



Setting the standards for today and tomorrow .....

# *CALIBRATED LEAKS*



**“VTI sets the standards by which others measure themselves. The number one company worldwide for traceable calibrated standards offers the widest range of regular and custom built units.”**

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# CALIBRATED LEAKS

*We make them ALL !! ....*



- ▶ High Precision Helium Permeation Leaks
- ▶ General Purpose helium Permeation Leaks
- ▶ Refrigerant Leak Standards
- ▶ Mixed Gas Standards
- ▶ Sniffer Calibrators
- ▶ Crimped Capillary Gas Leaks
- ▶ Open Crimped Capillary Leaks
- ▶ Positive Shut Off Leak/Valves
- ▶ Chemical Industry
- ▶ Liquid Permeation Leaks

## NEW PRODUCT

### RSC - Refrigerant Leak Standard



VTI's new RSC Sniffer Calibrator is easier to operate, works for years without clogging or refilling and is a fraction of the price of other Refrigerant Leak Standards.

The sensitivity of a leak detector should ideally be checked each time it is used or, at least, at the beginning and end of each shift to verify that it is operating properly.

The RSC is calibrated by VTI's A2LA Accredited calibration laboratory and is available both with and without NIST-Traceable documentation depending upon your requirements.

The RSC has several user-friendly features that make it exceptional value. The lifetime supply of R134a will not require adjustment or refilling by the user. It features a permeation type leak element that is not susceptible to the plugging problems that can occur with the capillary leak elements commonly used in refrigerant leak standards. The RSC leak standard has a low temperature coefficient of only 0.6%/°F and it has a 1/4" I.D. recess with a tapered bottom to accept a variety of sniffer probes for repeatable results and 100% gas collection.

The leak rate is expressed in ounces per year, other units upon request. Three standard sizes are available 0.2, 0.5 and 1.0oz/yr.



### Accu-Flow™ High Precision Helium Permeation Calibrated Gas Leaks

The Accu-Flow™ High Precision Calibrated Helium Permeation Leaks were developed as high precision, UHV compatible transfer standards for calibrating mass spectrometers/RGA's and leak detectors. In critical manufacturing and research applications, they offer the ultimate in performance and accuracy. These Precision Leaks have all-metal valves and are bakeable. NIST-traceable calibrations are provided.

### Accu-Flow™ General Purpose Helium Permeation Calibrated Gas Leaks

The Accu-Flow™ General Purpose Calibrated Helium Leaks offer very high quality design and construction at affordable prices. Like the High Precision Leaks, they feature TIG welded stainless steel construction, fused glass-to-metal seals and NIST traceable calibrations. VTI's low cost Model Equivalents are available for calibrating all makes of leak detectors including Alcatel, Balzers, Leybold, Varian and Veeco.



## CALIBRATED GAS LEAKS ...



### Sniffer Calibrators – Fixed and Variable Rate

Only VTI provides both Variable Rate (shown) and Fixed Rate **Sniffer Probe Calibrators** in either the Crimped Capillary or Teflon Permeation designs. The Capillary design is essentially unbreakable and the flow rate is insensitive to temperature changes. The Teflon Permeation design is also unbreakable and is not susceptible to plugging. They are used to calibrate helium and freon detectors in Nuclear, Automotive, Refrigeration and many other industries.

### Liquid Permeation Leaks

VTI's **Liqui-Perm Leaks** can be used to generate a precise leak rate of any liquid or low vapor pressure condensable gas, such as water, HFCs and CFCs. Uses include the calibration of refrigerant detectors, RGA's and gas dosing. A NIST-traceable calibration is provided. Using a Teflon permeation element, a Liqui-Perm Leak is virtually unbreakable, will not plug and can be built to a gas flow rate selected by the customer from a very wide range of available flow values.



### Lifetime™ Crimped Capillary Calibrated Gas Leaks

The patented **Lifetime™ Crimped Capillary Leaks** offer high reliability, long life and are available for virtually any gas. They feature an unbreakable, all stainless steel (no Teflon or epoxy) and the unique stainless steel crimped capillary tube. The flow rate is relatively insensitive to temperature as compared to permeation leaks. These leaks deplete at a rate less than 1% per year and have a lifetime warranty.

### Accu-Flow™ Open Style Crimped Capillary Calibrated Gas Leaks

Available in a variety of configurations for any gas, one of our **Accu-Flow™ Open Style Leaks** can provide a wide range of leak rates by changing the input pressure using the NIST-traceable calibration that is provided. They are used to calibrate leak detectors and sniffers, and to install a controlled test leak in products. They also serve as inlet restrictions for mass spectrometers and as ultra-low flow control devices.

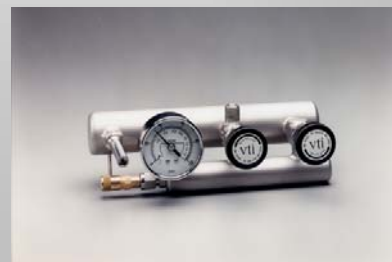


### Positive Shut-Off Leak/Sampling Valves

VTI's proprietary **Positive Shut-Off Valves** provide instan-on and –off operation and have virtually no dead volume (0.0001cc). They are used in calibrated leak assemblies, especially for high flow rate leaks and with expensive gasses and gas mixtures. The gas depletion rate is minimized by the positive shut-off design and there is essentially no gas burst upon opening the valve. These unique valves are also used in the design of our atmospheric pressure gas sampling systems.

### RLS – Refrigerant Leak Standard

VTI's **Refrigerant Leak Standards** are used for the calibration of halogen gas leak detector/sniffers and are available for all CFC, HFC and HCFC's for any leak rate range. In common use in the automotive, refrigeration and air conditioning industries, the RLS's are equivalent to the Yokogawa/GE LS-20. Each leak standard has a 10:1 adjustable leak rate range that is certified by NIST-traceable calibration.



## *CUSTOM LEAK CAPABILITY*

Leak testing is an integral and essential part of so many manufacturing processes today. The necessity to maximize product quality, reliability and process yield drives manufacturers to implement ever more stringent standards.

VTI is unique in being able to offer the customer custom calibrated leaks that can be built into an actual product component to allow a true understanding of the measurement to be made **BEFORE** costly instrumentation or systems are purchased. Our extensive knowledge of custom system building can then be employed to build the right solution for the task at hand. Some examples are shown below.

VTI has built many test pieces to allow evaluation of current regime / system performance and vendor instrumentation. Leaks have been built into countless components for this purpose with some examples listed below.



**Torque Converter with  
Calibrated Leak**

- ▶ **Torque Converters**
- ▶ **Check Valves**
- ▶ **Fuel Injectors**
- ▶ **Batteries**
- ▶ **Airbag Inflator**
- ▶ **Fuel Manifolds**



**Injector module with  
Calibrated Leak**

## *LEAK CALIBRATION & REFURBISHMENT SERVICES*



VTI offers the most comprehensive Leak Calibration services available. NIST-traceable calibrations, using applicable procedures, are provided for helium and all other gases. We calibrate and repair VTI and all other manufacturer's leaks and we offer free re-builds of all leaks which are on yearly calibration schedules. Rapid turnaround is available and traceable calibrations are documented with a detailed Certificate of Calibration and an Error Analysis.

## *MORE INFORMATION ...*

A wealth of further information is available on the VTI website. You can visit the Calibrated Leak web pages or browse through the library to get specification sheets, technical support sheets and papers on related topics together with information on other VTI products and services.



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**VTI is an A2LA accredited calibration facility**