



TRITON

Bi-directional Tethered In-line
Inspection (ILI) Pipeline Solutions

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TRITON

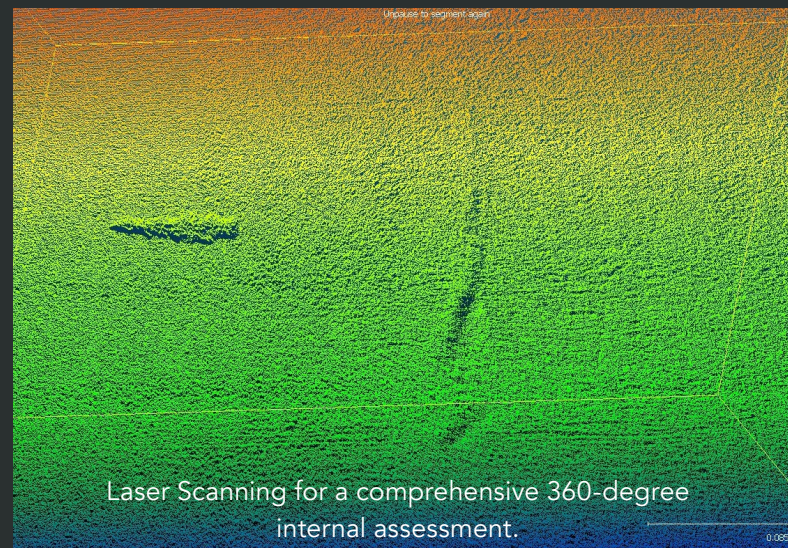
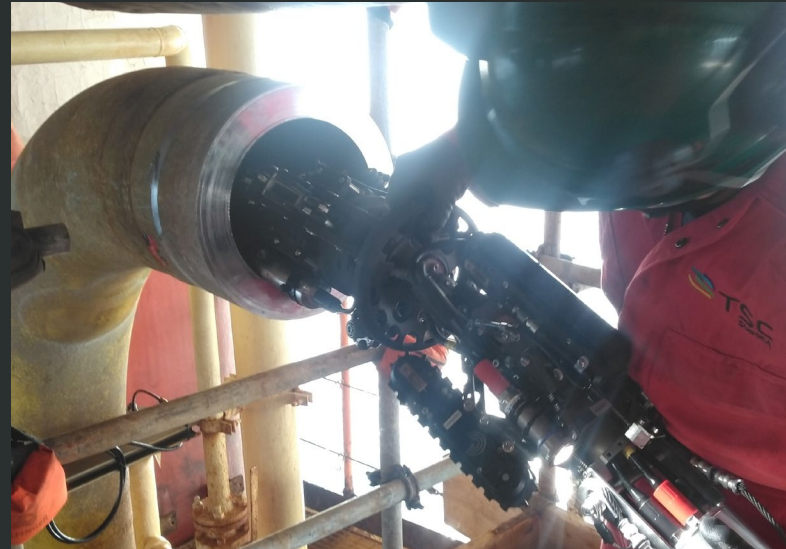
Bridging the gap for non-piggable pipelines

TSC Subsea's Bi-directional Tethered In-line Inspection (ILI) solutions redefines internal pipeline integrity assessments of un-piggable or non-piggable pipelines.

Equipped with advanced Non-destructive Testing (NDT) technologies and engineered for the challenges of un-piggable pipelines, this powerhouse combines triple independently powered tracks and an adaptable tripod chassis for intricate inspections across various pipe sizes and orientations, including the ability to navigate horizontal, vertical and even multiple 90-degree bends in both dry and wet conditions.

Ensuring the integrity of pipeline systems is crucial for optimising efficiency and production rates while minimising environmental impact and ensuring the safety of personnel and the public. Neglecting the maintenance of pipelines can result in decreased production and, in the worst-case scenario, lead to catastrophic failures due to unidentified cracks or corrosion.

Pipeline operators commonly opt for in-line inspection (ILI) pigging solutions, but these methods require specific pig launching and receiving facilities. When such facilities are unavailable, the pipeline is typically labelled as non-piggable, un-piggable, or challenging to inspect. This is where TRITON comes into its element.



