

PROWLER

LD 5000 REFRIGERANT LEAK DETECTOR



JB INDUSTRIES INC.



PRODUCT OVERVIEW

JB Industries is proud to unveil the new, revolutionary LD 5000 PROWLER refrigerant gas leak detector. Using our new proprietary JBI Electrochemical sensor technology for unparalleled accuracy coupled with the unique user features, there simply is no better hand held probe type service leak detector system on the market. The LD 5000 uses a long life sensor that is designed to detect the more current and more difficult HFC refrigerants such as R-134a, R-410A, R-404A, R-407C, and R-507 in addition to all HCFC (R-22) and refrigerants including SNAP approved hydrocarbon blends. The sensitivity is extremely accurate for all HFC, HCFC and blended refrigerants as well as the new HFO refrigerants. The sensor is durable and will not be damaged by overexposure to refrigerant gas or contaminated by condensate water. Its slim-line design makes it easy to probe difficult to search areas. The technology provides for low battery consumption, excellent circuit stability, extremely long sensor life, and the electrochemical function of the sensor does not diminish over time with use. The sensor life has been tested to be greater than ten years, which is unique in the industry and it is safe to use in a combustible atmosphere. The PROWLER features a large LCD screen that flips upward so the user can adjust the screen position for better visibility. The bar graph shows the intensity of a leak to help pinpoint the source of the leak. The sensitivity can be programmed from high to medium to low. If a leak is detected, there is an audible alarm that will sound, vibration in handle, and bar graph on the screen. The LCD display also indicates the amount of remaining battery life. The LD 5000's unique digital leak size indicator takes the guesswork out of whether or not to repair a small leak. The adjustable LCD display is independent from the audio and/or vibrating handle alarms and sensitivity level, allowing for the precise pinpointing of the leak source. The PROWLER does not require rechargeable batteries and operates on 4 AA batteries (included).

Certified to meet the standards
of CE, EN14624, SAE J2791

24 Month Warranty

Detects R-1234yf a replacement for all HFC (R-134a) and HCFC (R-22) refrigerants currently being phased out

IMPORTANT PLEASE READ BEFORE OPERATING YOUR PROWLER LD 5000 LEAK DETECTOR

THE PROWLER EMPLOYS AN ULTRA SENSITIVE SENSOR AND ADVANCED SOFTWARE THAT IS CAPABLE OF FINDING TINY LEAKS IN AC SYSTEMS.

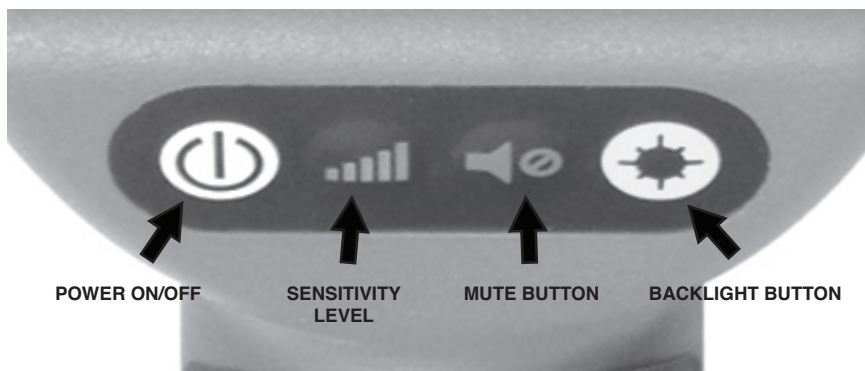
THE PROWLER SOFTWARE AUTOMATICALLY DETECTS CHANGES IN CONCENTRATION OF GAS. ONCE THE DETECTOR ALARMS, IT WILL ALARM AGAIN ONLY WHEN THE CONCENTRATION OF REFRIGERANT INCREASES.

TO VERIFY THE SOURCE OF THE LEAK, ALWAYS MOVE THE PROBE AWAY FROM THE AREA OF THE LEAK TO ALLOW THE SENSOR TO RESET TO A LOWER CONCENTRATION. THEN BRING IT BACK AGAIN UNTIL THE EXACT LOCATION OF THE LEAK SOURCE HAS BEEN VERIFIED.

