

11 Leak Detection

Helium Leak Detectors

What is Helium LEAK DETECTION?

Helium leak detection is a very sensitive method that can identify extremely small leaks. For example, our equipment can detect a leak so small that it would emit just two cubic centimeters of helium (or the sum volume amount of three five-cent coin nickels) in 320 years. While very few applications require this level of precision, this example serves to highlight the accuracy possible with this process. Helium leak detectors come in manual and automated models, each type has its benefits. They are sold as standalone table top models or can be sold as mobile units on carts with external backing pumps.

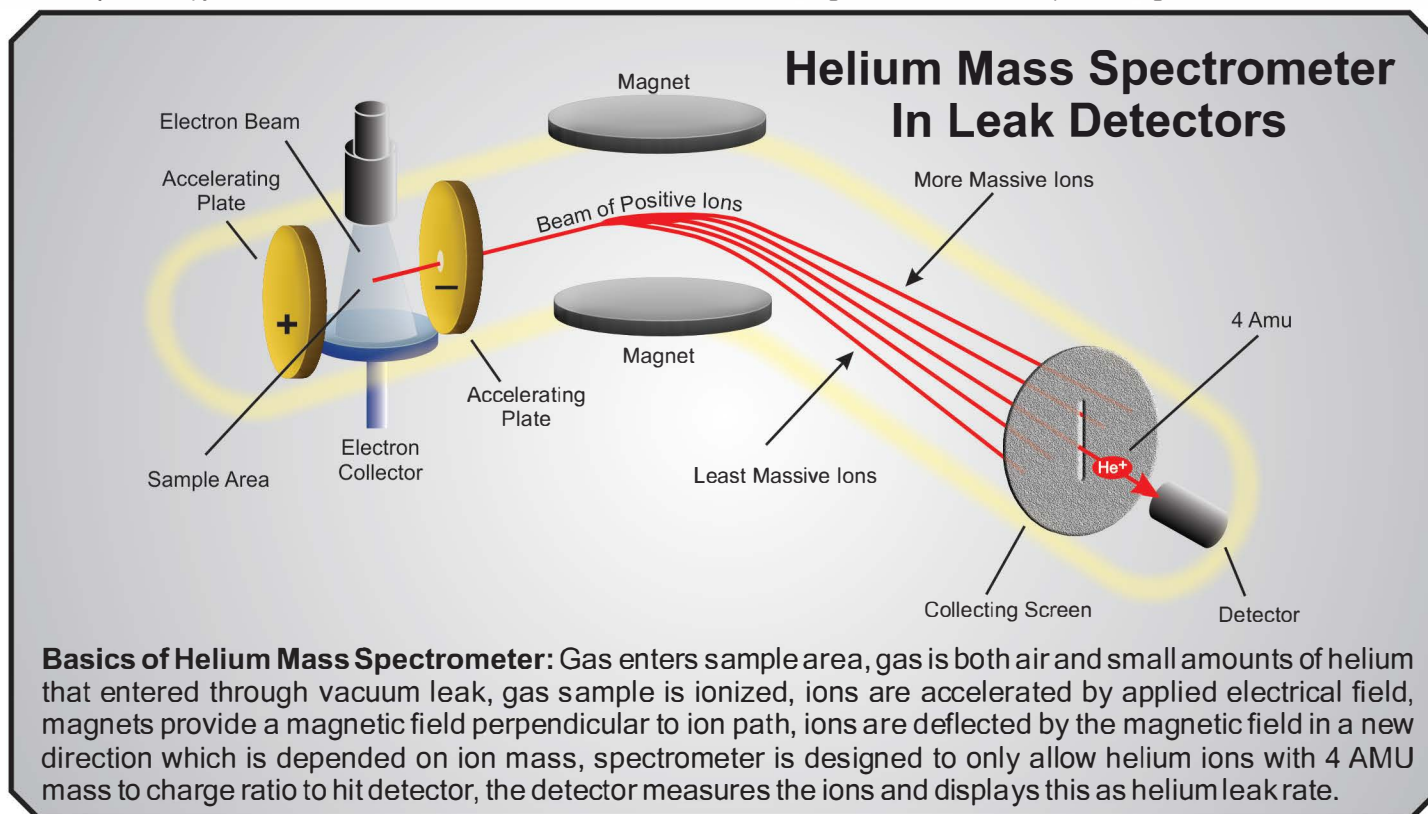
The heart of the helium leak detector is a built-in helium mass spectrometer which identifies the amount and helium present inside the internal vacuum region of the helium leak detector. The mass spectrometer works by ionizing a gas sample to generate charged atoms and these ions are then separated according to their mass-to-charge ratio, typically by

accelerating them and subjecting them to an applied magnetic field. Helium ions of the same 4 AMU mass-to-charge ratio will undergo the same amount of deflection. The helium ions are detected by a mechanism capable of detecting charged particles, such as an electron multiplier. The measured helium ion intensity is displayed as helium leak rate, in units of standard cc per second.

