



It's called a  
**DUCTLESS MINI SPLIT,**  
and it's a game changer.

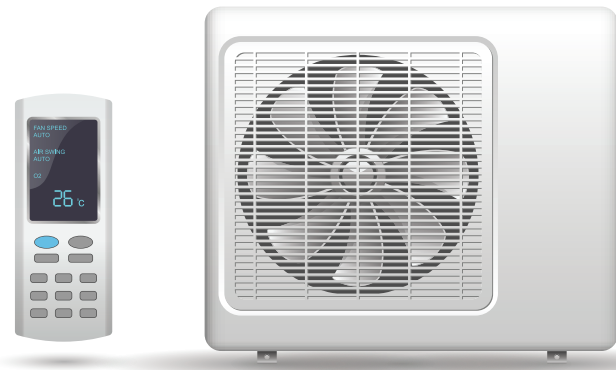
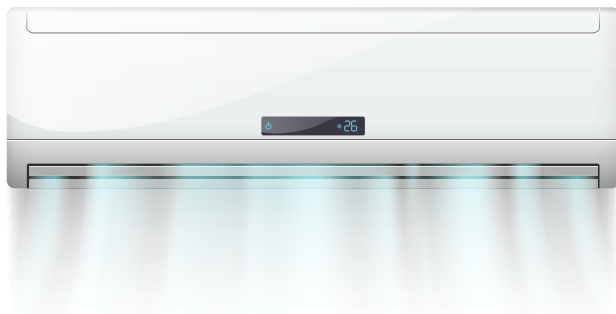
*Ending The Office*  
**THERMOSTAT  
WARS**

It happens all over America, every day, in every office. One employee keeps the office toasty warm, while everyone else sweats in silence. Or worse, one enthusiastic supervisor insists on freezing temperatures to keep people “alert,” provoking all-out hostilities by the water cooler.

## Does this sound like your office?

As talented as she is, our CFO insists on keeping the offices ice cold. Because of this, the sales team down the hall is now freezing, wearing fleece vests and heavy sweaters inside, even during the outdoor heat of late summer. The mood is turning ugly around the office, and I even feel a sore throat coming on, probably from the chill. Still, she’s doing a great job, so I can’t risk her quitting. What should I do?

Imagine being able to stop all that now, with one simple change to your HVAC. The fighting, the



grousing, the unhappy employees and the decreased productivity from everyone worrying about why it’s one temperature in the office when it really should be at another (depending on with whom you talk, answers will vary).

**It’s called a ductless mini split HVAC system, and it’s a game changer.** Once you have it, you’ll never want to go back. And we’re here to show you why.

The truth is, ductless mini splits have been around since the 1970s. Most office buildings in Europe and Asia use them, and you hardly see them complaining, right?

We’re not so sure, but we can say that recent breakthroughs in HVAC technology have made ductless

mini split systems easier to install and cheaper to operate than ever before. In the right circumstances and under the correct conditions, it's absolutely your best solution for customized indoor comfort as well as cost effective cooling. Safe, secure and attractive, ductless mini splits can be easily installed by a licensed HVAC contractor.

## What should you know about these revolutionary new systems before moving forward?



It starts with understanding exactly what ductless mini splits are. Essentially, ductless mini splits are a two-way heating and cooling system, made to transfer hot air outside and, with the help of a compressor and refrigerant, cool the air on its way inside. Each system consists of an outdoor condenser and indoor units placed in multiple locations throughout a building.

The outdoor condenser has a variable speed compressor utilizing AC to DC inverter technology, ensuring a consistent matching of the cooling load. This outside unit also has a condenser coil, expansion valve, and an accompanying fan to cool this coil. Each interior unit has its own evaporator and silent fan. A conduit housing a power cable, insulated tubing and a condensate drain connects the outdoor system with the one indoors. There is no cycling on/off as there is with a typical central AC unit, resulting in lower resource consumption and greater energy efficiency.



It starts with control. Remember, according to the experts, the number one reason tenants move out of a commercial space is because they're not comfortable inside.

