

科技创造美好生活

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Vacuum Leak Detection

真空检漏设备

www.kyky.com.cn

COMPANY PROFILE
公司简介



北京中科科仪股份有限公司成立于1958年，是中国科学院首家事业单位整体转改制企业。专注于电子光学和真空技术领域，业务范围覆盖扫描电子显微镜、氦质谱检漏仪等科学仪器装备和分子泵、真空应用设备等核心零部件及产业设备，是国家级企业技术中心及国家级制造业“单项冠军”示范企业。先后研制出我国第一台扫描电子显微镜、第一台涡轮分子泵、第一台商用氦质谱检漏仪，第一台磁悬浮分子泵，第一台场发射枪扫描电子显微镜，打破了国外技术垄断，填补了国内空白，提升了我国高端科学仪器装备与核心零部件国产化和自主化水平，为我国前沿科学研究、重大工程和战略型新兴产业的发展提供了重要支撑。

Founded in 1958, KYKY Technology Co., Ltd. is the first enterprise of the Chinese Academy of Sciences that has been transformed from a public institution. Focusing on the field of Electron optics and vacuum technology, its business scope covers scientific instruments and equipment such as Scanning electron microscope and helium leak detector, as well as core components and industrial equipment such as turbo molecular pump and vacuum equipment. KYKY is a national enterprise technology center and a national manufacturing "single champion" demonstration enterprise, developing the first Scanning electron microscope, the first turbo molecular pump, the first commercial helium leak detector, the first magnetically levitated molecular pump and the first field emission Scanning electron microscope successively, breaking the foreign technological monopoly, filling the domestic gap, improving the localization and independence level of China's high-end scientific instruments and equipment and core parts, and contributing to China's cutting-edge scientific research and the development of Megaproject and strategic emerging industries.

APPLICATIONS 应用领域

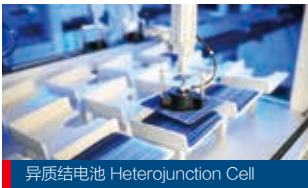
真空获得 Vacuum Generation



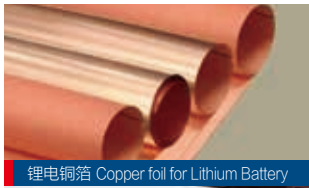
IC制造 IC manufacturing



分析仪器 Analytical Instruments



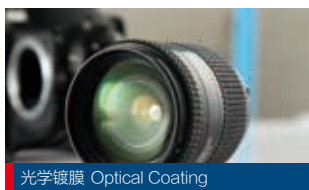
异质结电池 Heterojunction Cell



锂电铜箔 Copper foil for Lithium Battery



平板显示 Panel Display



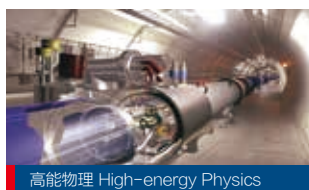
光学镀膜 Optical Coating



LOW-E玻璃镀膜 Low-e Glass Coating



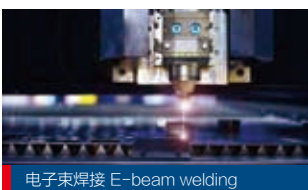
装饰镀膜 Decorative Coating



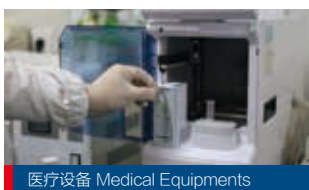
高能物理 High-energy Physics



航空航天 Aerospace

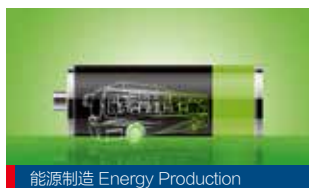


电子束焊接 E-beam welding



医疗设备 Medical Equipments

真空检漏 Vacuum Leak Detection



能源制造 Energy Production



航天工业 Space Industry



汽车工业 Automotive Industry



电力电气 Electricals and Electrics



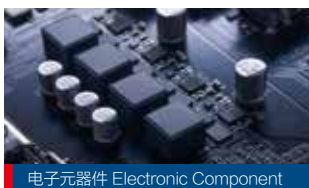
阀门工业 Valve Industry



动力电池 Battery



低温制冷 Cryogenic Refrigeration



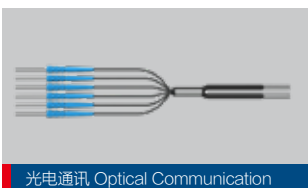
电子元器件 Electronic Component



换热系统 Heat Transfer System



仪器仪表 Instrument & Apparatus



光电通讯 Optical Communication



真空设备 Vacuum System



真空检漏业务 / Vacuum Leak Detection

中科科仪具有近五十年的真空检漏技术经验，是我国最大的拥有自主知识产权的真空检漏仪器与真空检漏系统的研发与生产基地。自ZHP-10型氦质谱检漏仪上市以来，KYKY本着创新求发展的企业精神，相继推出ZQJ-230系列、ZQJ-291系列、ZQJ-530型、ZQJ-542型、ZQJ-2000系列以及ZQJ-3000型等多种型号的检漏仪；同时研制出了充气回收检漏系统、高低真空排气检漏台、充氮充氮氟油检漏平台、防爆测氢检漏仪等检漏设备。中科科仪研制的检漏仪与检漏系统为航空航天、电力电子、空调制冷、化工冶金、医疗设备、半导体生产等诸多领域提供了先进、有效的检漏解决方案，满足了各领域用户的不同需求。

With nearly 50 years of vacuum leak detection technology experience, KYKY is the largest R&D and production base of HLD and has the independent intellectual property rights for vacuum leak detection system. Since the launch of ZHP-10 HLD, KYKY in the spirit of innovation and development, produced ZQJ-230 series, ZQJ-291 series, ZQJ-530, ZQJ-542, ZQJ-2000 series, ZQJ-3000 and other types of HLD, and developed gas recovery leak detection system, high and low vacuum exhaust leak detection platform, helium-filled fluorine oil leak detection platform, explosion-proof helium leak detector and other leak detection equipment as well. The leak detectors and leak detection systems developed by KYKY provide advanced and effective leak detection solutions to aerospace, power electronics, air conditioning refrigeration, chemical metallurgy, medical equipment, semiconductor production and many other applications to meet the demands in various fields.

