



Ductless Heat Pumps

Frequently Asked Questions

Q. What is a ductless heat pump?

A ductless heat pump is a highly efficient heating and cooling system that does not require ductwork. Ductless heat pump systems consist of an outdoor compressor unit and one or more indoor units, linked by refrigerant lines. Using a refrigerant vapor compression cycle, like a common household refrigerator, ductless heat pumps collect heat from outside the house and deliver it inside on the heating cycle, and vice versa on the cooling cycle.

Ductless heat pumps use variable speed compressors to continuously match the heating/cooling load, avoiding the on/off cycling of conventional electric resistance and central heating systems. This eliminates uncomfortable temperature variations and high-energy consumption. An indoor unit contains a quiet oscillating fan to distribute air into the space. It is mounted on a wall covering a three-inch hole where the refrigerant lines pass through to the outside unit, which can be mounted up to 66 feet away. Each indoor unit heats and cools its own zone and can be controlled independently.

Q. Do heat pumps really heat well in our climate?

Yes, there are now heat pumps that are rated to work well in cold climates. Newer refrigerants can carry more heat from colder air and newer heat pump inverter technology more efficiently matches the work done by the heat pump to the heating or cooling needs of the customer.

Units eligible for the Heat Pump Pilot Program are rated to perform at temperatures as low as -15 degrees F, so they can operate efficiently for most days of the heating season.

Q. Why consider a heat pump for heating?

Ductless heat pumps deliver 2.5 to 3 times more energy in the form of heat than they use in electricity to produce the heat. At current prices, heat pumps can provide the same amount of heat as oil, kerosene, propane, and resistance electric heating systems at roughly half the cost.

Q: How is the heat pump controlled?

The heat pump is operated using a programmable remote control. Because the thermostat is located in the wall unit, which is mounted closer to the ceiling than a conventional thermostat, selecting the ideal comfort level takes practice. The actual

settings on the remote control may need to be a few degrees higher or lower to achieve the desired comfort.

Most heat pumps also offer various modes of operation such as quiet, high, economy, or timer. Wall-mounted controls are also available.

Q: What are appropriate applications for ductless heat pumps?

Supplemental heating – Ductless heat pumps are ideal to supplement your primary heating system and generally pay for themselves in less than five years. Heat pumps are most often installed in the most frequently used rooms as a supplemental heat source.

Room additions – A heat pump can also be used when a room is added onto a house or an attic is converted to living space. Rather than extending the home's existing ductwork or pipes, or adding electric resistance heaters, the ductless system can provide efficient heating and cooling.

New construction – New home designs can be adapted to take advantage of a ductless heat pump's many benefits.

Q: Are ductless heat pumps efficient?

Yes, ductless heat pumps can reduce heating costs up to 50%. It is important to remember that while your overall heating cost will be lower, your electricity bill will increase.

Three key factors account for the high efficiency of a ductless heat pump:

1. During the heating season, heat pumps move heat from the cool outdoors into your warm house and during the cooling season, heat pumps move heat from your cool house into the warm outdoors. Because they move heat rather than generate heat, heat pumps can provide up to four times the amount of energy they consume.
2. Heat pumps use inverter-driven, variable-speed compressors that allow the system to maintain constant indoor temperatures by running continuously at higher or lower speeds. Thus, the system can ramp-up or down without great losses in operating efficiency, avoiding the energy-intensive on/off cycling common in electric resistance, baseboard hot water, and forced air systems.
3. Ductless heat pumps also dehumidify better than standard central air conditioners, resulting in less energy usage and more cooling comfort in summer months.

Q: How much does a ductless heat pump cost?

The average cost to install a ductless heat pump with a single indoor unit is approximately \$3,500. Additional indoor units and greater heating capacities will increase the cost of the system. Other factors that will affect the cost of an installed

system include manufacturer and model, refrigerant line-set length, difficulty of installation, and contractor rates.

Q: Is it cost effective to set the temperature down a few degrees at night? If so, to what temperature or how many degrees lower should it be set overnight?

During extremely cold weather, it is advised to keep the temperature constant both day and night. If the heat pump is trying to recover in the morning during a cold snap, it will have a difficult time getting to the temperature that you want it to be. Turn it down as far as you can and still have it recover in time to be comfortable. Your comfort level is the most important.

Q: What incentives are available for ductless heat pumps?

Emera Maine offers a discounted electric heat rate to customers when they install an efficient ductless heat pump system. Efficiency Maine offers a rebate of \$500 on ductless heat pump and \$300 on air to water heat pumps. For program details, visit www.emeramaine.com.

Federal Tax Credits: A federal tax credit up to \$300 is also available to taxpayers who purchase a qualified energy-efficient, residential, ductless heat pump.

Q. Do all heat pumps qualify for the Efficiency Maine rebate?

No, not all heat pumps qualify for a rebate. Only the most efficient ductless, mini-split heat pumps with an HSPF rating of 10 or greater are eligible for a rebate under this program. There is a complete list on www.energymaine.com.

Q. Is there a lower electric heating rate and how do I qualify?

Yes, we offer electric space heating rate from October to April. In most cases, applicants who have had a heat pump installed through this program will be eligible and will be automatically enrolled.

Q: How long will a ductless heat pump last?

With proper maintenance and care, a ductless heat pump should perform for 15-20 years. Many of the systems installed during the 1980s are still functioning well today. If you can smell salt air where you plan to put a heat pump, they won't last that long due to the salt corrosion on the outdoor unit.

Q: What kind of maintenance does a ductless heat pump require?

Dust filters should be vacuumed or washed as needed and allergen cartridges should be washed or replaced according to manufacturers' recommendations. The outside unit should be professionally cleaned every year or two, which costs about the same as having a boiler or furnace cleaned.

Q: Are ductless heat pumps quiet?

Although ductless heat pumps are remarkably quiet during operation, they do make noises. In addition to the low-level fan sound (both indoor and outdoor units), you may also hear “whirring”, “clicking”, “rushing fluid”, etc. These sounds can be the result of thermal expansion, refrigerant movement, or mechanical parts. This is normal. As you encounter these sounds, please refer to the owner’s manual for indications. If the indications are for abnormal operation or if you become concerned, call your contractor.

Q: How do I know what size system my house needs?

To be sure you get a system that best suits your needs, consult with one or more registered installers before purchasing a system.

Q: What is a Registered Installer?

A registered installer is a contractor who has registered with Efficiency Maine to install ductless heat pumps. In order to register, the contractor must agree to follow Efficiency Maine’s Code of Conduct, has shown proof of insurance, has completed Energy Star Heat Pump Manufacturer installation training, and has EPA Section 608 Refrigerant Handling certification. Because the technology is relatively new in Maine, registered installers have varying degrees of experience installing this equipment. Efficiency Maine maintains a current list of registered installers on its website at <http://www.energymaine.com/at-home/registered-vendor-locator>, which includes information regarding the number of heat pumps each contractor has installed as part of an Efficiency Maine program or as part of our Heat Pump Rebate Pilot Program. Some contractors have experience installing heat pumps that don’t qualify for one of these programs. It is always a good idea to ask a contractor about their experience or ask for references before you hire them. You may also want to ask them if they will provide you with training on how to operate the unit once it is installed.

