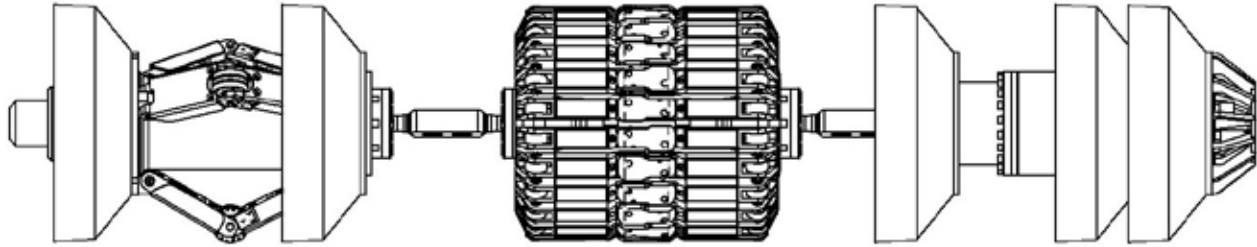


12" Magnetic Flux Leakage Inspection Tool



General			Measurement specifications		
Pipeline size	12"	inch	Direction of magnetisation	axial	
Tool length	1721	mm	Measurement Type	triaxial Hall	
Weight	160	kg	Maximum wall thickness for accurate measurement	17.5	mm
No. of bodies	3		Magnetisation level at maximum wall thickness	10	kA/m
Inertial unit	3d mapping standard accuracy ¹		Axial sampling frequency, variable	2000	Hz
Maximum runtime	24 (expandable)	hrs	Circumferential sensor spacing	4	mm
			Internal / External discrimination	Eddy current based	
Pipeline specifications			Odometers	3 channels	
Maximum pipe length	230 (expandable)	km	Marker system	Time benched GPS	
Minimum bore	243	mm	Pressure measurement accuracy	± 0.15	bar
Minimum bend radius	1.5D		Temperature measurement accuracy	± 1	°C
Velocity range ²	0.1-4	m/s	Location accuracy		
Temperature range ³	0 - 80	°C	Location accuracy ⁵	0.1	%
Maximum pressure ⁴	300	bar	Accuracy to girth weld	0.1	m
Minimum back pressure	20	bar	Clock position resolution	± 5	°
Required differential launch pressure	2	bar			

¹ refer to 3D & inertial datasheet, GPS mapping available on request

² recommended operating range is 0.1-1.5 m/s

³ higher temperatures available on request

⁴ higher pressures available on request

⁵ relative to closest above ground marker

Detection and sizing capabilities

Sizing accuracy is dependent on external factors, such as contamination of pipeline and operational conditions or heavily patterned seamless pipe. The below table specifies the sizing accuracy in terms of percentage of wall thickness (t) at 80% confidence level for welded pipe and seamless pipe.

Sizing accuracy in welded pipe				
Feature	Minimum depth at 90% POD	Depth sizing accuracy	Length sizing accuracy	Width sizing accuracy
General metal loss	5%	± 10%	± 10mm	± 10mm
Pitting	10%	± 10%	± 10mm	± 10mm
Axial grooving	10%	± 10%	± 10mm	± 10mm
Circumferential grooving	10%	± 10%	± 10mm	± 10mm
Axial slotting	20%	± 10%	± 10mm	± 10mm
Circumferential slotting	10%	± 10%	± 10mm	± 10mm
Corrosion near girth welds	20%	± 10%	± 10mm	± 20mm

Sizing accuracy in seamless pipe				
Feature	Minimum depth at 90% POD	Depth sizing accuracy	Length sizing accuracy	Width sizing accuracy
General metal loss	15%	± 10%	± 10mm	± 10mm
Pitting	15%	± 10%	± 10mm	± 10mm
Axial grooving	15%	± 10%	± 10mm	± 10mm
Circumferential grooving	15%	± 10%	± 10mm	± 10mm
Axial slotting	20%	± 20%	± 10mm	± 10mm
Circumferential slotting	15%	± 10%	± 10mm	± 10mm
Corrosion near girth welds	20%	± 20%	± 10mm	± 20mm

Identification of features			
Feature	Yes POI >90%	No POI <50%	Possibly 50% < POI < 90%
Internal / external discrimination	✓		
Metal loss feature in body of pipe	✓		
Metal loss feature in weld area	✓		
Metal loss pipe mill feature	✓		
Mid wall feature			✓
Grinding	✓		
Gouging	✓		
Dent / Dent with metal loss	✓		
Spalling			✓
Axial crack		✓	
Circumferential crack			✓
Eccentric pipeline casing	✓		
Fitting	✓		
Sleeve	✓		
Valve	✓		
Tee	✓		
Bends (5D or less)	✓		
Close metal object	✓		
Clock position of lonaseam weld	✓		
Girthweld	✓		
Patch	✓		