LD-8 Leak Survey Tool

LD-8 Quick Reference Guide

Operating Instructions

1. The LD-8 Leak Survey Tool is a "rod-based" acoustic listening instrument for listening for water leaks at hydrants, meters, and valves:

Listening at a Hydrant with a 4-inch Rod

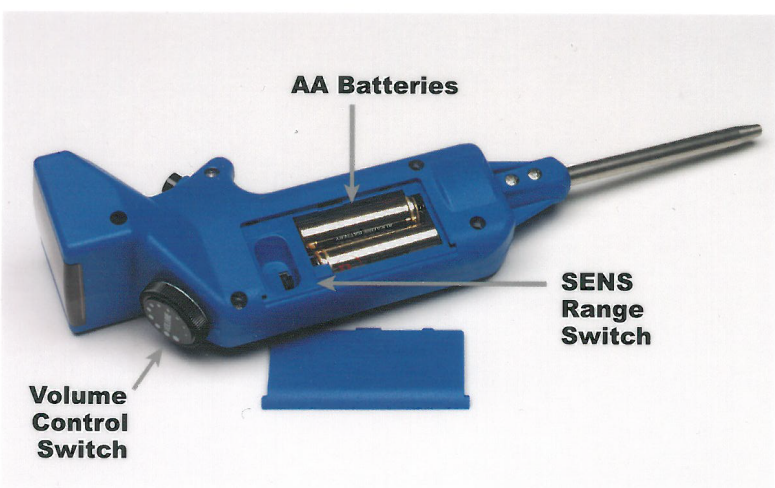
Listening at a Meter with Optional 40 inches Rod

2. The LD-8 includes a 4-inch short contact rod, a 4-section contact rod set (threaded connections, each rod 13 inches) and an adapter rod as standard items:

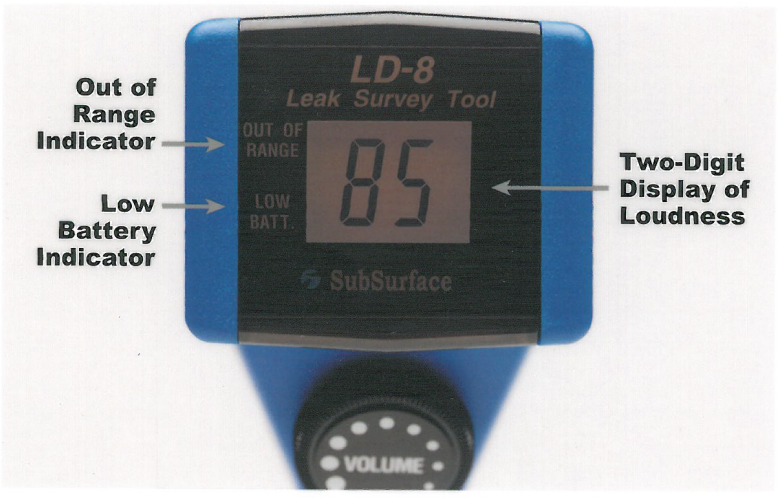
The adapter rod has female threads at both ends, and it is used for attaching the optional 40 inches Long Contact Rod or the optional 60 inches Long Contact Rod.

3. The stereo headphones attach to the side of the LD-8 amplifier at this connector jack:

4. Two AA batteries go inside the battery compartment like this:

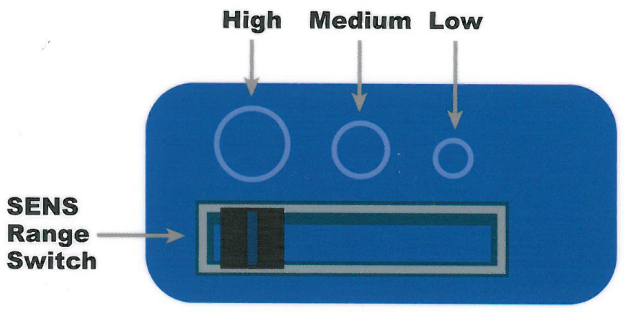


5. The LD-8 amplifier display has a two-digit display of loudness, out of range indicator, and low battery indicator:



6. The Low Battery Indicator flickers a "battery icon" when the battery power is low and the ON/OFF Button is depressed. Replace the batteries when the icon appears.

