# [tech solutions]

## Embraco
## EMC Compressor

One of Embraco's industry-leading and environmentally friendly refrigeration solutions is the EMC Compressor, a highly innovative compressor that uses natural refrigerant R290. It is one of the world's most efficient single-speed compressors, consuming up to 30% less energy than traditional compressors. The EMC Compressor works with zero Ozone Depletion Potential and nearly zero Global Warming Potential, allowing manufacturers to meet the refrigerant regulations proposed by the U.S. Environmental Protection Agency (EPA). Its smaller platform and extended cooling capacity releases more internal space for refrigerators and it is designed for use in beverage coolers, vending machines, under-counters and reach ins. Circle 115 on the reader service card.

## Fieldpiece Instruments
## Wireless Refrigerant Scale

Fieldpiece Instruments' new SRS3 Wireless Refrigerant Scale delivers accurate measurements for residential or light commercial facilities and sends those measurements either to the included remote or directly to the Fieldpiece Job Link™ mobile app to record and document refrigerant use. The sealed platform of the SRS3 is made of heavy-duty aluminum and is water-resistant. The scale measures refrigerant tanks up to 252 lb, and displays in ounces or grams only, pounds or kilograms only, or both ounces/grams and pounds/kilograms.

For more information please visit our website at www.fieldpiece.com or call 714.634.1844. Follow us on Facebook and watch our YouTube Channel. Circle 116 on the reader service card.

## Advantages of
## Duct Leakage Testing


Your company faces tough competition. It seems there is always someone who is willing to do the job cheaper and cut quality in the process. At the same time, homeowners commonly shop for the lowest price without understanding the difference a quality installation will have on their comfort and satisfaction. With a duct leakage performance test, you will be able to demonstrate the added value of your quality installation and repair services, and quickly differentiate yourself from the competition.

One of the greatest benefits of performance testing is that you will more thoroughly understand the job before you begin. You will be able to identify duct leakage and other performance problems up front and provide better estimates for the work to be done. By reducing the guesswork, you avoid unforeseen performance and comfort problems, size equipment more accurately, and reduce costly callbacks.

A duct leakage performance test involves pressurizing the duct system with a calibrated fan and simultaneously measuring the airflow through the fan and its effect on the pressure within the duct system. The tighter the duct system, the less air you need from the fan to create a change in duct system pressure. Testing procedures can be set up to measure only duct leaks which are connected to the outside, or to measure total duct leakage (i.e. leaks connected to the outside and inside of the house). Duct leakage measurements are used to diagnose and demonstrate leakage problems, estimate efficiency losses from duct leakage, and certify the quality of duct system installation.

Visit www.ductblaster.com to learn more. Circle 117 on the reader service card.

## Mastercool's **Mini Twin Turbo**

Mastercool introduces the new "Mini Twin" all-in-one recovery machine. Equipped with the same high quality twin piston compressor as the Twin Turbo series this unit has been designed to work in all applications. Whether you find yourself up a ladder, in a crawl space or just not looking forward to lugging around a heavy piece of equipment this is the right machine for you. Best of all, this machine has been constructed with the safest spark-free components allowing the use with all combustible gases.

The Mini Twin was designed with the refrigeration technician in mind who recovers smaller amounts of refrigerant and is exposed to combustible gas applications. This technician will benefit from the speed, weight, portability and overall value. The unit was designed compact with a simple "Spark Free" internal structure, twin cylinder compressor, and advanced oversized fan to recover effortlessly. The added safety element allows technicians to recover under safe operating conditions in any environment. **Circle 118 on the reader service card.**

## TPI 605 Digital Vacuum **Gauge just $119.95**

Use the TPI 605 Digital Vacuum Gauge, offered at $119.95, to verify vacuum before charging refrigerant systems; prevent moisture and air from remaining in the system; and find small leaks. Features: 12,000 to 15 micron range, 1 micron resolution; wall hook and magnets for hands free use; 300 PSI over pressure for safety; cleanable sensor; seven units of measure: Microns, PSI, inHg, mBar, Pascals, mTorr and Torr; and auto power off after 20 minutes. Learn more about the TPI 605, $119.95, at www.testproductsintl.com, or 1-800-368-5719. **Circle 119 on the reader service card.**

## NATE Technical Committee **Reviews AC Exam**


NATE continues to ensure that its exams meet the highest standard of quality, with questions that are clear, relevant to the industry and set at the appropriate skill level. The NATE technical committee met on April 12th and 13th at the company headquarters in Arlington, VA to review the Air Conditioning Service exam. Updated questions will be incorporated into a new exam form to be implemented this fall.

