

# ALL ABOUT DUCTLESS HEAT PUMPS

BUILT FOR NEW ENGLAND HOMES

Understanding the Benefits  
of **Ductless Heating & Cooling**  
for Home and Business Owners



JAMES SMITHELL

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# Introduction

Heating and cooling technology has come a long way and ductless heat pumps are at the forefront of that evolution.

Whether you're managing comfort in a single-family home, a multi-unit property, or a commercial space, ductless systems offer a smarter and more efficient way to control indoor temperatures year-round.

***All About Ductless Heat Pumps: Understanding the Benefits of Ductless Heating & Cooling for Home & Business Owners*** is designed to give you a clear, practical understanding of how ductless systems work and what they can do for you.

Inside, you'll learn how ductless heat pumps compare to traditional HVAC systems, which applications they're best suited for, and what to consider when deciding if ductless is right for your space.



# Chapter 1 – How Does Ductless Work?

## Getting to Know the Basics

Ductless mini-splits work by transferring heat from one place to another. Instead of generating heat during the winter, heat is extracted from outside and carried into your space via thin copper tubing called refrigerant lines.

When in cooling mode, the system works backwards and removes heat from your space to transfer it outdoors. The cooling process starts with the outdoor unit, where a variable-speed compressor circulates refrigerant to one or more indoor air handlers.

Then, evaporator coils inside the indoor units absorb heat from the room air. Finally, the heated refrigerant circulates back outside, where it's released through the condenser.

Because these units don't use ductwork, they can deliver efficient comfort and independent temperature control without energy loss.

## Benefits of Ductless Heating & Air Conditioning

- Installation is easy since only one small opening in an exterior wall is required for each indoor unit.
- You can use the same system for both heating and cooling.
- Since these systems only transfer heat instead of generating it, they are cheaper to run.
- Indoor units are compact and can be wall, floor, or ceiling-mounted.
- Mini-splits are actually whisper-quiet at 30 decibels (dB).
- Advanced filtration removes dust and allergens from the air day and night.
  - Indoor air can be 2 to 100 times more polluted than outdoors, with Americans spending up to 90% of their time inside.<sup>1</sup> Ductless offers advanced filtration that removes even the smallest particles to help you breathe easier.

# Say Goodbye to Carbon Monoxide

Carbon monoxide (CO) is produced by burning fossil fuels like natural gas, wood, and propane. Having your windows and doors shut during the winter makes this worse. Breathing CO can lead to tissue damage and even death.<sup>2</sup>

However, ductless systems produce no carbon monoxide. This means you can sleep peacefully knowing you and your family aren't at risk.

## Q&A

### How long will a ductless system last?

With proper maintenance, a ductless AC can last between 15 and 20 years or even longer, depending on the type of unit you have and how much it gets used.

### How much does ductless installation cost?

How much ductless costs depends on multiple factors like:

- How large your space is
- How many zones you want to have
- The number of windows and doors there are
- Which equipment you choose
- How complicated the installation is

<sup>1</sup> <https://www.lung.org/clean-air/indoor-air>

<sup>2</sup> <https://www.mayoclinic.org/diseases-conditions/carbon-monoxide/symptoms-causes/syc-20370642>



# Chapter 2 – Understanding Multi-Zone Ductless Systems

Ductless systems can easily be used to heat or cool more than one room. This requires a multi-zone system with two or more indoor units connected to a single outdoor unit. Generally, you can attach up to eight indoor units to an outdoor condenser without needing a second.

Each indoor air handler allows you to control the temperature in that zone separately from the others. This allows you to save energy by lowering or turning off heating or cooling in zones you're not using.

## Ideal Applications

Multi-zone ductless systems can be used in a wide variety of cases, like:

- Homes and businesses looking for a complete heating and cooling solution
- Historic homes that need updated HVAC without compromising architecture or structure
- New construction without any previous heating or cooling equipment
- Multi-level homes that need individual comfort on every floor
- Vacation homes and Airbnbs that you want to turn off HVAC to when not in use
- Businesses with clean rooms or server cooling needs that are separate from office or conference areas

## Benefits of Multi-Zone Ductless

- **Personalized comfort in every room.** A multi-zone ductless system lets you keep different temperatures in different areas without affecting the comfort of other zones.
- **Lower electric bills.** Because you only heat or cool the rooms you use, multi-zone systems reduce energy waste and help you save on utility bills without giving up your comfort.
- **Great cold-climate performance.** Mitsubishi multi-zone systems can feature Hyper-Heating (H2i) and SUMO technology, which provides excellent heating performance even in sub-zero New England winters.

