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BROCHURE

# VCLD-Semiconductor

Wayeal

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WAYEAL皖仪

Stock Code: 688600

Professional / Intelligent / Reliable / Intimate

# One-stop Leak Detection Solutions



More trustable With forever

更可靠 共长远


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# About Wayeal

One-stop Sealing Detection Solutions Provider

Anhui Wanyi Science and Technology Co,. Ltd.(stock code:688600)is a high-tech enterprise focusing on sealing testing. The company independently develops and produces high-end helium mass spectrometer leak detector, air tightness leak detector,vacuum chamber helium detection system and helium charging, recovery and purification system, which are widely used in semiconductor, new energy, automobile, medical, refrigeration, electric power, traditional vacuum, electronic appliances, 3C, aerospace and other industries.

20+ years development, as a national major projects and high-end leak detection instruments and equipment development and application of the development project, considering WAYEAL insisted on innovation of science and technology, with worldclassproduct development platform and post-doctoral scientific research workstation innova-tion platform, many times to undertake strategic emerging industries. National Devel-opment and Reform Commission (NDRC), national science and technology support plan, important scientific research projects, such as national torch plan. WAYEAL with professional leak detection system solutions and quality, efficient, intimate full range of services to help the world tens of thousands of automated production lines, to create greater value for customers!

In the future, WAYEAL will deeply practice the enterprise spirit of “Quality at WAYEAL, Service at WAYEAL”, do the product seriously, do the service with heart, and provide customers with "more professional, more intelligent, more reliable, more intimate" sealing test equipment.




**20+** Years
Dedication and Accumulation

**500+**
R&D Engineers

**200+**
Invention Patents

**260+**
Service Engineers

**14** Standards
Participation in drafting national industry standards

**41000+**
Global Installtions

## The whole process of quality control to ensure product stability and reliability

R&D ——› Procurement ——› Production ——› After-sales

### Quality Management System

ISO9001 Quality Certification
CE Certification
ISO14000 Certification
ISO1001:2003 Certification

### R&D Quality Control

Dedicated testing department with advanced R&D and testing platforms such as reliability lab, safety lab, EMC lab and software testing lab. Strictly follow the integrated product development process of design planning, design input, design review, design verification, design validation and design change.

### Procurement Quality Control

Build an integrated supply chain platform to effectively drive quality improvement in the supply chain and better achieve standardized and digital supply management.

### Production Quality Control

Equipped with 22 professional production inspection and testing equipment, to ensure that each product from the raw materials into the warehouse to the production of the factory have gone through 12 inspection and testing procedures.

### Factory Quality Control

Equipped with high temperature aging room, high and low temperature alternating humidity and heat test, electromagnetic vibration test stand, salt spray alternating test machine and other experimental equipment. Through the performance test, reliability test, safety test, electromagnetic compatibility test, software test, to ensure the reliability and safety of the product.

### After-sales Quality Control

Set up a after-sales installation, maintenance,repair process handling procedures, product quality information feedback, analysis and resolution of the rapid response mechanism, timely and rapid promotion of product quality improvement.





## Pursuit of the Ultimate Quality




### 18,000m² Production Center

Including production workshop, sheet metal workshop, digital equipment machining center.

### Swiss GF 5-axis Machining Center

The machining accuracy is <0.005mm, which can effectively improve the machining quality of valves, pipe fittings and other parts that require high form and location tolerance.

### DMG/MZK Turning Center

The machining accuracy can reach 0.005mm, and the turning and milling of shaft parts can be completed at one time.

# Helium Mass Spetrometer Leak Detector

Entering the era of fast and accurate leak detection

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**Efficient and Excellent Leak Detection  Redefining Precision**

## Conventional Helium Mass Spectrometer Leak Detector

Rapid and accurate detection of helium or hydrogen by vacuum helium injection method, sniffer method, helium hood method, back pressure method and other detection methods. It is suitable for industrial leak detection in various high requirements and harsh environments.



SFJ-231

The 5th Generation

The 6th Generation



SFJ-16C/D



SFJ-16M



SFJ-16M+

## Modular Helium Mass Spectrometer Leak Detector

Modular structure design for easy system integration. It's widely used in various automated assembly lines.