NATE tests are reviewed annually as a part of the organization's routine exam maintenance process. Training and Education Manager Anthony Spagnoli explained that, "Item statistics from the exam are used to identify questions that are not performing well and such questions are revised or replaced. Question performance is typically impacted by the level of difficulty or how well the question is written. Factors including the use of grammar and wording may be revised to make the question easier to comprehend, which is of course, is in the best interest of our technicians."

When all questions are reviewed and edited, the Beta Testing Phase of the process ensues. During this period, the exam is tested prior to its official launch. The results of these preliminary exams are then used to gauge the new exam form's difficulty, and that allows NATE to adjust the passing score if needed.

Mr. Spagnoli insists that candidates will be successful at the Air Conditioning Service exam, and any other NATE test with a combination of solid preparation and experience. Those interested in the NATE tests are encouraged to review the Knowledge Areas of Technician Expertise (KATEs) online at KATEs and to consider training material available at the NATE Online Store. **Circle 120 on the reader service card.**

# [tech solutions]

## testo Flow hood


The testo 420 Flow Hood with built-in flow straighteners offers highly accurate measurement data even in turbulent flow applications. The tiltable and detachable Bluetooth display provides an easily viewable screen from any direction as well as the benefit of remote measurement monitoring. With the integration of testo's powerful 420 app you can have detailed report generation at the push of a button. At only 6.2 lb, its lightweight design ensures convenient handling while measuring volume flows at supply and return vents. Testo's extensive line of air flow instruments are unmatched in both precision and reliability. For more information, visit www.testo.com. Circle 121 on the reader service card.

## CATIV Clamp Meter and Voltage Tester

The DL220 from UEi Test Instruments has a patent pending Sliding Clamp Jaw that combines a fork meter, a current hook and voltage tester into a single combined solution. The low profile sliding jaw allows easy access in tight spaces while the closed clamp head provides better accuracy than open fork or current hook options. The DL220 is rated CATIV offering AC and DC voltage, AC Amps, resistance, continuity, LRA inrush and data hold. In addition to the ergonomic design, the DL220 has connected test leads, test lead storage, a backlit display and is backed by a two-year limited warranty. Circle 122 on the reader service card.

## Locking Refrigerant Caps

Novent® locking refrigerant caps help you comply with the International Mechanical Code (IMC) and International Residential Code (IRC) requirements for "locking refrigerant caps" and they can also help you (and your client, the building owner) prevent refrigerant theft and vandalism.

The IMC and IRC code requires all outdoor access ports (on AC and refrigeration equipment) be made tamper resistant. The code commentary details the Novent caps and keys as the standard for use, as these products were designed with the requirement of a special tool for removal (one that is not easily obtained by the non-licensed, general public).

The corrosion-resistant, aluminum-shrouded brass Novent locking caps screw onto standard Schrader valves. They comply with the IMC (Section 1101-10) and IRC (Section M1411-6), which mandate tamper-resistant outdoor access ports for all AC/R installations. The exact language is "Refrigerant circuit access ports located outdoors shall be fitted with locking type tamper resistant caps."

The Novent patented locking caps can only be installed and removed with a special "screwdriver key" or MultiKey "key-ring" sized wrench key, which are available only through wholesale HVACR distributors and are sold only to licensed technicians.

So, comply with enforced code, and to solve problems where systems are mysteriously losing refrigerant (and you can't find any leaks), the Novent locking refrigerant cap is your solution. Circle 123 on the reader service card.