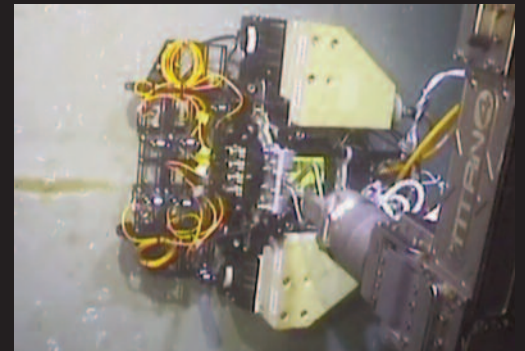


MAG-Rover

Sonomatic — the world's leading provider of automated ultrasonic subsea inspection for more than 20 years — has developed the first remotely steerable UT scanner capable of deepwater operations. The MAG-Rover can be ROV or diver deployed and can be remotely manoeuvred to the exact inspection location, making it among our most versatile tools yet.



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.

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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.

Sonomatic's MAG-Rover has been designed for ultrasonic inspections for topsides, splash zones and subsea, and can uniquely be steered under remote control to the work site in shallow and deep water locations. The tool is ideally suited for use in areas where human access is difficult and allows topsides or onshore inspection without the need for scaffolding. It can be attached to a structure at a topsides location, even by a rope access technician, and then driven under an operator's control to the inspection location which may be below sea level.

Key features:

- ROV-deployable to inspection site
- Remote driving to inspection site
- Straight line Weld inspection Probe rastering
- Automated angle (Weld) tracking
- Encoded measurement
- Water depth measurement
- Deployable to deep water depth
- Flexible wheel camber accommodates curved and undulating surfaces
- Camera visualisation through three on-board cameras
- Two-channel steering via topside joystick control
- Weld location/alignment using a combination of camera visuals, encoded measurement, inclination and depth measurement.

The MAG-Rover can be used for the following applications:

- Inspection in areas of restricted access on pipelines, storage tanks, pressure vessels and columns
- Inspection of jacket closure welds
- Inspection on semi-submersible structures and hulls

A range of inspection types can be carried out, including:

- Time of flight diffraction (TOFD)
- Automated pulse-echo
- Corrosion mapping
- Weld Profiling

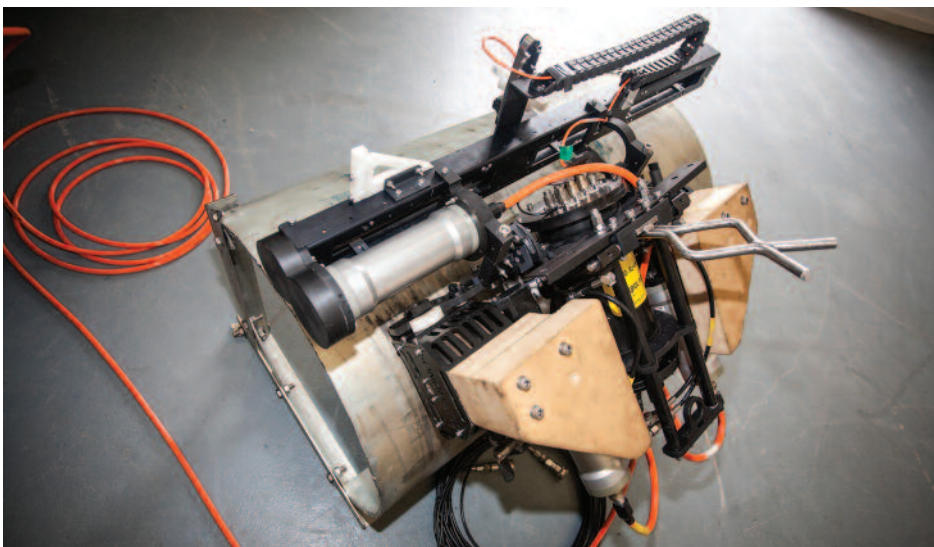
The standard MAG-Rover unit comprises a steerable crawler driven by two magnetic drive wheels which allow the scanner to adhere to any magnetic surface, including those that curve or undulate.

At the front of the scanner is the UT transducer array, which gimbals to follow the contour of the surface being inspected. When deployed via ROV, the tool harnesses the ROV's communications system. Sonomatic's world-leading Microplus ultrasonic system is incorporated for proven measurement reliability, and set-up options include:

- **Prime** — up to eight channels of UT linear scanning (TOFD, 0° corrosion mapping, angled shear wave pulse-echo UT)
- **Characterisation** — up to eight channels of angled pulse-echo shear wave UT reciprocating head with a 550 mm max scan stroke length (total)
- **Raptor** — the MAG-Rover can be configured to implement rapid reciprocating probe(s) for high-speed accurate corrosion mapping.

All manoeuvring and navigation is carried out from a Sonomatic Control Station connected to the MAG-Rover via an umbilical.

The technology includes two-channel steering controlled via a topside joystick, and three on-board cameras. One is focused on the probe contact zone to enable the easy following of Welds; the other two are mounted to the left and right of the scanner for general navigation and probe monitoring. The camera configuration can be adjusted to allow rear viewing for umbilical monitoring.



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).