## Multiple Options to Meet Different Application Scenarios.

**Helium Mass Spectrometer Leak Detector Parameter Table**

| Model Number | | Modular | | Standard | | |
|---|---|---|---|---|---|---|
| | | SFJ-16M | SFJ-16M+ | SFJ-16C | SFJ-16D | SFJ-231 |
| Performance Parameters | Minimum Detectable Leak rate (Pa. m3/s)/ Vacuum Mode | Vacuum Mode (ULTRA): $5.0*10^{-13}$ Helium Pumping Speed>5l/s Vacuum Mode(FINE): $1.0*10^{-12}$ Helium Pumping Speed>2.5l/s | $5.0*10^{-13}$ | | | |
| | Minimum Detectable Leak Rate ($Pa.m^3/s$) / Sniffer Mode | $5.0*10^{-9}$ | $3.0*10^{-9}$ | $2.5*10^{-9}$ | | $5.0*10^{-9}$ |
| | Maximum Detectable Leak Rate (Pa) | (ULTRA):40 (FINE):200 | 1800 | | | 1500 |
| | Respone Time (s) | <1 | | | | |
| | Startup Time (min) | ≤1.58 | | | | ≤2 |
| | Detectable Quality | 2,3,4($H_2$, He-3, He-4) | | | | |
| | HMI | 5inch Color LCD Touch Screen | | 7inch Color LCD Touch Screen | | |
| Basic Configurations | Ion Source | 2pcs, Iridium coated yttrium oxide, automatic switching | | | | |
| | Backing Pumps | Optional | | Rotary Vane Vacuum Pump | Scroll Vacuum Pump | Rotary Vane Vacuum Pumps |
| | I/O Input/ Output Interface | 8 Inputs, 8 Outputs | | | | |
| | Communication Interface | RS232/485, LAN | | | | RS232/485, USB*2 |
| | MES Interface | Standard | | | | |
| | Diamensions (W)*(D)*(H), mm | 400*330*301 | 400*335*310 | 755*467*1180 | 755*467*1180 | 645*678*965 |
| | Specications of Leak Detection Port | (ULTRA): DN25 KF (FINE): DN16 KF | DN25 KF | | | |
| | Power Supply | DC24V | | AC220V, 50Hz/60Hz | | |
| | Operating Temperature | 0~40°C | | | | |
| | Language | Chinese/English | | | | |
| | Leakage Rate Display | Figure, Bar Chart, Curve Chart | | | | |

## Optional



## Extremely Fast Response  Accurate Leak Detection



### 360°C Rotating LCD Touch Screen

Smart user interface;
Smooth and efficient menu management

### Highly Efficient and Focused

Flat and wide table top with built-in storage drawers for easy workpiece placement and connection storage.

### Trolley Design

The whole machine with compact size and large wheel diameter, which can easily pass-through narrow area.



### Various System Controls Available

Cost-effective



### Lightweight and Compact

Save 60% space and bring unlimited possibilities for your production line design.

### Satisfying Your Multiple Needs

Feature-rich and easy to operate
More reliable and smart



## Simplify the Complexity and Enhanced with Exclusive Algorithms

**Harmonic Decoupling Algorithm**

Ultra-fast Response
Short response time for start-up
More accurate sealing detection

**New Design**

Mass spectromet chamber,circuit board, external dimensions, high robustness, low failure rate, easy and efficient operation and maintenance.

**Stable Input and Efficient Output**

Equipped with RS232, RS485 and LAN communication interfaces, it is able to work stably under the worst working conditions after various extreme tests. Digital and analog outputs are available to meet the needs of remote operating system integration.

