

Acoustic Ranger

Detects holes, blockages, erosion, and corrosion

The Acoustic Ranger (AR 5000) detects holes, blockages, erosion, and corrosion in tubes and pipes. The device emits a sound pulse which runs along the inside of the pipe and around bends and complex spirals.



FEATURES

Proving vent lines and pressure relief streams clear

Accurate positioning capability

Commissioning and post shutdown applications

Acoustic Ranger

Detects holes, blockages, erosion, and corrosion

Blockages caused by process residue or product build-up and leaks caused by material wall loss can occur in the most unexpected and inaccessible locations without warning.

The established approach to detecting and locating such problems usually involves expensive and disruptive engineering intervention entailing the removal and subsequent re-instatement of insulation and the erection of scaffolding. Even then, the techniques available to accurately detect anomalies are not efficient and the effects on production and costs are only too obvious.

The AR 5000 is a portable system able to efficiently detect and locate the presence of blockages and leaks without the need to remove insulation or to erect staging.

Application

- » The potential scope for the AR 5000 is vast. Applications include:
- » Proving vent lines and pressure relief streams clear
- » Heat exchanger and condenser tubing examination for debris and through wall holes
- » Accurately locating blockages and equipment within pipework
- » Proving process pipework serviceable both during commissioning and following shut down

Operation

An acoustic transducer is applied to the end of the pipe or tube under test and a sound wave is transmitted through the air in the tube. Changes in the cross section such as blockages and through wall holes produce reflections of sound detected by the receiver within the transducer. The system provides the following information on defect signals:

- » Type of defect (hole or blockage)
- » Size
- » Distance from the transducer

Features

- » Requires only one access point via existing flanges or fittings
- » Long-range – up to 1,969 ft / 600 m from a single access point with a single trace
- » Fast application – immediate on-line results
- » Detection, location and sizing in a single shot
- » Portable and battery powered, requires only one operator
- » Unaffected by bends and is equally effective on straight or complex spiral tubing
- » Inspects any material and tube sizes from .23 - 19.7 in / 6 - 500 mm bore
- » High sensitivity – blockages and foreign bodies equivalent to 10% and holes of 1% of the tube cross section are readily detectable in field use and higher sensitivities achievable in controlled environments



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