ULTRASONIC INSPECTION FACILITIES MAINTENANCE INDUSTRIAL & COMMERCIAL

DESCRIPTION

Inspection of mechanical equipment with ultrasonic detection equipment has many advantages. Ultrasound inspection provides early warning of bearing failure, detects lack of lubrication, detects leaks in compressed-air and vacuum systems, prevents over lubrication and can be used on high as well as low speed bearings. In addition, since ultrasound is a high frequency, short wave signal, it is possible to filter out stray, confusing background noises and focuses on the specific item to be inspected. Basic inspection methods are extremely simple and require very little training. In addition, ultrasonic testing works extremely well with vibration technology. In fact the two technologies complement each other and enhance any PDM, (Predictive Maintenance) program.

Some common areas for ultrasonic inspection in the industrial & commercial environment:

- **COMPRESSED-AIR/GAS AND VACUUM SYSTEMS FOR LEAKS**
- **STEAM SYSTEMS (TRAPS – VALVES – GASKETS – BOILERS)**
- **BEARINGS FOR WEAR**
- **MOTORS, PUMPS, GEAR BOXES FOR INTERNAL WEAR**
- **ELECTRIC SYSTEM FOR ARCING, SHORTING, TRACKING, CORONA**
- **HYDRAULIC SYSTEM (VALVES, SEALS, CONTROLS)**
- **DRIVE BELTS FOR CRACKS AND WEAR (with equipment in operation & belt guards in place)**
- **ENCLOSED AREAS (ROOMS, CONTAINERS, VAULTS, TANKS, ETC.)**
- **VALVES, GASKETS, SEALS**
- **SIGNIFICANTLY REDUCE TEST & SURVEY TIME**

How Ultrasonic Detection Works

Compressed gases, when leaking produce a turbulent flow with strong ultrasonic components. By scanning fittings, a leak will be heard as a distinct "hiss". Due to the high frequency, short wave nature of ultrasound, the sound will be loudest at its point of origin. The Ultrasonic unit translates the ultrasonic leak signals into recognizable audible signals where they are heard through headphones and seen as intensity increments on a meter. A unique test **incorporates** a patented ultrasonic transmitter called a Tone Generator. This device is placed in a cabin, tank or container where it floods the area with an intense ultrasonic signal. The generated ultrasound will deflect off solid seals but will flow through a leak path.

Detection Methods

Pressurized air & gas leaks produce turbulence with high frequency components. To locate compressed air and gas leaks, simply scan the test area with the hand held Ultrasonic detector. If a leak is present, ultrasonic sound not audible to the human ear is produced. This high frequency sound will be "heard" by the detector and converted into an audible "hissing" sound heard through the systems headphones. Simply follow it to the loudest point. If it is difficult to discriminate the leaks location, reduce the sensitivity and continue to follow to the loudest point.

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