Helium is used to detect leaks in vacuum system because it is non-toxic, inert, non-condensable, non-flammable, and not normally present in the atmosphere at more than trace amounts (5 ppm). Due to its small atomic size, helium passes easily through small leaks, is also relatively inexpensive, and is available in various size cylinders. The only molecule smaller than Helium (He) is Hydrogen (H₂) which is not inert (hydrogen is flammable and explosive when mixed with atmospheric oxygen).

Helium Leak Detectors Include:

- A spectrometer to detect the mass of helium
- A vacuum system to evacuate the spectrometer consisting of primary pump (turbo) & roughing pump (oil or dry)
- Valves for stages of evacuation, testing & venting
- Amplifier and readout instrumentation
- Power supplies and controls
- Plumbing that attaches the part being tested to detector



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2 Leak Detection Methods:

Spray Probe Test (Helium Leaks In)

For this technique, the leak detector is hooked directly to the system under test and the inside of the system is evacuated. Once an acceptable vacuum is achieved, **helium is sprayed discreetly on the outside of the system**, with particular attention being paid to any suspect locations. Any leaks in the system, including defective welds (caused by cracks, pin holes, incomplete welds, porosity, etc.), flawed or missing gaskets, leaks due to loose clamps, or any other defects will allow helium to pass in and be readily detected by the machine. The source of any leaks can then be accurately pinpointed and repaired.

The spray probe (also known as vacuum mode) process is used to achieve the highest level of sensitivity. The equipment being used dictates the maximum sensitivity achievable to 2×10^{-10} std cc/sec. This technique does require that the system being tested is relatively leak tight prior to testing, as an ample vacuum is required for testing. However, by using special throttling devices a gross test can typically be performed. The gross test should eliminate any major leaks, permitting the use of increased sensitivity.

Sniffer Probe Test (Helium Leaks Out)

For this technique, **helium is pressurized throughout the inside of the system being tested**. Due to the innate properties of helium it readily migrates throughout the system and in its attempt to escape out, penetrates any imperfections, including: defective welds (caused by cracks, pin holes, incomplete welds, porosity, etc.), flawed or missing gaskets, leaks due to loose clamps, or any other defects. The system's exterior is then scanned (sniffed) by using a probe attached to the leak tester. Any leaks will result in an increased level of helium nearest the source and be readily detected by the unit. Leak sources can then be pinpointed, providing the opportunity for immediate repair and retest.

The sniffer process is very flexible and can be adapted to meet the needs of any system. The sniffer probe technique is not as sensitive as the spray probe process, however, due to the amount of helium present in the air (approx. 5 ppm). The maximum sensitivity achievable under this procedure is approximately 1×10^{-6} std cc/sec. Nevertheless, this process is vastly superior to other traditional leak testing methods, such as: bubble testing, acoustic emission, or liquid penetrant.



Spray Probe



Sniffer Probe

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AGILENT Varian

959 MacroTorr Helium Leak Detectors



Stand Alone P104968
(roughing pump not included)



P105357

P104972

959 mobile models with carts

IDEAL P/N	959 UNIT	Price*
P104968	Stand Alone (no roughing pump)	\$18,318.00
P104971	With cart mounted Adixen 2021 rotary vane roughing pump	\$22,995.00
P104972	With cart mounted Agilent DS302 rotary vane roughing pump	\$20,739.00
P105357	With cart mounted Agilent 600 Scroll roughing pump	\$26,920.00
P104969	With cart mounted Agilent DS302, with extra V-81 turbo & FRG-700 gauge	\$36,995.00
P104266	Calibrated helium leak test with manual on/off valve KF25	\$645.00
P105838	REBUILT with cart mounted Agilent DS302 rotary vane roughing pump	\$13,995.00

Features Include:

