

TECHNICAL FOCUS

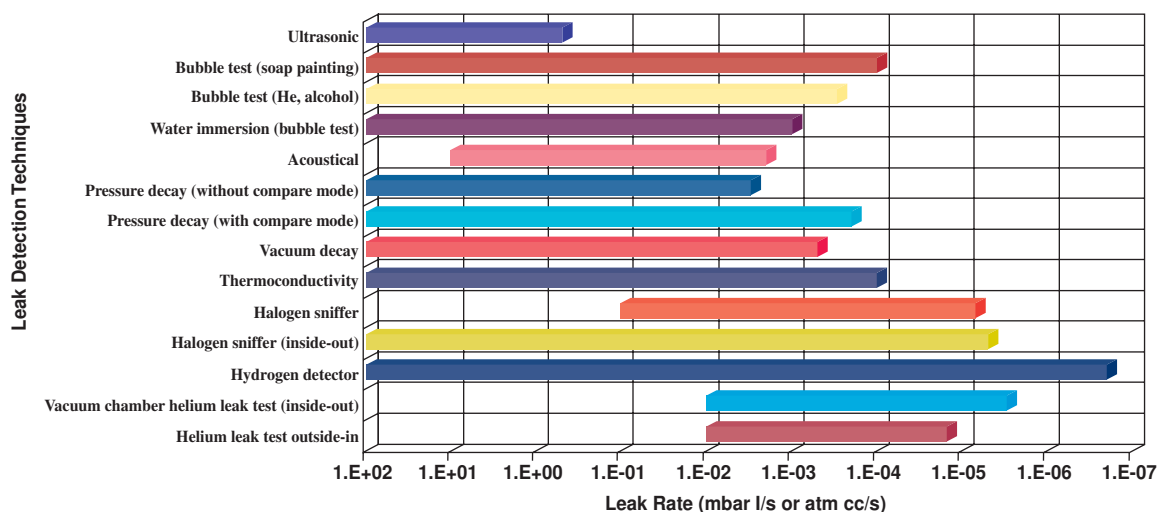
Leak Detection in the Refrigeration and A/C industry

In the refrigeration and A/C industry, components and systems must be leak tested to ensure that refrigerant leakages are below specified limits. This reference limit may depend either on the maximum acceptable leak rate, consistent with the life expectation of the final products, as well as on government imposed regulations. Usually the maximum acceptable leak rate, depending on refrigerant type and application, spans from 15 g/y (5 oz/year) of refrigerant, as for some large air conditioning systems, to 0.5 g/y (0.01 oz/year), for some domestic refrigerators.

This threshold level is the main parameter to be considered when selecting a test method or combinations thereof. However, additional considerations such as equipment and production cost, required productivity, reliability and user friendliness must also be taken into account.

Several leak-testing techniques are available, spanning from very simple manual operations to fully automated systems. In the diagram below, the sensitivity of various leak-test techniques is summarized.

Leak Detection Sensitivity



VTech's engineers are available to analyze your specific leak detection requirements and suggest the most suitable equipment within your budget.

To receive the extended version of VTech's technical paper about Leak Detection Technology, providing a detailed analysis and comparison of the leak-detection techniques as above, please contact your nearest VTech facility.

About VTech



VTech is a joint venture between Galileo Vacuum Systems and Special Process Equipment. Its focus is refrigeration and A/C process equipment including leak detection, refrigerant charging, automatic test equipment and pre-evacuation.

While Special Process Equipment is the technology partner, with its 30 plus years of experience in refrigeration and A/C manufacturing engineering, Galileo provides worldwide marketing and product support through its network of subsidiaries, independent representatives and service centers.

If you would like to know more about our company and products, we invite you to visit our web site (www.vtechonline.com) or to call your nearest VTech location. Demo units are available to test your specific application and for training purposes.

A new brand with a long tradition in refrigeration and A/C process equipment

CAPABILITIES

- Automatic leak detection
- Leak location and repair
 - Pre-evacuation
- Refrigerant supply and charging
 - Final run-test
- Process software

AHR Expo Report

VTech participated in the AHR Expo Show held in Orlando, Florida on February 7-9, 2005. The show was well attended and the VTech booth saw a steady flow of visitors.