CATALOGUE
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氦质谱检漏仪 Helium Leak Detectors

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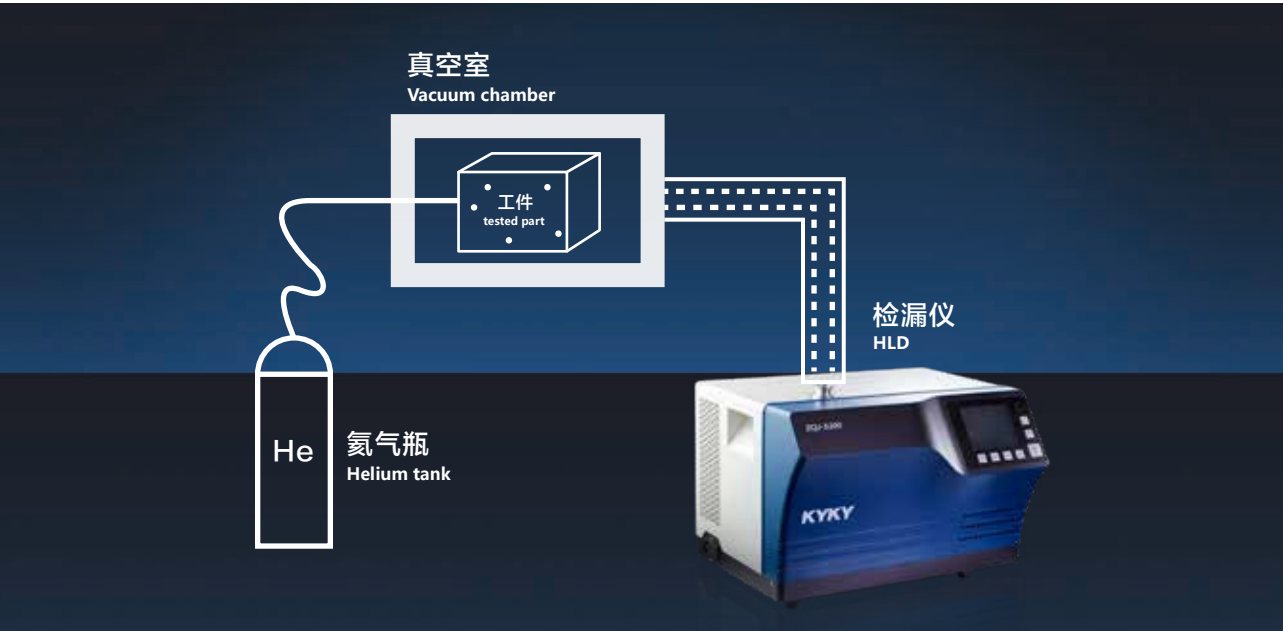
真空检漏系统 Vacuum Leak Detection System

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Vacuum Solutions	

GENERAL VACUUM LEAK DETECTION METHODS
常用真空检漏方法介绍



真空法 VACUUM MODE

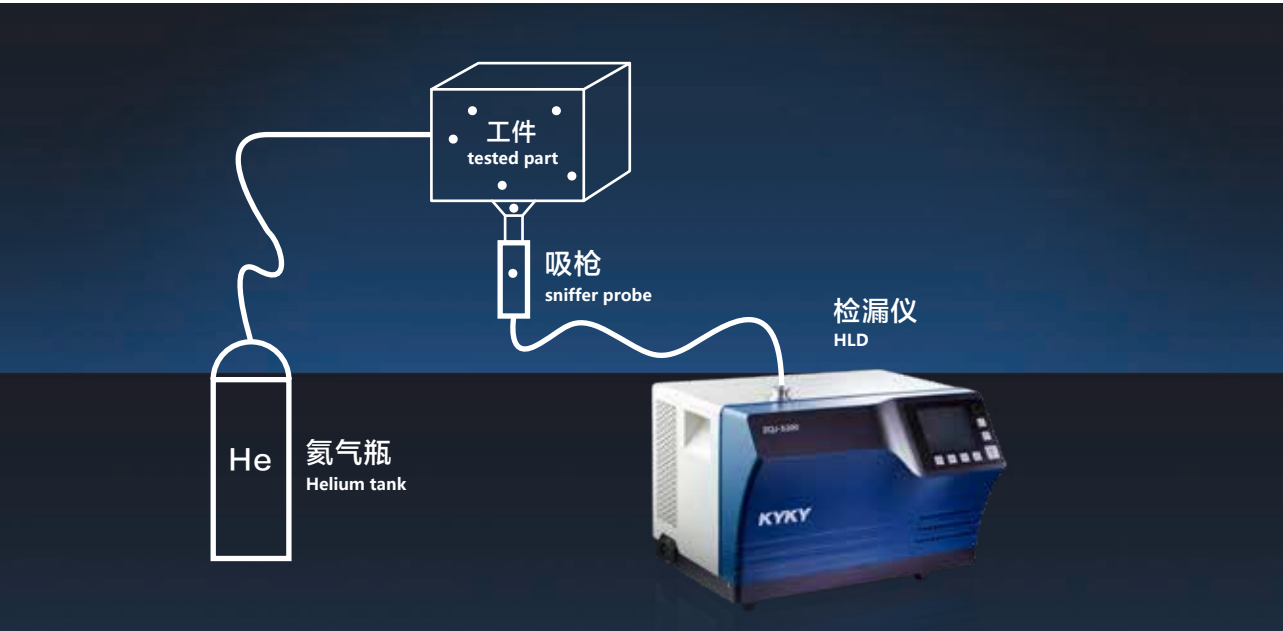
被检测件放入真空室内，对被检测件充入一定压强的氦气，真空室与检漏仪的检漏口相接，若被检工件有泄漏，则漏入真空箱的氦气可通过检漏仪测出。

The tested part is placed in a vacuum test chamber and filled with helium with certain pressure. If a leak is present, the escaped Helium will be measured by the leak detector.