If the source of the leak is very large, it may be necessary to pull away from the leak for approximately 5 to 10 seconds to allow the sensor to reset again. The probe tip can then be brought back again to the area where the alarm occurred to verify the source of the leak.

NOTE: When searching for large leaks and large leaks in contaminated areas always turn the PROWLER on and allow the detector to complete the warm-up mode before entering the suspected work area. Wait an additional 10 to 15 seconds to allow the sensor to reach maximum sensitivity and select the sensitivity of the unit initially to HI sensitivity mode before entering the work area. Change the sensitivity level to LO or MED if necessary to locate the source of the leak. Before entering the work area, always validate the sensitivity of the instrument with the Leak Test Vile.

WARNING: In a contaminated work area, the PROWLER will automatically reset (stop alarming) even though refrigerant contamination is present. If the PROWLER alarms when entering the work area, check the LCD display. If you see 10 full bars, the background contamination is dangerously high (excess of 1,000 ppm) and it is not a safe condition. The work area needs to be ventilated before continuing.



HOW TO OPERATE

1) TURN ON: Press the ON/OFF button once to turn on and again to turn off. **NOTE:** Hold button down for approximately 1 second to turn unit off.

2) WARM UP: The detector automatically energizes the sensor conditioning it for use. During the sensor conditioning cycle, the digital graph leak size indicator will gradually increase and the detector will sound a slow “beep”. Warm up mode is usually less than 20 seconds and is complete when the digital graph displays all 10 bars. **NOTE:** When the detector has not been used for long periods, conditioning may take slightly longer than usual.

3) READY: The detector is ready to begin searching for leaks when the sensitivity setting (Hi, Med, or Low) and the battery indicator are displayed on the LCD. The audio “beep” increases in frequency.

LOW BATTERY INDICATOR

The battery indicator consists of the battery outline with 3 bars within the outline and located in the upper center portion of the LCD display. Battery level indication is the following:

Three Bars:	Full Voltage
Two Bars:	1/2 Life
One Bar:	1/4 Life
No Bars:	Low Voltage (Change Batteries)
No Bars/ Blinking:	Unit will be disabled and not function properly in this state

Replace the 4 AA Alkaline batteries when the battery indicator shows no bars. Follow battery installation instructions under MAINTENANCE.

LEAK SIZE INDICATOR



The digital leak size indicating LCD graph display remains off normally but once a leak is detected, a number of indicating bars (up to 10 bars with increasing height) will be displayed for all HFC and HCFC refrigerants regardless of the sensitivity setting. **NOTE:** The LCD display angle can be adjusted for ease of viewing when referring to the display for leak size. The display may be adjusted from normal viewing (closed position) to a 30 degree angle if required. The backlight may be turned on for low light conditions.

The graph will continue to increase or decrease depending on the amount of refrigerant sensed. The maximum value will be displayed once the leak source has been located. This table can be used to approximate the size of leak:

# OF BARS	SIZE OF LEAK (OZ/ YR)
1-3 bars	< 0.1
4-6 bars	0.1 to 0.5
7-10 bars	> 0.5

AUTO MUTE FUNCTION AND VIBRATING HANDLE

To silence or mute the audio beep and alarm signal, press the MUTE button. To restore the audio sound, press the MUTE button again. (**NOTE:** A few seconds is required to restore sound if the mute button is pressed in rapid succession.)

Vibrating handle mode is always on. In noisy environments or if the audio alarm is muted the vibrating alarm provides leak detection without having to view the display.

ADJUSTING SENSITIVITY LEVELS



The Leak Detector will default to the MED sensitivity level automatically once the unit comes out of the warm up mode and the battery indicator and sensitivity level are displayed.

To change sensitivity levels, press the Sensitivity button once for HI sensitivity and again for LO sensitivity.

BACKLIGHT

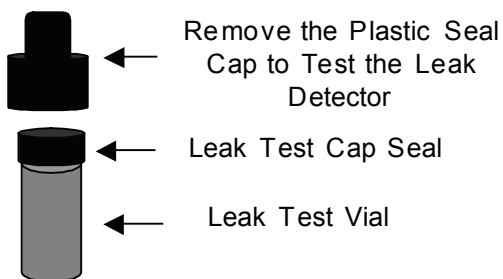


To turn on the LCD display backlight, press the Backlight button once. Press again to turn off.

