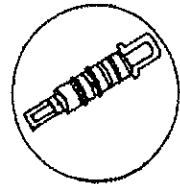
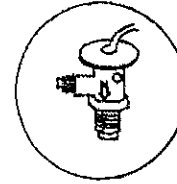


THE BASICS / SYSTEM OPERATION

REFRIGERANT CIRCUIT

EXPANSION VALVE

ORIFICE TUBE

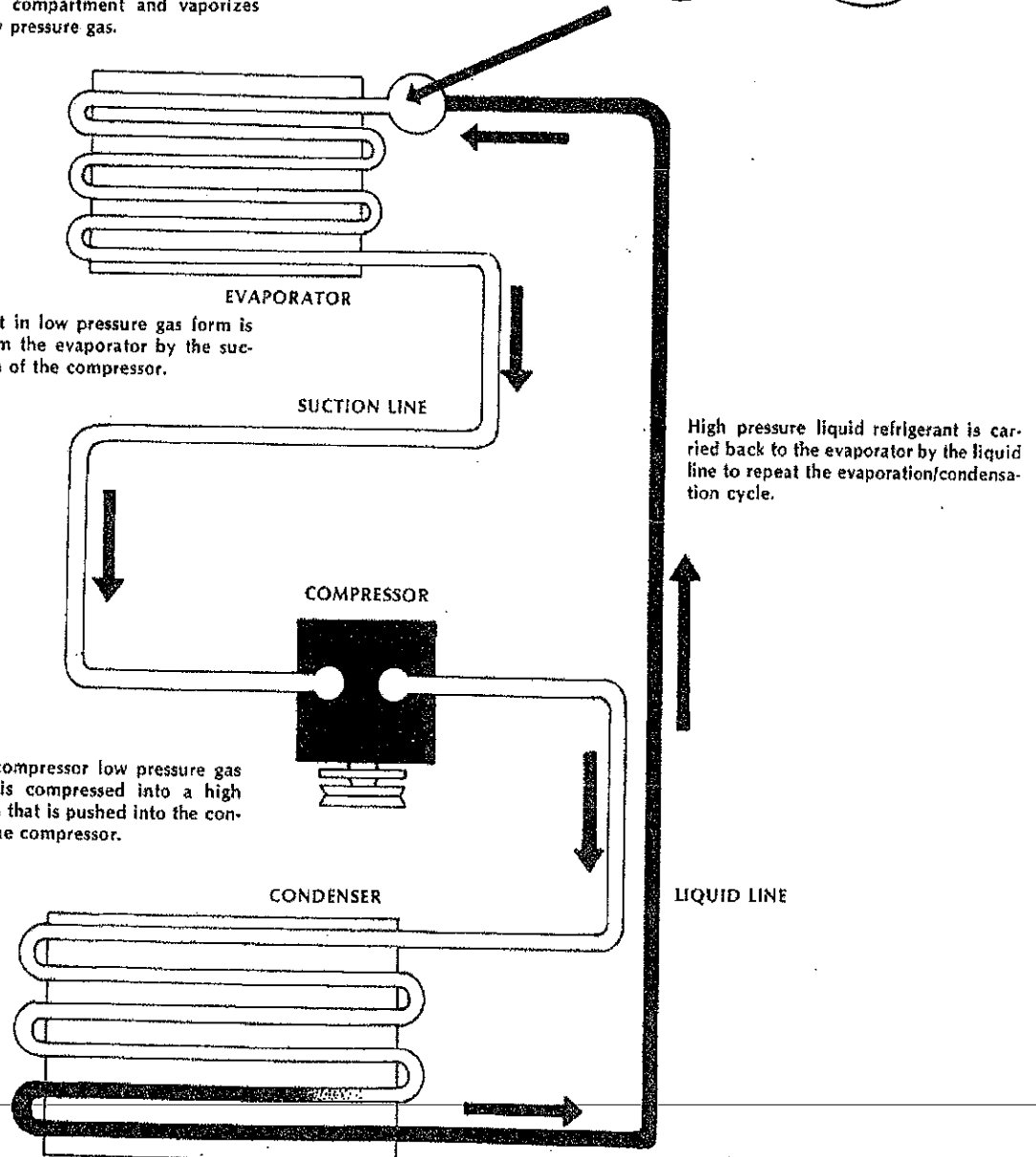


Refrigerant enters evaporator as a liquid spray. It absorbs heat from the air in the passenger compartment and vaporizes into a low pressure gas.

Refrigerant in low pressure gas form is drawn from the evaporator by the suction action of the compressor.

Inside the compressor low pressure gas refrigerant is compressed into a high pressure gas that is pushed into the condenser by the compressor.

Refrigerant enters the condenser as a high pressure gas. It gives up its heat to the outside air and condenses back into liquid form.



