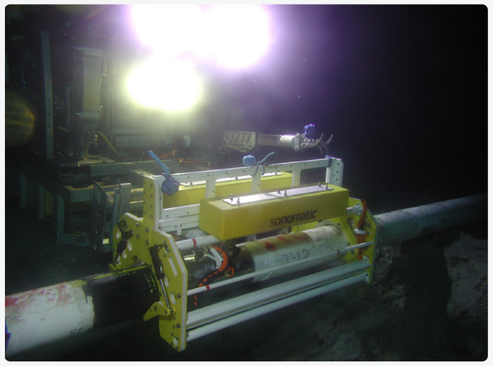
SONOMATIC

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 ROV-iT System.

ROV-iT

Sonomatic – the world's leading provider of automated ultrasonic subsea inspection for more than 30 years – has developed a range of ROV-deployed tools that offer significant advantages over traditional diver-deployed systems. Among the key benefits, is the ability to carry out inspection work without the need for a dive support vessel, and at much greater depths.



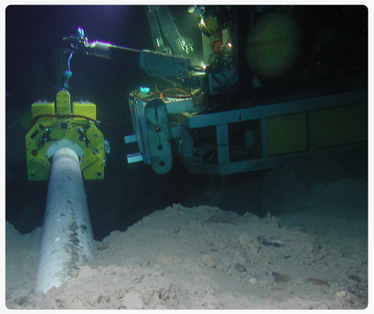
Sonomatic has strategically-placed offices which allow us to respond to clients globally and supply a range of quality products backed by outstanding customer service. As well as providing field services, we also offer training and consultancy at our UK bases and at clients' premises anywhere in the world.

Our commitment is to enhancing asset performance through applied, innovative technology, and delivering these benefits to our customers through our products and services. We are also committed to working with our customers as value-added partners to fully maximise the benefits of inspection technology.

ROV TOOLS AND INSPECTION TECHNIQUES

Sonomatic's ROV-iT tools have been designed for inspecting the parent material and welds on pipelines, risers, caissons, and structural assets. The tools are adaptable, operating on both horizontal and vertical pipes ranging from 6" to 30" diameter. A range of inspection techniques can be deployed, including:

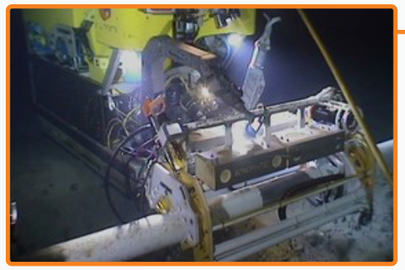
- Corrosion Mapping
- Time of Flight Diffraction (TOFD)
- Automated Shear Wave Pulse Echo/Phased Array/TFM
- Computed Tomography
- Dynamic Response Spectroscopy (DRS™)
- The scanner can also be utilised for component profile measurement and Alternating Current Field Measurements.



The tools are built around Sonomatic's extensive field experience with challenging subsea inspections and integrate our proven Microplus ultrasonic systems and software with bespoke in-house designed scanner hardware.

