

PIL Caliper Tool Pipeline Caliper Survey

Product Information

The PIL Caliper tool was conceived and engineered to provide the industry with a simple and robust, single-body caliper tool solution. The tool's rugged technology is equally valuable onshore and offshore, for the identification of geometrical anomalies which could affect the integrity of the pipeline. Where offshore projects are concerned, the PIL tool's AutoStart feature allows for the tool to be started as the tool leaves the launch trap. This functionality is particularly valuable where inspections involving an extended period of time from tool load to launch are required, such as a launch from a pre-installed subsea laydown head.

Pipeline Innovations Ltd have optimised the multi-channel caliper technology to be simple and robust, to maximise reliability under even the most severe operating conditions. The caliper system is modular in nature and as a result, it can operate in a wide range of configurations on disc pigs, cup pigs and wheeled suspension pigs.



The PIL Caliper tool provides a cost-effective method of identifying pipeline deformation as required by pipeline operators and regulatory bodies. The tool identifies geometric anomalies with accurate location and clock position information. Following are standard tool specifications:

TECHNICAL DATA			
Tool size range	NPS 6" – 48"	Bend radius capability	3D
Dent reporting	Better than 2%	Survey speed	0.25–3.0 m/s (0.5–6.5 mph)
Dent sizing	± 2.5 mm (0.1")	Battery life	70 – 100 hours
Ovality	± 2.5 mm (0.1")	Maximum pressure	400 bar Standard 600 bar Special
Odometer accuracy	± 0.1%	Temperature range	0° - 70°C (32° - 158°F)

Key Features

Reporting

On completion of a PIL Caliper inspection, a field report is issued, identifying any anomalies that exceed the detection criteria. The normal reporting threshold is 2% of nominal pipe diameter for dents and 5% for ovality. This can be varied to suit project requirements and specifications.

The detailed final report provides a comprehensive overview of the pipeline in the form of a mean bore plot for the complete length of the pipeline inspected. The final report also provides detailed information on key dimensions of the defects and their exact location, relative to the pipe number and the position in relation to the nearest girth weld. The following is an example of defect information in a typical report:

TABLE OF ANOMALIES										
Anomaly No	Type	Pipe Number	Weld Number	Odometer Distance	Bore Reduction (Dent + Ovality)		Dent Depth		Dent Length	Dent Width
				(m)	(mm)	% of Nom OD	(mm)	% of Nom OD	(m)	(mm)
1	Dent	307443	4.5m from K0745-MO25	16192	75	6.1%	35	2.9%	2.8	930
			7.5m from K0745-MO26							
2	Dent	320397	8.6m from K0736-MO28	25213	65	5.3%	30	2.2%	2.1	465
			3.5m from K0736-MO29							
3	Dent	320279	3.7m from K0729-MO16	32268	64	5.2%	33	2.7%	2.4	930
			8.2m from K0729-MO17							
4	Dent	43962	2.5m from K0717-MO23	44165	72	5.9%	35	2.9%	2.2	930
			8.6m from K0717-MO24							

This data will be backed up with multi-channel plots of each of the anomalies and if required CSV files of the anomalies which can be used by Pipeline Integrity engineers for carrying out detailed stress calculations.