

## Operations Manual

The Son-Tector ultrasonic detector is a simple to use tool. No calibration or training is required. Follow these easy steps:

### INSTRUCTIONS FOR PRESSURIZED LEAKS

Some applications are: compressed air or gas, truck air brake systems, pipes and pipelines, high pressure steam systems, bottled gas, medical gas manifolds, helium, telephone cable, vacuum bags and chambers.

1. Attach the coil cord to the hand probe (blue plastic cylinder).
2. Attach the other end of the coil cord to the unit.
3. Turn on the unit.
4. Turn up the volume until you can just hear the background noise (hiss). Increasing the volume does not increase the leak detection sensitivity. Setting the volume control too high can create operator fatigue.
5. Ask someone to simulate a leak by squeezing the enclosed plastic bottle. Move the blue hand probe in a sweeping motion in the direction of the simulated leak. You will hear the sound escaping from the bottle and see the meter move. You are ready to find leaks.
6. Move the blue hand probe in a sweeping motion in the direction of the suspected leak. You will hear the leak. Follow the sound. It is as easy as that.
7. We suggest you play around with the unit for a few minutes. You will be surprised that leaks sound just the way you would expect.

Additional items you may need:

- A. Headphones are for noisy environments.
- B. The rubber sound concentrator finds the exact point of the leak. Once the general area of the leak has been located with the blue hand probe, slip the rubber sound concentrator over the screen end of the probe to zero in on the precise leak location.

In the **112 and 123 packages**, the rubber sound concentrator is normally stored over the metal rod of the contact probe.

### INSTRUCTIONS FOR NON-PRESSURIZED LEAKS

Non-pressurized leaks do not generate ultrasonic noise. We create our own noise with the SON-CASTER ultrasonic transmitter. Some examples are: pin hole leaks in containers, tanks, truck van and trailers, HVAC, seals, and gaskets.

1. Follow steps 1 through 4 for pressurized leaks (above).
2. Turn on the small blue metal Son-Caster box and place it on one side of the barrier with the screen opening facing the suspected leak. The ultrasonic Son-Caster noise generator fills the leaking area with ultrasonic sound. On the other side of the barrier, use the Son-Tector with the blue plastic cylindrical hand probe to hear the sound coming through the leak.
3. Follow steps 6 and 7 for pressurized leaks (above).

## INSTRUCTIONS FOR MECHANICAL MALFUNCTIONS

Some examples are:

faulty or bad bearings, hydraulic valves, steam traps.

1. Attach the long, narrow, metal contact probe to the coil cord.
2. Attach the other end of the coil cord to the unit.
3. Turn on the unit.
4. Turn up the volume until you can just hear the background noise (hiss).

Increasing the volume does not increase the leak detection sensitivity. Setting the volume control too high can create operator fatigue. You may find it convenient to touch the probe tip to the noise source before advancing the volume control. Often, mechanical noise pick-up is quite intense and setting the volume too high may be deafening.

5. Touch the tip of the metal contact probe to the area being tested. Correct operation sounds one way, malfunction sounds another way. You can easily hear the difference. You may need headphones if you are working in a noisy environment.

## INSTRUCTIONS FOR CORONA DISCHARGE

NOTE: these are the same as

INSTRUCTIONS FOR PRESSURIZED LEAKS

1. Attach the coil cord to the hand probe (blue plastic cylinder).
2. Attach the other end of the coil cord to the unit.
3. Turn on the unit.
4. Turn up the volume until you can just hear the background noise (hiss). Increasing the volume does not increase the leak detection sensitivity. Setting the volume control too high can create operator fatigue.
5. Ask someone to simulate a leak by squeezing the enclosed plastic bottle. Move the blue hand probe in a sweeping motion

in the direction of the simulated leak. You will hear the sound escaping from the bottle and see the meter move. You are ready to find corona discharge.

6. Move the blue hand probe in a sweeping motion in the direction of the suspected corona discharge. You will hear the corona discharge. Follow the sound. It is as easy as that.
7. We suggest you play around with the unit for a few minutes. You will be surprised that corona discharge sounds just the way you would expect.

## HANDLING & STORAGE

The Son-Tector is rugged. One was dropped from a 30-foot tower onto pavement and continued to operate! Nevertheless, while hard knocks may not cause failure, they should be avoided as much as possible. Common sense and the following suggestions will insure trouble-free operation:

1. To prolong battery life, be sure the instrument is turned off before placing it in storage, even overnight.
2. Protect the blue plastic hand probe (microphone) from moisture and other contamination. Water, in small amounts, will not cause permanent damage. Corrosive or coating material will destroy the unit's sensitivity.
3. The unit is not waterproof and should be protected from the elements.
4. We recommend the use of the carrying case for storage and transportation. The case gives effective protection from rough handling and considerable protection from the weather when the unit is used outdoors.
5. If the unit is to be stored for more than several months, the battery should be removed. The battery, if allowed to corrode while in storage, may do considerable damage.

## BATTERY REPLACEMENT FOR THE SON-TECTOR ULTRASONIC DETECTOR

The Son-Tector uses a standard 9 volt alkaline or mercury battery obtainable at most stores. The battery is located under the leather flap at the bottom of the amplifier package. (Discontinued models 100 and 130 - in the handle - remove three screws). When replacing the battery or battery cover, be careful not to strain or pinch the wires.

## BATTERY REPLACEMENT FOR THE SON-CASTER ULTRASONIC NOISE GENERATOR

Current Son-Casters come factory equipped with a 9 volt zinc-carbon battery. A zinc-carbon battery brings any possible explosion hazard which may exist in a gas atmosphere to a minimum. Alkaline or mercury batteries may be used for all other applications.

## PERFORMANCE TESTING OF THE SON- TECTORULTRASONIC DETECTOR

Blue plastic microphone hand probe: Turn up the volume control until you can barely hear the hissing background noise. Enclosed with your Son-Tector you will find a small plastic squeeze bottle. The bottle is a handy way to check for proper operation. A brisk squeeze should be clearly audible to the tool at a distance in excess of 50 feet. In the event the sound cannot be heard or the meter does not move, the battery should be replaced.

Metal contact probe: Turn up the volume control until you can barely hear the hissing background noise. Rub the metal probe over any surface. You will hear the scraping sound. In the event the sound cannot be heard or the meter does not move, the battery should be replaced.

## PERFORMANCE TESTING OF THE SON- CASTERULTRASONIC NOISE GENERATOR

To test the Son-Caster, turn it on and hold it close to your ear. If the unit is operating properly you will be able to hear a faint buzzing sound. If you cannot hear the buzzing sound, replace the battery.