

VTech e-news

Product Spotlight

#8

VTech 101: Essentially Better

VTech's entry level model refrigerant charging machine, the VTech 100 series, is a simple, effective and cost-friendly solution for small to medium production lines.

The market is filled with low-cost equipment, most of which lacks the power and precision that manufacturers really want. Sure, everyone loves to save money but not while sacrificing quality in their products.

This is where the VTech 100 model comes in: only what you need but better than the rest. With superior control and customization, it offers a touch screen user interface, PLC based computer technology and completely automatic operation, making the VTech 100 one smart, powerful little guy at a modest price.

Available in single (101) or dual-filler



VTech 101 at Fawn Mfg., Waukeg, IA

(102) models, it's ideal for commercial refrigeration manufacturers who, for instance use R134a and/or R404. The VTech 100 is compatible with any HFC refrigerant.

Complete with Low Side Evacuation (optional) it will do a thorough evacuation and a consistent, accurate charge. Data can be stored via Ethernet interface to a standalone PC running the data logging software (optional).

"We were looking to update our

existing charging systems," said Scott Moosey, Materials manager at Polyscience, (Niles, IL) who recently completed installation of two VTech 102's. "We are very pleased with the equipment, it's simple to use and technically advanced at the same time."

As with all of VTech's charging equipment, this machine is available for a 30-day free trial in the US. To find out more and request a quote, contact VTech today at info@vtechonline.com.



VTech 101 at Coldpoint Corp., Rome, NY

Company News

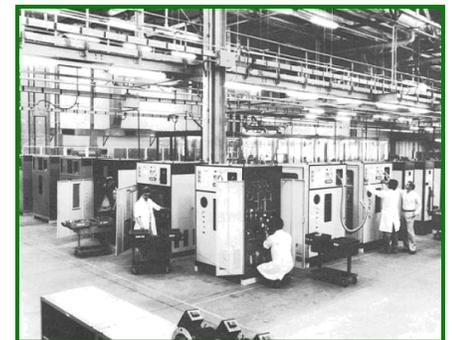
History 101: Decades of "Cool Innovation"

For over 50 years, Galileo Vacuum Systems, now known as VTech, has produced equipment especially designed for the refrigeration industry with an emphasis on innovation and technical excellence.

As Technology has advanced, so has VTech. From the simplest charging

equipment using hand valves such as the V201g, to the first fully automatic electronic A100 machine (shown on page 3), and to the fully PLC based equipment of today, like the VTech 100, VTech has lead the way with innovation, inspired design, efficiency and cost-effectiveness.

To succeed in this industry you have to know what it's like to actually run



Officine Galileo, c. 1975

Technical Focus

Refrigeration 101: Back to Basics

Part One: The Refrigerating Cycle:

Simply put, refrigeration systems solve a problem. The problem is how to convey heat from an area of a given temperature to an area of higher temperature. As a matter of physics, heat never does this on its own. In order to achieve this, a catalyst must be employed to facilitate the “heat transfer.” Refrigerants known as HFC’s (Hydrofluorocarbons) are commonly used.

Refrigerants help perform what is called the compression/expansion cycle. Although refrigerants are commonly thought of as gases, they are, for the working cycle, a liquid.

Figure 1 illustrates the thermodynamic cycle of temperature vs. entropy.

The thermodynamic cycle consists of four phases:

Phase 1: Compression of the low pressure vapor from P_1 to the pressure at P_2

Phase 2: Condensation of the high pressure vapor (P_2) to liquid refrigerant at constant pressure P_2

Phase 3: Isenthalpic expansion of the liquid from pressure P_2 to P_1

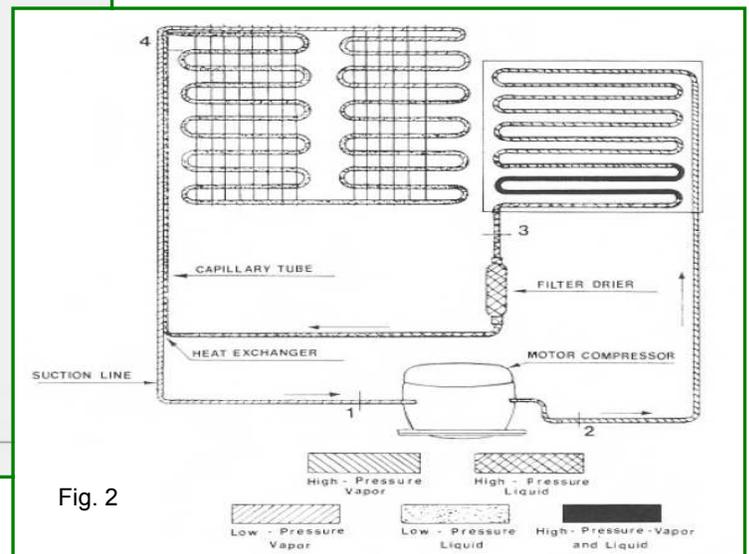
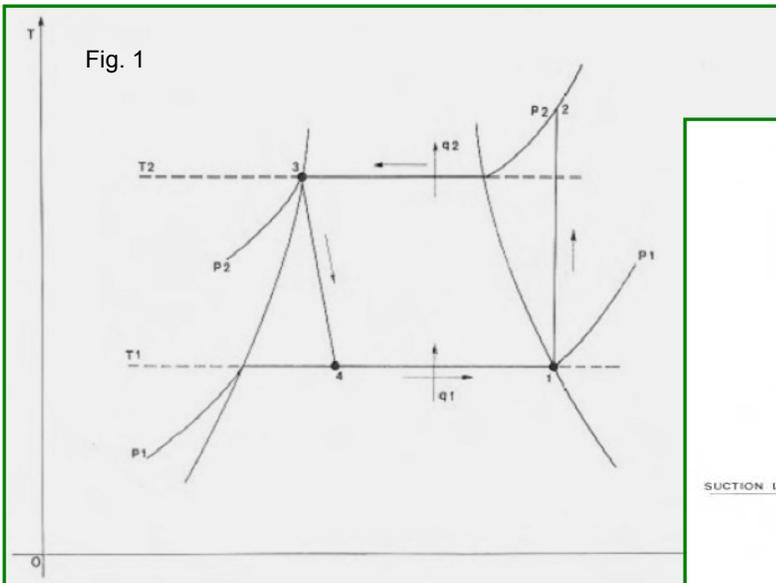
Phase 4: Evaporation of the liquid at constant pressure P_1