7. The SENS Range Switch inside the battery compartment has 3 positions:



With the switch in the High position, the LD-8's sensitivity is highest (for listening to small leaks). With the switch in the Low position, the LD-8's sensitivity is lowest (for listening to loud leaks).

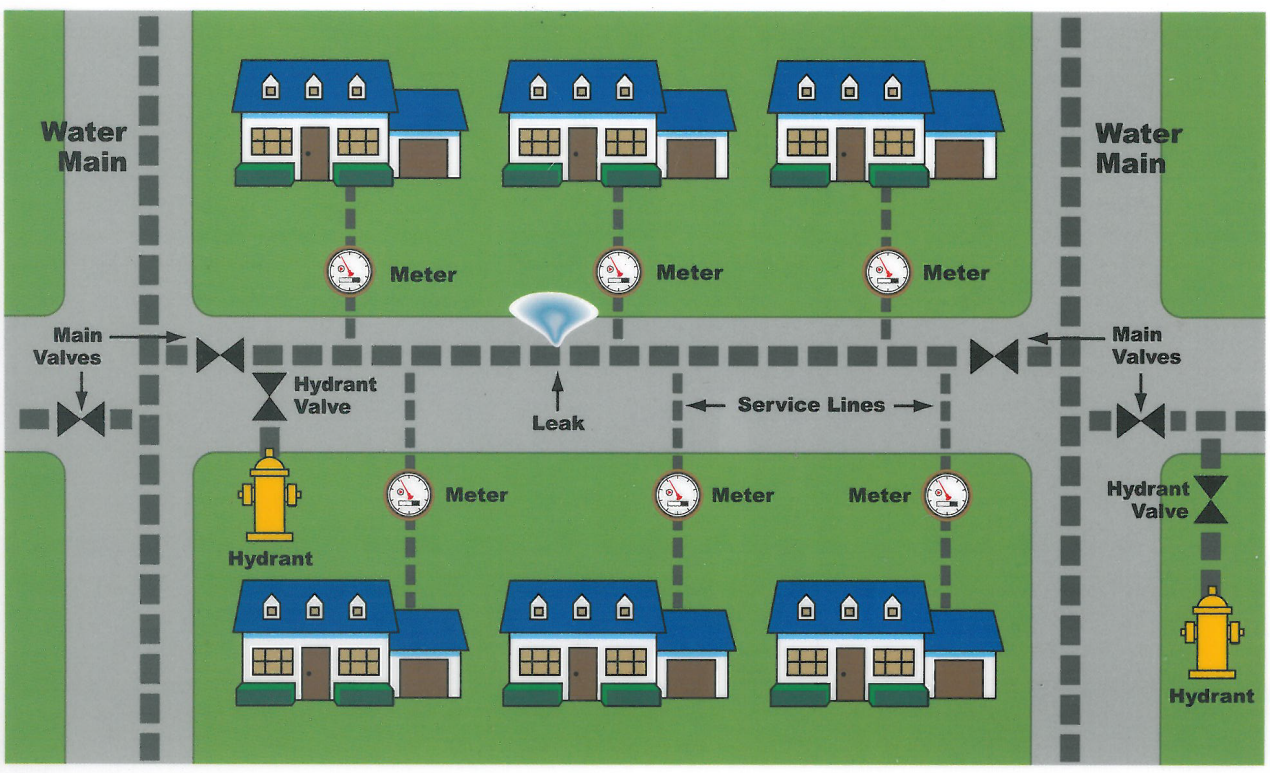
8. The Out of Range Indicator flickers a "△" icon when the sound level display exceeds 99. Move the SENS Range Switch to Medium or Low to re-scale the two-digit display to a lower range. Each SENS Range Switch position is 10X higher or lower in sensitivity then the adjacent position.

