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Hybrid Heat Systems: How Do They Work?

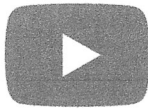
Learn how a traditional heat pump can be combined with a furnace, creating a hybrid system that optimizes energy efficiency year round while saving you money.

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Hybrid heat systems: What is a hybrid system and how do they work?



With a hybrid heat system, you get the best of both HVAC worlds: hot or cold air when you need it most. A hybrid heating and cooling system combine a traditional heat pump with a furnace to provide your home with an energy-efficient HVAC system that you can use all year long. Not only does a hybrid heat system save energy, but it can also save you money on utility bills.

What is a Hybrid Heat System?

A hybrid system, also called a dual fuel heat pump, is made up of both an electric heat pump and a gas furnace. The system alternates between using each of the two units, depending on the season, temperature, and function needed, to maximize efficiency and effectively heat and cool your home all year long.

The heat pump in the system works like a central air conditioner in the summer months by transferring hot air out of your home until your thermostat reads your desired temperature. The heat pump also does the majority of the work in the fall and spring months by providing cost-efficient heat during milder temperatures.

The furnace takes over and works to heat your entire home when the temperature takes a dip during the cold, winter months. The main function of a furnace is converting fuel into heat quickly and efficiently. When it's cold outside, the furnace in your hybrid heat system will do just that.

Furnaces vs. Heat Pumps vs. Hybrid

Understanding the differences among these systems will help you decide which is right for your home!

Furnaces

A furnace is a good ol' fashioned heating system. It works by burning a fuel source, like propane or natural gas, to make heat. That heat is then combined with air from the home to warm it, then that warm air is re-distributed throughout the home. Furnaces only produce heat, so homeowners typically need a separate air conditioning system in their home for the cooler months.

Furnaces are only about 95% energy efficient, but they do have a longer lifespan (more than 20 years) than other heating systems because they're used for only a few months out of the year. They're relatively inexpensive to install, but keep in mind that your home does need to have access to natural gas or propane for a furnace to function. If it doesn't, the process to access a natural gas source will drive up the installation cost.

Heat Pumps

Heat pumps perform both heating and cooling functions, so you only need to have one HVAC system to cover you all year long in mild climates. Heat pumps are flexible systems, so they're able to adapt to the weather outside. For instance, when it's cold out, heat pumps extract whatever heat is in the outside air and transfer it into the home. When the temperatures are warmer, they switch to a cooling function by removing hot air from the home. Heat pumps have a shorter lifespan than furnaces (around 15 years) because they work all year long moving air around to reach your desired temperature.

When temperatures outside are close to freezing, heat pumps have to work for more time to bring heat into your home, which can drive up your utility bills. But, they are more energy efficient overall than most HVAC systems — they can reduce your electricity use for heating by about 50% compared to furnaces, according to the Department of Energy — and make sense for homeowners in year-round mild climates.

Hybrid Systems

As we mentioned earlier, hybrid heat systems are a combination HVAC system with both a heat pump and a furnace. The hybrid system uses the heat pump in hot or mild temperatures (about

40°F and higher) and the furnace in colder temperatures (about 32°F and below). It switches between the two depending on which is more efficient for the circumstances, which saves time and energy in getting your home to the desired temperature. Hybrid systems are great for any type of climate and function year-round. Plus, because each piece only works when it's optimal, hybrid heat systems have a life expectancy between 20 and 25 years!

When Does a Hybrid System Make Sense?

If you live in a place where the temperature is always changing

Hybrid heat systems are best for places that experience all four seasons and varying temperatures. If you live in a place that's cold the majority of the time, a furnace can help provide heat, and a lot of it, at a rapid pace. For those who live in hotter or more mild climates, heat pumps make the most sense because they function best in warm to hot temperatures. Hybrid systems are for people who experience both ends of the temperature spectrum. A furnace heats quickly and efficiently, so if you live through changing climates, you'll need to invest in another HVAC system to meet your needs. While heat pumps both heat and cool, they have to work overtime at extremely low temperatures, which isn't always the most cost or energy-effective solution. Hybrid heat systems take the best qualities of both systems to tackle whatever climate you may wake up to.

If local laws encourage energy efficiency

Furnaces use energy sources like propane and natural gas to burn heat, which isn't always the most environmentally-friendly option. States are beginning to pass new laws that encourage and reward energy efficiency in HVAC, like [California's 2022 Energy Code](#). Heat pumps are the star of the show in California's new code, using the energy efficiency rates of heat pumps as the performance standard baseline for heating and cooling in all homes and some commercial spaces. Heat pumps are typically the gold standard in terms of energy efficiency because they just transfer energy instead of making it from scratch. If your state's energy efficiency laws are headed in the same direction as California, it might be worth upgrading your current HVAC system to a hybrid system to keep up with the changing times.

If dry, hot heat in the winter impacts your personal comfort

If you're using a furnace in the winter and experiencing dry, chapped skin while inside your home, your HVAC system could be the cause. The gas heat that furnaces produce and put into your home is a higher temperature than heat produced from an electrical source. This hot, dry heat can dry out and chap sensitive skin. If this sounds like a problem you face, you may want to consider upgrading to a hybrid system with "cooler" heat for a more comfortable living experience, while still getting that hot heat when it's needed.

How can a Hybrid Heat System Save You Energy and Money?

The ability for a hybrid heat system to switch between a furnace and a heat pump is what saves you energy and money. A furnace isn't needed in hot temperatures (because it only produces heat) and a heat pump has to work overtime in extremely cold temperatures. Instead of letting a regular heat pump do the extra work in the winter, a hybrid heat system lets the furnace do the heavy lifting. This means the heat pump isn't expending unnecessary energy to do a job a furnace could do quicker and more efficiently. On the flip side, a heat pump can warm your home in a more energy-efficient way than a furnace when it's just cool outside, and a hybrid system lets it do just that.

All this switching between functions doesn't only save energy, but it also saves time and money. By allowing the best unit to heat or cool your home at the best time, a hybrid system gets your home to your desired temperature faster. Not to mention, less energy wasted from your HVAC systems means less money wasted on utility bills for you.

Hybrid heat systems are a triple win for homeowners.

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