主要特点 MAIN CHARACTERISTICS

- ◆ 可测出被检测件整体漏率 Available for leak rate of entire part
- ◆ 检测精度很高、重复性好 High sensitivity, good repeatability
- ◆ 检测节拍很快，特别适合在线工业化生产 Short detection cycle especially suitable for industrial production
- ◆ 如配备氦气回收装置，可实现氦气循环使用，节约生产成本 Cost-saving if equipped with Helium recycling device
- ◆ 缺点是需要其他辅助方法确定漏点 Weakness: other devices required to target the leaking point

GENERAL VACUUM LEAK DETECTION METHODS
常用真空检漏方法介绍



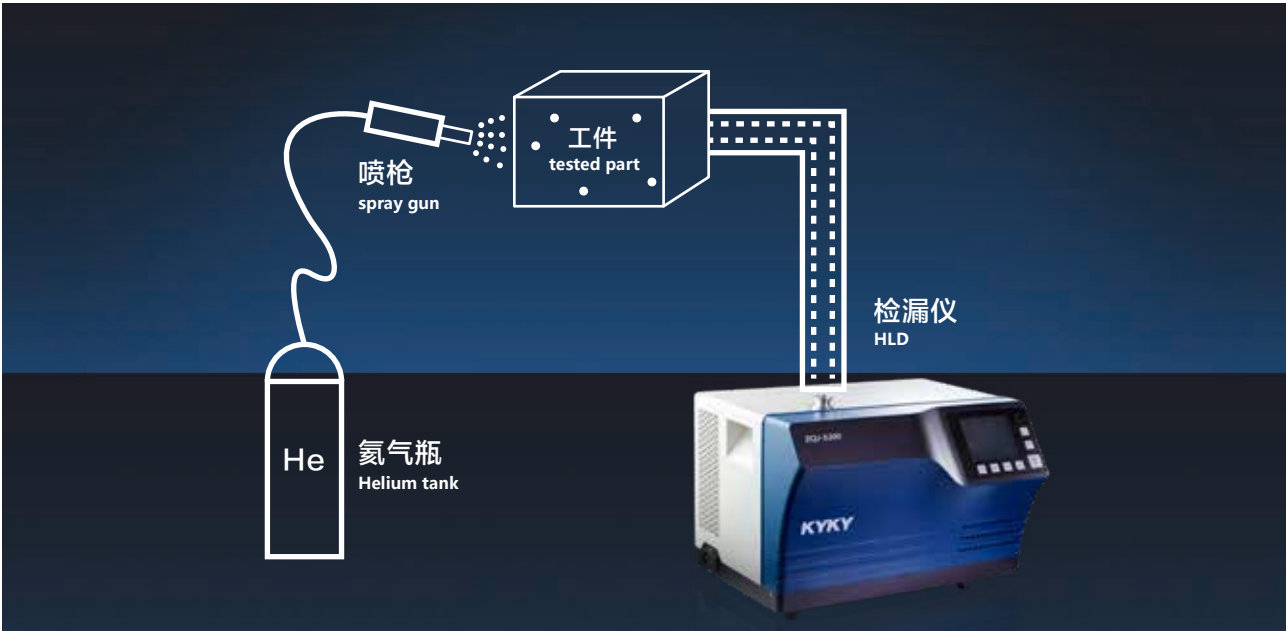
吸入法 SNIFFING MODE

吸入法,对被检测容器充入氦气,在氦质谱检漏仪的检漏口配备专用吸枪,使用吸枪对充了氦的被检容器外壁的焊缝和密封接头等处移动,如果该容器有漏隙,经漏隙渗出的氦会被吸入,检漏仪就会响应。

The tested part is pressurized with test gas, Helium. Move the sniffer around the tested part, such as welding and connected points etc. If a leak is present, the leak detector will catch the escaping Helium, locate the leak.

主要特点 MAIN CHARACTERISTICS

◆ 可准确定位漏点	Targeting leaking point
◆ 与真空法相比,无需制作真空罐,设备投入成本较低	Low cost (no need for vacuum chamber)
◆ 人工操作,对操作者有一定经验要求	Manual operation, experiences required



