



Residual Mass Spectrometry for the
New Millennium

AERO VAC MASS SPECTROMETER SYSTEMS



“Practical implementation of the AERO VAC ODYSSEY mass spectrometer allows VTI to offer solutions for Gas Analysis, Leak Detection and general RGA that embody all the advantages inherent to the magnetic sector instrument.”

Residual Mass Spectrometry for the New Millennium

MASS SPECTROMETER SYSTEMS



Applications:

- ▶ Vacuum Coating
- ▶ Leak Checking
- ▶ Semiconductor Manufacturing
- ▶ Refrigeration Manufacturing
- ▶ Automotive Manufacturing
- ▶ Catalytic Studies
- ▶ Nuclear Physics
- ▶ Research and Development
- ▶ Aeronautics / Aerospace
- ▶ Chemical Industry

AERO VAC ODYSSEY

The Heart of our Mass Spectrometer Systems ...

The **AERO VAC** Magnetic Mass Spectrometer has an long and established pedigree. The first **AERO VAC** was launched in 1965, with the newest, digital version being launched in 2001 – aptly named, the **ODYSSEY**.

Technologically, the **ODYSSEY** is a far cry from the original model employing the very latest in digital, computing and network technologies.

Fundamentally, the **ODYSSEY** uses the magnetic sector principle for mass separation – the original technique – which today remains the choice of the serious scientist and is universally employed in any dedicated Leak Detection system.

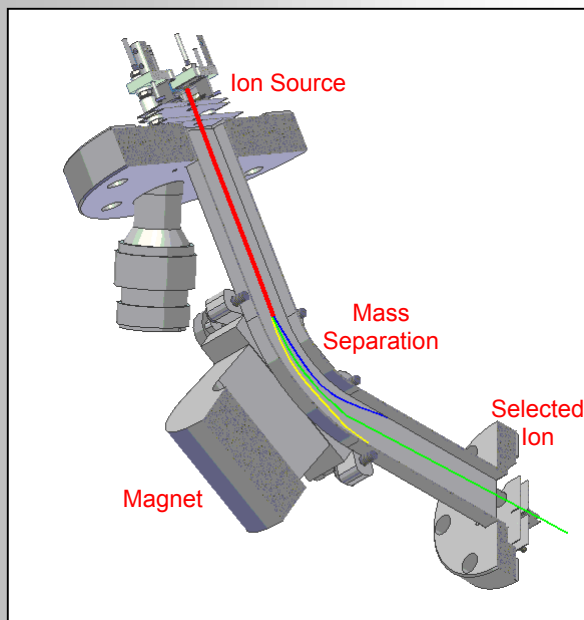
This is as a result of the systems fundamental simplicity, ruggedness and serviceability which cannot be matched by any quadrupole analyzer.

The **ODYSSEY** is a “smart” instrument that can be run stand-alone or connected to a PC. Front panel controls and displays make operation a breeze and Windows based control and data handling software provides for a complete range of analysis capabilities with a PC.

Next generation electronics allow a vast **increase in scan speed** over other instruments allowing for true fast trend and transient monitoring.

Encounter (V2) software is included as standard with the **ODYSSEY**. With an intuitive user interface that includes linearized mass scale and multi decade display of peak intensity, the package is immediately “familiar” to the seasoned RGA user and new operator alike.

ASK FOR the **ODYSSEY** brochure – **ODY-DATA** – for more detailed information or visit the VTI website.



MASS SPECTROMETER FEATURES

- 1) **High Sensitivity Ion Source** – New design provides greatly improved efficiency/sensitivity.
- 2) **Pre-focused Ion Source** – Factory aligned and never needs adjusting.
- 3) **Dual Filaments** – Ensure continuous operation.
- 4) **“Soft-Start” Power Up** – Prolongs filament life.
- 5) **Over-pressure protection** – Guards against filament burnout during operation.
- 6) **High Pressure Sensing** – Prevents start-up at atmospheric pressure.
- 7) **Rugged construction** – Contamination resistant and robust construction for harsh applications and environments.

Call Toll Free 1-800-704-4774 – www.vacuumtechnology.com

Mass Spectrometer Systems ...

AERO VAC POLARIS Leak Detector / RGA

The **POLARIS** leak detection system offers a unique combination of traditional high performance *Leak Detection* features which are combined with the optional capability of performing comprehensive *Residual Gas Analysis*. Available in a single system, the **POLARIS** is the world's first such offering which allows true and total vacuum diagnostic and management capability.

With leak detection down to 4×10^{-11} Std cc/sec, a measurement range of 1×10^{-4} to 2×10^{-11} Std cc/sec and a response time of <0.5 sec at the inlet port, the **POLARIS** offers true UHV functionality.