APPLICATIONS

- > Un-piggable or non-piggable pipelines
- > Flow lines to subsea installations
- > Loading and unloading lines
- > Rigid and flexible risers
- > Internal damage assessments
- > Pipelines with internal obstacles

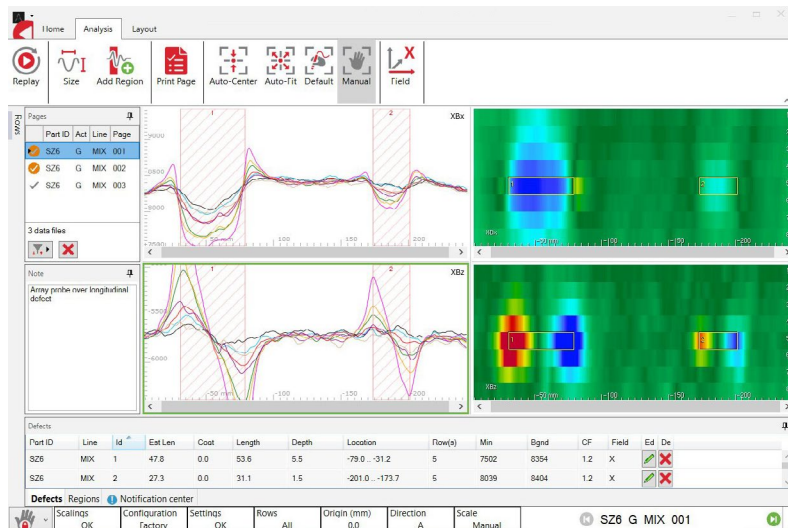
CAPABILITIES

- > Corrosion mapping
- > Wall thickness measurements
- > Ovality and dents assessment
- > Crack detection and sizing in welds
- > Remote visual inspection
- > Through coating and unprepared surfaces

ADVANCED NDT

The adaptable TRITON ILI pipe crawler can operate in both dry and wet environments and can integrate various Non-Destructive Testing (NDT) technologies based on defect mechanisms:

- > **Alternating Current Field Measurement (ACFM®)** for detecting surface-breaking cracks and sizing welds.
- > **Phased Array Ultrasonics (PAUT)** for corrosion mapping and wall thickness measurements.
- > **Acoustic Resonance Technology (ART)** for quantitative wall thickness measurements, through coating and unprepared surfaces.
- > **Pulsed Eddy Current (PEC)** for inspecting highly corroded and scab surfaces.
- > **Remote Visual Inspection (RVI)** with a high-resolution PTZ camera.
- > **Laser Scanning** for a comprehensive 360-degree internal assessment.



ACFM crack detection and sizing

BUILT TO SUCCEED

Manufactured from anodised aluminium and stainless steel, the TRITON withstands rugged conditions. A 150 m (492 ft) depth rating ensures confident inspection in water and humidity-prone environments.

Inspection areas are illuminated with powerful LED lighting while onboard cameras capture high-resolution video. Real-time sensors provide crucial data on pipe size and expansion force, ensuring the tractors expand to the optimal size to navigate the pipe.

FEATURES

- ✓ Horizontal and vertical travel capabilities and the ability to navigate through pipe bends.
- ✓ Inspection of pipelines that are challenging for traditional pigging methods.
- ✓ Ideal for pipes with a single entry and exit point.
- ✓ Offers various configuration options to accommodate different pipe setups.
- ✓ Multiple NDT technology options.
- ✓ Capable of reaching depths of up to 150 m (492 ft) of flooded pipes.
- ✓ Travel a distance of up to 300 m (1000 ft).
- ✓ Capable of full 360-degree circumferential scanning.
- ✓ Suitable for both dry and wet conditions.
- ✓ Customisable to overcome challenging pipelines with internal components.

CLIENT COMMENT

"I have nothing but praise for the project, from engineering all the way through to execution."

BP Project Manager

TRITON SPECIFICATIONS

Pipe diameters range	50 mm – 1520 mm (2 in – 60 in)
Maximum tether length	300 m (1000 ft)
Maximum speed	3.6 m (12 ft) per minute
Depth rating	150 m (492 ft)
Minimum bend radius	3D
Power requirements	100-240VAC 50/60Hz 5A
Vehicle weights	8.5 kg (19 lb)
Camera	Full HD Pan, Tilt and Zoom (PTZ)
Lighting	2x auxiliary LED lights
Operating temperature	Normal: 0°C to 45°C (32F to 113F) Limited: -10° to 45°C (14F to 113F)
NDT technology options	Alternating Current Field Measurement (ACFM®) Acoustic Resonance Technology (ART) Phased Array Ultrasonics (PAUT) Pulsed Eddy Current (PEC) Remote Visual Inspection (RVI) Laser Scanning

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