How to Survey for Water Leaks

with the LD-8 Leak Survey Tool

LD-8 Quick Reference Guide

1. The sounds of leaks in pressurized water pipes can travel for hundreds (even thousands) of feet in every direction down the mains and services:



2. Different pipe materials and different pipe diameters transmit leak sounds down their pipe walls very differently:

Distances Leak Sounds May Travel

Pipe Material	Pipe Diameter	Distance Sound Travels*
Iron Pipe	6 inch	1000 – 1200 ft
Iron Pipe	12 inch	800 – 1000 ft
Iron Pipe	24 inch	600 – 800 ft
A/C Pipe	6 inch	800 – 1000 ft
A/C Pipe	12 inch	700 – 900 ft
A/C Pipe	24 inch	400 – 600 ft
PVC Pipe	6 inch	400 – 600 ft
PVC Pipe	12 inch	200 – 300 ft
PVC Pipe	24 inch	100 – 150 ft

* For a 5 gal/min leak at 60 psi pressure

3. The service line material is also very important when listening at meters or curb stops:

Service Line Material	Distance Sound Travels*
Copper Tubing	600 – 1000 ft
Galvanized Steel Pipe	800 – 1200 ft
"Poly" Plastic Tubing	50 – 100 ft

* For a 2 gal/min leak at 50 psi pressure

If the distribution system experiences main breaks (5 to 10 gal/min or more) at certain times of the year and the mains are iron pipe or A/C pipe, then a "Hydrant Survey" can be effective and an efficient use of time. Listen at every hydrant in every block. If there is no hydrant for 500 ft., then choose a main valve.

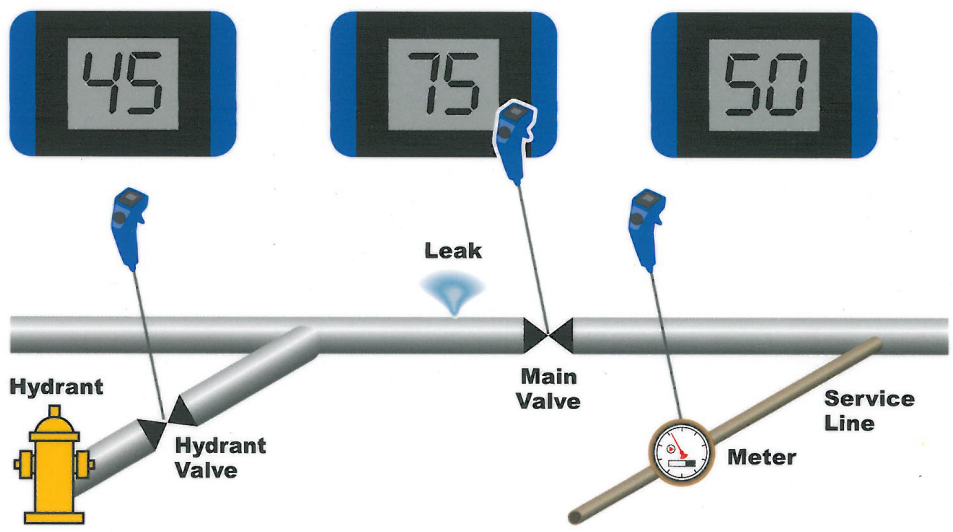
If the distribution system has PVC mains and copper services, then an "Every Meter and Every Valve Survey" may be necessary. Particularly if the system experiences small leaks at the corp valves (taps into mains).

4. The leak survey "strategy" must consider the pipe materials, pipe diameters, service line materials, and types of leaks expected.

Hydrant Survey

Meter Survey

5. If you hear a leak, listen at the adjacent service lines, hydrants, and valves. If the sound is louder, then you are closer. If you cannot tell which one is louder with your ears, then study the two-digit display:



The leak is closest to the main valve because the two-digit display is higher here.