

MS-40 Portable Leak Detectors

Fully automatic, easy to use,
and highly accurate, these
advanced design leak
detectors are ideal for a
broad range of applications
including
clean, oil-free testing.



Veeco

Leak Detection by Vacuum Instrument Corporation



The MS-40 and MS-40 DRY

High inlet pressure of 7.5 Torr provides fastest time-to-test

Built-in diagnostics for trouble-free maintenance

Simple one-button start-up



Fully automatic tuning and calibration

Rotary vane and dry pump models available

Feature

Simple one-button start up

Fully automatic operation, tuning and calibration

Three modes of operation in a single unit

Built-in test diagnostics display system error codes and isolate faults

Mini-sniffer probe port

Turbo pump with liquid lubricated ceramic bearing

Solenoid valves designed specifically for vacuum use

Dual magnetic sector mass spectrometer with resolving power of 14

De-scan switch

RS-232 port provides for external control

Benefit

System is ready in less than three minutes with zero operator intervention

Reduces operator training, making the MS-40 the easiest to use and most automated portable in the industry

Direct mode can be used for higher sensitivity; Reverse mode for faster cycle time; Combination mode for automatic switching between reverse and direct flow

Trouble-free maintenance and quick repair

Allows simple sniffing operation through a dedicated sniffer port connection

Provides the ability to perform preventative maintenance; Greatly increases turbo life; Less heat and better lubrication than grease lubricated bearing

Valves last up to 20 million cycles

Lower background levels during testing; Leak detector does not mistake adjacent peaks for helium

The industry's only de-scan switch allows for positive identification of helium at any time during testing

Ideal for integrating to automated control systems and personal computers

MS-40 / MS-40 DRY

MS-40: Four times faster, for greater productivity



The familiar family of leak detectors formerly made by Veeco Instruments Inc. is now manufactured, sold and serviced by Vacuum Instrument Corporation (VIC). VIC is committed to continuing the Veeco tradition of leak detection innovation and development, and to support the world's largest base of installed leak detectors.

Breakthrough technology combines high test port pressure, a large capacity internal mechanical pump, and VIC's unique mass spectrometer to make the MS-40 leak detectors at least four times faster than conventional portable units available today.* Its speed makes the MS-40 ideal for a wide range of industrial applications.

Three modes of operation are provided in a single, standard Model MS-40. These leak detectors provide a high-sensitivity Direct Flow Mode and Reverse Flow Mode for faster cycle time, as well as a Combination Mode that automatically switches from Reverse to Direct.

MS-40 provides cleaner leak detection than Reverse Flow-only detectors. Direct flow leak detection permits orders of magnitude cleaner leak detection than reverse flow-only leak detectors for applications which don't require 100% dry leak detection. The ability to do direct flow only leak detection with the conventional MS-40 can offer an economical alternative to purchasing a dry leak detector.

The internal roughing pump in this self-contained portable leak detector produces fast cycle times and, in most cases, eliminates the need for a separate auxiliary pump.

* Based on typical competitive inlet pressures of 0.375 Torr

The ultimate cleanroom portable: MS-40 DRY

VIC's MS-40 DRY is the industry's only self-contained portable dry leak detector. Featuring an oil-free diaphragm/molecular drag pump, the MS-40 DRY is ideal for use in cleanrooms and other environments where contamination is a concern.

This truly portable unit weighs less than 100 lbs in standard configuration. Light-weight makes for easy portability, and a self-contained diaphragm pump allows for easy movement.

The smallest footprint in the industry reduces your cleanroom cost. The high cost of cleanroom space means that smaller is better, when it comes to equipment. The MS-40 DRY is designed to allow you to maximize the use of cleanroom space by minimizing the footprint and workspace for leak detection.

Available in stainless steel, the MS-40 DRY can be ordered with a stainless steel enclosure. Free from paint chips and other contamination concerns, this special model conforms to more stringent cleanroom standards.

The MS-40 requires minimal maintenance with the simple, economical replacement of pump diaphragms. Designed for productivity and reliability, VIC's MS-40 DRY does not require annual replacement of the pump, bearing or scroll head that is typically required for scroll pump models.

