

# VTech e-news

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## Welcome to the first edition of VTech E-News.

This electronic format allows for faster and trouble-free distribution of our newsletter. You can expect to receive VTech E-News every quarter. We are planning to report about technical advances, new installations, maintenance tips and anything else that may be of interest to our readers. I hope you will find our newsletter informative and please do not hesitate to write or call with any comments or questions. Paolo Raugei (praugei@att.net)

### 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.specialprocessequip.com](http://www.specialprocessequip.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



VTech at AHR

Orlando, Florida | February 7-9, 2005 | Booth 4796

### Here is a preview of VTech products being displayed at the show:

#### VTech 75 – Multi-functional Leak Tester

The VTech 75 is intended for use on leak repair lines and for low-mid volume producers requiring dedicated leak testing at each production line.

Combining pressure decay, tracer gas charging and leak location by high precision sniffing, the VTech 75 is available for either Hydrogen or Helium leak detection. While Hydrogen is a fairly new tracer gas, it offers multiple advances over the traditional Helium tracer gas:

- Hydrogen is an inexpensive gas: it costs less than 1/3 of Helium.
- Hydrogen is 15 times lighter than air, and its viscosity is only half of air and Helium.
- Hydrogen penetrates leaks more readily and vents away significantly easier than any other tracer gas. Therefore, background build-up can be minimized through the use of Hydrogen as a tracer gas.
- Hydrogen leak detector is significantly less expensive than traditional Helium mass spectrometers and is all solid state technology.

Industrial grade Hydrogen (5%) and Nitrogen (95%) mixtures suitable for use in leak detection are available from most gas suppliers.

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### **VTech 202 Refrigerant Charger**

This is the most versatile piece of equipment available in VTech's product line. It combines pressure decay leak detection, evacuation and high precision gas and refrigerant charging. Data collection through computer interface and bar code scanning is also available.

The VTech 202 uses a proprietary high-precision metering technology that is unaffected by electromagnetic noise. The number of fillers and type of refrigerants is customizable according to market requirements. The working cycle is programmable via touch screen interface and fully automatic.

## Technical Focus

### **Automatic leak detection made easier – New technology introduced by VTech**

Automatic leak detection of refrigeration or A/C complete systems and components allows for a fast go/no-go leak test on the assembly line.

The system is fully automatic and requires no human intervention (the sniffing operation is eliminated). Depending on the volume of the units to be tested, the automatic leak detection cycle can be as short as 30 seconds and guarantees a leak resolution of 0.1 ounces of refrigerant per year or  $1.8 \times 10^{-5}$  cc/second.

A traditional automatic leak detection technology uses a vacuum chamber where the system or component to be tested is introduced. Once the vacuum cycle is completed, the system or component is filled with pure Helium. If a leak is present, the tracer gas will find its way through the leak into the vacuum chamber and is detected by the Helium mass spectrometer attached to the chamber. Therefore this leak detection method is normally referred to as "inside/out". At the end of the cycle, a separate Helium recovery system is used to recover the gas from the system.

VTech's automatic leak detection technology relies on a different method. A controlled mixture of Helium/air is introduced in an enclosure where the parts to be tested are located. Because the parts (and not the enclosure) are evacuated, if a leak is present the Helium will find its way through the leak in the system or component and is then detected by a Helium mass spectrometer. Thus, this leak detection method is known as "outside/in". Some of the advantages of VTech "outside/in" automatic leak detection are the following:

- Reduced capital equipment cost (no high vacuum chamber required and relevant pumping package)
- Lower operating cost (10% Helium/air mixture is used vs. pure Helium)
- No need of a Helium recovery system (the mixture is vented to atmosphere)
- The system is easily customizable to changing production requirements by simply resizing the enclosure

VTech has demo units available for testing your specific requirement. Contact your nearest VTech facility for additional details.