## The obvious benefits of a ductless mini split system...

The building is always too hot or too cold. If your commercial building houses professional tenants, let them decide what temperature at which to keep their offices. A high-powered corporate lawyer doesn't want to conduct business in a space that feels like Antarctica. A successful high-end realtor isn't satisfied when prospective clients must suffer through Phoenix-in-the-springtime conditions just to learn more about her sales track record. The bottom line? Ductless mini splits enhance the indoor comfort of your tenants, which adds real value to your property.

With a ductless mini split system, each "zone" is operated by its own remote control, so you can have one office at one temperature, while another down the hall can remain at another. Everyone can enjoy the indoor comfort they prefer, without having to compromise. In this era of everything from personal pizzas to moisturizers to made-to-order dog food, having that level of customized comfort matters. It's the easy way to end the bickering at the water cooler, while enhancing productivity right away.

Furthermore, by having tenants in individual office suites or spaces set their own thermostats, you can avoid the waste and inefficiency of a centralized system, one that often results in huge energy bills month after month, year after year. Instead, ductless mini splits provide a level of personal comfort and control, while costing less.





*The old commercial building our business owns is charming and even historic, but tenants complain that the wall unit air conditioners and space heaters we supply for every suite are not enough to keep up with weather extremes. We've had a contractor come out and give us an estimate on creating ductwork for a new HVAC system, and it's going to cost more than the building is worth. That is, assuming we could get the construction permits on such a historic building, which we probably couldn't anyway. What the heck now? Is everyone in our building doomed to be cold in the winter and hot in the summer? I knew our property was said to be haunted, but the prospect of miserable indoor temperatures sounds even scarier. Help!*

## Good news!

A ductless mini split system is perfect in this kind of situation. Without a complicated system of ductwork between floors, ductless mini splits are the perfect option for commercial buildings where space is limited, or ductwork construction is unrealistic for structural or cost reasons. They're easily installed by a professional, and while they require regular maintenance, you're avoiding the inevitable complications that accompany a typical central cooling system. No leakage, no broken ducts, no problem!

Ductless mini splits also add a measure of safety and security to any commercial building. The fact is that window air conditioning units are easily removed from the outside, rendering them a potentially dangerous safety breach in a building otherwise locked down securely. What commercial building owner really wants a window left open and exposed to the outside, day and night?

It's also important to note that window unit air conditioners present a significant fire hazard. In a 2012 report by the National Fire Protection Association, "room air conditioners appear to have a higher fire risk relative to usage than central air conditioning." According to their data and adjusting for the relative frequency of wall units compared to central AC systems, mounted units may be 1.8 times more likely to cause a fire.



And let's face it. Window air units are unsightly. While that may be okay in some situations, for today's commercial building owners, the marketplace is competitive. Can you really afford to leave your building looking dated and less

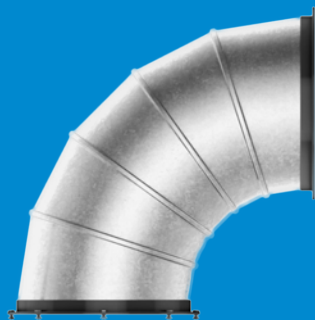
than efficient? Appearances count with tenants, especially in Southern California. With ductless mini split systems, you are conveying a positive first impression.

*Energy bills are through the roof on my commercial property, and it's no surprise why. The rambling layout of the building and indoor/outdoor design of the warehouse portion mean all that cool, conditioned air is literally going right out the window when it comes to the first floor. Still, the temperature on the upper floors gets pretty hot, especially during the warmer months. I can't ask employees to wear "business bathing suits" to stay comfortable, but the costs of keeping them cool are killing my bottom line. Something must give. Is there a solution that doesn't involve breaking the bank?*

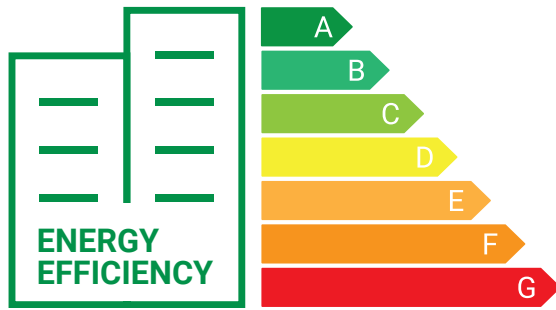


The fact is, for any commercial property owner worried about energy expenses, ductless mini splits may be the best way to get cost-efficient energy for their building. Along with being extra quiet, ductless mini splits avoid losing the estimated 39% or more of their cool air that typically happens with the leaky, damaged, or incorrectly installed ductwork of a conventional central air system. According to the Department of Energy, the number one energy waster in a typical commercial building is the ductwork. That risk is eliminated completely with these systems. Ductless mini splits have an exceptional **SEER rating** as well, typically ranking between 16 and 22 for most systems.