- Manual set up and calibration
- Sensitivity Range 10^{-4} thru 10^{-8} atm cc/sec
- Fast pump down time
- Roughing rotary vane or scroll pump models
- Simple, rugged, mobile design
- High test port pressure tolerance reduces time required to reach test mode

The 959 MacroTorr helium leak detector fulfills the need for a rugged and dependable leak detector in the most demanding industrial applications. **These are manual models that require calibration with external calibrated leak.** Never the less, they are the most cost effective leak detectors available. Available in stand-alone or wheeled cart configurations. We have designed these units with large externally-mounted primary pumps that deliver high roughing speeds for fast pump down times. The stand alone model does not come with a roughing pump. The wheel cart-mounted versions are available with roughing rotary vane or scroll pumps. Helium bottles, regulators and spray probes available on our website.

Agilent 959 Leak Detector SPECIFICATIONS

Sensitivity Range	10^{-4} thru 10^{-8} atm cc/sec
Minimum detectable leak at 1000 ppm	2×10^{-9} thru 10^{-8} atm cc/sec helium
Max. test port pressure	1 Torr
High vacuum pump	V81 MacroTorr turbo/drag pump
Primary roughing pump	
Rotary Vane	Agilent DS302 or Adixen 2021SD
Dry Scroll	Agilent TriScroll 600
Inlet flange	KF25
Calibration routine	Manual
Background suppression	Manual
Leak indication	50 segment bar graph w/exponent display
Leak units displayed	Atmosphere cc/sec.
Ranging	Manual
Analog leak rate	Phone jack
Audio alarm	Threshold, volume cont., output for speakers
Electronic response time	2 seconds
Weight (base unit) / Power requirements	50 lbs. / 115 or 230VAC 50/60 hz (15/20 amps)

Helium Leak Detectors

AGILENT Varian Automated Turn Key (Push Button) Helium Leak Detectors

VS Series Helium Leak Detectors



Call for DISCOUNT

IDEAL P/N	VS LEAK DETECTOR UNITS	Price*
P104372	VSPR021 Portable (DS42 Rotary Vane Pump enclosed in case, 120VAC)	\$22,630.00
P104373	VSPD031 Portable (IDP3 Dry Scroll Pump enclosed in case, 120VAC)	\$24,380.00
P104367	VSBR151 Bench Mount with DS302 Rotary Vane Pump on the side, 120VAC	\$24,075.00
P104368	VSBD301 Bench Mount with Triscroll TS620 Dry Pump on the side, 120VAC	\$30,600.00
P104366	VSMR151 Mobile Cart with DS302 Rotary Vane Pump, 120VAC	\$25,440.00
P103289	VSMD301 Mobile Cart with Triscroll TS620 Dry Pump, 120VAC	\$32,571.00
P104105	VSMD302 Mobile Cart with Triscroll TS620 Dry Pump, 220VAC	\$31,420.00
P104928	VSBR151 Bench Mount w/4 wheel I-Cart, helium bottle & Spray Probe, 120VAC	\$25,995.00
P104106	VSF LDWB Wireless Remote Base Unit for an optional remote control	\$921.98
P105748	Hand held remote control VS helium (PN G8600-6002)	1,347.80
P104670	Agilent Leak Detector Test Data (CD) Software for VS Leak Detectors	\$607.81

Features Include:

- Sensitivity Range to 5×10^{-12} atm cc/sec
- Two button operation w/advanced intelligence
- Full auto startup and auto calibration
- Intuitive menu structure, easy to navigate
- Programmable test sequences
- Very clear color touch screen
- High test pressures detecting large leaks
- High helium pump speeds for fast response
- Compact lightweight designs
- Multiple configurations
- Optional wireless hand held remote control

The VS Series Leak Detectors combine the simplicity of an automatic system with a two-button operation and advanced expert system intelligence. The state-of-the-art spectrometer and vacuum system provide powerful capability, enabling a broad range of test methods for diverse applications to include internal calibration and touch screens. A wide range of options allows for broad configuration flexibility and robust design innovations allow the VS Series Leak Detectors to conform to the most rigorous industrial standards operating dependably in the most challenging environments.

