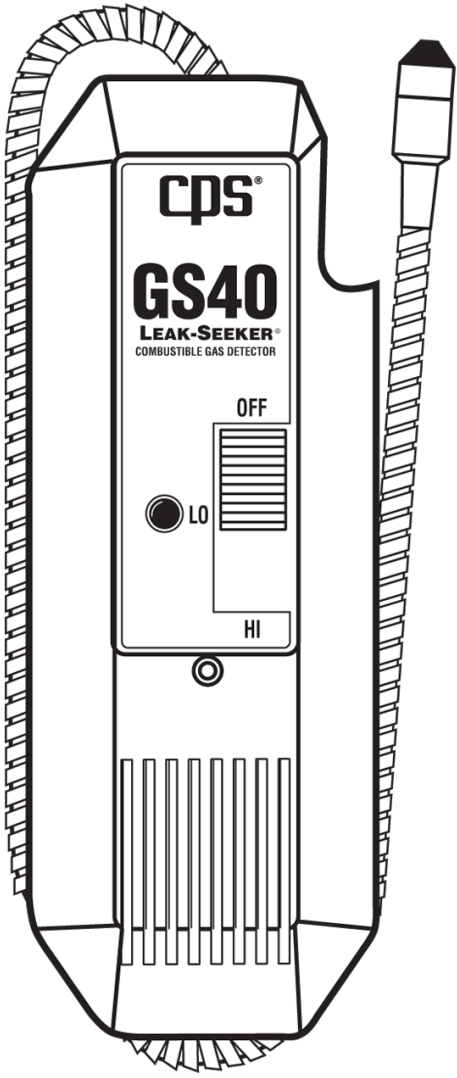
GS40

Combustible Gas Detector



INSTRUCTION MANUAL

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SPECIFICATIONS

Sensitivity	25 TO 1000 PPM, depending on the type of impurity
Sensor Warm Up Time	Approximately 30 seconds
Response Time	Less than 20 seconds
Operating Temperature	15 ˚F to 104 ˚F (-10 ˚C to 40 ˚C)
Power Requirements	4 AA alkaline or NiMH batteries
Battery Life	Approximately 20 hours with AA alkaline batteries and 10 hours with NiMH.
Weight	13.5 Oz. (380 g.)
Dimensions	8" x 2.7" x 1.5" (20.3 cm. x 6.9 cm. x 3.8 cm.)
Probe Length	18" (46 cm.)

PARTIAL LIST OF DETECTABLE GASES	
Acetylene (50 ppm)	Hydrogen Sulfide (10 ppm)
Ammonia (30 ppm)	Isopropanol (100 ppm)
Benzene (150 ppm)	Methane (Natural Gas) (30 ppm)
Butane (25 ppm)	Methanol (50 ppm)
Carbon Monoxide (1000 ppm)	Methyl Ethyl Ketone (50 ppm)
Ethanol (25 ppm)	Propane (25 ppm)
Hydrogen (25 ppm)	(ppm) = Minimum Detectable Concetration

GENERAL DESCRIPTION

The GS-40 is a completely self contained combustible gas leak detector designed to pinpoint gas leaks in the most demanding applications. An efficient and sensitive gas sensor is combined with solid state circuitry which provides an audible alarm that increases in pitch as the concentration of the gas increases. A visual indication is also provided as well as provisions for an earphone for use in noisy environments.

The sensor has been extensively tested and averages a useful life of five years in normal operation. The sensor is capable of responding to a wide range of combustible gases and other toxic contaminants. Response levels as low as 25 ppm are possible.

A modern design, combined with an efficient heated Tin Oxide sensor, allows long operating life from a battery pack of only 4 AA cells. This allows for a very portable, lightweight instrument featuring an 18 inch—46 cm—flexible metal probe capable of reaching the most difficult locations.

The operation of the GS-40 is fully automatic; no manual adjustment is needed to obtain the full benefits of its unique sensitivity and stability. Simply turn the ON-OFF switch to either its HI or LO sensitivity positions, wait a short period of time while the instrument automatically warms up the sensor, and balances itself to the surrounding atmosphere, and the GS-40 will start its audible alarm at a slow ticking rate to signal that it is ready to search for leaks. During the warm up time, a bright red LED signals the state of the battery pack: fully illuminated if the batteries are OK or dimly lit if the batteries need changing.

