PROWLER LD-5000

ELECTROCHEMICAL REFRIGERANT LEAK DETECTOR

A2L COMPATIBLE

Detects all HFC, HCFC and HFO Refrigerants Including Blends

Certifications:

CE, ASHRAE 173-2012, EN 14624:2012, SAE J2791 and SAE J2913

CE



MADE IN USA
WITH GLOBALLY SOURCED PARTS

JB JUST BETTER

OPERATING MANUAL

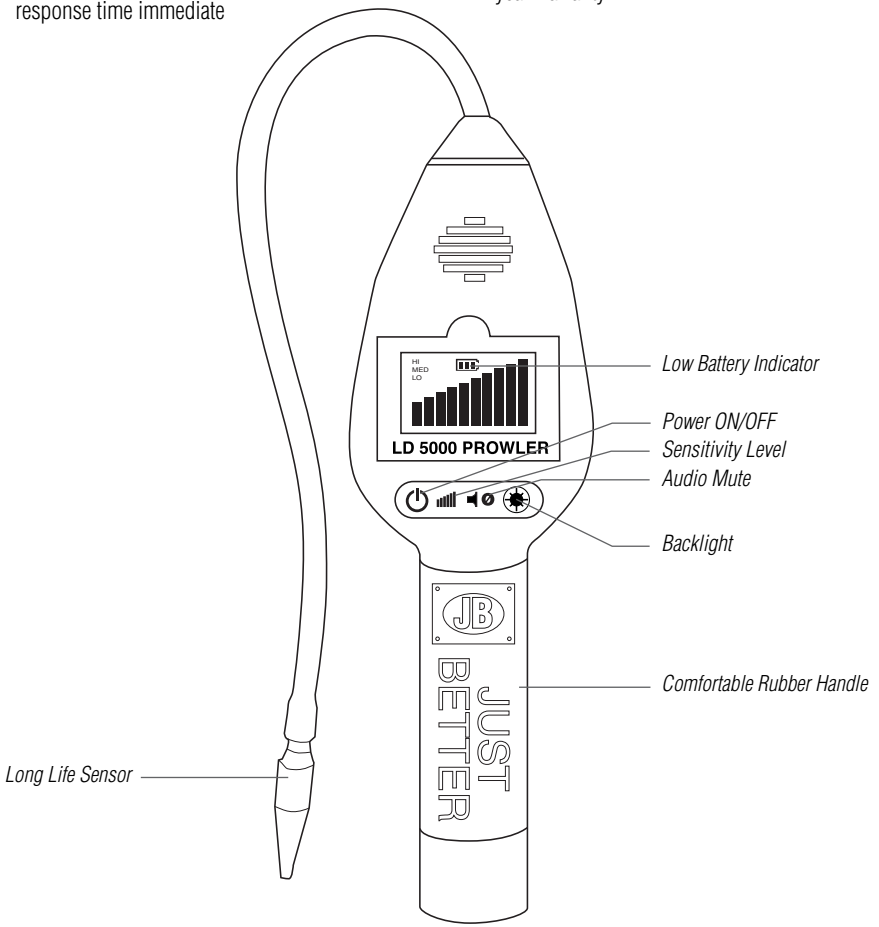
JBIND.COM

INTRODUCTION

The PROWLER LD-5000 uses a long life sensor that is designed to detect current and difficult HFC refrigerants such as R-134a, R-410A, R-404A, R-407C, and R-507 in addition to all HCFC (R-22), HC refrigerants, and SNAP approved 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. Technology provides for low battery consumption, excellent circuit stability, and extremely long sensor life. The electrochemical function of the sensor does not diminish over time with use and it is safe to use in a combustible atmosphere. The PROWLER does not require rechargeable batteries.

Features

- Detects all HFC, HCFC, HFO and blended refrigerants
- Sensor life > 10 years; proprietary electrochemical sensor will not diminish over time or with use
- Manual calibration mode and reset control
- High, medium, and low sensitivity settings
- Warm up time < 30 seconds; response time immediate
- Mutable alarm with silent vibrating handle
- Back-lit LCD screen tilts up for easy viewing at any angle
- 17" flexible probe
- Protective carrying case
- Operates with four AA batteries (included)
- 2 year warranty



SPECIFICATIONS

Product Specifications

Description	Leak detector, refrigerant gas
Sensor life	> 10 years
Response time	Instantaneous
Power supply	Four AA Alkaline batteries
Battery life	4-6 hours continuous
Warm up time	< 20 seconds
Probe length	17" (43cm)
LCD Display	Sensitivity, Battery Life, Leak Level Indication
Weight	1.5 lbs
Warranty	2 year warranty (includes sensor)

OPERATING INSTRUCTIONS

Install Batteries

Remove battery cover with a Phillips head screwdriver. Insert four AA batteries.

Power Settings

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

2. **WARM UP CYCLE:** 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.

3. **READY MODE:** 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.

