



Ultrasonic Leak Detector **OTL268**

Users Manual

Read this manual thoroughly before use

INTRODUCTION

This instrument uses ultrasonic sensing technology and features small size and light weight. It is reliable and easy to use and is a practical, portable tool.

By using this instrument, you can quickly and accurately locate leaks in any pressure and vacuum system. It is very suitable for detecting cracks of pipes, valves, and etc, and is very suitable for tightness check for cabin, plane, vehicle cabinet, refrigerator, freezing plant, oil tank and other sealed compartments; in addition, it can be used to detect electrical discharge from switches, transformers, insulators, circuit breakers, relay, bus bars and etc to prevent accidents.

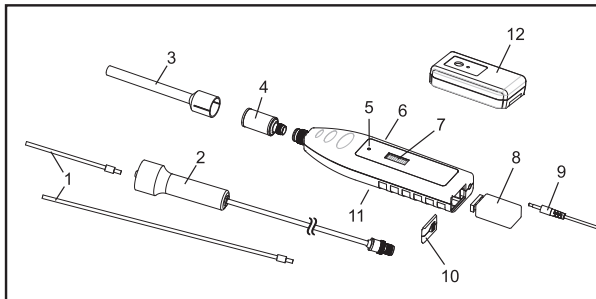
This instrument consists of:

1. Leak detector
2. Ultrasonic probe
3. Ultrasonic microphone
4. Ultrasonic transmitter
5. Extension tube
6. Probe tips, 70mm and 290mm
7. Headphone (with volume adjuster)

PRINCIPLE

Turbulence created by gas or air forced through a small orifice generates ultrasonic sound. Ultrasonic sound occurs when the atmosphere leaks into a vacuum vessel or when a pressure vessel leaks to the outside atmosphere. Ultrasonic sound's frequency is related to the size of the orifice which ultrasonic sound passes through, but usually the frequency is about 40kHz. Ultrasonic sound is very directional, this directionality is used to pinpoint the origin of the ultrasonic sound, the leak point.

PARTS



1. Probe Tips 2. Ultrasonic Probe 3. Extension Tube
 4. Ultrasonic Microphone 5. Power Indicator 6. Knob 7. LED-array
 8. Battery 9. Plug of Headphone 10. Battery Cover
 11. Leak Detector 12. Ultrasonic Transmitter

Brief Instruction

LED-array:

Used to indicate the intensity of ultrasonic wave detected.

Knob:

Used to turn on the leak detector and increase the detection sensitivity.

Ultrasonic Transmitter

This ultrasonic transmitter generates supersonic waves whose frequency is about 40kHz. By using the ultrasonic transmitter and the leak detector together, you can check tightness of non-pressurized compartments

TECHNICAL DATA

Signal Indicator: LED-array, headphone

Frequency Response: 36kHz - 44kHz

Operating Environment: temperature: 0°C - 50°C
 relative humidity: ≤ 85%

Battery: 9V battery, 6F22 or equivalent

Size: Leak Detector: 215×50×30mm

Ultrasonic Transmitter: 103×60×24mm

Weight: Leak Detector: about 162g (including battery)

Ultrasonic Transmitter: about 90g (including battery)

BASIC OPERATING METHOD

This instrument is mainly used to detect leaks and other ultrasonic source, it utilizes ultrasonic sensor to detect ultrasound generated by a gas or liquid which flows through a small restrictive opening thus leak can be located.

Basic Operating Method:

1. Turn the leak detector's knob forwards to turn on the leak detector, the power indicator will light up. Continue to turn the knob forwards to the end to set the detection sensitivity at the highest level.

Note: If there is significant background noise so that all the 10 LEDs of the LED-array light up, turn the knob backwards to reduce the sensitivity until all the 10 LEDs turn off.

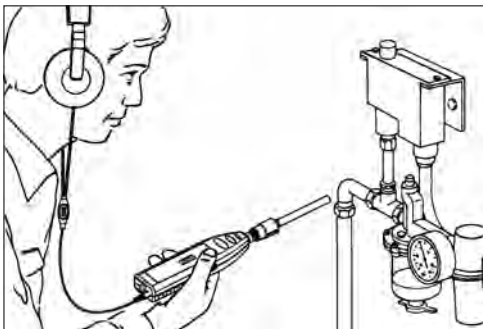
2. Scan the area of the suspected leak while observing the LED-array and listening to the sound of the headphone if you use the headphone. As the leak detector is moved closer to the ultrasonic source, more LEDs of the LED-array will light up and the tone of the sound will increase.
3. If all LEDs of the LED-array light up, turn the knob backwards to reduce the sensitivity.
4. Approach the suspected leak and; if more LEDs lights up, reduce the sensitivity.
5. When the general location of the suspected leak is determined, adjust the sensitivity so that 4 - 5 LEDs are illuminated when the leak area is scanned. This helps the user accurately locate the leak. If the LED-array display increases, then the leak source is getting closer. If the display decreases, then the leak source is getting further away.