Most importantly, the concept behind ductless mini splits is the beautiful part. Each room or area utilizing a ductless mini split system in a commercial building is its own comfort zone. Property owners are no longer paying to cool empty spaces, while trying to keep occupied areas comfortable. How many times do you use your conference room in a month? And yet, how often are you paying to air condition that space? If you have typical centralized HVAC, you're doing so every time you turn the system on.



The number one energy waster in a typical commercial building is the ductwork.



Ductless mini splits' superior energy efficiency also comes with the variable speed compressors, driven by inverters, that permit them to avoid cycling on and off repeatedly as central air systems typically do. By providing consistent indoor temperatures and running continuously, these systems essentially can do more while working less. It's a lesson for us all!

Sounds great, doesn't it? But before you buy, it's important to consider several factors surrounding your individual property and circumstances. Frankly, to do otherwise is to court disaster, especially when it comes to these products.

### **Can you schedule regular maintenance?**

Ductless mini splits require monthly cleaning to run most efficiently. These are not "fix it and forget it" products. With regular air filter changes and simple maintenance emphasizing basic cleaning, ductless mini split systems can last up to two or three decades, judging by the many products installed in the 1970s and 80s still performing beautifully today.

### **Do upfront costs like purchase and installation make sense for you at this time?**

There's no way around it. Ductless mini split systems are more expensive up front than some other HVAC alternatives. If ordered and installed by a less experienced or competent HVAC contractor, the system may be sized incorrectly, resulting in poor performance and cost efficiency. Translation: this is not a system where you can cut corners. Work with a pro to find out exactly what you need, and have them handle the installation.

### **Think about rebates and other available discounts.**

Your HVAC professional can steer you in the right direction when it comes to maximizing these rebate opportunities for your company. State and federal incentives are always changing. Any savvy commercial property owner should take advantage of whatever discounts exist for purchase and installation.

So, there you have it. The thermostat wars can end today, if you choose. You can enhance tenant occupancy rates, and keep your colleagues happy, with a system that allows them to choose individually how hot or cold to keep their office. The system is energy efficient, and in many cases far cheaper than the system you're using now. Whether you're running a small business or own a multi-tenant skyscraper, you can tell everyone you're on the cutting edge of durable, efficient HVAC technology, too.

**And we think that's pretty cool!**



Robert Helbing, PE  
President, Air-Tro, Inc.  
1630 S. Myrtle Ave., Monrovia, CA 91016  
626.357.3535 | [airtro.com](http://airtro.com)  
[service@airtro.com](mailto:service@airtro.com)

**Follow us:**



Robert Helbing, PE, is President of Air-Tro Heating and Air Conditioning Company. He is a Caltech-degreed aeronautical engineer (yes - a rocket scientist!), as well as a 4th generation contractor and 3rd generation engineer. He is a past-president of the Institute of Heating and Air Conditioning Industries (IHACI); Air Conditioning Contractors of America (ACCA) Contractor of the Year, 2011; and a 15-year member of Excellence Alliance Industries, a membership organization committed to the development and improvement of HVACR companies nationwide. Bob is also a founding member and past committee chair for the Western HVAC Performance Alliance, a council of stakeholders in the Energy industry which includes utilities, regulators, manufacturers and contractors. He currently serves on two committees for the WHPA: Commercial Quality Installation and the Existing Buildings Energy Efficiency. He can be reached at 626.357.3535 and [bobhelbing@airtro.com](mailto:bobhelbing@airtro.com).

For more information, visit our commercial section on the web at [airtro.com/commercial](http://airtro.com/commercial)

