

**Test Equipment
Depot**



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Operating Instructions



Model: LD3

Dual Mode Refrigerant
Gas Leak Detector



Contents

Introduction	3
Features	3
LD3 Control Panel	4
Operating Instructions	4
Adjusting Sensitivity Levels	5
Leak Test Vial	5
Maintenance	6
Product Specifications	7
EN14624/2005 Test Specifications	7
Cross Sensitivity to Automotive Chemicals	8
Replacement Parts	8
Return for Repair Policy & Warranty Policy	9

Introduction

The LD3 features a long life solid electrolyte semiconductor sensor technology that is designed to detect all CFC, HCFC, HFC, and HFO refrigerants including R-1234YF (HFO), R-134A (HFC), R-410A (HFC), R-22 (HCFC), R-407C (HFC), R-507 (HFC), R-12 (CFC), R-404C (HFC). The LD3 is designed to detect all SNAP approved refrigerant blends.

The LD3 does not require rechargeable batteries

Features

Long life, stable sensor

R1234yf sensitivity .015 oz/yr

R134a sensitivity .05 oz/yr

Certified to SAE J2791, J2913, ASHRAE 173-2012, EN14624-2012

Automatic calibration and reset to ambient

3 adjustable sensitivity levels

Low battery indicator

True mechanical pump

Uses 4 AA alkaline batteries

CE Certified

Comfortable Santoprene handle grip

2-year warranty includes sensor

Made in USA

LD3 Control Panel



Sensitivity Level Indicator
Green = MED (default)
RED = HI, Amber = LO Low
Battery indicator when
flashing RED

ON/OFF Switch
Hold down to change
Sensitivity when detector
is on.

Operating Instructions

1. **Turn On:** Press the ON/OFF button once to turn on and again to turn off.

NOTE: For SAE J2913 sensitivity setting for R1234yf Mode hold down ON/OFF button until is the LED turns displays red.

2. **Warm Up:** The detector automatically starts heating the sensor. During the heating cycle the detector will sound a slow “beep” and the LED will alternate colors; green, red, yellow. The warm up cycle is complete when the audio beep increases in frequency and the LED turns to constant green (the default sensitivity level). Warm up is usually less than 20 seconds.
3. **Search:** Move the probe tip towards a suspected refrigerant leak at the rate of less than 2 inches (~50 mm) per second, no more than 1/4 inch (~5 mm) away from the suspected source.
4. **Detection:** If a leak exists, the sound will increase in rate and pitch.

NOTE: The leak detector responds to changes in refrigerant concentration. When detection occurs, move the probe away from the source and back again to confirm the leak source. The detector alarm will reset if the probe is held fixed at the source (see Automatic Calibration Feature).

Adjusting Sensitivity Levels

In addition to the automatic calibration, the audio alarm trigger level can be set by the user to 3 different sensitivity levels- **LO (Yellow)**, **MED (Green)**, **HI (Red)**. If the detector is continuously alerting while pulled away from the suspected area of the leak, the sensitivity level can be adjusted so the detector will only alert when the sensor is close to the source of the leak.

The Leak Detector will default to the **MED (Green)** sensitivity level automatically once the unit comes out of the warm up cycle. To change sensitivity levels when the detector is on, press and hold the ON/OFF button down for several seconds. The indicator LED at the top of the keypad will scroll changing colors; **Green for MED**, **Red for HI** and **Yellow for LO**. Release the button when the desired sensitivity level is displayed.

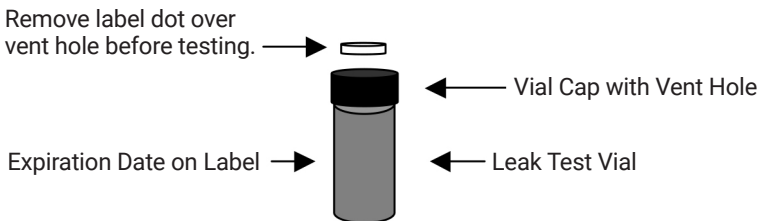
Leak Test Vial

The leak detector comes with a Leak Test Vial that allows the user to verify the detector is performing properly. Check the expiration date on the vial before testing the leak detector.

To test:

1. Remove the colored label dot on the center of the screw cap to expose the vent hole. (see fig. below)
2. Turn on the detector and allow the unit to complete the warm up cycle. Set sensitivity level to HIGH.
3. Place the sensor close to the hole in the Leak Test Vial. The beep rate should increase indicating that the sensor and electronics are working properly.