喷氦法 SPRAYING MODE

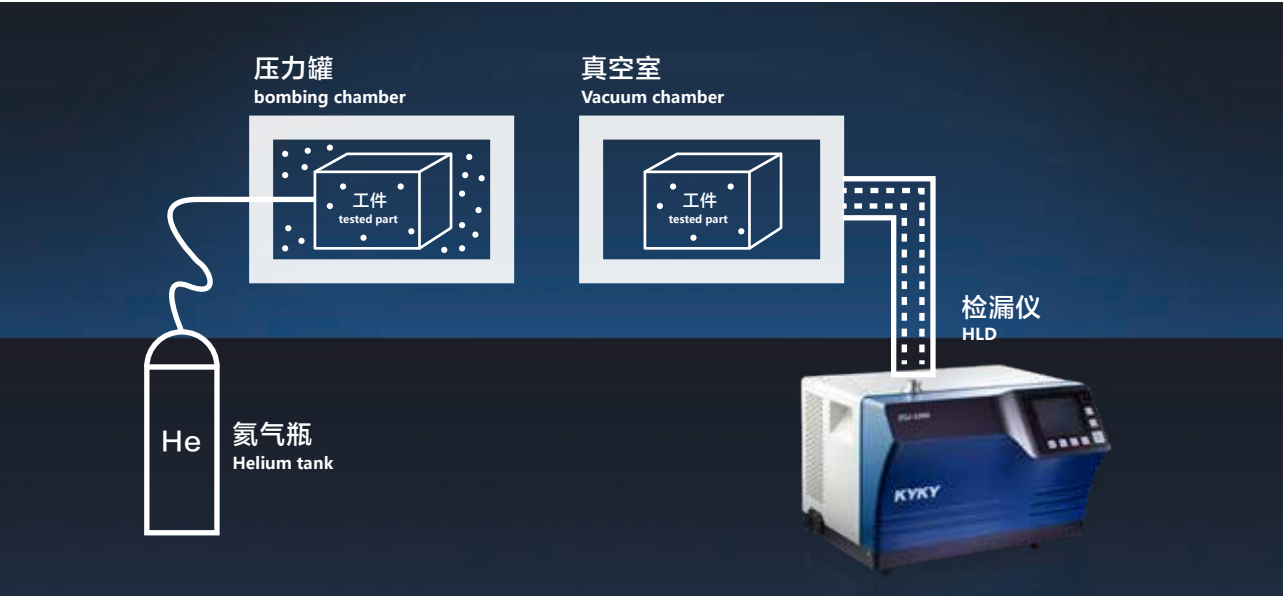
将被检器件和仪器连通,在抽好真空后,在被检器件可能存在漏孔的地方(如密封接头,焊缝等),用喷枪喷氦,如图所示,如果被检器件某处有漏孔,当氦喷到漏孔上时,氦气立即会被吸入到真空系统,从而扩散到质谱室中,氦质谱检漏仪就会立即有响应。

The leak detector evacuates the air inside the tested part. Spray the test gas onto the surface of the part, like welding and connected points. The detector will catch the gas flowing through the leak point of the tested part to locate the leak point.

主要特点 MAIN CHARACTERISTICS

◆ 检测精度很高	High sensitivity
◆ 能准确定位漏点	Targeting leaking point

GENERAL VACUUM LEAK DETECTION METHODS
常用真空检漏方法介绍



背压法 BOMBING MODE

采用背压法检漏时，首先将被检产品置于高压的氦气室中，浸泡数小时，如果产品表面有漏孔，氦气便被压入被检产品中。然后取出被检产品，放入与检漏仪相连的真空容器内进行检漏。

Place the tested part in a high pressurized Helium chamber (bombing chamber) for several hours. If a leak be present, the tracer gas is forced into the part with the high pressure. After that, take the tested part into a vacuum chamber. Any Helium inside the part will escape and be measured by the leak detector.

主要特点 MAIN CHARACTERISTICS

- ◆ 检测灵敏度高 High sensitivity
- ◆ 能实现小型密封容器产品可以进行批量化检测 Available for small sealed products and with high production
- ◆ 高重复性 Good repeatability

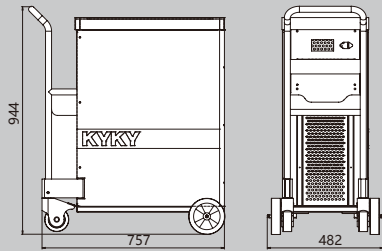
HELIUM LEAK DETECTORS
氦质谱检漏仪



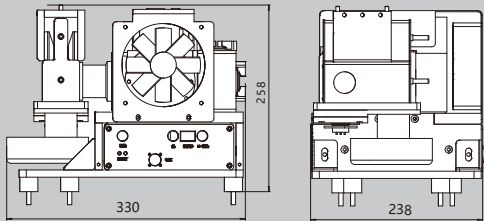
APPLICATIONS
应用领域

应用领域 Applications	ZQJ-3300/3700	ZQJ-3900	ZQJ-3200/G	ZQJ-2300车式	ZQJ-2300	ZQJ-2000	ZQJ-230D	ZQJ-230EK
汽车工业 Automobile Industry	■	■	■	■	■	■		
能源制造 Energy Industry	■	■	■	■	■		■	
低温制冷 Cryogenics	■	■	■	■	■	■	■	
电力电气 Electric Power	■	■	■					■
电子器件 Electronic Device	■		■	■		■	■	■
真空制造 Vacuum Industry	■	■	■	■		■	■	
冶金工业 Metallurgical Industry	■	■	■	■		■		■
阀门制造 Valve Manufacturing	■	■	■	■	■	■	■	■
核电工业 Nuclear Power Industry	■	■	■	■	■			■
科学研究 Scientific Research	■		■	■	■	■	■	
半导体工业 Semiconductor Industry	■	■	■					
电厂检漏 Leak Detection to Power Plant	■	■	■					