The MS-40 DRY is shown here locating leaks in semiconductor process equipment. Vacuum Instrument Corporation, the world's largest company devoted to the manufacture, sale, and service of leak detection equipment, can provide a wide variety of leak detectors or complete leak detection solutions to meet your specifications



Accurate and Easy to Use

The highest accuracy in the industry—Provides a resolution of 14 at mass 4, which is the highest in the industry.

Easiest-to-use, most automated and fastest portable helium leak detector available today—No manual tuning or calibration of gauges or mass spectrometer required.

Reduce operator error—Fully automatic operation, tuning and calibration minimize the risk of operator error.

Internal NIST-traceable temperature compensated calibrator—All leak testing is NIST certifiable over the full system temperature range through an internal temperature compensated NIST-traceable calibrated leak standard.

Fast, non-destructive leak testing assures longer life and greater protection for your product—The mass spectrometry method used by the MS-40 will not destroy the test object, as can other methods such as bubble-testing and dye penetration.

Allows testing for the smallest leaks at the highest pressures—Because of their dual magnetic sector, high resolution mass spectrometry, VIC leak detectors are able to test for the smallest leaks at the highest pressures. Gross testing begins immediately at atmospheric pressure. Fine leak testing begins at 7.5 Torr.

Other methods can be deceiving—Unlike VIC's dual magnetic sector mass spectrometer technique, other testing methods can be fooled by operator error.

Remote control—An optional remote control allows simple, automatic leak testing up to 100 feet from the leak detector. Operational switches and leak rate readings are conveniently located on the remote box so all information is readily available to the operator.

Ready to test in under three minutes—Simple one-button start-up brings the system from a cold start to full operation in less than three minutes.

Applications

The MS-40 and MS-40 DRY leak detectors can be used in hundreds of applications, including:

MS-40

- Automotive
- Compressors
- Electron Beam Welders
- Gas Tanks
- Heat Exchangers
- High Pressure Devices
- Nuclear Reactors
- Power Distribution Plants
- Refrigeration Parts

MS-40 DRY

- Beverage and Food Containers
(FDA Standards)
- Electronics
- Freeze Dryer Applications
- Gas Distribution Lines
- Particle Accelerators
- Pharmaceuticals
- Process Chambers
- Quartz Crystal Packages
- Semiconductors
- UHV Systems and Hardware

MS-40 or MS-40 DRY

- Glass-to-Metal Seals
- Hermetically Sealed Devices
- Infrared Detectors
- Ion Implanters
- Lithium Batteries
- Medical Research and Equipment
- Sputtering Equipment
- Valves

MS-40 Specifications

Performance

Time To Test: <1.5 sec. on a blank test port.

Sensitivity: 4×10^{-11} atm cc/sec. in direct mode.* 4×10^{-10} atm cc/sec. in reverse mode.*

Response Time: Direct Mode <2 seconds.* Reverse Mode <3 seconds.*

Leak Range: 10^{-4} atm cc/sec. to 4×10^{-11} atm cc/sec. 10 atm cc/sec. to 4×10^{-11} atm cc/sec. with optional dedicated external roughing pump.

Resolution: Resolving power of 14 at mass 4.*

Maximum Inlet Pressure: Test Mode:

Atmosphere	Gross (with dedicated external roughing pump)
7.5 Torr	Fine

Start Up Time: <3 minutes.

Vacuum System

Turbo Pump: 52 l/s turbomolecular pump with ceramic bearing.

Mechanical Foreline/Roughing Pump: Built-in 1.5 cfm direct drive foreline/roughing pump. Optional 7 cfm or 16 cfm auxiliary roughing pump available.

Valves: Reliable, fast acting solenoid valves rated for millions of cycles. Easy to clean without special tools, designed for long, trouble-free life.

Vacuum Gauging: Two Pirani gauges monitor foreline and test port pressures. An ionization gauge is built into the spectrometer tube ion source for reduced maintenance. A built-in, maintenance-free HiVac gauge utilizes existing focusing plates within the source and eliminates the need for a high maintenance cold cathode discharge gauge.

Access: Hinged doors and pop-off side panels for serviceability of pump oil, air filters and internal calibrator.

Calibrator: Internal temperature compensated Helium leak standard. Traceable to NIST with quick disconnect for easy recalibration.

MS-40 DRY Specifications

Performance

Time To Test: <1.5 sec. on a blank test port.

Sensitivity: 4×10^{-11} atm cc/sec. in direct mode.* 6×10^{-9} atm cc/sec. in reverse mode.