LEAK TEST VIAL

The leak detector comes with a Leak Test Vial that allows the user to make sure the detector is performing properly. To test:

1. Remove the Plastic Seal Cap on the top of the Leak Test Vial by pulling it off (see fig. below). Also, remove and discard the circular Leak Test Cap Seal.
2. Turn on the leak detector and allow the unit to complete the warm up cycle.
3. Place the sensor close to the small hole in the top of the Leak Test Vial. The beep rate should increase and the Digital Leak Size Indicator should display a number from 4-6 indicating that the sensor and electronics are working properly.



NOTE: Remember to replace the Plastic Seal Cap after the leak test is completed. Replace the Leak Test Vial when the green media color is no longer visible and the leak media has evaporated. Remove the threaded cap on the Vial to confirm the status of the leak test media. After the leak test media has evaporated, it is normal for there to be a green film on the wall of the Leak Test Vial.

MAINTENANCE

Batteries:

Install Batteries: Remove screw located at the center area of the bottom housing and remove battery door as shown. Always insert all four batteries into the battery compartment in the same direction. Note polarity mark on the inside of the battery compartment for proper battery orientation.

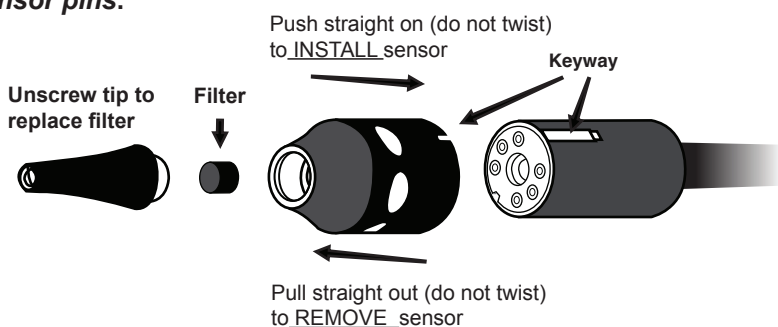


Sensor:

Replace Filter: Unscrew sensor tip as shown to replace filter. Replace filter whenever it becomes visibly dirty or every 2 to 3 months depending on use.

Replace Sensor: Remove sensor by pulling out of socket. Install the new sensor by aligning the notch in sensor cover with the raised keyway on the sensor socket holder.(see figure below)

Note: Do not force sensor into socket. Misalignment can damage the sensor pins.



IMPORTANT: Make sure sensor is fully inserted for proper operation. The detector will stay in warm-up mode if the sensor becomes loose or is not fully inserted.

CROSS SENSITIVITY TO AUTOMOTIVE CHEMICALS

Some automotive solvents and chemicals have similar hydrocarbon properties as R-134a and may elicit a positive response (<30 seconds) from the PROWLER. Before leak checking, clean up any of the following chemicals that elicit a positive response:

- * Rain-X windshield Wash Fluid
- * Ford Spot Remover (wet)
- * Ford Rust Inhibitor
- * Ford Gasket Adhesive (wet)
- * Loctite Natural Blue degreaser (diluted)
- * Ford Brake Parts Cleaner
- * Ford Silicone Rubber (uncured)
- * Motorcraft Antifreeze heated to 160 degrees F (PARTIAL RESPONSE)
- * Gunk liquid wrench
- * Ford Pumice lotion (with solvent)
- * Ford Motorcraft brake fluid
- * Ford Carburetor Cleaner

FREQUENTLY ASKED QUESTIONS

Q: How does the Prowler sensor compare to heated sensor leak detectors?

A: Besides having superior sensitivity especially to the newer HFC refrigerants, the Prowler sensor also operates at a lower temperature than heated sensors. This is an advantage because it draws less current so it does not require the use of rechargeable batteries. Another advantage is that it can be used safely in combustible atmospheres.

Q: What happens when the Prowler detects that a leak is present?

