

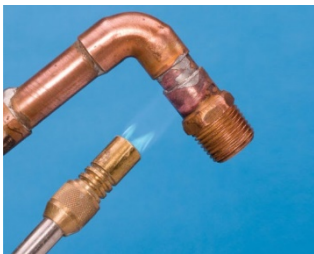


COUNTERING SOME MISCONCEPTIONS ABOUT EXCEL AIR SYSTEMS

As Excel Air Systems has grown, our esteemed reputation has become commonly known throughout the industry. Despite that status, some misconceptions about our technology still remain amongst certain members of the mechanical contractor community, perhaps based on naivety.

As such, we recognize the importance of directly addressing these doubts and strengthening communication, as part of our commitment to providing essential resources on what Excel Air Systems' unique sealed room technology has to offer.

COPPER IS NO GUARANTEED STOPPER



One of the biggest misconceptions is that traditional copper pipes with solid brazed joints are virtually incapable of leaking, while our unconventional products are insufficiently designed for the rigorous requirements of industrial HVAC applications, and will subsequently leak. This incorrect belief has brought an air of reluctance to certain individuals.

However, not only are traditional brazes and welds susceptible to the vibration of heavy machinery (nullifying their supposed leakproof properties and alleged indestructibility) but copper piping itself often possesses detrimental irregularities.

In contrast, our quick-connect [Plug & Play Fittings](#) and [Flexible Linesets](#) – developed in conjunction with our trusted partners for several years prior to their respective product launches – are machined to precise tolerances.

Having been specifically designed to encapsulate R-410A refrigerant, which functions at a smaller molecular level than oxygen, this patented technology is extensively tested and vetted in the controlled environment of our shop. By utilizing all the proper principles and procedures to ensure that standards are met, we remove any potentially hazardous variables, unlike with traditional copper pipes, which run the risk of poor welds and contaminants rendering the system inoperable.



THE ANTI-LEAK TECHNIQUE

To further illustrate the contrast between our products and other current market offerings, with most fittings and linesets, even if there isn't an air leak, there could still be a gaping refrigerant leak, which conducting a simple pressure check with air would not reveal.



The only reliable way to discover this is by putting it into a vacuum, which is our standard protocol. The crimping mechanism and its proprietary components were created specifically for this multi-layer process, not simply ported or adapted from other technologies in a half-hearted attempt.

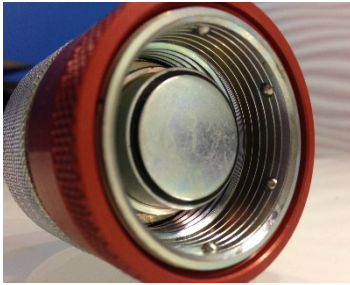
These rigorous protocols (including burst pressure-testing lines at 2,500+ PSI) ensure the seals are tight enough to hold under any pressure, thereby removing a lot of variables.

From that perspective, Excel Air Systems has already raised the bar by designing and testing our products to such heightened standards, setting them miles ahead of the standard components on an average job site, while the repeated nature of the process has significantly increased efficiency.

We know that everything has to work perfectly, because the situation is mission critical.

For a more in-depth explanation on the various scientific procedures we undertake, one could refer to our [resources](#).

FOR A MORE FITTING UNDERSTANDING



Despite some persisting misunderstandings that [Plug & Play Fittings](#) are single-use only, they are actually uniquely resealable, opening the door for reusability.

Their second-generation design requires no tools, so if your hand alone can't get them on, they're not being put on properly.

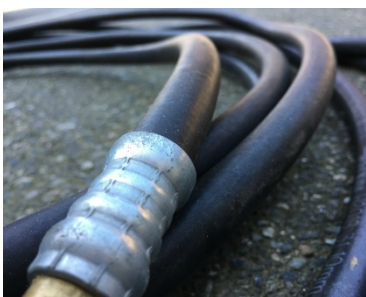
In other words, if it's easy, you did it correctly. If it's difficult, then the fitting must not be on the right parallel, as it can become caught if vertically or horizontally askew, and will not connect.

Therefore, the probability of cross-threading or other installation issues is greatly reduced. The ability to connect and disconnect without losing a charge also allows for inexpensive system relocation if moving to another facility.

A MORE FLEXIBLE MINDSET TOWARDS LINESETS

Other objections, specifically regarding [Flexible Linesets](#), may pertain to them being less aesthetically pleasing and of a softer composition than copper pipes. Despite these minor drawbacks, they're still quite strong and remarkably dependable.

As evidence of their durability, with systems constantly being tested in-house, our resident testing room Linesets are repeatedly dragged across the floor, coiled back up, and moved around without sustaining any damage. It's only very rarely that we feel the need to replace that line.