## Single Zone vs Multi-Zone: Which Is Right for You?

Feature	Single-Zone Ductless	Multi-Zone Ductless
Comfort control	One temperature for one room	Independent temperatures for multiple rooms or zones
Energy efficiency	Efficient for small spaces	Highly efficient for whole-home or large business applications
Installation	Simple	Requires planning for multiple indoor units
Flexibility	Fixed setup for one space	Can add or remove zones as needs change
Air quality	Filtration in one unit	Filtration in each zone for cleaner air throughout the home
Cost	Lower upfront cost	Higher upfront cost, but more energy savings long-term

## Q&A

### Can multi-zone ductless systems work with my existing HVAC?

Multi-zone ductless systems are highly versatile and can be used alongside your current heating or cooling setup. For example, you might keep your central HVAC while adding ductless zones to bedrooms, home offices, or additions that are hard to heat or cool.

### Can I add to a multi-zone system later on?

Yes, you can add new indoor units to your existing outdoor condenser as needed. However, you will need a second outdoor unit if you have eight (8) or more indoor air handlers.

### How do I control the temperature in each zone?

You can control the temperature for each zone either by adjusting the settings on each air handler, or you can use the Comfort by Mitsubishi Electric app to make changes to individual units remotely.

# Chapter 3 – Mitsubishi Hyper-Heat (H2i) & SUMO Systems

## What Is Hyper-Heat (H2i) and SUMO Technology?

Hyper-Heat is a cold-climate heat pump technology that uses an advanced inverter-driven compressor with flash injection to maintain heating performance in low outdoor temperatures. These systems work by continuously adjusting the compressor speed based on demand and adding extra refrigerant during extremely cold conditions to boost heating capacity.

SUMO systems offer even higher performance for greater heating demands, which is ideal for large homes and businesses.

## Benefits of Mitsubishi Hyper-Heat (H2i) and SUMO Systems

- H2i systems have sophisticated inverter compressors allow for 100% capacity, even down to -5 degrees Fahrenheit.<sup>3</sup> SUMO systems can continue heating your space down to -22 degrees Fahrenheit.
- Reduces or eliminates reliance on fossil fuels like wood or gas for winter heating.

## Q&A

### What's the difference between Hyper-Heat (H2i) and regular heat?

Hyper-Heat (H2i) systems are made to provide consistent heat in colder temperatures than a standard heat pump. While regular units can lose heating capacity as temps drop, these systems are engineered with advanced inverter technology that can extract heat from the outside even in very cold climates.

### What's the difference between Hyper-Heat (H2i) and SUMO systems?

Hyper-Heat is widely available and remains a strong, reliable cold-climate system for New England homes and businesses. It is designed to maintain full heating capacity at low outdoor temperatures and continue operating in very cold weather.

The SUMO platform is essentially a higher-performance option within Mitsubishi's cold-climate lineup. SUMO systems are designed for spaces with higher heating demands and tend to maintain stronger heat output at colder temperatures compared to standard Hyper-Heat (H2i) systems.

Both options are well-suited for cold climates, with SUMO offering added capacity and stability for larger or more demanding applications.

### **Will I need backup heating with a Mitsubishi Hyper-Heat (H2i) or SUMO system?**

In most cases, you will not need to use a backup heating source when you have a Hyper-Heat (H2i) or SUMO system. Rarely, you may need to use electric space heaters, a gas furnace, or wood heat if outdoor temperatures are below -13 to -22 degrees Fahrenheit depending on which system you have.



<sup>3</sup> <https://www.mitsubishicomfort.com/articles/introducing-deluxe-wall-mounted-h2i-plus-system>

## Chapter 4 – Ductless Energy Efficiency

### Is Ductless Energy-Efficient?

Ductless mini-splits are the most energy-efficient systems available on the market. Because they don't need ductwork to move heated or cooled air, they prevent a significant amount of energy loss that occurs with central heating and AC.

