HLD440N
Nitrogen Leak Detector

OWNER'S MANUAL

TABLE OF CONTENTS

INTRODUCTION

Congratulations on your purchase of the TIFHLD440N Nitrogen Leak Detector. Your new unit has been designed and produced to provide many years of dependable service. Please read this manual carefully before using the unit in order to gain the full benefits of its features.

The TIF HLD440N is an extremely sensitive, easy to use Nitrogen leak detector. Since no calibration is necessary, the most inexperienced person can start leak checking in seconds. The clear, audible signal provides a constant indication and ceases upon the detection of Nitrogen.

Although primarily used to locate leaks in buried telephone cable using Nitrogen as a 'tracer' gas the HLD440N can be used for ANY Nitrogen detection.

Examples of such include cylinder valves, pressurized lines, containment vessels, etc...

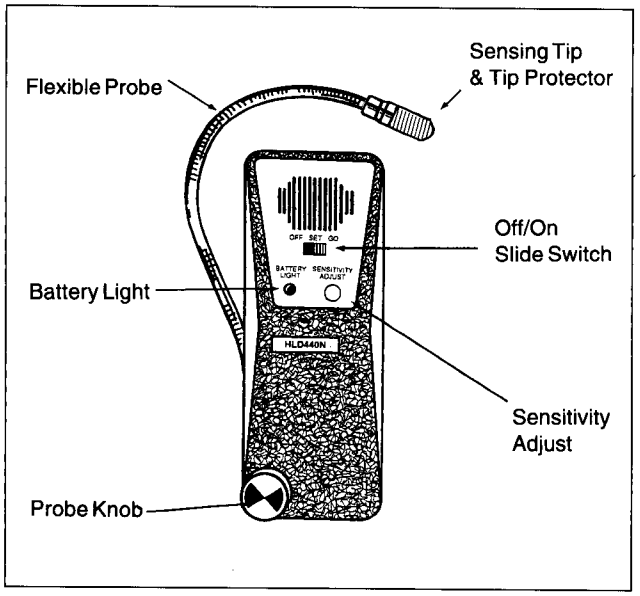
Should you experience any difficulty or require technical assistance please call our Customer Service Hotline toll free at 1-800-327-5060.

FEATURES

- Does not require calibration.
- Clear, audible signal for mistake proof leak detecting.
- Finds leaks in contaminated areas.
- Cordless. Operates on two C-cell alkaline batteries.
- Sensor not poisoned by large doses of Nitrogen or other gases.
- Instantaneous on - no warm up.
- Constant battery indication.
- Responds to minute traces of Nitrogen.
- No dangerous or poisonous gases are generated.
- Long, flexible stainless probe for easy access and probing.
- Utilizes an audible "Geiger Counter" ticking signal which decreases and stops upon detection.

DIAGRAM

The HLD440N
Electronic Leak Detector



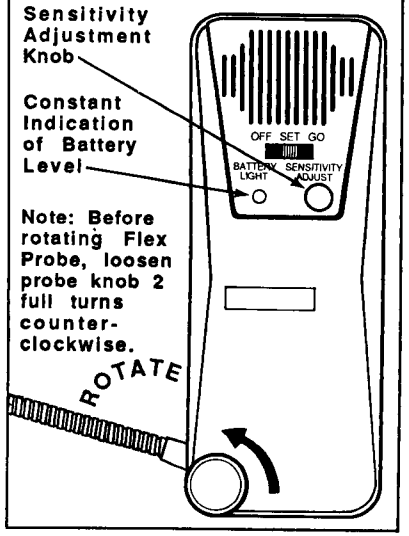
OPERATING INSTRUCTIONS

General

1. Move slide switch to SET position (see Figure 1). DO NOT operate in the GO position.
2. Turn the knob clockwise until a 'siren' signal is heard.
3. **SLOWLY** turn the knob counter clockwise **just** until a distinct **RAPID** ticking is heard. The unit is now set for maximum sensitivity.
4. Begin searching for leaks.

NOTE: Initially the unit should be set as described above. This provides maximum sensitivity. Be aware, however, that the sensitivity can be adjusted:

Figure 1



Rotate the knob clockwise to INCREASE and counter-clockwise to DECREASE sensitivity.

- The FASTER the ticking, the GREATER the sensitivity.
- The SLOWER the ticking, the LESS sensitive.

Leak Detection Techniques

The most common use of the HLD440N is the location of leaks in buried telephone cables after injecting Nitrogen into the cable as a 'tracer' gas.

Instructions for this use follow:

For greatest effectivity the TIF HLD440N should be used in conjunction with probe holes made in the ground. This provides for:

- Faster leak detection
- More accurate leak location

Before leak checking Nitrogen must be injected as a tracer gas.

Also, one should verify the absence of contaminants in the surrounding soil or earth. This check verifies:

- That the TIF HLD440N can be used in this location.
- That sensitivity is appropriately set.

Leak Detection Techniques (cont.)

