



 [YouTube](https://www.youtube.com) www.wipcool.com

Scan us for more details

WIPCOOL[®]
IDEAL PRODUCTS FOR HVAC



ALD-2 Heated Diode Refrigerant Leak Detector

-Operation Manual-

1. Notice for Use

- Thank you for buying WIPCOOL ADVANCED series refrigerant leak detector, we are dedicated to providing you with high quality products.
- Please check if your ordered goods in good shipment condition, with the correct accessories, any damage during transportation, please contact us or the local distributors in time if you find any problems.
- If there is any change in the product (including the specification), we won't inform any more.

Warning!

Please read and understand this manual thoroughly before operation and maintenance.

Please do NOT disassemble the detector by yourself.

If you have any technical questions, please feel free to contact us.

1. Please ONLY install clean filter before detection or it may damage the sensor.
2. Please charge the detector promptly to ensure sufficient battery level for the detection*.
3. Do NOT use the probe to touch or detect any charged objects.
4. Do not let water enter the air inlet of the probe.
5. Please protect your eyes and skin during detection.
6. Please avoid breathing the refrigerant vapors. Inhalation of high concentration refrigerants harmful and may cause unconsciousness or death.
7. Never dispose of used batteries in regular trash can (but in the battery recycle box) to avoid danger or harm to environment.

2. Specifications

Overview

ALD-2 hand-held refrigerant leak detector has a heated diode gas sensor and precise control circuits, which enable it to detect all halogen refrigerants; it has high sensitivity, fast response speed, stable performance and multiple functions; its ergonomic design makes the operation easier and more comfortable.



1. Flexible Probe	8. Three-Color Sensitivity Icon
2. Sensor	9. Auto Reset Button
3. Display Screen	10. On/Off Button
4. Three-Color Battery Level Icon	11. Mute Button
5. Buzzer Icon	12. Sensitivity Button
6. Alarm Icon	13. Battery Base
7. Auto Reset Icon	

Included:

Refrigerant leak detector x 1	Heated diode gas sensor x 1
Manual x 1	Packing box x 1

3. Technic Data

Sensor type	Heated diode gas sensor
Minimum detectable leakage	≤ 3g/year
Reaction time	≤3 seconds
Warm-up time	30 seconds
Reset time	≤10 seconds
Working temperature range	0-50°C
Working humidity range	<80%RH(non-condensing)
Applicable refrigerant	CFCs, HCFCs, HFCs, HCs and HFOs2
Sensor life time	1 year
Reset	Automatic/manual
Probe length	420mm (16.5 in)
Package size	390.5mm*226.4mm*79.6mm
Battery life	7 hours
Weight	340g

Note: Applicable to all halogen refrigerants, including but not limited to:
 CFCs: Such as R12,R11,R500,R503
 HCFCs: Such as R22,R123,R124,R502
 HFCs: Such as R134a, R4040, R410a, R407C,R32
 HCs: Such as R600a,R290
 HFOs: Such as R1234YF

4. Function Introductions

4.1 Battery Level Indication

Battery level icon	Battery level
Green	High
Orange	Medium
Red and flashing	Low

Note:

- 1) When the battery power is insufficient, the test result may be inaccurate.
- 2) When the battery power is "low", the leak detector will automatically shut down after working for 10minutes, and the battery should be replaced in time.

4.2 Sensitive Indication

Sensitivity icon	Sensitivity grade
Red	High
Orange	Medium
Green	Low

Note: After warming up the leak detector, press the sensitivity button to adjust the sensitivity.

4.3 Leak Alarm/Mute Function

The leak detector has audible and visual leak alarms. When the leakage is detected, the screen will show the leakage level (1-7).The higher the gas concentration is, the larger the value is and the higher the alarm frequency is. You can choose to turn on both audible and visual alarms at the same time or only select visual alarms. When the device completes warming up and starts working, it will automatically turn on the sound alarm function, at this time, you can press the mute button to turn off/on the sound alarm.