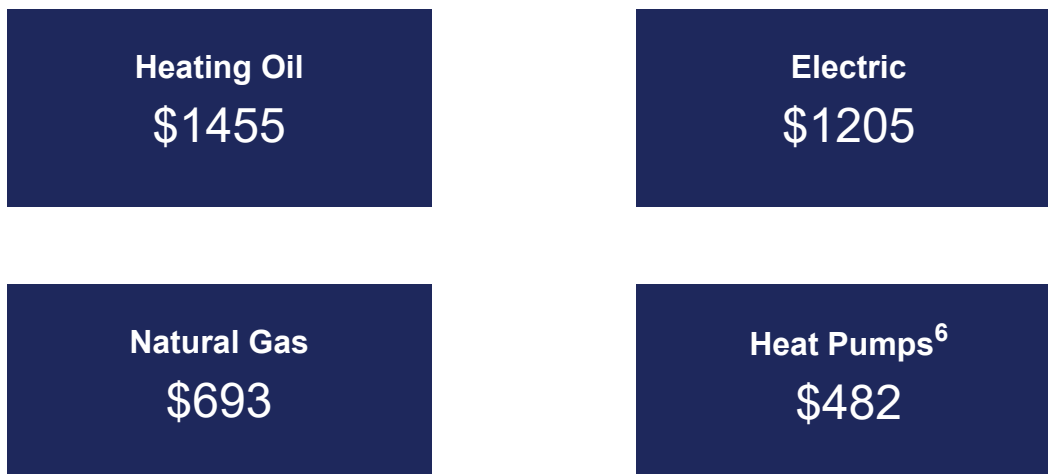
Plus, inverter-driven technology works like cruise control to adjust the system output to meet demand rather than constantly turning on and off. This translates to lower electric bills and even better comfort.

### Ductless Uses 60% Less Energy

Heating your space accounts for 29% of your total utility costs.<sup>4</sup> And, duct losses account for more than 30% of energy consumption when cooling your space according to the Department of Energy.<sup>5</sup>

But according to ENERGY STAR, mini-splits use 60% less energy to heat your space than standard electric radiators. Plus, ENERGY STAR certified ductless systems used in a whole-home setting reduce greenhouse gas emissions by over 4,500 lbs.<sup>6</sup>

### Total Winter Heating Costs by Fuel Type<sup>7</sup>



<sup>4</sup> <https://www.energy.gov/energysaver/home-heating-systems>

<sup>5</sup> <https://www.energy.gov/energysaver/ductless-minisplit-heat-pumps>

<sup>6</sup> [https://www.energystar.gov/products/ductless\\_heating\\_cooling](https://www.energystar.gov/products/ductless_heating_cooling)

<sup>7</sup> <https://neada.org/wp-content/uploads/2025/11/EnergypricesNov25.pdf>

# Chapter 5 – Ductless Maintenance & Repair

Regular maintenance is key for keeping your ductless HVAC system in good condition.

## Why Is Ductless Maintenance Important?

- A clean system works more efficiently and uses less energy, so your electric bills stay low.
- Routine checks help technicians detect and fix minor issues before they become major ones.
- Proper maintenance reduces wear and tear on your equipment and increases your unit's overall lifespan.
- When your filter and coils are clean, your indoor air quality is better.
- You can worry less about unexpected breakdowns.
- Seasonal maintenance keeps your system's warranty intact.

## Q&A

### What kind of maintenance does a ductless system need?

Ductless maintenance generally includes:

- Cleaning or replacing air filters
- Cleaning the internal components of indoor and outdoor units
- Lubricating moving parts
- Checking and refilling refrigerant as needed
- Inspecting and cleaning drain lines
- Checking and tightening electrical connections
- Testing system performance

## How often will my ductless heat pump need to be cleaned?

Ideally, maintenance for a ductless mini-split should be performed once or twice a year depending on the unit you have and the manufacturer's recommendations.

## When should I schedule ductless maintenance?

The best time to schedule routine maintenance for a ductless heat pump is in the spring before the summer cooling season starts or in the fall before the winter heating season.

## Signs Your Heat Pump Needs Repair

- Your system is short cycling or turning on and off too frequently.
- The air coming from your vents is weak or too hot or cold for the settings you're using.
- Your system is stuck in cooling or heating mode, and you can't change it.
- Your mini-split is making strange noises like rattling, banging, or screeching.
- You smell a burning odor, or the air coming from your unit is musty.
- Your energy bills are higher than normal.



## Q&A

### Should I repair or replace my ductless system?

Whether you should repair or replace your ductless system depends on its age, condition, and overall performance. For newer systems and those that have been well-maintained, repair is generally the best way to go. This also applies if the problem is a minor one or can be easily fixed.