**Intelligent Filtering Algorithm**

**Signal Scan Calibration Algorithm**

**Multi-stage Signal Amplication Technology**

**High Performance Molecular Pumps**

**Clean Air Circuit System**

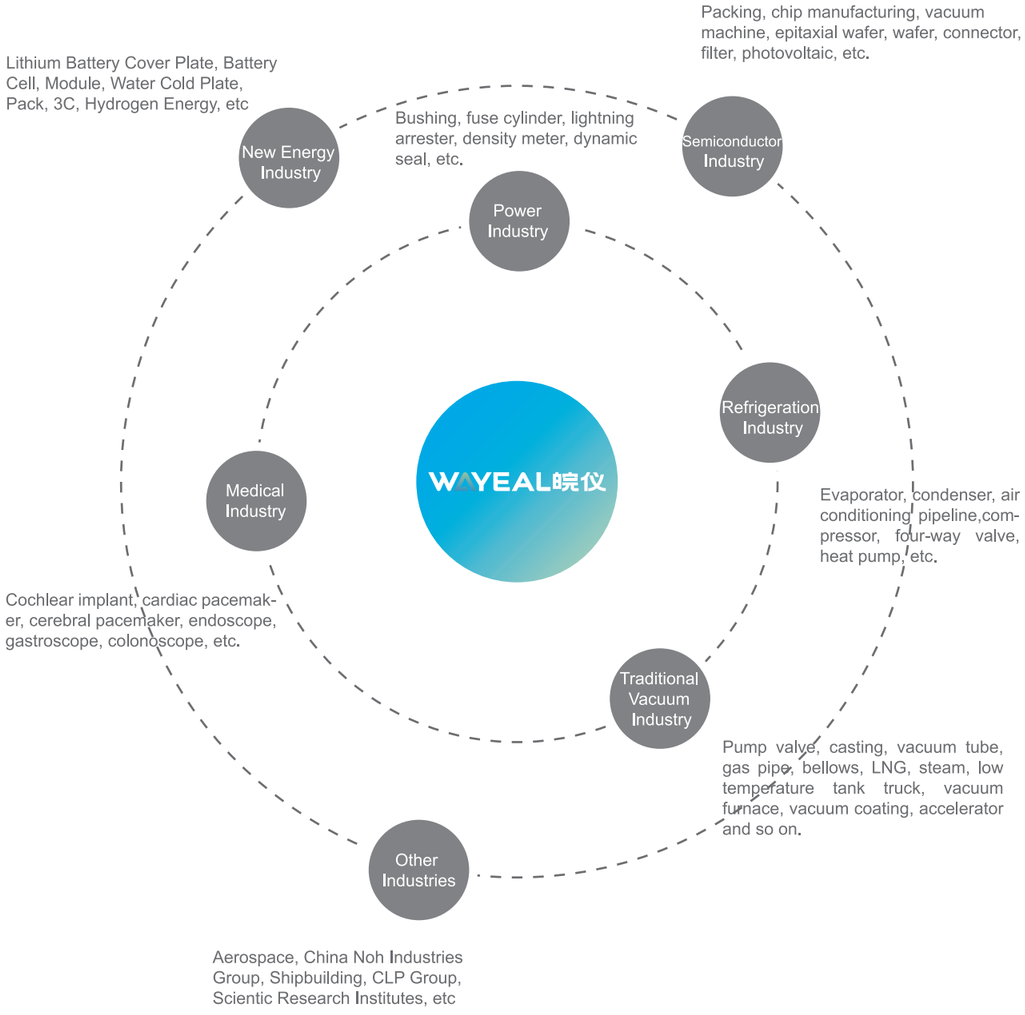
**High-speed CPU+IDC**

**Intelligent Operating System**

**Wireless Remote Control**

**Failure Indication and Alarm Function**

## Industrial Applications






# Pressure Decay Leak Detector

Infinite Detection  Great Potential

## HIGH PRECISION DIFFERENTIAL PRESSURE DECAY LEAK DETECTOR

The differential pressure decay leak detector uses the differential pressure sensor as the sensing element, and fills/evacuates the inside of the part to be tested to a specified pressure, so as to judge whether the part to be tested leaks or not and the leakage size according to the attenuation value of the internal pressure.



