

Pipers® Instrumented Cleaning Pigs

Detect leaks, deposits, metal loss, and bends 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. For gas pipelines, our patented solution pairs a Pipers® Instrumented Cleaning Pig with artificial intelligence powered data analytics.

Pipers® Instrumented Cleaning Pigs are suitable for use in piggable and unpiggable¹ 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, detecting any immediate concerns such as leaks and significant metal loss, and identifying sharp bends to determine suitability for a high resolution inline inspection tool.

Service overview

Magnetic Inspection	Identify welds, magnetic features, and metal loss per spool with a 30% relative difference threshold (ferromagnetic pipelines only).
Bend Detection	Detect and quantify bends with an angle larger than 10 degrees and a radius smaller than 10D.
Leak Detection	Pipers® instrumented cleaning pigs detect and locate leaks audible above the background sound of the cleaning pig.
Deposit Inspection	Pipers® provide a detailed pressure profile over the full length of the pipeline and can identify segments with increased friction.

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.

¹ Unpiggable pipelines refers to pipelines that can't be inspected with conventional inline inspection tools, but are suitable for foam or poly cleanings pigs.

Technical information

Operational specifications

Pipeline Materials	All pipeline materials (Steel, Ductile Iron, Cast Iron, PVC, HDPE, ...).
Pipeline Diameters	4 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	0.5 – 4 m/s (1.5 – 13 ft/s) for optimal resolution. Higher velocities and lower velocities down to 0.1 m/s (0.3 ft/s) are possible, but might impact the resolution.

Product specifications

	Pipers® 2.8 PICP	Pipers® 2.2 PICP
Diameter	8 inches and larger	4 inches and larger
Cleaning pig type	Foam / Poly	Foam / Poly
Maximum Pressure	20,000 kPa (2,900 psi)	10,000 kPa (1,450 psi)
Maximum Temperature	70 °C (158 °F)	70 °C (158 °F)
Runtime		
< 5 °C	14 hours	14 hours
5 - 50 °C	24 hours	24 hours
50 - 70 °C	12 hours	12 hours
Runtime (without leak detection)		
< 5 °C	20 hours	20 hours
5 - 50 °C	48 hours	48 hours
50 - 70 °C	35 hours	35 hours

Certification

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