LOW PRESSURE

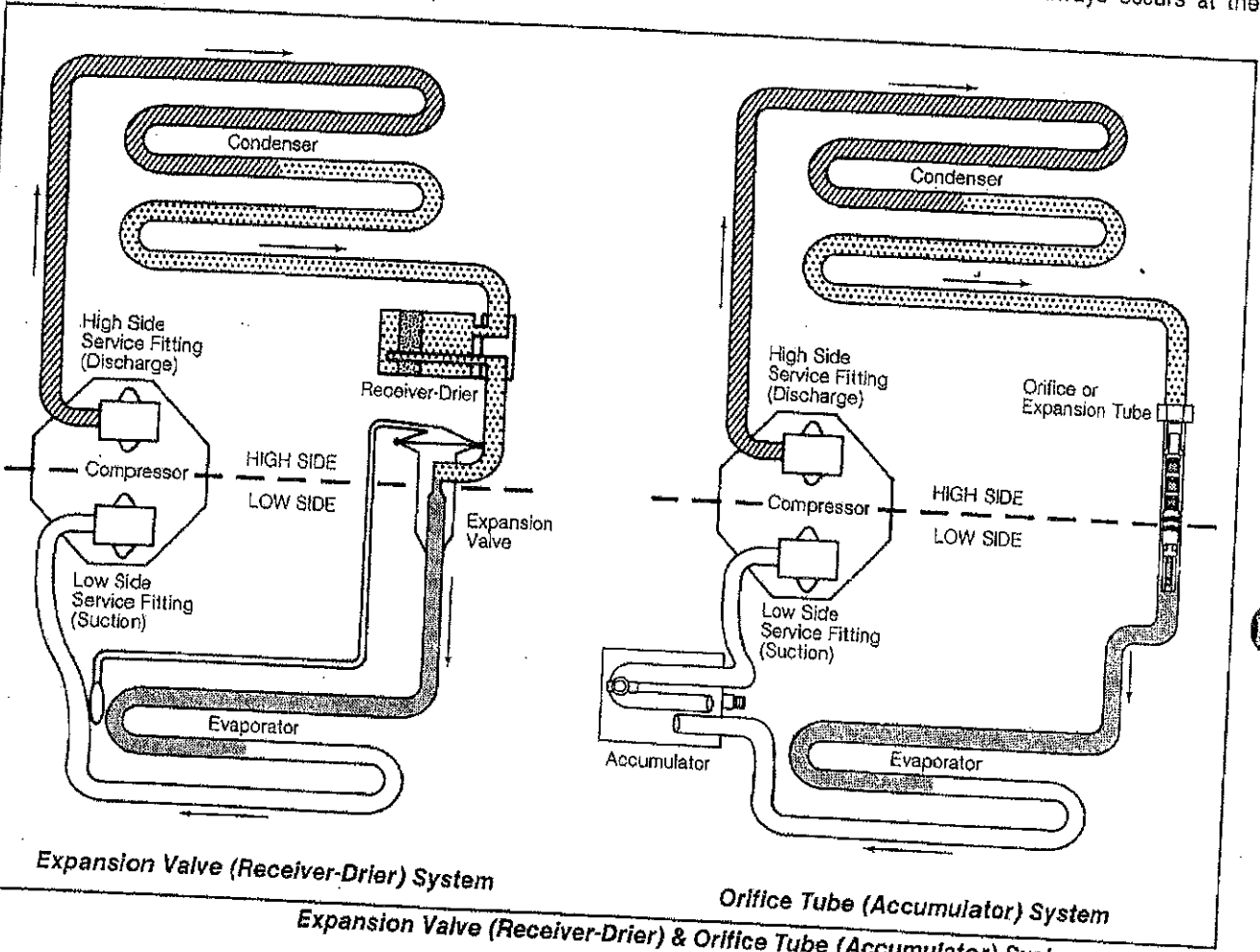
HIGH PRESSURE

OPERATION DESCRIPTION

DESCRIPTION

AIR CONDITIONING SYSTEM HAS HIGH AND LOW SIDES

Let's start our discussion of the A/C system by looking at the following diagram. We have mentioned that an air conditioner has a High Side and Low Side. This is true of all air conditioning systems, and the division of these two "sides" always occurs at the same point.