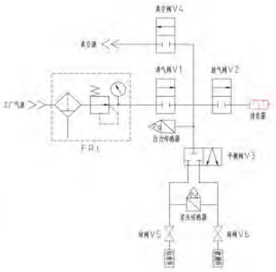
Standard



Standard-dual channel



Modular



Gas path principle of direct pressure decay leak detector instrument

| HIGH PRECISION DIFFERENTIAL PRESSURE DECAY LEAK DETECTOR | | |
|---|---|---|
| Model | | Pressure regulating range |
| Standard | CH050 | 1~20kPa，1~50kPa，5~100kPa (Mechanical voltage regulation) |
| | CH050D | 1~20kPa，1~50kPa，5~89kPa (Electronic voltage regulation) |
| | CH600 | 10 ~ 600kPa (Mechanical voltage regulation) |
| | CH600D | 10 ~ 600kPa（Electronic voltage regulation) |
| | ZF600 | -100 ~ -1kPa,10~600kPa (Customizable) |
| | ZF2400 | -100 ~ -1kPa,50 ~ 2400kPa,200 ~ 4000kPa（Customizable) |
| Standard-dual-station | ZF2-600 | 10 ~ 600kPa（Mechanical voltage regulation) |
| | ZF2-600D | 10 ~ 600kPa（Electronic voltage regulation) |
| Modular | CH600P | 10 ~ 600kPa |
| SENSOR PARAMETERS | | |
| Direct pressure workstation | Sensor error | ±0.1%F.S |
| | Display resolution | Can set 0-4 digits after decimal point. |
| Differential pressure sensor | Sensor range | ±2000Pa |
| | Sensor withstand voltage | 13.8MPa |
| | Sensor error | ±0.1%FS |
| | Display resolution | Can set 0-4 digits after decimal point. |
| Display unit | Test pressure | Pa、kPa、kg/cm2、psi、mbar、bar、Torr、$mmH_2O$、mmHg、MPa |
| | Leakage | Pa、Pa/s、kPa、kPa/s、kPa/min、mL/s、mL/min、L/min、Pa.$m^3$/s、mL/h、L/h、SCCM |
| GENERAL PARAMETERS | | |
| Parameter channel number | | 64 groups, can be switched by I/O or communication. |
| Test beat setting | | 0 ~ 3600 s |
| Power supply | | AC220V±10%,50Hz |
| Test pressure source | | Clean, dry, sufficient flow, not less than 600kPa and more than 100kPa higher than the test pressure. |
| Ambient temperature | | The service temperature is -5℃~40℃; the storage temperature is -20℃~70℃ |
| Humidity | | Below 80%RH, no condensation. |
| Overall dimensions (width * depth * height) | Standard | 321mm*440mm*206mm |
| | Modular | 191mm*249mm*268mm |
| Weight | Standard | 20kg |
| | Modular | 10kg |

## LARGE RANGE DIRECT PRESSURE DECAY LEAK DETECTOR

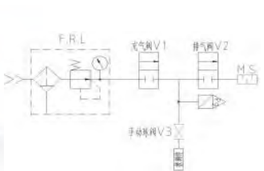
Direct-pressure airtightness leak detector uses direct-pressure sensor as sensing element, and fills/evacuates compressed air or nitrogen with specified pressure into the part to be tested, and judges whether there is leakage and the leakage size of the part to be tested according to the attenuation value of its internal pressure.



Standard



Standard-four channel



Gas path principle of direct pressure decay leak detector instrument

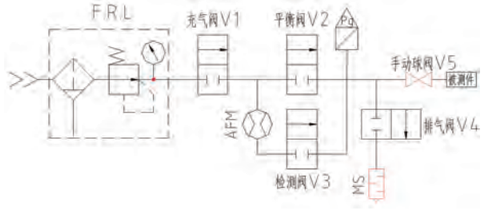
| LARGE RANGE DIRECT PRESSURE DECAY LEAK DETECTOR | | |
|---|---|---|
| Model | | Pressure regulating range |
| Standard | ZH2400 | 50kPa~2400kPa (Customizable) |
| Standard-four-station | ZH600-X | 10kPa~500kPa(Customizable) |
| SENSOR PARAMETERS | | |
| Direct pressure sensor | Sensor error | ±0.1%F.S |
| | Display resolution | Can set 0-4 digits after decimal point. |
| Display unit | Test pressure | Pa、kPa、kg/cm2、psi、mbar、bar、Torr、$mmH_2O$、mmHg、MPa |
| | Leakage | Pa、Pa/s、kPa、kPa/s、kPa/min、mL/s、mL/min、L/min、Pa.$m^3$/s、mL/h、L/h、SCCM |
| GENERAL PARAMETERS | | |
| Parameter channel number | | 64 groups, can be switched by I/O or communication. |
| Test beat setting | | 0 ~ 3600 s |
| Power supply | | AC220V±10%,50Hz |
| Test pressure source | | Clean, dry, sufficient flow, not less than 600kPa and more than 100kPa higher than the test pressure. |
| Ambient temperature | | The service temperature is -5℃~40℃; the storage temperature is -20℃~70℃ |
| Humidity | | Below 80%RH, no condensation. |
| Overall dimensions (width * depth * height) | Standard | 321mm*440mm*206mm |
| | Standard-four-station | 431mm*460mm*208mm |
| Weight | Standard | 15kg |
| | Standard-four-station | 20kg |

# WIDE RANGE FLOW RATE PRESSURE DECAY LEAK DETECTOR

The flow rate pressure decay leak detector is equipped with a special pneumatic valve group with low leakage and reliable operation and a leak detection sensor with high sensitivity and high pressure resistance, which has extremely high test resolution and sensitivity.



