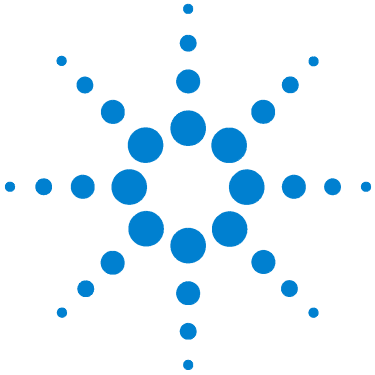

Agilent G3388A
Leak Detector

Operation Manual

Agilent Technologies

Notices

Manual Part Number

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Safety Notices

CAUTION

A **CAUTION** notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a **CAUTION** notice until the indicated conditions are fully understood and met.

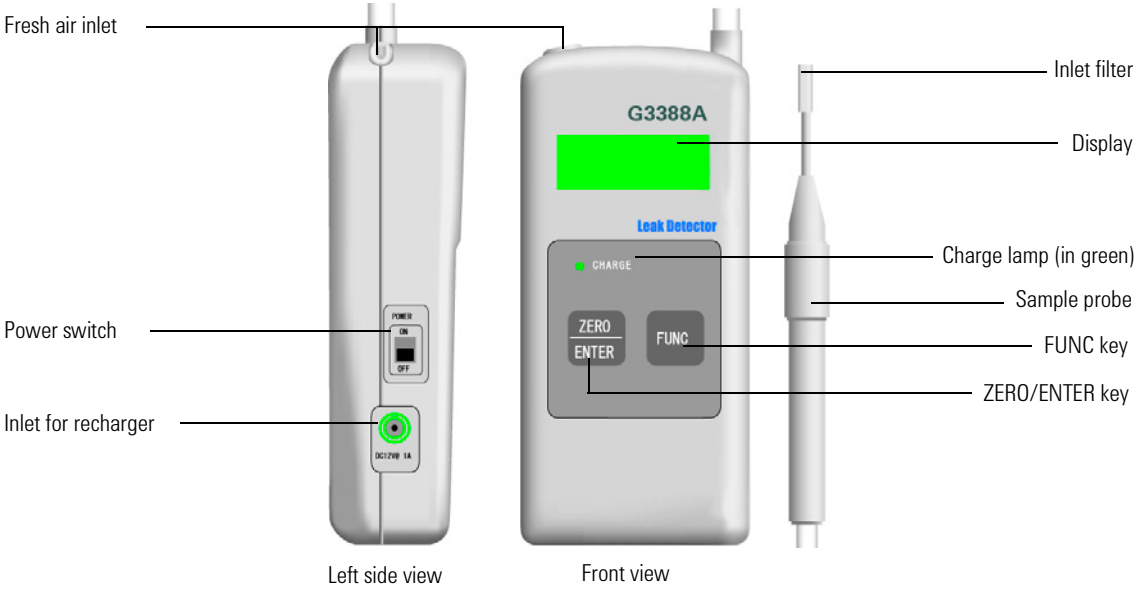
WARNING

A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

Contents

1 Introduction

The Agilent Technologies Leak Detector is a portable, highly sensitive instrument designed to detect helium gas leaks in gas chromatographs (GCs) and their accessories, such as purge and trap systems. The detector indicates leaks through a dual system that consists of an indicating LCD and an audible alarm. The detector is more reliable and convenient to use than soap solutions and is capable of detecting even the smallest, hard-to-reach gas leaks.



Use the Agilent Leak Detector only for detecting gases. Never allow liquids or particles to enter the probe.

To determine whether a GC or a GC accessory is leaking gas, place the Agilent Leak Detector's sample probe near the suspected leak. Make sure that the sample probe remains open during leak detection. Be careful not to place the probe's tip against the connection or fitting that you are checking.

Protect the detector from vibration while it is operating.

NOTE Be aware that the detector will give a positive response to skin vapor and to fittings that were recently leak checked with a soap solution.

Periodically replace the filter (part number 5067-0218) that is attached at the inlet of the sample probe.

CAUTION

- Do not expose the detector to shock, wet environments, solvents, or temperatures outside its specified range.
- Do not open the detector's body.
- Do not use the detector to detect corrosive gases.
- Do not block the fresh air inlet at the top of the detector. Be aware that the detector's sensitivity will be adversely affected if it is used in an area containing the leaking gas.