Response Time: <2 seconds in direct mode.* <3 seconds in reverse mode.*

Leak Range: 10×10^{-5} atm cc/sec. to 4×10^{-11} atm cc/sec. 10 atm cc/sec. to 4×10^{-11} atm cc/sec. with optional dedicated external roughing pump.

Resolution: Resolving power of 14 at mass 4.*

Maximum Inlet Pressure: Test Mode:

Atmosphere	Gross (with dedicated external roughing pump)
7.5 Torr	Fine

Start Up Time: <3 minutes.

Vacuum System

Turbo Pump: 52 l/s turbomolecular pump with ceramic bearing.

Dry Foreline/Roughing Pump: Built-in 16 cfm dual stage diaphragm/molecular drag pump. Optional external dry roughing pumps available.

Valves: Reliable, fast acting solenoid valves rated for millions of cycles. Easy to clean without special tools, designed for long, trouble-free life.

Vacuum Gauging: Two Pirani gauges monitor foreline and test port pressures. An ionization gauge is built into the spectrometer tube ion source for reduced maintenance. A built-in, maintenance-free HiVac gauge utilizes existing focusing plates within the source and eliminates the need for a high maintenance cold cathode discharge gauge.

Access: Hinged door and pop-off side panels for serviceability of air filters and internal calibrator.

Calibrator: Internal temperature compensated Helium leak standard. Traceable to NIST with quick disconnect for easy recalibration.

MS-40/MS-40 DRY Specifications

Spectrometer Tube

180° deflection dual magnetic sector mass spectrometer tube with built-in high vacuum ion gauge. Two long-life, low current filaments. Self-cleaning heated repeller and automatic closed-loop emission control. Heavy ion traps reduce the need for deionization of the mass spectrometer tube by an order of magnitude.

Tunable: Sensitive to Helium Mass 3 or Mass 4, user selectable.

Electronics

Microprocessor controlled. Diagnostics automatically display error codes and messages on alphanumeric display. Real time clock with battery back-up.

RS-232 Port: Provides for remote computer control and data transfer, as well as remote diagnostics and downloading of new software releases directly from VIC. Uniform field lengths allow for easy integration and downloading of data into automated systems.

Printer Port: A parallel printer port is provided to transmit test results to any PC compatible printer. At the conclusion of a test, the leak rate, the reject set point, reject or accept indication, and the time and date is sent to the printer.

Service/Maintenance Panel: A flip-open door provides easy access to settings and diagnostic functions for maintenance personnel. A switch inside the unit enables the service mode, which prevents unauthorized access. Total unit running time is monitored for scheduled maintenance.

Operator Interface

Control Panel: User-friendly, highly reliable sealed membrane switch panel. All necessary test information is clearly displayed on the control panel. Diagnostic and set-up information shown on 8-digit alphanumeric display. Audio leak rate indicator with volume control.

Tuning Controls: Single button for completely automatic tuning. Cal Check button verifies tuning and calibration at any time. Single calibrate button adjusts gain automatically.

Hand-Held Remote Control Option: Remote unit provides start/vent switches and ranging controls along with leak rate readout up to 100 feet from the leak detector. Highly reliable tactile membrane switches and lightweight rugged design. Standard coiled cord length of 25 feet.

Physical Data

Size: 15"H x 20½"W x 14"D (38.1 cm H x 52.7cm W x 35.6 cm D).

Weight: 87 lbs. 39.5 kg. (MS-40); 96 lbs. 43.6 kg (MS-40 DRY).

Power Requirements: 115V, 60Hz, 8 amps; 230V/240V, 50Hz, 5 amps; 100V, 50Hz, 8 amps; 100V, 60Hz, 8 amps.



Leak Detection by Vacuum Instrument Corporation

Vacuum Instrument Corporation

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Factory Direct Service Centers

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Exclusive Sales & Service Representatives Worldwide

* Performance determined in accordance with American Vacuum Society standards; Specifications subject to change without notice.

Great genes...