The sensor in the GS-40 has a normal life of over 5 years. However, if accidental damage to the sensor occurs by getting wet or clogged, it can be easily replaced as indicated in the maintenance section.

The GS-40 is not intrinsically safe in Class 1, Division 1 atmospheres and should be turned on and off in areas where no combustible gases are present.

OPERATION

1. Install 4 alkaline AA batteries in the battery compartment as shown inside battery compartment.
2. Turn the instrument ON by sliding the front panel switch to either the LO position as shown in Fig 2. This sets the instrument to its low sensitivity setting.

   CAUTION: perform this step and the previous one in an atmosphere free of contaminants.
3. Wait approximately 30 seconds until the audible alarm starts to tick at a slow rate.
4. Start searching for leaks.
5. If no leaks are found, exit to an area free from contaminants, switch the instrument to the HI sensitivity setting and repeat from step 3.

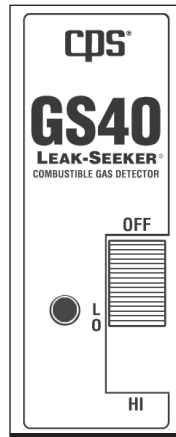

Fig 2

The GS-40 is a fully automatic instrument and it will adjust itself to any background contamination. This means that if the user walks into an area where there is a background concentration of contaminants, there will be an alarm, but the unit will quickly adjust itself to the background and will resume its slow ticking rate.

CAUTION: If a background indication is detected, it is best to return to an area free of contamination, turn off the instrument, ventilate the area and repeat the operation from Step 2.

If large leaks are present, the high sensitivity of the GS-40 will make it difficult to pinpoint the source of the leak. In those cases, exit to an area free from contaminants, set the sensitivity switch to LO and repeat the search procedure from Step 3. Large leaks should be repaired first.

The best procedure to find a leak with the GS-40 is to sweep the sensor back and forth over suspected areas such as joints, fittings and valves. Repeated alarms over the same spot are a sure indication of a leak.

MAINTENANCE

The GS-40 is a rugged instrument designed with the durability and reliability demands of the service industry in mind. Although no regular maintenance is required other than replacing the batteries, some care should be observed to ensure the maximum life and performance.

1. SENSOR CARE:
   The gas sensor used in the GS-40 is the product of years of research and development. It's miniature size and low power consumption allows extended operation in portable equipment.

   The sensor has a metal grill at the front. This grill allows the contaminants to come in contact with the sensing element inside and should never be allowed to become clogged with dirt or grease. If this should happen, the sensor becomes useless and needs to be replaced. No water should be allowed to penetrate the sensor. If this happens, the sensor must be replaced.

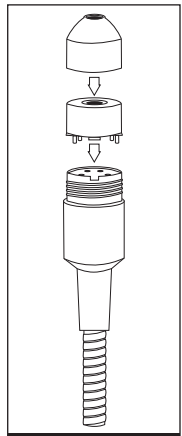

Fig 3

2. SENSOR REPLACEMENT:
   To replace the sensor, simply unscrew the front of the sensor housing, pull the sensor out, plug the replacement sensor into its socket, first aligning the metal tab on the sensor shell with the notch in the sensor housing, and screw the front of the sensor housing back in place.
   See Fig 3 for details.

3. BATTERY REPLACEMENT:
   When the red LED on the front panel lights dimly, it is time to replace the batteries. Even though the GS-40 will still operate for some time when the LED is dimly lit, it is recommended never to let the LED be completely extinguished. Replace the batteries with a fresh set of 4 alkaline AA cells as indicated in **Fig 1**. A set of 4 rechargeable Nickel Metal Hydride cells can also be used but they cannot be recharged in the instrument; use the charger recommended by the manufacturer of the batteries.

WARRANTY

CPS® guarantees that all products are free of manufacturing and material defects for one year from the date of purchase. If a product should fail during the guarantee period due to defective material or workmanship, it will be repaired or replaced (at our option) at no charge. This guarantee does not apply to products that have been altered, misused or are in need of field service maintenance. All repaired products will carry an independent 90 day warranty. LS3000B and LS790B carry a 2 year warranty.

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