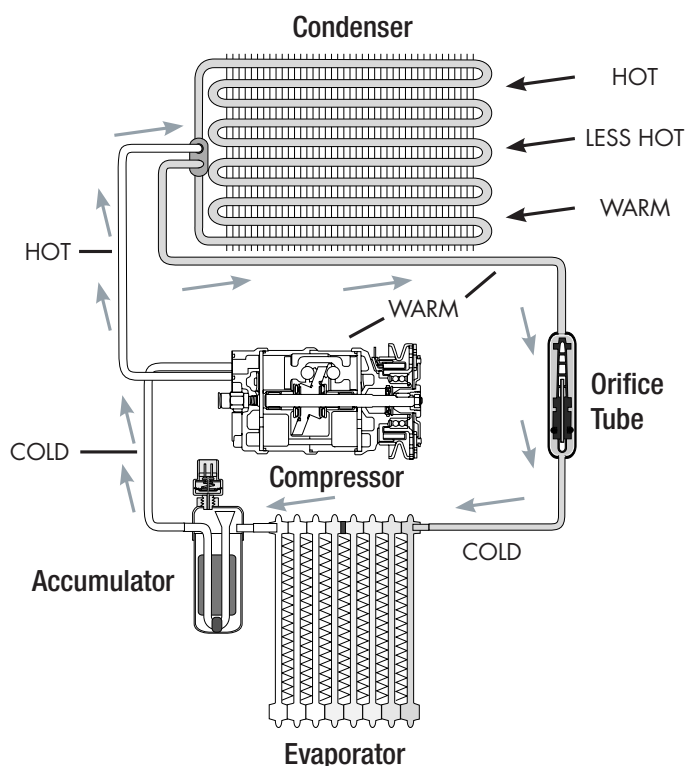


AC SYSTEM 2011

In order to better understand your AC system and learn more about the major components study this diagram. Here you can see how the system basically works and get a feel for what the components do.

1. **Compressor:** The compressor is the heart of your AC system, it is a pump, which pressurizes and circulates the system refrigerant. The refrigerant is drawn in through the low side of the compressor (blue line) as a low temperature vapor and is quickly expelled from the compressor through the high side (red line) after being compressed to a high-pressure high temperature vapor. The compressor is belt driven by your engine and is engaged and disengaged by a clutch.
 2. **Clutch:** The clutch which is a part of the compressor, acts as the on / off switch for the compressor. The clutch is controlled by the AC switch inside the vehicle used for turning the AC on or off also in conjunction with a temperature or pressure sensitive switch in the system and in most vehicles in the engine control computer.
 3. **Condenser:** The condenser is the exterior heat exchanger. The condenser receives a high-pressure vapor (red line) from the compressor. As the vapor travels down the condenser the vapor cools, releasing its heat to the surrounding atmosphere. There the vapor is condensing and becomes a liquid (blue line), the condenser coils are mounted in fins to provide maximum cooling. The condenser is usually mounted in front of the radiator for maximum airflow possible.
 4. **Expansion Valve or Orifice Tube:** There are 2 types of AC systems most common in today's vehicles.
 - A.) First the Expansion valve system uses the expansion valve to control the refrigerant flow and reduce the temperature and pressure of the refrigerant prior to entering the evaporator.
 - B.) Other systems use an Orifice tube, which meters refrigerant flow and will also create a pressure drop. The orifice tube may be located at the condenser outlet (blue line) as well as near the evaporator inlet.
 5. **Accumulator or Receiver Drier:** Again to types of parts for two different systems. Both parts act as a storage area and filter and also inside these units you will find a drying agent also referred to as desiccant they also are used for removing moisture. There biggest difference comes when you see where they are located, the receiver drier is located in between the condenser and evaporator on the high pressure side (dark blue), while the accumulator is located on the low pressure side after the evaporator (light blue)
- Note: What to remember here?**
- When you have an accumulator you will find an orifice tube
 - When the system has a receiver drier you will have an expansion valve
 - Expansion valve systems are found on most Chrysler and import applications
 - On Orifice tube systems where the Orifice tube meters the amount of refrigerant going to compressor you must also have a cycling switch or have a variable displacement compressor incorporated to also help control refrigerant flow in the system. The switch type and location will vary between systems.
6. **Evaporator:** The evaporator looks like a small condenser and is actually constructed quite similarly to that of a condenser. It acts as the interior heat exchanger. The evaporator receives refrigerant as a low pressure cold, atomized liquid. As the refrigerant passes through the evaporator, warm interior air is blown across the coils and the heat is absorbed by the refrigerant. It is here where the absorption of the heat from inside the vehicle the cooling effect is created for the inside of the passenger compartment of the vehicle.
 7. **Hoses:** The hoses act as the transporters for the refrigerant and will travel at high and low pressures throughout the AC system. Hoses are also designed to withstand heat and petroleum products associated with under hood environments.

Orifice tube System



Thermal expansion valve System