Standard




Gas path principle of direct pressure decay leak detector

| WIDE RANGE FLOW RATE PRESSURE DECAY LEAK DETECTOR | | |
|---|---|---|
| **Model** | | **Pressure regulating range** |
| LC101 | | 10kPa~600kPa |
| **SENSOR PARAMETERS** | | |
| Direct pressure sensor | Sensor withstand voltage | Sensor full scale 3 times pressure |
| | Sensor error | ±0.1%F.S |
| | Display resolution | Can set 0-4 digits after decimal point. |
| Flow sensor | Sensor range | 10ml/min ~ 50000mL/min |
| | Sensor error | ±3%F.S. |
| | Sensor withstand voltage | 0.98MPa |
| | Display resolution | Can set 0-4 digits after decimal point. |
| Display unit | Test pressure | Pa、kPa、kg/cm2、psi、mbar、bar、Torr、$mmH_2O$、mmHg、MPa |
| | Leakage | mL/s、mL/min、L/min、L/h、 $m^3/h$、SCCM、Pa/min、g/h |
| **GENERAL PARAMETERS** | | |
| Parameter channel number | | 64 groups, can be switched by I/O or communication. |
| Test beat setting | | 0 ~ 3600 s |
| Power supply | | AC220V±10%,50Hz |
| Test pressure source | | Clean, dry, sufficient flow, not less than 600kPa and more than 100kPa higher than the test pressure. |
| Ambient temperature | | The service temperature is -5℃~40℃; the storage temperature is -20℃~70℃ |
| Humidity | | Below 80%RH, no condensation. |
| Overall dimensions (width * depth * height) | | 321mm*440mm*206mm |
| Weight | | 15kg |

# OPTIONAL ACCESSORIES



Compensating tank



Calibration leak



Leak calibrator



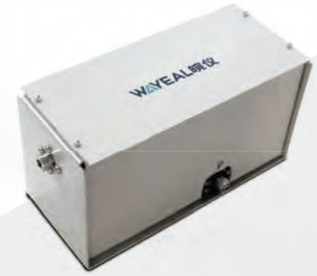
Control box



Bidum switch device



## Optional Accessories



Bidum Switch Device



Control Box



Calibration Leak

Compensation Tank



Leak Calibrator

## Comprehensive Structural Optimization




**Streamlined design Flexible conguration**

Unique minimalist design, simple and generous, flexible conguration

**Front Mounted Regulator and Lift Back Cover**

Convenient for pressure adjustment and daily maintenance

**Various Communication Interfaces**

It can eectively ensure that MES and other smooth application of industrial integration

**High Denition Full color Touch Screen**

Friendly communication interface

## A Full Range of Functional Innovation




**High-speed Transmission Fast Connection**

Various input and output and logic programming functions can be directly and precisely controlled for tooling, valves, cylinders and other peripherals to achieve complex action logic; eliminating the need for a dedicated PLC and effectively reducing the cost.

**Efficient Industrial Interconnection System**

Authorized back-up system to ensure continuous operation of the leak detector and production line under special circumstances

**Easy Data Management**

Data storage capacity of more than 1 million items. Efficient database indexing algorithms for fast querying of original data

**Easy Label Output Operation**

PC/PLC, printer and scan gun can be directly connected to the apps

## Powerful Configuration to Create Hard-core Performance




### Error Correction

Ensure the test accuracy and eliminate the external error

### Pushing the Limits

Differential pressure sensor accuracy +0.1%f.s, pressure resistance 13.8Mpa detection resolution up to 0.001, to meet different display requirements.

