Axial oriented metal loss features and geometry anomalies constitute an integrity threat to pipelines, particularly when coinciding. Therefore, a combined in-line inspection is a very efficient approach for a safe and reliable pipeline operation.

ROSEN’s RoCombo MFL-C/XT offers the possibility to investigate pipelines for axial oriented metal loss and geometry anomalies in only one inspection run.

THE SOLUTION
The RoCombo MFL-C/XT includes not only a Magnetic Flux Leakage unit but also a combination of mechanical calipers with an electronic measurement system based on the Eddy Current principle. This innovative combination enables the RoCorr to check for both, metal loss and geometry anomalies in only one inspection run. Unique magnet and sensor designs ensure high sensitivity and precision for the detection of corrosion, erosion, gouging and a huge variety of other metal loss features.

The tool measures depth, profile and contour of geometric features, allowing a stress/strain based integrity assessment. XYZ Mapping coordinates for advanced integrity management is available optionally.

KEY ADVANTAGES
• Precise long seam categorization and analysis using magnetic saturation in circumferential direction.
• Accurate metal loss characterization in welded and specifically in seamless pipeline by extra high sensor density and high sampling rate.
• High precision geometry mapping and dent sizing using contour following sensor technology even at tough operational conditions.
• Accurate discrete stress and strain gridding derived from high resolution inspection raw data.
• Quantitative determination of scale, debris and wax achieved by touch less pipeline surface sensing.
• Lifetime integrity management supported by full recording of the complete inspection raw data.
• High availability and a wide range of proven tool configurations addressing individual operational pipeline requirements.
• High quality service with certified processes (API 1163), personnel qualification (ASNT) and equipment (CE, ATEX).

SERVICE OPTIONS
All aspects from the inspection request to the final report are covered with the flexibility to choose from various service options.
• Cleaning – operational and pre inspection
• Speed Control – inspection at high flow rates
• XYZ – route mapping and strain analysis
• Multi-Diameter – pipelines with varying diameter
• Offshore – long distance and high pressure
• Post ILI – data alignment and combined evaluation
• Integrity – RBI, FFP, CGA
• ROAIMS – versatile asset integrity software suite

RoCombo MFL-C/XT
Standard Operating Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Accuracy</th>
<th>Detection threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID Changes</td>
<td>±0.8 mm</td>
<td>0.8 mm</td>
</tr>
<tr>
<td>Ovalities</td>
<td>±0.5 %</td>
<td>0.5 %</td>
</tr>
<tr>
<td></td>
<td>±15 mm</td>
<td>±0.5 %</td>
</tr>
<tr>
<td></td>
<td>±12°</td>
<td>±12°</td>
</tr>
<tr>
<td>Dents</td>
<td>±0.8 mm</td>
<td>±0.3 %</td>
</tr>
<tr>
<td></td>
<td>±7.6 mm</td>
<td>±0.3 %</td>
</tr>
<tr>
<td></td>
<td>±25.4 mm</td>
<td>±1.0 %</td>
</tr>
<tr>
<td></td>
<td>±12°</td>
<td>±12°</td>
</tr>
</tbody>
</table>

Metal Loss Feature Classification

All reported metal loss features are classified according to the dimensions shown in the following Pipeline Operators’ Forum (POF) specification graph.

Wall Thickness Detection

±1 mm (± 0.04") or ±0.1t, whichever value is greater

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TECHNICAL SPECIFICATIONS

Remarks and Features

- Other tool sizes are available on request
- Higher pressure rating available on request
- Tailored solutions with different specifications available
- API 1163 certified services
- CE and ATEX certification available
- Contact ROSEN for more detailed information about the presented service
- Specifications are subjected to change according to specific requirements or tool configurations