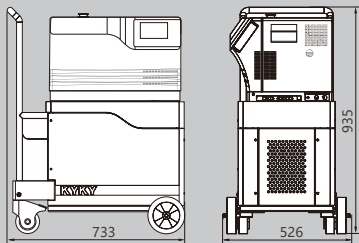
OUTLINE DIMENSIONS DRAWING(mm)
安装尺寸图



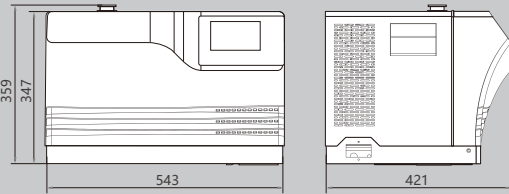
ZQJ-3300/3700



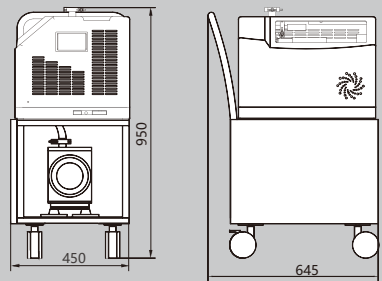
ZQJ-3900



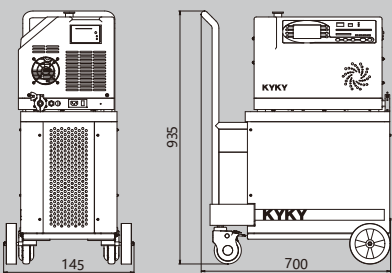
ZQJ-3200车式



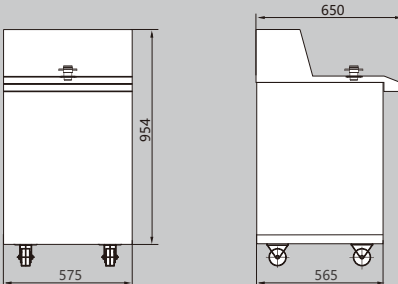
ZQJ-3200台式



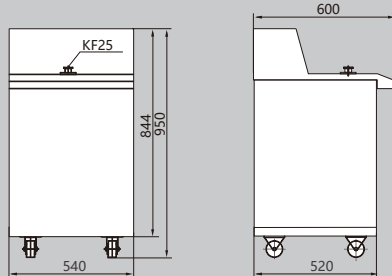
ZQJ-2000



ZQJ-2300车式



ZQJ-230EK



ZQJ-230D

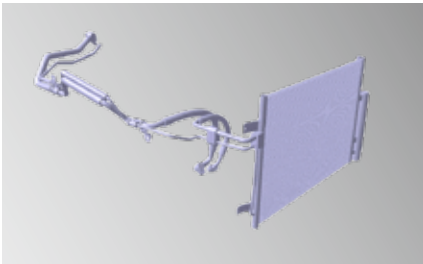
SPECIFICATIONS
技术指标

型号 Model	ZQJ-3300/3700	ZQJ-3900	ZQJ-3200/G
最小可检漏率 Smallest Detectable Leak Rate (Pa·m³/s)	5×10 ⁻¹³	5×10 ⁻¹³	5×10 ⁻¹³
检漏测量范围 Leak Rate Display (Pa·m³/s)	5×10 ⁻¹³ ~ 1×10 ⁻¹	5×10 ⁻¹³ ~ 1×10 ⁻¹	5×10 ⁻¹³ ~ 1×10 ⁻¹
检漏口最大压强 Maximum Inlet Pressure (Pa)	1200/1800	超精检口 20Pa 精检口 40Pa 粗检口 1500Pa	2500
响应时间 Response Time (s)	≤1	≤1	≤1
启动时间 Run-up Time (min)	<3	<3	<3
电源要求 Power	220VAC±10%, 50Hz, 8A	220VAC±10%, 50Hz, 8A	220V AC±10%, 50Hz, 8A
工作环境 Working Temperature and Relative Humidity	温度5 ~ 45℃, 湿度<80% Working Temperature 5~45℃, Realtive Humidity ≤80%	温度5 ~ 45℃, 湿度<80% Working Temperature 5~45℃, Realtive Humidity ≤80%	5℃ ~ 45℃, 湿度小于80%
外形尺寸 L*W*H (mm)	757×482×944	330×258×238	543×421×359 (台式) 733×528×935 (车式)
重 量 Weight (kg)	82	35	55(台式) 109(车式)

VACUUM LEAK DETECTION SYSTEM
真空检漏系统

型号 Model	ZQJ-2300/G	ZQJ-2000	ZQJ-230D	ZQJ-230EK
最小可检漏率 Smallest Detectable Leak Rate (Pa·m³/s)	2.0×10 ⁻¹¹	2×10 ⁻¹¹	<5×10 ⁻¹¹	<5×10 ⁻¹¹
检漏测量范围 Leak Rate Display (Pa·m³/s)	1×10 ⁻¹¹ ~ 1×10 ⁻⁵	1×10 ⁻¹¹ ~ 1×10 ⁻⁵	2×10 ⁻¹¹ ~ 9.8×10 ⁻⁵	2×10 ⁻¹¹ ~ 9.8×10 ⁻⁵
检漏口最大压强 Maximum Inlet Pressure (Pa)	1000	1000	20	5000
响应时间 Response Time (s)	≤2	≤2	≤3	<3
启动时间 Run-up Time (min)	<8	<8	<8	<8
电源要求 Power	220VAC±10%, 50Hz, 10A	220VAC±10%, 50Hz, 10A	220VAC±10%, 50Hz, 16A	220VAC±10%, 50Hz, 16A
工作环境 Working Temperature and Relative Humidity	温度5 ~ 45℃, 湿度<80% Working Temperature 5~45℃, Realtive Humidity ≤80%	温度5 ~ 45℃, 相对湿度≤80% Working Temperature 5~45℃ Realtive Humidity ≤80%	温度5 ~ 35℃, 相对湿度≤80% Working Temperature 5~35℃, Realtive Humidity ≤80%	温度5 ~ 35℃, 相对湿度≤80% Working Temperature 5~35℃, Realtive Humidity ≤80%
外形尺寸 L*W*H (mm)	500x482x397(台式) 700x482x935(车式)	645x450x950	540x600x950	575x650x1060
重 量 Weight (kg)	36(台式) 95(车式)	80	82	80

VACUUM LEAK DETECTION SYSTEM
真空检漏系统



被检件 / Tested Products

汽车空调冷凝器检漏系统
Helium Leak Detection System for Automobile A.C. Evaporators & Condensers

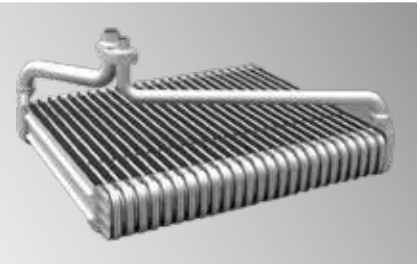
产品应用 APPLICATIONS

适用于汽车空调蒸发器、冷凝器气密性检测，准确度高，检漏节拍快，既可定性亦可定量显示工件的泄漏情况，操作维护简单，适用于生产线。

The system is used to test Evaporator or Condenser of automobile A.C. for leakage with high accuracy and in short work cycle qualitatively and quantitatively. It is easy to operate and maintain in production line.

