The important filter

The filter is the most important item for which the home owner is responsible. This is also the most neglected item and is the cause of many high energy bills. Your filter collects dust particles that otherwise would clog your indoor coil. When your filter is not cleaned or changed periodically, you run the risk of substantially increasing energy consumption, reducing comfort and causing equipment damage.

You should clean or replace your filter every month. The filter is located in the indoor unit or the return air grille. If you cannot find your filter, call a heating contractor, manufacturer of the unit or REC for assistance.

Proper air flow

Air that has been heated or cooled is distributed throughout your house by the duct system. Conditioned air is distributed through registers located in each room. Proper air flow is critical for efficient heat pump operation: do not close off more than two registers in your home and do not block a register's air flow or deflect its direction.

Proper air flow is also important for the outdoor unit. Keep grass, shrubbery, leaves and dust away from the unit for unobstructed air flow.

Winter power outages

If you experience a power outage lasting longer than 30 minutes in the winter, switch your thermostat to emergency heat. When power is restored, allow the heat pump to heat your house for about one hour in the emergency setting. This will allow the compressor heater to warm up any refrigerant that may be in the compressor.

After an hour has passed, you may switch your thermostat back to normal heating. (On many newer heat pumps, this procedure is not required; ask a heating contractor to be sure you know what steps, if any, are required for your unit.)

When to call a technician

Other than changing the filter, maintenance must be performed by a qualified technician. Call a heating contractor when you experience one of the following problems:

- Unusual sounds or noise
- Thermostat indicator light always lit
- Unit constantly operating in mild weather
- Outdoor unit continually iced over
- No air flow out of registers

Your heat pump is like any machine: you must know how to operate it correctly to maximize its performance. Now that you know how best to operate your heat pump, you will be able to maximize its ability to heat and cool your home efficiently.

If you have questions, or need more information, please call REC's Customer Services Department at 800-552-3904.

Heat Pump Manufacturers

Amana 800-843-0304
Bryant 800-428-4326
Carrier 800-227-7437
Heil/Tempstar.....877-591-8908
Lennox.....800-953-6669
Rheem/Ruud 800-432-8373
Trane/G.E./American Standard....903-581-3200
Whirlpool 800-253-1301
York/Coleman/Luxaire 877-874-7378

HEAT PUMP EFFICIENCY TIPS

Operating your heat pump

Rappahannock Electric Cooperative
A Touchstone Energy® Cooperative

REC-HP 03/07

www.myrec.coop

How your heat pump works

Heat pumps have been around for a long time. Any appliance that takes heat from one area and moves it to another, such as your refrigerator, is a heat pump. The heat pump in your home works on the same principle as your refrigerator but on a larger scale.

Most heat pump installations involve what is called a split system. The outdoor unit contains the compressor and a heat exchange, called a coil. The indoor unit contains another coil, a fan that blows air through your duct system and electric heating elements.

The outdoor and indoor units are connected by two copper tubes. These two tubes do not move air; instead, they move a gas refrigerant (such as Freon) that carries the heat between the indoor and outdoor coils. The refrigerant has the ability to absorb heat from the air, even at very low temperatures.

In the winter, when you are heating your home, the refrigerant absorbs heat from the outdoor air drawn across the outdoor coil. The refrigerant becomes hot, but is made even hotter (well over 140° F) by going through the compressor.

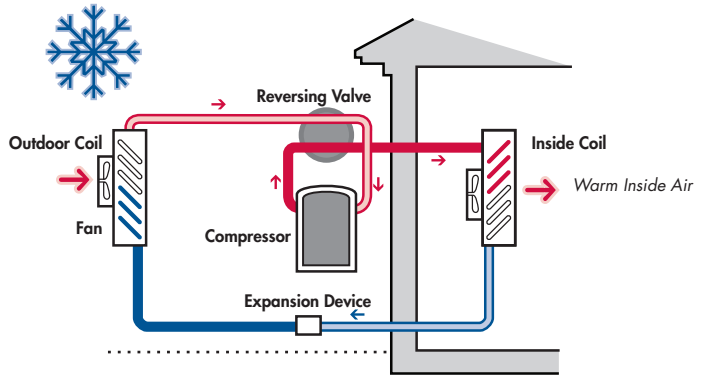
This hot gas travels through a copper tube to the indoor coil. The fan draws air through your return grille and pushes the air across the indoor coil. The hot gas transfers its heat to the air drawn across the coil and into the duct system.

In the summer, when you are cooling your home, your heat pump simply reverses the flow of refrigerant. Now the refrigerant absorbs heat from room air blown across the indoor coil. In this manner, heat and humidity are removed from the air, and cool, dry air is distributed throughout your home by way of the duct system.

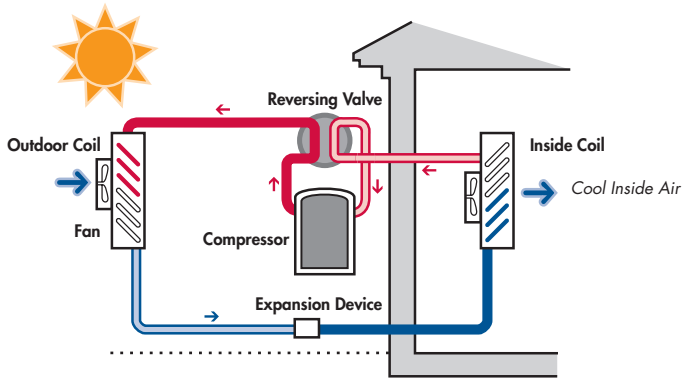
The absorbed heat is carried by the refrigerant through the copper tube to the outdoor unit. Here the refrigerant goes through the compressor then moves through the outdoor coil, which transfers the absorbed heat to the outdoor air.

Components of an Air-source Heat Pump

Winter – Heating Cycle



Summer – Cooling Cycle



Thermostat operation

In the winter, when the outdoor temperature drops below 32° F, your heat pump may need assistance in heating your home. Electric heating elements will come on automatically to help heat your home during severe weather.

Many thermostats have an indicator light that tells you when the electric back-up heat is on. It may be labeled emergency or auxiliary. Generally, you should see this light on only during very cold days. The light may also indicate a problem with your heat pump, such as a clogged air filter.

Setting your thermostat to the lowest comfortable temperature is the best approach to conserving energy and saving money. Frequent or drastic changes to your thermostat may cause you to use more energy. Avoid increasing your thermostat more than one degree at a time. A change in setting greater than 1-1/2 degrees at one time will cause your electric back-up heat to come on. Whenever your electric back-up heat comes on unnecessarily, you will be wasting energy.

In the summer, when your heat pump is operating in the cooling mode, there is no back-up system like there is with your back-up heat. You can adjust your thermostat setting up or down without worrying about additional systems coming on. For economical operation, however, you should aim for the highest comfortable temperature when selecting your thermostat setting.

There are many types of thermostats; some are quite confusing to operate, others are very simple. Please feel free to contact REC or a heating contractor to discuss the proper operation of your existing thermostat or the selection of a new, energy saving thermostat.