

# Home Heating Guide

A review of heating systems and ways to make your home more efficient.





# **Salem Electric**

SERVING KEIZER AND SALEM

This guide is designed to help you compare electric heating and cooling systems so you can choose the best system for your home.

To operate at its maximum efficiency, your home should be adequately weatherized prior to installing your new heating system.

Adequate insulation levels and properly installed caulking and weatherstripping have a tremendous effect on the heating system's ability to maintain comfortable temperatures efficiently. In addition to lower operating costs, appropriate insulation levels allow you to install a heating system sized correctly for your home, saving you on equipment and energy costs. With forced air systems, air leakage and inadequate ductwork sizing can drastically reduce the system's efficiency.

Salem Electric's WeatherWise Program provides incentives for the installation of ceiling, floor, wall and duct insulation, window replacements, duct and air sealing, and caulking and weatherstripping in homes with permanently-installed electric heat, as well as incentives for energy efficient air source or ductless heat pumps.

Contact Salem Electric's Member Services Department at 503 362-3601 or visit [SalemElectric.com](http://SalemElectric.com) to schedule a free energy audit on your home. While at your home, the energy expert will discuss rebates and incentives available through our energy efficiency programs.

# Ductless Heat Pump

Ductless heat pumps are an easy to install, high efficiency heating and cooling system. A ductless heat pump transfers heat using refrigerant expansion and compression. They are quiet and heat rooms evenly with no hot or cool spots. They require no ductwork (only a 3" opening in the outside wall or ceiling for the refrigerant lines and electrical connections).

Ductless systems have an outdoor unit, an indoor unit (mounted on the wall) and a remote control thermostat.



## Controls & Operation

Ductless heat pumps operate with a remote control thermostat for both heating and cooling.

## Maintenance

- Clean air filters regularly
- Regularly clear debris from around the outdoor unit

## Efficiency

Heat pump efficiency is rated by the Heating Season Performance Factor (HSPF) and Co-Efficient of Performance (COP); for both, the higher the rating the more efficient the system.

Contact Salem Electric for recommended efficiency ratings, available incentives and tax credit information.

## Advantages

- Quiet fan circulates air allowing similar temperatures in different areas of your home
- Rebates available from Salem Electric
- May qualify for state and federal tax credits

## Disadvantages

- Additional zonal heating may be needed for isolated rooms
- Larger homes may require more than one unit



# Air Source Heat Pump

Air source heat pumps transfer heat using refrigerant expansion and compression. Heat pumps are extremely efficient with lower operating costs than other conventional heating systems. They provide a constant, even temperature for year-around heating and cooling needs. Heat pumps are initially a little more expensive to install and require a back-up heating system for periods when outdoor temperatures are extremely cold.



## Controls & Operation

A single thermostat controls the heating and cooling of your home. Adding a programmable thermostat allows you to control your home temperature according to your daily schedule. Most models have a variety of setback options and many offer web-based controls that allow you to operate the system even when you're away from home. Electronic filters and high-efficiency particulate air (HEPA) filters can be added to clean circulated air.

## Maintenance

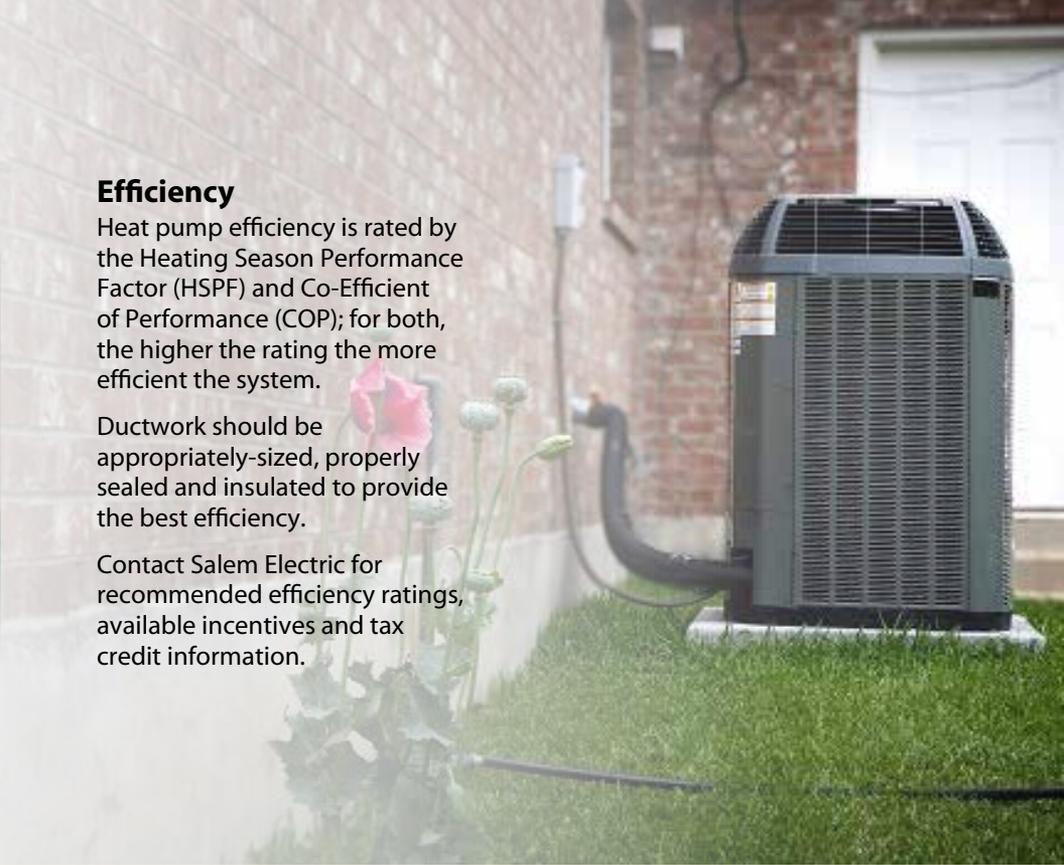
- Clean or replace filters regularly
- Avoid blocking supply registers that impede and restrict air flow
- Regularly clear debris from around the outdoor unit
- An annual service agreement is recommended

