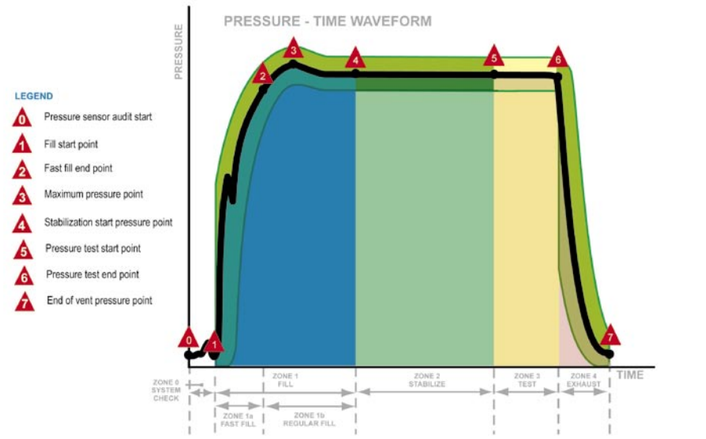
EXAMPLE DEFECTS DETECTED

The figure below shows a typical pressure decay waveform.



Example Defects Detected

- **Blockage in part under test**
- **Gross leaks**
- **Fine leaks, cracks in seals**
- **Gross defects, missing part, wrong part, crimped lines**
- **Rolled seals, rolled O-rings**
- **No part in place**

Example Machining or Tooling Mainenance Issues Detected

- **Kinked hoses, debris in part or hoses**
- **Fixture seal leaks or flaws**
- **Defective valves and pressure regulator**
- **Incorrect regulator setting or line pressure**
- **Damaged transducer**

Sciemetric's 3300 Leak Test System accurately detects even the most subtle leak defects.

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SCIEMETRIC®
Solutions for Manufacturing.
Defect Detection. Analysis. Traceability.

3300 Leak Test System

IN PROCESS LEAK

EXCEPTIONAL LEAK TESTING TECHNOLOGY

IMPROVE QUALITY

DECREASE CYCLE TIME

MINIMIZE FALSE REJECTS

SCIEMETRIC®
Solutions for Manufacturing.
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FUNCTIONAL DESCRIPTION

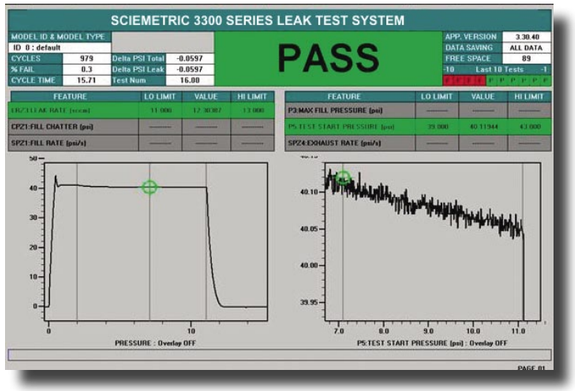
Sciemetric's 3300 Leak Test System "raises-the-bar" and sets a new standard in leak testing. While easy to setup and to use, the 3300 outperforms conventional leak test systems by decreasing test cycle time and detecting defects other systems cannot find. One of the most advanced testing tools on the market today, the 3300 is a proven system with a solid reputation for:

- ***Improving gage repeatability & reproducibility (R&R)***
- ***Improving the quality of shipped parts***
- ***Decreasing cycle time***
- ***Increasing productivity by minimizing false rejects***

Traditional leak test systems rely on minimal data capture or predictive analysis to evaluate the quality of a cavity. Although this method reduces cycle time, it typically sacrifices reliable and repeatable results.

Sciemetric's 3300 Leak Test System relies on advances in fill and pressure control technology to decrease test cycle time. The technology uses closed loop pressure control to fill and maintain pressure in the cavity. Unlike other leak test systems, the 3300 Series uses Sciemetric's advanced Signature Analysis techniques to capture and analyze the entire leak test waveform in real-time. Using all the data points on the curve leads to increased accuracy and better Gage R&R for both pressure decay and mass flow leak testing. The system also automatically identifies and learns the key elements of the leak test. The values from these key elements are compared against acceptable limits to determine pass or fail status.

The 3300 Leak test system allows manufacturers to achieve reliable and repeatable results in a fraction of the time traditional test methods require. Sciemetric's proprietary signature analysis technology finds defects that other leak test systems can not find. Fewer false accepts leads to improved quality for manufacturers, while the ability to minimize false rejects improves manufacturer efficiency and yield. All this is achievable at a lower overall cost than most competitive systems.



DEFECTS DETECTED*

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- **No part in place**

**These are the major defects detected by the 3300 System. However, the list is not exhaustive. The system can be configured to detect other defects.*

EASY TO SETUP, EASY TO USE

Sciemetric's 3300 Leak Test System is designed for fast and easy installation. The turnkey system goes directly from the box to the production line with minimum on-site configuration. Adaptable and responsive, it integrates seamlessly into most production lines, eliminating costly productivity disruptions and production line downtime.

