

Air Source Heat Pumps



Sizing the Unit

Central air conditioners and ASHP's are sized the same - by the ton (there are 12,000 BTU's per ton), and that's the amount of cooling capacity. When purchasing your ASHP, have your heating and cooling contractor size the correct ASHP for you. If your home or office is sized for a two ton central air conditioning unit, you should size an ASHP for 2.5 ton - preferably a half ton larger to help with the heating load.

Heat Pump Thermostats

ASHP's will not work on a regular thermostat. At the time of purchase, make sure your ASHP has a compatible thermostat. The thermostat runs your gas furnace and/or electric auxiliary heat and your ASHP. Once your ASHP is operating you can set the outdoor sensor to 15 degrees above zero. This setting allows your gas furnace to operate at temperatures 15 degrees above zero. For older homes, the setting should be at 20-25 degrees above zero. Adjustments are made on the ASHP's thermostat. However, on some ASHP's the adjustment is made on the outside unit.

Interface Kit

Interface Kits determine what unit or combination of units are needed to provide heat to your home. All heat pumps require the use of an Interface Kit. These kits vary depending on the model purchased. There are two Interface Kit options available - all inclusive with the thermostat or it is a separate item which is wired in between the gas furnace, electric auxiliary heat, the outdoor unit and thermostat. The Interface Kit has an option for low temperature cut out - the lowest temperature you want your heat pump to operate at. If the outdoor temperature is below the low set point on the thermostat, it will automatically bring on the second stage of heat to satisfy the temperature needs in your home. The second stage may be gas or electric resistance.

Defrost Kit

All heat pumps need a Defrost Kit to operate at outdoor temperatures below 35 degrees. The defrost system melts ice off the coils when needed, to keep the efficiency of the unit as high as possible. When your Defrost Kit melts the ice from the coils, your furnace will continue to run for a short period, keeping your home at a comfortable temperature.

Crank Case Heater

The Crank Case Heater keeps the oil and refrigerant from separating in cold weather. Most heat pumps will need some type of heater for the compressor at times of extreme cold.

Manufacturers have done a great job in insulating the compressor area, and feel some models may not require this feature.

Installation & Maintenance

Follow these installation and maintenance tips to ensure the efficient operation of your ASHP:

- > Install ASHP at least 10" above the pad - this prevents ice jamming and damage to the outside coil
- > The unit must be level for optimum performance
- > Place your ASHP preferably on the west or south side of your home - direct sun should not affect the cooling performance on the larger outside coils
- > If possible, place unit in an area secluded from the wind, at least 24" from walls or shrubs
- > Never install an ASHP under a deck that has 8' or less over head
- > Remove all heavy snow and ice before operation - if there is a large build-up of ice on the outdoor fan, remove ice before operation

Also Available - Swimming Pool Heat Pumps

Heat pumps are available for outdoor swimming pools which are typically used between the months of April and November.

Swimming pool heat pumps will heat your pool for a fraction of the cost of gas or propane if installed on MVEC's money saving Energy Wise rates.



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A wise investment that saves you money, plus offers you worry free heating & cooling for your home



Spring



Summer



Fall



Winter



Central Air Conditioner vs. Air Source Heat Pump

Can you tell the difference between a Central Air Conditioner and an Air Source Heat Pump (ASHP)? On the outside the units look the same.

However, on the inside of the unit there is a distinct difference.

Both units cool and dehumidify your home or office exactly the same, but the central air conditioner has no heating mode like an ASHP. The ASHP contains a reversing valve which moves heat the opposite direction from the cool mode. By switching the thermostat to heat, the ASHP becomes your primary source of heat for your home.

Enhance Your Gas Furnace

Enhance your gas furnace by installing an ASHP instead of a central air conditioner. Not only will this unit keep your home or office cool, it will also heat your home down to about 15 degrees above zero. This saves you on the cost of running your gas furnace to heat your home.

Economics

Using an ASHP that operates on MVEC's Energy Wise® rates is equal to paying approximately 35 cents a therm for natural gas or 30 cents a gallon for propane with a 90% efficient furnace. You still need the gas furnace for temperatures under 15 degrees above. An ASHP with gas furnace gives you a "Dual Fuel" system which qualifies you for our best Energy Wise® rates. You can also install an electric strip heater to the gas furnace and ASHP. This allows you to run on electricity in colder temperatures or until we cycle off for a peak load time.

Moving Heat vs. Making Heat

Unlike a furnace, which creates heat by burning gas and sending the unburned portion out the vent or chimney, an ASHP (in the heating mode) will move heat from point A to point B. An ASHP can move about four times more heat at 47° than the energy it takes to operate it. When the temperature is 17° outside, the heat can move over 2.5 times more than it takes to operate the system.

Heat Pump Quick Facts

An ASHP saves you money by not having to run your gas furnace to heat your home. By adding a plenum heater to your existing or new gas furnace, you can reduce gas consumption by 95%.

A 2.5 ton 14 SEER ASHP will cost \$55 less per year to operate on MVEC's Energy Wise rates than a 10 SEER model each cooling season.



Dual Fuel System

A Dual Fuel System has two types of heat available for your home or office. The primary source is electric - a plenum heater, ASHP, cone heater, electric boiler, baseboard, etc. The second source is fossil fuel - gas, oil or propane. Dual Fuel gives you the option to use your fuel of choice, electric or fossil. With this system, MVEC offers a competitive advantage with electricity as your fuel of choice.

Reduce Gas Costs

An ASHP heats your home or office down to 15 degrees above zero when it can no longer keep up with its heat loss. At lower temperatures the plenum heater steps in. Should MVEC have to shed load because of high peaks during that time, the gas furnace will continue to operate, keeping your home or office warm. Once the peak time has passed the system automatically switches to low cost electric heat. This type of Dual Fuel program allows you to save money with our Energy Wise rates.

Energy Wise® Programs

Energy Wise Programs were created to help reduce peak draws on the electric system. While you are on this program, MVEC occasionally may switch your electric heating or cooling system off to reduce energy usage during a peak. Generally the peak period does not last longer than eight hours. Typically this happens around 5% of the month or about 35 hours. MVEC has activated this program closer to 1% or less of the month. For participation in these programs, MVEC members receive reduced electric rates or bill credits.

SEER For Cooling & COP For Heating

In the cooling mode, your ASHP efficiency is measured just like a central air conditioning unit. The higher the Seasonal Energy Efficiency Ratio (SEER) the more efficient the unit is. The government's Energy Star rating for 2006 is 14 SEER or higher. Energy Star ratings are subject to change. In the heating mode, the ASHP efficiency is measured by Coefficient of Performance (COP). This is the amount of energy it takes to operate the ASHP versus the amount of energy the ASHP moves at a certain temperature from point A to point B.

An Air Source Heat Pump provides great heating and cooling options for all seasons



Spring Summer Fall Winter

