

**WIPCOOL®**  
IDEAL PRODUCTS FOR HVAC

## MVG-1

### Digital Vacuum Gauge

### 数显真空计

### Operation Manual 使用说明书



Please read this instruction carefully before using this product, and keep this manual carefully for future reference  
在使用本产品之前, 请仔细阅读本说明书并保存本手册以备将来参考

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#### 1.Introduction 简介

MVG-1 is a small and portable professional instrument for vacuum measurement powered by a lithium battery. The 1/4" SAE fitting is convenient for vacuum measurement in the HVAC/R field.

MVG-1是一款小巧便携采用锂电池供电的用于真空测量的专业仪表, 接口采用标准1/4" SAE可方便应用在HVAC&R领域的真空测量。

#### 1.1 Technical Parameters 规格参数

Characteristic 特性	Parameters 参数
Measuring Range 测量范围	1-19000microns
Vacuum Units 真空单位	microns、mTorr、inHg、Pa、Torr、KPa、mbar、psia
Temperature Units 温度单位	°C/°F
Resolution 分辨率	1-400microns 1micron 400-3000microns 10microns 3000-10000microns 100microns 10000-19000microns 250microns
Accuracy 精度	1-10000microns ±10% of Reading(读取值)±10microns 10000-19000microns ±20% of Reading(读取值)
Battery 电源	Rechargeable lithium batteries 可充电锂电池 (1000mAh)
Operating Temperature 工作温度	14-122°F/-10-50°C
Storage temperature 存储温度	-4-140°F/-20-60°C
Interface 接口类型	1/4" SAE Male Flare
Overload 最大过载压力	27.5bar

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#### 1.2 Technical Parameters 规格参数



Number 序号	Element 元素	Function 功能
①	lcom 图标 [  ]	Displays the battery capacity 显示电池容量 > 75% > 50% > 25% > 5% < 5%
②	Temperature display 温度显示	<ul style="list-style-type: none"> <li>● Displays the currently measured temperature 显示当前测量温度</li> <li>● Measurement parameter: 测量参数 TH2O = evaporation temperature of water 水的饱和温度 Tamb = ambient temperature 环境温度</li> <li>● Unit set 单位设置 (°C/°F)</li> </ul>
③	Vacuum display 真空显示	<ul style="list-style-type: none"> <li>● Displays the currently measured vacuum 显示当前测量真空度</li> <li>● Unit set 单位设置 (microns、mTorr、inHg、Pa、Torr、KPa、mbar、psi)</li> </ul>

## 2.Operation Guide 操作指南

1. Press the power button to turn on the device.

1.按下电源键，开启仪器。

④ The instrument displays "----" when ambient pressure is applied to the connections. The display indicates the applied pressure value once the applied pressure is within the measuring range (1 to 19,000 microns).

④ 当传感器处于环境压力下时，仪器显示----。当真空抽到测量范围内(1-19000microns)时，显示屏显示当前压力值。

2.Unit setting

2.设置单位

Set the unit according to your usage habits

根据您的使用习惯设置单位

Short press "POWER" to select "mTorr, inHg, Pa, Torr, kPa, mbar, psia, microns".

When the unit of vacuum was flash, Long press "POWER" to enter the setting of temperature

unit. Then short press "POWER" to select the temperature unit when "°C or °F" is flash.

开机状态下短按电源键进入真空单位切换模式，真空单位闪烁，此时短按可以在mTorr、inHg、Pa、Torr、kPa、mbar、psia、microns轮番切换。真空单位闪烁时长按电源键进入温度单位切换模式，温度单位闪烁，此时短按可以在°C和°F轮番切换。

3.H<sub>2</sub>O status

3.H<sub>2</sub>O状态

The device determines the physical state of water by comparing the ambient temperature and the water saturation temperature corresponding to the vacuum in the system. When the TH<sub>2</sub>O water saturation temperature is less than the Tamb ambient temperature, the water is in a gaseous state (evaporated into water vapor), and the moisture in the pipeline can be more effectively extracted.

设备通过比较环境温度和系统内真空对应的水饱和温度判断水的物理状态，当TH<sub>2</sub>O水饱和温度 < Tamb环境温度，水为气态(蒸发为水汽)，管道内的湿气能更有效的被抽除。

④ Suggestion: When the target value is reached, the state of H<sub>2</sub>O remains liquid.

Please adjust the target value and continue pumping until the state of H<sub>2</sub>O becomes gaseous.

④ 建议:当抽取到目标值后H<sub>2</sub>O的状态仍然保持液态,请调整目标值继续抽气直到H<sub>2</sub>O的状态变为气态。

## 4.Maintenance 产品维护



Oil-proof film is used inside of the vacuum chamber to filter impurities and reduce sensor contamination. To maintain optimal measurement accuracy, it is necessary to check the oil-proof film every three months for normal use (adjust the inspection cycle appropriately according to the frequency of use). If the oil-proof film is severely contaminated, it needs to be replaced.

Follow the steps as below:

1. The product is shut down.
2. Use a wrench to unscrew the sensor nut and remove the oil-proof film.
3. Check if the oil-proof film is contaminated with impurities. Try wiping it with a tissue. If it cannot be cleaned, please replace it.
4. Check if the O-ring is intact. If there is any damage, please replace it. Before replacement, lubricate the O-ring with vacuum oil.
5. Put the oil-proof film into the sensor nut and tighten the nut with a wrench.

If the vacuum sensor inside the chamber is contaminated, please clean it according to the following methods:

1. Use a dropper or syringe to inject acetone or alcohol (>70%) into the sensor chamber. Tighten the nut and gently shake the product.
2. Loosen the nut and drain the liquid from the cavity. Repeat 3-4 times.
3. Vacuum or leave it for 3 hours until the sensor is dry.

真空腔体内采用防油膜过滤杂质,减少传感器污染。为保持最佳的测量精度,正常使用需每三个月检查(根据使用频次适当调整检查周期)防油膜情况,如果防油膜污染严重需要重新更换。按照以下步骤操作:

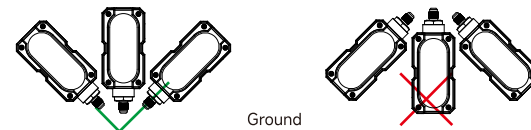
- 1.产品关机。
- 2.用扳手拧下传感器螺母,取下防油膜。
- 3.检查防油膜是否有杂质污染。试着用纸巾擦一下。如果无法清洗,请更换。
- 4.检查O形圈是否完好。如有损坏,请更换。更换前,用真空油润滑O形圈。
- 5.将防油膜放入传感器螺母内,用扳手拧紧螺母。

如果腔体内的真空传感器被污染,请按照以下方法进行清洁:

- 1.用滴管或注射器向传感器腔体内注射丙酮或酒精(>70%)。拧紧螺母,轻轻摇动产品。
- 2.松开螺母,从腔内排出液体。重复3-4次。
- 3.抽真空或放置3小时,直至传感器干燥。

## 5.Precautions for Product Instructions注意事项

- ④ 1. Before using the vacuum gauge, please check whether there is any oil stain on the joint.  
使用真空计前,请检查接头处是否有油污。
- ④ 2. Please keep the connector of the product downward and vertical to connect to the system as much as possible.  
真空计连接系统时,方向请尽量朝上。



Ground