4.4 Automatic/Manual Reset

In order to avoid the influence on the detection caused by the refrigerant in the environment, the leak detector has the function to zero the environment refrigerant.

Automatic reset: it is a default option. The leak detector will automatically zero the refrigerant concentration around the probe, and only when it detects higher refrigerant concentration around the probe, it will alarm.

Manual reset: The sensitivity can be re-adjusted by short-pressing the zeroing button. When the screen shows "8" for 3 seconds, it means that the zeroing process is completed. At this time, you can use it to detect the refrigerant concentration higher than that in the aforesaid environment.

Note: If the refrigerant concentration in the environment is very low, Reset function will increase the device's sensitivity, and oppositely, if the refrigerant concentration in the environment is very high, it will decrease the sensitivity.

4.5 Automatic Shutdown Function

The leak detector will automatically power off if there is no button operation for 30 minutes. When there is any effective button operation, the system will reset the 30-minute countdown.

4.6 Fault Alarm Function

Alarm code	Alarm reason
1 ^E	Probe power failure
2 ^E	Probe missing or faulty
3 ^E	Fan shutdown

Note:

- 1)The warm-up failure of the probe is detected, and it needs professional technicians to repair it.
- 2)After the problem of the probe missing or failure is solved, the detector needs to be re-warmed up.
- 3)When there are more than one faults simultaneously, the fault priority is 1^E 2^E 3^E

5. Operation Instructions

5.1 Operation

①press the "on/off" button, the leak detector will turn on and starts to warm-up;



Warming-up state icon

- ②In the process of warming up, the LED in the middle of the screen will flash; the warm-up time is 30 seconds;
- ③After warming up, the screen will show a flashing "0", indicating that the detector is ready now, at this time, the buzzer icon will be on, and the buzzer will be started (beeps once per second). You can press the mute button to turn on/off the audible alarm.)
- ④By default, after warming-up, the device will automatically go through zeroing, and the automatic zeroing icon will be on. Long-pressing the zeroing button for 3s can turn off the automatic zeroing function, and now the detector will be switched to the manual zeroing. Short-pressing the zeroing button can zero the value. Long-pressing the zeroing button for 3s to turn on the automatic reset function.
- ⑤After warming-up, the sensitivity icon will red, indicating that the device is at the highest sensitivity level. According to your requirement, you can press the sensitivity button to select the sensitivity level. Three sensitivity options are available by pressing the button.
- ⑥Put the probe to detect the place where there may be leakage. The flexible probe can be bent into a needed shape to facilitate detecting the place difficult to reach.
- ⑦If leakage is detected, the device will give audible and visual alarms. The screen will show an alarm value. The higher the leakage concentration is, the greater the alarm value is and the higher the alarm sound frequency is.

⑧ After a leakage is found out, it will alarm. It is recommended to move the detector out of the detected place for 10 seconds before the next detection

⑨ Press the "On/Off" button for 3 seconds to turn off it.

Notes:

Please open the battery cover and remove the insulation sheet before first use.

5.2 Battery Installation

Batteries: Three AA alkaline batteries(**Purchased seperately**). Open the battery compartment cover as showing in the picture. Then load the battery into the battery compartment. Please take note to the battery direction when installing.



6. Maintenance

Proper maintenance of the leak detector can prolong the service life of the sensor and improve its performance.

① Sensor service life: it can be used normally for ≥ 1 year. If the sensor frequently works in an environment with high-concentration refrigerant, the service life will be reduced quickly. When the service life is over, the sensor needs to be replaced.

② Replacing the sensor: As shown in the figure right, unscrew the probe shell and then replace the sensor.

Attention: the sensor and the socket shall be in a good contact.

Note:

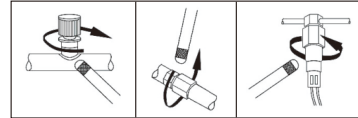
1. Please turn off the detector before cleaning the probe shell.
2. Clean the sensor with a cotton cloth or dry gas to ensure that there are no water drops, oil, grease, dust or other pollutants on the sensor surface.
3. Put the leak detector and sensor in a dry and clean place. If it will not be used for a long time, please remove the battery.



