

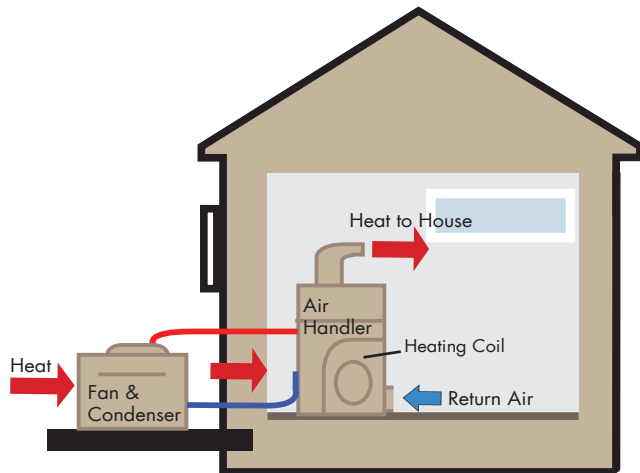
Heat Pump Technology

How Do Heat Pumps Work?

The general principle behind heat pumps is that they use electricity to move heat from one place to another instead of harnessing heat from combustion. This gives electric heat pumps a much higher efficiency than traditional HVAC systems. Heat pumps can replace traditional domestic hot water and air heating systems especially in moderate climates. They can also be used in reverse to air condition a home in the summer.

When to Use a Heat Pump

For climates with moderate heating and cooling needs, heat pumps offer an efficient alternative to traditional furnaces and air conditioners. Heat pumps work best with properly sealed duct systems and building envelopes with good levels of insulation. Heat pump hot water heaters are a great option to replace existing electric resistance hot water heaters.



Things to Consider with Heat Pumps

- *Location, Location, Location:* Heat pump domestic hot water heaters (DHWs) need access to adequate air flow (not suitable for a closet). Heat pump DHWs also discharge cold air, which can 'fight' against your air heating system when in use. For this reason, heat pump DHWs are best situated in unconditioned garages separated from the rest of the house. Duct systems can be used to direct discharge air where needed.
- *Extreme Cold Weather:* Heat pumps work by taking heat from the ambient air and directing it into your home; so when temperatures dip below freezing, they operate less efficiently. Most heat pump systems have electric resistance systems to help with defrosting and when temperatures dip below freezing.

References

www.energy.gov/energysaver/heat-pump-systems