

Using a LS70 Helium Detector to Find Underground Plumbing Leaks



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Your Partner in Swimming Pool Water Conservation

Your new LS50 Helium Detector is a sensitive, lightweight, hand held instrument designed to easily and quickly pinpoint the smallest leaks in a plumbing system pressurized with a gas, such as Helium or Carbon Dioxide.

Equipment Needed:

- LS50 Helium Detector
- Anderson's Pressure Tester
- Assorted Anderson Test Plugs
- Single Stage Regulator
- Gas Cylinder - filled with a gas, such as Helium or Carbon Dioxide, that has a thermal conductivity different from air.



LS50 Helium Detector



Pressure Tester



Assorted Test Plugs



Flow
Regulator

Set Up:

1. Pressure test the plumbing system to determine which plumbing line is leaking.
2. Once it is determined which line is leaking purge the line of water. Hook you pressure tester up to your gas source and slowly induce the gas into the line. Although a constant flow of gas is required, it is not necessary to maintain a measurable pressure.

Test:

1. Turn the unit "ON". Power On light will glow red. Note: A blinking light indicates that the battery is at 50% capacity and will require recharging soon.
2. Select LO or HI range. Warm up: LO range = none required, HI range = 10 minutes **For most underground plumbing leak location use LO range.**
3. Zero the unit by pressing the zero button. LED bar graph will illuminate one way, then the other, then off. Re-zero unit every 5-10 minutes or as needed.
4. Using the probe, carefully move the tip over and around the suspected buried plumbing line. The probe must be moved slowly to detect small leaks.
5. A leak is indicated if the LED bar graph illuminates. The concentration of the trace gas escaping from the leak is indicated on the LED display by the number of lights illuminated.
6. Once a location giving peak reading has been located, remove the probe from the area and allow the unit to return to zero. Then return the probe to the suspected location to verify the leak.
7. Detects trace amounts of gas that have a thermal conductivity different from air. Polarity indicator LED is "on" when identifying a gas with a higher thermal conductivity than air, such as but not limited to: Helium, Neon, Fluorine. Polarity indicator LED is "off" when identifying a gas with a lower thermal conductivity than air, such as but not limited to: Carbon Dioxide, R12 Refrigerant, Acetone, Argon.



Battery Charging:

Connect AC adapter to back of unit and plug into AC supply. The battery will be fully charged in approximately 4 1/2 hours (95% charged in 1 hour). The charging circuit is designed so that the battery will not overcharge. Battery life is approximately 3 1/2 hours run continuously from a fully charged battery.

Caution:

The leak detector is not designed to be used to determine leaks of combustible gases!

Tips and Pointers:

- Helium is the gas of choice among many users of the LS50, because it has a very high thermal conductivity making it easy to detect. Also its small molecular structure enables it to quickly rise to the surface even through concrete.
- When the trace gas escapes from a leak it seeks the easiest path to the surface. Although helium can come right through concrete, it may move laterally if an easier path to the surface is close by. Check expansion joints, cracks, or edges of the deck first. To pinpoint the leak when gas is located in one of these areas, use a listening device or drill small holes in the deck and continue using LS50.
- Windy conditions can make detections difficult with the LS50. When such conditions exist a simple to make "wind shield" can be affixed around the probe to aid in detection. Drill a hole in the bottom of a Tupperware type container. Slide the bowl onto the probe and secure it in place so that a shield is formed around the probe. When surveying the suspected leak area place the upside down bowl on the ground to make a seal. Detection of the trace gas when using the "wind shield" confirms that the gas is coming through the ground and is not being blown to, or away from the probe.
- For stand up operation slide the probe into a 18"-24" piece of small diameter PVC so the end of the probe just extends from the pipe. The pipe can then be handled like a wand with the probe held close to the ground while the operator stands.