

# LD-18 Digital Water Leak Detector

## LD-18 Quick Reference Guide

### Operating Instructions

1. The LD-18 Digital Water Leak Detector is primarily designed for water leak “pinpointing,” the term used to describe the task of finding the exact location directly over a leak in a pressurized water pipe:



Listening with the LD-18 directly over the pipe



Listening at different spots to detect differences in loudness of the leak

2. The LD-18 has both Standard Accessories and Optional Accessories:



#### Standard Accessories

- 1 Amplifier with LCD Display, Controls, and USB Connection (to PC Computers)
- 2 Padded Case for Amplifier
- 3 40 inches Belt (50 inches and 60 inches Optional)
- 4 Ground Microphone and Handswitch
- 5 Magnet Base and Nutdriver
- 6 Heavy-Duty ABS Plastic Carrying Case
- 7 Aviation-Grade Stereo Headphones
- 8 PC Software and USB Cable

#### Optional Accessories

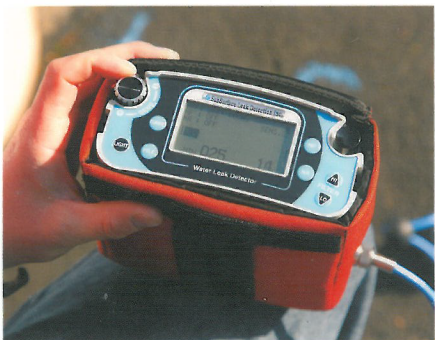
- 9 Sensor with Strong Magnet and 9.75 ft. Cable (to listen at valves and hydrants)

3. Controls and switches for the LD-18 digital amplifier:



LD-18 Amplifier Face

5. Adjustments in the field:

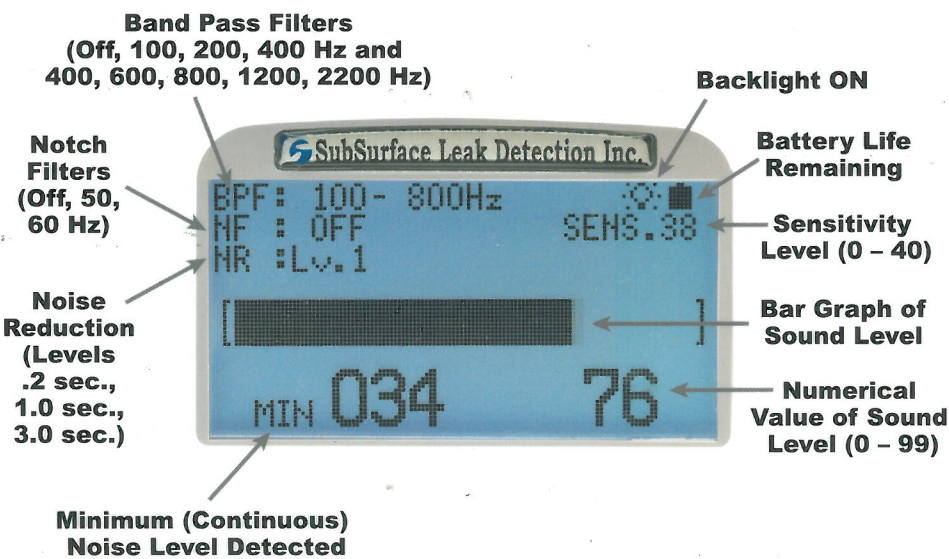


Use the Sensitivity Control to adjust the Sensitivity Level. Adjust so the Sound Level is between 30 – 70, and sounds are clearly heard in the headphones.



Use the LO Filters Control to remove extraneous continuous noises from motors, wind, and highways.

4. Amplifier's LCD Display screen for listening and pinpointing:



Release the Mute Switch when moving the Ground Microphone. Press the Mute Switch to listen.



Listen at each spot over the pipe for 30 – 60 sec. or longer. Are there leak sounds or not?



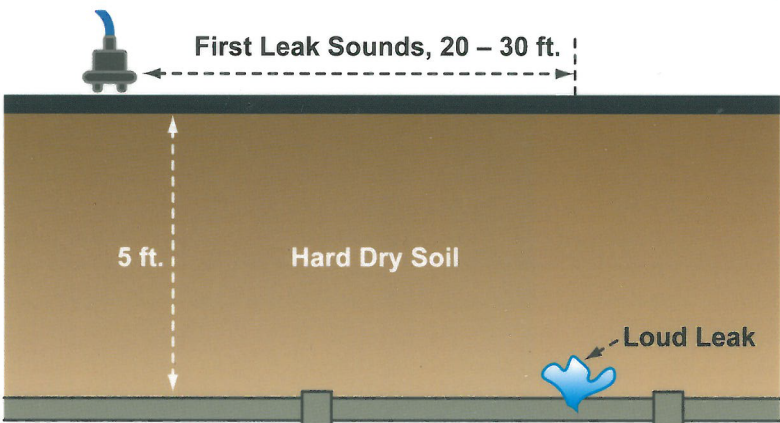
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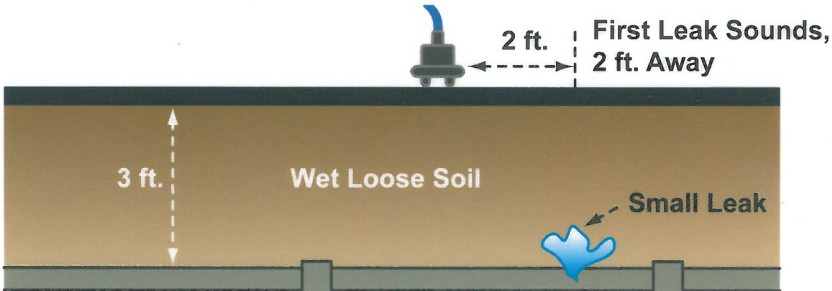
### How to Pinpoint Water Leaks with the LD-18

