

# comfort zone

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## Compressors Aid in Energy Efficiency

Some new trends in the compressor industry are riding the green/energy efficiency wave.


In order to reduce energy consumption and achieve better energy efficiency, there is a growing trend to apply variable-speed and variable-capacity control technologies to compressors. These technologies save energy by running the compressor at slower speeds and using intelligent devices to closely match system operation with actual demand. This trend will grow as legislation and regulations increase minimum efficiency levels.

A second change in compressors is the types of refrigerant utilized, due to various governmental rules. Compressors are optimized for HFC refrigerants, which have completely replaced HCFC refrigerants; they are also optimized for use with natural refrigerants such as R-290 (propane), R-600a (isobutene), and R-744 (carbon dioxide).

Today's compressors are smaller, lighter, and more efficient without sacrificing reliability. Compressor efficiencies over the last five to

seven years have increased at an average of 1–1½ percent per year. Some designs have even eliminated the need for oil inside the compressor through the use of magnetic bearings. Today's compressors are also much quieter, making them “greener” than their predecessors.

To keep your compressors running efficiently, your HVAC contractor should perform regular maintenance so that the systems operate as efficiently as possible, and reduce energy consumption and greenhouse gas emissions at the point of production. Here are some maintenance tips:

- Clean the coils
- Replace dirty filters
- Maintain proper system charge
- Add or replace insulation
- Eliminate duct losses through leakage
- Keep the refrigeration system clean and dry
- Apply refrigerant flow devices and operating/safety controls to avoid overheating 

## Heat Rejection for Critical Facilities— Balancing Availability vs. Operation Costs

Are you trying to keep the HVAC for data rooms and telecom locations working at maximum efficiency, while trying to reduce operating expenses?

Not too long ago, it was fairly simple: Engineers focused on how many watts per square foot the Information Technology (IT) equipment consumed, therefore rejecting “waste heat” into the room. The conversion from watts to Btuh was made, and the appropriate tonnage Computer Room Air Conditioning (CRAC) units were ordered. A contractor installed the units up against the wall of the data center. They’d connect the piping, controls, and the electrical service, and perform a startup. Even though the unit placement was not ideal, usually there was enough tonnage to saturate the room with cold air. The mindset concerning electrical costs was, “They are what they are.”

In business, as in life, rules change. Moore’s Law states that every 18 months, the computing capacity, meaning work done by a computer, will double. Therefore, the amount of heat given off by the computing equipment will rise as well. As a result, data center cooling today is all about kW/rack of IT gear. The larger-capacity, faster, and therefore hotter computers (especially blade-style

servers) have forced engineers to analyze the physics of cooling.

The focus now is “heat removal” and in particular, capturing the heat as close to the source as possible. Today’s CRAC units are strategically located within the rows of IT equipment, or otherwise positioned to ingest all of the hot air possible. The current mindset regarding electrical cost is, “We must be as efficient as possible to pay as little for power as possible.”

So how can your service partner help customers save money? They should start by asking questions:

- Can we save operating dollars by studying the layout of the IT gear and making placement suggestions based upon heat load?
- Would it make sense to duct or re-duct either the supply or return air in an existing facility?
- What is the IT staff installing?
- Are the rows of equipment placed in a hot isle–cold isle design?
- Are the CRAC units fighting each other (some cooling, some reheating, and others fighting the humidity setpoint)?

By becoming a resource and learning what drives your business, a good service provider can help you stay online and save you money. ☒

## Employee Spotlight

**Name:** Larry Lisowski

**Position:** Service Technician

**Years in the HVAC industry:** 18 years

**Years at Air Comfort:** 10 years

**Major job responsibilities:** Service, maintenance, DDC installations

**For me, a perfect day at work is:** Getting the job done, getting home in one piece, and a short drive

**The best part about my job is:** Working somewhere different day to day

**Family:** Wife Leslie; boys Jake (17) and Nick (14)

**If I could do it all over again, I would:** Go to college, become a banker and live in a warm climate

**Three words that best describe me?** Easy going, hard working and expert ping pong player

**If a movie was made about my life, the title would be:** “The

World’s Most Interesting Man” (Hhrrummp!). And I would have Mel Brooks star in it.

**If I could be a professional athlete, I would be:** Golfer

**Favorite winter activity:** Going south for vacation

**Favorite summer activity:** Fishing

**Three bad habits I am willing to admit:** Like to start multiple projects around the house and never finish them, drink out of the milk carton, and that’s all I’m willing to admit to ☒



## Ed Raftery Retires After 40+ Years!

Congratulations on 40 years with Air Comfort. May your days be filled with enjoyment and many Sox victories! Health and happiness in the future. –*The Blaster*



Your retirement is no longer a “pipe dream”. Let’s hope you are able to “fit” many trips back to see us and that you and Linda also find time to “take off” to your favorite destination of Las Vegas! All the best Ed! –*Jim*

Ed was one of the first Air Comfort employees I met during my interview process ten years ago. Before my first day, Ed took me to a White Sox game, which was very thoughtful and so characteristic of him. Happy Retirement, Ed! We are sure going to miss you! –*Lynette*

Whether as a pipefitter, Superintendent, or Vice President you always approached your work with dedication, hard work and the goal to make Air Comfort the best it could be. You’ve been a huge part of our success over the years.

For your dedication and commitment over a span of 40 years, I want to say THANK YOU!! I wish you all the best in your retirement. You will always be a part of the Air Comfort family! –*Tim* ☒



The **focus** now is “heat removal” and **capturing** the heat as **close** to the source as possible.



## Blaster's Trivia



1. What is the maximum diameter of a baseball bat in the Major Leagues?
2. What year was this rule established?
3. Name the four (4) Major League teams broadcaster Harry Carey worked for during his career.
4. Who was the first manager of the expansion team the New York Mets?
5. Who was the first Major League baseball player to earn \$100,000 for a season?
6. Who was Cornelius Alexander McGillicuddy?

*If you know the answers to all six questions, contact Carol at 708.356.5092 or email [williamsc@aircomfort.com](mailto:williamsc@aircomfort.com).*

### Air Comfort

Air Comfort is a full-service HVAC provider specializing in design and installation of new equipment, retrofits of existing systems, maintenance programs and emergency service.

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