WARNING

- **Do not use the detector in areas at risk for fire, explosion, or large leaks of flammable gas.**
- **Do not use the detector in areas without sufficient ventilation to safely detect small leaks of flammable gases.**
- **Do not use the detector in environments that may be potentially contaminated with dust or combustible fumes.**

Specifications

Detector:	Thermistor-actuated thermal conductivity cell
Thermal conductivity of gases:	Lower than 48×10^{-6} cal/cm.s. °C or higher than 68×10^{-6} cal/cm.s. °C (both at 0 °C, 1 atm)
Sensitivity:*	Helium 0.01 mL/min in atmosphere
Battery:	Rechargeable nickel metal hydride batteries Part number 5067-0219
Continuous operation:	5 hours (with new, fully charged batteries)
Display:	LCD (12 × 2)
Recharger:	AC100 - 240 V, 50 to 60 Hz 0.3 A
Operating temperature range:	10 to 35 °C
Overall size:	65 mm (W) × 37 mm (D) × 143 mm (H)
Net weight:	310 grams

* The sensitivity should be dependent on the difference between the thermal conductivities of gas and air; a large difference results in a high sensitivity. Also, the kinds of gas and humidity should influence the sensitivity.

1 Introduction

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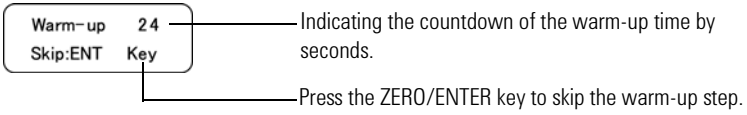
Operating Procedure

1 The detector's batteries are not fully charged when they are shipped from the factory. Recharge the batteries before using the detector.

2 Wait for 30 minutes after recharging for the batteries' temperature to stabilize.

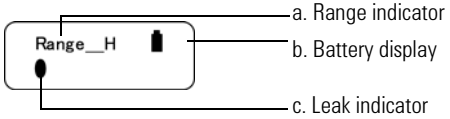
3 Turn the power switch to the ON position and allow the detector to warm up for approximately 25 seconds. If the buzzer sounds during this time, press the **ZERO/ENTER** key to stop it.

Warming-up display



4 When the LCD shows the following display (Standard display), press the **ZERO/ENTER** key. Now the detector is ready to use. "Range_L" may be displayed if this was the last setting.

Standard display



a Range indicator

Range_H:	High sensitivity
Range_L:	Low sensitivity

b Battery display

Lit:	The batteries are fully charged.
Blinking:	The batteries need to be recharged with the included recharger.

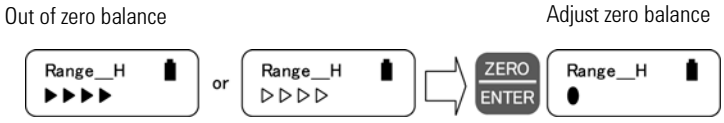
c Leak indicator

▶ Gas Leak Mark: Indicates that a gas leak that has higher thermal conductivity than air has been detected.

▷ Gas Leak Mark: Indicates that a gas leak that has lower thermal conductivity than air has been detected.

● Zero Leak Mark: Indicates that there are no gas leaks.

This indicator will blink when the detector becomes stable. When the leak indicator is displayed without leakage, press **ZERO/ENTER** to adjust the zero balance.



