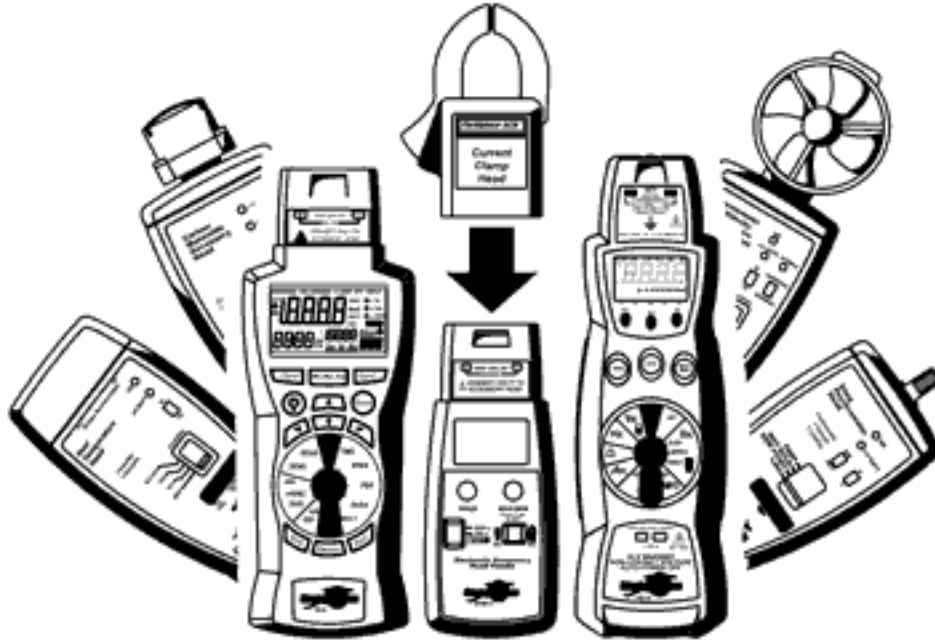


## Contractors Find New Ways to Increase Efficiency and Improve Safety



### Technician shortage means new ways must be found to increase efficiency

*By: Jack Sine*

*The nationwide shortage of HVAC technicians has forced service companies to find ways to maximize their service techs' performance. The successful ones are using a three-pronged approach: education, better instrumentation, and enhanced preventive maintenance programs.*

### Better education means more efficient technicians

*John Shamahorn, Director of Operations at Chas Roberts Air Conditioning in Tucson, Arizona says education certainly is key to getting the most out of technicians and keeping them safe.*

*“Chas Roberts has been around since 1942,” said Shamahorn, “and we learned early on that tech education is the base on which to build our business. Today have 80 per cent of the Phoenix residential air conditioning market and 43 per cent of Tucson and we achieved that on the efficiency of our technicians. We have nearly a thousand employees, most of them techs who we get from the local trade schools. But the education they get there is just a start. Naturally we do on the job training, but we also enhance that with classroom time at our*

*facilities. Our main instructor is also our best trouble shooter and he can teach the new techs things they wouldn't learn elsewhere. We also bring in experts from outside to broaden their knowledge. We have such large market share because we meet our schedules and we meet our schedules because we make sure we have the best trained service technicians."*

*John Bevington is President of ChillCo in Louisiana. ChillCo sells and services large tonnage chillers for the commercial and industrial markets.*

*"Naturally, we educate our technicians both in house and out," says Bevington. "But we take it a step further. We also educate our customers. We offer a five day high intensity course that focuses on chiller maintenance and repair from the end-user's perspective. It's good for both us and them. They gain knowledge that can save them problems by learning to properly maintain and troubleshoot their systems, and it's good for ChilCo because it frees up our technicians for more pressing work."*

### **New technology means better efficiency and greater safety**

*The most successful contractors are the ones who find the best new technology for their technicians to use. At Chas Roberts it's instrumentation that makes the technician's job easier and safer.*

*"We monitor technology very closely," said Shamahorn, "and recently we identified several instruments from two companies, Fieldpiece and INFICON, that greatly improve our techs' performance."*

*Fieldpiece is a manufacturer of hand-held instruments for installation, maintenance, and repair of HVAC equipment.*

*"I first discovered them at my wholesaler's. I told him I needed a new meter and he held out a Fieldpiece and told me it was new on the market. I asked him if it was rugged enough for HVAC work and he grinned at me, threw it across the room and bounced it off the Coke machine. He went over, picked it up and it worked fine. That was a year and a half ago and I have been using their instruments ever since and recommending them to my technicians. We even offer a payroll deduction plan to help them make the purchase. The Fieldpiece instruments are extremely durable, highly accurate, and priced right. And they're more compact than others on the market. That makes the technician's work even easier.*

