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CLD-100
REFRIGERANT LEAK DETECTOR

# User Manual

V3.0

## General Information 1

Incorporated with advanced leak detection technology, CLD-100 is an ideal and economic halogen leak detector. Compact in appearance, it is stable and easy to operate.

### Detect all kinds of halogen refrigerants

Designed with Inner precise IC with ultra-low circuit consumption offers more stable functionality and lengthens the battery life.
Dual -color visual display of battery voltage. Excellent sensor brings high sensitivity and longer service time.

**Operating temperature:** 0°C to 52°C (32°F to 125°F)
**Maximum sensitivity:** 6 gr/yr, for all halogen refrigerants approximately
**Battery life:** 20 hours in normal use
**Response time:** Instantaneous
**Work mode:** Continuous, no limitation
**Fixed probe length:** 20cm
**Warm-up time:** Approximately 6 seconds
**Reset time:** 2-10 seconds
**Power supply:** 6V DC, four AAA excellent batteries

## General Information 2

### Detection Range

The CLD-100 detects leaks in other systems and storage / recovery containers. It responds to all halogen (including Chlorine and Fluorine) refrigerants. This includes but is not limited to:
CFCs e.g.R12, R11, R500, R503 etc.
HCFCs e.g.R22, R123, R124, R502 etc.
HFCs e.g., R134a, R404a, R125 etc.
Blends such asAZ-50, HP62, MP39 etc.

Detect Ethylene Oxide gas leaks in hospital sterilizing equipment. (it detect the halogen carrier gas).
Detect SF-6 in high voltage circuit breakers.

- Detect most gases that contain Chlorine, Fluorine and Bromine (halogen gases).
- Detect cleaning agents used in dry cleaning applications such as perchloroethylene.
- Detect halogen gases in fire-extinguishing system.

### Battery Indicator

The forepart light of panel indicates the leak and the battery voltage.
GREEN Battery voltage is normal, sufficient for proper operation.
ORANGE Battery voltage is approaching the lower threshold for operation.
Replace them as soon as possible.

## Structure 3


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|---|---|
| 1 | Sensing tip |
| 2 | Flexible probe |
| 3 | Indicator light |
| 4 | Power on/off and sensitivity adjusting faucet |
| 5 | Buzzer |
| 6 | Shell |
| 7 | Battery compartment |

## Operating Instructions 4

- Switch on the detector and the buzzer will beeps constantly.
- Check the battery level by observing the power indicator.
  Adjust appropriate sensitivity or adjust the sensitivity at any time during operation. This adjustment will not interrupt detection.
  Detect leak when the detector is switched on for 6s.
- When refrigerant leak is detected, the buzzer will beep in a higher frequency.
- Verify the potential leak place and detect continuously until the leak is located.

Notes:

CLD-100 features on automatic circuit and a reset function that enables it to ignore ambient concentration of Halogen. Upon initial power on, the detector automatically sets itself to ignore the level of refrigerant present at the tip in 6s and enter the best state of detection. Place the sensing tip near to a known leak source and switch the detector on. It is convenient to find higher concentration leak. Or move the detector in fresh air and switch it on, adjust to the maximum sensitivity, any concentration above zero will be detected.

During detection mode, the detector will follow the change of halogen gas concentration in the surrounding environment to avoid false alarm. The detector features sensitivity adjustment. Turn the button clockwise/ counter clockwise for high/low sensitivity. It does not mean the higher sensitivity is adjusted, the better the detector will work. If the air is not fresh, selecting higher sensitivity will cause a false alarm. When the leaked gas is detected, the detector will beep quicker. The more refrigerant gas was detected, the higher the beep frequency will be. The light indicator will flash quickly at the same time.

- Adjust to higher sensitivity when a leak can't be found. Adjust to lower sensitivity when the detector runs unstably.
- When the buzzer alarms for a leak, and the sensing tip remained at the place being detected long enough, the circuit will equalize it.
- In windy areas, even a large leak is difficult to be found. In this condition it is better to shield the potential leak area.
  Be aware that the detector may alarm if the sensing tip contacts with moisture and/or solvents. Therefore, avoid contact with these during leak checking.

## Detection Method 5

The air conditioning or refrigeration system should be charged with sufficient refrigerant to have a standard pressure of 340 Kpa (50 psi) at least when not in operation. Leaks may not be measured at temperature below 15°C(59"F), since this pressure may not be reached.

- Please do not contaminate the sensor tip. If the part is very dirty, or condensate (moisture) is present, it should be wiped off with a dry shop towel or blown off with shop air. No cleaners or solvents should be used, since the detector may be sensitive to the ingredients.

* Visually trace the entire refrigerant system, and look for signs of air conditioning lubricant leakage, damage, and corrosion on all lines, hoses, and components. Each of the suspected area should be carefully checked with the detector probe, as well as all fittings, hose to line couplings, refrigerant controls, service ports with caps in place, brazed or welded areas, and areas around attachment points and hold-downs on lines and components.

Always follow the refrigerant system around in a continuous path so that no areas of potential leaks are missed. If a leak is found, always continue testing the remainder of the system

- At each area checked, the probe should be moved around the location, at a rate no more than 25 to 50mm/second (1 -2in/second). And no more than mm(1/4in) from the surface, completely around the position. Slower and closer movement of the probe greatly improves the likelihood of finding a leak.

Automotive A/C systems only.

Leak testing of the evaporator core while in the air conditioning module shall be accomplished by turning the air conditioning fan on high level fix a period of 15 seconds in minimum, shutting it off, then wait for the refrigerant to accumulate for 10 minutes. After that, insert the probe into the fan resistor block or condensate drain hole, if no water is present, or into the closet opening in the heating/ventilator conditioning c^e to the evaporator, such as the heater duct or vent. If the detector alarms, a leak apparently has been found.

An apparent leak shall be verified at least once as follows:

a- Blow shop air into the area of the suspected leak, if necessary, and repeat checking the area. In case of very large leaks, blowing out the area with shop air often helps locate the exact position of the leak.

b- First move the probe to fresh air and reset. Then hold the probe tip as close as possible to the indicated leak source and slowly move around it until the leak is confirmed.

## Maintenance 6

Notes:

- Shut down the engine during detecting automotive A/C systems leak. Following any service to the refrigerant systems and any other service which disturbs the refrigerant system, a leak test of the repair and of the service ports of the refrigerant system should be done.

Appropriate maintenance of your leak detector is very important. Carefully follow the instructions to reduce the mis-operation and prolong the service life of the detector.

- Keep the sensing tip clean from dust, moisture and grease. If the tip is dirty, please clean it by immersing in a mild solvent, such as alcohol, for several seconds, and then use compressed air and/or a towel to clean.
- Never use solvents such as gasoline, turpentine, minerals etc. They will leave detectable residue and desensitize your detector.

Warning

Tum the detector off before replacing the sensing tip. Failure to do so may result in a mild electric shock!

Sensing Tip Replacement

- The tip will eventually wear out and require replacement. It is difficult to predict exactly when this will occur since the tip life is directly related to the conditions and frequency of use. The tip should be replaced whenever the alarm sounds or the sound becomes erratic in a clean and pure environment.
- Take out the batteries in case the detector is left unused for a long time. If the detector does not work, please check if the batteries are well contacted or the voltage is below acceptable operating level. Else, please inspect if the tip is dirty or not well contacted with the probe.
- Your part of opening the tool is beyond the warranty service.