Expansion Valve (Receiver-Drier) System

Orifice Tube (Accumulator) System

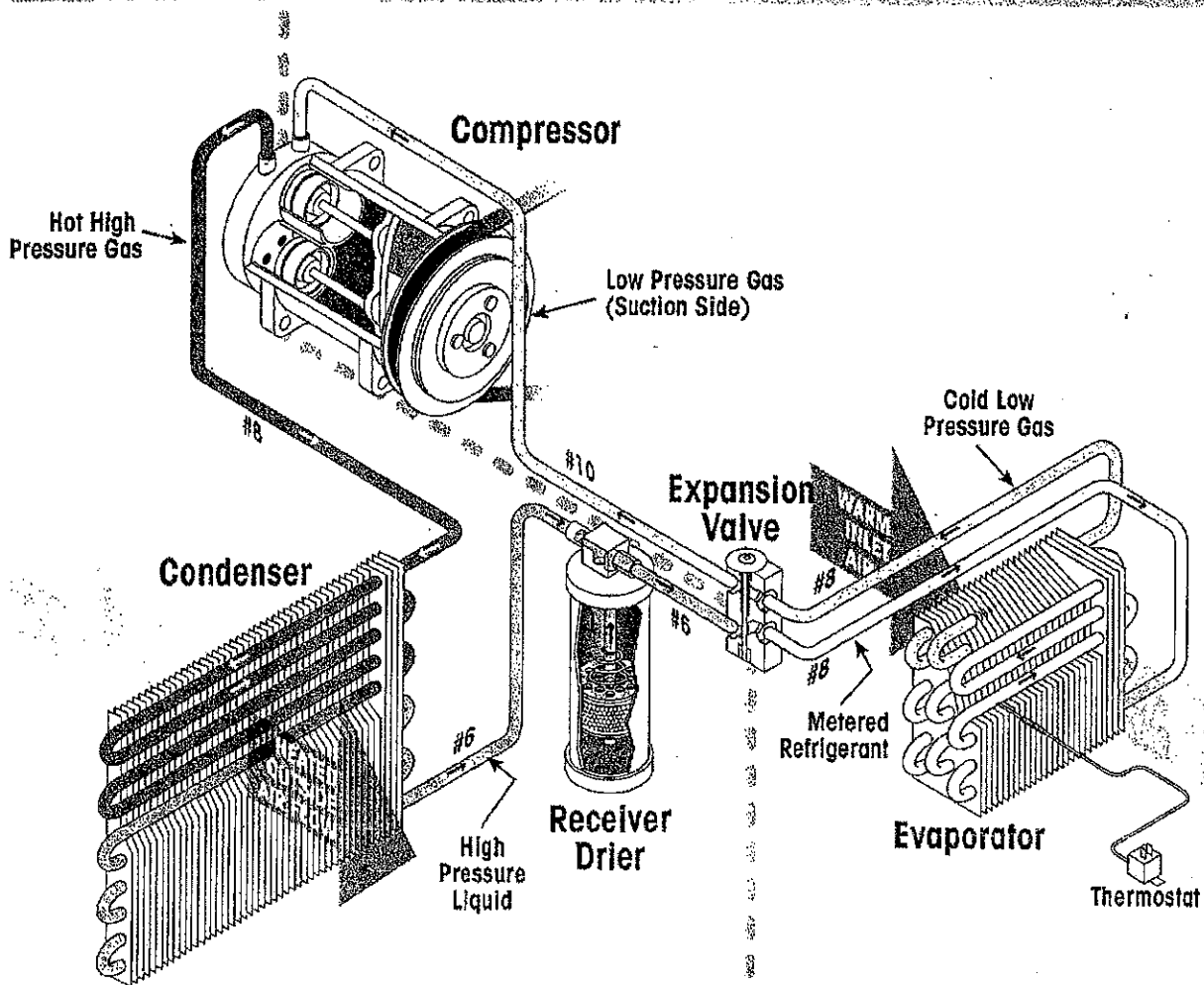
Expansion Valve (Receiver-Drier) & Orifice Tube (Accumulator) Systems

High Side simply refers to the side of the system in which high pressure exists. As shown in the illustration, the high side is (following the flow arrows) from the outlet (discharge) side of the compressor, through the condenser, through the receiver-drier (if equipped) and to the expansion valve (or orifice tube).

It is the compressor's job to create the high pressure (higher temperature) so the R-12 will be able to condense and release heat at the condenser. A pressure differential is created at the expansion valve or orifice tube - the dividing point on the front side of the system. The expansion valve will be explained in detail later in this section.

Low Side is the term used for the portion of the air conditioning system in which low pressure and temperature exist. From the expansion valve (or orifice tube), through the evaporator and accumulator (if equipped) to the inlet side (suction) of the compressor, the R-12 is in a low-pressure state. This allows heat to be transferred from inside the car to the "colder" R-12, which then carries it away.

TYPICAL PLUMBING SCHEMATIC



Air Conditioner components are connected together to illustrate system operation. The components shown are not to scale. The refrigerant and refrigerant oil are clear in color and not visible in this drawing; however, we've attempted to suggest temperature variants through the use of values of gray in the pipeline. The small arrows inside the components and connecting hoses show the direction of refrigerant flow (refrigerant circuit).