

Heat Pump Water Heaters: A Quick Guide for Contractors

When an electric water heater goes out, it is an emergency, so homeowners may not explore competing technologies. In recent years, heat pump water heaters have become more reliable and affordable, and they are now an attractive alternative to electric resistance models.

LOCATION, LOCATION, LOCATION

Heat pump water heaters pull heat from the air, which means that they actually cool the air around them. Therefore, they should not be located in confined spaces like closets or small laundry rooms.

This localized air cooling is an advantage in the summer, but a disadvantage in the winter. Heat pump water heaters should be installed where they have adequate access to an unrestricted volume of air (at least 1000 cubic feet) and where they possibly can harvest heat that would otherwise be a problem or go to waste. Garages work well because they have adequate volume. Even a single car garage is about 1600 cubic feet. Also, when you park a hot car in a garage, it releases heat into the air that can be used by the heat pump water heater.

Other ideal locations include unconditioned basements or large open crawlspaces such as those in homes built on a slope. Other considerations are noise—when they are running, they are about as loud as a window air conditioner; and height—they are much taller than a regular storage water heater. They do not have to be mounted on a stand like some other gas water heaters.

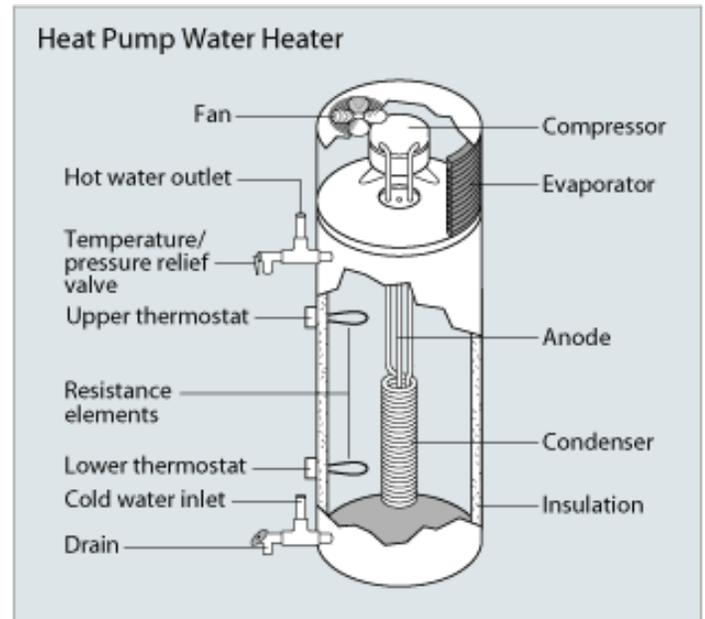
WHAT SIZE?

Because heat-pump water heaters do not heat water quickly, households that use a lot of hot water should purchase one with a larger storage capacity. A family that stretches the capacity of a regular 50 gallon water heater should consider an 80 gallon heat pump water heater. Oversized water heaters reduce efficiency through standby losses (heat emitted from tank when hot water is not being consumed). Undersized water heaters reduce efficiency due to inducing the electric resistance back up strips that are built in to most heat pump water heaters.

COSTS AND SAVINGS

The incremental cost of an electric heat pump water heater over replacing a standard resistance electric water heater is \$1,200-\$2,000.

For a family that uses 35 gallons of hot water per day, a heat pump water heater will save about \$150-\$250 per year compared to an electric resistance model. Energy costs for a heat pump water heater are comparable to gas storage water heaters.



Source: U.S. Department of Energy, Energy.gov
<http://energy.gov/energysaver/articles/heat-pump-water-heaters>

SMUD REBATES

SMUD offers a \$1,000 rebate for installing a heat pump water heater that has an energy factor of ≥ 2.0 and is 50 gallons or greater.

FOR MORE INFORMATION

For more information about energy efficiency incentives available through SMUD, visit: <http://hpp.smud.org/> or email Jim Mills at: james.mills@smud.org

For more information about heat-pump water heaters: <http://energy.gov/energysaver/articles/heat-pump-water-heaters>
<http://www.greenbuildingadvisor.com/blogs/dept/musings/heat-pump-water-heaters-come-age>