



**CUSTOM PRODUCTION LEAK  
TESTING SOLUTIONS ....**

# ***CUSTOM LEAK TEST SYSTEMS***



**“With many years of experience gained in numerous industrial fields, VTI offers extensive and complete product design, fabrication and support capability all under one roof.”**



# CUSTOM LEAK TEST SYSTEMS

Applications include:

- ▶ Air Conditioning Manufacturing
- ▶ Semiconductor Manufacturing
- ▶ Refrigeration Manufacturing
- ▶ Battery Testing
- ▶ Automotive Industry
- ▶ Research and Development
- ▶ Chemical Industry
- ▶ Aeronautics/Aerospace

## About VTI ... The Company:

With many years of custom system design and fabrication as a backdrop, a staff with many man-years of knowledge and experience in Vacuum, Leak Detection, System design and Production Management, VTI offers an unparalleled capability to customers requiring Custom Leak Detection System packages.

Product quality, reliability and consistently high standards of service and support are all elements of the core company philosophy demonstrated by the NIST and A2LA accreditation standards the company maintains.

All this is set in a 60,000 square foot facility in Oak Ridge TN where state-of-the-art tools from CAD to CNC machining are used to produce leading-edge systems.

## System Design:

VTI has long been known for offering quality system design with attention to detail. Today, this is taken to the next level with the implementation of the most advanced 3D mechanical design software available.

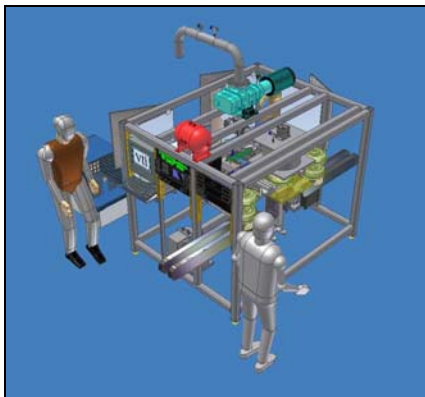
The ability to design the system and display the 'assembly' in full color 3D format as shown here greatly facilitates communication of the design and design issues to the customer. This both saves time and provides the customer with a clear picture every step of the way.

Customers have commented when they see a system for the first time, "No surprises, that's **exactly** what I thought it would look like".

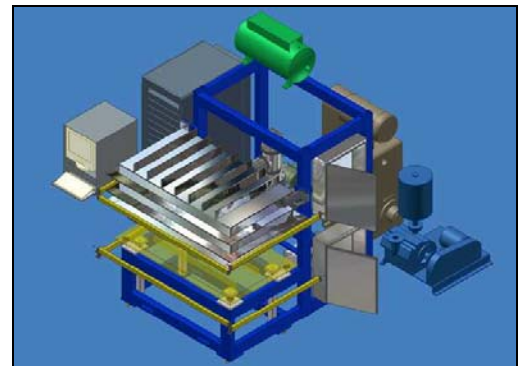
But this is only one of many advantages....

VTI's goal of meeting the customer's requirement at the lowest cost, often less than the cost of an 'off-the-shelf' solution that may not even fit the application, is addressed with this software.

CAD techniques enable VTI to reduce its concept-to-manufacturing time, visualize and 'tweak' designs quickly and inexpensively before any metal is cut and achieve faster delivery times due to less shop rework / fitting. A greatly enhanced capability **and** cost savings for the customer!



Automated System for Leak Testing Torque Converters



Large Chamber System for Leak Testing Fuel Tanks prior to assembly



# CUSTOM PRODUCTION LEAK TESTINGS SOLUTIONS

## Custom Leak Test Systems



Staff offer extensive technical and application experience

### Fabrication Facilities ...

Quality of fabrication is assured using qualified staff employing the latest techniques and components. Standard components are widely used to insure ease of maintenance and support.

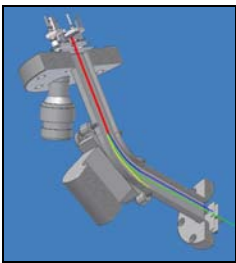
CNC machines insure that standard and custom components required by the design can be accurately and quickly produced.

Extensive, fully serviced test bays allow for system construction and test with optimum efficiency and provide space for system trials with even the largest test pieces.



CNC machines provide precision components on demand

### Sensor Technology...



AERO VAC Sensor

System performance is contingent upon accurate and reliable measurement of the trace gas components. VTI manufactures and uses the **AERO VAC Odyssey** Digital Mass Spectrometer offering the rugged, stable and sensitive performance characteristics required from the measurement foundation stone.

### Calibrated Leaks ...

Essential to system operation is the requirement to build and incorporate reference leaks.