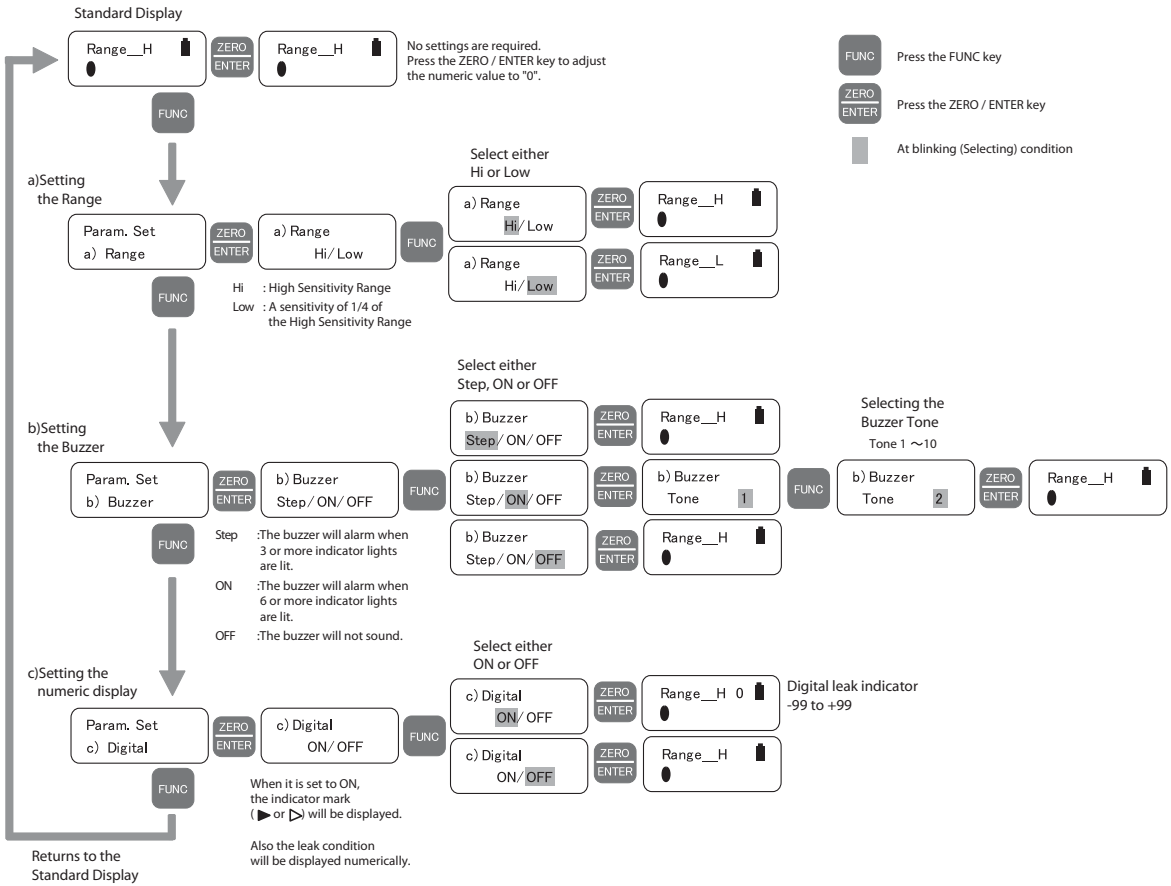
5 Place the sample probe tip near the gas connection to be leak checked, making sure the probe remains open and isn't placed against the connection being checked. Wait approximately 3 seconds and look for one of the above displays on the LCD.

This display	**Indicates that**
▶ ▷	There may or may not be a gas leak.
▶ ▶ ▷ ▷	There is a gas leak.

When the buzzer function (ON or STEP) is selected, the audible alarm sounds according to the TONE level selected. (See Section 3.)

3 Function Settings

Set the range, buzzer, and numeric display as shown in this illustration.



4
Power Supply

The Agilent Leak Detector is powered by rechargeable nickel metal hydride batteries. These batteries are not fully charged when the detector is shipped from the factory and must be recharged before the detector can be used. It takes approximately 3 hours to fully recharge the batteries; when fully charged, they will provide approximately 5 hours of continuous service.

Do not use the detector for 30 minutes after recharging to allow its temperature to stabilize.

A blinking battery display or a “Low Battery Error” message indicates that the batteries are low and must be recharged with the attached recharger.

CAUTION

- Do not use any devices other than the one supplied with the detector to recharge the detector’s batteries.
- Do not use the detector while its batteries are being recharged.
- Do not use the detector after recharging the batteries until its temperature has stabilized (approximately 30 minutes).
- Make sure that the detector’s power is OFF when removing or attaching the recharger to the detector.
- Do contact Agilent if the battery lifetime appears to be unusually short; the batteries may need to be replaced.

Follow this procedure to replace the leak detector’s batteries:

1. Remove the four screws on the back of the leak detector using an appropriate screwdriver.
2. Set the screws aside.

3 Carefully separate the covers, taking care not to strain the wires.

4 Remove the connector that attaches the battery wire to the PC board by gently rocking the connector back and forth.

5 Remove the two screws on the battery's retaining clip.

6 Remove the clip and screws and set them aside.

7 Remove the battery, noting its orientation, and replace it with part number 5067-0219.

8 Using the two screws from step 5, replace the battery's retaining clip.

9 Connect the new battery wire to the PC board, aligning the tabs with the slots.

10 Check all tubing and wiring to be sure that it will not be crimped when the covers are reassembled.

CAUTION Crimped tubing may prevent the unit from detecting gases, even though it warms up successfully.

11 Carefully place the front cover on to the back cover, paying attention to wires and tubing.

12 Replace the four screws from step 1 on the back cover.

13 Test the unit by turning on the power switch. The unit should successfully go through the warm-up process.

14 Verify the detector's operation using an inert gas.

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