A: When refrigerant gas enters the sensor, the Prowler detection circuit initiates three indicators that show a leak is present. The user hears an audio alarm (when not manually muted), feels a vibration in the handle, and sees the bar graph line(s) appearing on the LCD screen. Both the audio and vibration alarm are constant no matter how large the concentration of the gas. The LCD bar graph changes depending on the concentration of the gas in the sensor. The bar graph is also independent from the sensitivity level selected.

Q: How does the Prowler work so that the source of the leak can be located?

A: Unlike other leak detectors, the Prowler incorporates several innovative high technology features that allow the user to find the source of the leak without requiring any manual adjustments. Advanced computer software constantly monitors the surroundings for the presence of refrigerant gas. The detector then automatically calibrates itself so that it alarms only when it senses an increase in the level of refrigerant as the source of the leak is approached. The proprietary software then “filters” out and virtually eliminates any unwanted (false) alarm signals that occur away from the leak source.

Q: Will the Prowler detect large leaks without any manual adjustments?

A: Yes. However, if the Prowler alarms initially close to a large leak and then stops alarming before the source of the leak can be pinpointed, it means that the concentration of refrigerant in the area near the leak is similar to the concentration at the leak source. In this situation, it is important to move the sensor away from the leak source (usually above the suspected leak source) for 5 to 10 seconds to allow the sensor to self calibrate to a lower concentration before searching the area a second time. The detector will then alarm again closer to (or at) the source of the leak. Holding the probe away in this manner will also give a more accurate indication of the leak size on the bar graph.

Q: Will the Prowler alarm when entering a work area contaminated with refrigerant?

A: Yes. Nevertheless, you must always turn on the Prowler outside of the work area (in clean air) and allow it to complete the warm up cycle before entering an area where a large leak is suspected. The Prowler will alarm initially but will automatically self calibrate to the surroundings and will not alarm again until a larger concentration closer to the source of the leak is detected.

Q: Why does the alarm stop sounding when the sensor is held static at a leak source?

A: This is normal and demonstrates how the detector automatically resets (self calibrates) itself to the ambient. Once the Prowler alarms near the area of the leak, it should be moved away from the leak and back again to verify the exact location and size of the leak. If the leak is large (more than five bars), it may be necessary to move the sensor away from the leak area for 5 to 10 seconds

Q: Can the Prowler determine the size of the leak?

A: Yes, once the leak has been pin pointed the maximum number of bars on the LCD screen will give the user an idea of the size of the leak. If the leak is large, (5 bars or more) it may be necessary to hold the detector away from the leak for 5 to 10 seconds in order for the circuit to reset completely and to give an accurate indication of the leak size.

Q: What does the Prowler do when it is turned on and is going through the warm up mode?

A: When turned on, the Prowler begins to energize and condition the sensor for use. During this period, the unit will beep at a slow rate and the LCD bar graph will display the conditioning progress by gradually increasing. Warm up is complete when all 10 bars are shown on the display. The beep rate will also increase and the sensitivity level will default to Medium. Note: The bars on the bar graph may increase up initially and then down again before increasing to 10 full bars. This is normal.

Q: How should the Prowler be tested to make sure it is working properly prior to leak searching?

A: The preferred method to test the Prowler is with the Leak Test Vial that is included with the leak detector. Although the Vial does not contain refrigerant gas or liquid (this is prohibited), the media in the Vial accurately simulates a small to medium refrigerant gas leak. To test with the Vial, power on the Prowler by depressing the on/off button. Allow the instrument time (up to 20 seconds) to energize the sensor. Remove the plastic label seal on the top of the Leak Test Vile and place the sensor closer to the small hole in the top of the Vile. The beep rate should increase and the

small hole in the top of the Vial. The beep rate should increase and the Leak Size Bar graph should display a minimum of three bars. The detector will calibrate itself to the Leak Test Vial if the sensor is held static close to the small hole in the cap and will not alarm again until it is moved away and allowed to reset. Consecutive testing at the cap and moving away from Vial will eventually result in the detector calibrating itself to the Vial. In this case, the Prowler may require additional time away from the Vial in order to reset before it will alarm again at the Leak Vial. Never use the Leak Test Vial with the cap removed from the bottle. **Note:** if the detector has been out of use for weeks, it may be necessary to set the sensitivity level to Hi initially when testing the Prowler with the Leak Test Vial.

Q: Is there a way to test the Prowler with Refrigerant Gas before leak checking?

