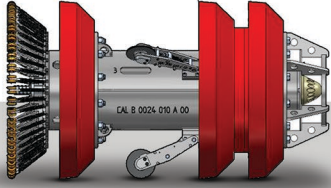


Geometry Technology

The Pipesurvey geometry inspection tools utilizes high-accuracy, multi-channel, radial measurement to provide useful data about the pipeline structural integrity. Each geometry pig is equipped with a data logger that registers dynamic behavior, acceleration and rotation, temperature and pressure. The Geometry Pig records data in both time based and distance based measurement based benchmarking systems to provide accurate coordinates of pipeline features.

The Pipesurvey geometry tool is used to detect and measure dents, buckles, wrinkles, ovalities, weld penetration as well as bend radii, misalignments, and pipeline profile.



TOOL SPECIFICATIONS	
Pipe sizes	6" – 36" Are housed in Houston
Inspection distance	Up to 150 miles, consult for longer distances
Minimum Bend Radius	1.5D Back to back
Velocity range	0.2 – 9 Mph
Location accuracy	+/- 1 m [GPS], 0.1 m from girth weld [Odometer]
Dent Detection Threshold	1% of I.D.
Ovality Detection Threshold	2% of I.D.
Depth Resolution	0.5% I.D.
Collapsibility	Up to 25%

MFL Technology

Pipesurvey magnetic inspection tools use the highest attainable resolution of tri-axial sensors to accurately determine the dimensions of the metal loss. The tools offer a gapless sensor arrangement with integrated ID/OD sensors for complete wall coverage. The sensor design offers flexibility to scan the weld and heat affected zone as accurately as possible. The tools feature low-friction, wheel-supported magbars, encapsulated primary sensors, and 1.5D back-to-back bend capable chassis to meet the challenges of difficult to pig lines. Pipesurvey MFL tools have been successfully applied in transmission lines, tank farm lines, gathering lines, risers and low-flow lines, both on- and off-shore.

Axial MFL technology deploys an axially oriented magnetic field and is most often used to detect pipeline anomalies such as general corrosion, pitting, pinholes, circumferential slotting and grooving as well as axial slotting and grooving. Axial MFL tools are customizable for multi-diameter, bi-directional, low pressure, and tether applications.



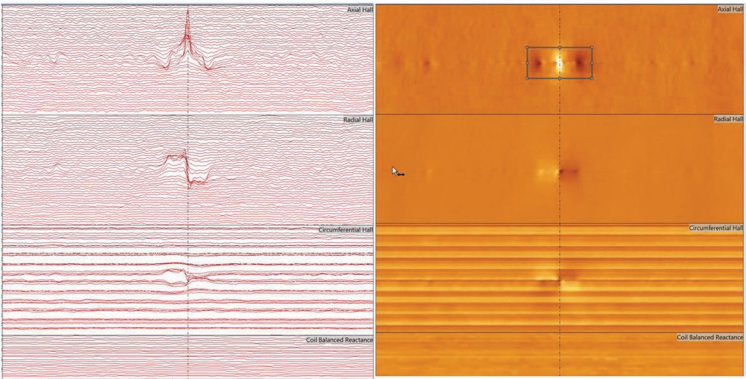
TOOL SPECIFICATIONS	
Pipe sizes	6" – 36" Are housed in Houston
Collapsibility	Up to 25%
Bend radius	1.5D Back to back
Velocity	0.2 – 9 Mph. Active Speed Control available.
Location accuracy	+/- 1 m [GPS], 0.1 m from girth weld [Odometer]
Detection threshold	5% of wall thickness

*refer to Tool Data Sheet for Complete Overview of Specification

Data Analysis

Pipesurvey has developed powerful and user friendly DATsurvey® software to analyze corrosion, geometry, and mapping inspection data. The client software includes detailed views available on one screen, including:

- An event list with filtering option to optimize customer's need
- Raw data in-line view or thermal-view that can be zoomed at any scale in distance and in clock position
- Statistical information from the whole dataset, such as velocity plot, temperature plot, pressure plot , or magnetization plot
- 3D view to visualize the pipeline in three dimensions at the target location
- The ability to creating additional dig-sheets



Pipesurvey's Ultra-High Resolution Tri-axial MFL technology allows for better characterization and improved sizing accuracy of pipeline anomalies. Measuring all signals (axial, radial, and circumferential) provides more inputs into the sizing model yielding more accurate results. Tight sensor spacing combined with a high sampling rate improve the probability of detection of axially oriented narrow features, as well as allowing identification and sizing of pitting inside of general corrosion and pinhole corrosion.