7. Safety and Detection

7.1 Detection Method

The method to use the device to detect is shown in the following figure:



① Bend the flexible probe into the required shape and put the probe slowly in the area where leakage may occur.

② When a leak is detected, the leak detector will give an audible and visual alarm. With the increase of refrigerant concentration, the alarm frequency will become higher, and the alarm value on the screen is larger. When the leak detector gives an alarm, it means that you are close to the leak source. Re-check the nearby area to confirm whether the alarm is repeated.

③ If you close to the leakage point, you can slowly move the detector to the suspected leakage source from the areas where the detector does not give alarms to find out the accurate location of the leakage source. In addition, properly using the "zeroing" function and adjusting the sensitivity can help find out the leakage point location (at first, you should use high sensitivity to roughly find the leakage area, then select a lower sensitivity and repeat the above steps to find out the leakage source point).

④ Once the leakage source location is determined, you can mark it, and then detect other places of the refrigeration system until all leakage points are found.

7.2 Precautions

① During detecting, the refrigeration system pressure shall be 250psi, and the detected area should be nearly air-static. If there is a wind, the leaked refrigerant gas will be quickly diluted or blown away from the leakage source point, thus affecting the detection accuracy. In addition, before detecting, please use a fan to blow off the refrigerant gas emitted by a known source in the refrigeration system to avoid its influence on accuracy.

②The "Automatic Reset" function is a default option, so when the detector is started and detects some refrigerant, it will automatically zero the value of the current ambient refrigerant concentration. If the "Automatic Zeroing" function is turned off, you have to short-press the "Reset" button to zero the value of current ambient refrigerant concentration.

③Leakage sources usually occur in oil-polluted or dusty places, joint valve or pipeline connection. These places shall be detected with priority.

④The probe of the leak detector should be 3 mm-5 mm (1/8 in-1/4 in) away from the suspected leak point during detection, so as to prevent it from being polluted by oil and other pollution and affecting the detection accuracy. The probe should move at a speed of about 25-50mm/s(1-2in/second) when detecting.

⑤It is strictly forbidden to place the sensor directly in the refrigerant environment with a concentration exceeding 30000 ppm, which may cause permanent damage to the sensor.

1. 使用前须知

■尊敬的用户,感谢您对本公司的信赖与支持,欢迎您使用维朋公司领先系列冷媒检漏仪,我们将竭诚为您提供优质的的产品。

■请您仔细检查收到的产品是否与订购产品一致,备附件、使用说明等是否齐全,运输过程中是否有损坏,如果发现上述情形请及时本公司或当地经销商联系。

■在使用本产品前,请您务必仔细阅读此说明书,按产品操作规程进行操作。产品(包括说明书)以后若有任何改动,请恕不另行通知。

2. 产品概述

ALD-2便携式冷媒检漏仪采用加热二极管气体传感器以及精密的控制电路,可检测所有卤素类制冷剂;具有灵敏度高,响应速度快,且性能稳定,功能齐全;符合人体工程学的产品外观设计,使操作更简便,舒适。



1.探杆	8.三色灵敏度图标
2.传感器	9.环境置零键
3.数码管显示	10.开/关键
4.三色电池电量图标	11.静音键
5.蜂鸣器图标	12.灵敏度键
6.报警图标	13.电池仓
7.自动环境置零图标	

内含:

检漏仪(不含传感器) x 1	合格证 x 1
加热二极管气体传感器 x 1	包装彩盒 x 1
5号碱性干电池 x 3	

3. 技术参数

传感器类型	加热二极管气体传感器
最低可检泄漏量	≤3克/年
反应时间	≤3秒
暖机时间	30秒
恢复时间	≤10秒
工作温度范围	0-50°C
工作湿度范围	<80%RH不可结露
适用冷媒	CFCs, HCFCs, HFCs, HC, HFO类冷媒
传感器寿命	≥1年
校准	自动/手动
探杆长度	420mm(16.5 in)
包装尺寸	390.5mm*226.4mm*79.6mm
电池寿命	7小时
重量	340g