[Flexible Linesets'](#) numerous benefits in comparison to traditional piping cannot be underestimated. For example, if you were wanting to run a line of piping through a wall that had copper all the way up, you would first have to cut a hole. Then, trying to run the pipes through the wall would inevitably involve several hours of hard work and finessing, just to make them comply adequately.

In contrast, achieving this with a single [Flexible Lineset](#) would take less than a minute. You could put it through, pull it over, and put it down – running it in and out of the room with ease. Such flexibility opens the door for a lot more versatility in what you can accomplish, giving you a new level of control where systems are totally integrated.

PRE-CHARGE AHEAD

Leveraging the combined technologies of [Plug & Play Fittings](#) and [Flexible Linesets](#) and applying these fundamentals allows us to offer pre-charged systems, produced with the same repeated testing procedures for a properly-weighted charge.

This also means installation can be done faster and easier for greater convenience, which costs less, providing better economic value.

EVEN BETTER TOGETHER

Despite this increased efficiency, certain misconceptions have prevailed, with a degree of skepticism regarding the advantages of an all-in-one solution over independent air conditioning and dehumidification systems. This is understandable, as, in many of life's circumstances, custom appliances tailored to a specific purpose are vastly superior to gimmicky multi-tools, which are usually trying to be too much at once.

However, when pushing the boundaries of innovation, a balance and trade-off must be reached. In this case, since humidity is relative to temperature (garnering the term *relative humidity*), any opportunity to combine these components is well worth exploring.



Realizing this, in designing the [Evolution Series](#), we parlayed the expertise we earned through years of engineering thousands of air conditioners, evaluating dehumidifiers, and setting up grow rooms into a perfectly ideal solution.

DOING MORE WITH LESS

While other market offerings provide air conditioning or dehumidification to extreme capacities (aiming to do more with more), only Excel Air Systems is pushing the boundaries to offer both, doing more with less.



What does less mean? Today's grow rooms – particularly vertical set-ups – produce immense heat loads in very tight spaces, with a density outpacing that of next-generation server rooms. Therefore, you want to do as much as you can with the smallest footprint, because space is expensive.

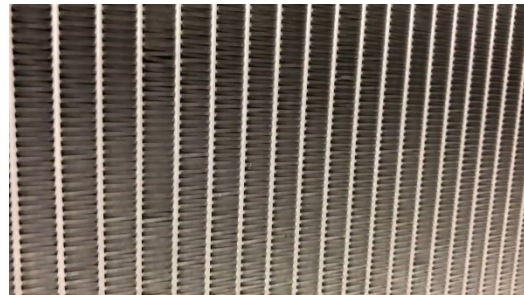
YOU DON'T KNOW THE HALF OF IT

Traditionally, these costly space requirements have meant the inability to have both systems in the room, as they leave no ceiling or floor space, necessitating placement of at least one of them in a nearby mechanical room or adjacent hallway and piping air in.

While this may seem like an improvement, it really just relocates the problem elsewhere and requires additional work, as you now need to insulate everything and run linesets. The versatility is considerably less, while the difficulty level is considerably higher, equating to higher costs and more headaches.

Excel Air Systems circumvents these limitations by designing a solution that requires half the amount of space, fitting what would usually take up 40 cubic feet into only 20 cubic feet. The amount of clutter is greatly reduced, opening up more space for growing.

How have we achieved this? We've successfully pioneered innovative components, such as next-generation microchannel coil technology, which industry experts not only denied could be used on evaporative air handler coils, but coil manufacturers had previously not even attempted.



LEVERAGING THE BALANCE

Beyond the components of the system itself, we look at everything else involved in successfully setting up a grow room, to find the best way to uniquely leverage those elements. However, without maintaining essential control over temperature and humidity, that beneficial balance would be lost.

How does the leverage of these factors come into play? First, consider conventional set-ups, where air conditioning drops temperature, and dehumidifiers create a lot of heat, resulting in the two systems being in direct conflict with each other, engaging in freezing and thawing cycles, draining a lot of power.

In contrast, as the mechanical workings and desired outcomes of the two functions actually share a lot of commonality when correctly configured, the [Evolution Series](#) has been designed to seamlessly switch on the fly between air conditioning and dehumidification modes, greatly increasing efficiency.

Since the system is never battling itself, it's able to run continuously. This undisturbed electrical current (without voltage irregularities) is much easier on the components, greatly prolonging the system's functional lifespan.

LET'S GET OUT OF SEER

With regard to this operational efficiency, another misconception that has negatively impacted certain industry members' preconceived perceptions of our products has been the idea that the higher the seasonal energy efficiency rating (commonly referred to as *SEER*), the more power-efficient the system.