1. Make a probe hole approximately 6-8" deep within a 6' diameter of the cable location but not within 1' of the cable.
2. Probe the hole with the detector (having it set as discussed above).
3. If no change in signal occurs proceed to step 6.
4. If an increase in signal occurs readjust the unit, **in position,** to the RAPID tick rate previously described and proceed to step 6.
5. If a decrease in signal occurs a contaminant similar to Nitrogen exists and the unit cannot effectively be used in this location.
6. Make and probe holes 6-8" deep every two to three feet along the cable.
7. Place the probe in each hole and listen for a change in signal.
8. When the audible signal CEASES Nitrogen has been detected. Always check for more than one leak.

NOTE: The audible signal may "wander" slightly during use. If so, readjust to a rapid ticking. Increases in tick rate should be disregarded as Nitrogen will always cause a cessation of the audible signal.

OPERATING INSTRUCTIONS

Operating Tips

To maintain good performance follow the points b

- Always check Battery Light before using.
- Make certain filter cloth is clean (white) and pr is free of dirt.
- Avoid direct contact with moisture. If tip or filte become wet they must be dried before re-using
- Always verify proper operation by testing with (signal should cease) BEFORE leak checking.

BLESHOOTING

shooting Hints

ticking occurs check the following:

or old Sensing Tip.
for a source of contamination.
attery indicator light should be lit.

ur leak detector is turned on, the red battery should be lit.
light is not on, install fresh size "C" alkaline
If the light is on and the unit fails to operate check the sensing tip as described on page 11.
er, low temperature will affect battery voltage.

tip contamination from dirt and moisture by the tip protector and filter cloth.

change filter cloth when new tip has been d.

Battery Replacement

Batteries need to be replaced when the red Battery Light does NOT illuminate when the unit is switched ON.

1. Remove the battery cover on the back of the unit by unscrewing the large slotted screw.
2. Remove the old batteries.
3. Replace with two fresh and/or tested 1.5V Alkaline size "C" batteries. Be careful to note the polarity as indicated on the label.
4. Replace battery cover and tighten screw.
5. Verify operation by switching ON and checking Battery Light.

Sensing Tip Care and Replacement

The TIF HLD440N Sensing tip is a consumable, replaceable part. Although it can be cleaned to improve performance, eventually it will wear out.
A dirty or failed sensing tip will react in one of two ways:

- A continuous siren sounds no matter what is done to the adjustment knob.
- The unit does not respond to a known leak of Nitrogen.

If either of the two above conditions exist proceed as follows (refer to Fig. 2 on p. 12):

1 Make certain unit is switched OFF.
2. Remove 'spring' tip protector and filter cloth.
3. Examine cloth and sensing tip for contamination such as dirt and moisture.
4. Clean tip by unscrewing from probe and blowing through with compressed air or Nitrogen.
5. Replace filter and reassemble tip assembly.
6. Check again for proper operation.
7. If unit still fails to work properly the Sensing tip must be replaced with a new one.

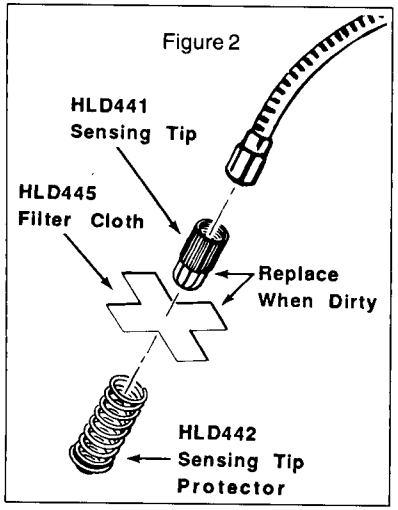
REPLACEMENT PARTS

Replacement Parts

Sensing Tip	Part #441
Sensing Tip Protector	Part #442
Filter Cloths	Part #445
Maintenance Kit*	Part #444

* Maintenance Kit contains: 2 sensing tips, 3 sensing tip protectors, 12 filter cloths.

Figure 2



Optional Accessories

Carrying Case	Part #447

SPECIFICATIONS

Specifications

Power Supply:	Two size "C" alkaline batteries.
Sensitivity:	Approximately 1% concentrations
Operating Temp. Range:	30° - 120° F.
Battery Life:	Approximately 70 hours, normal usage (alkaline batteries).
Duty Cycle:	Continuous, no limitation.
Response Time:	Instantaneous.
Warm-up Time:	Instantaneous.
Weight	28 ounces (with batteries).
Dimensions:	8" x 3" x 1.8".
Probe Length:	12.5"

WARRANTY & REPAIR

Limited One Year Warranty and Repair/Exchange Policy
This instrument is designed and produced to provide unlimited service. Should it be inoperative after performing the recommended maintenance, a no-charge repair or replacement will be made to the original owner if the claim is made within one year of the date of purchase. This applies to all repairable units which have not been tampered with or damaged. This warranty **does not cover** consumable items such as batteries & tips, nor physical damage and normal wear to components such as probes, sensors and adaptors. For repair service, send your tool to the factory address on the Owner's Manual. Repaired or replaced tools will carry a 90-day warranty.