The refrigerant absorbs a quantity of heat at pressure P_1 during phase 4 and then gives off the gained heat quantity when it condenses at pressure P_2 . The amount of heat transfer accomplished depends on the electric power used to compress the gaseous refrigerant from P_1 to P_2 .

Part Two: Basic Components of a Refrigeration Circuit

The components of a refrigeration system, as described in part one (see fig.2), consist of:

- A. Compressor, the purpose of which is to compress the vapor (Phase 1)
- B. Condenser, in which the vapor is condensed to liquid (Phase 2)
- C. Filter Drier, which is used to keep the refrigerant free of moisture and other substances
- D. Capillary tube or expansion valve where the expansion occurs (Phase 3)
- E. Evaporator, in which the refrigerant boils off and releases the absorbed heat (Phase 4, back to Phase 1).



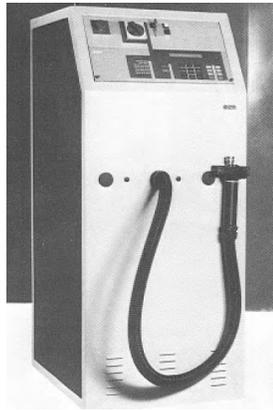
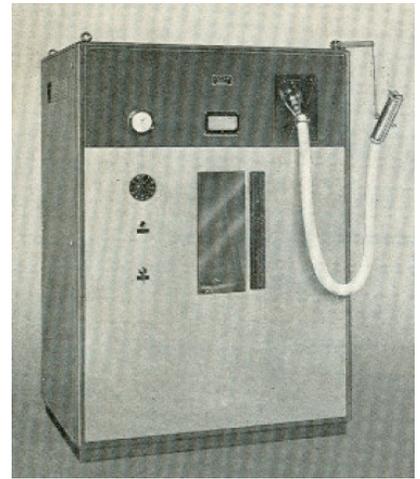
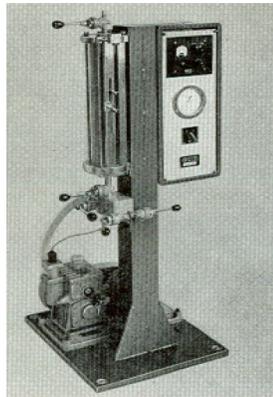
History 101

Continued from page 1

a production line, and we have that expertise. Our design engineers have a combined 40+ years of experience at Carrier Corporation, a worldwide leader in the refrigeration business.

This is the marriage of the technical aspect with the know-how component that is the recipe for success. VTech's equipment is made in the USA from primarily commercial components — no proprietary expensive electronics and special parts with long lead times. With quality in mind, as well as maintaining production with less down time, maintenance has never been easier either — the machine can automatically prompt the operator and maintenance people of routine procedures that need to be done such as changing of o-rings and vacuum pump oil.

The amount of skill required and dependence upon the operator has been limited by the automatic features on the VTech charging equipment. It boils down to connecting the hose, scanning in a barcode number or inputting a product number by the touch screen and walking away while the machine does the work. It makes one think that it really should've been this simple all along.



Company News Extra

Show & Tell: VTech Installs MasSpec Demo

VTech has just recently installed at its Alpharetta, GA (Metro Atlanta) facility a MasSpec demo machine. The MasSpec is an automatic helium outside-in leak tester.

This makes it easier than ever for people to see for themselves just how well the machine works. Seeing is believing, and all are welcome to come and see, as well as bring their own parts to test.

VTech's office is just 30 minutes from Atlanta's Hartsfield-Jackson Airport, the world's busiest airport and "hub" of the south.

"We think this is a very positive step," said Paolo Raugei, Executive VP of VTech. "It's like test driving a car, you need to get a feel for it before you buy it. We give people the power to do just that."

As opposed to a Vacuum Chamber (inside out) machine, the MasSpec is much less costly both on the front and back ends. The Plexiglas hood is only a containment chamber and is at atmospheric pressure during the test only using a 10-15% helium to air ratio compared to 100% in vacuum chamber and sniffing technologies.



VTech MasSpec Demo machine

Watch Demo Videos Online

VTech is currently re-vamping their website to include more interactive content, but for the meantime, you can view demo videos of the MasSpec and other equipment on youtube:

www.youtube.com/vtechamericas



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