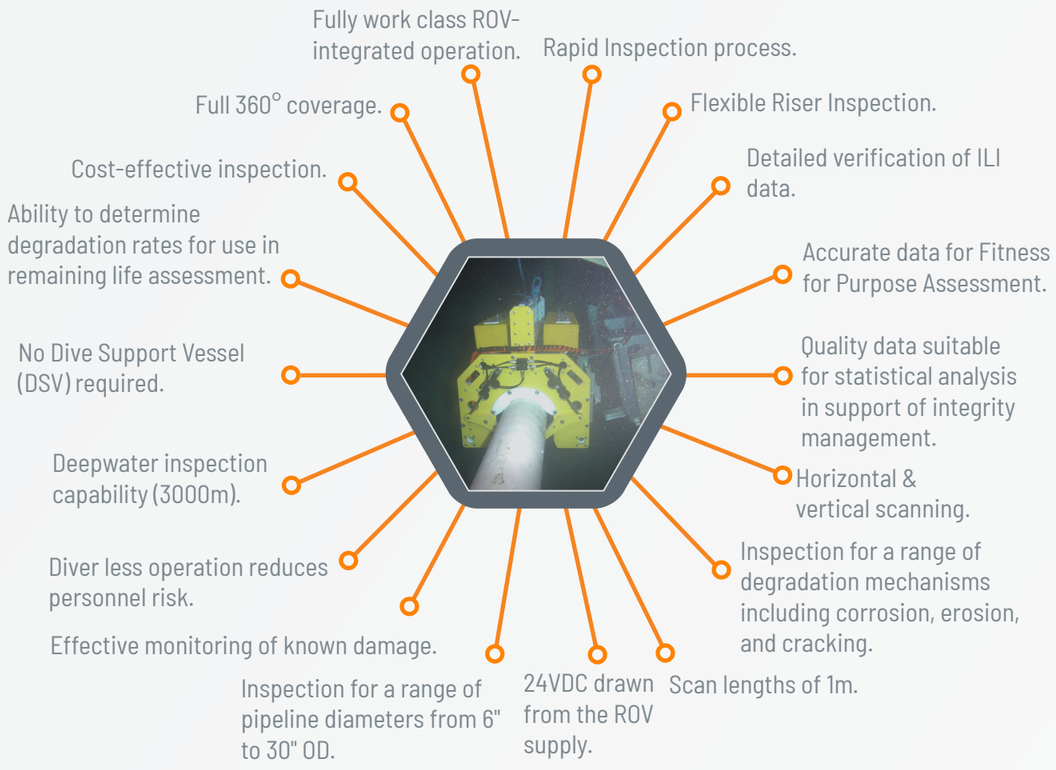
INSPECTION PROCESS

1. The ultrasonic system is attached to the ROV via a short 10m umbilical and can be deployed attached to the work class ROV (ROV-iT 12 & 18).
2. The scanner harnesses its power supply and data communication feeds from the ROV, making it a very versatile system.
3. After positioning by the ROV, the scanner is fully controlled by the inspection team topsides.
4. The ultrasonic system is highly configurable for each specific application and provides a comprehensive range of presentation formats including A, B, C and D-Scans.
5. Data is transferred in real time back to the surface through the ROV umbilical and no additional cabling is needed.
6. The data is analysed real time using Sonomatic's proprietary software routines and analysis algorithms to allow accurate and reliable results to be provided in single or composite images for each inspection location.
7. The full data sets, including individual A-Scans, are also stored for detailed post inspection analysis and comparison with previous/future data.
8. The inspection systems are pressured-rated to 3000m and have been utilised in the field to 1430m water depth to date. Minimal dredging required for 360-degree coverage, (500 mm below pipeline).



Recent developments allow subsea inspection of concrete weight coated pipelines through the use of subsea Computed Tomography.

KEY BENEFITS



The ROV-iT can be used for the following applications:

- Verification of ILI tool findings
- Inspection for internal corrosion and erosion (corrosion mapping and/or TOFD/Phased Array)
- Inspection for preferential weld corrosion/erosion (TOFD)
- Inspection for fatigue cracking (TOFD/Phased Array)
- Inspection for wet H2S damage in sour service (corrosion mapping, automated pulse echo, Phased Array and TOFD)
- Inspection for chloride pitting/SCC in corrosion resistant alloys (corrosion mapping, automated pulse echo, Phased Array and TOFD)
- Inspection of Subsea fabrication and repair welds (TOFD and automated pulse echo/Phased Array)
- Component geometry measurement including ovality inspection (0 ° line scans).

QA AND HS&E

Sonomatic operate under an integrated QHSE management system and are committed to the highest quality and safety of service provision | ISO 9001: 2015: 00007140 | ISO 14001:2015:00037371 | ISO 45001:2018:00037372 | ISO 17020: 2012: 4276 | Achilles FPAL Verified: 076712 | SEQual 1988 | British Safety Council Member: S0388440 |

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