技术指标 SPECIFICATIONS

- | | |
|----------------------|--|
| ◆ 检漏节拍：快于50s/件（双箱联动） | Work cycle:≤50s/pcs (Two Chambers linkage) |
| ◆ 最高充气压力：高于5MPa | Nitrogen/helium gas mixture pressure:≥5Mpa |
| ◆ 氦气回收率：≥98% | Helium recovery ratio:≥98% |
| ◆ 最小可检漏率：0.1g/y | Detection limit:0.1g/y |



被检件 / Tested Products

汽车空调蒸发器检漏系统
Vacuum Chamber Helium Leak Detection System for Automobile A.C. Evaporators

产品应用 APPLICATIONS

适用于汽车空调蒸发器气密性检测，准确度高，检漏节拍快，既可定性亦可定量显示工件的泄漏情况，操作维护简单，适用于生产线。

The system is used to test Automobile A.C. Evaporators for leakage with high accuracy and in short work cycle qualitatively and quantitatively. It is easy to operate and maintain in production line.

技术指标 SPECIFICATIONS

- | | |
|-----------------|---|
| ◆ 检漏节拍：30 秒/件 | Work cycle:30s/Pcs |
| ◆ 最高充气压力：5Mpa | Nitrogen/helium gas mixture pressure:≥5Mpa Helium |
| ◆ 氦气回收率：≥98% | Recovery ratio:≥98% |
| ◆ 最小可检漏率：0.1g/y | Detection limit:0.1g/y |

VACUUM LEAK DETECTION SYSTEM
真空检漏系统



被检件 / Tested Products

汽车空调储液器检漏系统
Vacuum Chamber Helium Leak Detection System for Automobile A.C. reservoirs

产品应用 APPLICATIONS

适用于汽车空调储液器进行检漏，可按照用户需求设置工位数，相对于单工位系统来说在增加很少设备投入的同时能有效降低成本，提高生产效率。
The machine is used to perform helium mass spectrum leak detection to reservoirs for car air conditioners, and the number of work stations can be set as needed. Compared with single work stations, only a few equipments invested, a lot efficiency increased and cost reduced.

技术指标 SPECIFICATIONS

- | | |
|-----------------------|---|
| ◆ 检漏节拍：快于20s/件 | Work cycle: < 20s/pcs |
| ◆ 示漏氦气压力：0-1.2MPa（可调） | Pressure of helium for leakage testing:0-1.2MPa(adjustable) |
| ◆ 氦气回收率：≥98% | Helium recovery ratio:≥98% |
| ◆ 最小可检漏率：0.1g/y | Detection limit:0.1g/y |



被检件 / Tested Products

汽车空调压缩机检漏系统
Vacuum Chamber Helium Leak Detection System for Automobile A.C. Compressor

产品应用 APPLICATIONS

适用于汽车空调压缩机泄漏检测，多工位设计，大大提高检漏效率。
Vacuum chamber method is used in this system to perform leak detection of workpieces with small hollow structure. The multiple work station design increases the detection efficiency.

技术指标 SPECIFICATIONS

- | | |
|----------------------|---|
| ◆ 检漏精度：< 10g/y | Detection limit:< 10g/y |
| ◆ 充氮充氦混合气的压力为：2.0Mpa | Nitrogen/helium gas mixture pressure:2.0Mpa |
| ◆ 多工位设计，检漏节拍：≤ 20秒/件 | Multi working station,Work cycle:≤20s/pcs |

VACUUM LEAK DETECTION SYSTEM
真空检漏系统



被检件 / Tested Products

汽车空调管路检漏系统
Helium Leak Detection System For A.C. tube

产品应用 APPLICATIONS

用于对空调管路进行干式检漏。
The system is used to test for A.C. tube.

技术指标 SPECIFICATIONS

◆ 检漏节拍：≤30秒/件	Work cycle:≤30s/pcs
◆ 氦检测压力：≤ 2.0 MPa	Helium detection pressure:≤2.0 MPa
◆ 氦气回收率：≥98 %	Helium recovery ratio:≥98%
◆ 检测漏率：< 2g/y	Detection limit: < 2g/y
◆ 不合格品防错功能	Non-conforming product error prevention function
◆ 条码打印功能：检测合格产品自动打印标签	Clamping automatically, suitable for assembly line work
◆ 数据存储功能，检测数据可查询追溯	Bar code scanning, data storage, check etc
◆ 设备具备检测管路内堵功能	The equipment has the function of testing internal blockage of pipeline



被检件 / Tested Products

汽车液力变矩器检漏系统
Hydraulic Torque Converter Leak Detection System

产品应用 APPLICATIONS

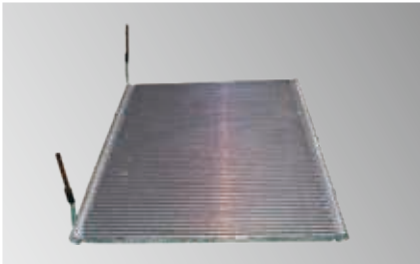
自动挡汽车发动机和变速箱之间没有离合器，他们之间的连接是靠液力变矩器来实现的，液力变矩器内部含液压油，一旦泄漏，会严重影响传动效果，因此，产品在出厂前都要进行泄漏测试。

There is no clutch between the automobile engine and the gearbox. The connection between them is realized by the hydraulic torque converter. The hydraulic oil inside the hydraulic torque converter will seriously affect the transmission effect if it leaks. Therefore, the product must be tested before it leaves the factory.