A: If it is necessary to test the Prowler with refrigerant gas, a small leak can be simulated by removing a Schrader valve cap on an access port of an HVAC system and waiting a few minutes for the accumulated gas to escape. Cracking open and quickly closing the valve on a cylinder of refrigerant is another option, however the area around the valve should be fanned to allow the gas to dissipate before testing with the Prowler. This test method is not advisable because it is difficult to control the amount of gas emitted from a refrigerant cylinder. Opening and closing the valve on a cylinder typically emits a large volume of refrigerant, which is not representative of an actual leak in an HVAC system. If the Prowler is tested this way, the procedure for finding large leaks (see above) should be followed. If the procedure for finding large leaks is not followed, the automatic calibration feature of the Prowler may cause it to appear to be insensitive.

Q: Will the Prowler sensor become damaged if it is exposed to a heavy stream of gas coming from the valve of a refrigerant cylinder?

A: No. However, exposing the sensor to a heavy stream of refrigerant will cause the sensor to “saturate” and it may take up to 15 or more seconds for the sensor automatically calibrate and reset to its maximum sensitivity level. For this reason, using a refrigerant cylinder is not an advisable means to test the sensitivity of the Prowler to any particular refrigerant.

Q: How can you claim the sensor will last up to 10 years?

A: The Prowler utilizes sensor technology that is based on room monitoring where sensors are required to be functioning continuously for years. Sensors used for this purpose cannot be depleted when contaminated with refrigerant or require any adjustment to operate at peak performance after running continuously for long periods. By converting continuous use into daily use, for a typical HVAC technician, it was determined using controlled test methods that the sensor would last more than 10 years (under ideal conditions). The sensor life test data was derived after testing the Prowler sensors continuously over a period.

PROWLER SPECIFICATIONS

Model #:	LD 5000
Name:	PROWLER Leak Detector, Refrigerant Gas
Sensitivity:	0.025 oz/yr R-22, 0.05 oz/yr R-134a, 0.0125 oz/yr R-1234yf, 0.05 oz/yr R-410A, 0.05 oz/yr R-404A, 0.05 oz/yr R-407A, 0.05 oz/yr R-427A
Sensor Life:	> 10 years (normal use)
Response Time:	Instantaneous
Power Supply:	4 AA Alkaline batteries
Battery Life:	4.5 hours continuous
Warm Up Time:	< 20 seconds
Probe Length:	17"
LCD Display:	Sensitivity, Battery Light, Leak Level Indication
Weight, lbs.:	1lb. 3.4 oz.
Warranty:	2 years includes sensor

EN 14624 TEST SPECIFICATIONS

Min/Max Sensitivity	1 gm/yr minimum, > 50 gr/yr maximum
Threshold (fixed):	
Min/Max Sensitivity	3 gm/yr minimum, > 50 gm/yr maximum
Threshold (moving):	
Min Detection Time:	Approximately 1 second
Clearing Time:	Approx. 9 seconds after exposure to > 50 gm/yr
Min. Threshold after	
Maximum Exposure:	1 gr/yr
Sensitivity Threshold in	
Polluted Atmosphere:	1 gm/yr
Calibration Frequency:	1/yr check with calibrated leak Standard

REPLACEMENT PARTS

Description	Part Number
Replacement Sensor with filter	LD-S101
Replacement Filters (5 pack)	LD-RF5
Leak Test Vial	LD-TV
Parts Kit (sensor, filter kit, test vial)	LD-PK
Carrying case	LD-CS

WARRANTY

The PROWLER LD 5000 Refrigerant Gas Leak Detector is warranted to be free of defects in materials and workmanship for a period of two years from the date of purchase. This warranty applies to all repairable instruments that have not been tampered with or damaged through improper use including unauthorized opening of the unit.

RETURN PRODUCT FOR REPAIR POLICY

Every effort has been made to provide reliable, superior quality products. However, in the event that the instrument needs repair, for units still under warranty return to the wholesaler from whom the device was purchased. The wholesaler should contact customer service 800-323-0811 to request an RGA # and include all necessary documentation. For units out of warranty, the user is asked to call customer service directly at 800-323-0811 to determine estimates for repair.



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