注:适用于所有卤素类制冷剂,包括但不限于:

CFCs:例如R12,R11,R500, R503等;

HCFCs:例如R22,R123,R124,R502等;

HFCs:例如R134a,R404a, R410a, R407C,R32等;

HCs:例如R600a,R290等;

HFOs:例如R1234YF等。

4. 功能介绍

4.1 电池电量指示

电池电量图标	电量等级
绿色	电量充足
橙色	中等电量
红色闪烁	严重不足

注意:

1)当电池电量严重不足时,检测结果可能不准确。

2)当电池电量严重不足时,检漏仪继续工作10分钟后自动关机,需及时更换电池。

4.2 灵敏度指示

灵敏度图标	灵敏度等级
红色	高灵敏度
橙色	中灵敏度
绿色	低灵敏度

注:检漏仪暖机完成后,按灵敏度键,可高、中、低循环调节产品灵敏度。

4.3 泄露报警/静音功能

检漏仪有声光两种泄露报警提示。当检测到泄露时,数码管会显示泄露的等级(1-7),泄露浓度越高,数码管数值越大,报警声频率越高。

可以选择同时开启声光报警或者只选择视觉报警。设备暖机完成进入工作状态,会自动开启声音报警功能,按下静音键,可循环关闭/开启声音报警。

4.4 自动/手动环境置零功能

为防止空气中混有制冷剂造成误报警,检漏仪具备忽略周围制冷剂浓度的功能。

自动环境置零功能:开机默认自动环境置零功能。检漏仪会自动忽略探头周围的制冷剂浓度,只有检测到探头周围制冷剂浓度水平变高时,才会产生报警。

手动环境置零功能:短按环境置零按键,可重新调整灵敏度。数码管显示“8”3秒后,表示检漏仪环境置零动作完成。可继续查找更高制冷剂浓度点。

注意: 检漏仪在环境制冷剂浓度较低的空气中环境置零会增高产品灵敏度,在制冷剂较高的空气中环境置零会降低产品灵敏度。

自动关机功能

本检漏仪具备30分钟无任何按键操作自动关机功能。任何状态下,任意按键操作有效时,系统将重置30分钟计时。

故障报警功能

报警代码	报警原因
1 ^E	检测探头电源故障
2 ^E	检测探头缺失或故障
3 ^E	检测风机运转故障

注:

- 1)检漏仪检测探头无暖机功能,需专业技术人员维修。
- 2)检漏仪探头缺失或故障排除后,需重新暖机。
- 3)多种故障并存时,按故障优先级分1^E 2^E 3^E。

5. 操作说明

5.1 仪器操作

- ①按“开/关”键,检漏仪开启并进入暖机状态;



暖机状态界面

- ②检漏仪暖机过程中,数码管中间LED闪动,暖机时间为30秒;
- ③暖机完成后,数码管闪烁显示“0”,表示设备可以正常使用,蜂鸣器图标常亮,声音开启(约1次/秒),按下静音键,可循环关闭、开启声音和蜂鸣器图标。
- ④暖机完成后,默认自动环境置零功能,自动环境置零图标亮,长按环境置零键2s,关闭自动环境置零图标,切换为手动环境置零功能短按环境置零键,可手动调节环境置零功能。长按环境置零2s,则重新开启自动环境置零功能。
- ⑤暖机完成后,灵敏度图标亮红色,即默认开启最高灵敏度档位。根据需求,按下灵敏度键,选择灵敏度档位。三个灵敏度档位循环可调。

