



Flange Face Corrosion Assessment with Phased Array

Ultrasonic Application Solutions

Application

Piping systems in petrochemical refineries and distribution centers contain thousands of bolted joints that experience corrosive environments. Continued safe operation of these facilities requires periodic inspection to assure joint integrity. The current inspection protocol relies heavily on the physical disassembly of the joints to perform visual inspection or the expense of using high end bulky complex data acquisition systems.

Solution

The GE European Solutions Center presents a solution using the PHASOR XS[®]. It can be used with either standard or custom built phased array probes. This solution provides a portable, light weight manual phased array system which can easily be instituted in to any inspection protocol. The examination can be performed by a single inspector from either the bolting surface or the taper face, depending on the customer requirement. The data consists of sectorial images from



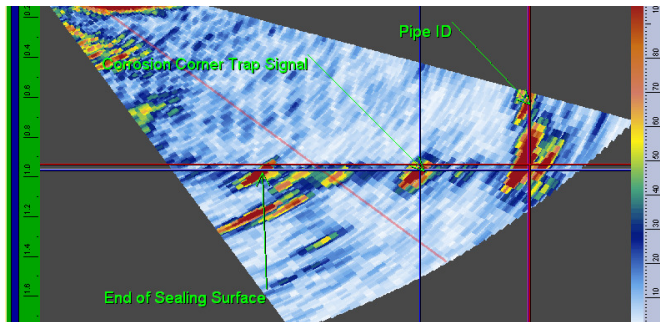
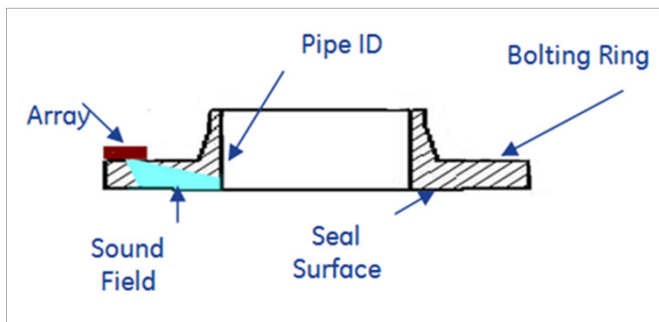
Figure 1: Typical piping system

which corrosion progression is estimated and used in risk based analysis inspection plans. This helps to minimize costs and provide a planning tool for future shutdowns.



Figure 2: Inspection of a bolted and gasketed flange

PHASOR – XS, PA 5MHZ



This example presents the inspection of a bolted and gasketed flange configuration from the bolting surface. The probe is located between the studs and the beam is insonifying the sealing surface and pipe ID.

The image presented on the left is the sectorial scan results for the location under consideration and the value presented is the progression of the corrosion front from the ID toward the gasket seal. The circle on the third picture shows the corroded surface that was detected.

Once the gasket seal is reached the seal is considered to have been compromised and needs replacement.

General solution information

- PHASOR – XS
- Phased Array Probe (5 MHz 16 element 1mm pitch)
- Wedge 35°-75°
- Rhythm Software Platform
- Standard / Custom Wedges

Your benefits

- Portable device
- One person operation
- Improved data reporting /archiving
- Ensure high quality
- Save money by improving your process

Part numbers

Phasor XS	0014372	PA 5MHz	115-100-003
Wedge	118-350-024		

Contact the GE European Solutions Center for your individual inspection problems: