

# Electric Heat Pumps



## REDUCE YOUR ENERGY COSTS ALL YEAR LONG

### WHAT IS A HEAT PUMP?

A heat pump is a year-round comfort conditioning system that uses refrigeration equipment to supply warm air in winter and cool air in summer.

Heat pumps aren't new. The concept of heat pumps was introduced in 1852. In 1927, the first practical model was in use. Heat pumps were introduced to the American market in the 1950s. Today millions are in use all across the country, successfully heating homes in even the coldest climates.

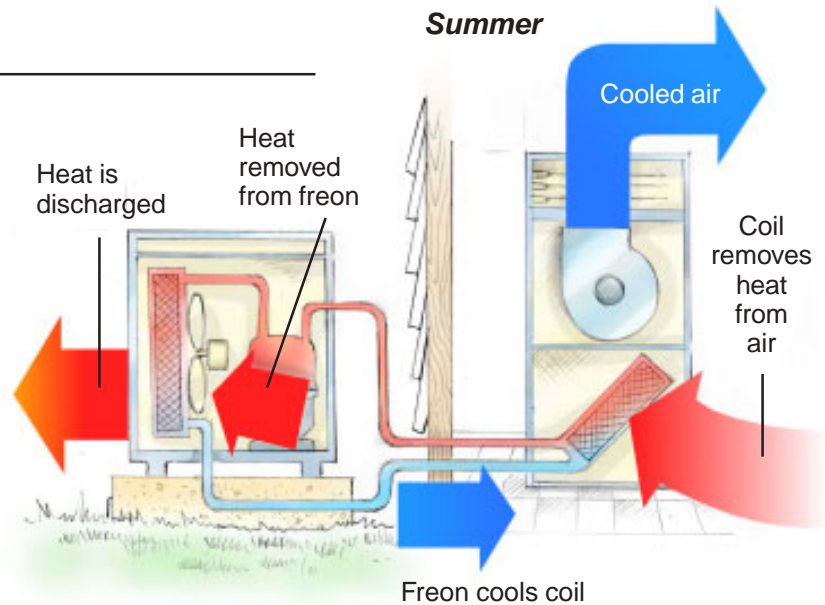
Heat pumps are growing in popularity because higher energy costs and chances of future fuel shortages have led homeowners to seek ways to reduce their heating and cooling costs. The new generation of heat pumps available today are extremely reliable and cost efficient.

### COST-EFFICIENT HEATING

A heat pump provides both heating and cooling capabilities in one system. So although the initial cost for a heat pump may be higher than for a regular furnace, remember, this system will both heat and cool your home. And, because the heat pump uses energy more efficiently over time, the savings will more than make up for the initial higher cost.

A heat pump will supply about two times more heat than energy used. The greatest savings with a heat pump usually occurs during the heating season.

To find out how much a heat pump will help you save annually, check operating costs and electricity



prices with your local electric utility. In Nebraska, energy costs to heat and cool a home with a heat pump are generally 25-30% less than conventional heating and cooling systems.

### HOW A HEAT PUMP WORKS

An "air-to-air" heat pump has two parts--an indoor unit with a coil and a blower that pushes the warm or cool air through your house (like a standard furnace); and an outdoor unit with another coil, fan and a compressor or pump (like a standard air conditioner). Unlike the standard system, in which the furnace operates only in winter and the air conditioner operates only in summer (using the furnace blower to move cool air), the heat pump uses both indoor and outdoor units year-round.

In summer, the Freon™ (refrigerant) removes heat from the air inside your home and exhausts it outside, while cooled air is forced through the duct system to cool your home.

In winter, the procedure is reversed. The Freon absorbs heat from the outside air, and the compressor pumps the Freon to the inside unit where the heat warms the inside air. The blower pushes the heated air through the duct system to warm your home.

### EVEN WINTER AIR HAS HEAT

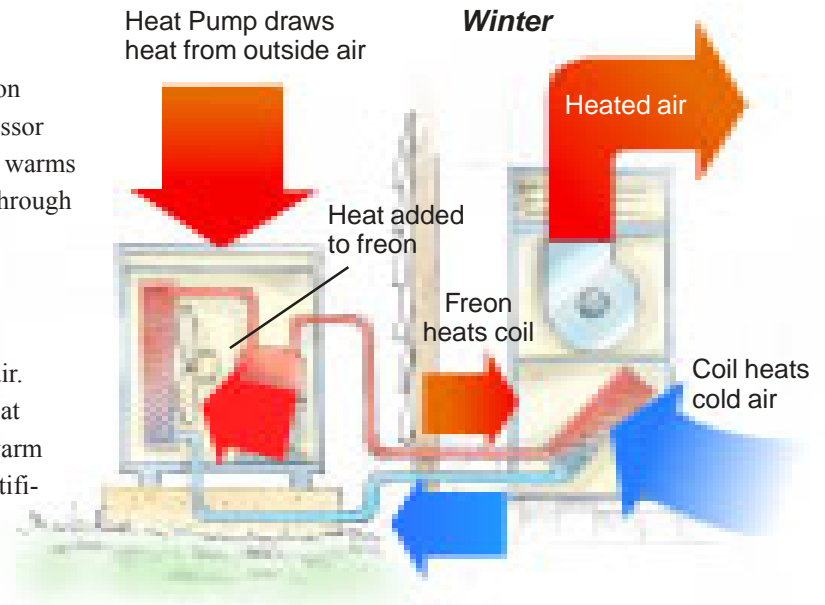
This may seem strange, but heat exists in all air. Even air as cold as  $-460^{\circ}\text{F}$ . contains heat. The heat pump uses this natural heat in the outside air to warm your home--at a lower cost than heating the air artificially.

### LOW-MAINTENANCE OPERATION

Your authorized heat pump dealer can install and maintain your system, just as with a standard furnace or air conditioner. Proper installation is important and will prevent most service problems. Be sure your service person has experience with heat pumps--just as you would want a trained mechanic working on your car. With thousands of heat pumps installed in Nebraska, many trained dealers and service personnel are available to serve you.

### NEXT STEPS TO INSTALLING A HEAT PUMP

- Pick a heating contractor that has experience installing Air-to-Air heat pumps.
- Ask your heating contractor to accurately evaluate your home for the installation and capacity requirements of a heat pump system. This evaluation could consist of a computer-generated heating analysis showing the amount of heating and cooling needed to condition your home for winter and summer.



- Request bids for a Standard efficient, Middle efficient, and a High efficient heat pump.
- Once you receive the bids, have your contractor explain the EFFICIENCY of the heat pump he or she sells. The efficiency rating for the heat pump air conditioning cycle is called the Seasonal Energy Efficiency Ratio or SEER. The SEER rating can range from 10 SEER to 16 SEER. The efficiency rating for the heat pump heating cycle is called Heating Seasonal Performance Factor or HSPF. The HSPF rating can range from 6.5 HSPF to 9.0 HSPF.
- The important thing to remember is: the larger the SEER and HSPF rating, the more efficient your heat pump will be. It is recommended that you purchase the most efficient system that you can afford. As time goes on, the more efficient heating system that you buy today will save you money tomorrow.

IF YOU HAVE QUESTIONS, CONTACT YOUR LOCAL DEALER, POWER SUPPLIER OR YOUR LOCAL  
NEBRASKA PUBLIC POWER DISTRICT OFFICE.



Nebraska Public Power District