MULTI DIAMETER TECHNOLOGY
IN-LINE INSPECTION SERVICES FOR PIPELINES WITH VARYING DIAMETER

Multi diameter pipeline designs are common practice in many offshore applications. Telescoping pipelines can be found in onshore operation as well. Such pipelines are very often classified as incapable of in-line inspection owing to their varying diameter. Nevertheless, pipeline operators need to manage the integrity of these high valuable assets.

By utilizing ROSEN’s Multi Diameter Technology operators can significantly cut costs and save a lot of time by utilizing our highly flexible and specialized ILI tools instead of the alternative non-ILI approaches.

THE SOLUTION

Key element of ROSEN’s multi diameter technology are the highly collapsible, self centering vehicles. Namely the pull unit to drive the tool and the inspection units. With flexible sealing elements and wheel support, the friction of these individual units is kept moderate over the entire diameter range. Full sensor coverage is gained by flexible high resolution sensor suspensions for the metal loss and geometry inspections.

Different diameters lead to varying differential pressure and flow. In this situation smooth run conditions can be achieved with our speed control technology implemented in the pull unit.

With the well-structured and certified data evaluation process our analysts provide the required high quality assessment on-time. Our reporting software ROSOFT facilitates the broad use of the inspection results.

KEY ADVANTAGES

• Accurate and precise feature classification and sizing across the entire multi diameter range.
• High data quality by smooth tool propulsion.
• Excellent passage capabilities for the entire multi diameter range, e.g. 1.5D bends and heavy wall.
• Inspection tool qualification by individual full scale testing.
• High availability and a wide range of proven tool configurations designed to transverse long Y-pieces and unbarred full bore Tees.
• 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 assessment
• Combo – multiple inspection technologies in one run
• Offshore – long distance and high pressure
• Post ILI – data alignment and combined evaluation
• Integrity – RBI, FFP, CGA, dent strain and stress analysis
• ROAIMS – versatile asset integrity software suite
## TECHNICAL SPECIFICATIONS

### Standard Operating Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tool sizes available</td>
<td>6”–56”</td>
</tr>
<tr>
<td>Passage (Min ID/Max ID)</td>
<td>Down to 55 %</td>
</tr>
<tr>
<td>Pipeline product</td>
<td>Gas or liquids</td>
</tr>
<tr>
<td>Product temperature range</td>
<td>0 °C–65 °C (32 °F–149 °F)</td>
</tr>
<tr>
<td>Maximum operating pressure</td>
<td>15 MPa (2175 psi)</td>
</tr>
<tr>
<td></td>
<td>25 MPa (3625 psi) optional</td>
</tr>
<tr>
<td>Operating speed range</td>
<td>Up to 3.0 m/s (6.8 mph)</td>
</tr>
<tr>
<td>Product flow range*</td>
<td>Up to 10.0 m/s (22.4 mph)</td>
</tr>
<tr>
<td>Minimum pipeline bend radius</td>
<td>1.5D</td>
</tr>
<tr>
<td>Maximum operating time</td>
<td>400 hours</td>
</tr>
<tr>
<td>Maximum inspection length</td>
<td>800 km (500 miles)</td>
</tr>
</tbody>
</table>

* Fitted with optional speed control system (gas lines only)

ID = Internal Diameter

Note: Contact ROSEN for more detailed information.

### 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