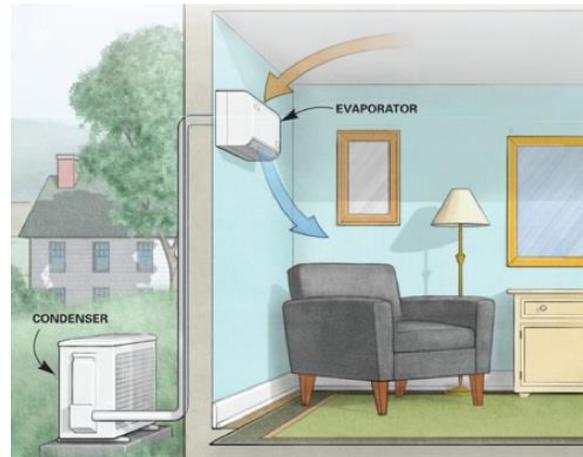


Mini-Split Heat Pump Comfort Systems

Almost all buildings at some point need to expend energy to warm or cool indoor space to stay within the human temperature comfort zone (roughly 68 to 78 degrees) For about 30 years Europeans and the Japanese have primarily relied on modern heat pump technology to condition the interiors their buildings. They love efficiency and their energy is typically more expensive that in America. This is why mini split systems are the predominant conditioning systems in those countries.

Mini-splits heat pumps consist of a single inverter compressor outside the building. These are considerably smaller and quieter than conventional air conditioner compressors, allowing them to be installed in small outdoor spaces or adjacent to property lines. An insulated connecting copper tubing “line set” delivers refrigerant (“freon”) to each of one to five indoor air handlers, where a fan blows air over the coils to heat or cool the air within indoor spaces. The compressor is outdoors, and the conditioning air handlers are indoors, thus the “split” in mini-splits.



A basic one wall mount air handler system

Typical central forced air systems are known to lose up to 20 to 30% of cooling and heating efficiency through leaks and heat flow through the 180 feet or so of ducting in a conventional suburban home. Mini-splits most commonly have no ducts (most efficient). Sometimes there is an air handler placed in the attic to condition a number of bedrooms or bathrooms. They do have duct runs but they are kept short as possible, and are buried in the attic insulation (a little less efficient).

Some other mini-split system benefits include:

- By their nature mini-splits are heating and cooling systems in one system.
- They are quieter in operation than any central furnace/AC available today.
- They have lower energy costs due to better efficiency and more control.
- No duct work which means this is ideal for older homes difficult to retrofit with a traditional central forced air systems
- No start stop, start stop cycling. Smooth continuous flow that slowly ramps up and down as needed, like cruise control in a car.
- Reduced temperature stratification between the upper and lower parts of a room.
- Easy to access and clean system filters.
- Ability to zone condition portions of the house without the complexity and unreliability of the older zoned systems in central unitary systems.

Zoning allows you to control the temperature different areas of the house. You can have the A/C turned off in the bedroom for the entire day while you are in the kitchen and the living room. Then when it's time to go to bed, you can simply turn the bedroom on and the rest of the house off. This can help you save a significant amount in your heating and cooling costs.