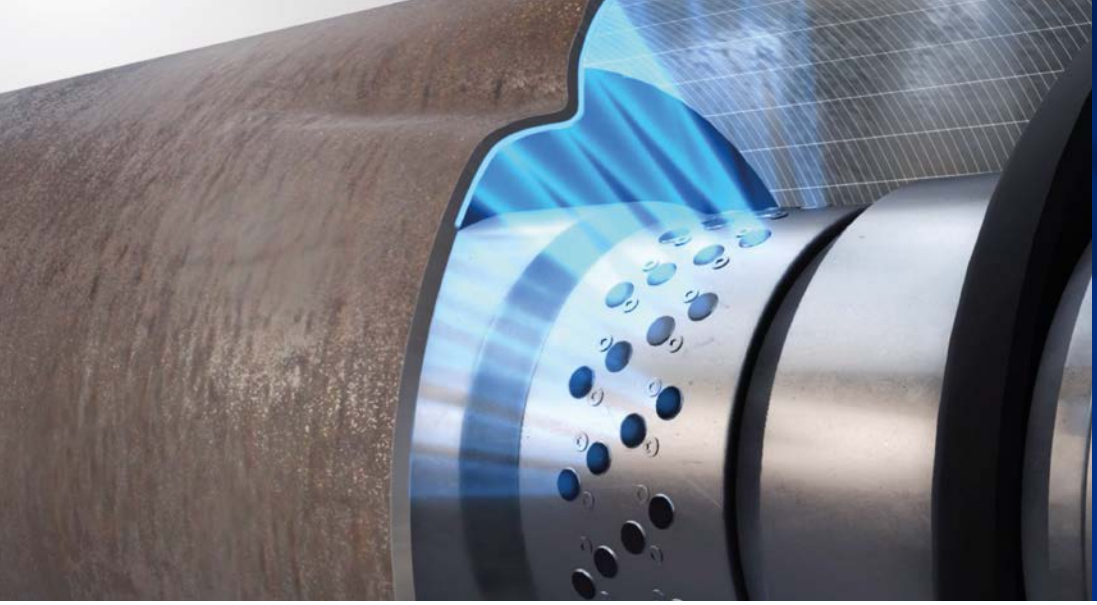


NDT Global

EVO Geometry

Ultrasonic Geometry Inspection

Ultrasonic Geometry Inspection

The leading edge EVO Series 1.0 delivers the most accurate and reliable ultrasonic inline inspection (ILI) available today. Combining a metal loss or crack assessment with ultrasonic-based geometry measurement enables a comprehensive inspection in a single run.

Accurate pipe geometry measurement and detection of dents is essential for pipeline integrity management. Using ultrasonic technology ensures precise, direct measurement of dents with depth resolution down to 0.1 mm (0.004 in). An ultrasonic geometry (UG) sensor module is combined with an EVO Series tool, delivering a complete metal loss/crack and geometry measurement solution, which enables the assessment of cracks in dents.

Multiple datasets are gathered in a single inspection and enhance identification of combined defects as the data is fully aligned. Data analysis now utilizes this amalgamated data with improved identification of metal loss to associated with dents or to detect cracks in dents associated with fatigue.

- Axial Cracks
- Circumferential Cracks
- Metal Loss
- **Geometry Ovalities**
- Mapping

Precise Measurement with Improved Efficiency

As a market leader, NDT Global leverages its expertise in ultrasonic pipeline inspections to set new benchmarks for geometry inspection.

New API RP 1183 suggest smoothing techniques in geometry data to approximate the dent shape, however, it is highly recomended to use the most accurate data available for the dent characterization.

We are capable of reporting dent characterization and calculating the dent fatigue life in compliance to API PR 1183.

The use of high-resolution ultrasonic geometry ensures complete coverage of the pipe wall. This coverage is maintained in bends with no loss of data. The absence of any mechanical calipers ensures that there is no risk of damage to the tool and allows the flexibility to perform bi-directional inspections.

EVO Geometry	Your Benefits
Combined geometry and metal loss/crack inspection	Multiple datasets obtained from a single inspection run which lowers costs
Fully aligned inspection data	Enhanced identification and classification of interacting defects, especially associated with dents
Highest performance specification	Enhanced assessment and less unnecessary digs

Ultrasonic Geometry Inspection

Specifications

Key Tool Specifications: EVO Geometry

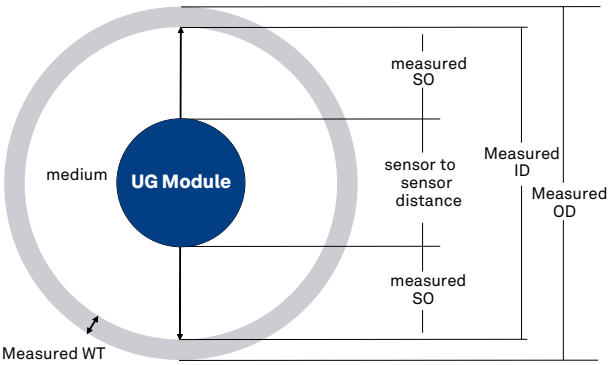
Tool sizes	6" to 42"	6" to 42"
Pipeline medium	Liquid	Liquid
Max. operation speed	4 m/s	9 mph
Temperature range	-10 to +50 °C	14 to 122 °F
Max. pressure	120 bar	1740 psi
Min. bend radius	1.5 D 90°	1.5 D 90°
Min. axial sampling distance	0.75 mm	0.03 in
Typical UG circumferential sensor spacing	15 mm	0.59 in
Defect location accuracy		
Axial from nearest girth weld	±0.1 m	±3.94 in
Circumferential		
• for Ø < 20"	±10°	±10°
• for Ø ≥ 20"	±5°	±5°

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

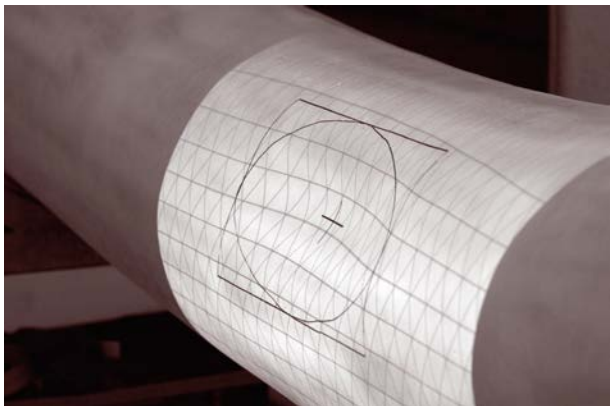
Key Performance Specifications (referring to API 1163)

POD for dents and ovalities ≥ 90%		
• Min. dent depth	2 mm	0.08 in
• Min. ovality	2 mm	0.08 in
Dent depth sizing accuracy	±1 mm	±0.04 in
Dent length sizing accuracy	±10 mm	±0.39 in

Depth in percent can be calculated dividing the depth (mm/in) by OD (mm/in), absolute value is provided as direct measurement UT method.



Ultrasonic Geometry; direct measurement principle allows to scan the inner diameter of the pipeline without sensor calibration



Sample dent observed in a pipeline

Detection, Identification and Sizing Capabilities of EVO Geometry

- Dent
- Ovality
- Wrinkle/Ripple
- Buckle
- Bulges
- Blisters
- Pipeline expansion
- Out of roundness
- Type B sleeves
- Patches
- Welded fixtures

Please note: Tool 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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