

ULTRAPROBE®

Ultrasonic Tone Generators

Ultratone Test

Specialized Ultrasound Leak Detection

Without Pressure



Ultratone Test

The “Ultratone” test is an ultrasonic method for non-destructive testing which is faster

and easier than conventional methods utilizing air pressure or water, yet provides complete accuracy. This ultrasonic test is applicable to a wide range of items including: **Containers, Tubes, Pipes, Heat Exchangers, Gaskets, Seals, Hatches, Automobile and Aircraft.**

The test is conducted by placing a patented ultrasonic transmitter called a Warble Tone Generator inside (or on one side) of a test item. Instantly, a powerful warble pulse signal floods the test item and penetrates any existing leak site. Even thin spots in certain metals will be vibrated by the signal. A scan for sonic penetration with an **Ultraprobe** will pinpoint a leak.

WTG2SP Warble Pipe Tone Generator

Heat exchangers, tanks with small openings or pipe sections can be quickly flooded with ultrasound for leak testing. Features: 1” NPT male threaded nipple with adapters for 3/4” and 1/2” female nipple, 10 turn amplitude adjustment dial, warble ultrasound transmission, rechargeable ni-cad batteries (recharger not included). **(Optional accessory)**



UFMTG-1991 Multi-Directional Tone Generator

The UFMTG-1991 represents advanced state of the art in ultrasonic tone generation.

This extremely powerful ultrasonic transmitter contains a multiple array of four transducers that produce UE Systems’ patented warble tone to cover a circular pattern of 360°. The power switch provides for a high intensity ultrasonic output. Suction cup mounting (with magnetic mounts optional) allows the UFMTG-1991 to be easily positioned for accurate sound generation. A green LED flashes to signal when ultrasound is being transmitted. Powered by rechargeable nickel-cadmium batteries, a red LED indicates a low charge condition. **(Optional accessory)**



WTG-1 Warble Tone Generator

This is the standard tone generator supplied with all Ultraprobe Kits (KT). There are two amplitude output positions, low and high. The high position produces enough energy to cover 4,000 cubic feet of uninterrupted space. This standard tone generator is versatile enough to perform any Ultratone leak

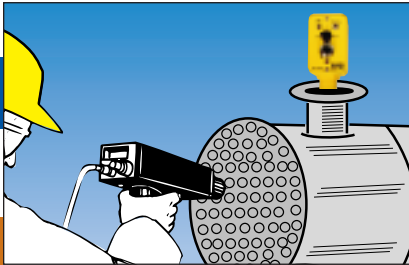


inspection procedure. Seals, gaskets, welds, tanks, pipes, aircraft, hatches, building envelope, wind noise/water leaks, etc. The WTG-1 uses rechargeable ni-cad batteries.

All **UE Systems Tone Generators** produce a patented Warble Tone.

This particular warble signal is easy to locate and eliminates the potential of false leak indications due to “standing waves” in which pure tone harmonics may stimulate a vibration at a point other than the actual leak.

Some typical applications for the Ultratone Test



Heat Exchangers

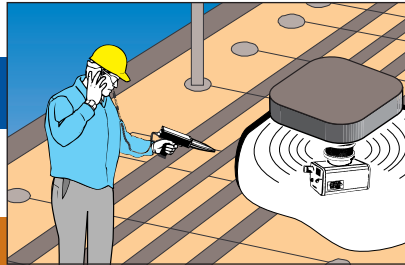
When the heat exchanger is off line, the Ultratone Test is an ideal method for locating faulty tubes.

The shell side of the heat exchanger is flooded with a uniform ultrasound. Usually the access to the shell side requires the use of UE Systems WTG-2SP Pipe Tone generator. The tone generators are placed in flange fittings or access ports to surround the tube bundle with uniform ultrasound. The generated ultrasound will reflect off solid tubes but will vibrate areas of extreme thinning and penetrate leaks along faulty tubes.

A faulty tube will have a distinctly different sound quality and intensity level than a solid, intact tube. By scanning along the tube sheet the telltale signal will be heard and the faulty tube quickly located. Poor rolls in the tube sheet can also be detected.

Aircraft

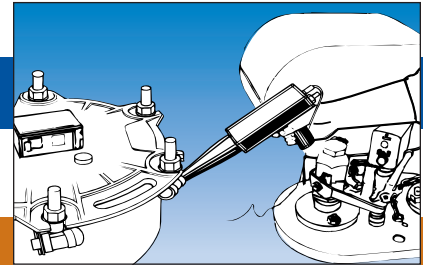
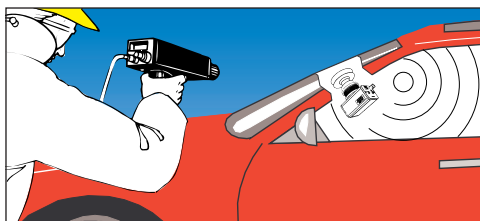
Often problems with cabin pressure, cockpit window noise or fuel cell leaks are difficult to locate when the aircraft is on the ground. Using the UFMTG-1991 Tone Generator to flood a section of the cabin, cockpit or fuel cell, the generated sound will deflect off solid seals but will follow the path of least resistance through a leak hole. Scanning on the opposite side with an Ultraprobe will indicate the leak signal and locate the exact leak site. This test is fast and accurate. There is no need for any excessive preparation of the leak site. Once a repair is performed, a fast re-check will assure the job has been performed correctly.



Marine

Water tightness integrity testing of compartments and bulkheads can be extremely time consuming using the standard bubble/pressure method. Depending on the size of the compartment, one or multiple UFMTG-1991 Multi-directional Ultrasonic Tone Generators are placed strategically to provide a uniform ultrasound in the test area. By scanning on the opposite side, the leak signal will be detected and the exact location of the leak will be determined. The speed of the test assures reduced man-hours, increased accuracy and provides for a quick re-test of the repair.

Hatches may also be inspected quickly and conveniently. The UFMTG-1991 Tone Generator may be suction cup mounted to the underside of a hatch and in some instances, the standard WTG-1 Warble Ultrasonic Tone Generator may be placed in the hatch area to provide a uniform ultrasonic signal around the hatch seal. Scanning on the topside with an Ultraprobe will indicate sonic penetration and the leak site. What's more, it is possible to establish repeatable inspection procedures to meet the requirements of private insurance or agency codes.



Rail and Truck Hatch Testing

To prevent potential environmental spills through leaking hatches during transportation, it is often possible to inspect for leakage of the “nitrogen blanket” by simply scanning with an Ultraprobe. However, there are instances where this may not be possible, or a “blanket” is not used. The hatch area may be inspected using a WTG-2SP affixed to a bleed or vent pipe or by placing a tone generator in the hatch, performing the test and then removing the tone generator. In either case, the generated ultrasound will not penetrate a solid hatch seal, but will follow the path of least resistance through a leak site. Scanning the hatch with an Ultraprobe will indicate the exact location of a leak providing for a quick repair and re-test. For extremely corrosive environments, UE Systems provides a special version of the tone generator, the model WTG-2SPIS.

Automotive

Wind noise and water leaks are easily tested with the UFMTG-1991. The convenient suction cup mount enables users to place the tone generator on the windshield. Close the doors, and test for sonic penetration. Pre-established intensity levels at specific test points can provide accept-reject criteria for fast, repeatable quality control inspections. Using a WTG-1 in the trunk can help locate water leaks and eliminate the need to having someone crawl into these tight areas.

Alpine Components

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