MS•60 Series

portable helium leak detector

Quickly and accurately detects leaks for a broad range of applications

Standard 7 cfm direct drive foreline/roughing pump for faster cycle times

Internal or external calibration for flexibility

Digital Input / Digital Output

Fully automatic

Dual magnetic sector high resolution mass spectrometer

Three modes of operation

Simple one-button start-up



Features:

- 5×10^{-12} atm-cc/sec sensitivity
- Lanthanum yttria-coated iridium filaments
- Password security
- AZ³, 3 modes of advanced auto-zero

Benefits:

- Most sensitive portable available
- Longer lasting than tungsten
- Protects against tampering
- Faster, more accurate testing

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MS60
VIC Leak Detection

The most advanced leak-test instrumentation and application experience in the industry!

Vacuum Instrument Corporation

Model: MS-60

PERFORMANCE			
Characteristics	Units	MS-60, 7 CFM	MS-60, 10.6 CFM
Sensitivity, vacuum *	atm-cc/sec	5.0 x 10 ⁻¹²	
Sensitivity, sniffing		1.0 x 10 ⁻⁸	
Leak Measurement Range		5.0 x 10 ⁻¹² to 1.0 x 10 ⁻⁵ (10 w/ext pump)	
Leak Ranging	-	Auto/Manual	
Start-up time	minutes	<3	
Response Time *	seconds	<2 direct	
Resolution for ⁴ He *	-	14	
Mass Spectrometer Tube	-	180° deflection; dual-magnetic sector	
Auto-tuning	-	Yes	
Auto-calibration	-	Internal – yes; External - manual	
Auto-zeroing	-	Yes, AZ ³ , 3 modes: Normal, Spray and Hold	
Reject set-point	-	Yes	
Built-in calibrated leak	-	Yes	
NIST traceable	-	Yes	
Temperature compensated	-	Yes	
He Scan	-	Yes	
Filaments	-	2 ~ Lanthanum-yttria coated iridium	
Maximum Operating Pressure	Torr	7.5, 760 w/ext roughing option	
Display	-	Alpha/Numeric	
Units	-	atm cc/s, mbar ³ /s, Pa ³ /sec	
I/O	-	0-5V or 0-10V chart; Linear Mantissa and Exponent or Logarithmic LR and Test Port Pressure and Foreline Pressure	
Digital I/O (PLC interface)	-	6-output, 7-input	
Printer Port	-	Yes	
RS-232C	-	Yes	
Software	-	Password security, 3-mode auto-zero	
VACUUM SYSTEM			
Vacuum Mode	-	Direct, reverse or combination flow	
Roughing Pump	cfm	7 rotary vane	10.6 rotary vane
High Vacuum Pump	liters/second	60 turbomolecular	
Vacuum Gauging	-	Pirani: Test port & foreline; Ion: High vacuum	
Test port connection	-	NW25	
PHYSICAL			
Dimensions (W x H x D)	Inches (cm)	21 x 16.9 x 16.5 (53.3 x 42.9 x 41.9)	
Weight	lbs. (kg)	133 (60.3)	135 (61.2)
ELECTRICAL			
Power	V/Hz/A	115/50-60/8; 230-240/50-60/5; 100/50-60/8	

*Performance determined in accordance with American Vacuum Society Standards; Specifications are subject to change without notice.
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Corporate Headquarters

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Exclusive Sales & Service Representatives Worldwide



PERFORMANCE

Time To Test: <2.5 sec. on a blank port

Sensitivity: <1x10⁻⁸ STD-cc/sec

Response Time: <3 seconds

Leak Range: 10⁰ to 10⁻⁸ STD-cc/sec

Maximum Inlet Pressure: 100 Torr Gross Mode
20 mTorr Fine Mode

Resolution: 40 at mass 40

Testable Masses: 40 (Argon)

SYSTEM

Start Up: <3 minutes

Tuning and Calibration: Automatic

Ranging: Automatic or Manual

Calibration Check: Automatic

Flow Modes: Direct Flow Mode

Selectable Measurement Units:

<u>Pressure</u>	<u>Leak Rate</u>
mTorr	STD-cc/sec
mbar	mbar-l/sec
Pascal	Pascal-m3/sec

Argon or air equivalent units can be selected.