VS Series Leak Detectors SPECIFICATIONS

Model Number	PR02/PD03	MR15 & MD30
Configuration Options	Portable (pump enclosed in case)	Bench Mount & Mobile Cart
Primary Pump Type	DS-42 - 2 m ³ /hr (34 l/m) 1.5CFM	DS-302 - 14 m ³ /hr (232 l/m) 8.5 CFM
	Dry Scroll	TS-620 - 30 m ³ /hr (500 l/m) 17 CFM
Minimum Detectable Leak at 1000 ppm ambient He	5×10^{-12} atm cc/sec : 5×10^{-12} mbar l/s : 5×10^{-13} Pa m ³ /sec helium	
Maximum Test Port Pressure	13 mbar, 10 Torr, 1330 Pa	
Helium Pumping Speed @ Test Port (Fine Test)	1.8 l/s	
Calibration Routine	Automated or manual (internal or external)	
Background Suppression	Push button initiated auto zero, and auto zero < zero function	
User Interface	High clarity, color display, TFT touch screen	
Selectable Languages	English, French, German, Japanese, Korean, Mandarin, Spanish	
Automated Cycling	Programmable rough time, test time, reject set points	
Response Time	< 0.5 seconds	
Set Points	Standard, 5 set points, N/O or N/C; 3 leak rate, 1 pressure, 1 audio	
Communications Interface	RS-232 isolated interface @9600 baud (DB-9S)	
Discrete I/O	Optically isolated, 5-24 VDC outputs & inputs (DB-25S)	
Wireless Remote Control (optional)	2.4 GHz ISM band, 100m (328 ft) range, 4 AA batteries or 5 VDC supply	

* Catalog Pricing
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Adixen by PFEIFFER VACUUM

For maintenance applications as well as small production environments. The ASM 340 offers vacuum (spray probe) or sniffing mode leak detection. These dependable leak detectors can be used to find very precise leaks in your vacuum systems. The ASM 340 is characterized by its high sensitivity, ease of operation, ultra fast response time and short recovery time. The ASM 340 can be adapted to specific applications with the aid of our extensive line of accessories for this multipurpose unit.

Features Include:

- The fastest time to test in its class
- 2.5 l/s helium pumping speed
- Ability to detect leaks from 5×10^{-12} mBar
- Small size and highly maneuverable (cart options)
- Detachable operator interface with color touchscreen
- Integrated SD card for data processing
- Calibration manual or automatic
- Table top or mobile cart options
- Multiple sniffer or vacuum probe options
- Optional wireless or wired remote controls

ASM340 HELIUM LEAK DETECTOR

Table Top Model
with internal
roughing pump

Mobile Wet Cart
with internal
roughing pump



ASM 340 SPECIFICATIONS

Flange (in)	KF 25
Test methods	Vacuum Spray or Sniffing
Detectable gases	^4He , ^3He , H_2
Minimum detectable helium leak rate (sniffing)	1×10^{-9} mbar l/s
Minimum detectable helium leak rate (spray)	1×10^{-12} mbar l/s
Pumping speed for He	2.5 l/s
Noise level	54 db (A)
Universal voltage*	90-240 VAC 50/60hz
Start-up time without calibration	3 min.
Backing Pumps	Dry or Wet
Weight kg. (lbs.) (stand alone)	39 (71)
I/O interfaces	
RS-232 - 1 digital input (Start test); 2 digital outputs (Test mode ok, Helium signal above reject set point); 3 analog outputs (configurable: Helium signal log, mantissa, exponent, inlet pressure)	

IDEAL P/N	ASM 340 Helium Leak Detector & Accessories	Price*
P105947	ASM 340 leak detector with wet cart and internal rotary vane backing pump (110-130VAC)	\$22,450.00
P105942	ASM 340 table top no cart with internal rotary vane backing pump (110-130VAC)	\$24,245.00
P105940	ASM 340 table top no cart with internal diaphragm backing pump (90-240VAC)	\$24,795.00
P105941	ASM 340 leak detector with wet cart and internal diaphragm backing pump (90-240VAC)	\$29,989.56
P105946	Pfeiffer Adixen Standard Helium Sniffer Probe for (ASM310, 340, 380)	\$547.00
P105944	Pfeiffer Adixen Standard Helium Spray Gun for (ASM310, 340, 380)	\$598.85
P105948	Pfeiffer Adixen RCS500 WL Remote Control for (ASM340, 380)	\$2,995.00
P105943	Pfeiffer Adixen Wired Remote Control for (ASM310, 340, 380)	\$1,495.00
P105945	Pfeiffer Adixen Wired Remote Control Replacement Cable (10 m)	\$395.50

* Catalog Pricing
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Helium Leak Detectors

Adixen by PFEIFFER VACUUM

The ASM 380 high-performance leak detector is fitted with an ACP 40 dry backing pump combined with a powerful high vacuum pump. This makes it the ideal solution for maximum testing sensitivity in analytics, laboratories, the solar panel and semiconductor industry. With the ASM 380, you will achieve extremely short pump down times even where large volumes are involved. The slim design and compact size set up on a cart with large wheels and a low center of gravity make this leak detector mobile and safe to handle.