4. **SEARCHING:** When searching for leaks, move the sensor tip along A/C lines and fittings no further away than .37 in (9.5 mm) and no faster than 3 in/sec (75 mm/sec). If the detector alarms, make smaller sweeps back and forth until the leak source can be pinpointed.

   NOTE: The LD-5000 only responds to changes in leak concentration. The alarm will reset automatically if the sensor tip is held at the leak source. If the leak detector has been out of use for an extended period, weeks or months, the following action is recommended:

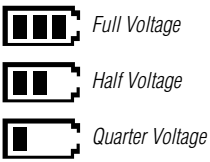
   - Power on the instrument and allow it to warm up and adjust to ready mode.

   - Allow the leak detector to operate with the sensitivity level in the HI position for several minutes before testing with the Leak Test Vial. This guarantees that sensor is fully conditioned for maximum response to refrigerant gas.

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

Battery level indication is the following:



Change Batteries:



Audio 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 are 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.

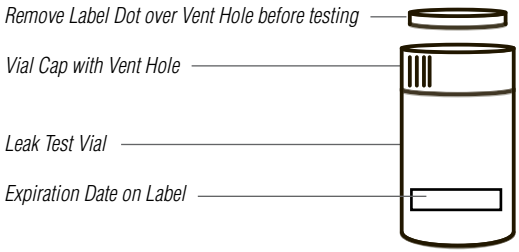
To change sensitivity levels, press the Sensitivity button once for HI sensitivity and again for LO sensitivity.

Leak Test Vial

Leak detector comes with a Leak Test Vial that allows the user to make sure the detector is operating properly.

To test:

1. Remove the colored label dot in the center of the screw cap to expose the vent hole in the top of the cap.
2. Turn on the leak detector and allow the instrument 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 Graph should display a minimum of 3 bars indicating that the sensor and electronics are working properly.



NOTE: Replace the Test Vial in the bag and seal when not in use to extend shelf life. Replace Test Vial when the green color is no longer visible, vial is less than 1/4 full or at the time of the expiration date.

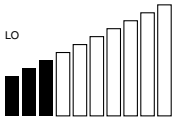
Leak Size Indicator

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.

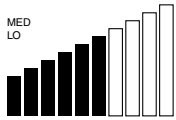
The LCD display angle can be adjusted for ease of viewing when referring to the display for leak size. The display may be adjusted from normal viewing (closed position) to a 30 degree angle if required.

The backlight may be turned on for low light conditions.

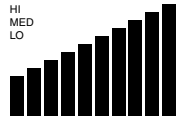
The graph will continue to increase or decrease depending on the amount of refrigerant sensed. The maximum value will be displayed once the leak source has been located. This table can be used to approximate the size of leak:



1-3 Bars: < 0.1 oz/yr



4-6 Bars: 0.1 - 0.5 oz/yr



7-10 Bars: > 0.5 oz/yr

Automatic Calibration Mode

This mode is useful when searching for leaks normally and also in contaminated areas. The detector automatically recalibrates (re-zeroes) to ambient levels, which stops the constant alarm, only responding to higher levels of refrigerant. This allows searching for the true source of the leak. The detector will reset automatically after 3 or 4 seconds and stop the detector from alarming.

Note: the detector automatically defaults to this mode when the unit is powered on normally.

Manual Calibration Mode

This mode may be useful when more control over the calibration is required such as in heavily contaminated areas but may also be helpful when searching for smaller leaks. In this mode the detector recalibrates to ambient levels, but only when the user chooses to do so. The calibration will remain constant when searching for small leaks.

To use the detector in Manual Calibration mode: Select the sensitivity mode required High, Medium or Low. Press and hold the Sensitivity button and release the button when the High, Medium or Low indicator on the display starts flashing.

NOTE: when in this mode, the Sensitivity level indicator will blink (flash) continuously. Reset or clear the alarm by pressing the Sensitivity button again. Continue to reset the alarm as needed until the leak source is pin-pointed.

To return to the Automatic Calibration Mode: Press and hold the Sensitivity button until the sensitivity indicator stops flashing. The Sensitivity level indicator will stop blinking and will stay on.

NOTE: the sensitivity levels can only be changed in Automatic Calibration mode.

To change sensitivity levels while in Manual mode: Return to Automatic mode, select the desired level and return back to Manual mode.

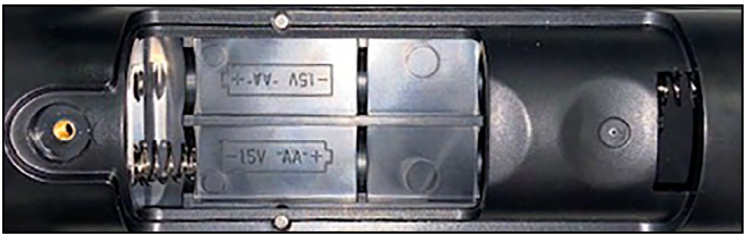
Backlight

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

MAINTENANCE

Batteries

Install Batteries: Remove screw located at base end of unit and pull down hinged battery door. Insert four AA batteries into the battery compartment as shown, noting Polarity Marks for battery orientation.

