

PHASED ARRAY FLANGE FACE INSPECTION



Oceaneering Specialist Inspection Services offers a fully qualified approach for the detection of flange face corrosion. With timely advances in Phased Array technology it is now possible to replace expensive visual inspection with an in-service non-intrusive approach.

Crevice corrosion is a well known damage mechanism in industry and is caused by a concentration of corrosive substances within a confined space. The crevice between two adjoining flanges is the ideal environment for crevice corrosion to initiate. Because of the concentration of these corrosive substances in a localised area the rate of corrosion is accelerated. When flanges are used in very corrosive environments such as hydrofluoric acid service, the flange face is particularly susceptible. Corrosion of the sealing area can cause loss of containment and therefore have the potential to cause a release of product with potentially catastrophic effect. Due to the complexity of the flange face geometry it has become a requirement to improve upon the inspection methods that have traditionally utilised A-scan ultrasonic's.

Phased Array has the ability to simultaneously collect A-scan data at a number of given angles. This unique feature produces a volumetric beam allowing operators to distinguish between geometric reflectors and defect signals and therefore increasing the likelihood of detection.

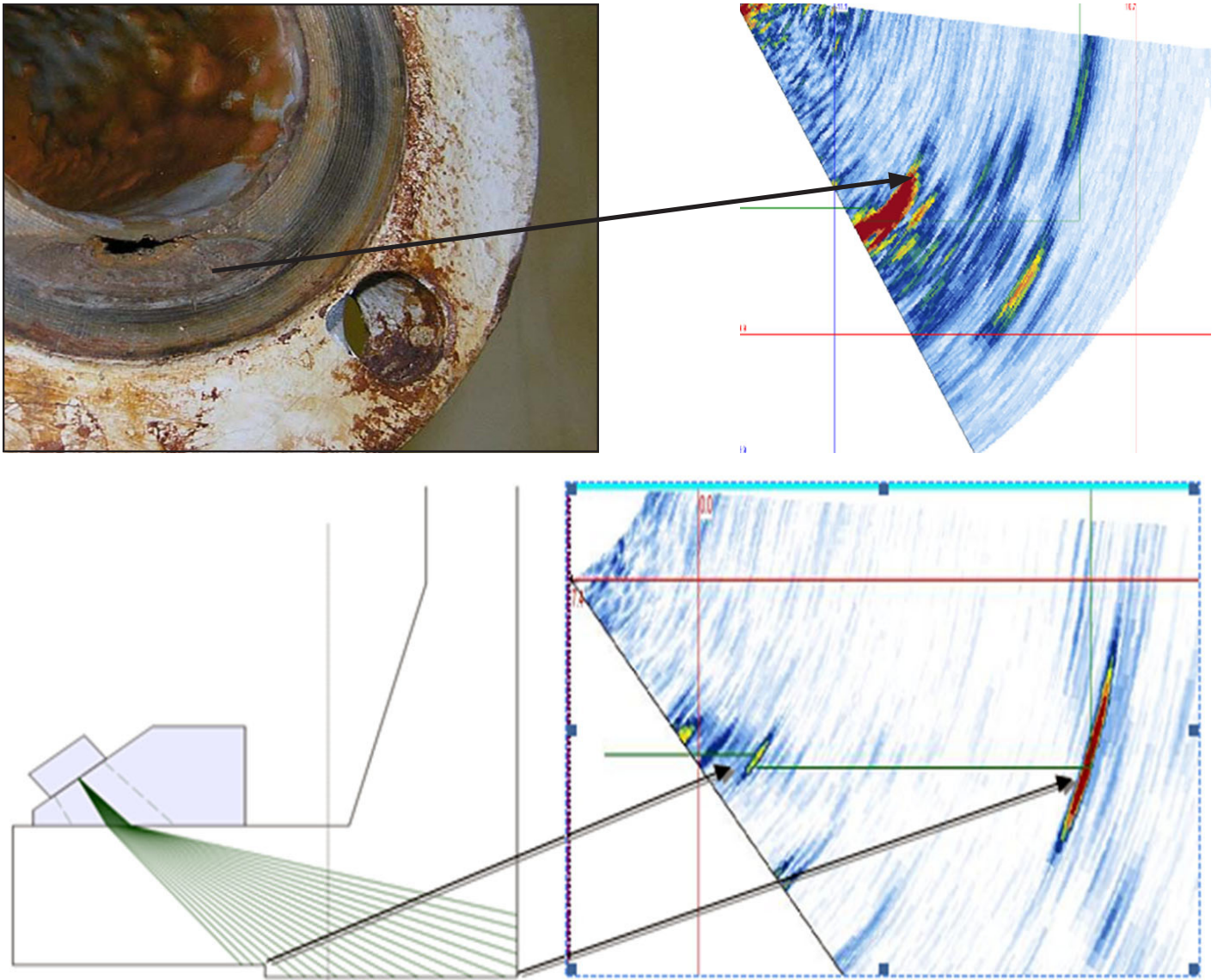
Oceaneering's inspection technique has been independently validated as part of a industry initiative to determine a reliable inspection method for this widespread problem. The independent trial resulted in Oceaneering out performing all of its competitors to achieve overall Probability of Detection (POD) of 84% in Raised Face joints and 62% in Ring Type joints. Flanges ranged from 2 inch to 8 inch diameter.

In addition to a number of trials carried out in controlled conditions, on site trials have been equally as successful in validating the technique. Pre-shutdown inspection campaigns have been carried on a number of onshore and offshore assets with the subsequent visual examination during plant downtime proving PA results 100% reliable.

The proven PA technique provides Oceaneering with significant competitive advantage over other inspection providers as by combining this latest development with our already established corrosion mapping and weld root erosion systems, we now offer a complete Non-Intrusive Inspection (NII) package for a wide range of in-service vessels.



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Features

- Portable & robust phased array system
- Third party qualified techniques and procedures
- Small probe suitable for all flanges down to 3/4 inch
- Advanced software that incorporates CAD drawings as visual overlays
- Numerous fully qualified and experienced Phased Array technicians

