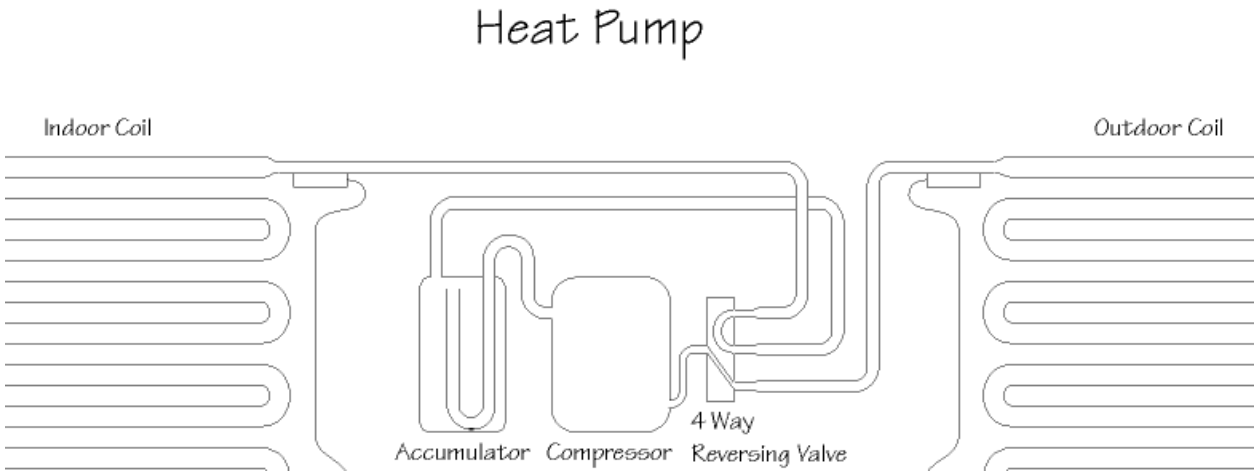
Heat Pumps vs. Conventional Air Conditioning

As you may know, heat pumps are used to both cool and heat the home. The same device accomplishes this by reversing the flow of refrigerant. There are also conventional air conditioning systems that only cool. Heat is typically supplied by either a gas (natural or LP) or an oil furnace. Both heat pumps and conventional air conditioning systems are typically "split" systems, with the compressor located on the exterior of the home and the air handler or furnace in the interior (attic, crawlspace, closet, etc).

The distinction between heat pumps is not critical for air conditioning. However, if a system has an electric furnace for heat instead of a heat pump, the energy costs can be substantially higher, even prohibitive because electric furnaces are similar to heating with electric baseboard heaters except they are forced air as opposed to unitary heaters. Heat pumps are much more cost effective than electric furnaces, which are like heating the house with a hair dryer! Use caution before listing a home as a heat pump if this is in doubt.

There are several ways to distinguish a heat pump from an electric furnace. The first is the thermostat. Heat pump thermostats are typically equipped with an emergency heat switch that switches from heat pump mode (most efficient) to emergency heat (least efficient). The second is that older, slider model style heat pump thermostats have dual mercury switches that can be viewed by removing the thermostat cover. The third is by looking for the reversing valve inside the compressor unit on the exterior of the home. It can be seen by looking thru the top of the outdoor unit and looks like the sketch below:



On a related topic, please note that R-22 refrigerant is being replaced by R410, which is more environmentally friendly. After 2010, chemical manufacturers may still produce R-22 to service existing equipment, but not for use in new equipment. As a result, heating, ventilation and air-conditioning (HVAC) system manufacturers will only be able to use pre-existing supplies of R-22 to produce new air conditioners and heat pumps. These existing supplies would include R-22 recovered from existing equipment and recycled.

Use of existing refrigerant, including refrigerant that has been recovered and recycled, will be allowed beyond 2020 to service existing systems, but chemical manufacturers will no longer be able to produce R-22 to service existing air conditioners and heat pumps.

I strongly recommend that any new equipment be R410 to avoid any shortages or excessive costs associated with R-22. Refrigerant can be found on the manufacturer's identification plate at the outdoor unit.

Respectfully submitted,
John Guy/Home Inspector Committee Member

Are you interested in serving on the **Home Inspector Committee** in 2010? If so please contact Susan Jester at sjester@wsrar.com or 768-5560.