Add to this features such as Auto Calibration, Full Test Cycling and Audible signal and the standard **POLARIS** becomes a powerful package. With options such as RGA capability, remote control and bar scanner control, the system can be tailored to individual needs.

Ask for the **POLARIS** brochure – **POL-DATA** – for more detailed information or visit the VTI website.



AERO VAC DISCOVERY Gas Analysis System

Gas Analysis applications truly benefit from the inherent measurement stability that the Magnetic Sector system offers over the Quadrupole. Add to this exceptional lower mass resolution capability and you have the optimum Gas Analysis solution.

Dependent upon application and space requirements, the **DISCOVERY** is available in a number of configurations from bench-top through console to rack mount. All benefit from the **ODYSSEY's** capability together with VTI's many years of system application, design and implementation experience.

Call VTI to discuss individual application requirements and to discuss the variety of inlet options available.

Ask for the **DISCOVERY** – **DISCOVERY-DATA** - and **ODYSSEY** – **ODY-DATA** - brochures for more detailed information or visit the VTI website.

AERO VAC WATCHMAN Process Monitor

With the **ODYSSEY** as the heart of the system, the **WATCHMAN** employs the advantages of high sensitivity, speed, rugged construction and high reliability performance to the critical task of monitoring coating processes and providing vacuum diagnostics for the coating system.

Available in a number of versions, the **WATCHMAN** can be installed as a manual system providing RGA capability to monitor vacuum quality through semi-automatic to a fully automatic system with vacuum gauging and pressure control to provide data on the on-going coating process. Generally, **WATCHMAN** systems are supplied as 'bolt-on' components for the vacuum coating system. A mobile version, cart mounted, is also available if required.

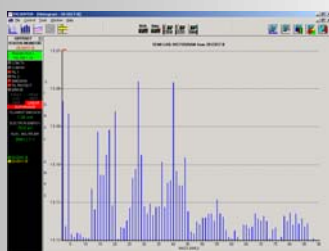
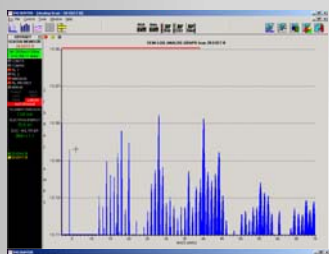
These systems benefit from the networking capability of the **ODYSSEY** and **ENCOUNTER** software allowing monitoring of up to eight coating systems from a central computer. Data logging capabilities allow for data generation, storage and later retrieval for quality assessment and yield control.

Ask for the **WATCHMAN** brochure – **WATCHMAN-DATA** – for more detailed information or visit the VTI website.



Software for RGA and Gas Analysis ...

VTI's **ENCOUNTER** (V2) software package provides data acquisition and control functions for the Mass Spectrometer system. This encompasses the needs of RGA applications and can be extended to encompass the full needs of the analytical mass spectroscopist. Screens shown below illustrate some of the modes of operation available such as the histogram, trend and analog modes commonly used in RGA type applications.

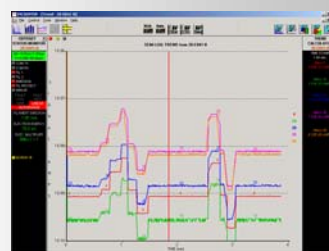
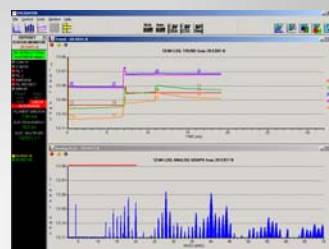


To move from qualitative Gas Analysis performance, the operational needs of the system grows to encompass issues such as calibration, background levels and library referencing.

It is at this point that the hardware performance comes into play both in terms of the measurement device and in the design of the sample inlet system.

The performance achievable is a collective of the Mass Spectrometer, Vacuum/Sample system and Software package.

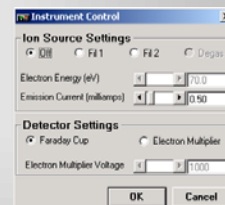
Ask for the **ENCOUNTER** brochure – **ENC-DATA** – for more detailed information or visit the VTI website.



Software for System Control ...



VTI's wealth of experience has driven the evolution of core elements of software providing key system control forming a robust backbone upon which analytical software can be run. This is a key factor in both on-going system support and in the excellent reliability reputation VTI has developed and enjoyed over many years.



More Information ...

A wealth of further information is available on the VTI website. You can visit the **ODYSSEY**, **POLARIS**, **DISCOVERY** and **WATCHMAN** systems web pages or browse through the library to get specification sheets, technical support sheets and papers on related topics alongside other VTI products and services.



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