



# **COMBUSTIBLE GAS LEAK DETECTOR**



## **CGD900 USER'S MANUAL**

**MSHA "INTRINSIC SAFETY" APPROVED (IN METHANE-AIR ONLY)**

*Please read this manual carefully and thoroughly before using this product.*

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## **INTRODUCTION**

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Thank you for purchasing General Tools & Instruments' CGD900 Combustible Gas Leak Detector with MSHA "Intrinsically Safe" approval. Please read this user's manual carefully and thoroughly before using the instrument.

The CGD900 uses proven heated-sensor technology to detect the presence of most combustible gases, including methane, propane, butane, acetylene, and alcohol and gasoline vapors (see p.7 [Specifications section] for a longer list). In addition, its unique front-panel readout indicates the relative size of a gas leak from 1 to 9.

This reading makes it easier to pinpoint the source of a leak and helps you decide whether it is large enough to be worth plugging. The reading, which is independent of the unit's sensitivity level, rises and falls with the amount of combustible gas sensed at the end of the CGD900's 17-inch-long flexible and obedient probe. The maximum value is displayed when the tip of the probe is at the source of the leak.

The CGD900 is powered by four "AA" Alkaline (non-rechargeable) batteries.

## **KEY FEATURES**

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- CE certified to meet European Union requirements
- MSHA Certified "Intrinsically Safe" in Methane-Air only
- Durable, stable sensor with industry-first two-year warranty
- Methane sensitivity of <5 ppm
- Calibrates automatically
- Unique numeric leak size indicator on front panel
- Three adjustable sensitivity levels
- Comfortable Sanoprene rubber grip

## WHAT'S IN THE CASE

The CGD900 comes fully assembled in a padded carrying case, along with a leak test vial that enables you to check that the unit is performing properly. See page 5 for instructions for performing this test titled "Using the Leak Test Vial".

## SAFETY INSTRUCTIONS

**WARNING:** Never use a flame to illuminate an area where combustible gases could be present.

## OPERATING INSTRUCTIONS

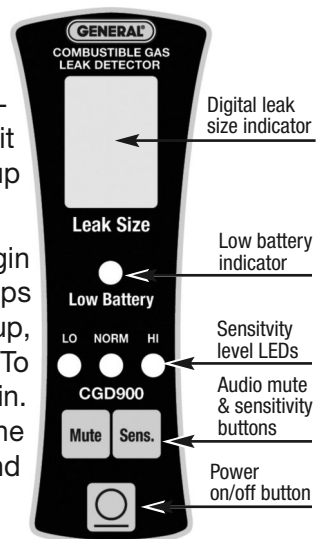
All of the CGD900's controls and indicators are on the unit's front panel. Familiarize yourself with the nomenclature in the picture below before turning on and operating the unit.

Before the CGD900 can be put to use, it must execute a three-step startup sequence:

**1. TURN ON.** Press the on/off  button once to turn on the unit, and again to turn it off.

**2. WARM UP.** Once the unit has been turned on, it automatically begins heating the sensor. During warm up, the digital leak size indicator flashes "0", the sensitivity level indicators illuminate in sequence, and the unit beeps slowly and repeatedly. The warm up cycle normally takes less than 10 seconds.

**3. READY.** The CGD900 is ready to begin searching for leaks when the display stops flashing "0", the green LED for NORM lights up, and the audio "beep" increases in frequency. To silence the beep, push the Mute button again. **(Note:** It takes a few seconds to restore the sound if the Mute button is pushed quickly and repeatedly.



## USING THE LEAK SIZE INDICATOR AND SENSITIVITY SETTINGS

Once the CGD900 has been started up, the digital leak size indicator normally remains off (the display is blank). But once the instrument detects a leak, a number from 1 to 9 is displayed in the window—regardless of the unit's sensitivity setting.

The number displayed reflects the concentration of combustible gas sensed. The maximum value is displayed when the tip of the probe is at the source of the leak. Try switching between different sensitivity settings while moving the probe until the highest number appears.

When the unit has reached the Ready state, the unit automatically defaults to the normal sensitivity level (the green LED labeled NORM is illuminated). To raise the sensitivity level, press the SENS. button once; this lights the red LED labeled HI. To lower the sensitivity level, press the SENS. button again; this lights the yellow LED labeled LO.

## USING THE LEAK TEST VIAL

The CGD900 ships with a leak test vial that lets you check whether the instrument is working properly. To perform this test:

- Remove the plastic cap from the leak test vial (it pops off, rather than unscrews).
- Turn the instrument on and wait for it to heat the sensor (the display goes blank and the green LED labeled NORM illuminates).
- Place the tip of the probe close to the small hole in the top of the leak test vial. If the unit is working properly, the unit's beep rate should increase and the digital leak size indicator should display a number between 4 and 6. If you do not get these readings, you should replace the sensor (see p.6).