VACUUM SYSTEM

High Vacuum Pump: 52 l/s turbo pump

Roughing Pump: 16 cfm dual stage rotary vane pump

Foreline Pump: 7 cfm dual stage rotary vane pump

Valves: Reliable, fast acting solenoid valves rated for millions of cycles. Easy to clean without special tools, designed for long, trouble-free life

Vacuum Gauging: Two Pirani gauges monitor test port and foreline pressures. Maintenance-free HiVac gauge utilizes a ground plate within the spectrometer source and eliminates the need for a high maintenance cold cathode discharge gauge

Calibrator: Internal temperature compensated Argon leak standard traceable to NIST. Quick disconnect for easy removal for recertification

Mass Spectrometer: Dual 90° magnetic sector mass spectrometer with built-in high vacuum pressure gauge. Two long life, low current filaments. Automatic closed loop emission control with self cleaning heated repeller.



VIC Leak Detection

Vacuum Metrology

Vacuum Instrument Corporation

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Exclusive Sales & Service Representatives Worldwide

Model MS-50 ♦ Argon Leak Detector

- Industries Only Production Leak Detector with a Full Screen, Interactive CRT
- Built-in Diagnostics for Trouble-Free Maintenance
- Independent Quick Calibration Check
- Dual Pump System – Dedicated Foreline and Roughing Pumps
- Simple One-Button Power Up Has System Ready to Test in Less than 3 Minutes
- Fully Automatic Startup, Tuning and Calibration

ELECTRONICS

PC-based, microprocessor controlled. Self-diagnostics automatically display error codes and messages on CRT
RS232 Port: Provides for remote computer control and data transfer, as well as remote diagnostics and downloading of new software releases directly from VIC. Uniform field lengths allow for easy integration and downloading of data into automated systems.

Discrete I/O Port: Optional

Printer Port: Parallel printer port is provided to transmit test results to any PC compatible printer. Test results include leak rate, reject point, reject or accept indication, and time and date.

Communications: RS232 port, Remote Connector, Printer Connector, Headphone Jack, Video Connections (Power and Control), Chart Out (0-5V signal corresponding to leak rate mantissa).

Facilities Connections: Nitrogen bulkhead, Exhaust bulkhead

SOFTWARE

Multiple languages at the touch of a button. 50 sets of test parameters for testing many different types of parts. On-line help screens and colorful displays enhance user interface. Software stores in FLASH memory for easy upgrades.

OPERATOR INTERFACE

Display: 9" Color VGA monitor with tilt and swivel base.

Control Panel: Highly reliable tactile membrane switch panel. Discrete switches provided for Start and Vent.

Keypad: Keypad provided to prevent unauthorized access to settings and functions.

Remote Control: Optional



PHYSICAL DATA

Size: 25 3/4" W x 30 5/8" D x 35 1/4" H
(65.4 cm W x 77.8 cm D x 89.6 cm H)

Shipping Weight: 350 lb (158.8 kg)

Power Requirements: 100V/50/60 Hz 115V/60 Hz 30 A
230-240V/50 Hz 15 A

MS-50 Argon

from Vacuum Instrument Corporation

Calibrated Leaks

are provided with certificates traceable to NIST,
ideal for companies establishing ISO-9000
and other quality procedures



VIC Leak Detection®

Ask about our recalibration services

Air Leak
Testing

Industrial Leak
Detection

Advanced
Leak
Metrology



CALIBRATED GAS LEAKS

VIC Leak Detection®

VIC offers a high quality line of calibrated gas leaks traceable to National Institute of Standards Technology (NIST). Calibrated gas leaks are used to provide a controlled delivery of gases at a relatively low flow rate for applications including:



- Calibration of leak detectors, including helium and halogen sniffers
- Calibration of residual gas analyzers
- Calibration of analytical mass spectrometers
- Provides pressure rise at predictable rates
- Gas blending
- Simulated leak

Certificates of NIST traceability are provided with each leak standard documenting the accuracy, and calibration parameters. This information is perfect for meeting various quality standards.

VIC offers a variety of Calibrated Gas Leaks

OM Series Orifice type, lowest temperature coefficient ensures predictable leak rates over a wide temperature band

PM Series Permeation type, suitable for precision calibration of helium leak detectors; resists clogging

Outlet Fittings for PM and OM Series

EMOT Series Metal Orifice type, designed for atmospheric sniffing applications

SC Series designed for MS-40, -50, and -60 leak detectors and helium leak detectors made by Veeco Instruments

Specialty Leaks

Storage Cases for calibrated leaks

Recalibration Services

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Designers and Manufacturers of Leak Detectors, Gas Handling Equipment, and Complete Leak Detection Solutions

Air Leak
Testing

Industrial Leak
Detection

Advanced
Leak
Metrology



OM Series

Calibrated Orifice Leaks

VIC Leak Detection®

The OM Series leaks utilize a precision tapered glass capillary as the leak element. Gases pass through a single orifice, with the leak rate dependent upon size and gas pressure. To prevent clogging of the fine orifice, a unique particle trap is located between the capillary tube and outlet fitting.



