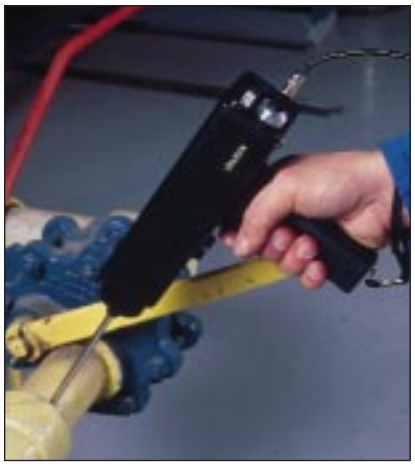
ULTRAPROBE®
Ultrasound Applications

Common Uses of Airborne Ultrasound Technology



Valves

Valve activity such as leakage or blockage can be accurately checked while the valve is on line. Properly seated valves are relatively quiet while leaking valves produce a turbulent flow as the fluid moves from the high pressure side through the leak to the low pressure side. Due to a wide sensitivity and ultrasonic frequency selection range, all types of valves even in noisy environments can be accurately tested.

Valve Stems

Valve stems may be quickly tested for leaks to atmosphere.

Pressure/Vacuum Leaks

As any gas (air, oxygen, nitrogen, etc.) passes through a leak orifice, it generates a turbulent flow with detectable high frequency components. By scanning the test area with an Ultraprobe, a leak can be heard through the headset as a rushing sound or noted on the display/meter. The closer the instrument is to the leak, the louder the rushing sound and the higher the reading. Should ambient noise be a problem, a rubber focusing probe may be used to narrow the instrument's reception field and to shield it from conflicting ultrasounds. In addition, Frequency Tuning (available in most models) dramatically reduces background noise interference to provide ease of ultrasonic leak detection as never before experienced.

Steam Trap Inspection

Major steam trap manufacturers have recommended ultrasound inspection of steam traps as one of the most reliable methods available. By converting the ultrasonic elements of a working steam trap into the audible range, Ultraprobe allows users to hear through headphones and see on a display/meter the exact condition of a steam trap while it is on line. Blow-by, machine gunning, oversized traps or line blockage are all easily detected. Frequency tuning* enhances Ultraprobe's ability to discriminate between condensate and steam. Ultraprobe markedly reduces confusion from extraneous sounds or from heat transfer, even when traps are extremely close together.

**Not all models have frequency tuning.*

Electrical Inspection

Arcing, tracking, & corona discharge: Arcing, tracking, & corona discharge produce ultrasound at the site of emission. These electrical discharges can be located quickly by scanning an area with Ultraprobe. The signal is heard as a frying or buzzing sound in the headset. As with pressure or vacuum leak detection, the closer the instrument is to the discharge, the more intense the signal. Test: switchgear, transformers, circuit breakers, buss bars, relays, junction boxes, insulators, and other electrical gear.

ULTRAPROBE®
Ultrasound Applications

Bearing Inspection/Monitoring

Ultraprobe detects the earliest stage of bearing failure. NASA research has demonstrated that ultrasound bearing monitoring will locate potential bearing failure long before it is detected by traditional heat and vibration methods. With the Ultraprobe, users hear the sound quality of a bearing as well as monitor amplitude changes on the display/meter. This provides the ability to trend, trouble shoot and confirm potential bearing problems.

Bearing inspection is easy with the Ultraprobe. Requiring only one test point and very little training, users will learn to test bearings within minutes. Frequency Tuning makes it easy to tune into a bearing and isolate it for analysis regardless of competing signals. Even current vibration programs will achieve enhanced diagnostic ability with an Ultraprobe. Most vibration analyzers are easily connected to an Ultraprobe.

Prevent over-lubrication with the Ultraprobe 2000 by simply lubricating only until the meter reaches a specified level. Over lubrication is one of the most common causes of bearing failure.

General Mechanical Inspection of pumps, motors, compressors, gears & gear boxes: All types of operating equipment may be inspected with an Ultraprobe. Since Ultraprobe works in a high frequency, short wave environment, problems such as cavitation in pumps, compressor valve leakage or missing gear teeth may be heard and isolated. Ultraprobe's Frequency Tuning* allows users to quickly "tune in" to problem sounds and recognize them with little previous experience due to the clarity of the heterodyned signal.

**Not all models have frequency tuning. Consult with factory.*

Reciprocating Compressor Valve Analysis has become so successful with the Ultraprobe, many engine analyzer companies now offer instruments with an ultrasonic input port.

Heat Exchangers, Boilers & Condensers

In-leakage or pressure leakage can be readily located with the Ultraprobe. Fittings, valves, flanges are all easily scanned for leakage. The high frequency, short wave nature of ultrasound allows operators to pinpoint the location of a leak in high noise environments. Condenser tubes and heat exchanger tubes may be tested for leakage through three methods: vacuum, pressure, Ultratone.

Vacuum – The tube sheet is scanned for the tell-tale rushing sound produced as the leak draws air into the tube.

Pressure – Additional testing may be performed when the system is off-line utilizing air pressure around the tube bundle and scanning for the rushing sound produced from the leaking tube.

Ultratone – A unique method that is also employed for heat exchangers is the "Ultratone" method in which a powerful high frequency transmitter floods the shell side of the exchanger with ultrasound. The generated sound will follow the leak path through the tube. A scan of the tube sheet will indicate the leaking tube.

MADE IN U.S.A.

UE SYSTEMS inc.
14 Hayes Street , Elmsford, NY 10523-2536 USA
Tel: 914-592-1220 • Fax: 914-347-2181 • Toll Free: 1-800-223-1325
Email: ue@uesystems.com • Internet: http://www.uesystems.com