**NOTE:** Always remember to replace the plastic seal cap on the leak test vial after completing this test. Replace the leak test vial when its contents no longer appear green.

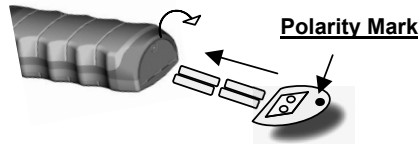
## MAINTENANCE, TROUBLESHOOTING AND CUSTOMER SUPPORT

### CHANGING BATTERIES

When the red LED labeled “Low Battery” is illuminated, it’s time to replace the unit’s four AA” Alkaline batteries.

To replace the batteries, first use a Phillips-head screwdriver to loosen the screw at the bottom of the CGD900 in a counterclockwise direction. Then open the hinged door and remove the old batteries from the two compartments while noting their polarity orientation.

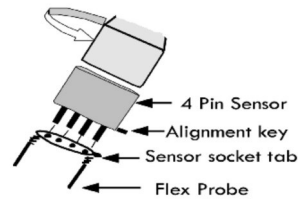
Insert two fresh batteries in the right compartment (+) end first, and then insert two more in the left compartment (-) end first. To help you do this correctly, there are (+) and (-) marks on the hinged door. Be sure each mark ends up adjacent to the end of a battery with matching polarity (see figure).



**NOTE:** If you may not be using the CGD900 for months, remove at least one battery to avoid the possibility of battery leakage ruining the unit.

### REPLACING THE SENSOR

To replace the CGD900’s sensor, which is at the end of the probe, first unscrew its metal cover counterclockwise. Then gently pull out the old sensor, which has four leads. Finally, install the new sensor by aligning the notch in the sensor’s socket with the raised tab on the socket holder (see figure).



**NOTE:** Do not force the sensor into the socket. Misalignment can damage the sensor pins. Insert the new sensor into the socket by pushing it directly in, without twisting.

## SPECIFICATIONS

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- Sensitivity:** <5 ppm (methane)
- Sensor life:** >300 hours
- Response time:** Instantaneous
- Power source:** 4 “AA” Alkaline batteries
- Battery life:** 20 hours of operation
- Warm up time:** <10 seconds
- Probe length:** 17 in.
- Numeric display type:** 7-segment LCD
- Weight:** 1.5 lbs
- Warranty:** 2 years for the instrument and 1 year for the sensor

## PARTIAL LIST OF DETECTABLE GASES AND VAPORS

Methane	Propane	Ethane
Butane	Hydrogen	Ethylene
Ethanol	Isobutane	NOL
Gasoline (fumes)	Acetylene	Methyl ether
Ammonia	Hydrogen sulfide	Industrial solvents
Benzene	Alcohols	Acetone
Toluene	Xylene	

## REPLACEMENT PARTS AND SUPPLIES

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Item .....	Part Number
Sensor .....	CGD900-1
Sensor cover .....	CGD900-2
Leak test vial .....	CGD900-3
Carrying case .....	CGD900-4
User’s manual .....	CGD900-5

## **WARRANTY INFORMATION**

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The CGD900 Combustible Gas Leak Detector from General Tools & Instruments (General) is warranted to the original purchaser to be free from defects in material and workmanship. Subject to certain restrictions, General will repair or replace this instrument, if after examination, it is determined by General to be defective in material or workmanship for a period of two years.

This warranty does not apply to damages that General determines to be from an attempted repair by non-authorized personnel or misuse, alterations, normal wear and tear or accidental damage. The defective unit must be returned to General Tools & Instruments or a General authorized service center, freight prepaid and insured.

Acceptance of the exclusive repair and replacement remedies described herein is a condition of the contract for purchase of this product. In no event shall General be liable for any incidental, special, consequential or punitive damages, or any cost, attorneys fees, expenses, losses alleged to be as a consequence of any damage due to failure of, or defect in any product including, but not limited to, any claims for loss of profits.



## **GENERAL'S RETURN FOR REPAIR POLICY**

Every effort has been made to provide you with a reliable, product of superior quality. However, in the event your instrument requires repair, please contact our Customer Service to obtain a RGA# (Return Goods Authorization) before forwarding the unit via prepaid freight to the attention of our Service Center at this address:

General Tools & Instruments  
80 White Street  
New York, NY 10013  
212-431-6100

Remember to include a copy of your proof of purchase, your return address, and your phone number and/or e-mail address.

The CGD900 Combustible Gas Leak Detector is warranted to be free of defects in materials and workmanship for two years after the date of purchase. This includes an industry-first two-year warranty on the sensor.

This warranty applies to all repairable instruments that have not been tampered with or damaged through improper use, including unauthorized opening of the unit.







## **Specialty Tools & Instruments**



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CGD900 User's Manual  
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