As a metric determined over a range of temperatures, SEER is calculated by measuring power draw, where the system is first run at 25% capacity, then at 50% capacity, then at 75% capacity, and then, finally, at 100% capacity. The average amperage reading is then divided by the number of BTU's, providing the SEER.



While this metric fittingly applies to conventional seasonal air conditioning, which runs intermittently – at different capacities on varying days of the year – to provide comfort cooling, it's not an accurate way to assess our systems, which are designed to run for 12 to 24 hours a day, 365 days a year, in grow rooms with extremely high heat loads.

High-SEER systems ramp up and down to save power, loading half of the compressor to get half of the amperage, but in mission critical applications, systems have to run well continuously at 100% capacity, not partial loads.

To illustrate with a more accurate comparison, a full load on one of our 5-ton unit runs at 30 amps, whereas a full load on a high SEER 5-ton system can run up to 34 amps, so it's 10% higher in that usage.

As SEER is based on only about 100 days of annual runtime, it does not apply to systems designed to run 24 hours a day, and pitting our systems against conventional air conditioners with standard SEER measurements is an inaccurate comparison.



Nonetheless, some individuals still feel that what they want is a variable speed compressor with even greater efficiency. However, what they may not realize is that the components required to make that work properly are substantially more expensive, retailing for as much as two or three times the price of other systems.

At such exorbitant prices, systems would have to be run on a residential basis for the better part of a decade before reclaiming the cost, rendering this option nonviable when compared to Excel Air Systems' products.

THE 5-TON CAN'T BE OUTDONE

Even from those with a correct understanding of our systems' operational efficiency, we've received questions regarding the perceived lack of scope of our offerings, wondering why the largest system we sell is only a 5-ton. There are actually a few important reasons for adhering to these limitations.

Engineering systems for a certain BTU level – adequately zoned for an area with 15 lights worth of cooling – allows for redundancy within the space. That way, instead of having to bring in a large crane and factor in load management to install one massive system, the required capacity is split among several more manageably-sized systems, so smaller lifts and equipment can be used.

As we've observed, with so many configuration options to consider when setting up a facility, it's not uncommon for people to still be changing plans (regarding voltage or placement) up until mere weeks before we're shipping their systems out.

Making such last-minute changes isn't possible with one massive system, as the entire infrastructure is based around it and solidified 3 to 6 months in advance, but with our gear, it's totally feasible. Then, in the untimely event of a partial system failure, the other systems can be adjusted accordingly while maintenance is conducted.

Additionally, in terms of approachability, suitable components and wiring are widely and readily available for 5-ton units, with the same infrastructure required for both residential and industrial applications.

This guarantees that parts like 5-ton compressors, contactors for 40 amps, and copper lines in necessary sizes are easily procurable from multiple manufacturers and distributors, because we want to provide mechanical contractors with the versatility of having many repair options.

DOWN TIME IS NOT AN OPTION

This commitment directly ties into another misconception held within the industry, which is that Excel Air Systems is inadvertently taking jobs away from mechanical contractors through our ongoing technological innovation. This false belief couldn't be farther from the truth.

In reality, during the initial installation process, the installing company only has the potential to lose money. With respect to mechanics, if, for example, you've made a faulty weld or failed to detect a refrigerant leak, and, upon starting the system, that weld blows off, that's coming out of your time, money, and resources, since you've already quoted the customer on a set rate for the job.

On top of that, the customer wants it fixed as fast as possible because they're on a strict schedule as well. In the event of such an issue, you're on your own, and that's an unacceptable situation that you can't afford.

WE'RE ALL PART OF THE SAME TEAM

Excel Air Systems is here to act as a support, providing you with the extraordinary power and resources to prevent that scenario, while enabling you to over-deliver in your service offerings. We make the job that much easier for you, your employer, and the customer, alleviating headaches.

You can still charge the same amount on the installation, but the difference is that you will be done on schedule, if not sooner. That way, you will be able to spend less time accomplishing more work, instead of more time accomplishing less work.

Reducing the potential for any issues and allowing you to do more in a shorter period will also prove to be extremely beneficial by giving you more time to complete additional installations, focus on further aspects of the facility, or even work on other projects.



While some sort of hypothetical concept that ceases the need for service contracts, filter changes, and regular maintenance would certainly be detrimental to your industry, we are not doing anything along those lines.

In fact, quite the opposite – we are here to empower you, because we know that the continued success of our systems lies with your ability to efficiently install and maintain them.

That being said, from a mechanical standpoint, we respect that, due to different individual preferences, Excel Air Systems technology still may not always be everyone's first choice.

However, having observed a considerable degree of stagnancy in the HVAC industry, we strongly believe in the value of educating on our products and making our technology more approachable to facilitate innovation.

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 LIVE CHAT



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