On the other hand, replacement may be the better choice if the system is older or has been needing frequent repairs for some time. New England Heat Pumps can evaluate your unit and let you know whether repair or replacement will provide you with the best outcome.

### When are repairs covered by warranty?

Repairs are typically covered by a warranty when the issue is caused by a manufacturing defect or a involves a part that is included in the warranty terms. Whether your repair will be covered usually depends on the age of your system and if it has been properly installed and maintained.

Damage caused by improper maintenance or external factors like storms or accidents are less likely to be covered. We can help you check your manufacturer's warranty details to determine which repairs are eligible.

### How can I prevent the need for future repairs?

The best way to prevent repairs is with ductless system maintenance. Routine maintenance once or twice a year can help identify problems early and keep your warranty intact.



# Chapter 6 – Commercial Ductless HVAC

## Who It's For

### Restaurants & Hospitality

Ductless mini-splits are ideal for restaurants, hotels, and other hospitality businesses that need efficient heating and cooling year-round.



### Retail & Office Spaces

Mini-splits are a great option for stores and offices that need reliable comfort without noise. These whisper-quiet systems operate at around 30 decibels (dB) so employees can easily hold conversations with customers and clients.



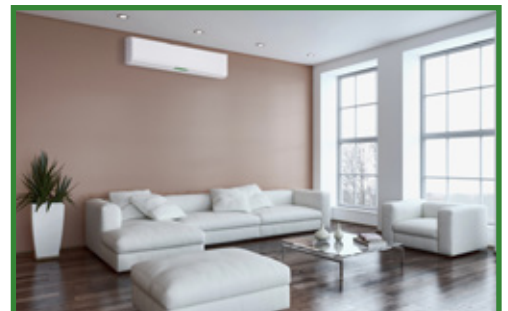
### Server Rooms & Data Centers

Server rooms and data centers that need to be kept cold also benefit from ductless air conditioning. These systems also offer sophisticated filtration that can help keep dust and debris out of sensitive computer equipment.



### Condo Developments & HOAs

Ductless heating and cooling is perfect for condos, apartment buildings, and HOAs that need zoned comfort in different areas.



## Q&A

### **Is ductless better than traditional heating and cooling for businesses?**

Yes. In most cases, ductless mini-splits are a better option than central heating and cooling. Not only do they provide precise, zoned comfort, but they also operate more efficiently than ducted systems. Installation is easy and generally requires very few changes to your existing structure.

This makes them ideal for businesses that need additional heat or air conditioning and those that want to replace their existing systems with a more energy-saving option.

### **What kind of maintenance does a commercial ductless system require?**

Ductless systems generally require less maintenance than typical HVAC systems, including commercial ones. This includes cleaning or replacing air filters, cleaning internal components, and checking electrical connections. It's a good idea to schedule maintenance once or twice a year, or as recommended by your system's manufacturer.

### **How long do commercial ductless systems last?**

With proper installation and maintenance, commercial ductless HVAC systems last 15 to 20 years or longer. The exact lifespan of your company's system depends on how often it's used and whether you get routine maintenance.



## Conclusion

Ductless heat pumps are more than just a modern alternative to traditional HVAC. These advanced systems represent a smarter, more environmentally friendly approach to comfort and energy savings. With reliable performance and flexible controls, ductless has proven to be a practical solution for both homes and businesses alike.

As you've seen throughout this guide, ductless technology offers meaningful benefits like lower energy costs, cleaner indoor air, and simplified installation compared to ducted systems.

Choosing the right heating and cooling system is an important investment. By understanding how ductless heat pumps work and where they deliver the greatest value, you're better equipped to make a decision about what kind of system is best for your situation.

When designed and installed correctly, ductless systems provide dependable, year-round comfort without hassle or energy waste.



## About Us

We are a locally owned and family-operated company specializing in heat pumps. With over 20 years of experience in the HVAC industry, you can trust that your home is in expert hands.

Our focus is on cold-climate ductless heat pump systems. Having worked extensively with these systems in real-life settings, we understand both their benefits and limitations. While many companies try to do it all, we stay in our lane—because we believe in being the best at what we do.

You may have heard mixed things about heat pumps, and we're here to provide you with the facts. Our approach is different: we take the time to listen, just like we would with family, and create a custom quote based on your actual needs—not just rebates or high price tags.

If you're in the market for a ductless heat pump system, give us a shot. From start to finish, you'll see the difference.

**(781) 443-9911**