技术指标 SPECIFICATIONS

◆ 自动化程度高：全自动流水线，机械手装卸，检漏全程无需人工干预	High automation: full automatic assembly line, manipulator loading and unloading, leak detection without manual intervention.
◆ 检测节拍快：<60秒/件	Beat fast: <60s/pcs
◆ 检测精度高，最小可检漏 $1 \times 10^{-7} \text{Pa} \cdot \text{m}^3/\text{s}$	High detection accuracy: $1 \times 10^{-7} \text{Pa} \cdot \text{m}^3/\text{s}$
◆ 氦气回收率：≥98%	Helium recovery rate: ≥98%
◆ 具备条码扫描、数据记录、故障记录、标签打印等功能	Functional of bar code scanning, data recording, fault recording, label printing

VACUUM LEAK DETECTION SYSTEM
真空检漏系统



被检件 / Tested Products

家用空调检漏系统
Helium Leak Detection System For Domestic Air-conditioning

产品应用 APPLICATIONS

应用于家用空调器气密性检测。
The system is used to test for Household Air-conditioning

技术指标 SPECIFICATIONS

- | | |
|--------------------------|--|
| ◆ 检漏节拍：大箱120 s/件，小箱30s/件 | Work cycle:120 s/pcs (large chamber), 30 s/pcs (small chamber) |
| ◆ 最高充气压力：高于5Mpa | Max. loading pressure:Above 5MPa |
| ◆ 氦气回收率：≥98% | Helium recovery ratio:≥98% |
| ◆ 真空箱内极限真空度（Pa）：优于10Pa | Ultimate vacuum in chamber(Pa):above 10Pa |
| ◆ 最小可检漏率：0.1g/y | Detection limit:0.1g/y |



被检件 / Tested Products

电力柱上开关检漏系统
Helium Leak Detection System For Column Switches

产品应用 APPLICATIONS

本系统适用于在线对电力柱上开关进行干式检漏，并对检漏合格产品进行SF6自动充注。
The system is used for testing column switches.

技术指标 SPECIFICATIONS

- | | |
|-------------------------|--|
| ◆ 双工位配置每箱检测一件 | Double Position |
| ◆ 工件内外压力差：≤0.03Mpa（可设定） | Pressure difference between outside and inside of workpiece:≤0.03Mpa(settable) |
| ◆ 年泄漏率：≤0.5% | Detection limit:≤0.5% leakage per year |
| ◆ 充SF6气体压力：0.035Mpa（表压） | SF6 loading pressure:0.035Mpa(gage pressure) |
| ◆ 充氮压力：0.03Mpa（绝压） | Helium loading pressure:0.03Mpa(absolute pressure) |
| ◆ 氦气回收率：≥98% | Helium recycle ratio:≥98% |
| ◆ 检漏节拍：≤7分钟/件 | Work cycle:≤7 Minutes/pcs |
| ◆ 自动化的装夹、特别适合流水线作业 | Clamping automaticly, suitable for assembly line work |
| ◆ 条码扫描、数据存储查询等功能 | Bar code scanning, data storage, check etc |

VACUUM LEAK DETECTION SYSTEM
真空检漏系统



环网柜移箱式检漏系统



电力开关柜氦检漏设备



被检件 / Tested Products

气体绝缘柜、环网柜检漏系统
Helium Leak Detection System for Power Switch

产品应用 APPLICATIONS

适用于对气体绝缘开关设备及环网柜产品的整机检漏和SF6气体的充注。系统检漏和气体充注时，始终使内外压差保持在一定的范围之内，以防止工件的变形。

The system is used to perform helium mass spectrum leak detection to switch cabinets. The system is functional of keeping the difference of pressure inside & outside of chamber within a suitable range to avoid the deformation of the workpieces.

技术指标 SPECIFICATIONS

◆ 每箱可检工件数：大工件可检1件，小工件可同时检2件	Max number of workpieces per chamber:1 piece (large), 2 pieces (small)
◆ 工件内外压力差：≤0.03MPa（可设定）	Pressure difference between outside and inside of workpiece:≤0.03MPa(settable)
◆ 年泄漏率：≤0.5%	Detection limit:≤0.5% leakage per year
◆ 充SF6气体压力：0.035MPa（表压）	SF6 loading pressure:0.035MPa(gage pressure)
◆ 充氦压力：0.03MPa（绝压）	Helium loading pressure:0.03MPa(absolute pressure)
◆ 氦气回收率：≥98 %	Helium recovery ratio:≥98%
◆ 检漏节拍：≤1小时/件	Work cycle:≤1 hour/pcs



锂电池自动检漏装置
Lithium Battery Leak Auto-Detection Device



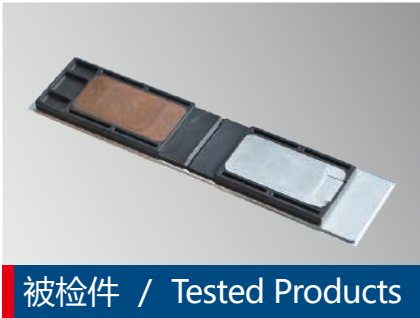
产品应用 APPLICATIONS

新能源锂电池
New energy lithium batteries

技术指标 SPECIFICATIONS

◆ 最小可检漏率：1x10 ⁻⁸ Pa·m ³ /s	Minimum detectable leak rate:1x10 ⁻⁸ Pa·m ³ /s
◆ 可检工件尺寸：可根据要求定制	Detectable workpiece size: customizable as required
◆ 气缸行程：70mm~130mm	Cylinder stroke:70mm~130mm
◆ 检漏节拍：15秒/组	Leak detection cycle: 15 sec/group

VACUUM LEAK DETECTION SYSTEM
真空检漏系统



锂电池外壳、陶瓷电极检漏系统
Ceramic Electrode and Battery Case Leak Detection System

产品应用 APPLICATIONS

用于陶瓷电极、锂电池外壳、盖板密封性能检测。
It is used for testing ceramic electrode, lithium battery shell and sealing plate.