High Performance features

- Lowest temperature coefficient available, 0.2 %/°C ensures predictable leak rates over a wide temperature band
- Wide range of leak rates available, 10^{-3} to 10^{-9} Atm-cc/sec
- Specific leak rate values available to match your product's leak specifications
- Supplied with N.I.S.T. certificate at no additional charge
- Unique particle trap virtually eliminates clogging, typically associated with capillary leaks
- Leaks supplied with 300cc or 500cc stainless steel cylinder (depending on leak rate) with DOT-3E1800 rating offering maximum life span
- Available in a wide variety of gases (see ordering information) and outlet fittings

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Designers and Manufacturers of Leak Detectors, Gas Handling Equipment, and Complete Leak Detection Solutions



OM Series

Ordering Information

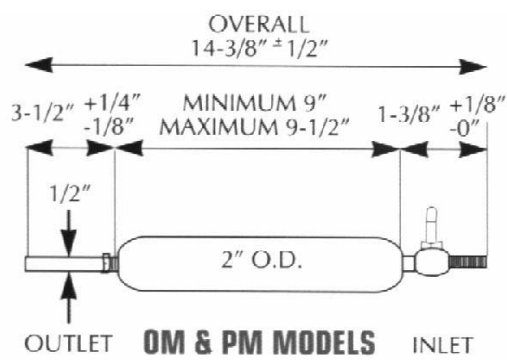
VIC Leak Detection®

Available in a wide range of gases as coded below. Specify gas code and leak rate. When ordering P/N 922-XYX, X = Leak Rate Exponent and YY = Gas Code from the chart below. Leak Rates: 10^{-3} to 10^{-9} .

Example: OM No. 922-501 = 10^{-5} range Helium Leak

All leaks filled with high purity gases. Please note that other gases and specific leak rate values are also available upon request. Available gases include:

01 Helium	08 Deuterium	15 Methane
02 Helium 3	09 R-12	16 Neon
03 Argon	10 R-22	17 Sulfur Dioxide
04 Nitrogen	11 R-23	18 SF ₆
05 Hydrogen	12 Krypton	19 Xenon
06 Oxygen	13 Carbon Dioxide	20 —
07 Air	14 Carbon Monoxide	21 R-134A



All OM models supplied with 1/2" OD smooth tube connection unless otherwise specified. OM³ Range leaks provided with 500-cc volume.

Other gases and specific leak rate values available upon request. At an additional charge, all OM model gas leaks can be supplied at a specific leak rate + or - 1 of specified leak rate. P/N 922-021 (Example: 2.5×10^{-5} Atm-cc/sec asked for, will receive leak at 1.5 or 3.5×10^{-5} Atm-cc/sec), or at an extra close tolerance of specific leak rate + or - 0.5 of specified leak rate. P/N 921-622 (Example: 2.5×10^{-5} Atm-cc/sec asked for will receive leak at 2 to 3×10^{-5} Atm-cc/sec).

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PM Series

Calibrated Permeation Leaks

VIC Leak Detection®

The PM Series leaks utilize a durable 7740 Pyrex glass permeation leak element that permits diffusion of helium gas. Helium diffuses through the glass membrane at a constant rate determined by the membrane thickness and surface area. These leaks are highly resistant to clogging by nature of their design.



