

Longitudinal weld anomalies and narrow axial internal and external corrosion pose a serious integrity threat to pipeline systems. Conventional MFL tools that apply the magnetic field in the axial direction do not provide reliable detection and sizing of such anomalies. PIPECARE TFI tools apply the MFL technology in transverse (circumferential) direction. The proven design and high magnetization of the TFI tools coupled with an extra-high circumferential resolution, provides reliable detection and sizing of narrow longitudinally-oriented metal loss anomalies.

PIPECARE TFI tools can be run as stand-alone tools or may be combined with other inspection technologies, such as MFL, UT, geometry and mapping.

### PIPECARE TFI TOOLS

Tool sizes	6" to 24"
Pipeline product	Gas, liquids, multiphase
Operating pressure range	0 to 120 barg
Operating temperature range	-20 to 85° C
Wall thickness range	3-20 mm
Tool velocity range	0.2 – 4.0 m/sec
Min. pipeline bend radius	1.5D (8" and above)
Min. passage bore	80-85% of OD



Tools of other sizes and higher performance specification are available upon request.

### DETECTION AND SIZING SPECIFICATIONS

	General Metal Loss	Pitting	Axial Grooving	Axial Slotting
Depth at POD 90%	0.1t	0.15t	0.1t	0.15t
Depth sizing accuracy at 80% certainty	0.1t	0.15t	0.1t	0.15t
Width sizing accuracy at 80% certainty	+/- 15 mm	+/- 15 mm	+/- 15 mm	+/- 15 mm
Length sizing accuracy at 80% certainty	+/- 15 mm	+/- 15 mm	+/- 15 mm	+/- 15 mm

### LOCATION ACCURACY

Axial position from closest weld at 90% certainty	0.15m
Accuracy of distance from pig trap valve at 90% certainty	0.2%
Accuracy of circumferential position at 90% certainty	10°



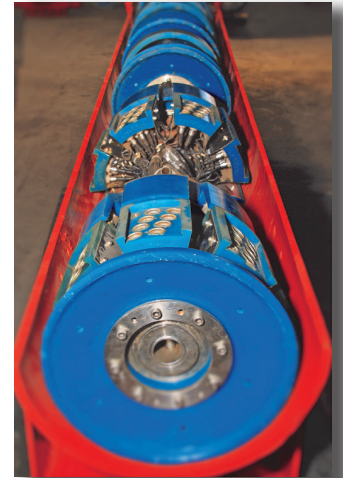
PIPECARE ultrasonic metal loss inspection tools work based on the direct measurement principle. This ensures quantitative wall thickness measurements, superior detection and sizing of metal loss anomalies, laminations and inclusions.

PIPECARE UT tools can be run as stand-alone tools or may be combined with other inspection technologies, such as MFL, TFI, geometry and mapping.

## PIPECARE UT TOOLS

Tool sizes	3" to 24"
Pipeline product	Liquids
Operating pressure range	0 to 120 barg
Operating temperature range	-20 to 85° C
Wall thickness range	4 to 32 mm
Tool velocity range	0.2 – 2.0 m/sec
Min. pipeline bend radius	1.5D
Min. passage bore	80-85% of OD

Tools of other sizes and higher performance specification are available upon request.



## DETECTION AND SIZING SPECIFICATIONS

	General Metal Loss	Pitting	Axial Grooving	Circumferential Grooving
Depth at POD 90%	1 mm	1.5 mm	1.5 mm	1.5 mm
Depth sizing accuracy at 80% certainty	0.5 mm	1 mm	1 mm	1 mm
Width sizing accuracy at 80% certainty	8 mm	8 mm	8 mm	8 mm
Length sizing accuracy at 80% certainty	6 mm	6 mm	6 mm	6 mm

## LOCATION ACCURACY

Axial position from closest weld at 90% certainty	0.15 m
Accuracy of distance from pig trap valve at 90% certainty	0.2%
Accuracy of circumferential position at 90% certainty	10°