### Zero Calibration

Timely calibration to ensure long-term stability

### Multithreaded Compatible Algorithm

Improve scalability and maintainability and improve device utilization

### Automatic Protection

With Power-off memory , self-protection , fault alarm function



## Industrial Applications

### Automotive Industry

**Power system:** engine waterway/oil passage, cylinder head valve, spark plug, engine assembly, rear oil seal, oil sump, heat flow pipe, oil lter, air lter, oil pump housing/assembly, water pump housing/assembly, turbocharger, etc.
**Fuel system:** fuel system assembly, engine detachment system, single tank, oil pump, fuel distributor, fuel distributor, fuel lter, high-pressure fuel line, carbon tank, etc.
**Brake system:** brake master pump / sub-pump, brake caliper, wheel cylinder, etc.
**Steering system:** steering gear assembly, etc.
**Transmission system:** Transmission system: transmission assembly/shell, axle assembly/shell, etc.
**Exhaust system:** intake/exhaust manifold, EGR, three-way catalytic conveer, muer assembly, etc.
**Cooling system:** oil cooler, radiator, intercooler, oil cooler, thermostat, etc.
**Electrical system:** battery, lights, air conditioning parts, waterproof electric plug, solenoid valve, window electric control box, electric injection system, etc

### New Energy Industry

Charging gun, PACK battery pack, motor, water-cooling plate, controller, wiring harness, connector, bipolar plate, electric stack, hydrogen channel, oxygen channel, water channel, etc.

### Medical Industry

Multi-lumen catheter, infusion connector, positive pressure connector, balloon catheter, blood pressure monitor, puncture device, infusion connection tube, respirato airbag, urine bag, ultrasound handle, ventilator, plasma peusion device, catheter sheath, ampoule, celine bottle, medicine solution bag/infusion bag, PTP package, air conditioning package, pre-lled syringe, blister package, eye drop container, culture dish, etc.

### Food Industry

Sealing bags, glass/plastic bottles, easy-to-open cans, etc.

### Consumer Electronics Industry

Smart phones, headphones, watches, smart bracelets, pagers, electric razors, electric toothbrushes...

### Gas Sanitary Industry

Gas valve, propoional valve, membrane gas meter, pipeline, water heater, wall oven, heater, oven, stove, faucet, faucet spool, water pipe, etc.

### Other Industries

Underwater cameras, sueillance cameras, submersible pumps, re extinguishing tanks, etc

# Vacuum Chamber Leak Detection System

Customized for Each Industry



## Lithium Battery Industry

It is suitable for battery leakage detection such as batteries, covers, modules, water cooling plates, PACK packages, and super capacitors



Square Shell Battery Automatic Leak Detection Production Line

Square Shell Battery Automatic Leak Detection Production Line



**PACKS Automatic Leak Detection Production Line**



Button Battery Automatic Leak Detection Production Line



Cylindrical Battery Automatic Leak Detection Production Line

## Hydrogen Energy Industry

It is suitable for temperature leakage detection and complete sets of equipment such as hydrogen production pipelines, low temperature storage tanks, hydrogen cylinders, liquid hydrogen collision tanks, valve parts, membrane electrodes, bipolar plates, gas sugar ring pumps, etc.



Hydrogen Energy Helium Leak Detection System



Laser Marking Machine



Hydrogen Energy Airtightness Leak Detection System



Bipolar Plate Dispensing Machine



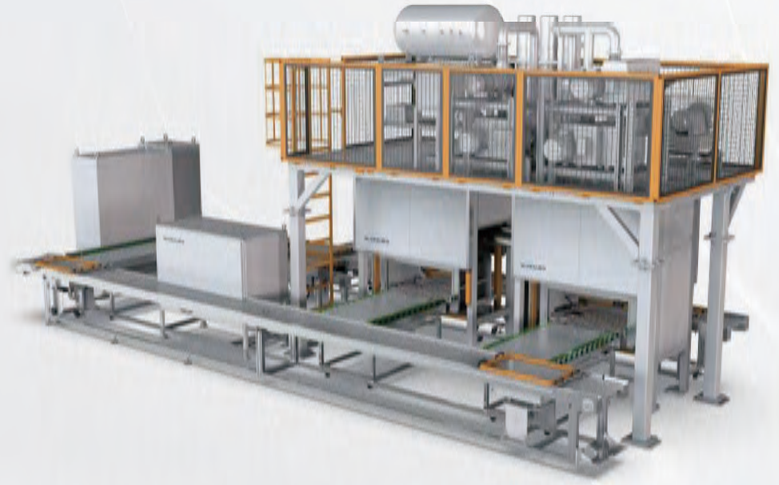
Bipolar Plate Adhesive Strip Laminating Machine



Bipolar Plate Resistance Tester

## Automobile Industry

It is suitable for the detection of automobile air conditioner condenser/warm air core, compressor, A/C piping, expansion valve, wheel hub, oil cooler, fuel tank, motor, electric control, engine transmission, water tank, water cooling plate, etc.



