

SERVICE CALLS

Sawtooth Humidity Control - A client's Vaisala combined temperature and humidity sensor on a 100% outside air system was trending with excessive RH fluctuations in a process area. Despite a setpoint of 40% RH plus or minus 10%, levels were falling well above and below the parameters. The humidity control loop was found to be making corrections far too rapidly, creating a sawtooth effect. Loop tuning, testing, and verification corrected it.



Accurate Cooling Flow - MRI scanners and other intricate medical equipment require precise cooling flow at specific temperatures. MSC recently responded to an urgent call from medical imaging office where severe cooling issues put MRIs at critical risk. Using a highly-accurate Fuji Portaflow Ultrasonic Flow Meter, our techs were able to quickly diagnose a cooling flow anomaly and promptly remedy the problem.



PROGNOSIS WRONG?: Getting The Right Diagnosis

We all know that feeling

The nagging uncertainty when you've brought your car to the auto mechanic to fix an odd squeak and he recommends a very expensive repair. What if he's wrong? What if the problem is a simple adjustment or low-cost part replacement? Am I being taken advantage of? Or maybe he simply doesn't know what he's talking about? The same goes when your facility's heating, cooling or refrigeration system stops working, and a contractor diagnoses major component failure and recommends replacement at a cost of thousands, or tens of thousands. Time is of the essence to get the system back on line, so what do you do?

Qualifying your contractor

It is far from uncommon for an HVAC contractor with inadequate technical training, or lacking proper diagnostic tools, to miss a simple problem and erroneously condemn an expensive piece of equipment. Fortunately, there are steps building owners and facility managers can take to avoid these predicaments. First and most importantly, exercise due diligence by fully vetting your contractor of choice. What are their technicians' qualifications? Are they UA STAR-certified? Have they been factory-trained and certified to work on your brand of equipment? Does the contractor own, or have access to, the proper diagnostic equipment for your specific issue? If you feel uncertain about a diagnosis you receive, seek a second opinion, and don't just ask for a quote on a condemned part. Have the second contractor perform their own analysis.

Second opinions: a parable

MSC was recently called upon to provide a competitive quote to replace a 20 HP main indoor blower motor in a large rooftop unit that had been tripping on a daily basis. Another contractor had diagnosed motor failure and quoted a large sum to replace it.

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TECH TALK

MSC - THE ONLY TRUE HVAC SERVICE COMPANY - WE FIX IT



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973-884-5000

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MSC technicians asked to examine the motor, as it is against company policy to submit a bid without first performing our own diagnostics, and, using a Fluke 1550B megohmmeter, or megger, the source of the problem was quickly traced to a pitted contactor that was preventing voltage from passing through. The part was replaced the same day at a small fraction of the original quote, saving the client over \$5,000.

“MSC: the only true HVAC service company”

MSC is a service subspecialist in the technical intricacies of HVAC and controls, not a mechanical contractor. We continually invest in state-of-the-art diagnostic equipment, and all of our technicians are UA STAR-certified, multi-disciplined diagnosticians trained in electrical, controls, refrigeration, and thermodynamics. MSC can diagnose even the most elusive issues the first time around and provide clients with prompt, permanent solutions.

For more information on our services and advanced diagnostic capabilities, please contact MSC at 973-884-5000.



MSC: Investing In Our Customers



Investment in advanced diagnostic tools and equipment is one of the most important things an HVAC service company can do for their clients.

MSC technicians are the best-equipped in the industry. We continually invest in the most sophisticated diagnostic tools money can buy, from megohmmeters and micromanometers, to multimeters and ultrasonic flow meters, and spare no expense to make sure all of our technicians receive in-depth technical training on how to use these diagnostic tools correctly. They frequently attend vendor-sponsored seminars, and regularly take part in collaborative in-house workshops to share solutions and stay updated on the latest equipment, controls, and technology.

Be wary of the contractor with the low hourly rate, which can be a strong indicator of inadequate investment in diagnostic tools and regular technical training.



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Chilled Beams

Chilled beams are ceiling-suspended convection HVAC systems that use circulated chilled or heated water to induce air flow to cool or heat a building. First developed in Norway in 1975 and widely used throughout Europe for decades, chilled beam technology is steadily gaining in popularity here in the U.S. as an energy-efficient, low-maintenance option.

The term “beam” is somewhat of a misnomer, as chilled beams were named for their long, narrow appearance and are not part of a building’s structure. There are two basic types, passive and active. Both types can be recessed within a suspended ceiling system or mounted just below the ceiling. Multi-service chilled beams can integrate other building services such as lighting, sprinklers, smoke detectors, etc.

On passive systems, chilled water is circulated through a cooling coil. The cooled air passing over the coil naturally descends as warm air continually rises, resulting in convective air motion that cools the space. An active chilled beam relies on primary air supply introduced through high-velocity nozzles to induce air flow up through the beam and back down into the room. Active beams provide greater cooling capacity and better humidity control than passive systems, and can be used for both heating and cooling. There are numerous advantages to chilled beam technology over conventional systems, depending on the application. These include significant energy savings, simplicity of design and control, smaller ductwork and air-handling units, less noise, minimal maintenance, increased occupant comfort, and improved indoor air quality. Disadvantages are dew-point concerns, appearance, conflicts with lighting and other ceiling-mounted devices, and ceiling height limitations (chilled beams are not suitable for ceilings higher than 14 feet).



Father Of Modern Air Conditioning

Willis Carrier is credited with inventing modern air conditioning, one of the most important inventions of the 20th century. While waiting for a train on a foggy night in 1902, the mechanical engineer had a sudden insight into the complex relationship between air temperature, humidity, and dew point. In 1906, after extensive research and field testing, Carrier patented his “Apparatus for Treating Air, which used chilled coils to control temperature and humidity.



TECH TIDBIT...

- When considering replacing an old air handler or split system with a high-efficiency model, verify that all ductwork is properly sized and leak-tested, as many old ductwork systems are undersized and leak considerably. Advanced technology and antiquated ventilation systems don't really mix.