## Efficiency

Heat pump efficiency is rated by the Heating Season Performance Factor (HSPF) and Co-Efficient of Performance (COP); for both, the higher the rating the more efficient the system.

Ductwork should be appropriately-sized, properly sealed and insulated to provide the best efficiency.

Contact Salem Electric for recommended efficiency ratings, available incentives and tax credit information.



## Advantages

- One system heats and cools the entire home
- One thermostat operates the entire system
- Heating/cooling registers take up minimal space
- Quiet, clean and safe with no flames, fumes or chimneys
- Maintains comfortable temperatures year around

## Disadvantages

- Larger initial investment
- Ductwork can reduce efficiency if not properly sized, sealed and insulated



# Zonal Heating Systems

Zonal heating systems are less expensive to install than most other heating systems and they are a good option for those who like varying temperatures in different areas or zones of their home. Each zone is an area isolated from other areas by walls or doors (e.g. each bedroom is a separate zone). Depending on your home's floor plan you could have several zones. More open floor plans have fewer zones but may have more than one zone controlled by the same thermostat. Zonal system efficiency is influenced by the efficiency of the building (e.g. insulation levels), the quality of the system's thermostats and the home's floor plan.



## Fan-Assisted Wall Heaters

Fan-assisted wall heaters are similar to a forced air system without the ductwork. These self-contained units include a heating element and a fan and offer great flexibility with units ranging from 500-3,000 watts in a variety of dimensions.

## Baseboard Heaters

Baseboard heaters are installed at the base of the wall along the floor typically below a window. These systems can be used in a variety of applications without ducts, motors, or fans. They draw cool air across an electric element and radiate the warm air from the top of the unit. Newer models eliminate snapping and popping noises experienced in older equipment.

## Controls & Operation

Typically zonal systems are equipped with either electronic or electromechanical thermostats. Electromechanical thermostats are slower to react and allow wider temperature swings. Electronic thermostats minimize temperature swings and provide much better comfort.

## Efficiency

Electric resistance heat is 100% efficient; for every watt of electricity consumed a watt of heat is created. For optimum efficiency, reduce the thermostat setting while sleeping or when the space is unoccupied for four hours or longer.

Fan-assisted systems heat rooms rapidly and efficiently.

## Maintenance

Turn electricity off at the breaker and clean as recommended by manufacturer. Some fan-assisted motors require occasional oiling.

## Advantages

- Separate zones can be heated to different temperatures
- Affordable to purchase and install
- Varying dimensions and wattages available
- Versatile for various construction applications
- No heat loss through ductwork
- Low maintenance

## Disadvantages

- Some fan-assisted models can be noisy
- May cause a safety hazard if blocked by furniture or other combustibles
- Multiple thermostats to adjust temperatures
- No cooling ability





## Evaluating Contractors & Bids

The best quality heating system is only as good as the quality of the installation. A low bid may not necessarily be the best bid. Salem Electric recommends getting more than one bid for comparison purposes. Before making your selection, be sure the bids include information on the following items:

- Equipment Cost and Sizing
- System Efficiency Ratings, Durability and Warranty
- Duct Sealing and Insulation
- Location of Indoor and Outdoor Units
- Consider Annual Service Contract (if needed)
- Contact the Oregon Construction Contractors Board at 503 378-4621 or visit [oregon.gov/ccb](http://oregon.gov/ccb) for contractor information.

For more information or for assistance in evaluating your bids contact Salem Electric's Member Services Department at 503 362-3601 or visit [SalemElectric.com](http://SalemElectric.com).



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