

U.S. Department of Energy - Energy Efficiency and Renewable Energy Energy Savers

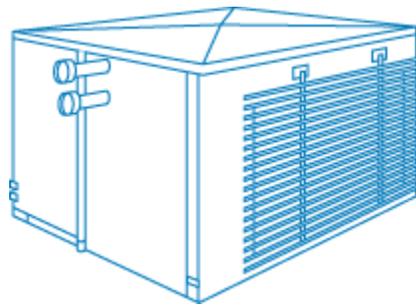
Heat Pump Swimming Pool Heaters

If you want an energy-efficient way to heat your swimming pool, consider using a heat pump pool heater.

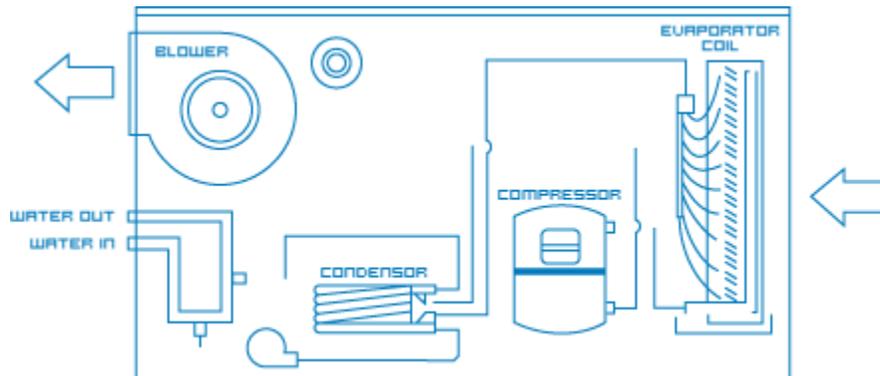
How They Work

Heat pumps use electricity to capture heat and move it from one place to another. They don't generate heat.

As the pool pump circulates the swimming pool's water, the water drawn from the pool passes through a filter and the heat pump heater. The heat pump heater has a fan that draws in the outside air and directs it over the evaporator coil. Liquid refrigerant within the evaporator coil absorbs the heat from the outside air and becomes a gas. The warm gas in the coil then passes through the compressor. The compressor increases the heat, creating a very hot gas that then passes through the condenser. The condenser transfers the heat from the hot gas to the cooler pool water circulating through the heater. The heated water then returns to the pool. The hot gas, as it flows through the condenser coil, returns to liquid form and back to the evaporator, where the whole process begins again.



Heat pump.



Example of how a heat pump operates.

Higher efficiency heat pump pool heaters usually use *scroll compressors* versus the *reciprocating compressors* of standard units.

Heat pump pool heaters work efficiently as long as the outside temperature remains above the 45°F–50°F range. The cooler the outside air they draw in, the more energy they use. However, since most people use outdoor swimming pools during warm and mild weather, this usually isn't an issue.

Selecting a Heat Pump Pool Heater

Heat pump pool heaters cost more than [gas pool heaters](#), but they typically have much lower annual operating costs because of their higher efficiencies. With proper maintenance, heat pump pool heaters typically last longer than gas pool heaters. Therefore, you'll save more money in the long run.

When selecting a heat pump pool heater, you should consider its:

- [Size](#)
- [Efficiency](#)
- [Costs](#).

Installation and Maintenance

Proper installation and maintenance of your heat pump pool heater can optimize its efficiency. It's best to have a qualified pool professional install the heater, especially the electric hookup, and perform complicated maintenance or repair tasks.

Read your owner's manual for a maintenance schedule and/or recommendations. You'll probably need to tune up your pool heater annually. Because of a heat pump pool heater's many moving and electrical parts, it will probably require periodic service by an air conditioning technician.

With proper installation and maintenance, heat pump pool heaters can last 10 or more years.

Other Types of Pool Heaters

- [Gas pool heaters](#)
- [Solar pool heaters](#)

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