NOTE: The leak detector responds to changes in refrigerant concentration. When detection occurs, move the probe away from the source and back again to confirm the leak source. The detector alarm will reset if the probe is held fixed at the source (see Automatic Calibration Feature).



MAINTENANCE

Batteries

Install Batteries: Unscrew the battery cover located at the base of the unit as shown. Insert all four batteries into the battery compartment in the same direction. Note the polarity mark on the inside of the battery compartment for proper battery orientation. Replace batteries when the LED Indicator display flashes RED.

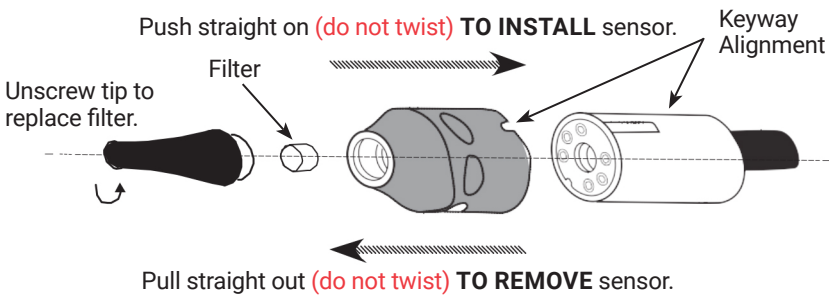


Sensor & Sensor Filter

Replace Filter: Unscrew sensor tip as shown to replace filter. Replace filter when it becomes visible dirty or after 30 hours of usage.

Replace Sensor: Remove sensor by pulling it out of the socket. Install the new sensor by aligning the Keyway notch in the 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: 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 the "Warm Up" mode 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.



Note: 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 come out of warm up, and then run it with the sensitivity level in the (Hi) high position for several minutes before testing it with the Leak Test Vial. This action will guarantee that the sensor is fully conditioned for maximum response to refrigerant gas.

Product Specifications

Model No.	LD3
Name	Leak Detector, Refrigerant Gas
Sensitivity	.05 oz/yr R134a, .0123 oz/yr R1234yf
Sensor Life	> 10 years
Response Time	Instantaneous
Power Supply	4 AA Alkaline batteries
Battery Life	4 hours continuous
Warm up time	< 20 seconds
Probe Length	17 inches
Weight, lbs	1.5 lbs
Warranty	2 years (includes sensor)

EN14624/2005 Test Specifications

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 second
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 to Automotive Chemicals

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

Chemical Name/Brand	Response
Rain-X Windshield Wash Fluid	Y
Ford Spot Remover (wet)	Y
Ford Rust Inhibitor	Y
Ford Gasket Adhesive (wet)	Y
Loctite Natural Blue Degreaser (diluted)	Y
Ford Brake Parts Cleaner	Y
Ford Silicone Rubber (uncured)	N
Motorcraft Antifreeze heated to 160 degrees F	N (partial)
Gunk Liquid Wrench	Y
Ford Silicone Lubricant	N
Ford Pumice Lotion (with solvent)	Y
Ford Motorcraft Brake Fluid	Y
Ford Carburetor Cleaner	Y
Dextron Transmission Fluid heated to 160 degrees F	N
Quaker State Motor Oil heated to 160 degrees F	N

Replacement Parts

Item	Part Number
Sensor with Filter	F00E901451
Sensor Filters (5 pack)	F00E901446
Leak Test Vial	F00E901447
Sensor Tip	F00E901452
Parts Kit (includes sensor, test vial & filter kit)	F00E901453
Carrying Case	F00E901450

Return for Repair Policy & Warranty Policy

Every effort has been made to provide reliable, superior quality products. However, in the event your instrument requires repair, call the Robinair Technical Hotline below for instructions.

Robinair warrants the LD3 Refrigerant Gas Leak Detector to be free of defects in materials and workmanship for a period of two years from the date of purchase. Robinair shall, at its option, repair or replace, at no charge, such products which, under normal conditions of use and service, prove to be defective in material and/or workmanship. This warranty applies to all repairable instruments that have not been tampered with or damaged through improper use including unauthorized opening of the unit. Please ship warranty units that require repair freight prepaid to Service Center along with proof of purchase, return address, phone number and/or email address.

Robinair shall not be liable for any incidental, consequential, special or punitive damages arising from the sale or use of any products, whether such claim is in contract or not. No attempt to alter, modify or amend this warranty shall be effective unless authorized in writing by an officer of Robinair.

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