DETECTING AND SIZING OF CRACKS AND CRACK-LIKE ANOMALIES

Cracks and crack-like features can occur during pipe manufacture, construction or operation. Whatever the origin, these flaws can seriously compromise the integrity of a pipeline.

Most cracks are invisible to the naked eye, and can weaken a pipeline causing catastrophic failure. NDT Global’s range of ultrasonic ILI robots ensure the accurate detection and identification of cracks and crack-like anomalies in the base material and in the weld area of pipes. Our high-resolution ultrasonic crack detection robots use the proven 45° shear wave methods for crack detection.

NDT Global's Enhanced Sizing solution for UT crack inspection provides precise crack assessments for depths above 4 mm (0.16 in). It delivers depth sizing beyond the previous limitation of 4 mm (0.16 in). This breakthrough is the major improvement in crack inspection since the introduction of absolute depth sizing.

EVO SERIES 1.0 UCx - DEPTH SIZING ACCURACY

The NDT Global Enhanced Sizing methodology is capable of sizing a full range of crack depths up to 100% wall thickness. The removal of limitations provides operators with more accurate data for better informed decisions regarding pipeline operations. Enhanced Sizing is an example of the ongoing research and development achievements conducted by NDT Global.

NDT Global's UCx technology improves the depth sizing accuracy of cracks by 20%. This advancement further enhances the data operators rely on for the safe operation of their pipeline assets.

- Reliable detection of axial cracks in the pipe body and the long seam
- Designed for high-precision inspection of axial crack welds
- Inspection diameters from 6" to 48"

EVO SERIES 1.0
EVO SERIES 1.0 UCx
ULTRASONIC HIGH-RESOLUTION CRACK INSPECTION

SPECIFICATIONS

Key robot specifications: Evo Series 1.0 UCx

<table>
<thead>
<tr>
<th>Specification</th>
<th>6&quot; to 48&quot;</th>
<th>6&quot; to 48&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robot sizes</td>
<td>6&quot; to 48&quot;</td>
<td>6&quot; to 48&quot;</td>
</tr>
<tr>
<td>Pipeline medium</td>
<td>Liquid</td>
<td>Liquid</td>
</tr>
<tr>
<td>Max. operation speed</td>
<td>4 m/s</td>
<td>9 mph</td>
</tr>
<tr>
<td>Temperature range</td>
<td>-10 to +50 °C</td>
<td>14 to 122 °F</td>
</tr>
<tr>
<td>Max. pressure</td>
<td>120 bar</td>
<td>1740 psi</td>
</tr>
<tr>
<td>Min. bend radius</td>
<td>1.5 D 90°</td>
<td>1.5 D 90°</td>
</tr>
<tr>
<td>Min. axial sampling distance</td>
<td>0.75 mm</td>
<td>0.03 in</td>
</tr>
<tr>
<td>Circumferential sensor spacing</td>
<td>5 mm</td>
<td>0.20 in</td>
</tr>
</tbody>
</table>

Max. operating speed and min. axial sampling distance depend on specific ILI robot set-up. Special configurations for high-temperature, high-pressure, multi-diameter and bi-directional inspections available upon request.

Defect location accuracy

<table>
<thead>
<tr>
<th>Location</th>
<th>Axial from nearest girth weld</th>
<th>Circumferential</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>±0.1 m</td>
<td>±10°</td>
</tr>
<tr>
<td></td>
<td>±3.94 in</td>
<td>±5°</td>
</tr>
</tbody>
</table>

Key performance specifications (referring to API 1163)

- POD for axial cracks, crack-like anomalies and linear indications ≥ 90%
- Min. depth of crack with L ≥ 20 mm (0.79 in)
  - Base material & at weld: 1 mm 0.04 in
  - In weld: 2 mm 0.08 in

- Depth sizing accuracy at 80% certainty
  - 1 ... < 3 mm (0.04 ... < 0.12 in): ±0.8 mm ±0.031 in
  - 3 ... < 4 mm (0.12 ... < 0.16 in): ±0.9 mm ±0.035 in
  - ≥ 4 mm (0.16 in): ±1.2 mm ±0.047 in

- Length sizing accuracy at 90% certainty: ±10 mm ±0.39 in

- Location in pipe wall
  - Internal/external: Yes Yes

Please note: Robot and performance specifications depend on inspection and pipeline conditions. Please contact your local NDT Global representative for further information.

NDT Global reserves the right to introduce modifications and changes without prior notice.

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