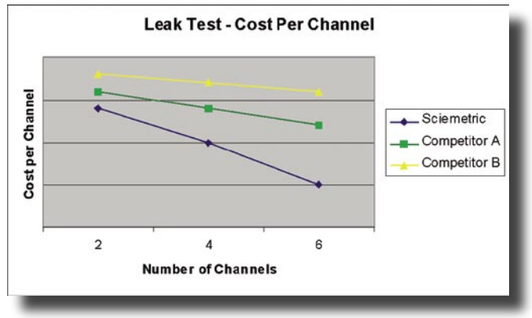
FEATURES	BENEFITS
Signature analysis technology	▪ Better Gage R&R (Repeatability and Reproducibility) ▪ Finds more defects than other types of leak tests, leading to higher levels of quality and fewer false rejects
Built in SPC (Statistical Process Control)	▪ All process control limits calculated automatically ▪ Pass/fail test limits based on statistically relevant calculations ▪ Reduces false failures/rejects ▪ All data presented in clear, easy-to-understand formats
Capture and analyze complete leak curve waveform	▪ Provides root cause determination; - Solve potential problems before they occur - Puts an end to chronic failures and saves on wasteful maintenance costs
Direct PLC interface	▪ Works seamlessly as part of your manufacturing process
Optional birth history software (QualityWorX™ system)	▪ Warranty management tool ▪ Facilitates root cause identification of defects ▪ Provides full traceability (birth history)
Fully menu driven with automated sequencing, data collection, processing and analysis Fast sensor and system calibration and verification	▪ Easy to setup and use
Industrial PC-based architecture Multi-channel support	▪ Flexible and expandable leak testing; unlimited configurations to meet your unique test needs

Designed specifically for leak testing, the 3300 System is practical, powerful and very user friendly. The technology is based on proven Intel Pentium™ processor architecture and utilizes the Windows™ operating system. This provides operators a familiar look and feel and streamlines maintenance.

DESIGNED FOR PRODUCTION ENVIRONMENTS

The 3300 is based on a modular architecture. The controller, pneumatics and display are separate to ensure that you have the best overall solution to meet your specific testing needs. This modular design also makes it practical and cost effective to construct multi-channel leak test systems with mixed pneumatic capabilities (pressure decay, mass flow etc.). To ensure maximum reliability, all test data is protected by a comprehensive redundancy system, featuring dual hard drives and power supplies.

Best of all, this modular architecture provides the 3300 with one of the lowest cost per channel in the industry. The Sciemetric solution scales with pneumatics. One controller can support up to four pneumatic panels. This spreads the cost of the controller over as many as 24 channels. Competitive systems have an integrated controller/pneumatics architecture and do not have the same economy of scale that the 3300 Series provides.



MULTI CHANNEL SUPPORT

The controller can support up to four pneumatic panels and each pneumatic panel can support up to six channels. The 3300 is therefore expandable from a simple single channel leak application all the way up to twenty-four channels per controller.

INTEGRATED SPC

The 3300 Leak Test System also comes equipped with an integrated SPC (Statistical Process Control) module. The SPC module automatically calculates process control limits, graphically presents test data and provides trending on process variables. All data is reported in clear, easy-to-understand formats. By generating timely and critical information, the 3300 exposes, analyses and resolves production problems, consistently keeping production processes in control and ensuring improved product quality.

INTEGRATES SEAMLESSLY WITH EXISTING PRODUCTION OPERATIONS

The 3300 Series can be adapted to almost any production line with minimal tooling or modifications to existing machinery. The 3300 supports numerous communication and network options, including direct Ethernet connectivity and most fieldbus interfaces.

- OPC
- GE GENIUS
- ETHERNET
- RS232
- PROFIBUS-DP
- INTERBUS
- DEVICENET
- CAN
- MODBUS PLUS
- ALLEN BRADLEY DATA HIGHWAY PLUS®
- RS LINX

MANUFACTURING BIRTH HISTORY AND TRACEABILITY

For the ultimate in manufacturing traceability, permanent storage of leak test data is available through the optional QualityWorX® Product Quality Management System. QualityWorX® can be used to archive test results by serial number and store the actual waveforms that were measured during testing.

Traceability and Analysis

QualityWorX® also provides exceptional traceability throughout the entire manufacturing process. The system creates a comprehensive overview of all test functions, delivering production monitoring with the highest degree of precision. Defects and deficiencies can be traced to the level of individual stations, operators, shifts, and components. This facilitates rapid identification and resolution of process and product problems before significant costs for repair and rework are incurred. QualityWorX® is the global leader in manufacturing intelligence and quality control management.

Up to **6 Channels** per panel, **4 panels** per Controller