

## Raptor Scanner

The Raptor Scanner is a dual-axis manipulator designed for rapid ultrasonic inspection of vessels and large diameter pipework. Its main application is corrosion mapping as part of Non-intrusive inspection (NII) programmes for vessels where it provides high quality data with rapid coverage. It can also be used for deployment of a range of other inspection techniques such as angle shear wave and Time of Flight Diffraction (TOFD). The scanner is based on a magnetic wheeled crawler and can cover in excess of 5 m<sup>2</sup> per hour at high resolution. The Raptor is controlled by, and interfaces with, Sonomatic's industry proven Microplus ultrasonic system for collection, analysis and presentation of data. It uses dedicated software which provides a range of formats for imaging of the data and stores all data collected (including individual a-scans) for subsequent on-line or off-line analysis.



The manipulator is based on a magnetically wheeled crawler and is constructed in lightweight aluminium to allow for ease of attachment and positioning on the equipment being inspected. The scanner has a low profile which, together with the unique cross-arm design, ensures that the area accessible for automated scanning is maximised. The system is capable of performing inspections to a range of operator defined resolutions, with scan widths of up to 2000 mm to minimise re-positioning delays. Closed-loop DC motor drives are used, with integral encoders for accurate positional feedback, and a variety of attachments are available covering a wide range of ultrasonic inspection techniques.

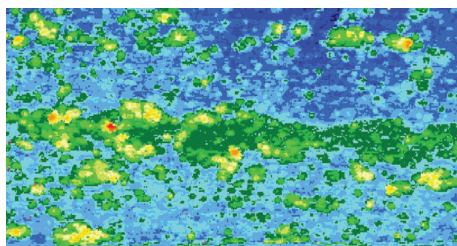
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Sonomatic has offices in strategic global locations so we can respond quickly to customers' requirements wherever they may be situated. Our high quality products are matched only by our customer service. In addition to our field services, we offer training and consultancy at our sites in the UK or at clients' premises anywhere in the world. Sonomatic is committed to improving asset performance through applied and innovative technology; to delivering these benefits to our customers in the products and services that we provide; and to working with our customers, as value-added partners, to realise the maximum benefits of inspection technology.



### Specifications

Scan type	Line and raster
Axial stroke	500 mm to 2000 mm
Drive	DC servomotors
Speed Axial	0 - >500 mm/s
Circumferential	0 - >100 mm/s
Encoding	Incremental shaft encoders
Encoder resolution	Axial 199 pulses/mm Circumferential 357 pulses/mm



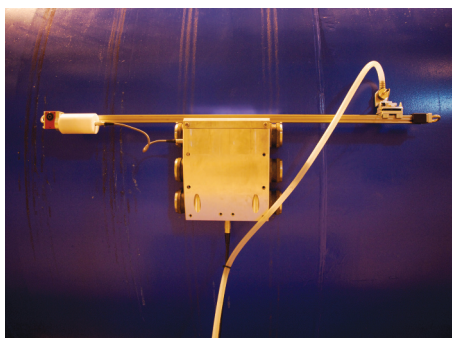
### Unique Features

- Rapid corrosion mapping for NII with accurate and reliable thickness measurement
- High-precision inspection system
- Data integration with Sonomatic's video tracked  $\mu$ Map data collected in areas not accessible for fully automated scanning
- Water jet probes for rapid scanning with minimal surface preparation
- Range of probe assemblies that allow optimised performance for each application
- Range of cross arm lengths to allow optimised coverage for each application
- Inspection of up to 2 metres in one stroke
- Lightweight aluminium construction

- Low-profile design to maximise access for automated scanning
- Modular construction for rapid site set up and adjustment
- Multifunction interchangeable scanning heads
- Corrosion mapping and TOFD

### Design Features

- Hexo-Drive-train (6x rare-earth magnetic wheels)
- Cam-drive system maintaining straight scanning lines
- Dual servo drive system
- High torque, 0-degree anti-backlash gearbox
- Fully mobile unit can be run from 110V supply or generator
- IP65-rated scanner design for the offshore industry
- Anodised coating for environmental protection
- Interchangeable wheels to suit different applications and structural geometries
- Up to 1000 kg of magnetic pulling force



### QA and HS&E

It is Sonomatic's ongoing commitment to supply services and products, through the application of technical and engineering excellence, which complement both the customer's and our own QA and HS&E requirements.

Sonomatic's commitment to quality is maintained through continuous assessment and review of our Quality Management Systems to BS EN ISO 9001:2008. Sonomatic actively promotes the development, implementation and improvement of our QMS as a part of our ongoing drive to enhance customer satisfaction by meeting or exceeding customer requirements. In 2009 Sonomatic achieved UKAS accreditation as an Inspection Body to BS EN ISO/IEC 17020 (UKAS IB4276).