VTI offers the widest range of standard leak products with NIST and A2LA certifications.

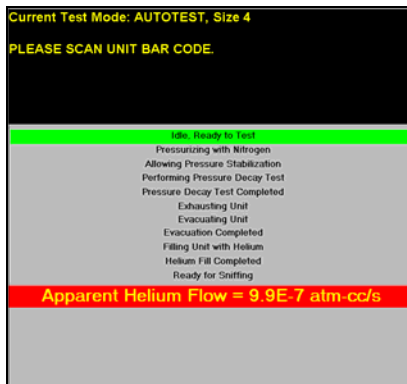
Uniquely, leaks can be built into test parts to validate system performance with an in-situ measurement.



Calibrated leak built into torque converter

### LEAKSEEKER Custom System Software ...

By their very nature, each custom system is unique. VTI's wealth of experience has driven the evolution of **LEAKSEEKER** software providing key functional capability upon which a robust system backbone is built. Customization is then carried out with the security of core system operation assured. This is a key factor in both on-going system support, future expansion and in the excellent reliability reputation VTI has developed and enjoyed over many years.

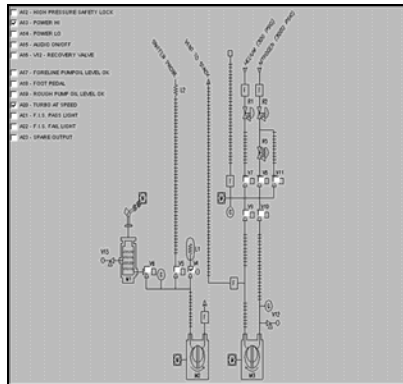


#### SINGLE SCREEN OPERATION

Operation is simply and efficiently provided on a single screen with:

- ▶ Prompts to the operator
- ▶ Indication of test status
- ▶ Clear display of test results

Results, combined with system switching and lights, present clear **PASS/FAIL** indications to the operator.



#### CONTROL AND SECURITY

**Control** can be effected through Digital I/O menus which detail all system components or through a schematic (shown above) which allows for visualization of the cycle in progress

**Security** essential in production instrumentation, is addressed with password protection controlling the ability to change settings.



#### CUSTOMIZATION

Customization of the **LEAKSEEKER** software is effected through a series of screens which cover all system parameters:

- ▶ Timing Delays
- ▶ Pressure Set-Points
- ▶ Operational Modes
- ▶ Flow Rate Parameters
- ▶ Misc. Control Parameters



## Custom Leak Test Systems

### SMARTSTATION Peripheral Workstations ...

Custom system operation can be enhanced by the selective implementation of peripheral workstations to streamline the production process. For example, pressure decay can identify units with large leaks such that more sensitive systems do not waste time testing these. Sniffing at a repair station allows leak sites to be located without halting the main production line. VTI SMARTSTATION Leak Detector workstations are designed to cover these needs.



**SMARTSTATION PD**  
Pressure Decay



**SMARTSTATION HS**  
Helium Sniffer



**SMARTSTATION RS**  
Refrigerant Sniffer



**SMARTSTATION**  
Repair Station

### Custom System Examples ...

Integration into the manufacturing regime is illustrated below and shows the selective use of automation (to enhance throughput) and combination testing. More comprehensive information is available on each of these (and many more) installation on the Leak test Systems web pages.



**A-COIL STATION**  
Integration of a "Gross test" and final Helium leak test minimizes production delays identifying large leaks early in the process



**AIR-BAG INFLATOR TESTER**  
Essential in providing critical test for safety component with confirmed disposal of parts that fail the test



**A/C COMPONENT TESTER**  
System design with automated turntable system provides a cost effective solution to meet the throughput required by production

### More Information ...

A wealth of further information is available on the VTI web-site including informative Video presentations. We suggest you download:

- ▶ Principles of Leak Testing
- ▶ SMARTSTATION Leak Test Systems
- ▶ AERO VAC Odyssey Mass Spectrometer Brochure
- ▶ Encounter Software Brochure
- ▶ Some of the many Custom System Example Data Sheets

In addition to visiting the CUSTOM LEAK DETECTION SYSTEMS web pages, you can visit extensive pages on CALIBRATED LEAKS and our range of MASS SPECTROMETRY PRODUCTS. We also have a wide range of VACUUM COMPONENTS, flanges, fittings and pumps and can carry out CUSTOM FABRICATION to your exact requirements.

The staff at VACUUM TECHNOLOGY is always available to share their expertise in discussing any vacuum, engineering or fabrication challenge you may have.



**Calibration Laboratory**  
Certificate No. 1707.01

**VTI's Calibration Laboratory is Accredited by the American Association for Laboratory Accreditation.**