- 1.** The loudness of a leak heard on an asphalt street or a concrete slab depends upon the size of the leak, water pressure, and depth of the pipe. Hard, dry materials like asphalt, concrete, rock, and compacted soil transmit sounds better than wet clay, sand, or loose soil. The sounds travel further on iron and steel pipes than on PVC pipes or Poly pipes.

Example 1: Iron Pipe, 75 Psi, 10 GPM Leak, 5 ft. Depth



Example 2: PVC Pipe, 50 Psi, 1 GPM Leak, 3 ft. Depth



- 2.** Before listening on the asphalt or concrete over the pipe, always listen at hydrants, valves, and meters within 100 – 200 ft. of the suspected leak area:

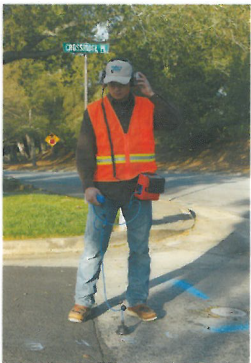


Listening at a hydrant with the magnet base



Which hydrant, valve or meter is loudest? Leak is closest to the loudest.

- 3.** Mark out the locations of the pipes and listen directly over them:



Adjust the sensitivity, change the filters, and use the Noise Reduction, if needed. Do you hear the leak?

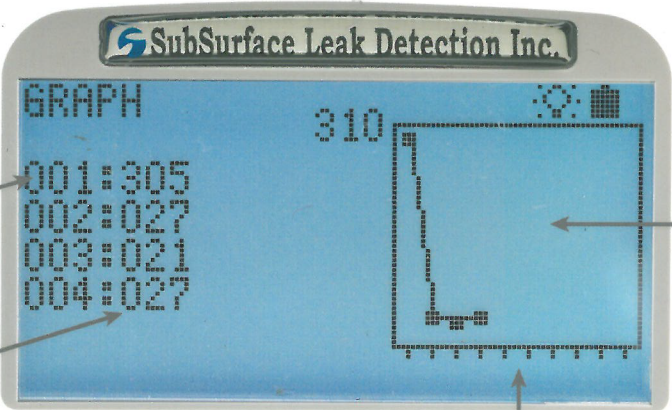


- 4.** At the spot no. 1, do you hear the leak? If “Yes,” than the LD-18 hears the leak too. Hold the Mute Switch closed and let the LD-18 listen for 30 – 60 seconds or longer until the Minimum Noise Level becomes constant. Press the SAVE button while still holding the Mute Switch.



Repeat this exact same process for 5 – 10 spots directly over the pipe. Spots can be spaced 6 inches apart or 3 feet apart, but the LD-18 has to be able to hear the leak.

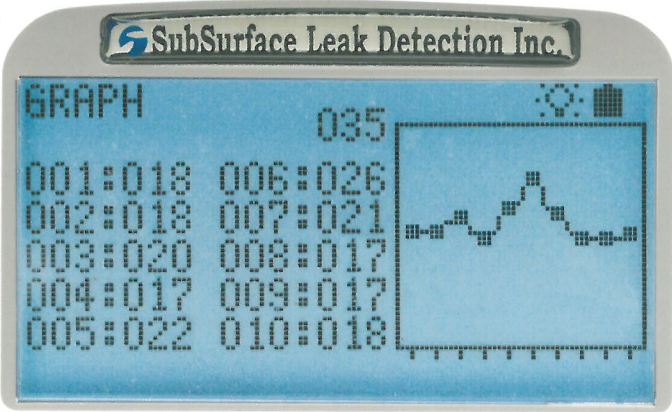
- 5.** Each time the SAVE button is pressed (while the Mute Switch is closed), the Minimum Noise Level is recorded in the LD-18’s memory and a file number is assigned. Press FILE to see the File List, and press FILE again to see the GRAPH:



Graph of 10 Min. Noise Levels (only 4 spots shown)

X-axis: File Number (spot on street)

- 6.** With the Minimum Noise Levels saved at 5 – 10 spots directly over the pipe, examine the GRAPH by pressing FILE twice:



The Minimum Noise Level at each spot is the actual leak sound, and where it reaches a peak is where the leak is pinpointed.

- 7.** The Band Pass Filters (HI and LO Filters) and Notch Filters (Off, 50 Hz, 60 Hz) are used for removing extraneous continuous noises like AC hum (60 Hz in USA), motors, air conditioners, wind, and traffic. Extraneous noises can interfere with the LD-18’s ability to hear the leak sounds.

- 8.** The Noise Reduction function removes intermittent noises like footsteps, passing cars, and dogs barking. Choose Lv.3 (3.0 sec.) to remove the longest lasting intermittent noises, up to 3.0 seconds long. Intermittent noises longer than 3.0 seconds cannot be removed.