Heat Pump Vs. Electric Heat

Heat Pump System

Heat pumps use electricity but not in the traditional form of electrically-heated coils that warm a room. A heat pump system works like a refrigerator, using electricity to move heat from a cool space to a warm space, making the cool space cooler and the warm space warmer. The heat pump efficiency factor is pretty high, and heat pumps are often less expensive than other types of heat, usually up to 50%.

There are actually three types of heat pumps: Air-to-air, water source and geothermal. The air-to-air heat pump is the one used in our homes. These heat pumps transfer heat between indoor and outdoor air, and can reduce electricity use in many instances by about 50 percent compared to furnaces and electric heaters. Heat pumps also double as air conditioners, and are really good at dehumidifying the air better than standard central air conditioners.

Air-source heat pumps have been around for many decades but technology has changed where air-source heat pumps provide a good, energy-efficient form of heat in winter. A heat pump uses less electricity than a typical electric furnace. The other advantage to the heat pump is it gives you the air conditioner in the same unit.

Electric Heat

Electric heat is typically installed through a central furnace. An electric furnace will be 100 percent efficient but will use more electricity than a heat pump. An electric furnace works like a big hair dryer, producing heat with electric heating elements. The furnaces then use forced air to blow the heated air through the house. The rate of heat may be more expensive, but cheaper installation costs than the heat pump.

How a heat pump works.

① Refrigerant is used to transfer heat.
② Heat exchanger warms refrigerant.
③ Refrigerant vaporizes, liquid to gas.
④ Compressor increases gas temperature.
⑤ Heat in gas is released to warm house.
⑥ Cooling gas condenses back to liquid.
⑦ Refrigerant is ready to start cycle over.