



VariPig



Case Study

Over 4,600km of gas pipeline decontaminated, cleaned and inspected

True centreline
running and
low differential
drive pressure
give increased
operational efficiency

About Varipig:

VariPig is a multi-diameter pipeline pigging solution, designed to run on the pipe centerline. VariPig provides support in all diameters, including large diameter pipeline changes.

Features and benefits:

- True centerline running
- Reduced drive pressure, for major cost-savings in long distance and deepwater pipelines
- Suspension arm design ensures even and consistent sealing disc wear
- Upto 100% diameter change possible
- Repeatable, efficient performance vs standard utility pigs
- Adaptability for different functions, including pipeline commissioning, operational cleaning and providing a drive module for 3rd party tools

The Client

A pipeline operator in the UK North Sea has created a new dual diameter pipeline system from the tie-in of two existing pipelines. The pipeline carries gas from the North Sea fields to the on-shore Scottish receiving facility.



VariPig - multi-diameter pipeline pigging solution

VariPig negotiates pipeline features including large wye piece, 3D bends and ensures sealing across full bore off-takes

The Challenge

To successfully pass through the pipeline system to undertake a complex progressive cleaning operation in a gas pipeline. This initial operation was further complicated as the mechanical condition of the pipeline was unknown and it was suspected that significant levels of contamination including liquid were present within the pipeline system.

VariPig would need to be launched within the small diameter pipeline, then increase into the larger diameter pipeline system.

The seal design must ensure that the large diameter discs did not wear out during prolonged operation within the smaller diameter pipeline and that the total sealing disc package would be capable of passing through 3D bends (within the smaller diameter pipeline) without compromising operation.

The Solution

Due to features present within the pipeline system, positioning of the seal packages was vital to ensure sealing and drive past a large diameter wye piece and full bore off-takes in both diameters. However, this requirement conflicts with the need to negotiate 3D bends. Detailed modelling using FTL's in-house 3D CAD software was utilised to predict how these conflicting requirements would effect operation of VariPig.

To record conditions within the pipeline the VariPig was equipped with 3rd party onboard electronics and sensors, within the VariPig dual module design.

Comprehensive array of onboard electronics and sensors record pipeline conditions

The Benefit

VariPig successfully completed a series of assessment and inspection runs for the operator.

Using the information gathered a pigging strategy was established to include additional cleaning and pipeline environment inspection and assessment runs in the onshore and offshore pipeline sections. To allow a more detailed assessment of pipeline conditions the VariPig tool was reconfigured to install a series of enhanced sensors onto the dual module tool design.

VariPig has successfully completed a total in excess of 4,600 Km with just basic routine field maintenance required to maintain operational reliability between operations.

**In-depth
Solutions** 

For more in-depth solutions

T: 0113 252 1061
E: sales@ftl.technology
W: ftl.technology