

VTech e-news

Engineering Value

This edition of VTech e-news focuses on VTech's engineering capabilities and how we provide unique value to our customers. VTech delivers tailored process solutions to help manufacturers meet today's challenges without the custom price tag. Whether it is a single piece of equipment or a turnkey installation, we serve our customers with local manufacturing and support. We hope that you will find this information useful and please feel free to contact us with any questions. Thank you.

- The VTech Team

Modular Equipment Design Increases Flexibility Without Raising Cost

A recent installation at a heat pump manufacturer in Finland demonstrates VTech's ability to provide "specialized" solutions for their customers without the "custom" price tag normally associated with building to specification. Challenged by the lack of extra floor space, a tight takt time, and a strict budget, VTech was able to provide a specialized solution, based on its [VTech MRC](#) equipment platform, to perform leak detection, evacuation and refrigerant charging on parallel production lines, with a centralized control system and

two remote operator stations, eliminating the need for multiple pieces of standalone equipment, each performing a specific function.

Since VTech's equipment is largely modular, it didn't involve much design work, but the engineering that went into the project was channeled toward the problem-solving and space-saving requirements rather than any new product development or research.

(Continued on page 2)



Remote Operator Station of the VTech MRC

VTech 202-2: Twice the Charging Machine in One

A Unitary Air Conditioning manufacturer recently installed a **VTech 202-2 Dual Evacuation and Refrigerant Charging System** which is equipped with two separate vacuum and charging circuits. This configuration saves space while allowing them to process two units simultaneously. The customer only has one refrigerant but since takt time is short, space limited and productivity is high in short runs, it is paramount that they utilize the footprint all while saving on the added cost of having two separate systems. An extra-large 10" color touch screen allows all of the data to be displayed.

The customer had this comment:

"We've been in business 25 years and this is the best charging system we've seen. Having this unit alone has increased our productivity by at least 5%."

This particular design has been a very popular choice for manufacturers looking to maximize the capability of their evacuation and charging system. Please click on the proceeding link for more information about the [VTech 202-2](#)



VTech 202-2

“ ”

“The engineer's first problem in any design situation is to discover what the problem really is.”

- Unknown

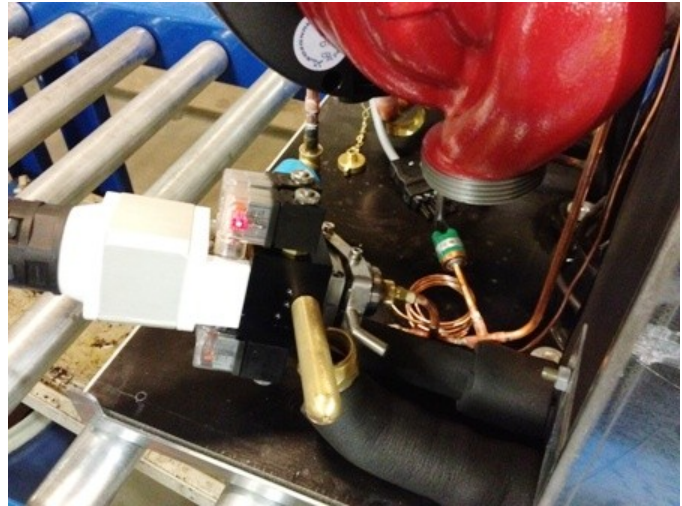
Modular Equipment continued from page 1

The new VTech equipment allows this customer to reduce the vacuum time by one third as well as add tracer gas injection for use with helium leak detectors, all without having to disconnect.

Due to the special design of our fillers (see picture at left) they can connect the filler directly to the unit to be charged to perform a complete cycle of pressure test, helium leak detection, vacuum and gas charge.

We were also able to provide a version of the control software specific to their requirements.

Have a problem you need to solve? Please contact us today.



Leak Detection, Evacuation and Refrigerant Charging Head

How Much is Helium Costing You?



The rising cost of helium affects the HVAC industry directly, which in turn has an indirect effect on the consumer in rising costs of goods produced, at least in part, through the use of helium. Specifically, we're talking about coils and refrigeration systems used in domestic refrigerators and air conditioners that are leak tested using this gas. In some areas the cost of 1,000 cubic feet of grade A helium has risen to as much as \$160, an increase of over 300% over the last 10 years.

How much is your helium costing you? Use our Helium cost calculator to find out the cost, per model, of not recovering helium used in testing.