⑥移动探头,在可能出现泄露处检测,柔性探头可弯曲成所需要的形状,以便达到人难以达到的区域。

⑦如果检测到泄露,设备会发出声光报警。数码管显示报警值,泄露浓度越高,报警值越大,报警声频率越高。

⑧经过多次连续测量泄露报警后,建议移出检测区10s,再去检测泄露源。

⑨检漏仪使用完毕后,长按“开/关”键2秒,关闭检漏仪。

注意:检漏仪首次使用时,请打开电池仓盖,取下绝缘片。

5.2 电池安装

电池规格:3节5号碱性干电池。

按图方向,打开电池仓盖。然后将电池装入电池仓中。安装时,请注意方向。



5.3 仪器维护

对检漏仪进行适当的维护,可以延长传感器使用寿命,提高检漏仪的性能。

①传感器寿命:传感器具有一定的寿命,正常情况下,正常使用 ≥ 1 年。若传感器长时间工作在高浓度的制冷剂下,会快速耗尽传感器寿命,当传感器使用寿命用尽,需更换传感器。

②更换传感器:如图所示,可旋下探头壳,更换传感器,确保传感器与接插端子接触良好。

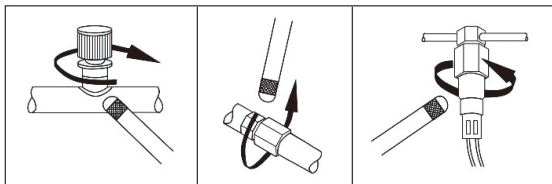


注意:

- 1.清洗探头壳前,请关闭电源。
- 2.可用棉布或干气体清洁传感器,确保传感器表面无水滴、油、油脂、灰尘或其它污染物。
- 3.将检漏仪和传感器存储在干燥清洁的地方,如果长期不使用时,请取下电池。

6. 安全检测

6.1 检漏仪检测方法如下图所示:



- ①弯曲柔性探杆成所需要的形状，在可能发生泄漏的位置区域缓慢移动探头。
- ②当检测到泄漏时，检漏仪会发出声光报警。随着制冷剂浓度的增加，检漏仪的报警频率越高，数码管报警值越大。当检漏仪发出警报时，就意味着你离泄漏源很近。重新检查附近的区域，确认是否重复报警。
- ③如果确定有泄漏源，从非报警区域的不同方向缓慢地向泄漏源方向移动，准确地将泄漏源排查出来。另外，借助“环境置零”功能和调整灵敏度，准确定位泄漏点(先用高灵敏度找到泄漏区域，再降低灵敏度水平，重复以上步骤确定泄漏源)。
- ④一旦确定了泄漏源，在泄漏源附近做相应的标记，然后对整个制冷系统进行检查，直到找到所有的泄漏点。

6.2 注意事项

- ①检测时，制冷系统中应有一定的压力(≥ 50 psi)，操作应在相对静态的空气条件下进行。如果有风，泄漏的制冷剂气体会被迅速稀释或从泄漏源吹走，从而影响检测的准确性。另外，在检测前，请使用风扇将制冷系统中疑似泄漏的制冷剂气体吹走，以免影响检测的准确性。
- ②“自动环境置零”功能默认启动。如果检漏仪在定位泄露源前发出泄露报警，设备会自动屏蔽当前环境制冷剂浓度。如果“自动环境置零”功能关闭，则必须使用“环境置零”键来屏蔽当前环境制冷剂的浓度。
- ③泄漏源通常发生在油污、积尘位置、节点阀或管道连接位置，检测应集中在这些区域。

④检漏仪探头在检测时应距疑似泄漏点3mm-5mm(1/8in-1/4in)，防止油污等污染探头，影响检测精度。探头以大约25-50mm/s(1-2in/second)的速度移动检测。

⑤严禁直接把传感器放置在浓度超过30000ppm制冷剂环境中，易造成传感器永久性损坏。

7. 保修

由于厂家制造疏忽引起产品本身的质量问题，自购买之日(凭发票)或出厂之日(无发票)起1个月内免费调换、12个月内免费保修、终身有偿检修。

下列情况除外:

擅自拆卸或修理引起损坏的;

使用不当(任意甩弃跌落等)，以及不可抗力因素引起损坏的。



浙江维朋制冷设备有限公司

浙江省温岭市经济开发区二期昌业路2号

电话:0576-81623971

传真:0576-81623972

邮箱:info@wipcool.com

网址:www.wipcool.com