APPLICATIONS AND TIPS

1. External leak detection with the Ultrasonic Microphone

Connect the ultrasonic microphone to the leak detector. You can connect the extension tube to the ultrasonic microphone if necessary. The extension tube will reduce the influence from

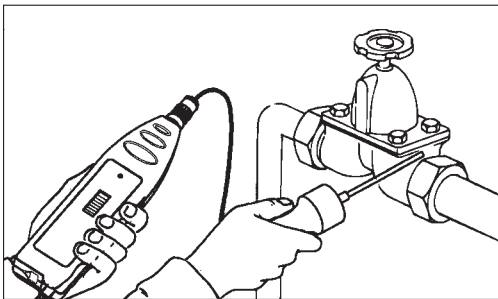
other ultrasonic noise sources and increase the directional sensitivity of the leak detector. Then use the method described in " **BASIC OPERATING METHOD** " section to perform external leak detection.



2. Internal Leak Detection with the Ultrasonic Probe and probe tip

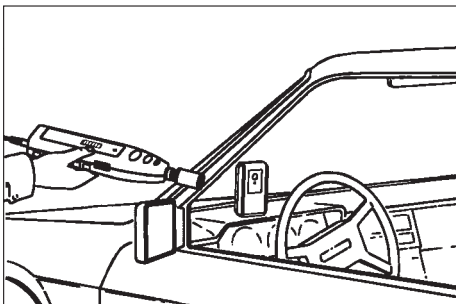
Connect the probe cable to the leak detector and use a suitable probe tip. Hold the probe steadily and press the probe tip against the area where an internal leak may exist. Then use the method described in " **BASIC OPERATING METHOD** " section to perform external leak detection moving the probe tip instead.

Note: Make sure that the probe tip is in contact with the object under investigation; otherwise it is impossible to make detection.



3. Leak Detection and Tightness Check in Non-pressurized Compartments

Connect the ultrasonic microphone to the leak detector, and place the ultrasonic transmitter inside the compartment under investigation. The ultrasonic transmitter's function is to supply the non-pressurized compartments with an ultrasonic signal. This signal will pass through the leaks, cracks and other holes which thus can be located by the leak detector. Use the method described in " **BASIC OPERATING METHOD** " section to perform leak detection and tightness check.



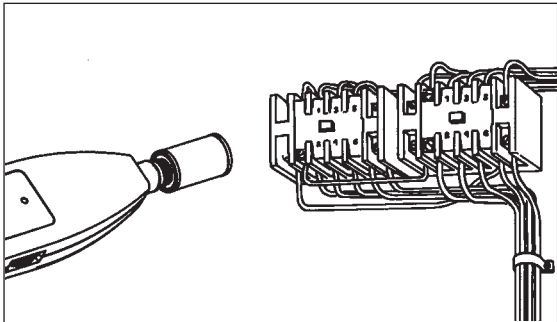
4. Electrical Discharge Detection

The leak detector with attached ultrasonic microphone can also be used to detect the ultrasound caused by electrical discharge from switches, transformers, insulators, circuit breakers, relays, bus bars, and etc. Use the method described in " **BASIC**

OPERATING METHOD " section to detect electrical discharge.

Caution:

It is highly dangerous to bring the microphone close to or in contact with high voltage equipment! Always consult or work with a licensed electrician!



BATTERY REPLACEMENT

Leak Detector

It is recommended to replace the battery of the leak detector when you have used the leak detector for about 12 hours. To replace the battery, turn off the leak detector first, then remove the battery cover and replace the old battery with a new one of the same type (9V battery, 6F22 or equivalent). Reinstall the battery cover.

Ultrasonic transmitter

If the battery of the ultrasonic transmitter is too low, the " **POWER** " LED of the ultrasonic transmitter will turn off. In this condition, you should replace the battery. To replace the battery, turn off the ultrasonic transmitter first and then remove its battery cover and replace the old battery with a new one of the same type (9V battery, 6F22 or equivalent).. Reinstall the battery cover.

CAUTION

1. To avoid electric shock and lethal injury, do not touch or connect any probe, probe tip or the ultrasonic microphone to any live circuit or object.
2. Keep a safe distance away from any live cable or object and from any moving object.

3. Do not stand on any unstable platform.
4. To avoid hearing damage, never set headphone volume too high. When you wear headphone near traffic area, be cautious to avoid accident and injury.
5. Do not use the instrument near an electric equipment generating intense electromagnetic wave.
6. Select and use a suitable accessory (such as probe, probe tip, ultrasonic microphone) according to detection need.
7. Observe all safety precautions when working around electrical equipment. Arcing can lead to explosions, be cautious.
8. Remove all batteries before storing the instrument for a long period of time. Battery leakage may cause damage.

DECLARATION

1. This manual is subject to change without notice.
2. Our company will not take the other responsibilities for any loss.
3. The content of this manual can not be used as the reason to use the instrument for any special application.

DISPOSAL OF THIS ARTICLE

Dear Customer,
If you at some point intend to dispose of this article, then please keep in mind that many of its components consist of valuable materials, which can be recycled. Please do not discharge it in the garbage bin, but check with your local council for recycling facilities in your area.