The ASM 380 with its low noise level of only 53 dB(A) is unusually quiet for a leak detector of its class. The color display panel with full 360° viewing can be read from any position. This display is also detachable and can be positioned where the user can see it using four strong magnetic clips. An integrated SD memory card makes it easy to save test data and settings parameters. The ASM 380 has an integrated lockable toolbox for tools, spare parts and accessories. Thanks to its convenient bottle-holder, it is even possible to attach and carry a tracer helium gas bottle. Compatible with the wireless remote control RC 500 WL. This enables the leak detector to be operated even from a distance of up to 100 meters. The ASM 380 is the perfect solution for high sensitivity helium leak testing in very large systems and installations. Other models available with options and accessories. Call for Quote 505-872-0037.



Mobile Unit optimized for rapid pump down and short response times

Totally Dry PUMPS

**Primary Pump: Turbomolecular
Roughing Pump: ACP40 Dry**

Features Include:

- Min. detectable leak 5x10⁻¹² mBar
- 7 l/s helium pumping speed
- 150 l/s hybrid turbomolecular drag pump
- 22 CFM ACP 40 Dry Roughing Backing Pump
- Fast time to test: unrivaled performances
- Narrow design and highly maneuverable cart system
- Integrated SD card for data processing
- Customizable operator color interface w/360° viewing
- Calibration manual or automatic
- Optional Wireless remote controls

ASM 380 SPECIFICATIONS

Flange (in)	KF 40
Test methods	Vacuum (Spray) and Sniffing
Detectable gases	⁴ He ³ He, H ₂
Minimum detectable helium leak rate (sniffing)	1x10 ⁻⁸ mbar l/s
Minimum detectable helium leak rate (spray)	1x10 ⁻¹³ mbar l/s
Pumping speed for He	7 l/s
Noise level	53 dB (A)
Voltage	90-240 VAC 50/60hz
Start-up time without calibration	4.5 min.
Start-up time with calibration	5.5 min.
Backing capacity	35 m ³ /hr
Weight kg. (lbs.)	110 (243)
Interface	RS-232 - 1 digital input (start cycle); 2 digital outputs
I/O interfaces	(test mode OK, helium signal above reject setpoint); 3 analog outputs (configurable: helium signal log, mantissa, exponent, inlet pressure)

IDEAL P/N	ASM 380 & Accessories	Price*
P105949	ASM 380 Leak Detector Cart System/ACP 40 roughing pump (90-240 VAC)	\$37,042.00
P105950	Helium Bottle holder for ASM 380	\$611.55
P105948	Pfeiffer Adixen RC500 WL Remote Control for (ASM340, 380)	\$2,995.00
P105943	Pfeiffer Adixen Wired Remote Control for (ASM310, 340, 380)	\$1,495.00
P105945	Pfeiffer Adixen Wired Remote Control Replacement Cable (10 m)	\$395.50
P105946	Pfeiffer Adixen Standard Helium Sniffer Probe for (ASM310, 340, 380)	\$547.00
P105944	Pfeiffer Adixen Standard Helium Spray Gun for (ASM310, 340, 380)	\$598.85

* Catalog Pricing
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11 Leak Detection

Helium Leak Detectors

Oerlikon Leybold PHOENIX L300i Helium Leak Detectors

The New Oerlikon Leybold Phoenix L300i series helium leak detector comes with or without a built in roughing pump and operates on 1-phase 115 VAC. The Oerlikon Leybold Phoenix Series L300i helium leak detectors are their most sensible design yet and offer amazing new features and control options for your facility, lab or classroom. The minimum detectable leak rate available for this unit in vacuum mode is $<5 \times 10^{-12}$ mbar l/s and in sniffer mode $<1 \times 10^{-7}$ mbar l/s. The inlet flange on the Phoenix L300i is DN25KF and comes standard with a TL7 internal calibrated leak and certificate of calibration.

Portable mobile cart and benchtop models are available. For the ultimate control and operation of the machine an iPad is recommended and offered as an optional accessory. **Please note:** A roughing pump MUST be integrated into your system in order for the L300i helium leak detector to work properly.