[Download the calculator here.](#)

When you look at your cost of helium, and if you simply let all of it go "up in the air", you'll want to consider helium recovery. Helium recovery systems, such as VTech's 300H series, can easily pay for themselves in 2-3 years. Each VTech Helium Recovery system is specified by three main factors, the recovery limit, expressed in mbar, the output pressure required for the subsequent leak test, given in bar, and the hourly consumption of helium used in production, in Normal Liters/hour.

For example, you want to recover to 500 mbar and reconcentrate to 14 bar (ABS) and have a maximum flow of 1,800 nli/h. The size of the recovery tanks and compressors are sized according to the project requirements and will recover about 90-95% of the helium to be reused. Click on the proceeding link for more information on the [VTech 300H](#) Series of Helium Recovery Systems.



VTech 300H Helium Recovery System

Compressor Manufacturer Adds VTech Leak Detection Equipment

A refrigeration compressor manufacturer recently purchased and installed two VTech Leak Detection systems to test their large reciprocating compressors, which are used in automotive and large refrigeration applications. These two new systems are in addition to an existing machine that is several years old.

One of the units is a [VTech 75](#) which combines pressure decay with hydrogen tracer gas sniffing, while the other is a [VTech 50](#) which performs only pressure decay. The systems are built into the line and include a customized safety hood to protect the operator, creating a seamless, straightforward experience for high repeatability.

The compressors themselves pose an interesting testing challenge, however, as they must be checked both for external leaks but internal leaks from one side of the compressor to the other, and at very high pressures, over 700 psig. Perhaps as important is the sequence of successive barcode scans that include the model, serial number and employee badge number for quality tracking and accountability purposes.



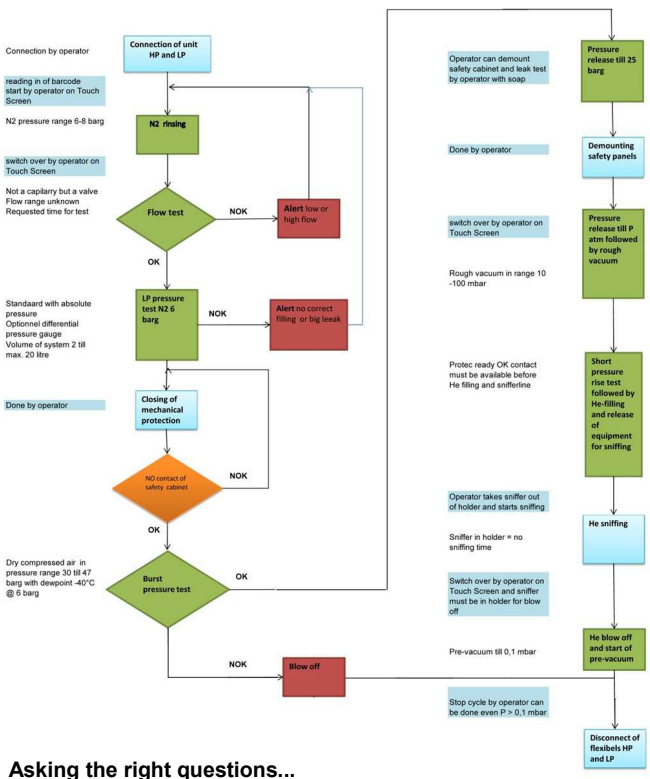
VTech 75 with integrated hood

High Level Design

With every project, especially a leak detection solution, VTech takes a High Level Design approach whereby we make the transition between what our systems do and how to implement them to meet customer's goals.

Because our systems are modular, "decomposition" into various possible appropriate configurations is easy. An evaluation of these elements is made to ensure optimum performance, functionality, cost, and that any other possible issues, technical or otherwise, are addressed, all while meeting or exceeding industry standards. Customer involvement is crucial; we need to understand the various limitations and forces at play. Our new project questionnaire helps to make these variables known.

Have a leak detection or other project in mind? Please contact us and let's start working on it.



About VTech

VTech combines over 50 years of experience in equipment design and process engineering of HVAC&R assembly lines. Our equipment range includes Leak Detection, Refrigerant Charging and Recovery, Pre-Evacuation, and Electrical Safety/Performance Test. Our Process Software provides an integrated solution for data management and process control. Please visit our website at www.vtechonline.com to browse our catalog and of course, feel free to contact us with any questions.