技术指标 SPECIFICATIONS

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|--|--|
| ◆ 专用工装设计、可同时检测多个工件 | Special tooling design, which can detect multiple workpieces simultaneously. |
| ◆ 特殊氮罩设计保证喷氮均匀 | Special helium cover design ensures uniform spray of helium. |
| ◆ 专用清氮功能，减少环境对系统本底影响 | Special helium cleaning function to reduce environmental impact on the background of the system. |
| ◆ 检测节拍快：5秒/件 | Short detection cycle: 5 seconds/pcs |
| ◆ 检测精度高，最小可检漏 $<1\times10^{-8}\text{Pa}\cdot\text{m}^3/\text{s}$ | High detection accuracy $<1\times10^{-8}\text{Pa}\cdot\text{m}^3/\text{s}$ |



氟油检漏平台HF-4A
Fluorinated Oil Leak Detection Device HF-4A

产品应用 APPLICATIONS

传感器、半导体、光电等电子元器件
Electronic components such as sensors, semiconductors, and photoelectric components

技术指标 SPECIFICATIONS

- | | |
|---|---|
| ◆ 加压罐本底真空度优于50Pa | Base vacuum degree of the pressurizing tank: greater than 50 Pa |
| ◆ 真空测量：热偶计 | Vacuum measurement: using a thermocouple gauge |
| ◆ 充气压力： $\leq 1.0\text{ MPa}$ | Inflation pressure: $\leq 1.0\text{ MPa}$ |
| ◆ 加热温度： $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ | Heating temperature: $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ |
| ◆ 升温时间：从室温到 125°C ， ≤ 30 分钟 | Heating time: $\leq 30\text{ min}$ from room temperature to 125°C |
| ◆ 工作电压：220VAC 50Hz | Working voltage: 220 VAC, 50 Hz |
| ◆ 仪器功率1.5KW (加热功率:0.4KW) | Instrument power: 1.5 KW (heating power: 0.4 KW) |
| ◆ 照明灯：白光 | Illuminating lamp: white light |

VACUUM SOLUTIONS
真空解决方案



充氮充氮氟油检漏平台
Fluorinated Oil Leak Detection Device



被检件 / Tested Products

中科科仪深耕真空领域60余年，具有国内首屈一指的真空资源整合能力，持续进行真空理论、工程实践和产品应用创新，为您提供全方位的真空解决方案和专业便捷服务。

With 60 years exploration in vacuum industry, KYKY is experienced to provide optimized vacuum solutions and convenient and professional services based on the overall understanding of specific requirements, vacuum fundamental theories, engineering practices and products applications.

半导体工业 SEMICONDUCTOR INDUSTRY

- ◆ 更长的维护保养时间间隔 Longer interval for maintenance
- ◆ 更加节能环保的真空产品 Efficient and eco-friendly products
- ◆ 定制化的真空解决方案 Customized vacuum solutions

工业检漏 INDUSTRIAL LEAK DETECTION

- ◆ 高灵敏度的检漏设备 Highly sensitive leak detector
- ◆ 高频率检漏的可靠产品 Reliable products for highly frequent operation
- ◆ 定制化的检漏解决方案 Customized leak detecting solutions
- ◆ 及时全面的现场服务 Timely and all-round services on site

研发、大科学工程 R&D AND NATIONAL MAJOR SCIENTIFIC ENGINEERING

- ◆ 高可靠性的产品 Highly reliable products

产品应用 APPLICATIONS

氮氟油加压检漏装置是专门针对半导体器件、集成电路、电子产品等电子元器件进行细检和粗检的一套自动化检漏装置。它与氮质谱检漏仪和重氟油加热仪配合使用，可以进行电子元器件的整个细检和粗检过程。
The automated equipment is special for testing semiconductor element, integrated circuit, and electronic products in rough and fine mode.

技术指标 SPECIFICATIONS

- | | |
|--|---|
| ◆ 加压罐本底真空度优于50Pa
Vacuum:≤ 50Pa | ◆ 真空测量：热偶计
Vacuum Test:thermal couple meter |
| ◆ 充气压力：≤1.0MPa
Helium loading pressure:0.2 ~ 1.0Mpa, adjustable | ◆ 加热温度：125℃±5℃
Indicator liquid(FC43)125±5℃ |
| ◆ 升温时间：从室温到125℃ ≤30分钟
Temperature Up time: 25℃-125℃≤30Min | ◆ 工作电压：220VDC 50Hz
Operating Voltage:220VDC 50Hz |
| ◆ 仪器功率：1.5KW（加热功率：0.4KW）
Power:1.5KW(Heating power 0.4KW) | ◆ 照明灯：12VDC 10W
Lamp:12VDC 10W |
| ◆ 氦气罐尺寸：Φ157×246，单位：mm
Helium tank:Φ157×246mm | ◆ 氮气罐尺寸：Φ157×246，单位：mm
Nitrogen tank:for N2 Φ157×246mm |

VACUUM SOLUTIONS 真空解决方案

- | | |
|---------------|---|
| ◆ 耐放射性辐射的解决方案 | Radiation-resistant solutions |
| ◆ 特殊需求的深度合作 | Deeper cooperation for special requirements |
| ◆ 定制化的真空解决方案 | Customized vacuum solutions |
| ◆ 及时全面的现场服务 | Timely and all-round services on site |

分析仪器 ANALYSIS INSTRUMENTS

- | | |
|---------------|---------------------------------------|
| ◆ 模块化设计的多重选择性 | Multi options based on modular design |
| ◆ 使用维护的便利性 | Convenient operation and maintenance |
| ◆ 控制连接的定制化 | Interfaces customization |
| ◆ 转速调节的自主性 | Independent speed adjustment |

真空服务 SERVICES

- | | |
|--------------------|--|
| ◆ 北京及全国真空行业协会的交流平台 | Platform of vacuum associations in China |
| ◆ 真空理论和计算交流咨询 | Consultancy of Vacuum theory and calculation |
| ◆ 真空工程的经验分享 | Experience sharing of vacuum engineering |