*"But that's not all. They have also introduced a modular design that makes the technician's tool kit significantly more compact. It consists of a stick meter, a data logger, an electronic handle, and separate heads that fit into any one of the three. The heads measure ac amps, vacuum, air velocity, dual temperature, gas/static pressure, wet bulb relative humidity, and carbon monoxide. I've tested them all and they are at least as accurate as anybody else's. And you can fit them all into a small tool bag. They reduce the amount that a technician has*

*to carry by 30 to 40 per cent. No more trips back to the truck. Plus, everything works the same way. Lose the operator's manual? No problem.*

*“And the modular design is much more convenient. Everything's there where you need it. The new stick meter even has a magnetic strap so you can hang it anywhere. The people at Fieldpiece really focused on the needs of the HVAC techs.”*

### **But what about safety?**

*“I already said how rugged they are.” Said Shamahorn. “The technicians believe in them. A while back one of our techs used a different brand meter to check for power and it registered zero. He got pretty well zapped. That has never happened with a Fieldpiece.”*

*Fieldpiece was founded in 1990 by Rey Harju as a manufacturer of digital multimeters.*

*“The problem with other instruments then and now,” said Harju, “is that they're designed for electricians and electronic technicians. HVAC technicians face unique challenges. They need to test a wide variety of parameters. For safety and convenience, they like our “hands free” testing. We design our instruments specifically for HVAC service technicians. We provide a magnet to hang the meter and alligator clips to hold thermocouples and test leads in one place. Our accessory heads measure the parameters a tech needs most. Our instruments are easy to carry, easy to use , and save the HVAC technicians time on the job.”*

*Shamahorn agrees.*

*“The Fieldpiece people are extremely responsive. Their service is excellent and you actually talk to a person. And when you make a suggestion they take it seriously. I've made a few suggestions that it looks like they are going to include in future instruments. They know that the guy in the field knows what he needs.”*

*When asked what other instruments made his technician's jobs easier, Shamahorn replied, “INFICON. Among other things, they make a leak detector called a D-TEK™ that is extremely accurate. It uses heated diode sensor technology to detect chlorine and fluorine. It is more accurate than other technologies on the market, and eliminates almost all false readings and by eliminating false readings you make the technician significantly more efficient.”*

*“INFICON developed hand-held heated diode sensor technology for refrigerant leak detection more than ten years ago,” said INFICON National Sales Manager, Brian King, “and we've been refining it ever since. It responds to the slightest trace of fluorine and chlorine and virtually nothing else. It is noticeably more sensitive than any other technology. The only thing the technician has to be careful about is the diode itself. Like a light bulb, it wears out eventually. We recommend that technicians carry a spare and check the*

*instrument regularly. We also recommend regular maintenance to extend the life of the instrument.”*

*The fact that the diode has to be replaced doesn't bother Shamahorn. “The accuracy and sensitivity more than make up for what is really a very minor nuisance. Everything wears out eventually. We have our techs replace the diodes in their instruments every 100 hours and we supply the spare diodes.”*

*Jeff Somers, Service Operations Manager for Monsen Engineering in New Jersey uses the technology of a sub contractor to speed their work. Their secret weapon is Hudson Technologies from Pearl River, New York. They offer a patented on-site refrigerant decontamination service that is not only extremely high speed, it can also decontaminate refrigerant on line so that no cooling time is lost. That is particularly important to process cooling chillers because production lines do not have to be shut down to decontaminate refrigerant. This service eliminates excess oil, moisture, rust, and particulates.*

*“They actually do the work for less than we do and give us additional profit room,” said Somers.*

*They also free up technicians for other work.*

### **Preventive maintenance increases a technician's efficiency**

*John Bevington of ChillCo maintains that a thorough preventive maintenance program saves technician time by minimizing catastrophic shutdowns that require technicians to be pulled from other jobs, thus decreasing efficiency. He says that a proper program spots internal chiller problems before they become serious so they can be repaired during scheduled shutdowns.*

*The key to a good preventive maintenance program is refrigerant and oil analysis.*

*“Some chiller owners have the misunderstanding that the purpose of oil and/or refrigerant analysis is to determine whether the oil needs to be changed or the refrigerant needs to be cleansed,” said Bevington. “While this is a secondary benefit to performing these tests, the primary benefit is to detect potentially harmful internal machine conditions and correct the root causes of these conditions.”*

*In addition to refrigerant and oil analysis, Bevington recommends that a thorough preventive maintenance program include:*

- Vibration analysis*
- Eddy current tube analysis*
- Maintaining an operating log*

· *Motor meggaring*

*So, while we cannot see the technician shortage disappearing any time soon, we can improve technicians' performance by ongoing education, keeping on top of the latest technology advances and putting them in our techs hands, and by aggressively marketing thorough preventive maintenance programs.*

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