

RoCorr MFL-A Service

In-line High-Resolution Metal Loss Detection and Sizing

Undetected and untreated corrosion within your pipeline assets will lead to performance loss and containment failure. Making in-line inspection (ILI) services a part of your integrated pipeline threat management strategy will help you manage this risk. Our RoCorr Service Suite is designed to detect, evaluate and locate metal loss due to corrosion and associated threats. This allows you to take remedial action before your pipeline integrity suffers.

Drawing on the largest ILI tool fleet in the world, our RoCorr features multiple and flexible options to suit your inspection needs while minimizing impact on pipeline operations. This includes a wide range of sensors that incorporate leading technologies to address your pipeline threats. The data gathering is supported by our unique data analysis and reporting tools, delivered by a dedicated team of experts. RoCorr reduces your corrosion and metal loss threat risk.



Detect pipeline corrosion before it impacts performance



Reliable assessment of internal and external corrosion



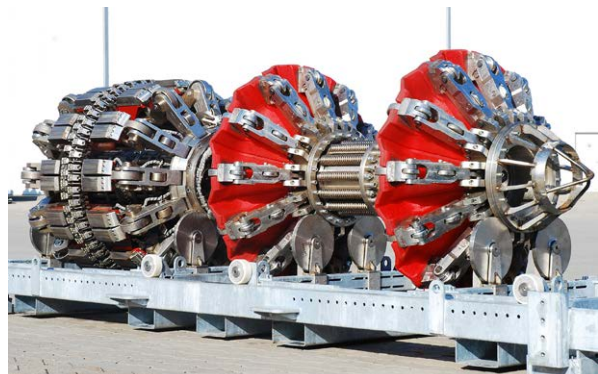
Assess the integrity of your onshore and offshore pipeline assets

Our magnetic flux leakage technology is the optimal choice for reliably identifying and characterizing external and internal metal loss features. Magnetic flux leakage technology is especially suited for the detection of corrosion, erosion, gouging, lamination, pitting and other metal loss features. Our MFL-A technology forms a strong foundation for your asset's lifetime integrity management.

- Full recording of raw data for lifetime integrity management
- High-quality certified processes, qualified personnel and equipment across the globe
- Minimizing the impact of inspections on daily operations through:
 - Speed control units to maintain full production flow during inspection
 - Combined diagnostics solutions to reduce the number of inspection runs required by combining technologies in one ILI tool

Benefits of Magnetic Flux Leakage Technology

- No need for coupling medium, so optimally suited for accurate inspection of gas and multiphase pipelines
- Ideally suited for identification and characterization of external and internal metal loss
- Availability of a wide range of tool sizes, combinations with other measurement technologies and multi-diameter tools allow for tailored solutions



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Technical Specifications

Standard Operating Specifications

Tool sizes available	3" - 56"
Pipeline product	Gas or liquids
Product temperature range	0 °C - 65 °C (32 °F - 150 °F)
Maximum operating pressure	15 MPa (2,175 psi) 25 MPa (3,625 psi) optional
Operating speed range	Up to 3.0 m/s (9.8 mph)
Product flow range*	Up to 12 m/s (26.8 mph)
Minimum pipeline bend radius	1.5D
Wall thickness range	4 - 32 mm (0.15" - 1.26")
Maximum operating time	400 hours
Maximum inspection length	800 km (500 miles)

* Fitted with optional speed control system (gas lines only)
Note: Please contact ROSEN for conditions outside of these specifications.

Location and Orientation Capabilities

Axial position accuracy from reference marker 1 m on 1000 m (1 ft on 1000 ft) marker distance	1:1000
Axial position from closest weld	±0.1 m (±4")
Circumferential position accuracy	±5°

The axial positioning accuracy is given at 90 % certainty and is based on following conditions:

1. Distance between upstream (u/s) and downstream (d/s) marker/reference point < 2,000 m (6,500 ft.).
2. Actual aboveground distance to both u/s and d/s marker/reference points have been measured and correlated.
3. Marker points are placed correctly according to respective ROSEN marker specification.

Performance Specifications

	General metal loss	Pitting	Axial Grooving	Circumf. Grooving	Circumf. Slotting
Depth at POD = 90 %	0.1t	0.1t	0.1t	0.1t	0.15t
Depth sizing accuracy at 80 % certainty	±0.1 t	±0.1 t	±0.15 t	±0.1 t	±0.1 t
Width sizing accuracy at 80 % certainty	±15 mm (0.59")	±12 mm (0.47")	±12 mm (0.47")	±12 mm (0.47")	±15 mm (0.59")
Length sizing accuracy at 80 % certainty	±15 mm (0.59")	±10 mm (0.39")	±10 mm (0.39")	±10 mm (0.39")	±10 mm (0.39")

Abbreviations: POD = Probability of Detection; t = wall thickness

Remarks and Features

- API 1163 compliant services
- CE and ATEX certification available
- Tailored solutions with different specifications upon request: multiple tool sizes or multi-diameter tools, higher pressure rating
- Contact ROSEN for more detailed information about the presented service
- Specifications are subject to change, depending on specific requirements or tool configurations