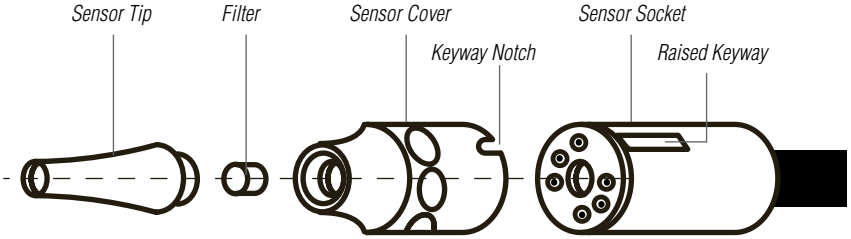


Sensor

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 Cover by pulling out of Socket. Install the new sensor by aligning the Keyway Notch in Sensor Cover with the Raised Keyway on Sensor Socket.

NOTE: Do not force Sensor Cover into Socket—misalignment will damage sensor pins.



To install sensor cover: align notch with raised keyway and insert straight on (do not twist)
To remove sensor cover: pull straight out (do not twist)

IMPORTANT: The instrument's software is designed to alert the user if the sensor is dislodged or defective. If the sensor is not fully inserted into the six-pin socket, or if it is defective, the instrument will not come out of warm up cycle for proper operation when the power button is turned on. Additionally, if the instrument becomes unstable during its operation, it is an indication that the sensor may be defective or dislodged.

Sensitivity

SENSITIVITY	
R1234yf	.0125 oz/yr
R22	.025 oz/yr
R32	.05 oz/yr
R134a	.05 oz/yr
R404A	.05 oz/yr
R407A	.05 oz/yr
R410A	.05 oz/yr
R427A	.05 oz/yr
R454B	.05 oz/yr

Test Specifications (EN14624)

Minimum/maximum sensitivity threshold (fixed):	1 gm/yr minimum, >50 gm/yr maximum
Minimum/maximum sensitivity threshold (moving):	3 gm/yr minimum, > 50 gm/yr maximum
Minimum detection time (1gm/yr):	Approx 1 seccond
Clearing time:	Approx 9 seconds after exposure to >50 gm/yr
Minimum threshold after maximum exposure:	1 gm/yr
Sensitivity threshold in polluted atmosphere:	1 gm/yr
Calibration frequency:	1/yr check with calibrated leak standard

Cross Sensitivity

Some automotive solvents and chemicals have similar hydrocarbon properties as R134a and may cause a positive response. Before leak checking, clean up any chemicals in the list below that cause a positive response.

CHEMICAL NAME
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° F
Gunk® liquid wrench
Ford® silicone lubricant
Ford® pumice lotion (with solvent)
Ford Motorcraft® brake fluid
Ford® carburetor cleaner
Dexron® transmission fluid heated to 160° F
Quaker State® motor oil heated to 160° F

Rain-X is a registered trademark of ITW Global Brands. Ford and Motorcraft are registered trademarks of Ford Motor Company. Quaker State is a registered trademark of Quaker State. Loctite is a registered trademark of Henkel Corp. Dexron is a registered trademark of General Motors. Gunk is a registered trademark of Gunk.

PARTS LIST

PART NO.	DESCRIPTION
LD-5000	PROWLER leak detector in case
LD-S101	Replacement sensor (6 prong)
LD-RF5	Replacement filters (5 pack)
LD-TV	Replacement leak test vial
LD-PK	Parts kit (includes 6 prong sensor, filter kit and test vial)
LD-CS	Protective carrying case
LD-ST	Replacement sensor tip

RETURN FOR REPAIR

Every effort has been made to provide reliable, superior quality products. However, in the event your instrument requires repair, please contact the location of purchase. Wholesalers please contact JB Customer Service Department to obtain a Return Goods Authorization (RGA) number. Ensure that all returned products are packed to avoid any damage in shipment. Paperwork should be placed in a separate plastic bag and should include JB's assigned RGA number, a description of the problem and any customer assigned repair or purchase order number, if applicable.

Wholesalers Contact Customer Service for RGA number:

800.323.0811 Toll
800.552.5593 Toll Fax

Products should be shipped with freight prepaid to:

JB Industries
RGA#_____
601 N. Farnsworth Ave.
Aurora, IL 60505
630.851.9444 Tel
630.851.9448 Fax

WARRANTY

The PROWLER LD-5000 is warrantied against defects in materials and workmanship for 1 year from date of purchase. JB products are guaranteed when used in accordance with our guidelines and recommendations. Warranty is limited to the repair, replacement, or credit at invoice price, (our option) of products which in our opinion are defective due to workmanship and/or materials. In no case will we allow charges for labor, expense or consequential damage. Repairs performed on items out of warranty will be invoiced on a nominal basis; contact wholesaler for details. Additional product information available online at www.jbind.com.

WARNING: This product can expose you to chemicals including lead which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

JB INDUSTRIES