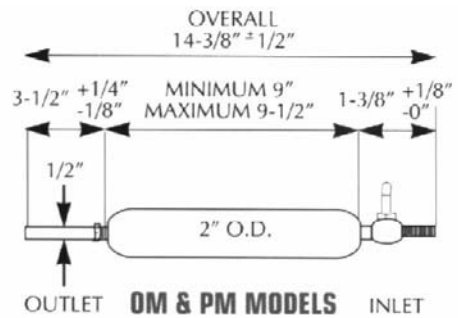
High Performance features

- Supplied exclusively with high purity helium gas Ideally suited for precision calibration of leak detectors
- Available in leak rates from 10^{-5} to 10^{-10} Atm-cc/sec
- Temperature coefficient is 3.2%/°C
- Durable 7740 Pyrex glass element will not clog
- Leaks supplied with 300cc stainless steel cylinder with DOT-3E1800 rating offering maximum life span
- Supplied with N.I.S.T. certificate at no additional charge
- Fused glass to kovar transition
- Available with a wide variety of outlet fittings

PM Series - Ordering Information:

Available in Helium only. All PM models are supplied with 1/2" OD smooth tube connection unless otherwise specified. Specify leak rate when ordering, as follows: P/N 923-X01 where X = Leak Rate Exponent and available Leak Rates are 10^{-5} , 10^{-6} , 10^{-7} , 10^{-8} , 10^{-9} , 10^{-10}

Example: PM No. 923-801 = 10^{-8} range (helium) leak.



All PM models supplied with 1/2" OD smooth tube connection unless otherwise specified.

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Air Leak
Testing

Industrial Leak
Detection

Advanced
Leak
Metrology



Outlet Configurations for PM and OM Series CGL's

VIC Leak Detection®

Part Number and Description

922-011	1-1/8" O.D. Tube Outlet
922-012	Conflat Flange, 2.75"
922-013	Mini Conflat Flange, 1.33"
922-014	1/4" Cajon Male VCR
922-015	1/4" Cajon Female VCR
922-016	1/4" Cajon Male VCO
922-017	1/4" Cajon Female VCO
922-018	NW-16 ISO KF
922-019	Isolation Valve, all metal, bellows sealed
922-020	Isolation Valve, high pressure, req'd w/10 ⁻³ leaks
922-022	NW-25 ISO KF
922-026	NW-40 ISO KF
922-028	1/4" OD Tube
922-033	NW-10 ISO KF
922-036	1/8" Female to 1/4" Male NPT
922-025	1/2" Cajon Female VCR
922-027	1/2" Cajon Male VCR
922-034	2" OD Smooth Tube
922-035	3/4" OD Smooth Tube
473-291-1001	Replacement Fill Valve



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Designers and Manufacturers of Leak Detectors, Gas Handling Equipment, and Complete Leak Detection Solutions

Air Leak
Testing

Industrial Leak
Detection

Advanced
Leak
Metrology



EMOT Series

Calibrated Metal Orifice Leaks

VIC Leak Detection®

These leaks are specifically designed for atmospheric sniffing applications. The leak standard features a metal orifice with zero dead space volume between leak element and outlet fitting. This allows for direct reading of leak rates in atmospheric conditions. Leaks are available in helium, SF₆, and most refrigerant gases.



High Performance features

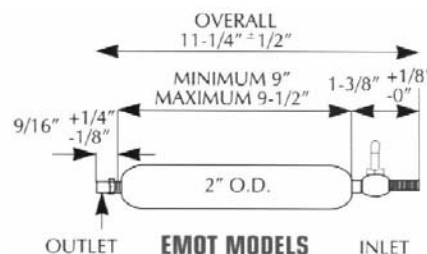
- Construction providing direct reading of leak rates in atmosphere
- Non-breakable stainless steel leak element
- Unique outlet fitting filter protects orifice from clogging
- Wide range of leak rates available, 10⁻¹ to 10⁻⁶ Atm-cc/sec
- Low temperature coefficients
- Supplied with 300cc stainless steel cylinder with DOT3E1800 rating offering maximum life span
- Supplied with N.I.S.T. certificate at no additional charge
- Specifically designed for atmospheric sniffing
- Ideal for calibrating VIC's TurboTest™ MD-290S, -390S and -490S, and halogen sniffing instruments

EMOT Series - Ordering Information:

Specify leak rate when ordering VIC Part No 921-XYX, where X = Leak Rate Exponent, YY = Gas Code and available Leak Rates are 10⁻¹, 10⁻², 10⁻³, 10⁻⁴, 10⁻⁵, 10⁻⁶

Example: EMOT No. 922-621 = 10⁻⁶ Range R-134A Leak

All leaks filled with high purity gases. Gases available include: R-12 (09), R-22 (10), R-23 (11), R-134A (21), Helium (01), and SF₆ (18) gases. (Gas ordering codes in parentheses). Other gases and specific leak rate values available upon request.