One product on display was the VTech 75 Multi-Tester Leak Detection System with the capability of performing a real-time leak test on two coils simultaneously, placed side by side in a safety enclosure. Once the pressure hoses are attached to the coils and the safety enclosure lowered, the system injects nitrogen gas at 300 psi and then performs a pressure decay test.

Additionally, the machine uses a “compare” feature to detect changes in the pressure decay curves of two identical units, thereby establishing an additional parameter to detect small leaks.

Once the coils successfully pass the pressure decay test, the nitrogen is automatically evacuated and then the coil is filled with hydrogen tracer gas. At this point, the operator proceeds to manually sniff the coil in order to pinpoint the presence and location of very small leaks.

The VTech 75 Multi-Tester has a wide range of applications. One of the most suitable is the testing of A/C coils. Leak testing underwater is still a fairly common practice in the industry, but this method is labor intensive and time consuming, not to mention messy and less accurate. The VTech 75 offers a very efficient and cost effective alternative. If you wish to learn more about this subject, please consult our technical paper about Leak Detection Technology, which is available on request.



The second unit on display was the VTech 202 Automatic Refrigerant Charging Machine. It features dual refrigerant charging with automatic temperature compensation, assuring a charging accuracy better than 0.5%. This unit performs pre-evacuation on the high and low side of the compressor to a pre-set vacuum level. Before gas charging can take place, it performs a vacuum decay leak test to ensure the integrity of the refrigeration circuit. Barcode scanning and a data acquisition package are available options.

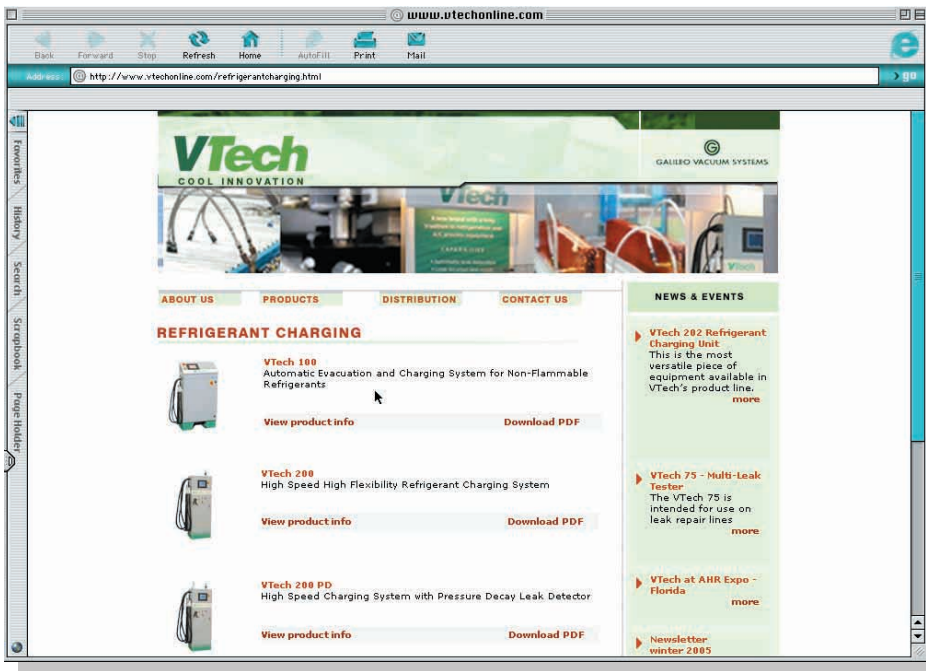
Cinzia Tarducci has recently joined the VTech team as part of the Business Development group. In her new position, she is responsible for the identification of new business opportunities including the optimization of the sales network and its training. She holds a Ph.D. in Chemistry from the University of Durham (U.K.) and an advanced degree in Chemistry from the University of Florence, Italy where she graduated with top honors. Prior to her joining VTech, she worked for Dow Chemical in Milan, Italy. Dr. Tarducci's extensive technical background will also be instrumental in the development of product/process applications for all the VTech equipment line.



We invite you to visit our new website:

www.vtechonline.com

The VTech website features detailed information about all VTech products as well as up-to-date news about the Refrigeration and Air Conditioning Industry.



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