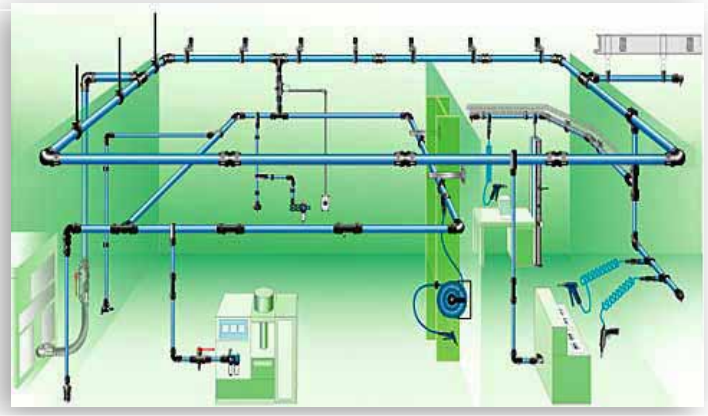
ULTRASONIC LEAK INSPECTION
PRESSURE & VACUUM SYSTEMS

Valves - Piping - Cylinders



Compressed air systems

DESCRIPTION

Compressors are the heart of any compressed gas system. Routine inspection and maintenance can prevent unplanned downtime. Although any type of compressor can be inspected ultrasonically, the most common application centers on larger reciprocating types. Specifically, valve function in these compressors is critical. Minor valve leaks can rapidly lead to large leaks, which can effect production and impact on plant safety.

How Ultrasonic Compressor Inspection Works

As with any mechanical movement, there is a "normal" operation and a "deviation". In the case of valves, normal function is the typical open/close movement. Ultrasonically this will be observed as a rhythmic movement. When valve movement changes due to leakage or sticking, the sound pattern changes. Each condition has ultrasonic components that can be sensed and monitored by the ultrasonic detection unit. Due to the short wave, high frequency nature of ultrasound, the sounds produced by a compressor valve can be isolated, which provides a clear test result.

Detection Method

For the "contact' method touch the valve with the contact probe and reduce the sensitivity until it is possible to obtain a meter swing around mid-line and hear the valve open/close movement. If more clarity is desired, try tuning the frequency to around 25 kHz. When testing, be sure to compare similar valves to each other (i.e. intake to intake, exhaust to exhaust) and under the same conditions (i.e. idling vs. working). For additional localization, use the scanning module with rubber focusing probe.

Pressure & Vacuum Systems

Compressed air and gas (Oxy, Nitrogen, LNG, CNG, etc) and vacuum systems are easily checked for leaks or system flow. Fittings, valves, couplings, regulators, hoses, piping, auto-bleeders, pneumatic actuators, gaskets & seals, etc are among the system components easily checked. Ultrasound is produced by the passage of air or gas though an orifice under pressure or vacuum. The ultrasonic signature is “heard” by our detectors and converted into a sound you can hear through headphones and seen as an indication on an analog meter.

Detection method

Simply scan detector along system components (pipe, valves, connectors, etc) until leak is found. Ordinary sounds such as background noise, talking or machinery (no matter how loud) are not detected. But leaks are easily pinpointed even in otherwise deafening background sound levels. **The use of ultrasonic leak detection can significantly reduce survey and diagnostic time.**

TO FIX IT…..FIRST YOU HAVE TO FIND IT!