With a clearly structured display and comfortable functions like easy start and stop or set-up of individual test profiles.

L300i Helium Leak Features:

- Quick start up time less than (<2 min.)
- Extremely fast response
- Auto calibration
- High sensitivity
- Detectable Masses of 2, 3 and 4
- Optional mobility due to wireless remote
- Service friendly (many options)

With OPTIONAL iPad controller

Benchtop



Mobile Cart



L300i SPECIFICATIONS

DATA	L300i w/rotary vane roughing	L300i DRY w/dry roughing
Max. inlet pressure	15 mbar	15 mbar
Min. detectable helium leak rate		
- in vacuum mode	$\leq 5 \times 10^{-12}$ mbar l/s	$\leq 5 \times 10^{-11}$ mbar l/s
- in sniffer mode	$\leq 1 \times 10^{-7}$ mbar l/s	$\leq 1 \times 10^{-7}$ mbar l/s
Min. detectable hydrogen leak rate		
- in vacuum mode	$\leq 1 \times 10^{-8}$ mbar l/s	$\leq 1 \times 10^{-8}$ mbar l/s
- in sniffer mode	$\leq 1 \times 10^{-7}$ mbar l/s	$\leq 1 \times 10^{-7}$ mbar l/s
Max. helium leak rate displayed	0.1 mbar l/s	0.1 mbar l/s
Measurement range	12 decades	11 decades
Time constant of leak rate	≤ 1 s	≤ 1 s
Pumping speed (helium) at inlet		
- GROSS mode	0.4 l/s	0.02 l/s
- FINE mode	≥ 2.5 l/s	≥ 0.4 l/s
Detectable masses	2, 3 and 4	2, 3 and 4
Mass spectrometer	180° magnetic sector field	
Ion source	2 filament Iridium/Yttria-oxide	
Input port	DN KF25	DN KF25
Time until ready for operation	≤ 2 min.	≤ 2 min.

IDEAL P/N	Phoenix L300i Leak Detector	Price*
P105614	Benchtop - No internal roughing pump.* No cart.	\$23,700.00
P105612	Benchtop w/wet internal D.25E Rotary Vane pump. No cart.	\$24,900.00
P105613	Benchtop w/dry internal diaphragm pump. No cart.	\$26,600.00
P105615	Mobile Cart w/wet internal D.25E Rotary Vane pump.	\$26,784.00
P105616	Mobile Cart w/dry internal diaphragm pump.	\$28,512.00
P105617	Mobile Cart No internal roughing pump.*	\$25,596.00
P105618	Mobile Cart w/wet EXTERNAL D4B Rotary Vane pump.	\$28,026.00
P105619	Mobile Cart w/wet EXTERNAL D8B Rotary Vane pump.	\$28,431.00
P105620	Mobile Cart w/wet EXTERNAL D16B Rotary Vane pump.	\$29,140.00
P105621	Mobile Cart w/dry EXTERNAL SC5D scroll pump.	\$29,985.00
P105602	Mobile Cart w/dry EXTERNAL SC15D scroll pump.	\$30,800.00
P105622	Mobile Cart w/dry EXTERNAL SC30D scroll pump.	\$35,791.00
P105625	iPad controller w/software & industrial case	\$2,530.00
P105623	RC310C corded remote control for L300i leak detector	\$2,150.00
P105624	RC310WL wireless remote control for L300i leak detector	\$2,650.00

*A roughing pump MUST be integrated into your system in order for the L300i helium leak detector to work properly. You may already have a roughing pump, if not, they are available from us, contact us for size and type.