Automatic Helium Detection Equipment for Automotive Parts




Manual Helium Detection Equipment for Automotive Parts



Manual Helium Detection Equipment for Automotive Parts



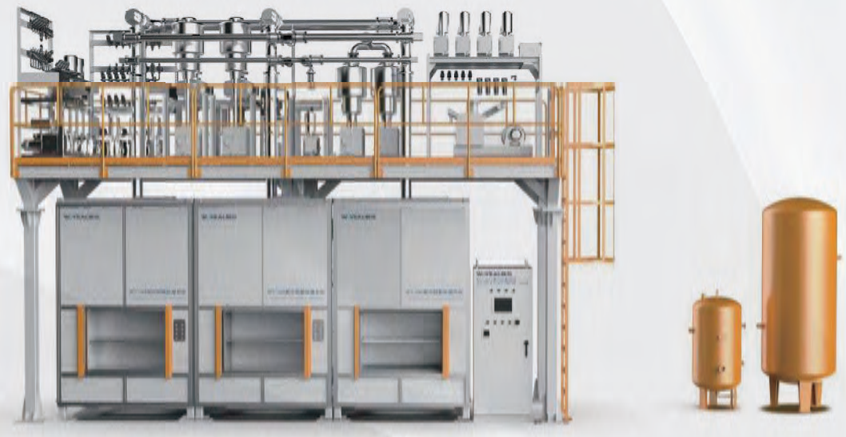
Manual Gas Detection Equipment for Automotive Parts

## Home Appliance Refrigeration Industry

It is suitable for the leak detection of solar water heater, home air conditioner condenser/evaporator, compressor, liquid storage tank, heat exchanger, expansion valve, shut-off valve, four-way valve, water heater, refrigerator condenser/evaporator, electric oil heater and etc.



Manual Helium Detecion Equipment for Home Appliance Refrigeration Parts



Automatic Helium Detection Equipment for Home Appliance Refrigeration Parts

## Power Industry

Suitable for SF6 inatable cabinets, basin terminals, GIS/GIL, pole-mounted switch, power castings, fuse caridges, bushings and other leakage detection




Single Chamber Helium Detection Equipment for Power Industry




Double Chamber Helium Detection Equipment for Power Industry

## Helium Recovery and Purication Systems

Helium from the leak detection process can be recovered, stored, puried and then recycled to reduce costs and increase efficiency.




Helium Filling and Recovery Systems




Helium Purication Systems

## Personalized Customization

### Data Statistics

Real-time Production and Fault Statistic

### Automatic Helium Cleaning

Quickly and effectively eliminates residual helium from the chamber and piping.Reliable leak detection accuracy and repeatability

### Password Protection

Preventing parameter changes due to misoperation.
Set product parameters on demand

### Chamber Calibration

Convenient for daily equipment calibration work. Ensure the accuracy of equipment detection

### Ethernet Communication

Can interact with the buyer's MES system. Expandable functions of scaning, printing and stamping.

### Automatic Delivery

Meet the manipulators synchronized loading and unloading. Reduce manual operation and the rate of false inspection.

| | |
|---|---|
| Number of Vacuum Chambers | 1~6 |
| Number of Detected Work-pieces per Chamber | 1~6 |
| Vacuum Chamber Volumn | 0.1-10000L Customized according to customer products |
| Vacuum chamber evacuation pressure | ≤30pa |
| Detection Pressure | ≤35Mpa |
| Detection Leak Rate | 1x10-4 ~ 1x10-9 Pa·m3/s |
| Recycling Efficiency | ≥98% |
| Cycle Time | According to customer requirements |

## Application


















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## Customer Orientation

# 5 Service Commitments

**Custom-made**

Provide a complete set of cus tomized solutions to maximize the actual needs of customer

**Lifetime Service**

Original factory warranty, life time maintenance

**Quick Response**

Round-the-clock service, 15-minute phone response, 24 Hours on site (48 hours in remote areas)

**Panorama Training**

From installation training to actual operation, from working principle to maintenance, from oine to online, build a system atic panoramic training platform

**Regular Return Visit**

Regular phone calls or home visits to ensure the normal operation of the equipment



## Wayeal Helium Leak Detection

More Professional More Intelligent More Reliable More User-friendly

### Cooperated Brands