Vacuum Instrument Corporation
2099 Ninth Avenue
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Email sales@vicleakdetection.com
WebSite www.vicleakdetection.com

Air Leak
Testing

Industrial Leak
Detection

Advanced
Leak
Metrology



SC Series Calibrated Gas Leaks

VIC Leak Detection®

The SC Series leaks are calibrated to a master standard traceable to NIST in a temperature and humidity controlled room. Calibrations are fully compliant with Mil Spec 45662/45662A and all applicable industrial standards. SC leaks are supplied with a certificate of calibration; these leaks are ideal for the Advanced Leak Metrology division's high-speed production leak detectors and older Veeco models.



SC Series - Ordering Information:

SC-4 for external calibration of all systems, 10^{-8} Atm-cc/sec range;
P/N 6130-001-01

SC-4/Ar for MS-50 Argon series only (internal calibrator replacement,
 10^{-8} Atm-cc/sec. range); P/N 0139-392-00

SC-7/40 for MS-40 and MS-50 series only (internal calibrator
replacement, 10^{-8} Atm-cc/sec range); P/N 0137-016-00

SC-7 for MS-30 series only (internal calibrator replacement, 10^{-8} Atm-
cc/sec. range); P/N 0135-110-00

SC-5 for external high sensitivity calibrator for all systems, 10^{-9} or 10^{-10}
Atm-cc/sec. range; P/N 6150-001-01

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Designers and Manufacturers of Leak Detectors, Gas Handling Equipment, and Complete Leak Detection Solutions

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Specialty Leaks

VIC Leak Detection®

VIC manufactures a wide range of specialty leaks designed specifically to meet your application requirements. Please contact our application specialist for complete details.

GL-2 Standard Calibrator

A sintered stainless steel filtered orifice that can be used for helium leak detection calibration in the gross leak test mode. When used in conjunction with an externally regulated helium source, the leak provides calibrated leakage rates at 3×10^{-3} Std-cc/sec (5% air equivalent (or 4.8×10^{-3} Std-cc/sec He). An integral filter assembly prevents most potential clogging effects. P/N 6160-001-00



Laser Drilled Micron Orifice

These leaks utilize a laser-drilled orifice as the leak element. The leaks are attached to a product (bogey) and are internally charged with tracer gas. The tracer gas flows into the product and through the orifice and allows for direct reading by a mass spectrometers.

High Performance features

- orifice sizes available down to 2 microns
- ideally suited for product mounting, and offers fast response times
- specific leak rate values available to match your products leak specification

This calibrated leak will have a blank VCR fitting to protect the orifice and a 1/4" NPT thread fitting to attached to the customer's product and will be provided with a 0.xx micron diameter orifice. This orifice yields a $x.x \times 10^{-4}$ Atm-cc/sec leak rate of air at atmosphere.

Internal Leak Detector Leaks

Sniffer Units (MD-390S & MD-490S) Internal Helium Calibrated Gas Leaks, P/N 752-150

Model MD-180/MD-290 Internal Helium Leak, P/N 752-103

Please contact VIC for additional ordering information.

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Storage Cases for Calibrated Gas Leaks

VIC Leak Detection®

VIC offers a durable custom storage case for its calibrated gas leaks. Constructed of a high impact resistant material, each case is filled with a specially molded insert which eliminates the chances of damage to the precision leak element in the event the gas leak is dropped. A handle and clearly marked outer label facilitate transportation and identification. Two case sizes are available: 16" x 4" x 4" and 19" x 4" x 4" to accommodate additional fittings to the calibrated leak.



- Protect your company's investment
- Eliminate costly replacements of leak elements
- Minimize downtime
- Improve accuracy of mass spectrometer calibrations

16" x 4" x 4" case, P/N 922-024

19" x 4" x 4" case, P/N 922-038

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Recalibration Services

Quality Control and Calibration Lab

VIC Leak Detection®

We offer a full recalibration service for calibrated gas leaks manufactured by VIC and other companies from our new 3000 sq.-ft calibration laboratory located in our New York headquarters. Services include recalibrating and recharging with replacement of the precision element if breakage or clogging occurs, along with full N.I.S.T.



Certificates of N.I.S.T. traceability are provided with each leak standard documenting the accuracy, and calibration parameters. This information is perfect for those companies who are establishing ISO-9000 and other quality procedures.

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