Helium Leak Detectors Accessories

Alcatel/Pfeiffer-Adixen

IDEAL VAC P/N	Leak Detector Parts & Accessories	Price*
P103581	Alcatel Mass spec tube COLLECTOR GASKET for leak detectors (ASM-10, 50, 51, 110, 150, 151)	\$29.95
P103583	Alcatel Mass spec tube FILAMENT GASKET for leak detectors (ASM-10, 50, 51, 110, 150, 151)	\$29.95
P103586	Alcatel Lead wire 0.8mm x 10m for helium leak detectors (ASM-10, 50, 51, 110, 150, 151)	\$124.99
P103582	Alcatel Mass spec tube Electron COLLECTOR for leak detectors (ASM-10, 50, 51, 110, 150, 151)	\$99.95
P103585	Alcatel Mass spec tube FILAMENT Assy. for leak detectors (ASM-10, 50, 51, 110, 150, 151)	\$335.00
P103584	Alcatel Oct Oil Diffusion Pump Oil, 66ml. size, for leak detectors (ASM-10, ASM-51)	\$99.75
P105946	Pfeiffer Adixen Standard Helium Sniffer Probe for (ASM310, 340, 380)	\$547.00
P105944	Pfeiffer Adixen Standard Helium Spray Gun for (ASM310, 340, 380)	\$598.85
P105948	Pfeiffer Adixen RC500 WL Remote Control for (ASM340, 380)	\$2,995.00
P105943	Pfeiffer Adixen Wired Remote Control for (ASM310, 340, 380)	\$1,495.00
P105945	Pfeiffer Adixen Wired Remote Control Replacement Cable (10 m)	\$395.50

Agilent-Varian

IDEAL VAC P/N	Leak Detector Parts & Accessories	Price*
P105342	Ion source replacement kit for Agilent/Varian VS series leak detectors	\$1,324.89
P105343	Filament replacement kit for Agilent/Varian VS series leak detectors, mfg. after 08/18/09	\$517.66
P105346	Filament replacement kit for Agilent/Varian VS series leak detectors, mfg. before 08/18/09	\$688.03
P105344	Ion source Thoriated Iridium Filaments for Agilent/Varian 979, 959, 938, 936 leak detectors	\$332.08
P105345	O-Ring Kit for cleaning spectrometer tube for Agilent/Varian 959 leak detector	\$157.30
P104627	Oil mist eliminator for Agilent/Varian VS Series leak detectors	\$384.41
P104970	Cleaning kit for spectrometer tube for Agilent/Varian 979, 959 & VS Series leak detectors	\$208.77

Oerlikon Leybold

IDEAL VAC P/N	Leak Detector Parts & Accessories	Price*
P105446	Display screen replacement for Oerlikon Leybold UL-500 helium leak detector	\$1,995.00
P105447	Ion source filament for Oerlikon Leybold UL100, UL200, UL500 helium leak detectors	\$1,295.00
P105623	RC310C Corded Remote Control for Oerlikon Leybold L300i helium leak detectors	\$2,150.00
P105624	RC310WL WIRELESS Remote Control for Oerlikon Leybold L300i helium leak detectors	\$2,650.00
P105625	iPad controller for Oerlikon Leybold L300i helium leak detectors	\$2,530.00
P105884	UL200 Leak Detector Rebuild Kit	\$999.95

Helium Leak Detector SUPPLIES

IDEAL VAC P/N	Leak Detector Supplies	Price*
P104104	Leak detector sniffer probe, for and connects to Agilent/Varian VS Series leak detectors, KF25	\$812.94
P104871	Spray probe gun for portable leak detectors, 1/4 inch NPT, flow regulated on helium bottle	\$325.95
P105182	Spray probe gun for portable leak detectors, 1/4 inch NPT, with adjustment regulator	\$425.00
P105088	Helium bottle for portable leak detectors & for leak testing supply, helium filled	\$399.00
P105089	Helium single stage brass regulator CGA-580 for use with portable helium bottles	\$299.00

Calibrated Helium Leak w/NIST Cert.

IDEAL VAC P/N	Calibrated Helium Leak	Price*
P104266	Calibrated Helium Leak, with ON/OFF Valve, NIST Certificate, 10 ⁻⁷ std cc/sec., flange size KF25	\$645.00
P103593	Calibrated Helium Leak, with ON/OFF Valve, NIST Certificate, 10 ⁻⁸ std cc/sec., flange size KF25	\$645.00
P104267	Calibrated Helium Leak, with ON/OFF Valve, NIST Certificate, 10 ⁻⁷ std cc/sec., flange size KF40	\$645.00
P103594	Calibrated Helium Leak, with ON/OFF Valve, NIST Certificate, 10 ⁻⁸ std cc/sec., flange size KF40	\$645.00
P104268	Calibrated Helium Leak, with ON/OFF Valve, NIST Certificate, 10 ⁻⁷ std cc/sec., flange size KF50	\$645.00
P103595	Calibrated Helium Leak, with ON/OFF Valve, NIST Certificate, 10 ⁻⁸ std cc/sec., flange size KF50	\$645.00

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P103585



P104627



P104268



P104970



P105089

P105088



P104871