

Pipers® for oil & gas

Detect leaks, deposits, and metal loss in pipelines under operational conditions

INGU's Pipers® inline inspection solution provides full visibility across all pipeline assets, improving planning, decision-making, and overall operational control. Our patented solution pairs a baseball-sized, free-floating multi-sensor device with artificial intelligence powered data analytics.

Pipers® are designed for use in piggable and unpiggable pipelines and can be deployed under operational conditions, which translates into 100% uptime and the ability to act where and when needed.

Pipers® data is highly repeatable, making it ideal for monitoring changes in pipeline condition, keeping you on top of leaks, deposits, and metal loss.

Service overview

Leak Detection	Pipers® accurately detect and locate leaks. The smallest verified leak size is 0.029 ± 0.001 GPM (0.11 ± 0.004 L/min).
Confirmation of Containment	Pipers® can be deployed quickly to confirm complete confirmation of containment within the leak detection limit.
Deposit Inspection	With 100 pressure measurements per second, Pipers® provide a detailed pressure (loss) profile over the full length of the pipeline with a resolution of 5% or larger inner diameter change.
Bend Detection	Detect and quantify bends with an angle larger than 10 degrees and a radius smaller than 10D (Pipers® instrumented cleaning pig only).
Magnetic Inspection	Identify welds, magnetic features, and metal loss per spool with a 30% relative difference threshold (ferromagnetic pipelines only).

INGU Pipeline Viewer

The results of a Pipers® inspection can be visualized in the INGU Pipeline Viewer (IPV). The IPV consists of an interactive GIS environment showing the pipeline path and the inspection results on a satellite map and a table with the pipe tally listing the inspection results.

Technical information

Operational specifications

Pipeline Materials	All pipeline materials (Steel, Ductile Iron, Cast Iron, PVC, HDPE, ...).
Pipeline Diameters	2 inches and larger.
Bends	No restrictions.
Internal Coating/Liner	No restrictions.
Inspection Fluid	All liquids and gases with exception of hydrogen, acetylene, and fluids with high concentrations of H ₂ SO ₄ .
Velocity Range	0.1 – 4 m/s (0.3 – 13 ft/s) for optimal resolution. Higher velocities are possible, but might impact the resolution.

Product specifications

	Pipers® 2.8	Pipers® 2.2	Pipers® 1.5
Diameter	2.8 inches	2.2 inches	1.5 inches
Color	Black	Black	Transparent/Orange
Maximum Pressure	20,000 kPa (2,900 psi)	10,000 kPa (1,450 psi)	3,000 kPa (435 psi)
Maximum Temperature	70 °C (158 °F)	70 °C (158 °F)	50 °C (122 °F)
Runtime			
< 5 °C	14 hours	14 hours	1½ hours
5 - 50 °C	24 hours	24 hours	2½ hours
50 - 70 °C	12 hours	12 hours	N/A
Runtime (without leak detection)			
< 5 °C	20 hours	20 hours	3 hours
5 - 50 °C	48 hours	48 hours	3½ hours
50 - 70 °C	35 hours	35 hours	N/A

Certification

CSA: Class I, Div. 1, Groups C & D T4 / Class I, Zone 0, AEx/Ex ia IIB T4 Ga

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